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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

FIELD OFFICE

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 24, 1997

Date received July 25, 1997

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-46

Rec'd 0700 hr.
Sampled 1140 hr.

FIELD MEASUREMENTS

pH	7.27
DO	5.3
Flow	4 gpm
Conductivity	474
Temperature	6.2°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17525

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	24	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 1030 SC
Alkalinity, Bicarbonate	334	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	274	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	5.9	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	53	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	5.1	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	5	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	519	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	235	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	25	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.37	----	pH units	EPA 150.1	07-25-1997 0900 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	9	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	260	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	13	5	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-7.2	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 13
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-47

Rec'd 0700 hr.
Sampled 1120 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 24, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	7.79
DO	6.9
Flow	9.23 gpm
Conductivity	516
Temperature	5°C

NOTE:DISSOLVED METALS FILTERED AT LAB!B

Analysis report no. 59-17526

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	16	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 1030 SC
Alkalinity, Bicarbonate	370	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 S
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 S
Alkalinity, Total	303	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	6.5	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	57	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	5.6	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	5	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	557	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	254	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	27	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.89	----	pH units	EPA 150.1	07-25-1997 0900 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	12	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	270	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	14	5	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-7.5	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-48

Rec'd 0300 hr.
Sampled 1105 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 21, 1997

Date received July 22, 1997

FIELD MEASUREMENTS

pH	7.40
DO	6.8
Flow	4.6 gpm
Conductivity	464
Temperature	7.7°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17501

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	39	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740 SC
Alkalinity, Bicarbonate	349	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Total	286	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100 SC
Anions	6.0	----	meq/l	---------	08-12-1997 1400 RJ
Calcium, Dissolved	60	1	mg/l	EPA 215.1	08-12-1997 1030 MK
Cations	5.4	----	meq/l	---------	08-12-1997 1400 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	518	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	261	----	mg/l as $CaCO_3$	SM2340-B	08-12-1997 1400 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Magnesium, Dissolved	27	1	mg/l	EPA 242.1	08-12-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
pH	7.70	----	pH units	EPA 150.1	07-22-1997 0800 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-12-1997 0915 MK
Sodium, Dissolved	5	1	mg/l	EPA 273.1	08-12-1997 0930 MK
Solids, Total Dissolved	270	10	mg/l	EPA 160.1	07-28-1997 0700 JC
Sulfate	7	5	mg/l	EPA 375.4	08-06-1997 0800 SC
Cation/Anion Balance	-4.8	----	%		08-12-1997 1400 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 13 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
84-56

Rec'd 0700 hr.
Sampled 1045 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 24, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	7.24
DO	5.2
Flow	.67 gpm
Conductivity	528
Temperature	6.4°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17524

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	29	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 1030 SC
Alkalinity, Bicarbonate	356	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 S
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 S
Alkalinity, Total	292	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	6.6	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	55	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	5.9	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	8	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	573	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	261	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	30	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.47	----	pH units	EPA 150.1	07-25-1997 0900 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	16	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	310	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	26	5	mg/l	EPA 375.4	08-08-1997 0830 SC
Cation/Anion Balance	-5.5	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 19 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-60

Rec'd 1300 hr.
Sampled 0756 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 28, 1997

Date received July 28, 1997

FIELD MEASUREMENTS

pH	7.76
DO	6.8
Flow	1 gpm
Conductivity	689
Temperature	6.4°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-17537

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	22	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	454	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	273	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	8.9	----	meq/l	---------	08-14-1997 1330 RJ
Calcium, Dissolved	76	1	mg/l	EPA 215.1	08-15-1997 1015 MK
Cations	7.9	----	meq/l	---------	08-14-1997 1330 RJ
Chloride	6	1	mg/l	SM4500-Cl-B	08-11-1997 1300 SC
Conductivity	747	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	305	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Magnesium, Dissolved	28	1	mg/l	EPA 242.1	08-14-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
pH	7.89	----	pH units	EPA 150.1	07-28-1997 1530 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-14-1997 0900 MK
Sodium, Dissolved	41	1	mg/l	EPA 273.1	08-14-1997 0930 MK
Solids, Total Dissolved	460	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	64	25	mg/l	EPA 375.4	08-12-1997 0900 SC
Cation/Anion Balance	-6.3	----	%		08-14-1997 1330 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-61

Rec'd 0300 hr.
Sampled 1505 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 21, 1997

Date received July 22, 1997

FIELD MEASUREMENTS

pH	7.28
DO	6.8
Flow	115.3 gpm
Conductivity	492
Temperature	5.1°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17502

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	18	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740	SC
Alkalinity, Bicarbonate	349	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100	SC
Alkalinity, Total	286	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100	SC
Anions	6.2	----	meq/l	---------	08-12-1997 1400	RJ
Calcium, Dissolved	68	1	mg/l	EPA 215.1	08-12-1997 1030	MK
Cations	6.0	----	meq/l	---------	08-12-1997 1400	RJ
Chloride	7	1	mg/l	SM4500-Cl-B	08-01-1997 1010	SC
Conductivity	560	1	umhos/cm	SM2510-B	07-22-1997 1230	MK
Hardness, Total	281	----	mg/l as $CaCO_3$	SM2340-B	08-12-1997 1400	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815	MK
Magnesium, Dissolved	27	1	mg/l	EPA 242.1	08-12-1997 1100	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845	MK
pH	7.63	----	pH units	EPA 150.1	07-22-1997 0800	MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-12-1997 0915	MK
Sodium, Dissolved	8	1	mg/l	EPA 273.1	08-12-1997 0930	MK
Solids, Total Dissolved	290	10	mg/l	EPA 160.1	07-28-1997 0700	JC
Sulfate	15	5	mg/l	EPA 375.4	08-06-1997 1300	SC
Cation/Anion Balance	-2.2	----	%		08-12-1997 1400	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 13
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-65

Rec'd 0300 hr.
Sampled 1300 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 21, 1997

Date received July 22, 1997

FIELD MEASUREMENTS

pH	7.47
DO	7.3
Flow	1 gpm
Conductivity	511
Temperature	7.1°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17503

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	20	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740 SC
Alkalinity, Bicarbonate	371	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Total	304	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100 SC
Anions	6.6	----	meq/l	---------	08-12-1997 1400 RJ
Calcium, Dissolved	76	1	mg/l	EPA 215.1	08-12-1997 1030 MK
Cations	6.2	----	meq/l	---------	08-12-1997 1400 RJ
Chloride	3	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	580	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	289	----	mg/l as $CaCO_3$	SM2340-B	08-12-1997 1400 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Magnesium, Dissolved	24	1	mg/l	EPA 242.1	08-12-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
pH	7.73	----	pH units	EPA 150.1	07-22-1997 0800 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-12-1997 0915 MK
Sodium, Dissolved	10	1	mg/l	EPA 273.1	08-12-1997 0930 MK
Solids, Total Dissolved	310	10	mg/l	EPA 160.1	07-28-1997 0700 JC
Sulfate	20	5	mg/l	EPA 375.4	08-06-1997 1300 SC
Cation/Anion Balance	-3.0	----	%		08-12-1997 1400 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-66

Rec'd 0300 hr.
Sampled 1149 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 21, 1997

Date received July 22, 1997

FIELD MEASUREMENTS

pH	7.49
DO	7.6
Flow	2.3 gpm
Conductivity	419
Temperature	6.3°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17504

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	13	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740	SC
Alkalinity, Bicarbonate	303	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100	SC
Alkalinity, Total	248	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100	SC
Anions	5.3	----	meq/l	---------	08-12-1997 1400	RJ
Calcium, Dissolved	43	1	mg/l	EPA 215.1	08-12-1997 1030	MK
Cations	4.7	----	meq/l	---------	08-12-1997 1400	RJ
Chloride	4	1	mg/l	SM4500-Cl-B	08-01-1997 1010	SC
Conductivity	463	1	umhos/cm	SM2510-B	07-22-1997 1230	MK
Hardness, Total	227	----	mg/l as $CaCO_3$	SM2340-B	08-12-1997 1400	RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	08-12-1997 0815	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815	MK
Magnesium, Dissolved	29	1	mg/l	EPA 242.1	08-12-1997 1100	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845	MK
pH	7.76	----	pH units	EPA 150.1	07-22-1997 0800	MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-12-1997 0915	MK
Sodium, Dissolved	5	1	mg/l	EPA 273.1	08-12-1997 0930	MK
Solids, Total Dissolved	240	10	mg/l	EPA 160.1	07-28-1997 0700	JC
Sulfate	11	5	mg/l	EPA 375.4	08-06-1997 1300	SC
Cation/Anion Balance	-5.6	----	%		08-12-1997 1400	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scout

Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 13 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-67
Rec'd 0300 hr.
Sampled 1115 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 21, 1997

Date received July 22, 1997

FIELD MEASUREMENTS

pH	7.37
DO	7.3
Flow	6 gpm
Conductivity	447
Temperature	5°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17505

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	15	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740 SC
Alkalinity, Bicarbonate	323	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Total	265	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100 SC
Anions	5.6	----	meq/l	---------	08-12-1997 1400 RJ
Calcium, Dissolved	46	1	mg/l	EPA 215.1	08-12-1997 1030 MK
Cations	5.3	----	meq/l	---------	08-12-1997 1400 RJ
Chloride	5	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	506	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	243	----	mg/l as $CaCO_3$	SM2340-B	08-12-1997 1400 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Magnesium, Dissolved	31	1	mg/l	EPA 242.1	08-12-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
pH	7.71	----	pH units	EPA 150.1	07-22-1997 0800 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-12-1997 0915 MK
Sodium, Dissolved	10	1	mg/l	EPA 273.1	08-12-1997 0930 MK
Solids, Total Dissolved	270	10	mg/l	EPA 160.1	07-28-1997 0700 JC
Sulfate	9	5	mg/l	EPA 375.4	08-06-1997 1300 SC
Cation/Anion Balance	-3.1	----	%		08-12-1997 1400 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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FAX: (801) 653-2436

August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-68
Rec'd 0300 hr.
Sampled 1125 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 21, 1997

Date received July 22, 1997

FIELD MEASUREMENTS

pH	~~7.81~~ 7.31
DO	7.0
Flow	1.7 gpm
Conductivity	479
Temperature	7.9°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17506

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	20	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740 SC
Alkalinity, Bicarbonate	361	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Total	295	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100 SC
Anions	6.1	----	meq/l	---------	08-12-1997 1400 RJ
Calcium, Dissolved	49	1	mg/l	EPA 215.1	08-12-1997 1030 MK
Cations	5.5	----	meq/l	---------	08-12-1997 1400 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	525	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	262	----	mg/l as $CaCO_3$	SM2340-B	08-12-1997 1400 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-12-1997 0815 MK
Magnesium, Dissolved	34	1	mg/l	EPA 242.1	08-12-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-12-1997 0845 MK
pH	7.79	----	pH units	EPA 150.1	07-22-1997 0800 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-12-1997 0915 MK
Sodium, Dissolved	5	1	mg/l	EPA 273.1	08-12-1997 0930 MK
Solids, Total Dissolved	270	10	mg/l	EPA 160.1	07-28-1997 0700 JC
Sulfate	5	5	mg/l	EPA 375.4	08-06-1997 1300 SC
Cation/Anion Balance	-5.8	----	%		08-12-1997 1400 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

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NOV 11 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
Burnt Tree

Rec'd 1600 hr.
Sampled 1317 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

FIELD MEASUREMENTS

pH	7.83
DO	7.3
Flow	7.29 gpm
Conductivity	466
Temperature	6.6°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18010

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	11	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	341	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	279	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	5.9	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	49	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	5.2	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	3	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	524	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	229	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	26	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.47	----	pH units	EPA 150.1	10-28-1997 0830 JC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	15	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	300	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	10	5	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	-5.8	----	%		11-11-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5
FIELD

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
ELK SPRING

Rec'd 1630 hr.
Sampled 1045 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.68
DO	6.6
Flow	73 GPM
Conductivity	417
Temperature	4.6°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17961

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	303	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 R
Alkalinity, Total	249	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 R
Anions	5.2	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	51	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	4.7	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	462	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	218	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	22	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.54	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	7	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	250	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	8	5	mg/l	EPA 375.4	10-27-1997 1215 SC
Cation/Anion Balance	-5.9	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 20, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
EM SPRING TED'S TUB

Kind of sample reported to us Water

Rec'd 1530 hr.
Sampled 1247 hr.

Sample taken at East Mountain Springs

Sample taken by Energy West/MBD

Date sampled October 28, 1997

Date received October 28, 1997

FIELD MEASUREMENTS

pH	8.29
DO	6.8
Flow	7.03 gpm
Conductivity	481
Temperature	3.1°C

Dissolved metals filtered at lab

Analysis report no. 59-18014

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	335	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	276	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	5.9	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Dissolved	58	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	5.1	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	6	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	516	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	227	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	20	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.86	----	pH units	EPA 150.1	10-28-1997 2145 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	14	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	280	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	11	5	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	-6.7	----	%		11-17-1997 1000 RJ

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NOV 20 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 11 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-2

Kind of sample reported to us Water

Rec'd 1600 hr.
Sampled 1327 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

FIELD MEASUREMENTS

pH	7.72
DO	5.9
Flow	1.55 gpm
Conductivity	502
Temperature	5.1°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18011

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	11	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	354	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	290	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	6.2	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	62	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	5.9	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	551	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	237	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	20	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.41	----	pH units	EPA 150.1	10-28-1997 0830 JC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	26	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	320	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	15	5	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	-2.9	----	%		11-11-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMBER ACIL

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-10

Rec'd 1630 hr.
Sampled 1245 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.69
DO	6.9
Flow	3.9 GPM
Conductivity	449
Temperature	6.2°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17964

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	317	5	mg/l as HCO_3	SM2320-B	10-23-1997 2240 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2240 RJ
Alkalinity, Total	260	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2240 RJ
Anions	6.4	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	65	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	5.4	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	6	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	502	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	257	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	23	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.64	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	5	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	250	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	7	5	mg/l	EPA 375.4	10-27-1997 1330 SC
Cation/Anion Balance	-8.9	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 11 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-15

Rec'd 1530 hr.
Sampled 1343 hr.

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/MBD

Date sampled October 28, 1997

Date received October 28, 1997

FIELD MEASUREMENTS

pH	8.79
DO	7.2
Flow	4.6 gpm
Conductivity	442
Temperature	5.7°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18013

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	334	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	274	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	5.7	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	60	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	5.1	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	3	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	491	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	240	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	22	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	8.12	----	pH units	EPA 150.1	10-28-1997 2145 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	6	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	290	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	7	5	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	-5.9	----	%		11-11-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-26

Rec'd 1630 hr.
Sampled 1430 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	8.29
DO	5.9
Flow	1.45 GPM
Conductivity	420
Temperature	7.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17968

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	338	5	mg/l as HCO_3	SM2320-B	10-23-1997 2240 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2240 RJ
Alkalinity, Total	277	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2240 RJ
Anions	6.0	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	43	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	5.3	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	7	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	517	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	235	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	31	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	8.17	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	14	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	260	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	11	5	mg/l	EPA 375.4	10-27-1997 1330 SC
Cation/Anion Balance	-5.9	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-28

Rec'd 1600 hr.
Sampled 0918 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

FIELD MEASUREMENTS

pH	7.97
DO	6.3
Flow	1 gpm
Conductivity	646
Temperature	5.2°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18005

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	289	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	237	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	8.0	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	39	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	7.3	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	14	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	729	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	200	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	25	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.48	----	pH units	EPA 150.1	10-28-1997 0830 JC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	76	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	460	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	136	50	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	-4.1	----	%		11-11-1997 1000 RJ

PACIFICORP
NOV 20 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-29

Rec'd 1630 hr.
Sampled 1330 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.65
DO	5.0
Flow	1.55 GPM
Conductivity	526
Temperature	4.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17966

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930	RJ
Alkalinity, Bicarbonate	335	5	mg/l as HCO_3	SM2320-B	10-23-1997 2240	RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2240	RJ
Alkalinity, Total	275	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2240	RJ
Anions	6.6	----	meq/l	---------	11-03-1997 0930	RJ
Calcium, Dissolved	35	1	mg/l	EPA 215.1	10-24-1997 1130	MK
Cations	5.8	----	meq/l	---------	11-03-1997 0930	RJ
Chloride	17	1	mg/l	SM4500-Cl-B	10-30-1997 1400	SC
Conductivity	560	1	umhos/cm	SM2510-B	10-28-1997 2215	MK
Hardness, Total	227	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930	MK
Magnesium, Dissolved	34	1	mg/l	EPA 242.1	10-24-1997 1145	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945	MK
pH	7.67	----	pH units	EPA 150.1	10-17-1997 0815	SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015	MK
Sodium, Dissolved	30	1	mg/l	EPA 273.1	10-24-1997 1045	MK
Solids, Total Dissolved	310	10	mg/l	EPA 160.1	10-21-1997 0700	JC
Sulfate	28	5	mg/l	EPA 375.4	10-27-1997 1330	SC
Cation/Anion Balance	-5.7	----	%		11-03-1997 0930	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-32

Rec'd 1630 hr.
Sampled 1404 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	8.28
DO	6.5
Flow	0.72 GPM
Conductivity	774
Temperature	8.5°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17967

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	510	5	mg/l as HCO_3	SM2320-B	10-23-1997 2240 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2240 RJ
Alkalinity, Total	419	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2240 RJ
Anions	9.4	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	67	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	9.3	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	18	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	863	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	390	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	1.2	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	1.0	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	54	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	8.19	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	35	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	510	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	24	5	mg/l	EPA 375.4	10-27-1997 1330 SC
Cation/Anion Balance	-0.2	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 18 1997

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
EM SPRING 79-38

Kind of sample reported to us Water

Rec'd 1530 hr.
Sampled 1200 hr.

Sample taken at East Mountain Springs

Sample taken by Energy West/MBD

Date sampled October 28, 1997

Date received October 28, 1997

FIELD MEASUREMENTS

pH	8.42
DO	6.9
Flow	2.04 gpm
Conductivity	596
Temperature	4.9°C

Dissolved metals filtered at lab

Analysis report no. 59-18016

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	431	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	354	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	7.8	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Dissolved	58	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	6.7	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	659	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	235	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	22	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.95	----	pH units	EPA 150.1	10-28-1997 2145 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	46	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	400	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	28	5	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	-7.3	----	%		11-17-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-47

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

Rec'd 1600 hr.
Sampled 1003 hr.

FIELD MEASUREMENTS

pH	8.02
DO	7.5
Flow	6 gpm
Conductivity	500
Temperature	2.6°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18007

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	353	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	289	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	6.2	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	56	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	5.7	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	552	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	259	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	29	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.91	----	pH units	EPA 150.1	10-28-1997 0830 JC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	13	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	320	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	14	5	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	-3.7	----	%		11-11-1997 1000 RJ

PACIFICORP
NOV 20 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMB ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

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TEL: (801) 653-2311
FAX: (801) 653-2436

November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-48

Kind of sample reported to us Water

Rec'd 1430 hr.
Sampled 0833 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.86
DO	6.4
Flow	2.6 GPM
Conductivity	480
Temperature	5.6°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17956

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1830 RJ
Alkalinity, Bicarbonate	361	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Total	296	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 RJ
Anions	6.2	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	60	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	5.5	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	554	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	265	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	1.3	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	28	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.71	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	5	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	270	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	8	5	mg/l	EPA 375.4	10-27-1997 1215 SC
Cation/Anion Balance	-5.8	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
84-56

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

Rec'd 1600 hr.
Sampled 0941 hr.

FIELD MEASUREMENTS

pH	7.62
DO	5.7
Flow	0.94 gpm
Conductivity	529
Temperature	5.3°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18006

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	12	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	347	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	285	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	6.5	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	56	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	6.2	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	9	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	595	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	276	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	33	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.42	----	pH units	EPA 150.1	10-28-1997 0830 JC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	17	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	340	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	27	5	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	-2.0	----	%		11-11-1997 1000 RJ

PACIFICORP
NOV 20 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 18 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
EM SPRING 89-60

Rec'd 1530 hr.
Sampled 1158 hr.

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/MBD

Date sampled October 28, 1997

Date received October 28, 1997

FIELD MEASUREMENTS

pH	8.74
DO	7.2
Flow	~~14 gpm~~ .4 GPM
Conductivity	694
Temperature	5.4°C

Dissolved metals filtered at lab

Analysis report no. 59-18015

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	463	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	379	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	8.9	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Dissolved	71	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	8.0	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	6	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	768	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	305	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	2.0	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	31	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	8.11	----	pH units	EPA 150.1	10-28-1997 2145 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	43	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	480	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	53	10	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	-5.3	----	%		11-17-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 25, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 25
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-61

Rec'd 1630 hr.
Sampled 1120 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.51
DO	6.6
Flow	38.46 GPM
Conductivity	511
Temperature	4.3°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17962

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	360	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Total	295	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 RJ
Anions	6.3	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	67	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	5.9	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	4	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	562	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	278	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	27	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.46	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	8	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	300	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	16	5	mg/l	EPA 375.4	10-27-1997 1330 SC
Cation/Anion Balance	-3.5	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-65

Kind of sample reported to us Water

Rec'd 1630 hr.
Sampled 1026 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.69
DO	6.3
Flow	0.92 GPM
Conductivity	538
Temperature	5.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17960

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	11	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	388	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Total	318	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 RJ
Anions	6.9	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	72	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	6.1	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	3	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	601	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	279	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	24	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.60	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	12	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	330	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	20	5	mg/l	EPA 375.4	10-27-1997 1215 SC
Cation/Anion Balance	-6.0	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-66

Kind of sample reported to us Water

Rec'd 1630 hr.
Sampled 0949 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.91
DO	6.5
Flow	0.37 GPM
Conductivity	442
Temperature	6.6°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17959

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930	RJ
Alkalinity, Bicarbonate	325	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020	RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020	R
Alkalinity, Total	267	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020	R
Anions	5.7	----	meq/l	---------	11-03-1997 0930	RJ
Calcium, Dissolved	44	1	mg/l	EPA 215.1	10-24-1997 1130	MK
Cations	5.1	----	meq/l	---------	11-03-1997 0930	RJ
Chloride	5	1	mg/l	SM4500-Cl-B	10-30-1997 1400	SC
Conductivity	494	1	umhos/cm	SM2510-B	10-28-1997 2215	MK
Hardness, Total	242	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930	RJ
Iron, Total	0.3	0.1	mg/l	EPA 236.1	10-24-1997 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930	MK
Magnesium, Dissolved	32	1	mg/l	EPA 242.1	10-24-1997 1145	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945	MK
pH	7.82	----	pH units	EPA 150.1	10-17-1997 0815	SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015	MK
Sodium, Dissolved	6	1	mg/l	EPA 273.1	10-24-1997 1045	MK
Solids, Total Dissolved	250	10	mg/l	EPA 160.1	10-21-1997 0700	JC
Sulfate	12	5	mg/l	EPA 375.4	10-27-1997 1215	SC
Cation/Anion Balance	-5.8	----	%		11-03-1997 0930	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-67

Rec'd 1430 hr.
Sampled 0852 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	7.52
DO	6.6
Flow	4.4 GPM
Conductivity	457
Temperature	4.4°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17957

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	12	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	327	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Total	268	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 RJ
Anions	5.8	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	45	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	5.2	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	5	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	535	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	236	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	30	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.54	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	11	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	280	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	16	5	mg/l	EPA 375.4	10-27-1997 1215 SC
Cation/Anion Balance	-5.8	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
89-68

Rec'd 1630 hr.
Sampled 0917 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 16, 1997

Date received October 16, 1997

FIELD MEASUREMENTS

pH	8.09
DO	6.7
Flow	1.1 GPM
Conductivity	480
Temperature	6.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17958

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1930 RJ
Alkalinity, Bicarbonate	352	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 R
Alkalinity, Total	288	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 R
Anions	6.1	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	49	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	5.5	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	5	1	mg/l	SM4500-Cl-B	10-30-1997 1400 SC
Conductivity	545	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	262	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	34	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.97	----	pH units	EPA 150.1	10-17-1997 0815 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	6	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	290	10	mg/l	EPA 160.1	10-21-1997 0700 JC
Sulfate	9	5	mg/l	EPA 375.4	10-27-1997 1215 SC
Cation/Anion Balance	-5.1	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

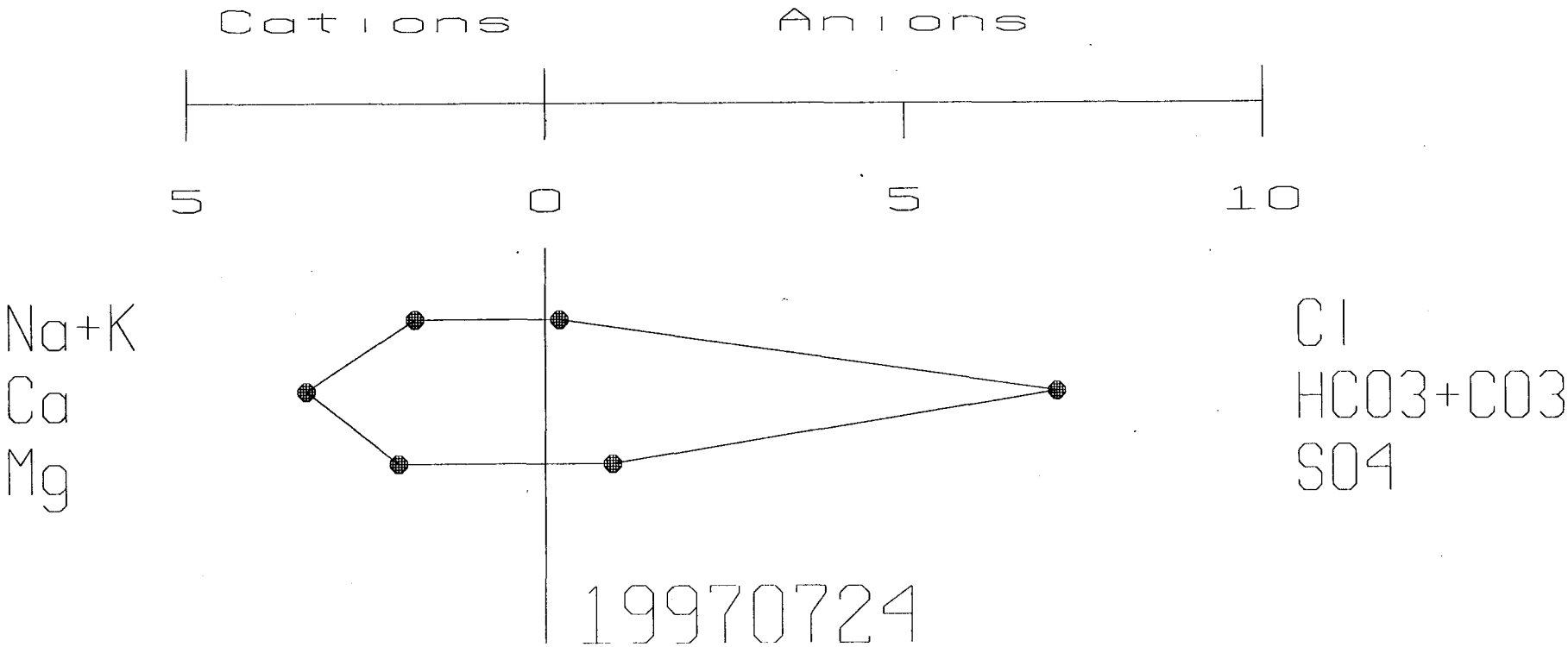
MEMB ACIL

EAST MOUNTAIN SPRINGS STIFF DIAGRAMS

PRICE RIVER FORMATION

EMS79-40

%meq/l



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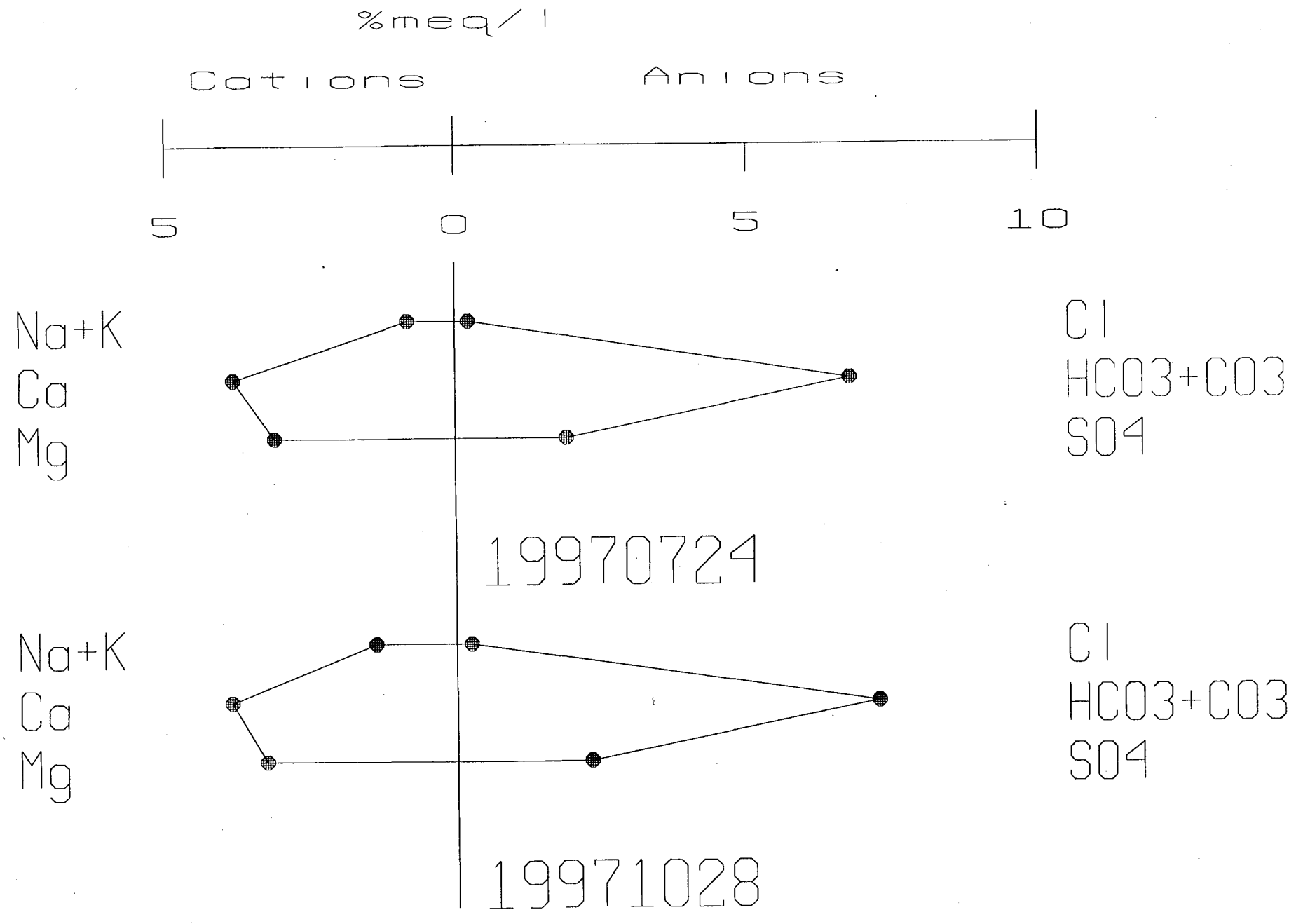
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19971028

EMS80-44

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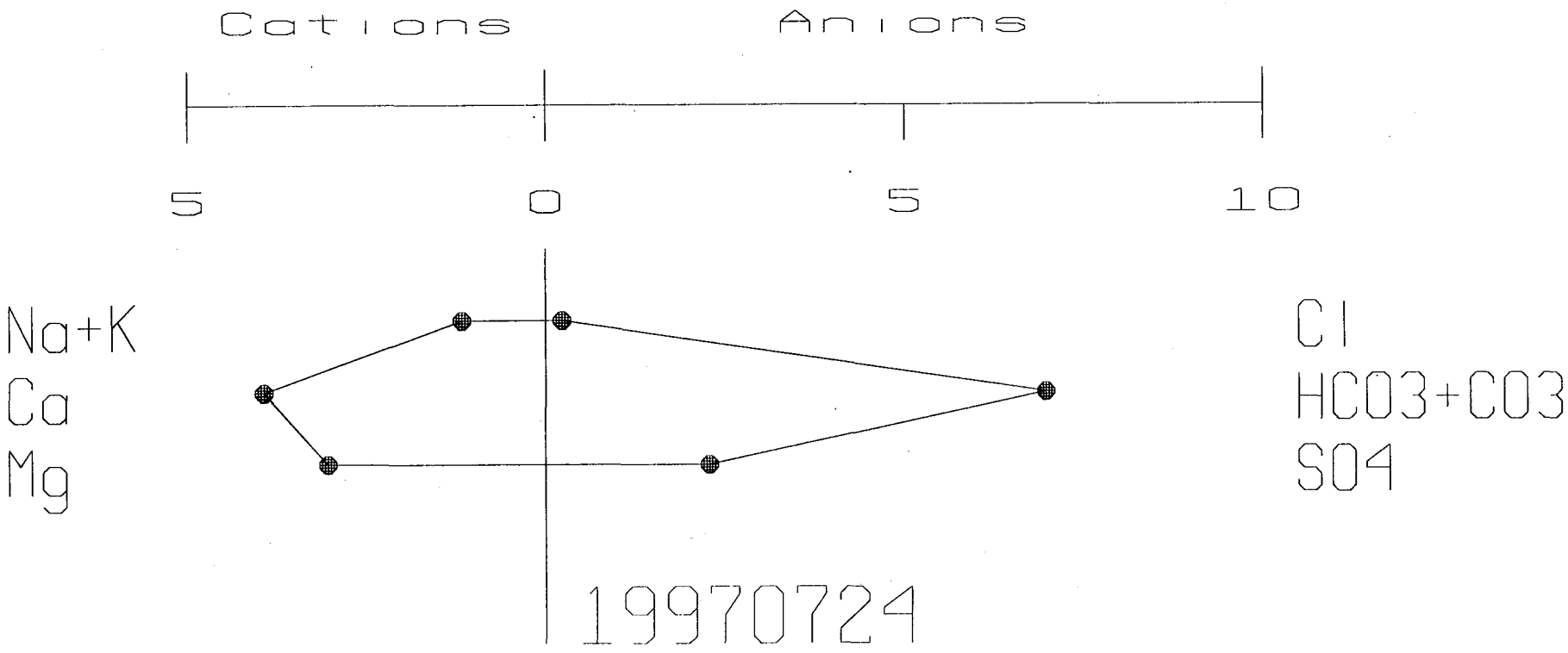

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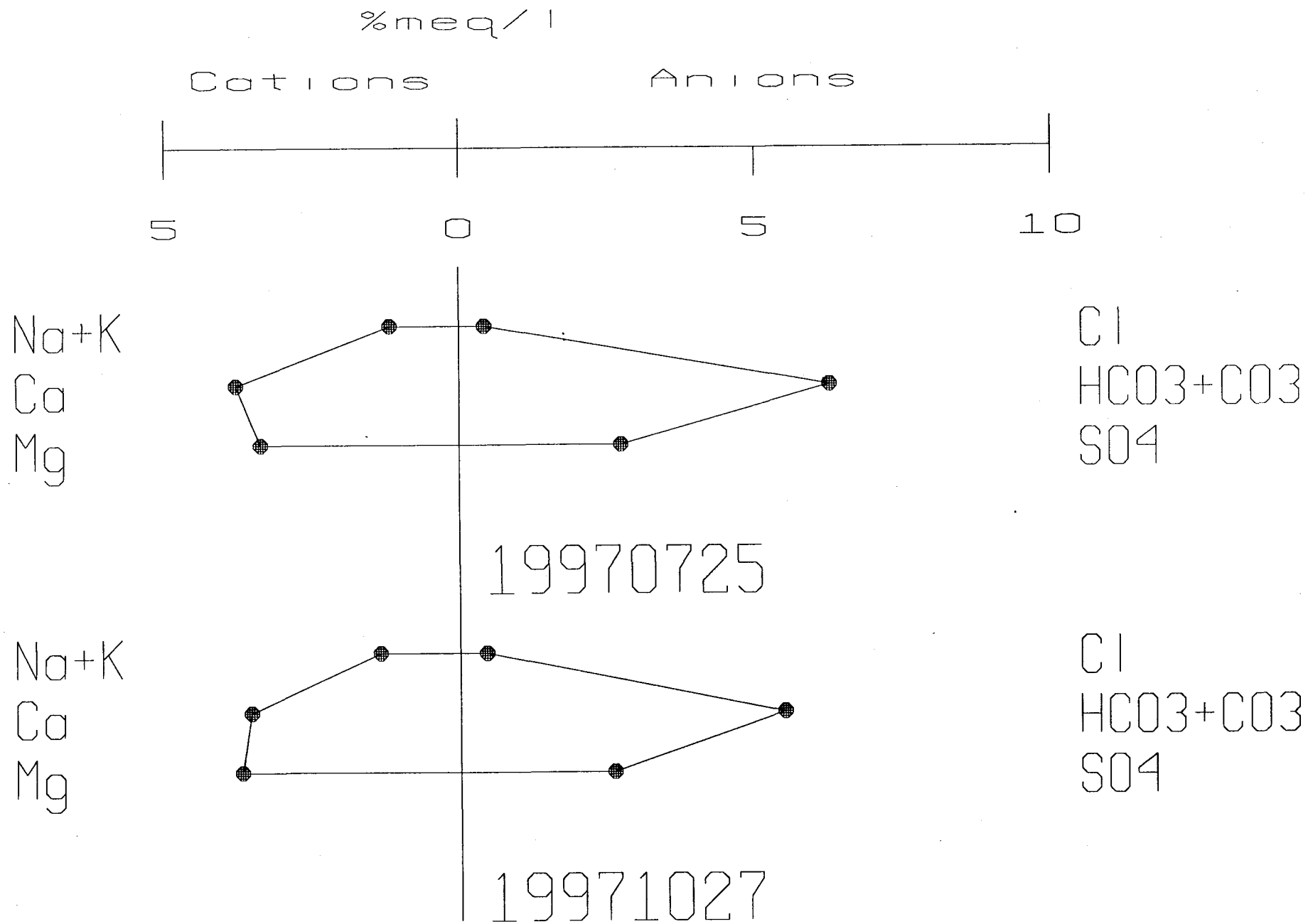
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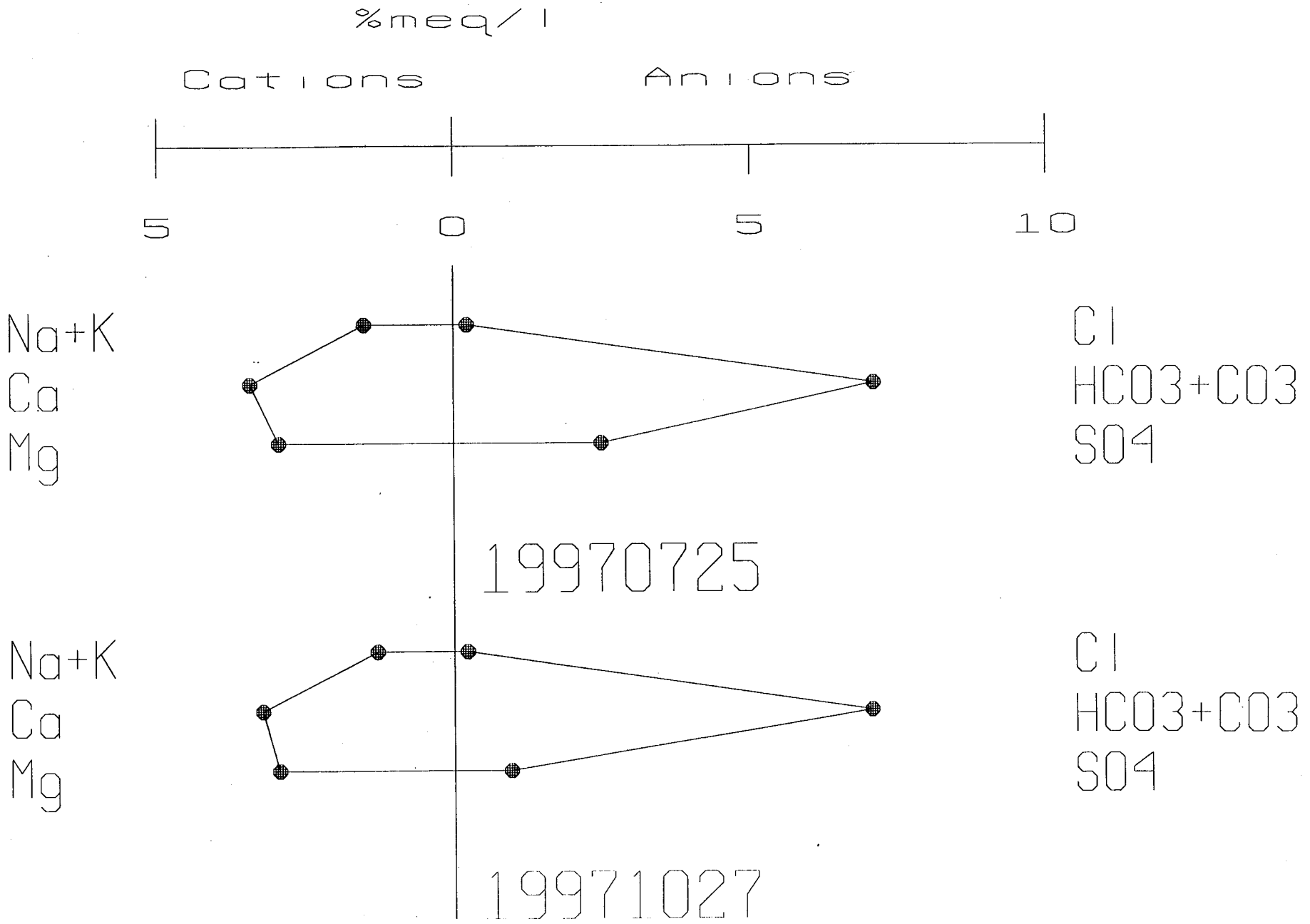
SO4
19971027

EMS82-52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SO4
19970725
Na+K
Ca
Mg
Cl
HCO3+CO3
SO4
19971027

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August 14, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 1 4
FIELD

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
79-40

Rec'd 0700 hr.
Sampled 1332 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 24, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	7.98
DO	6.2
Flow	1.35 gpm
Conductivity	615
Temperature	6°c

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17527

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	56	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 1030 SC
Alkalinity, Bicarbonate	435	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	357	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	8.3	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	67	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	7.2	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	7	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	697	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	270	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	25	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.99	----	pH units	EPA 150.1	07-25-1997 0900 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	42	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	410	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	45	10	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-6.7	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

RECEIVED
13
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-41

Rec'd 0700 hr.
Sampled 1345 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 24, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	7.29
DO	5.8
Flow	4.5 gpm
Conductivity	681
Temperature	4.9°C

NOTE:DISSOVLED METALS FILTERED AT LAB!

Analysis report no. 59-17529

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	29	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	412	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	337	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	8.9	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	77	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	7.8	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	8	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	756	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	349	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	38	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.48	----	pH units	EPA 150.1	07-25-1997 0900 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	19	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	470	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	91	25	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-6.5	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

13
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-44

Rec'd 0700 hr.
Sampled 1411 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 24, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	7.58
DO	6.8
Flow	.24 ~~2.2~~ gpm
Conductivity	739
Temperature	4.4°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17528

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	30	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	426	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	349	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	9.5	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	79	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	8.2	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	8	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	807	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	350	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	37	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.75	----	pH units	EPA 150.1	07-25-1997 0900 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	27	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	500	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	110	25	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-7.6	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 13
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
82-51

Rec'd 1500 hr.
Sampled 1040 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 25, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	7.58
DO	5.9
Flow	2.0 gpm
Conductivity	762
Temperature	~~6.6~~°C 9.5°C

DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17533

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	20	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	382	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 S
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 S
Alkalinity, Total	313	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	9.4	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	76	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	8.3	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	15	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	823	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	359	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	0.3	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	41	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.61	----	pH units	EPA 150.1	07-25-1997 1530 SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	26	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	530	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	131	50	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-6.0	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 27, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 26 97
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
82-52
Rec'd 1500 hr.
Sampled 1133 hr.

FIELD MEASUREMENTS

pH	7.64
DO	7.2
Flow	12 gpm
Conductivity	632
Temperature	4.7°C

NOTE:DISSOVLED METALS FILTERED AT LAB!
NOTE:BALANCE >10, BALANCE CALCULATED FROM DISSOLVED METAL VALUES!

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERBY WEST/MBD

Date sampled July 25, 1997

Date received July 25, 1997

Analysis report no. 59-17534

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	22	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	432	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	354	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	9.8	----	meq/l	---------	08-25-1997 0920 MK
Calcium, Dissolved	69	1	mg/l	EPA 215.1	08-12-1997 1330 MK
Cations	7.9	----	meq/l	---------	08-25-1997 0920 RJ
Chloride	8	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	715	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	321	----	mg/l as $CaCO_3$	SM2340-B	08-25-1997 0920 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	36	1	mg/l	EPA 242.1	08-21-1997 1345 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	7.48	----	pH units	EPA 150.1	07-25-1997 1530 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	35	1	mg/l	EPA 273.1	08-22-1997 0900 MK
Solids, Total Dissolved	420	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	120	50	mg/l	EPA 375.4	08-12-1997 0900 SC
Cation/Anion Balance	-10.6	----	%		08-25-1997 0920 RJ

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Mike Dennis	From
Co.	Co.
Dept.	Phone #
Fax #	Fax #

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 18 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
EM SPRING 80-41

Rec'd 1530 hr.
Sampled 1024 hr.

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/MBD

Date sampled October 28, 1997

Date received October 28, 1997

FIELD MEASUREMENTS

pH	8.42
DO	7.5
Flow	0.54 gpm
Conductivity	739
Temperature	2.3°C

Dissolved metals filtered at lab

Analysis report no. 59-18017

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	14	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	441	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	361	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	9.8	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Dissolved	78	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	8.6	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	9	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	830	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	359	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	40	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.87	----	pH units	EPA 150.1	10-28-1997 2145 MK
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	32	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	500	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	110	25	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	-6.5	----	%		11-17-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
82-51

Kind of sample reported to us Water

Rec'd 1600 hr.
Sampled 1145 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

FIELD MEASUREMENTS

pH	8.45
DO	7.1
Flow	0.36 gpm
Conductivity	747
Temperature	4.3°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18008

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	335	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	275	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	8.5	----	meq/l	---------	11-11-1997 1000 RJ
Calcium, Dissolved	71	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	8.6	----	meq/l	---------	11-11-1997 1000 RJ
Chloride	16	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	841	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	363	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Dissolved	45	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.86	----	pH units	EPA 150.1	10-28-1997 0830 JC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Dissolved	30	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	560	10	mg/l	EPA 160.1	10-29-1997 0700 JC
Sulfate	125	50	mg/l	EPA 375.4	10-29-1997 1400 SC
Cation/Anion Balance	0.3	----	%		11-11-1997 1000 RJ

PACIFICORP
NOV 20 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 11 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
82-52

Rec'd 1600 hr.
Sampled 1250 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 27, 1997

Date received October 27, 1997

FIELD MEASUREMENTS

pH	8.04
DO	7.4
Flow	5.45 gpm
Conductivity	645
Temperature	4.4°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18009

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	11	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900	SC
Alkalinity, Bicarbonate	430	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900	S
Alkalinity, Total	353	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900	S
Anions	8.2	----	meq/l	---------	11-11-1997 1000	RJ
Calcium, Dissolved	65	1	mg/l	EPA 215.1	11-07-1997 0845	MK
Cations	7.5	----	meq/l	---------	11-11-1997 1000	RJ
Chloride	8	1	mg/l	SM4500-Cl-B	11-04-1997 1230	SC
Conductivity	730	1	umhos/cm	SM2510-B	10-28-1997 2215	MK
Hardness, Total	311	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700	MK
Magnesium, Dissolved	36	1	mg/l	EPA 242.1	11-07-1997 0900	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715	MK
pH	7.58	----	pH units	EPA 150.1	10-28-1997 0830	JC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	11-07-1997 0745	MK
Sodium, Dissolved	30	1	mg/l	EPA 273.1	11-07-1997 0800	MK
Solids, Total Dissolved	440	10	mg/l	EPA 160.1	10-29-1997 0700	JC
Sulfate	46	10	mg/l	EPA 375.4	10-29-1997 1400	SC
Cation/Anion Balance	-4.6	----	%		11-11-1997 1000	RJ

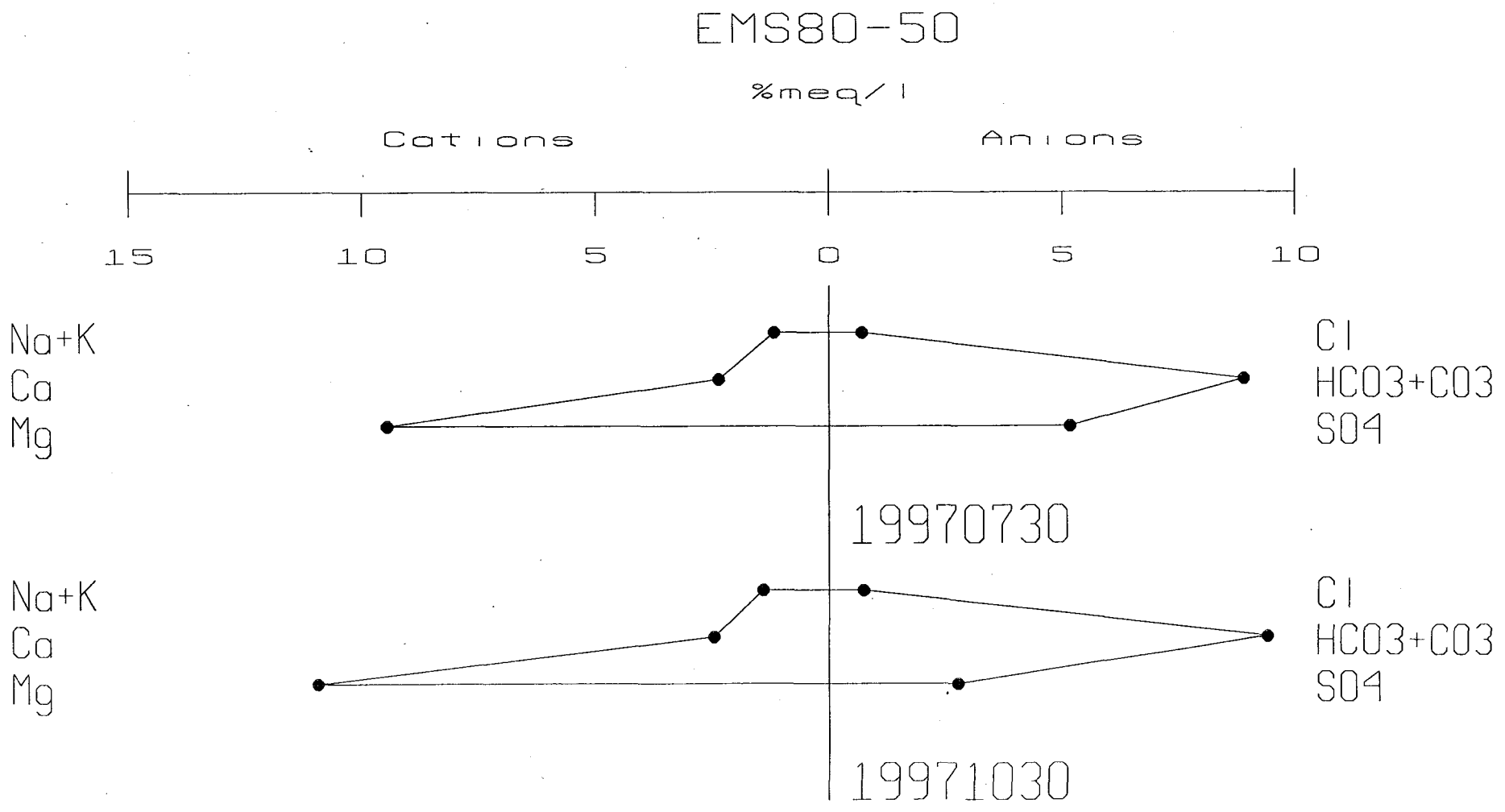
Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMB ACIL

EAST MOUNTAIN SPRINGS STIFF DIAGRAMS

BLACKHAWK FORMATION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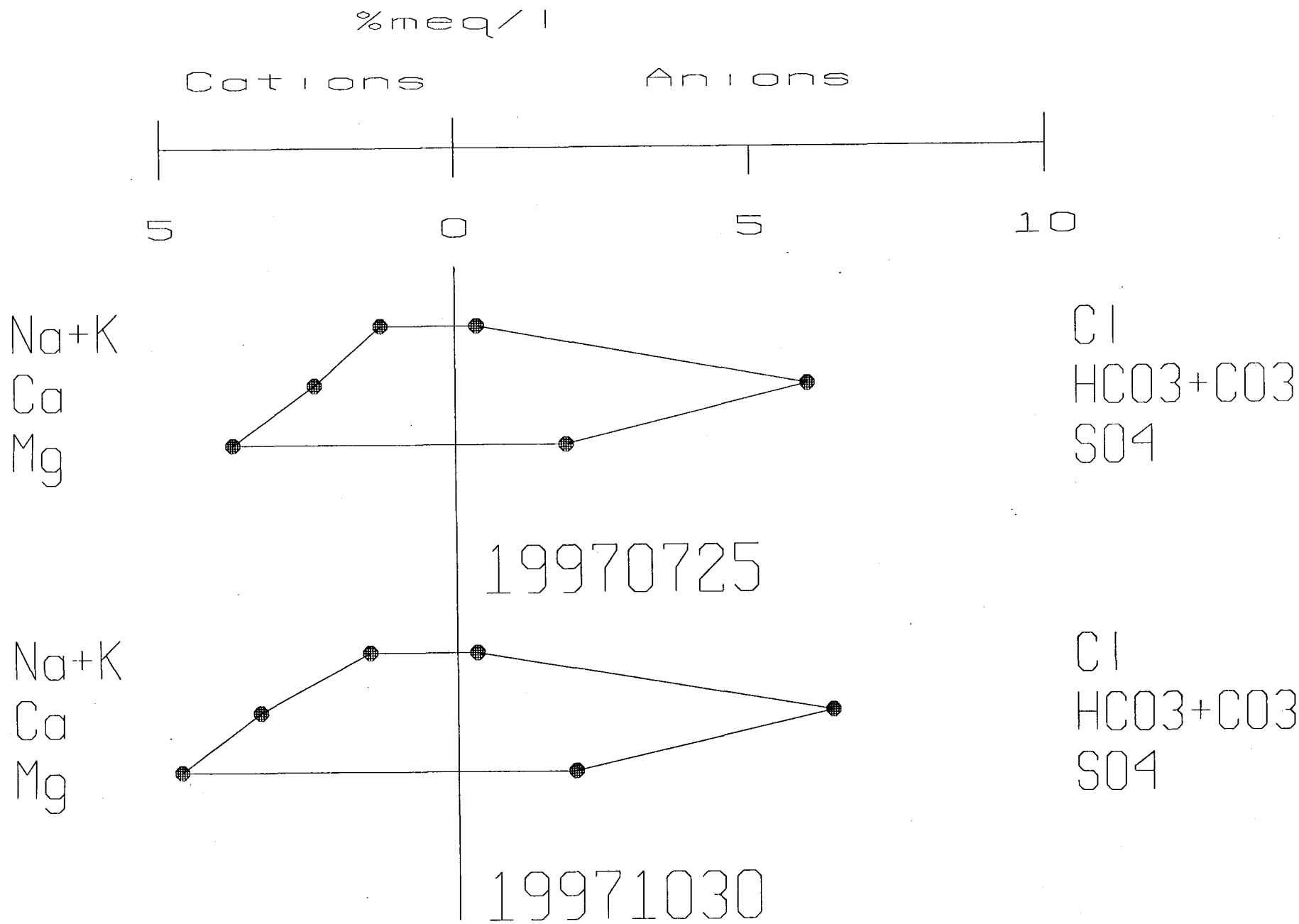
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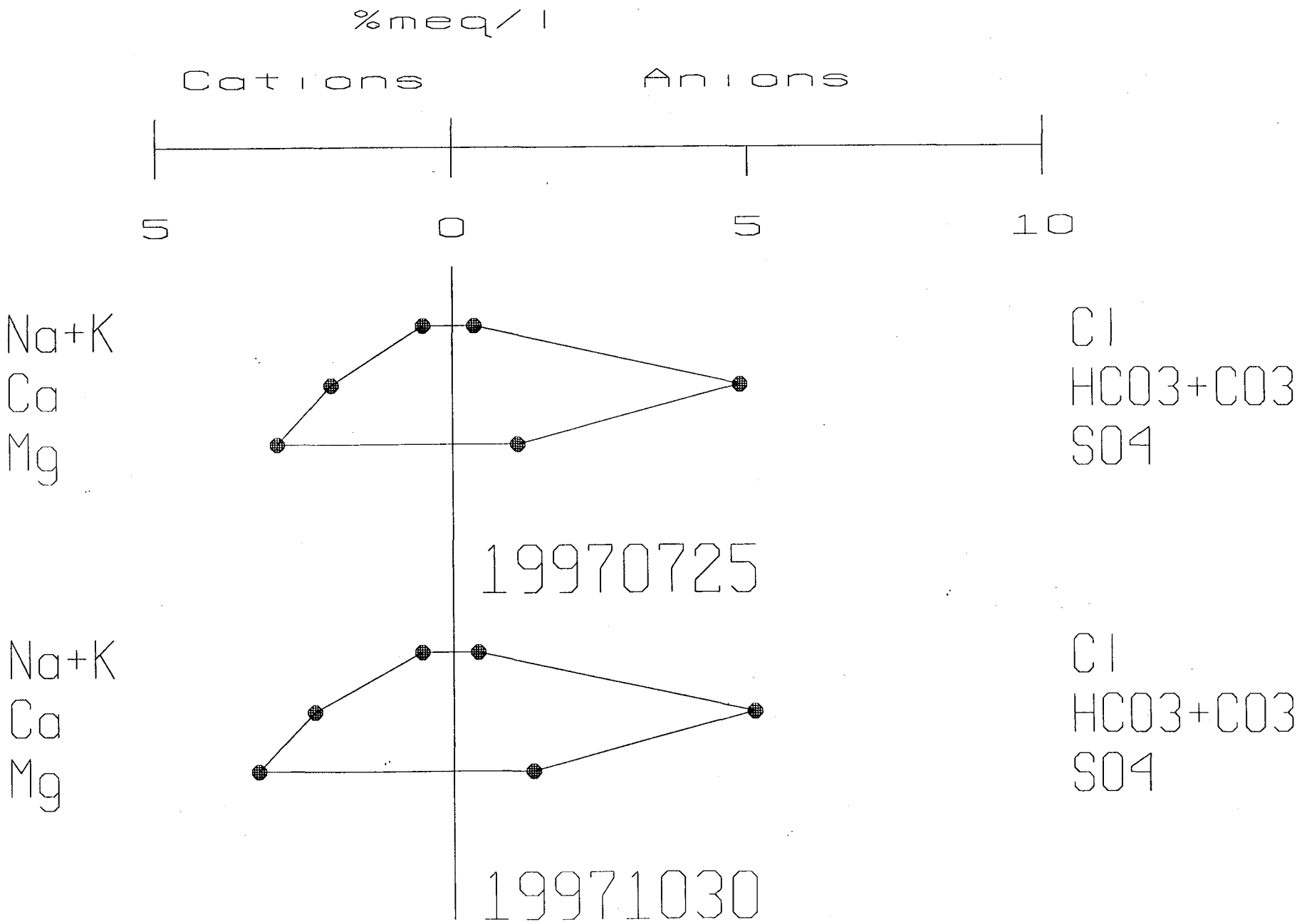
EMS91-73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Ca
Mg
Cl
HCO3+CO3
SO4
19971030

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FAX: (801) 653-2436

August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 19 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-50

Rec'd 1430 hr.
Sampled 1330 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 30, 1997

Date received July 30, 1997

FIELD MEASUREMENTS

pH	7.89
DO	6.3
Flow	3 gpm
Conductivity	1077
Temperature	7.8°C

Analysis report no. 59-17544

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	34	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	543	5	mg/l as HCO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Total	445	5	mg/l as $CaCO_3$	EPA 310.1	08-10-1997 0730 SC
Anions	14.8	----	meq/l	---------	08-14-1997 1330 RJ
Calcium, Dissolved	47	1	mg/l	EPA 215.1	08-15-1997 1015 MK
Cations	13.0	----	meq/l	---------	08-14-1997 1330 RJ
Chloride	25	1	mg/l	SM4500-Cl-B	08-11-1997 1300 SC
Conductivity	1208	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	591	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Magnesium, Dissolved	115	2	mg/l	EPA 242.1	08-14-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
pH	7.79	----	pH units	EPA 150.1	07-28-1997 1530 SC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	08-14-1997 0900 MK
Sodium, Dissolved	25	1	mg/l	EPA 273.1	08-14-1997 0930 MK
Solids, Total Dissolved	810	10	mg/l	EPA 160.1	08-06-1997 0700 JC
Sulfate	248	50	mg/l	EPA 375.4	08-12-1997 0900 SC
Cation/Anion Balance	-6.5	----	%		08-14-1997 1330 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

RECEIVED
AUG 13
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
91-72

Rec'd 1500 hr.
Sampled 0800 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 25, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	8.09
DO	7.2
Flow	10.7 gpm
Conductivity	648
Temperature	8.9°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17530

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	14	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	363	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	297	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	8.2	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	48	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	7.4	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	13	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	696	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	309	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	46	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	8.20	----	pH units	EPA 150.1	07-25-1997 1530 SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	28	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	450	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	90	25	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	~4.7	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
91-73

Rec'd 1500 hr.
Sampled 0825 hr.

Kind of sample reported to us Water

Sample taken at EAST MOUNTAIN SPRINGS

Sample taken by ENERGY WEST/MBD

Date sampled July 25, 1997

Date received July 25, 1997

FIELD MEASUREMENTS

pH	8.45
DO	6.8
Flow	1.62 gpm
Conductivity	523
Temperature	9.1°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17531

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	286	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Carbonate	5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 SC
Alkalinity, Total	243	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	6.3	----	meq/l	---------	08-13-1997 1200 RJ
Calcium, Dissolved	41	1	mg/l	EPA 215.1	08-13-1997 1030 MK
Cations	5.5	----	meq/l	---------	08-13-1997 1200 RJ
Chloride	13	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	564	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	251	----	mg/l as $CaCO_3$	SM2340-B	08-13-1997 1200 RJ
Iron, Total	0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	36	1	mg/l	EPA 242.1	08-13-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
pH	8.28	----	pH units	EPA 150.1	07-25-1997 1530 SC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	11	1	mg/l	EPA 273.1	08-13-1997 0900 MK
Solids, Total Dissolved	320	10	mg/l	EPA 160.1	07-30-1997 0700 JC
Sulfate	53	25	mg/l	EPA 375.4	08-08-1997 1215 SC
Cation/Anion Balance	-6.9	----	%		08-13-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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FAX: (801) 653-2436

November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 18 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
80-50

Rec'd 1230 hr.
Sampled 0832 hr.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 30, 1997

Date received October 30, 1997

FIELD MEASUREMENTS

pH	8.61
DO	6.6
Flow	2.45 gpm
Conductivity	1091
Temperature	7.7°C

Dissolved metals filtered at lab

Analysis report no. 59-18037

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	574	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	470	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	12.9	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Dissolved	49	1	mg/l	EPA 215.1	11-10-1997 0200 MK
Cations	14.8	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	26	1	mg/l	SM4500-Cl-B	11-04-1997 1400 SC
Conductivity	1254	1	umhos/cm	SM2510-B	10-30-1997 2115 MK
Hardness, Total	670	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-10-1997 0000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-10-1997 0000 MK
Magnesium, Dissolved	133	1	mg/l	EPA 242.1	11-10-1997 0245 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-10-1997 0030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-10-1997 0030 MK
pH	7.04	----	pH units	EPA 150.1	10-30-1997 1600 SC
Potassium, Dissolved	4	1	mg/l	EPA 258.1	11-10-1997 0100 MK
Sodium, Dissolved	30	2	mg/l	EPA 273.1	11-10-1997 0130 MK
Solids, Total Dissolved	770	10	mg/l	EPA 160.1	11-05-1997 0300 RJ
Sulfate	132	25	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	6.9	----	%		11-17-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

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HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 18
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
91-72

Kind of sample reported to us Water

Rec'd 1230 hr.
Sampled 1020 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 30, 1997

Date received October 30, 1997

FIELD MEASUREMENTS

pH	8.93
DO	7.5
Flow	8.57 gpm
Conductivity	658
Temperature	8.7°C

Dissolved metals filtered at lab

Analysis report no. 59-18035

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	388	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	318	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	8.7	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Dissolved	67	1	mg/l	EPA 215.1	11-10-1997 0200 MK
Cations	9.5	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	12	1	mg/l	SM4500-Cl-B	11-04-1997 1400 SC
Conductivity	724	1	umhos/cm	SM2510-B	10-30-1997 2115 MK
Hardness, Total	402	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-10-1997 0000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-10-1997 0000 MK
Magnesium, Dissolved	57	1	mg/l	EPA 242.1	11-10-1997 0245 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-10-1997 0030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-10-1997 0030 MK
pH	7.30	----	pH units	EPA 150.1	10-30-1997 1600 SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	11-10-1997 0100 MK
Sodium, Dissolved	33	1	mg/l	EPA 273.1	11-10-1997 0130 MK
Solids, Total Dissolved	410	10	mg/l	EPA 160.1	11-05-1997 0300 RJ
Sulfate	96	50	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	4.5	----	%		11-17-1997 1000 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 18 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

EAST MOUNTAIN SPRINGS
91-73

Kind of sample reported to us Water

Rec'd 1230 hr.
Sampled 1109 hr.

Sample taken at East Mountain

Sample taken by Energy West/MBD

Date sampled October 30, 1997

Date received October 30, 1997

FIELD MEASUREMENTS

pH	9.21
DO	7.5
Flow	0.8 gpm
Conductivity	530
Temperature	6.9°C

Dissolved metals filtered at lab

Analysis report no. 59-18036

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900	SC
Alkalinity, Bicarbonate	300	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900	
Alkalinity, Carbonate	5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900	
Alkalinity, Total	255	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900	SC
Anions	6.9	----	meq/l	---------	11-17-1997 1000	RJ
Calcium, Dissolved	47	1	mg/l	EPA 215.1	11-10-1997 0200	MK
Cations	6.2	----	meq/l	---------	11-17-1997 1000	RJ
Chloride	15	1	mg/l	SM4500-Cl-B	11-04-1997 1400	SC
Conductivity	578	1	umhos/cm	SM2510-B	10-30-1997 2115	MK
Hardness, Total	282	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000	RJ
Iron, Total	0.3	0.1	mg/l	EPA 236.1	11-10-1997 0000	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-10-1997 0000	MK
Magnesium, Dissolved	40	1	mg/l	EPA 242.1	11-10-1997 0245	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-10-1997 0030	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-10-1997 0030	MK
pH	7.48	----	pH units	EPA 150.1	10-30-1997 1600	SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	11-10-1997 0100	MK
Sodium, Dissolved	11	1	mg/l	EPA 273.1	11-10-1997 0130	MK
Solids, Total Dissolved	320	10	mg/l	EPA 160.1	11-05-1997 0300	RJ
Sulfate	65	25	mg/l	EPA 375.4	11-12-1997 0900	SC
Cation/Anion Balance	-5.3	----	%		11-17-1997 1000	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMBER ACIL

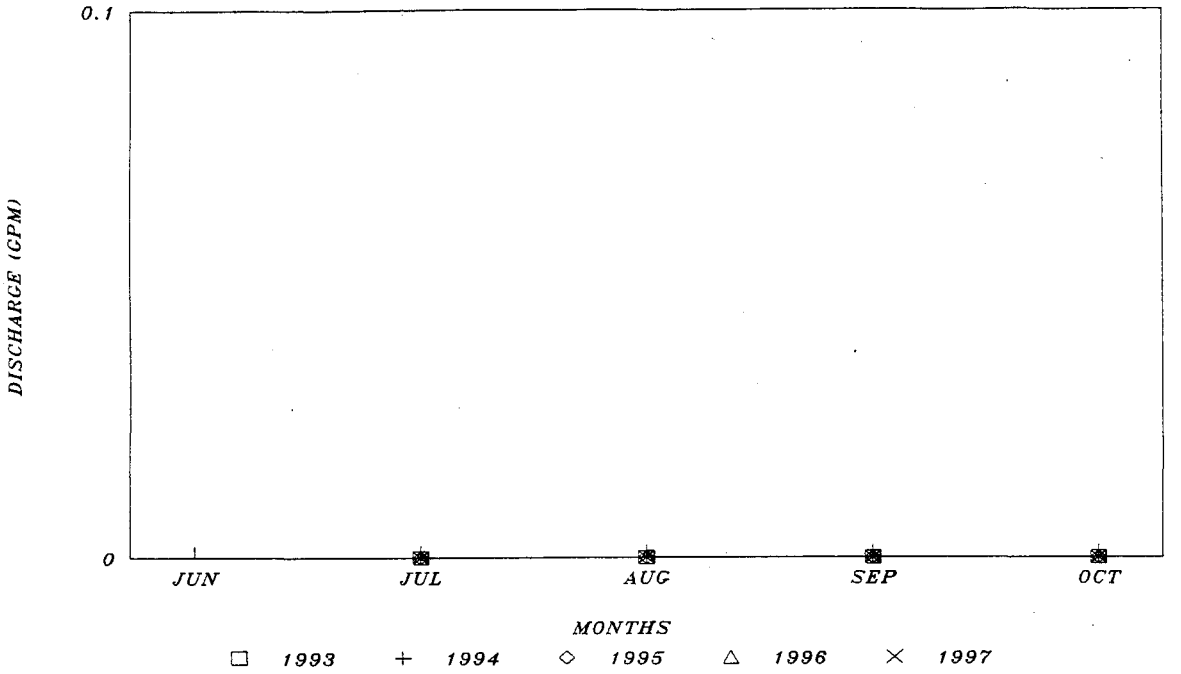
APPENDIX H

TRAIL MOUNTAIN SPRINGS
CROSS REFERENCE

ARCO'S INDENTIFCATION	ENERGY WEST INDENTIFCATION
T-1	17-22-2
T-2	17-27-1
T-3	17-27-2
T-4 or T-22	17-26-1
T-5	17-26-2
T-6	18-2-1
T-7	17-26-3
T-10	17-26-4
T-11	17-35-5
T-12	17-35-4
T-13	Flow From T-15
T-14	17-25-1
T-14A	17-26-5
T-15	17-35-1
T-16	17-35-2
T-17	DNL
T-18	Oliphant Mine
T-19	Stream Site
TM-21 or T-8	17-21-1
TM-22 or T-9	17-22-1
TM-23 or Cottonwood Spring	17-14-4

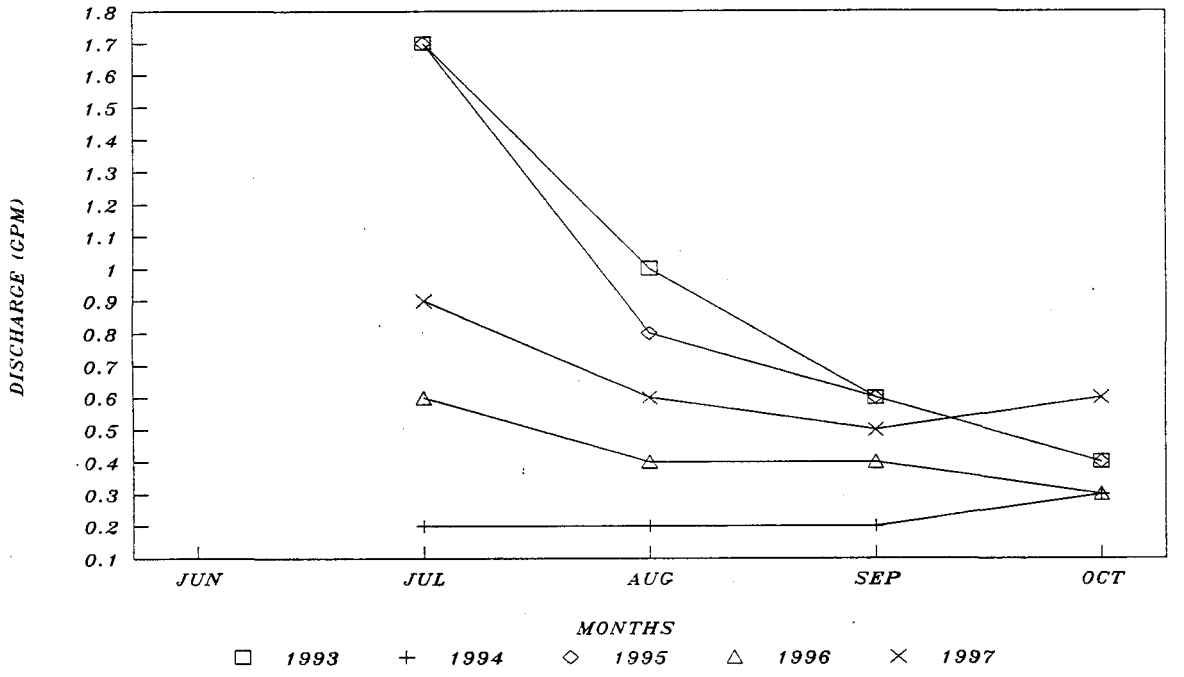
17-14-4

Discharge Recession Study



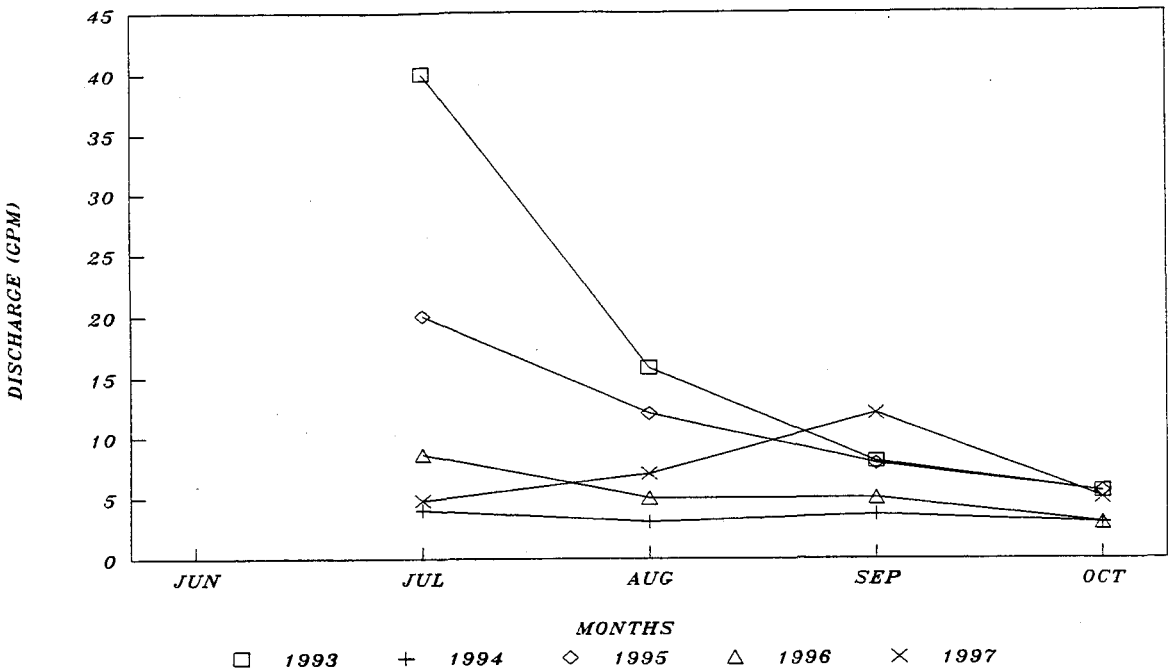
17-21-1

Discharge Recession Study



17-22-1

Discharge Recession Study



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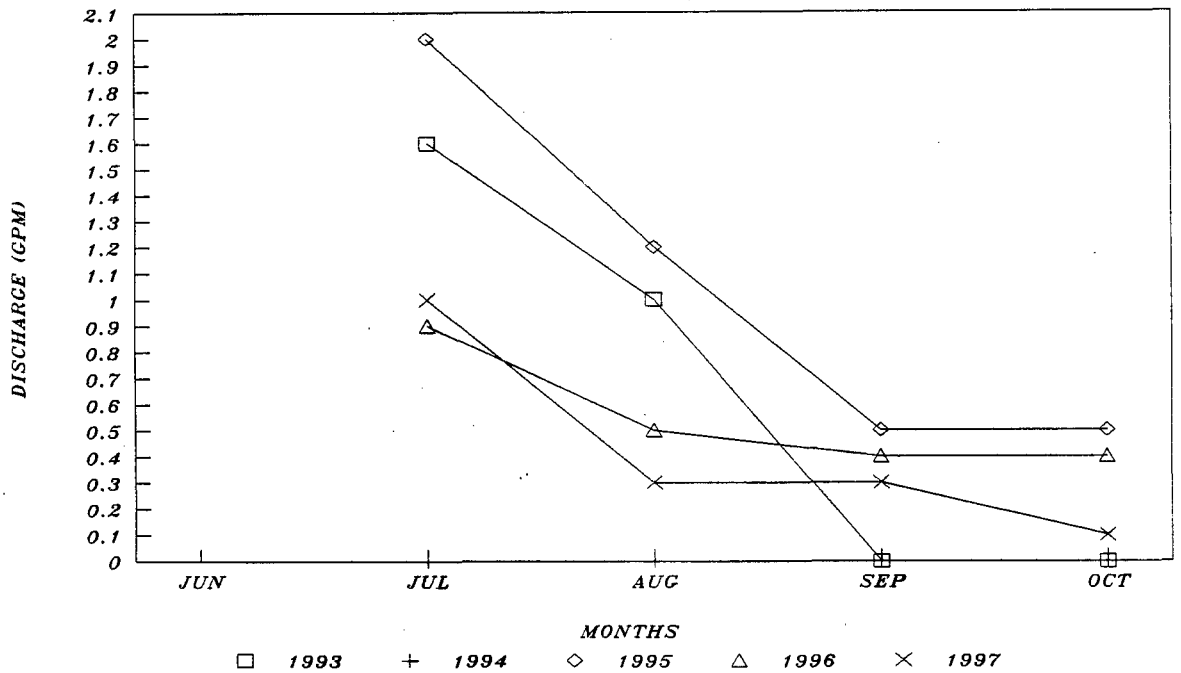
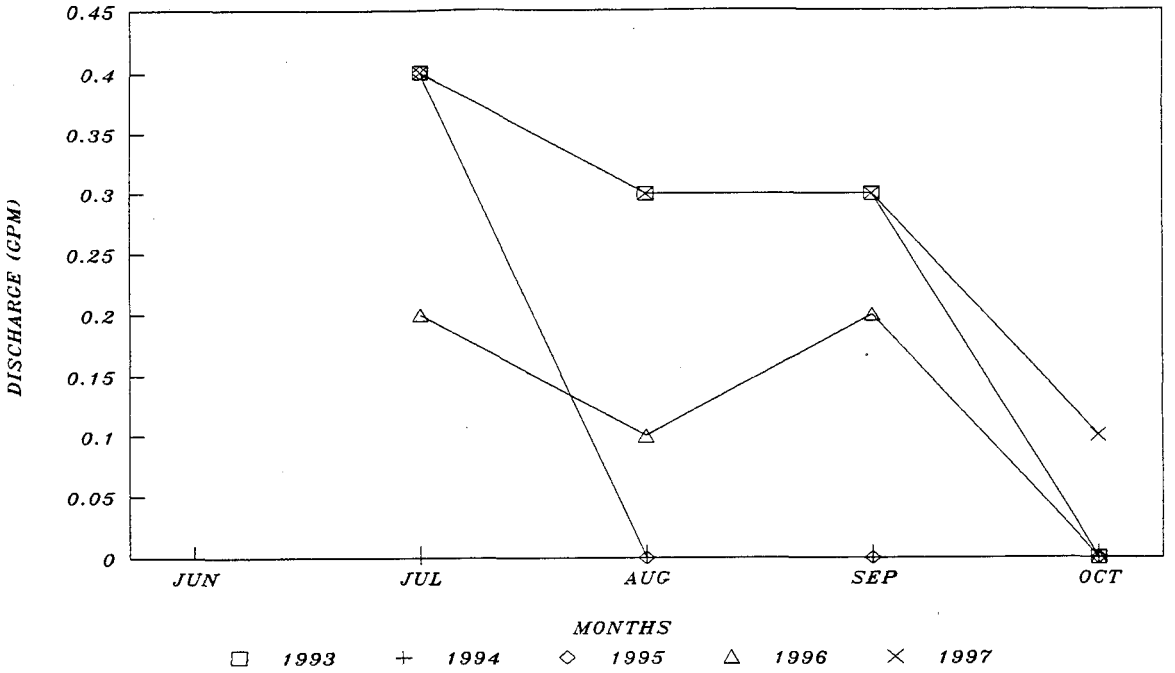
Discharge Recession Study



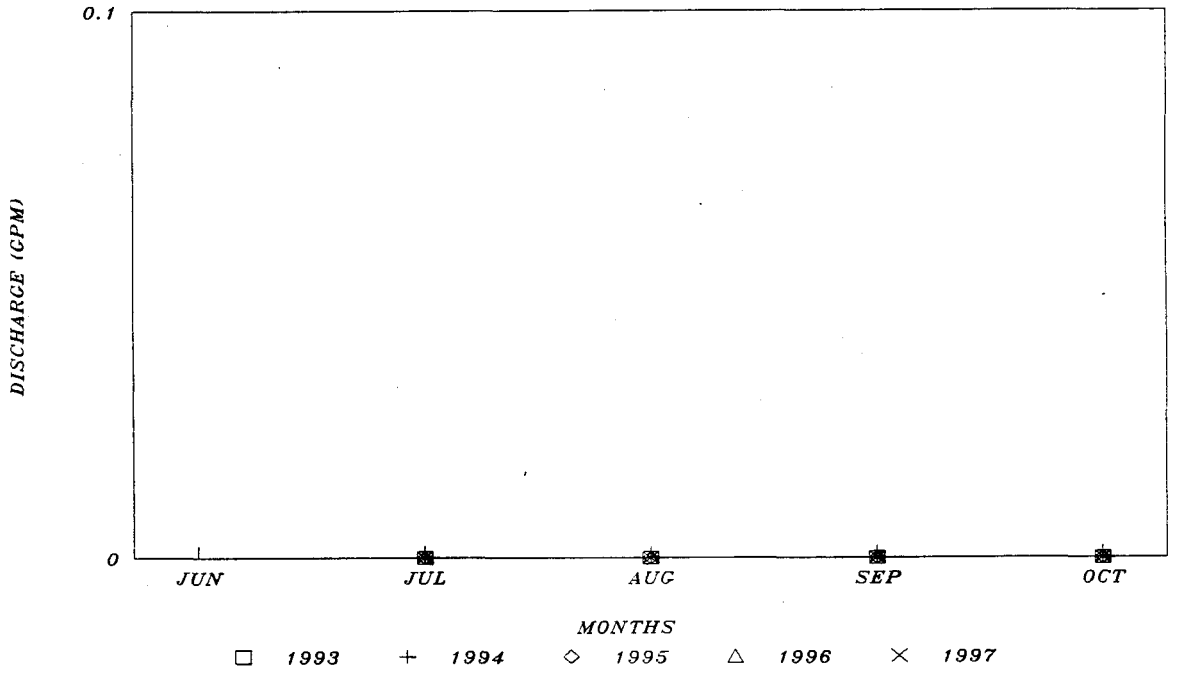
17-26-4

Discharge Recession Study



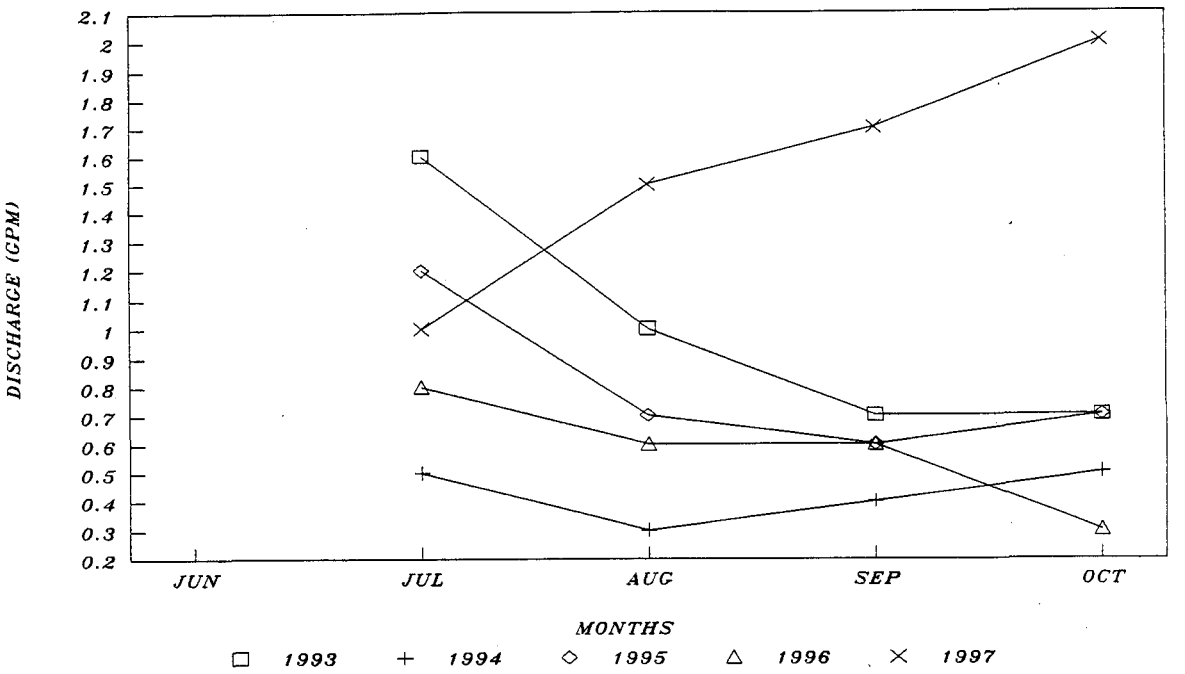
17-26-5

Discharge Recession Study



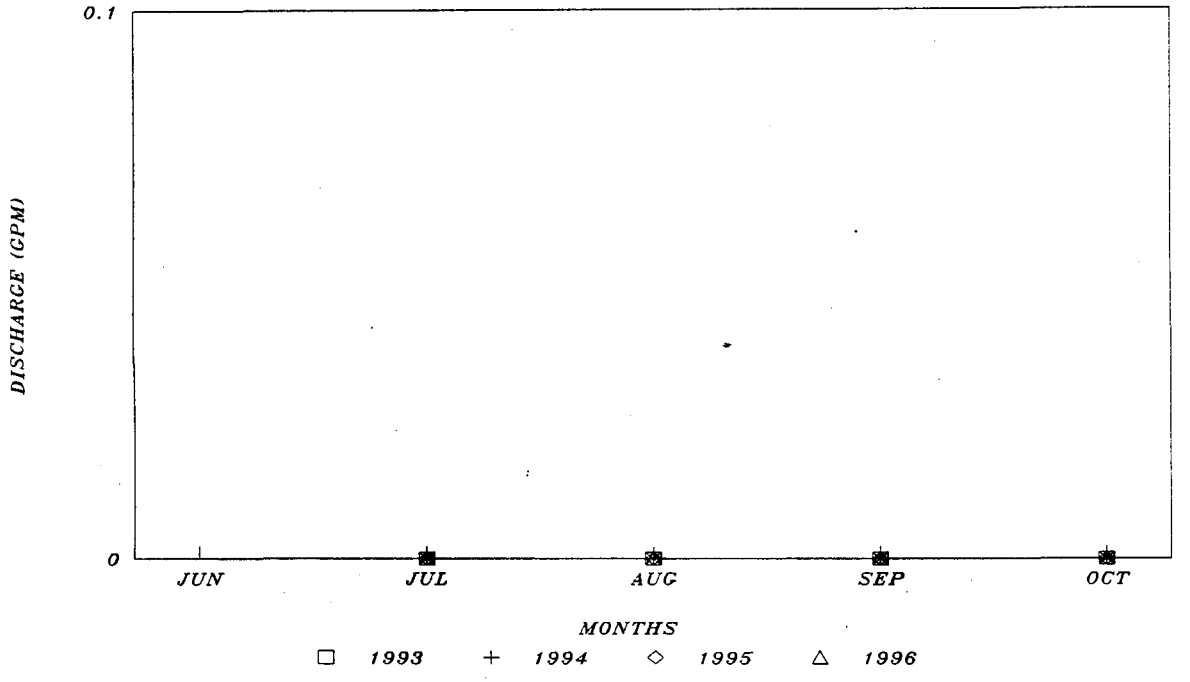
17-35-1

Discharge Recession Study



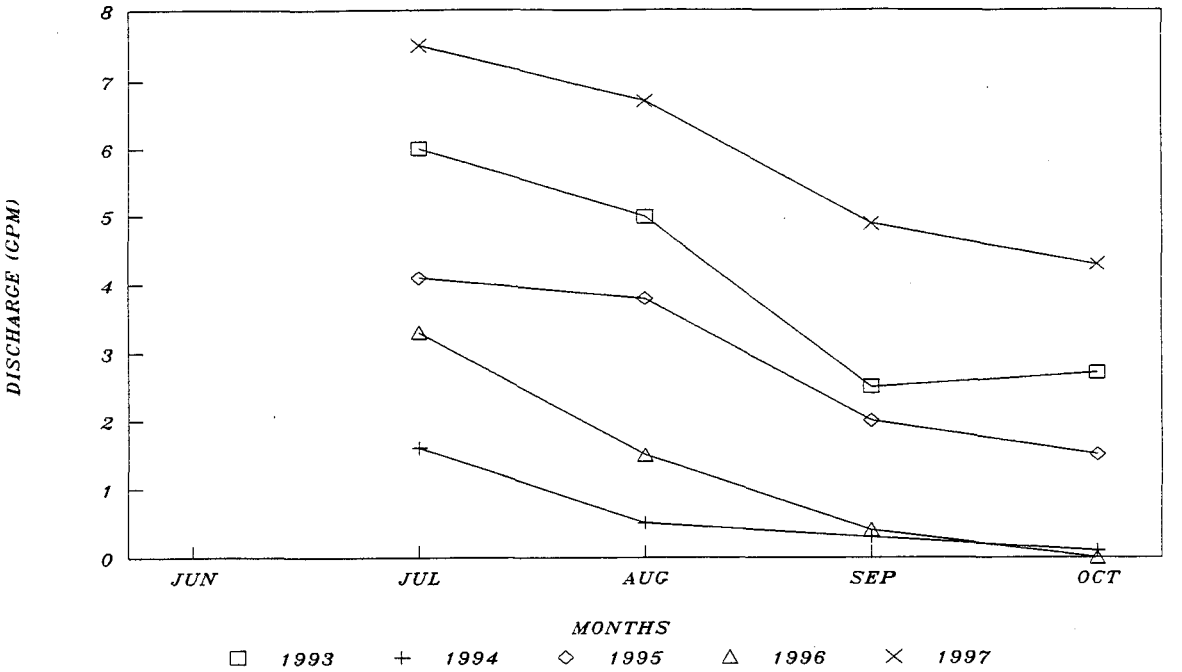
17-35-2

Discharge Recession Study



18-2-1

Discharge Recession Study



TRAIL MOUNTAIN SPRINGS STIFF DIAGRAMS

NORTHHORN FORMATION

18-2-1

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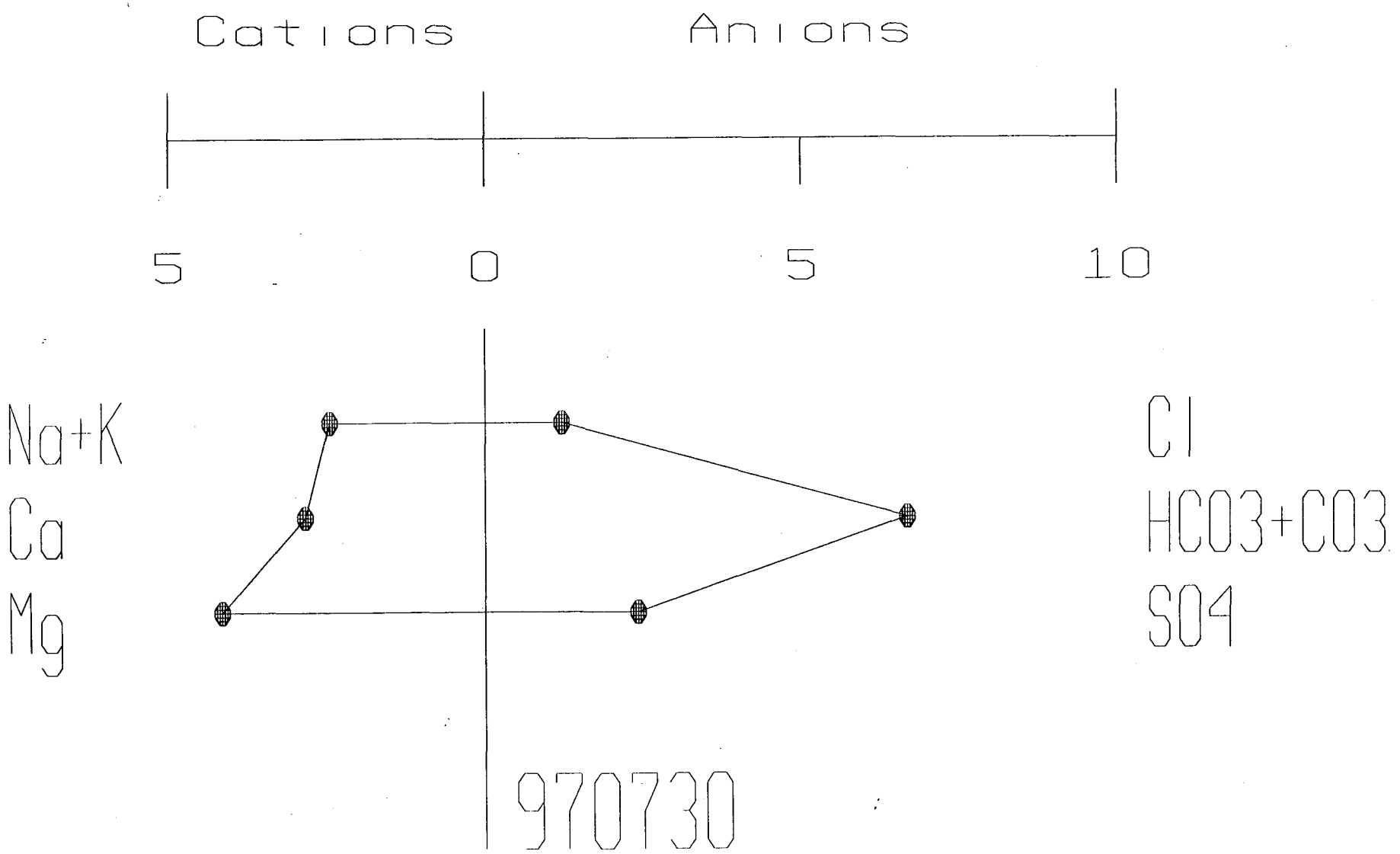

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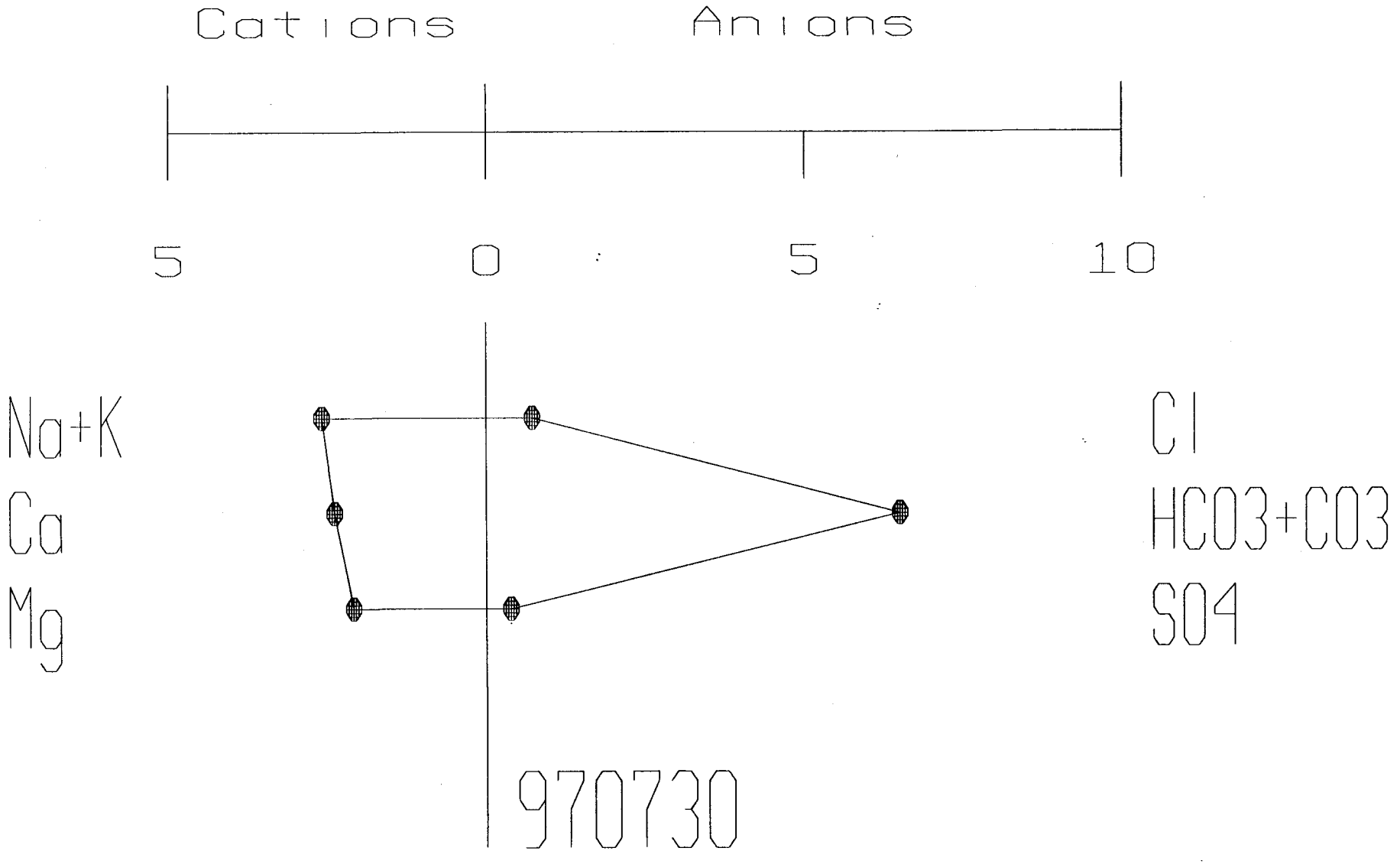

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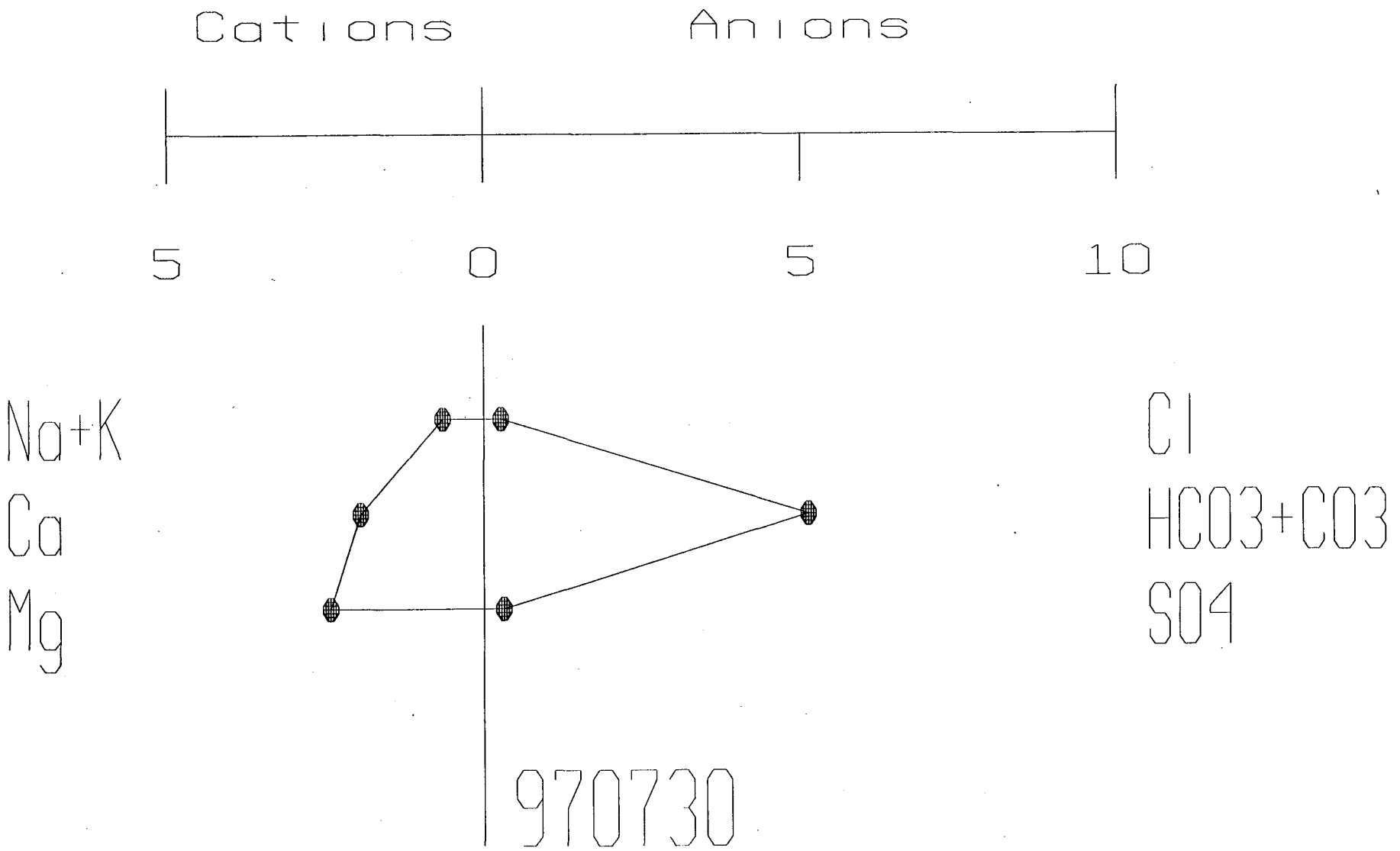

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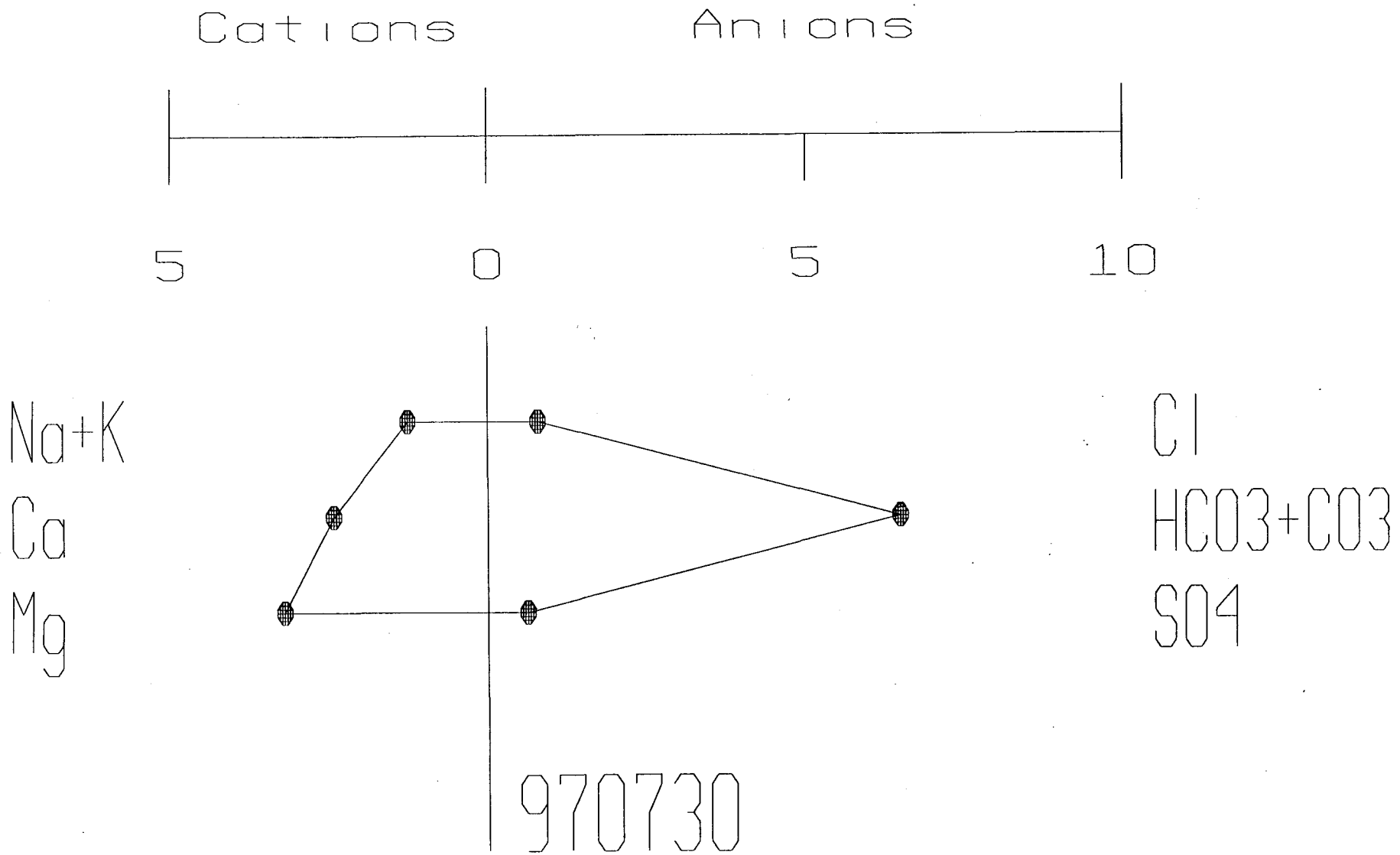

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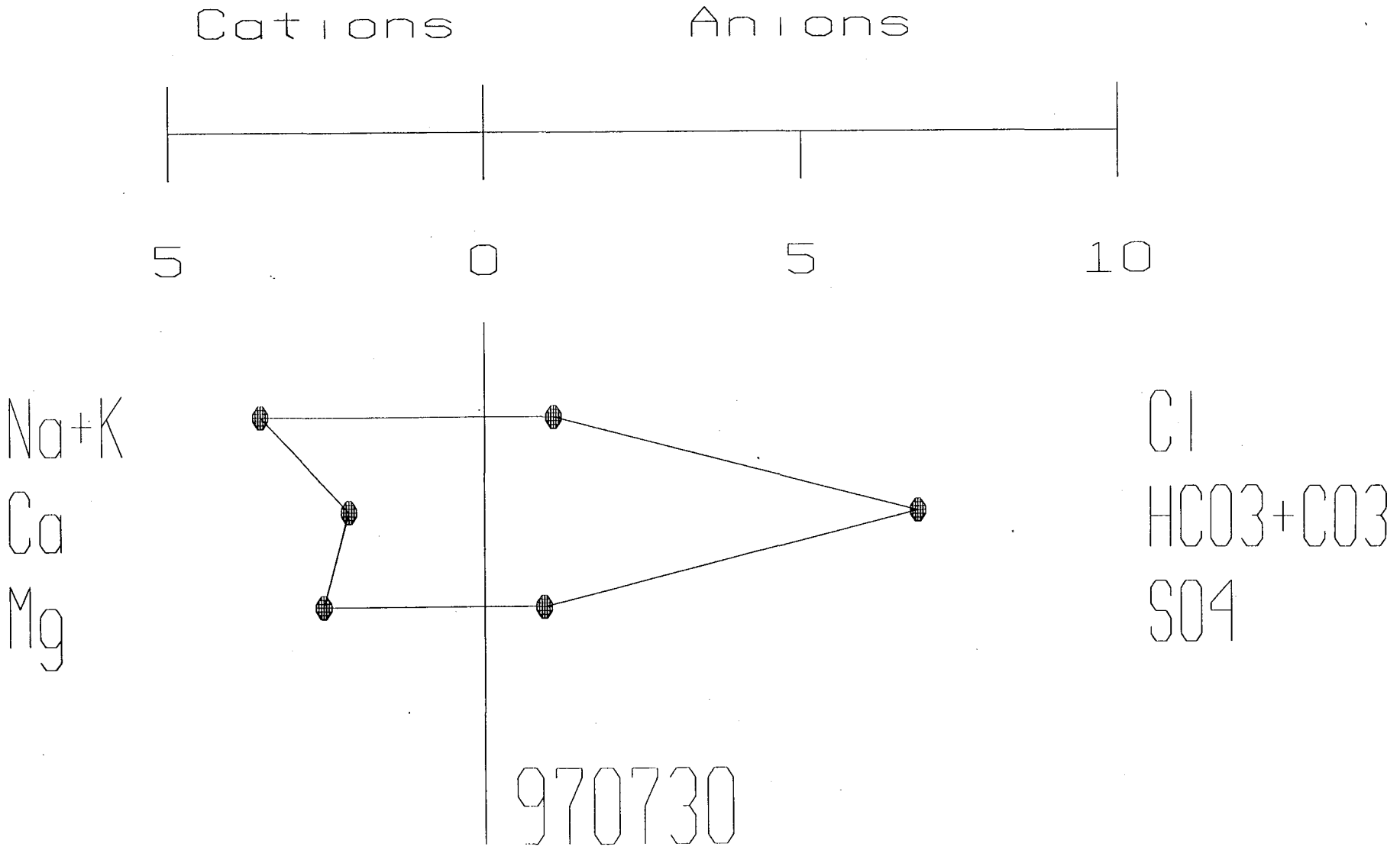

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FAX: (801) 653-2436

August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 18
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
18-2-1

Rec'd 1430 hr.
Sampled 0826 hr.

Kind of sample reported to us Water

Sample taken at TRAIL MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 30, 1997

Date received July 30, 1997

FIELD MEASUREMENTS

pH	7.70
DO	6.5
Flow	7.5 gpm
Conductivity	821
Temperature	8.6°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-17539

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
[illegible]dity	27	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
[illegible]alinity, Bicarbonate	399	5	mg/l as HCO_3	SM2320-B	08-10-1997 0730 SC
[illegible]alinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-10-1997 0730 SC
[illegible]alinity, Total	327	5	mg/l as $CaCO_3$	EPA 310.1	08-10-1997 0730 SC
[illegible]ions	10.1	----	meq/l	---------	08-14-1997 1330 RJ
[illegible]ium, Dissolved	57	1	mg/l	EPA 215.1	08-15-1997 1015 MK
[illegible]ions	9.2	----	meq/l	---------	08-14-1997 1330 RJ
[illegible]oride	42	1	mg/l	SM4500-Cl-B	08-11-1997 1300 SC
[illegible]nductivity	915	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
[illegible]rdness, Total	344	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330 RJ
[illegible]on, Total	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
[illegible]on, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
[illegible]nesium, Dissolved	49	1	mg/l	EPA 242.1	08-14-1997 1030 MK
[illegible]nganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
[illegible]nganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
	7.55	----	pH units	EPA 150.1	07-28-1997 1530 SC
[illegible]sium, Dissolved	<1	1	mg/l	EPA 258.1	08-14-1997 0900 MK
[illegible]um, Dissolved	54	1	mg/l	EPA 273.1	08-14-1997 0930 MK
[illegible]ds, Total Dissolved	550	10	mg/l	EPA 160.1	08-06-1997 0700 JC
[illegible]ate	116	25	mg/l	EPA 375.4	08-12-1997 0900 SC
[illegible]n Anion Balance	-4.7	----	%		08-14-1997 1330 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (801) 653-2311
FAX: (801) 653-2436

August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-21-1

Rec'd 1430 hr.
Sampled 1124 hr.

Kind of sample reported to us Water

Sample taken at TRAIL MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 30, 1997

Date received July 30, 1997

FIELD MEASUREMENTS

pH	7.36
DO	2.6
Flow	.92 gpm
Conductivity	614
Temperature	7.1°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-17543

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	20	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030	SC
Alkalinity, Bicarbonate	397	5	mg/l as HCO_3	SM2320-B	08-10-1997 0730	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-10-1997 0730	SC
Alkalinity, Total	325	5	mg/l as $CaCO_3$	EPA 310.1	08-10-1997 0730	SC
Anions	7.6	----	meq/l	---------	08-14-1997 1330	RJ
Calcium, Dissolved	50	1	mg/l	EPA 215.1	08-15-1997 1015	MK
Cations	7.2	----	meq/l	---------	08-14-1997 1330	RJ
Chloride	26	1	mg/l	SM4500-Cl-B	08-11-1997 1300	SC
Conductivity	691	1	umhos/cm	SM2510-B	08-11-1997 0800	JC
Hardness, Total	232	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745	MK
Magnesium, Dissolved	26	1	mg/l	EPA 242.1	08-14-1997 1030	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830	MK
pH	7.47	----	pH units	EPA 150.1	07-28-1997 1530	SC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	08-14-1997 0900	MK
Sodium, Dissolved	58	1	mg/l	EPA 273.1	08-14-1997 0930	MK
Solids, Total Dissolved	380	10	mg/l	EPA 160.1	08-06-1997 0700	JC
Sulfate	17	5	mg/l	EPA 375.4	08-12-1997 0900	SC
Cation/Anion Balance	-2.8	----	%		08-14-1997 1330	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-22-1

Rec'd 1430 hr.
Sampled 1055 hr.

Kind of sample reported to us Water

Sample taken at TRAIL MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 30, 1997

Date received July 30, 1997

FIELD MEASUREMENTS

pH	7.54
DO	6.5
Flow	4.8 gpm
Conductivity	435
Temperature	6.8°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-17542

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	14	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	303	5	mg/l as HCO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Total	249	5	mg/l as $CaCO_3$	EPA 310.1	08-10-1997 0730 SC
Anions	5.6	----	meq/l	---------	08-14-1997 1330 RJ
Calcium, Dissolved	38	1	mg/l	EPA 215.1	08-15-1997 1015 MK
Cations	4.8	----	meq/l	---------	08-14-1997 1330 RJ
Chloride	10	1	mg/l	SM4500-Cl-B	08-11-1997 1300 SC
Conductivity	490	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	210	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Magnesium, Dissolved	28	1	mg/l	EPA 242.1	08-14-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
pH	7.58	----	pH units	EPA 150.1	07-28-1997 1530 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-14-1997 0900 MK
Sodium, Dissolved	14	1	mg/l	EPA 273.1	08-14-1997 0930 MK
Solids, Total Dissolved	260	10	mg/l	EPA 160.1	08-06-1997 0700 JC
Sulfate	16	5	mg/l	EPA 375.4	08-12-1997 0900 SC
Cation Anion Balance	-7.4	----	%		08-14-1997 1330 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-26-4

Rec'd 1430 hr.
Sampled 1000 hr.

Kind of sample reported to us Water

Sample taken at TRAIL MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 30, 1997

Date received July 30, 1997

FIELD MEASUREMENTS

pH	8.23
DO	6.5
Flow	.42 gpm
Conductivity	626
Temperature	10.4°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-17541

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	16	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	396	5	mg/l as HCO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Total	325	5	mg/l as $CaCO_3$	EPA 310.1	08-10-1997 0730 SC
Anions	7.9	----	meq/l	---------	08-14-1997 1330 RJ
Calcium, Dissolved	49	1	mg/l	EPA 215.1	08-15-1997 1015 MK
Cations	6.9	----	meq/l	---------	08-14-1997 1330 RJ
Chloride	28	1	mg/l	SM4500-Cl-B	08-11-1997 1300 SC
Conductivity	698	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	283	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330 RJ
Iron, Total	0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Magnesium, Dissolved	39	1	mg/l	EPA 242.1	08-14-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
pH	8.12	----	pH units	EPA 150.1	07-28-1997 1530 SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	08-14-1997 0900 MK
Sodium, Dissolved	28	1	mg/l	EPA 273.1	08-14-1997 0930 MK
Solids, Total Dissolved	390	10	mg/l	EPA 160.1	08-06-1997 0700 JC
Sulfate	30	5	mg/l	EPA 375.4	08-12-1997 0900 SC
Cation/Anion Balance	-6.6	----	%		08-14-1997 1330 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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FAX: (801) 653-2436

August 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

19 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-35-1

Rec'd 1430 hr.
Sampled 0920 hr.

Kind of sample reported to us Water

Sample taken at TRAIL MOUNTAIN SPRINGS

Sample taken by Energy West/MBD

Date sampled July 30, 1997

Date received July 30, 1997

FIELD MEASUREMENTS

pH	7.78
DO	6.9
Flow	1 gpm
Conductivity	706
Temperature	8.2°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-17540

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	20	10	mg/l as $CaCO_3$	D1067-92	08-07-1997 1030 SC
Alkalinity, Bicarbonate	405	5	mg/l as HCO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-10-1997 0730 SC
Alkalinity, Total	332	5	mg/l as $CaCO_3$	EPA 310.1	08-10-1997 0730 SC
Balance	8.7	----	meq/l	---------	08-14-1997 1330 RJ
Calcium, Dissolved	42	1	mg/l	EPA 215.1	08-15-1997 1015 MK
Cations	8.0	----	meq/l	---------	08-14-1997 1330 RJ
Chloride	38	1	mg/l	SM4500-Cl-B	08-11-1997 1300 SC
Conductivity	779	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	228	----	mg/l as $CaCO_3$	SM2340-B	08-14-1997 1330 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-14-1997 0745 MK
Magnesium, Dissolved	30	1	mg/l	EPA 242.1	08-14-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-14-1997 0830 MK
pH	7.79	----	pH units	EPA 150.1	07-28-1997 1530 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	08-14-1997 0900 MK
Sodium, Dissolved	79	1	mg/l	EPA 273.1	08-14-1997 0930 MK
Solids, Total Dissolved	450	10	mg/l	EPA 160.1	08-06-1997 0700 JC
Sulfate	46	25	mg/l	EPA 375.4	08-12-1997 0900 SC
Cation/Anion Balance	-4.0	----	%		08-14-1997 1330 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
18-2-1

Rec'd 1630 hr.
Sampled 0837 hr.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled October 15, 1997

Date received October 15, 1997

FIELD MEASUREMENTS

pH	7.76
DO	6.0
Flow	4.3 GPM
Conductivity	815
Temperature	7.9°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17932

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	15	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1830 RJ
Alkalinity, Bicarbonate	413	5	mg/l as HCO_3	SM2320-B	10-23-1997 1600 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 1600 R
Alkalinity, Total	338	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 1600
Anions	10.4	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	57	1	mg/l	EPA 215.1	10-19-1997 1215 MK
Cations	9.7	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	43	1	mg/l	SM4500-Cl-B	10-30-1997 1215 SC
Conductivity	897	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	356	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Magnesium, Dissolved	52	1	mg/l	EPA 242.1	10-19-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
pH	7.51	----	pH units	EPA 150.1	10-16-1997 0800 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-19-1997 1130 MK
Sodium, Dissolved	59	1	mg/l	EPA 273.1	10-19-1997 1145 MK
Solids, Total Dissolved	560	10	mg/l	EPA 160.1	10-20-1997 0700 JC
Sulfate	116	25	mg/l	EPA 375.4	10-27-1997 0800 SC
Cation/Anion Balance	-3.5	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-21-1

Kind of sample reported to us Water

Rec'd 1630 hr.
Sampled 1415 hr.

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled October 15, 1997

Date received October 15, 1997

FIELD MEASUREMENTS

pH	7.50
DO	2.1
Flow	0.55 GPM
Conductivity	624
Temperature	6.9°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17941

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	11	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1830 RJ
Alkalinity, Bicarbonate	406	5	mg/l as HCO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 2020 RJ
Alkalinity, Total	332	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 2020 RJ
Anions	7.7	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	46	1	mg/l	EPA 215.1	10-24-1997 1130 MK
Cations	7.0	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	25	1	mg/l	SM4500-Cl-B	10-30-1997 1215 SC
Conductivity	696	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	218	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-24-1997 0930 MK
Magnesium, Dissolved	25	1	mg/l	EPA 242.1	10-24-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-24-1997 0945 MK
pH	7.56	----	pH units	EPA 150.1	10-16-1997 0800 SC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	10-24-1997 1015 MK
Sodium, Dissolved	60	1	mg/l	EPA 273.1	10-24-1997 1045 MK
Solids, Total Dissolved	380	10	mg/l	EPA 160.1	10-20-1997 0700 JC
Sulfate	18	5	mg/l	EPA 375.4	10-27-1997 1215 SC
Cation/Anion Balance	-5.1	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-22-1

Rec'd 1630 hr.
Sampled 1211 hr.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled October 15, 1997

Date received October 15, 1997

FIELD MEASUREMENTS

pH	7.83
DO	6.8
Flow	5 GPM
Conductivity	437
Temperature	6.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17936

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1830 RJ
Alkalinity, Bicarbonate	320	5	mg/l as HCO_3	SM2320-B	10-23-1997 1600 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 1600 [illegible]
Alkalinity, Total	262	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 1600 [illegible]
Anions	5.8	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Dissolved	40	1	mg/l	EPA 215.1	10-19-1997 1215 MK
Cations	5.2	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	9	1	mg/l	SM4500-Cl-B	10-30-1997 1215 SC
Conductivity	490	1	umhos/cm	SM2510-B	10-28-1997 2215 MK
Hardness, Total	228	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Magnesium, Dissolved	31	1	mg/l	EPA 242.1	10-19-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
pH	7.68	----	pH units	EPA 150.1	10-16-1997 0800 SC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-19-1997 1130 MK
Sodium, Dissolved	16	1	mg/l	EPA 273.1	10-19-1997 1145 MK
Solids, Total Dissolved	290	10	mg/l	EPA 160.1	10-20-1997 0700 JC
Sulfate	14	5	mg/l	EPA 375.4	10-27-1997 0800 SC
Cation/Anion Balance	-5.0	----	%		11-03-1997 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN SPRINGS
17-35-1

Rec'd 1630 hr.
Sampled 1020 hr.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled October 15, 1997

Date received October 15, 1997

FIELD MEASUREMENTS

pH	7.29
DO	6.7
Flow	2 GPM
Conductivity	711
Temperature	9.1°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17934

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-23-1997 1830	RJ
Alkalinity, Bicarbonate	426	5	mg/l as HCO_3	SM2320-B	10-23-1997 1600	RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 1600	RJ
Alkalinity, Total	350	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 1600	RJ
Anions	8.9	----	meq/l	---------	11-03-1997 0930	RJ
Calcium, Dissolved	44	1	mg/l	EPA 215.1	10-19-1997 1215	MK
Cations	8.5	----	meq/l	---------	11-03-1997 0930	RJ
Chloride	38	1	mg/l	SM4500-Cl-B	10-30-1997 1215	SC
Conductivity	789	1	umhos/cm	SM2510-B	10-28-1997 2215	MK
Hardness, Total	242	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045	MK
Magnesium, Dissolved	32	1	mg/l	EPA 242.1	10-19-1997 1230	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100	MK
pH	7.77	----	pH units	EPA 150.1	10-16-1997 0800	SC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	10-19-1997 1130	MK
Sodium, Dissolved	83	1	mg/l	EPA 273.1	10-19-1997 1145	MK
Solids, Total Dissolved	450	10	mg/l	EPA 160.1	10-20-1997 0700	JC
Sulfate	43	5	mg/l	EPA 375.4	10-27-1997 0800	SC
Cation/Anion Balance	-2.8	----	%		11-03-1997 0930	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

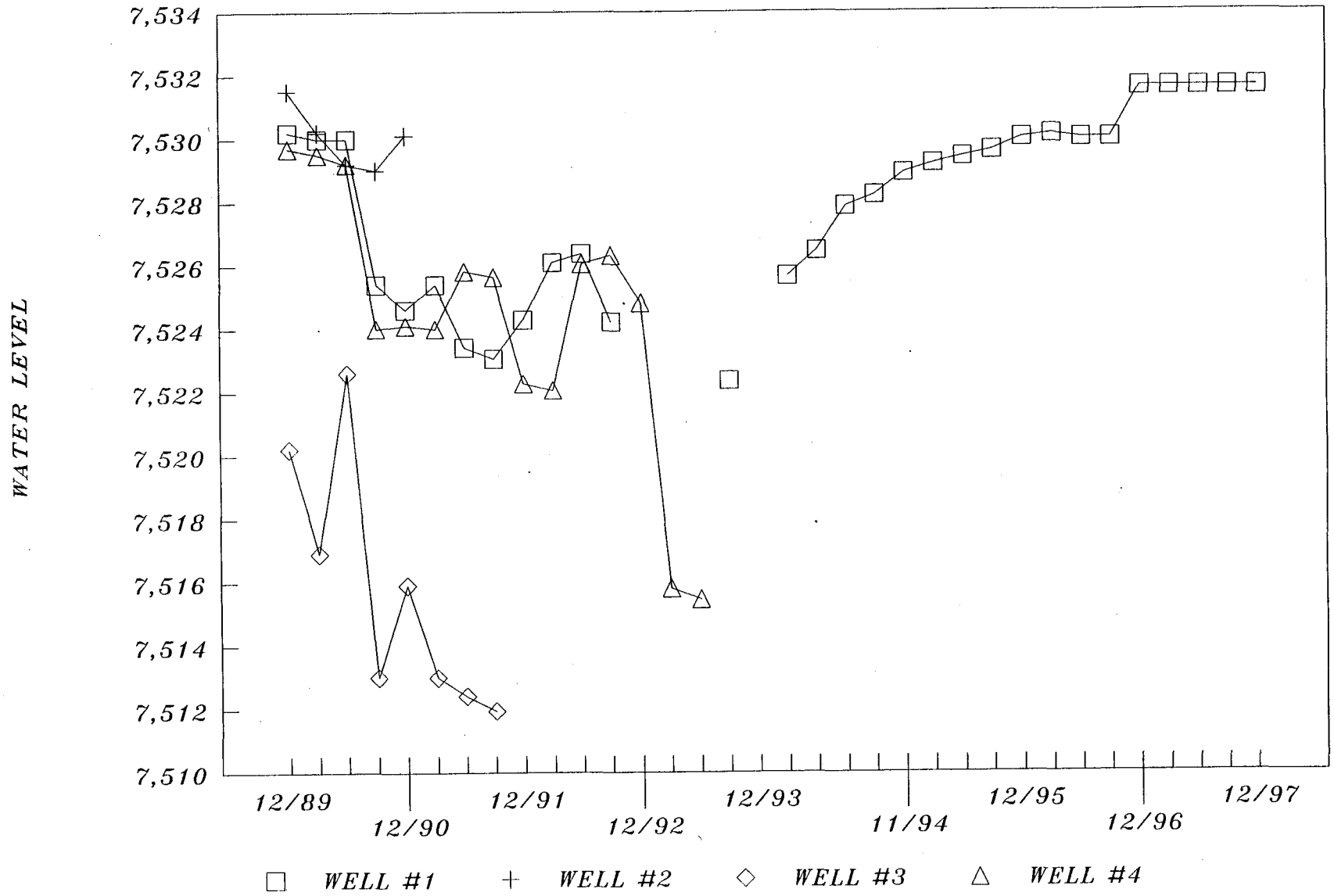
Huntington Laboratory

MEMBER ACIL

APPENDIX I

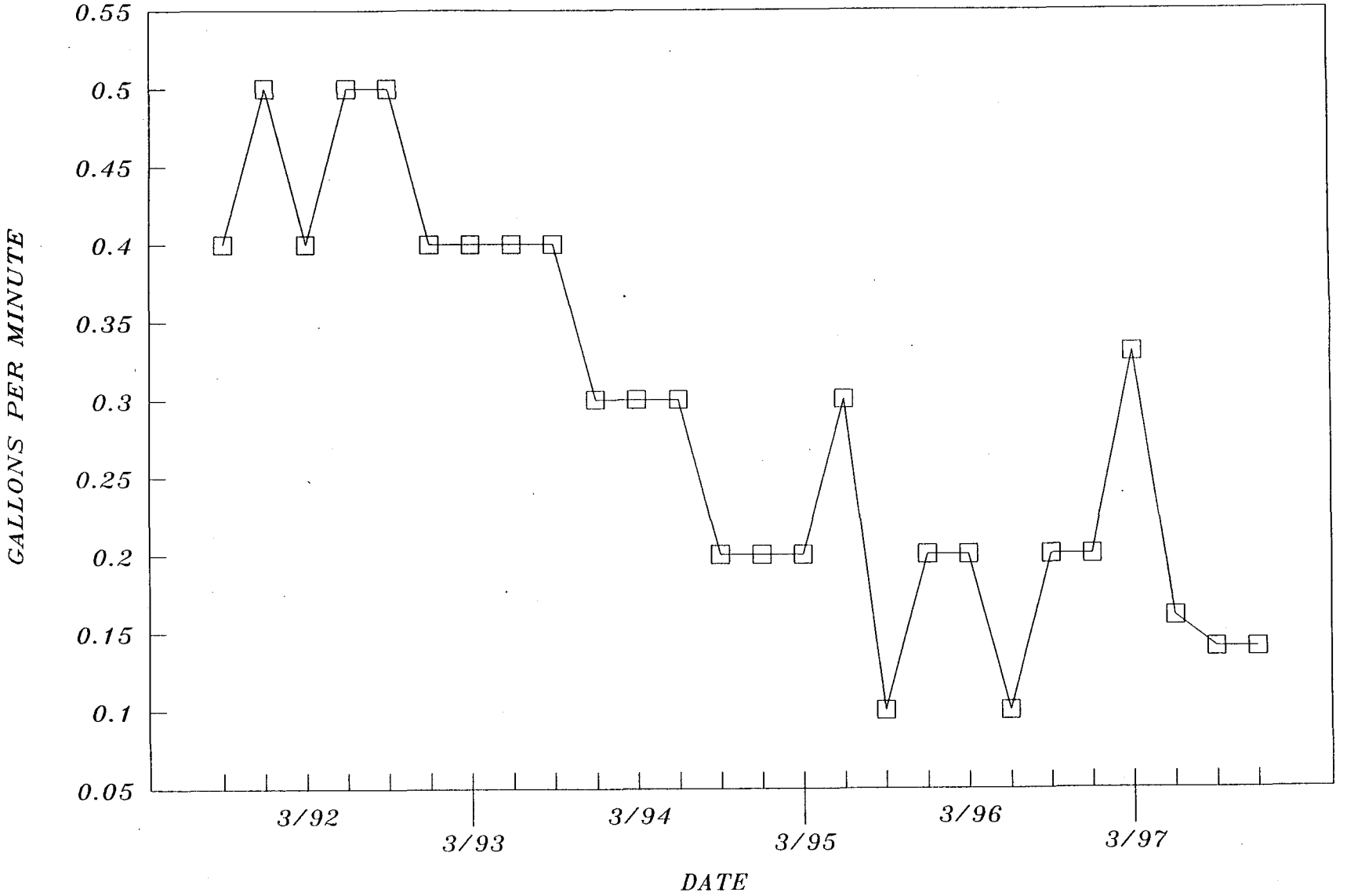
DEER CREEK MINE PIEZOMETRIC STUDY

IN-MINE WATER WELL ELEVATIONS



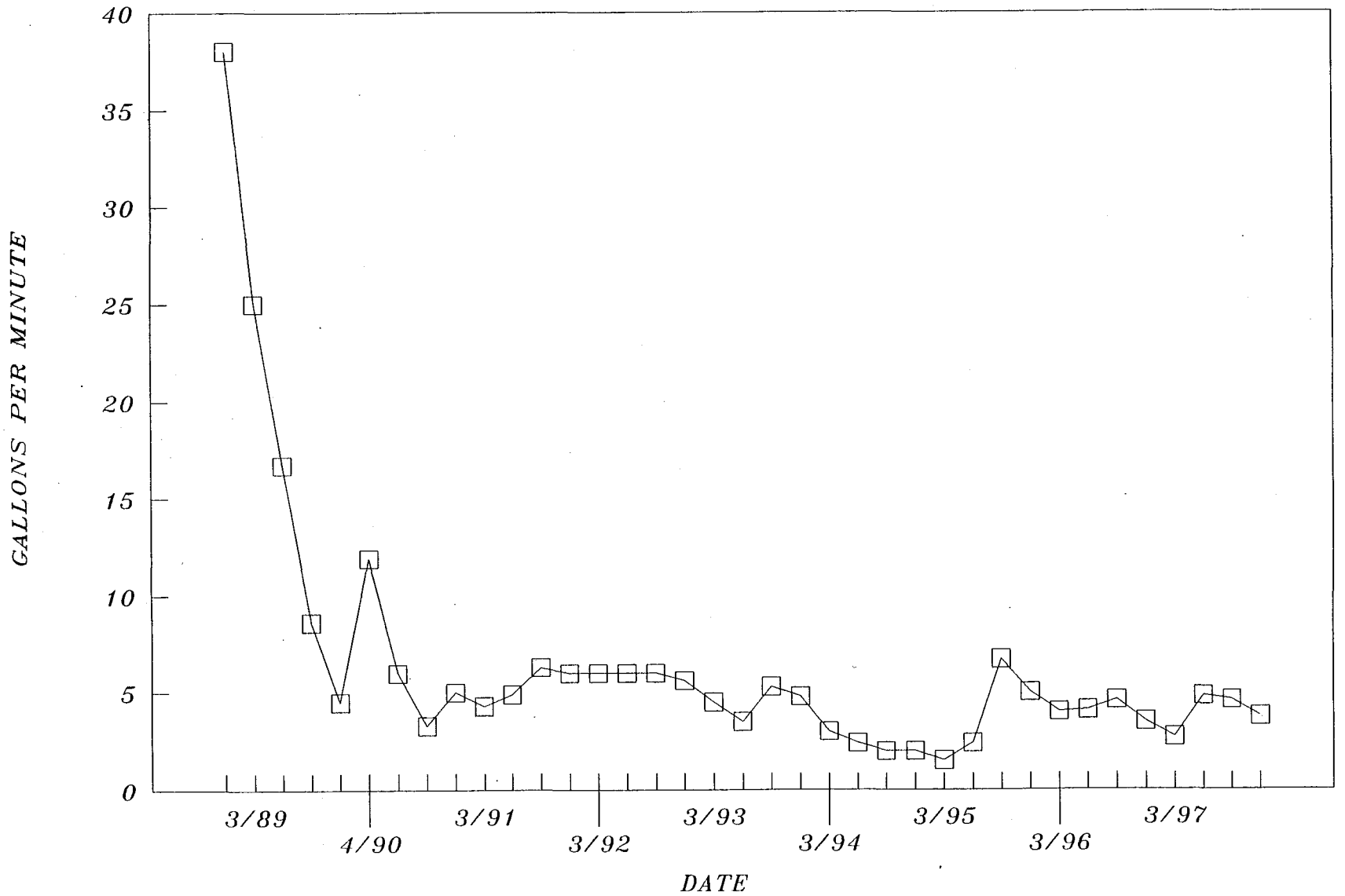
DEER CREEK IN-MINE MONITORING

Main North - Main East

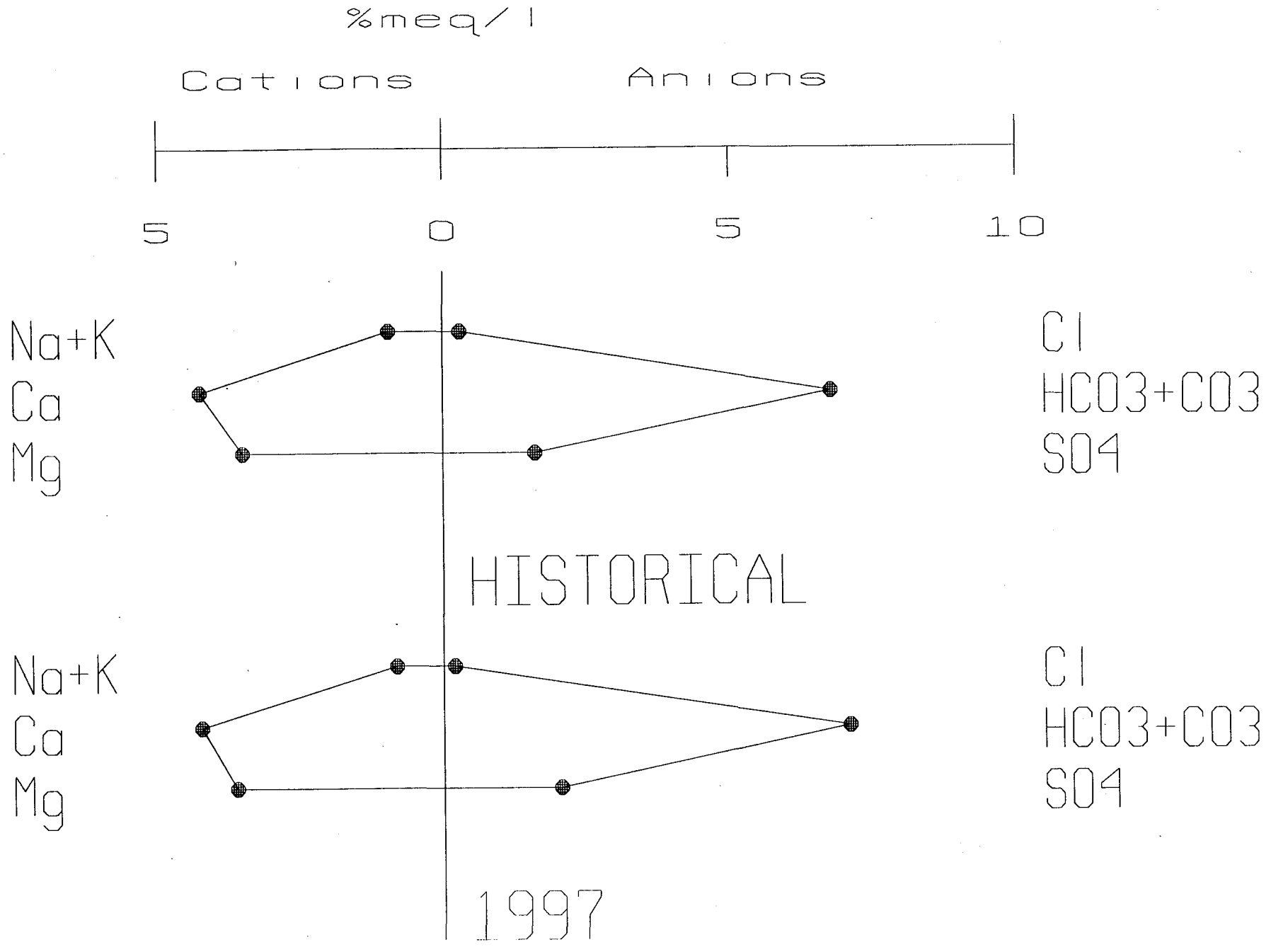


DEER CREEK IN-MINE MONITORING

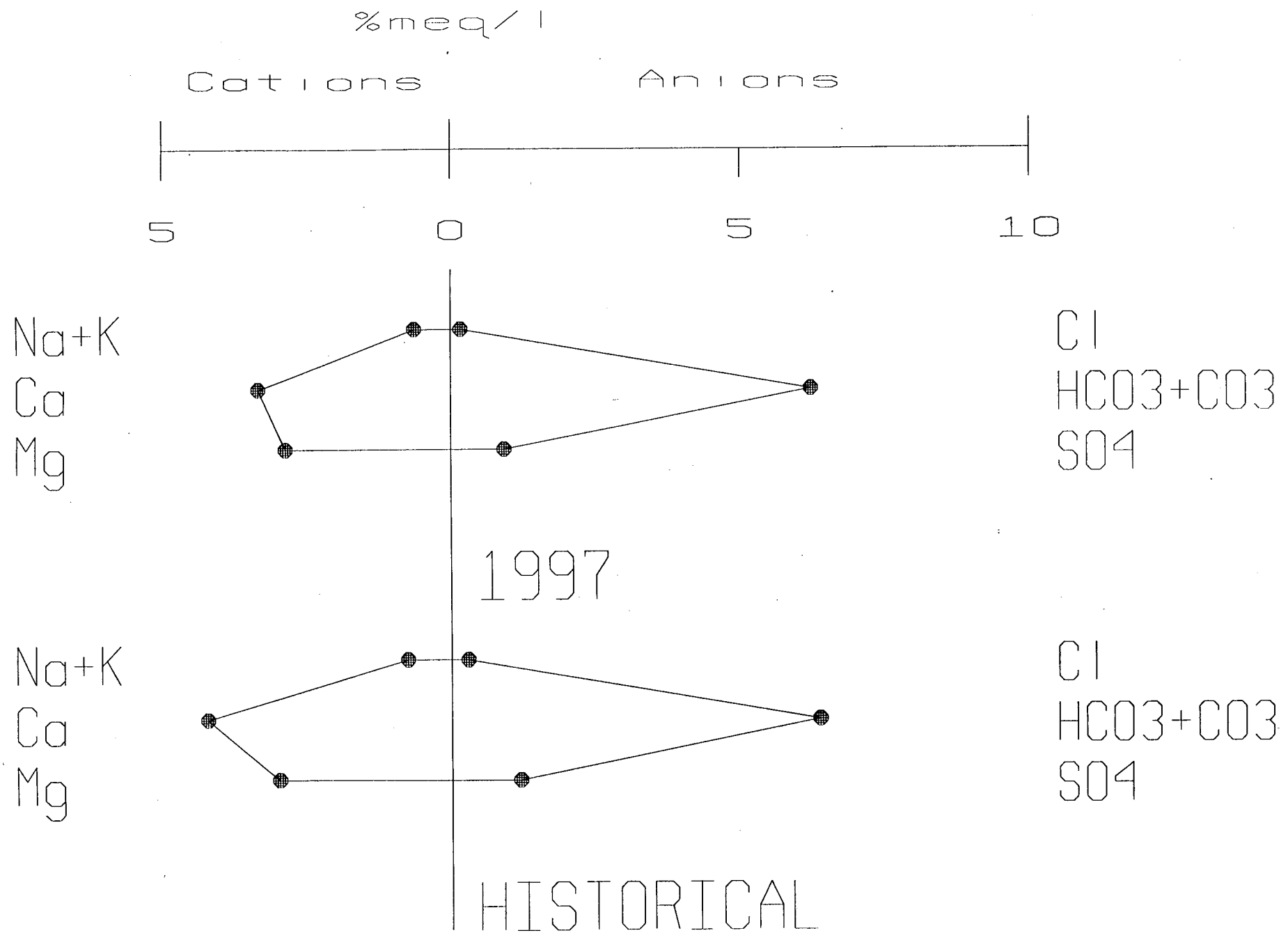
3rd North xc- 65(TW-10)



Deer Creek In-Mine MN-ME



Deer Creek TW-10 xc-65



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April 8, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
APR 8 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK IN-MINE
TW-10 3RD NORTH XC-65

Kind of sample reported to us Water

Rec'd 1415 hr.
Sampled 1226 hr.

Sample taken at

Sample taken by Energy West/Kenneth

FIELD MEASUREMENTS
Flow 2.78 gpm
Temperature 6.0°C

Date sampled March 27, 1997

Date received March 27, 1997

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17077

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	27	10	mg/l as $CaCO_3$	D1067-92	04-01-1997 0700	SW
Alkalinity, Bicarbonate	387	5	mg/l as HCO_3	SM2320-B	04-01-1997 1100	SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	04-01-1997 1100	SW
Alkalinity, Total	317	5	mg/l as $CaCO_3$	EPA 310.1	04-01-1997 1100	SW
Anions	7.4	----	meq/l	---------	04-08-1997 0815	RJ
Calcium, Dissolved	63	1	mg/l	EPA 215.1	04-04-1997 1130	MK
Cations	6.5	----	meq/l	---------	04-08-1997 0815	RJ
Chloride	6	1	mg/l	SM4500-Cl-B	04-01-1997 0800	SW
Conductivity	616	1	umhos/cm	SM2510-B	04-01-1997 1500	SW
Hardness, Total	297	----	mg/l as $CaCO_3$	SM2340-B	04-08-1997 0815	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	04-04-1997 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	04-04-1997 0930	MK
Magnesium, Dissolved	34	1	mg/l	EPA 242.1	04-04-1997 1145	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	04-04-1997 1000	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	04-04-1997 1000	MK
pH	7.45	----	pH units	EPA 150.1	03-28-1997 1045	JC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	04-04-1997 1030	MK
Sodium, Dissolved	13	1	mg/l	EPA 273.1	04-04-1997 1045	MK
Solids, Total Dissolved	370	10	mg/l	EPA 160.1	04-03-1997 0700	JC
Sulfate	41	250	mg/l	EPA 375.4	04-02-1997 0700	SW
Cation/Anion Balance	-6.0	----	%		04-08-1997 0815	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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FAX: (801) 653-2436

July 30, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK IN-MINE
TW-10 3RD NORTH XC-65

Kind of sample reported to us Water

Rec'd 1150 hr.
Sampled 1045 hr.

Sample taken at

Sample taken by ENERGY WEST/MIKE

FIELD MEASUREMENTS
Flow 4.8 gpm
Conductivity NA
Temperature 7.3°C

Date sampled June 30, 1997

Date received June 30, 1997

DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17444

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	24	10	mg/l as $CaCO_3$	D1067-92	07-03-1997 1010	SC
Alkalinity, Bicarbonate	376	5	mg/l as HCO_3	SM2320-B	07-09-1997 0700	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-09-1997 0700	[illegible]
Alkalinity, Total	308	5	mg/l as $CaCO_3$	EPA 310.1	07-09-1997 0700	[illegible]
Anions	7.3	----	meq/l	---------	07-28-1997 1400	RJ
Calcium, Dissolved	70	1	mg/l	EPA 215.1	07-09-1997 1030	MK
Cations	7.1	----	meq/l	---------	07-28-1997 1400	RJ
Chloride	5	10	mg/l	SM4500-Cl-B	07-23-1997 0830	SC
Conductivity	625	1	umhos/cm	SM2510-B	07-22-1997 1230	MK
Hardness, Total	319	----	mg/l as $CaCO_3$	SM2340-B	07-28-1997 1400	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Magnesium, Dissolved	35	10	mg/l	EPA 242.1	07-09-1997 1045	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
pH	7.49	----	pH units	EPA 150.1	07-01-1997 1030	RJ
Potassium, Dissolved	1	1	mg/l	EPA 258.1	07-09-1997 0845	MK
Sodium, Dissolved	15	100	mg/l	EPA 273.1	07-09-1997 0930	MK
Solids, Total Dissolved	410	10	mg/l	EPA 160.1	07-03-1997 0700	JC
Sulfate	47	10	mg/l	EPA 375.4	07-11-1997 1000	SC
Cation/Anion Balance	1.6	----	%		07-28-1997 1400	RJ

PACIFICORP
[illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

ctober 9, 1997

ACIFICORP FIELD OFFICE
. Box 1005
untington UT 84528

PACIFICORP
OCT - 9 199
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
IN MINE TW-10 3RD NORTH XC-65

Rec'd 0830 hr.
Sampled 1150 hr.

ind of sample Water
eported to us

ample taken at Deer Creek

ample taken by Energy West/Ken Fleck

Date sampled September 25, 1997

Date received September 26, 1997

FIELD MEASUREMENTS

Flow	4.66 gpm
Temperature	5°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17809

arameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
idity	14	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300 SC
linity, Bicarbonate	379	5	mg/l as HCO_3	SM2320-B	09-30-1997 1000 SC
linity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1000 SC
linity, Total	311	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1000 SC
	7.3	----	meq/l	---------	10-08-1997 0900 RJ
um, Dissolved	68	1	mg/l	EPA 215.1	10-01-1997 2245 MK
	6.8	----	meq/l	---------	10-08-1997 0900 RJ
ide	7	1	mg/l	SM4500-Cl-B	10-02-1997 1400 SC
ctivity	633	1	umhos/cm	SM2510-B	10-03-1997 0145 MK
ness, Total	310	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900 RJ
n, Total	<0.1	0.1	mg/l	EPA 236.1	10-01-1997 1945 MK
n, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-01-1997 1945 MK
sium, Dissolved	34	2	mg/l	EPA 242.1	10-01-1997 2300 MK
nese, Total	<0.1	0.1	mg/l	EPA 243.1	10-01-1997 2015 MK
nese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-01-1997 2015 MK
	7.25	----	pH units	EPA 150.1	09-26-1997 1540 SC
um, Dissolved	1	1	mg/l	EPA 258.1	10-01-1997 2045 MK
m, Dissolved	14	1	mg/l	EPA 273.1	10-01-1997 2115 MK
Total Dissolved	360	10	mg/l	EPA 160.1	09-29-1997 0700 JC
	41	10	mg/l	EPA 375.4	10-06-1997 0800 SC
Anion Balance	3.1	----	%		10-08-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
IN-MINE TW-10 3RD NORTH XC-65

Rec'd 1200 hr.
Sampled 0930 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KF

Date sampled December 9, 1997

Date received December 9, 1997

FIELD MEASUREMENTS
Flow 3.75 GPM
Temperature 7.3°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18152

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	375	5	mg/l as HCO_3	SM2320-B	12-12-1997 0700 JC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-12-1997 0700 J[illegible]
Alkalinity, Total	307	5	mg/l as $CaCO_3$	EPA 310.1	12-12-1997 0700 J[illegible]
Anions	7.3	----	meq/l	---------	01-02-1998 0930 RJ
Calcium, Dissolved	68	1	mg/l	EPA 215.1	12-11-1997 1200 MK
Cations	7.0	----	meq/l	---------	01-02-1998 0930 RJ
Chloride	6	1	mg/l	SM4500-Cl-B	12-12-1997 1200 SC
Conductivity	640	1	umhos/cm	SM2510-B	12-15-1997 1100 JC
Hardness, Total	332	----	mg/l as $CaCO_3$	SM2340-B	01-02-1998 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	12-11-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	12-11-1997 1000 MK
Magnesium, Dissolved	37	1	mg/l	EPA 242.1	12-11-1997 1215 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-11-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-11-1997 1030 MK
pH	7.77	----	pH units	EPA 150.1	12-09-1998 1400 SC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	12-11-1997 1045 MK
Sodium, Dissolved	13	1	mg/l	EPA 273.1	12-11-1997 1130 MK
Solids, Total Dissolved	360	10	mg/l	EPA 160.1	12-16-1997 0700 JC
Sulfate	47	10	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	-1.9	----	%		01-02-1998 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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April 10, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

APR 1 0
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK IN-MINE
MAIN NORTH-MAIN EAST

Kind of sample reported to us Water

Rec'd 1415 hr.
Sampled 1240 hr.

Sample taken at

Sample taken by Energy West/Kenneth

FIELD MEASUREMENTS
Flow .33 ~~3.36~~ gpm
Temperature 6.0°C

Date sampled March 27, 1997

Date received March 27, 1997

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17078

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	27	10	mg/l as $CaCO_3$	D1067-92	04-01-1997 0700 SW
Alkalinity, Bicarbonate	432	5	mg/l as HCO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Total	354	5	mg/l as $CaCO_3$	EPA 310.1	04-01-1997 1100 SW
Anions	9.2	----	meq/l	---------	04-09-1997 1600 RJ
Calcium, Dissolved	85	1	mg/l	EPA 215.1	04-04-1997 1130 MK
Cations	8.7	----	meq/l	---------	04-09-1997 1600 RJ
Chloride	8	1	mg/l	SM4500-Cl-B	04-01-1997 0800 SW
Conductivity	762	1	umhos/cm	SM2510-B	04-01-1997 1500 SW
Hardness, Total	398	----	mg/l as $CaCO_3$	SM2340-B	04-09-1997 1600 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	04-04-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	04-04-1997 0930 MK
Magnesium, Dissolved	44	1	mg/l	EPA 242.1	04-04-1997 1145 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	04-04-1997 1000 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	04-04-1997 1000 MK
pH	7.73	----	pH units	EPA 150.1	03-28-1997 1045 JC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	04-04-1997 1030 MK
Sodium, Dissolved	17	1	mg/l	EPA 273.1	04-04-1997 1045 MK
Solids, Total Dissolved	490	10	mg/l	EPA 160.1	04-03-1997 0700 JC
Sulfate	90	25	mg/l	EPA 375.4	04-02-1997 0700 SW
Cation/Anion Balance	-2.8	----	%		04-09-1997 1600 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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FAX: (801) 653-2436

July 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK IN-MINE
MAIN NORTH-MAIN EAST
Rec'd 1150 hr.
Sampled 1100 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by ENERGY WEST/MIKE

Date sampled June 30, 1997

Date received June 30, 1997

FIELD MEASUREMENTS
Flow 0.16 gpm
Temperature 8.2°C

DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17445

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	17	10	mg/l as $CaCO_3$	D1067-92	07-03-1997 1010	SC
Alkalinity, Bicarbonate	418	5	mg/l as HCO_3	SM2320-B	07-09-1997 0700	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-09-1997 0700	[illegible]
Alkalinity, Total	343	5	mg/l as $CaCO_3$	EPA 310.1	07-09-1997 0700	[illegible]
Anions	9.3	----	meq/l	---------	07-28-1997 1400	RJ
Calcium, Dissolved	81	1	mg/l	EPA 215.1	07-09-1997 1030	MK
Cations	8.3	----	meq/l	---------	07-28-1997 1400	RJ
Chloride	7	10	mg/l	SM4500-Cl-B	07-23-1997 0830	SC
Conductivity	741	1	umhos/cm	SM2510-B	07-22-1997 1230	MK
Hardness, Total	375	----	mg/l as $CaCO_3$	SM2340-B	07-28-1997 1400	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Magnesium, Dissolved	42	10	mg/l	EPA 242.1	07-09-1997 1045	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
pH	7.81	----	pH units	EPA 150.1	07-01-1997 1030	RJ
Potassium, Dissolved	2	1	mg/l	EPA 258.1	07-09-1997 0845	MK
Sodium, Dissolved	18	100	mg/l	EPA 273.1	07-09-1997 0930	MK
Solids, Total Dissolved	520	10	mg/l	EPA 160.1	07-03-1997 0700	JC
Sulfate	110	25	mg/l	EPA 375.4	07-11-1997 1000	SC
Cation/Anion Balance	5.7	----	%		07-28-1997 1400	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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tober 9, 1997

CIFICORP FIELD OFFICE
.O. Box 1005
untington UT 84528

PACIFICORP
OCT - 9 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
IN MINE MAIN NORTH-MAIN EAST

Rec'd 0830 hr.
Sampled 1210 hr.

ind of sample Water
eported to us

ample taken at Deer Creek

ample taken by Energy West/Ken Fleck

Date sampled September 25, 1997

Date received September 26, 1997

FIELD MEASUREMENTS

Flow 0.14 gpm
Temperature 7°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17810

ameter	**Result**	**MRL**	**Units**	**Method**	**Analyzed Date/Time/Analyst**
ity	<10	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300 SC
inity, Bicarbonate	437	5	mg/l as HCO_3	SM2320-B	09-30-1997 1000 SC
linity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1000 SC
linity, Total	358	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1000 SC
	9.3	----	meq/l	---------	10-08-1997 0900 RJ
um, Dissolved	86	1	mg/l	EPA 215.1	10-01-1997 2245 MK
	8.6	----	meq/l	---------	10-08-1997 0900 RJ
ride	7	1	mg/l	SM4500-Cl-B	10-02-1997 1400 SC
nductivity	796	1	umhos/cm	SM2510-B	10-03-1997 0145 MK
ness, Total	392	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900 RJ
Total	<0.1	0.1	mg/l	EPA 236.1	10-01-1997 1945 MK
Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-01-1997 1945 MK
nesium, Dissolved	43	2	mg/l	EPA 242.1	10-01-1997 2300 MK
nese, Total	<0.1	0.1	mg/l	EPA 243.1	10-01-1997 2015 MK
nese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-01-1997 2015 MK
	7.64	----	pH units	EPA 150.1	09-26-1997 1540 SC
sium, Dissolved	3	1	mg/l	EPA 258.1	10-01-1997 2045 MK
m, Dissolved	17	1	mg/l	EPA 273.1	10-01-1997 2115 MK
, Total Dissolved	500	10	mg/l	EPA 160.1	09-29-1997 0700 JC
	93	10	mg/l	EPA 375.4	10-06-1997 0800 SC
Anion Balance	3.6	----	%		10-08-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
IN-MINE MAIN NORTH-MAIN EAST

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KF

Date sampled December 9, 1997

Date received December 9, 1997

Rec'd 1200 hr.
Sampled 0945 hr.

FIELD MEASUREMENTS
Flow 0.14 GPM
Temperature 7°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18153

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	441	5	mg/l as HCO_3	SM2320-B	12-12-1997 0700 JC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-12-1997 0700
Alkalinity, Total	362	5	mg/l as $CaCO_3$	EPA 310.1	12-12-1997 0700 JC
Anions	9.5	----	meq/l	---------	01-02-1998 0930 RJ
Calcium, Dissolved	86	1	mg/l	EPA 215.1	12-11-1997 1200 MK
Cations	8.8	----	meq/l	---------	01-02-1998 0930 RJ
Chloride	7	1	mg/l	SM4500-Cl-B	12-12-1997 1200 SC
Conductivity	804	1	umhos/cm	SM2510-B	12-15-1997 1100 JC
Hardness, Total	404	----	mg/l as $CaCO_3$	SM2340-B	01-02-1998 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	12-11-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	12-11-1997 1000 MK
Magnesium, Dissolved	46	1	mg/l	EPA 242.1	12-11-1997 1215 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-11-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-11-1997 1030 MK
pH	7.73	----	pH units	EPA 150.1	12-09-1998 1400 SC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	12-11-1997 1045 MK
Sodium, Dissolved	16	1	mg/l	EPA 273.1	12-11-1997 1130 MK
Solids, Total Dissolved	480	10	mg/l	EPA 160.1	12-16-1997 0700 JC
Sulfate	98	25	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	-3.4	----	%		01-02-1998 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory

MEMBER ACIL

APPENDIX J

COMMERCIAL TESTING & ENGINEERING CO.
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FAX: (801) 653-2436

February 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
FEB 18 1997
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled January 20, 1997

Date received January 20, 1997

Sample identification by
PACIFICORP FIELD OFFICE

D.C. MINE DISCHARGE (UPDES 002)

Rec'd 1000 hr.
Sampled 0925 hr.
AMENDED DO FIELD MEASUREMENTS

FIELD MEASUREMENTS	
pH	7.34
DO	7.2
Flow	2039 gpm
Conductivity	1029
Temperature	11.4°C

Dissolved metals filtered at lab!
Amended Chloride!

Analysis report no. 59-16936

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	22	10	mg/l as $CaCO_3$	D1067-92	01-22-1997 0830 SW
Alkalinity, Bicarbonate	345	5	mg/l as HCO_3	SM2320-B	01-20-1997 1400 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	01-20-1997 1400 SW
Alkalinity, Total	284	5	mg/l as $CaCO_3$	EPA 310.1	01-20-1997 1400 SW
Anions	14.4	----	meq/l	---------	01-28-1997 1300 RJ
Calcium, Total	94	1	mg/l	EPA 215.1	01-23-1997 1030 MK
Calcium, Dissolved	78	1	mg/l	EPA 215.1	01-23-1997 1030 MK
Cations	13.7	----	meq/l	---------	01-28-1997 1300 RJ
Chloride	63	1	mg/l	SM4500-Cl-B	02-11-1997 1430 SW
Conductivity	1264	1	umhos/cm	SM2510-B	01-22-1997 1400 SW
Hardness, Total	507	----	mg/l as $CaCO_3$	SM2340-B	01-28-1997 1300 RJ
Iron, Total	0.9	0.1	mg/l	EPA 236.1	01-23-1997 0900 MK
Iron, Dissolved	0.3	0.1	mg/l	EPA 236.1	01-23-1997 0900 MK
Magnesium, Total	66	1	mg/l	EPA 242.1	01-23-1997 1045 MK
Magnesium, Dissolved	57	1	mg/l	EPA 242.1	01-23-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	01-23-1997 0915 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	01-23-1997 0915 MK
Oil & Grease	<2	2	mg/l	SM5520-B	01-30-1997 0700 JC
pH	7.59	----	pH units	EPA 150.1	01-20-1997 1415 MK
Potassium, Total	10	1	mg/l	EPA 258.1	01-23-1997 0930 MK
Potassium, Dissolved	8	1	mg/l	EPA 258.1	01-23-1997 0930 MK
Sodium, Total	77	1	mg/l	EPA 273.1	01-23-1997 1000 MK
Sodium, Dissolved	68	1	mg/l	EPA 273.1	01-23-1997 1000 MK
Solids, Total Dissolved	881	10	mg/l	EPA 160.1	01-22-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

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FAX: (801) 653-2436

February 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
FEB 18 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

D.C. MINE DISCHARGE (UPDES 002)

Kind of sample reported to us Water

Rec'd 1000 hr.
Sampled 0925 hr.
AMENDED DO FIELD MEASUREMENTS

FIELD MEASUREMENTS

pH	7.34
DO	7.2
Flow	2039 gpm
Conductivity	1029
Temperature	11.4°C

Sample taken at

Sample taken by Energy West/M.D.

Date sampled January 20, 1997

Date received January 20, 1997

Dissolved metals filtered at lab!
Amended Chloride!

Analysis report no. 59-16936

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	15	5	mg/l	EPA 160.2	01-22-1997 0700 JC
Sulfate	335	20	mg/l	EPA 375.4	01-27-1997 0900 SW
Cation/Anion Balance	2.5	----	%		01-28-1997 1300

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stoll

Huntington Laboratory RG

AMERICAN COUNCIL OF INDEPENDENT LABORATORIES, INC.

COMMERCIAL TESTING & ENGINEERING CO.
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FAX: (801) 653-2436

February 26, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
FEB 26 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE DISCHARGE
UPDES UT-0023604-002

Kind of sample reported to us Water

Rec'd 0920 hr.
Sampled 0751 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled February 10, 1997

Date received February 10, 1997

FIELD MEASUREMENTS

pH	7.18
DO	8.5
Flow	1117 gpm
Conductivity	1094
Temperature	11.5°C

Dissolved metals filtered at lab!

Analysis report no. 59-16972

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	21	10	mg/l as $CaCO_3$	D1067-92	02-17-1997 0900 SW
Alkalinity, Bicarbonate	441	5	mg/l as HCO_3	SM2320-B	02-10-1997 1100 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	02-10-1997 1100 SW
Alkalinity, Total	362	5	mg/l as $CaCO_3$	EPA 310.1	02-10-1997 1100 SW
Anions	14.8	----	meq/l	---------	02-25-1997 1100 RJ
Calcium, Total	128	1	mg/l	EPA 215.1	02-12-1997 1030 MK
Calcium, Dissolved	119	1	mg/l	EPA 215.1	02-12-1997 1030 MK
Cations	14.5	----	meq/l	---------	02-25-1997 1100 RJ
Chloride	18	1	mg/l	SM4500-Cl-B	02-10-1997 1030 SW
Conductivity	1227	1	umhos/cm	SM2510-B	02-10-1997 0900 SW
Hardness, Total	624	----	mg/l as $CaCO_3$	SM2340-B	02-25-1997 1100 RJ
Iron, Total	0.8	0.1	mg/l	EPA 236.1	02-12-1997 0730 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	02-12-1997 0730 MK
Magnesium, Total	74	1	mg/l	EPA 242.1	02-12-1997 1100 MK
Magnesium, Dissolved	68	1	mg/l	EPA 242.1	02-12-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	02-12-1997 0800 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	02-12-1997 0800 MK
Oil & Grease	<2	2	mg/l	SM5520-B	02-12-1997 0700 JC
pH	7.44	----	pH units	EPA 150.1	02-10-1997 1300 JC
Potassium, Total	6	1	mg/l	EPA 258.1	02-12-1997 0830 MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	02-12-1997 0830 MK
Sodium, Total	43	1	mg/l	EPA 273.1	02-12-1997 0900 MK
Sodium, Dissolved	36	1	mg/l	EPA 273.1	02-12-1997 0900 MK
Solids, Total Dissolved	653	10	mg/l	EPA 160.1	02-10-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

AMERICAN COUNCIL OF INDEPENDENT LABORATORIES, INC.

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FAX: (801) 653-2436

February 26, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
FEB 26 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE DISCHARGE
UPDES UT-0023604-002

Kind of sample reported to us Water

Rec'd 0920 hr.
Sampled 0751 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled February 10, 1997

Date received February 10, 1997

FIELD MEASUREMENTS

pH	7.18
DO	8.5
Flow	1117 gpm
Conductivity	1094
Temperature	11.5°C

Dissolved metals filtered at lab!

Analysis report no. 59-16972

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	20	5	mg/l	EPA 160.2	02-10-1997 0700 JC
Sulfate	341	65	mg/l	EPA 375.4	02-24-1997 0900 [illegible]
Cation/Anion Balance	-1.1	----	%		02-25-1997 1100 [illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RG

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March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE
UPDES UT 0023604-002

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1037 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 11, 1997

Date received March 11, 1997

FIELD MEASUREMENTS

pH	7.05
DO	7.9
Flow	700 gpm
Conductivity	1240
Temperature	13.3°C

Analysis report no. 59-17035

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	40	10	mg/l as $CaCO_3$	D1067-92	03-12-1997 0830 SW
Alkalinity, Bicarbonate	471	5	mg/l as HCO_3	SM2320-B	03-12-1997 1300 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-12-1997 1300 SW
Alkalinity, Total	386	5	mg/l as $CaCO_3$	EPA 310.1	03-12-1997 1300 SW
Anions	17.4	----	meq/l	---------	03-27-1997 1545 RJ
Calcium, Total	155	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Calcium, Dissolved	142	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Cations	16.8	----	meq/l	---------	03-27-1997 1545 RJ
Chloride	35	1	mg/l	SM4500-Cl-B	03-18-1997 0800 SW
Conductivity	1530	1	umhos/cm	SM2510-B	03-17-1997 1300 SW
Hardness, Total	708	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1545 RJ
Iron, Total	1.2	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Magnesium, Total	78	1	mg/l	EPA 242.1	03-18-1997 1230 MK
Magnesium, Dissolved	73	1	mg/l	EPA 242.1	03-18-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Oil & Grease	<2	2	mg/l	SM5520-B	03-13-1997 0700 JC
pH	7.32	----	pH units	EPA 150.1	03-11-1997 1245 JC
Potassium, Total	8	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Potassium, Dissolved	7	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Sodium, Total	55	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Sodium, Dissolved	51	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Solids, Total Dissolved	980	10	mg/l	EPA 160.1	03-11-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Terry Trout

Huntington Laboratory

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March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE
UPDES UT 0023604-002

Rec'd 1215 hr.
Sampled 1037 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 11, 1997

Date received March 11, 1997

FIELD MEASUREMENTS

pH	7.05
DO	7.9
Flow	700 gpm
Conductivity	1240
Temperature	13.3°C

Analysis report no. 59-17035

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	41	5	mg/l	EPA 160.2	03-11-1997 0700 JC
Sulfate	419	63	mg/l	EPA 375.4	03-26-1997 0700
Cation/Anion Balance	2.0	----	%		03-27-1997 1545

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scout

Huntington Laboratory LG

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May 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAY - 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Mine Discharge
UPDES UT-0023604-002

Kind of sample reported to us Water

Rec'd 1504 hr.
Sampled 1310 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled April 17, 1997

Date received April 17, 1997

FIELD MEASUREMENTS

pH	7.23
DO	8.8
Flow	2274 gpm
Conductivity	1010
Temperature	12°C

Dissolved metals filtered at lab!

Analysis report no. 59-17111

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	15	10	mg/l as $CaCO_3$	D1067-92	04-24-1997 1300 SW
Alkalinity, Bicarbonate	248	5	mg/l as HCO_3	SM2320-B	04-21-1997 1400 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	04-21-1997 1400 SW
Alkalinity, Total	285	5	mg/l as $CaCO_3$	EPA 310.1	04-21-1997 1400 SW
Anions	13.2	----	meq/l	---------	04-30-1997 1445 RJ
Calcium, Total	94	1	mg/l	EPA 215.1	04-23-1997 1015 MK
Calcium, Dissolved	84	1	mg/l	EPA 215.1	04-23-1997 1015 MK
Cations	15.6	----	meq/l	---------	04-30-1997 1445 RJ
Chloride	52	1	mg/l	SM4500-Cl-B	04-22-1997 0830 SW
Conductivity	1248	1	umhos/cm	SM2510-B	04-23-1997 0800 SW
Hardness, Total	614	----	mg/l as $CaCO_3$	SM2340-B	04-30-1997 1445 RJ]
Iron, Total	1.5	0.1	mg/l	EPA 236.1	04-23-1997 0800 MK
Iron, Dissolved	0.3	.1	mg/l	EPA 236.1	04-23-1997 0800 MK
Magnesium, Total	62	1	mg/l	EPA 242.1	04-23-1997 1030 MK
Magnesium, Dissolved	58	1	mg/l	EPA 242.1	04-23-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	04-23-1997 0830 MK
Manganese, Dissolved	<0.1	.1	mg/l	EPA 243.1	04-23-1997 0830 MK
Oil & Grease	7	2	mg/l	SM5520-B	04-25-1997 0700 JC
pH	7.63	----	pH units	EPA 150.1	04-17-1997 1015 RJ
Potassium, Total	10	1	mg/l	EPA 258.1	04-23-1997 0900 MK
Potassium, Dissolved	9	1	mg/l	EPA 258.1	04-23-1997 0900 MK
Sodium, Total	70	1	mg/l	EPA 273.1	04-23-1997 0915 MK
Sodium, Dissolved	64	1	mg/l	EPA 273.1	04-23-1997 0915 MK
Solids, Total Dissolved	810	10	mg/l	EPA 160.1	04-22-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Frost

Huntington Laboratory RJ

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FAX: (801) 653-2436

May 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAY - 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Mine Discharge
UPDES UT-0023604-002

Kind of sample reported to us Water

Rec'd 1504 hr.
Sampled 1310 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled April 17, 1997

Date received April 17, 1997

FIELD MEASUREMENTS

pH	7.23
DO	8.8
Flow	2274 gpm
Conductivity	1010
Temperature	12°C

Dissolved metals filtered at lab!

Analysis report no. 59-17111

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	153	5	mg/l	EPA 160.2	04-22-1997 0700 JC
Sulfate	366	250	mg/l	EPA 375.4	04-30-1997 0730 SH
Cation/Anion Balance	8.4	----	%		04-30-1997 1445

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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June 19, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUN 25 1997
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled May 12, 1997

Date received May 12, 1997

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Mine
Mine Discharge
UPDES UT-0023604-002
Rec'd 1000 hr.
Sampled 0759 hr.

FIELD MEASUREMENTS

pH	7.19
DO	8.6
Flow	800 gpm
Conductivity	1238
Temperature	12.7°C

NOTE:Dissolved metals filtered at lab!
Amended chlorides!

Analysis report no. 59-17142

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	36	10	mg/l as $CaCO_3$	D1067-92	05-13-1997 1000 RJ
Alkalinity, Bicarbonate	456	5	mg/l as HCO_3	SM2320-B	05-14-1997 0930 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	05-14-1997 0930 RJ
Alkalinity, Total	373	5	mg/l as $CaCO_3$	EPA 310.1	05-14-1997 0930 RJ
Anions	16.6	----	meq/l	---------	06-19-1997 1330 RJ
Calcium, Total	153	1	mg/l	EPA 215.1	06-07-1997 0745 MK
Calcium, Dissolved	144	1	mg/l	EPA 215.1	06-07-1997 0745 MK
Cations	15.3	----	meq/l	---------	06-10-1997 1430 RJ
Chloride	52	1	mg/l	SM4500-Cl-B	06-09-1997 0930 SW
Conductivity	1401	1	umhos/cm	SM2510-B	05-19-1997 1200 MK
Hardness, Total	679	----	mg/l as $CaCO_3$	SM2340-B	06-10-1997 1430 RJ
Iron, Total	0.9	0.1	mg/l	EPA 236.1	06-07-1997 0945 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	06-07-1997 0945 MK
Magnesium, Total	72	1	mg/l	EPA 242.1	06-07-1997 0830 MK
Magnesium, Dissolved	67	1	mg/l	EPA 242.1	06-07-1997 0830 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	06-07-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	06-07-1997 1030 MK
Oil & Grease	<2	2	mg/l	SM5520-B	05-20-1997 0700 JC
pH	7.31	----	pH units	EPA 150.1	05-12-1997 1145 JC
Potassium, Total	5	1	mg/l	EPA 258.1	06-07-1997 1100 MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	06-07-1997 1100 MK
Sodium, Total	38	1	mg/l	EPA 273.1	06-07-1997 1130 MK
Sodium, Dissolved	37	1	mg/l	EPA 273.1	06-07-1997 1130 MK
Solids, Total Dissolved	980	10	mg/l	EPA 160.1	05-13-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RB

COMMERCIAL TESTING & ENGINEERING CO.
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FAX: (801) 653-2436

June 19, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

5
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled May 12, 1997

Date received May 12, 1997

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Mine
Mine Discharge
UPDES UT-0023604-002
Rec'd 1000 hr.
Sampled 0759 hr.

FIELD MEASUREMENTS

pH	7.19
DO	8.6
Flow	800 gpm
Conductivity	1238
Temperature	12.7°C

NOTE:Dissolved metals filtered at lab!
Amended chlorides!

Analysis report no. 59-17142

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	14	5	mg/l	EPA 160.2	05-13-1997 0700 JC
Sulfate	368	125	mg/l	EPA 375.4	05-12-1997 0900 R[illegible]
Cation/Anion Balance	-3.9	----	%		06-19-1997 1330 R[illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory [illegible]

COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (801) 653-2311
FAX: (801) 653-2436

July 2, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

3

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Mine
Mine Discharge
UPDES UT-002364 04-002
Rec'd 1500 hr.
Sampled 1220 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled June 2, 1997

Date received June 2, 1997

FIELD MEASUREMENTS

pH	7.02
DO	8.6
Flow	2050 gpm
Conductivity	1137
Temperature	13.6°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17222

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	24	10	mg/l as $CaCO_3$	D1067-92	06-10-1997 0730 SW
Alkalinity, Bicarbonate	452	5	mg/l as HCO_3	SM2320-B	06-04-1997 1245 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	06-04-1997 1245 RJ
Alkalinity, Total	371	5	mg/l as $CaCO_3$	EPA 310.1	06-04-1997 1245 RJ
Anions	15.1	----	meq/l	---------	06-26-1997 1800 RJ
Calcium, Total	150	1	mg/l	EPA 215.1	06-19-1997 1115 MK
Calcium, Dissolved	130	1	mg/l	EPA 215.1	06-19-1997 1115 MK
Cations	15.5	----	meq/l	---------	06-26-1997 1800 RJ
Chloride	39	1	mg/l	SM4500-Cl-B	06-26-1997 0810 RJ
Conductivity	1257	1	umhos/cm	SM2510-B	06-10-1997 1400 SW
Hardness, Total	671	----	mg/l as $CaCO_3$	SM2340-B	06-26-1997 1800 RJ
Iron, Total	3.0	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Magnesium, Total	72	1	mg/l	EPA 242.1	06-19-1997 1130 MK
Magnesium, Dissolved	64	1	mg/l	EPA 242.1	06-19-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	06-19-1997 0915 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	06-19-1997 0915 MK
Oil & Grease	3	2	mg/l	SM5520-B	06-11-1997 0700 JC
pH	7.50	----	pH units	EPA 150.1	06-03-1997 0900 RJ
Potassium, Total	7	1	mg/l	EPA 258.1	06-19-1997 0945 MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	06-19-1997 0945 MK
Sodium, Total	43	1	mg/l	EPA 273.1	06-19-1997 1030 MK
Sodium, Dissolved	40	1	mg/l	EPA 273.1	06-19-1997 1030 MK
Solids, Total Dissolved	880	10	mg/l	EPA 160.1	06-05-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

July 2, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

-3
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Mine
Mine Discharge
UPDES UT-002364 04-002
Rec'd 1500 hr.
Sampled 1220 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled June 2, 1997

Date received June 2, 1997

FIELD MEASUREMENTS

pH	7.02
DO	8.6
Flow	2050 gpm
Conductivity	1137
Temperature	13.6°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17222

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	334	5	mg/l	EPA 160.2	06-05-1997 0700 JC
Sulfate	315	50	mg/l	EPA 375.4	06-24-1997 0830 [illegible]
Cation/Anion Balance	1.3	----	%		06-26-1997 1800

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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August 12, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 12 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE DISCHARGE
UPDES UT-0023604-002

Kind of sample reported to us Water

Rec'd 1400 hr.
Sampled 1040 hr.

Sample taken at DEER CREEK

Sample taken by ENERGY WEST/MBD

Date sampled July 14, 1997

Date received July 14, 1997

FIELD MEASUREMENTS

pH	7.21
DO	8.5
Flow	1372 gpm
Conductivity	887
Temperature	13.2°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17479

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	32	10	mg/l as $CaCO_3$	D1067-92	07-18-1997 0730 SC
Alkalinity, Bicarbonate	416	5	mg/l as HCO_3	SM2320-B	07-18-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-18-1997 0900 SC
Alkalinity, Total	341	5	mg/l as $CaCO_3$	EPA 310.1	07-18-1997 0900 SC
Anions	11.3	----	meq/l	---------	08-07-1997 1400 RJ
Calcium, Total	117	1	mg/l	EPA 215.1	08-07-1997 1100 MK
Calcium, Dissolved	98	1	mg/l	EPA 215.1	08-07-1997 1100 MK
Cations	12.8	----	meq/l	---------	08-07-1997 1400 RJ
Chloride	14	1	mg/l	SM4500-Cl-B	08-01-1997 0720 SC
Conductivity	1019	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	552	----	mg/l as $CaCO_3$	SM2340-B	08-07-1997 1400 RJ
Iron, Total	1.2	0.1	mg/l	EPA 236.1	08-07-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-07-1997 0800 MK
Magnesium, Total	63	1	mg/l	EPA 242.1	08-07-1997 1130 MK
Magnesium, Dissolved	53	1	mg/l	EPA 242.1	08-07-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-07-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-07-1997 0830 MK
Oil & Grease	<2	2	mg/l	SM5520-B	07-17-1997 0700 JC
pH	7.42	----	pH units	EPA 150.1	07-15-1997 0900 SC
Potassium, Total	6	1	mg/l	EPA 258.1	08-07-1997 0900 MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	08-07-1997 0900 MK
Sodium, Total	38	1	mg/l	EPA 273.1	08-07-1997 1000 MK
Sodium, Dissolved	29	1	mg/l	EPA 273.1	08-07-1997 1000 MK
Solids, Total Dissolved	670	10	mg/l	EPA 160.1	07-21-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

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August 12, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 12 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE DISCHARGE
UPDES UT-0023604-002

Rec'd 1400 hr.
Sampled 1040 hr.

Kind of sample reported to us Water

Sample taken at DEER CREEK

Sample taken by ENERGY WEST/MBD

Date sampled July 14, 1997

Date received July 14, 1997

FIELD MEASUREMENTS

pH	7.21
DO	8.5
Flow	1372 gpm
Conductivity	887
Temperature	13.2°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17479

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	149	5	mg/l	EPA 160.2	07-21-1997 0700 JC
Sulfate	197	50	mg/l	EPA 375.4	07-29-1997 0715 S
Cation/Anion Balance	6.3	----	%		08-07-1997 1400 R

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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August 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE UPDES UT-0023604-002

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/MBD

Date sampled August 12, 1997

Date received August 12, 1997

Rec'd 1100 hr.
Sampled 0630 hr.

FIELD MEASUREMENTS

pH	7.10
DO	6.9
Flow	1078 gpm
Conductivity	987
Temperature	14°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17577

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	56	10	mg/l as $CaCO_3$	D1067-92	08-13-1997 1000 SC
Alkalinity, Bicarbonate	462	5	mg/l as HCO_3	SM2320-B	08-15-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-15-1997 0730 SC
Alkalinity, Total	379	5	mg/l as $CaCO_3$	EPA 310.1	08-15-1997 0730 SC
Anions	14.1	----	meq/l	---------	08-25-1997 1500 RJ
Calcium, Total	126	1	mg/l	EPA 215.1	08-15-1997 1100 RJ
Calcium, Dissolved	113	1	mg/l	EPA 215.1	08-15-1997 1100 RJ
Cations	13.1	----	meq/l	---------	08-25-1997 1500 RJ
Chloride	13	1	mg/l	SM4500-Cl-B	08-13-1997 1400 SC
Conductivity	1130	1	umhos/cm	SM2510-B	08-25-1997 1300 RJ
Hardness, Total	578	----	mg/l as $CaCO_3$	SM2340-B	08-25-1997 1500 RJ
Iron, Total	0.7	0.1	mg/l	EPA 236.1	08-15-1997 1340 RJ
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-15-1997 1340 RJ
Magnesium, Total	64	1	mg/l	EPA 242.1	08-15-1997 1120 RJ
Magnesium, Dissolved	58	1	mg/l	EPA 242.1	08-15-1997 1120 RJ
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-15-1997 1410 RJ
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-15-1997 1410 RJ
Oil & Grease	<2	2	mg/l	SM5520-B	08-27-1997 0700 JC
pH	7.32	----	pH units	EPA 150.1	08-12-1997 1345 SC
Potassium, Total	6	1	mg/l	EPA 258.1	08-15-1997 1210 RJ
Potassium, Dissolved	6	1	mg/l	EPA 258.1	08-15-1997 1210 RJ
Sodium, Total	33	1	mg/l	EPA 273.1	08-15-1997 1230 RJ
Sodium, Dissolved	30	1	mg/l	EPA 273.1	08-15-1997 1230 RJ
Solids, Total Dissolved	780	10	mg/l	EPA 160.1	08-13-1997 0700 JC

PACIFI
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FIELD

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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August 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE UPDES UT-0023604-002

Rec'd 1100 hr.
Sampled 0630 hr.

Kind of sample reported to us	Water
Sample taken at	Deer Creek
Sample taken by	Energy West/MBD
Date sampled	August 12, 1997
Date received	August 12, 1997

FIELD MEASUREMENTS

pH	7.10
DO	6.9
Flow	1078 gpm
Conductivity	987
Temperature	14°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17577

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	11	5	mg/l	EPA 160.2	08-13-1997 0700 JC
Sulfate	295	167	mg/l	EPA 375.4	08-25-1997 0730 [illegible]
Cation/Anion Balance	-3.4	----	%		08-25-1997 1500 [illegible]

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SEP 2 1997
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November 7, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 7 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1130 hr.
Sampled 0722 hr.

Kind of sample reported to us Water

Sample taken at DEER CREEK

Sample taken by ENERGY WEST/MBD

Date sampled September 5, 1997

Date received September 5, 1997

FIELD MEASUREMENTS

pH	7.11
DO	5.5
Flow	941 GPM
Conductivity	1000
Temperature	13.9°C

Dissolved metals filtered at lab!

Analysis report no. 59-17698

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	17	10	mg/l as $CaCO_3$	D1067-92	09-10-1997 0900 RJ
Alkalinity, Bicarbonate	454	5	mg/l as HCO_3	SM2320-B	09-08-1997 0745 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-08-1997 0745 SC
Alkalinity, Total	372	5	mg/l as $CaCO_3$	EPA 310.1	09-08-1997 0745 SC
Anions	12.6	----	meq/l	---------	09-18-1997 1200 RJ
Calcium, Dissolved	114	1	mg/l	EPA 215.1	09-11-1997 0330 MK
Calcium, Total	130	1	mg/l	EPA 215.1	09-11-1997 0330 MK
Cations	14.7	----	meq/l	---------	09-18-1997 1200 RJ
Chloride	15	1	mg/l	SM4500-Cl-B	09-17-1997 1030 SC
Conductivity	1127	1	umhos/cm	SM2510-B	09-22-1997 1000 SC
Hardness, Total	588	----	mg/l as $CaCO_3$	SM2340-B	09-18-1997 1200 RJ
Iron, Total	1.4	0.1	mg/l	EPA 236.1	09-11-1997 0115 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	09-11-1997 0115 MK
Magnesium, Dissolved	57	1	mg/l	EPA 242.1	09-11-1997 0400 MK
Magnesium, Total	64	1	mg/l	EPA 242.1	09-11-1997 0400 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	09-11-1997 0145 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-11-1997 0145 MK
Oil & Grease	<2	2	mg/l	SM5520-B	09-09-1997 0700 JC
pH	7.29	----	pH units	EPA 150.1	09-05-1997 1300 SC
Potassium, Dissolved	6	1	mg/l	EPA 258.1	09-11-1997 0200 MK
Potassium, Total	7	1	mg/l	EPA 258.1	09-11-1997 0200 MK
Sodium, Dissolved	31	1	mg/l	EPA 273.1	09-11-1997 0245 MK
Sodium, Total	34	1	mg/l	EPA 273.1	09-11-1997 0245 MK
Solids, Total Dissolved	760	10	mg/l	EPA 160.1	09-05-1997 0700 JC

Respectfully submitted,
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November 7, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 7 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1130 hr.
Sampled 0722 hr.

Kind of sample reported to us Water

Sample taken at DEER CREEK

Sample taken by ENERGY WEST/MBD

Date sampled September 5, 1997

Date received September 5, 1997

FIELD MEASUREMENTS

pH	7.11
DO	5.5
Flow	941 GPM
Conductivity	1000
Temperature	13.9°C

Dissolved metals filtered at lab!

Analysis report no. 59-17698

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	50	5	mg/l	EPA 160.2	09-05-1997 0700 JC
Sulfate	229	50	mg/l	EPA 375.4	09-15-1997 0900 SC
Cation/Anion Balance	7.6	----	%		09-18-1997 1200

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

November 4, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1230 hr.
Sampled 0740 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/MBD

Date sampled October 14, 1997

Date received October 14, 1997

FIELD MEASUREMENTS

pH	7.28
DO	7.2
Flow	803 GPM
Conductivity	959
Temperature	12.8°C

NOTE:Dissolved metals filtered at lab

Analysis report no. 59-17926

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	16	10	mg/l as $CaCO_3$	D1067-92	10-16-1997 1030 SC
Alkalinity, Bicarbonate	446	5	mg/l as HCO_3	SM2320-B	10-23-1997 1600 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 1600 RJ
Alkalinity, Total	366	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 1600 RJ
Anions	12.6	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Total	116	1	mg/l	EPA 215.1	10-19-1997 1215 MK
Calcium, Dissolved	108	1	mg/l	EPA 215.1	10-19-1997 1215 MK
Cations	12.1	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	12	1	mg/l	SM4500-Cl-B	10-30-1997 1215 SC
Conductivity	1068	1	umhos/cm	SM2510-B	10-21-1997 1500 SC
Hardness, Total	537	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	0.9	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Magnesium, Total	60	1	mg/l	EPA 242.1	10-19-1997 1230 MK
Magnesium, Dissolved	56	1	mg/l	EPA 242.1	10-19-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
Oil & Grease	<2	2	mg/l	SM5520-B	10-24-1997 0700 JC
pH	7.15	----	pH units	EPA 150.1	10-15-1997 0800 SC
Potassium, Total	6	1	mg/l	EPA 258.1	10-19-1997 1130 MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	10-19-1997 1130 MK
Sodium, Total	29	1	mg/l	EPA 273.1	10-19-1997 1145 MK
Sodium, Dissolved	28	1	mg/l	EPA 273.1	10-19-1997 1145 MK
Solids, Total Dissolved	720	10	mg/l	EPA 160.1	10-20-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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November 4, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1230 hr.
Sampled 0740 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/MBD

Date sampled October 14, 1997

Date received October 14, 1997

FIELD MEASUREMENTS

pH	7.28
DO	7.2
Flow	803 GPM
Conductivity	959
Temperature	12.8°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-17926

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	10-20-1997 0700 JC
Sulfate	238	50	mg/l	EPA 375.4	10-27-1997 0800 SC
Cation/Anion Balance	-1.9	----	%		11-03-1997 0930

Respectfully submitted,
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FAX: (801) 653-2436

December 15, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1430 hr.
Sampled 1114 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek Mine

Sample taken by Energy West/MBD

Date sampled November 13, 1997

Date received November 13, 1997

FIELD MEASUREMENTS

pH	8.06
DO	5.8
Flow	1960 gpm
Conductivity	941
Temperature	11.5°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-18084

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-19-1997 1300 SC
Alkalinity, Bicarbonate	365	5	mg/l as HCO_3	SM2320-B	11-17-1997 1130 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-17-1997 1130 SC
Alkalinity, Total	299	5	mg/l as $CaCO_3$	EPA 310.1	11-17-1997 1130 SC
Anions	12.2	----	meq/l	---------	12-11-1997 1100 RJ
Calcium, Total	90	1	mg/l	EPA 215.1	11-17-1997 2300 MK
Calcium, Dissolved	81	1	mg/l	EPA 215.1	11-17-1997 2300 MK
Cations	11.8	----	meq/l	---------	12-11-1997 1100 RJ
Chloride	22	1	mg/l	SM4500-Cl-B	11-19-1997 0930 SC
Conductivity	1042	1	umhos/cm	SM2510-B	11-14-1997 1700 MK
Hardness, Total	455	----	mg/l as $CaCO_3$	SM2340-B	12-11-1997 1100 RJ
Iron, Total	0.6	0.1	mg/l	EPA 236.1	11-17-1997 2000 MK
Iron, Dissolved	0.2	0.1	mg/l	EPA 236.1	11-17-1997 2000 MK
Magnesium, Total	56	1	mg/l	EPA 242.1	11-18-1997 1200 MK
Magnesium, Dissolved	51	1	mg/l	EPA 242.1	11-18-1997 1200 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-17-1997 2100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-17-1997 2100 MK
Oil & Grease	3	2	mg/l	SM5520-B	11-19-1997 0700 JC
pH	7.48	----	pH units	EPA 150.1	11-13-1997 1500 SC
Potassium, Total	7	1	mg/l	EPA 258.1	11-17-1997 2130 MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	11-17-1997 2130 MK
Sodium, Total	57	1	mg/l	EPA 273.1	11-17-1997 2200 MK
Sodium, Dissolved	53	1	mg/l	EPA 273.1	11-17-1997 2200 MK
Solids, Total Dissolved	680	10	mg/l	EPA 160.1	11-20-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

December 15, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK MINE
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1430 hr.
Sampled 1114 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek Mine

Sample taken by Energy West/MBD

Date sampled November 13, 1997

Date received November 13, 1997

FIELD MEASUREMENTS

pH	8.06
DO	5.8
Flow	1960 gpm
Conductivity	941
Temperature	11.5°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-18084

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	16	5	mg/l	EPA 160.2	11-20-1997 0700 JC
Sulfate	271	125	mg/l	EPA 375.4	12-10-1997 1230 SC
Cation/Anion Balance	-2.0	----	%		12-11-1997 1100

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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December 17, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1430 hr.
Sampled 0850 hr.

Kind of sample reported to us Water

Sample taken at DEER CREEK

Sample taken by Energy West/MBD

Date sampled December 4, 1997

Date received December 4, 1997

FIELD MEASUREMENTS

pH	7.94
Flow	745 gpm
Conductivity	980
Temperature	12.2°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18144

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	12	10	mg/l as $CaCO_3$	D1067-92	12-08-1997 0800 SC
Alkalinity, Bicarbonate	399	5	mg/l as HCO_3	SM2320-B	12-08-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-08-1997 0900 SC
Alkalinity, Total	327	5	mg/l as $CaCO_3$	EPA 310.1	12-08-1997 0900 SC
Anions	12.9	----	meq/l	---------	12-11-1997 1100 RJ
Barium, Total	95	1	mg/l	EPA 215.1	12-08-1997 1445 MK
Barium, Dissolved	88	1	mg/l	EPA 215.1	12-08-1997 1445 MK
Cations	12.3	----	meq/l	---------	12-11-1997 1100 RJ
Chloride	33	1	mg/l	SM4500-Cl-B	12-05-1997 1300 SC
Conductivity	1104	1	umhos/cm	SM2510-B	12-15-1997 1100 JC
Hardness, Total	480	----	mg/l as $CaCO_3$	SM2340-B	12-11-1997 1100 RJ
Iron, Total	0.7	0.1	mg/l	EPA 236.1	12-08-1997 1200 MK
Iron, Dissolved	0.2	0.1	mg/l	EPA 236.1	12-08-1997 1200 MK
Magnesium, Total	59	1	mg/l	EPA 242.1	12-08-1997 1515 MK
Magnesium, Dissolved	54	1	mg/l	EPA 242.1	12-08-1997 1515 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-08-1997 1215 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-08-1997 1215 MK
Oil & Grease	<2	2	mg/l	SM5520-B	12-10-1997 0700 JC
pH	7.64	----	pH units	EPA 150.1	12-04-1997 2230 MK
Potassium, Total	7	1	mg/l	EPA 258.1	12-08-1997 1245 MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	12-08-1997 1245 MK
Sodium, Total	57	1	mg/l	EPA 273.1	12-08-1997 1300 MK
Sodium, Dissolved	53	1	mg/l	EPA 273.1	12-08-1997 1300 MK
Solids, Total Dissolved	710	10	mg/l	EPA 160.1	12-08-1997 0700 JC

Respectfully submitted,
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December 17, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
MINE DISCHARGE
UPDES UT-0023604-002
Rec'd 1430 hr.
Sampled 0850 hr.

Kind of sample reported to us Water

Sample taken at DEER CREEK

Sample taken by Energy West/MBD

Date sampled December 4, 1997

Date received December 4, 1997

FIELD MEASUREMENTS

pH	7.94
Flow	745 gpm
Conductivity	980
Temperature	12.2°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18144

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	16	5	mg/l	EPA 160.2	12-08-1997 0700 JC
Nitrate	263	50	mg/l	EPA 375.4	12-10-1997 0800 SC
Cation/Anion Balance	-2.7	----	%		12-11-1997 1100

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

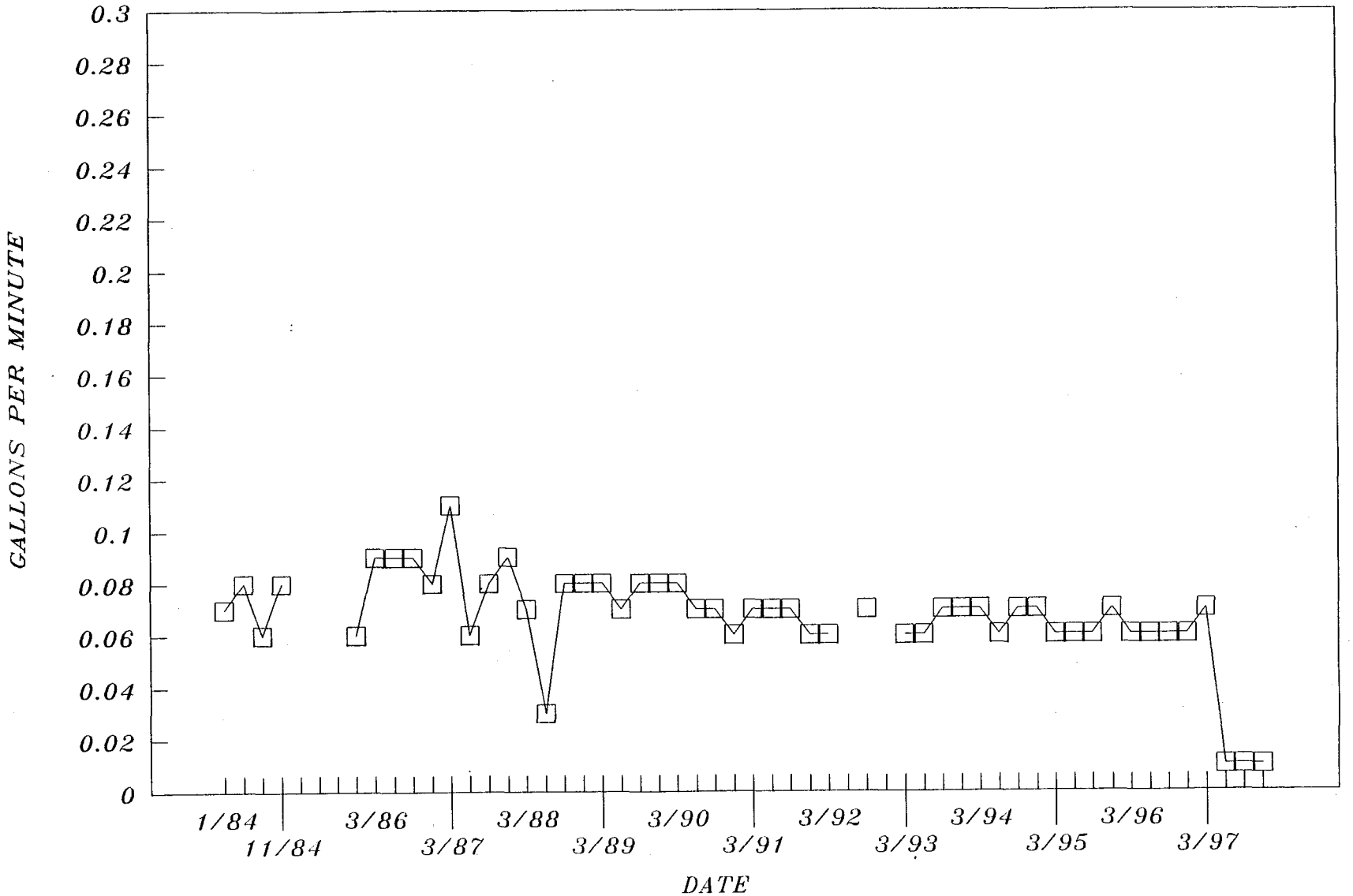
Huntington Laboratory

MEMBER ACIL

APPENDIX K

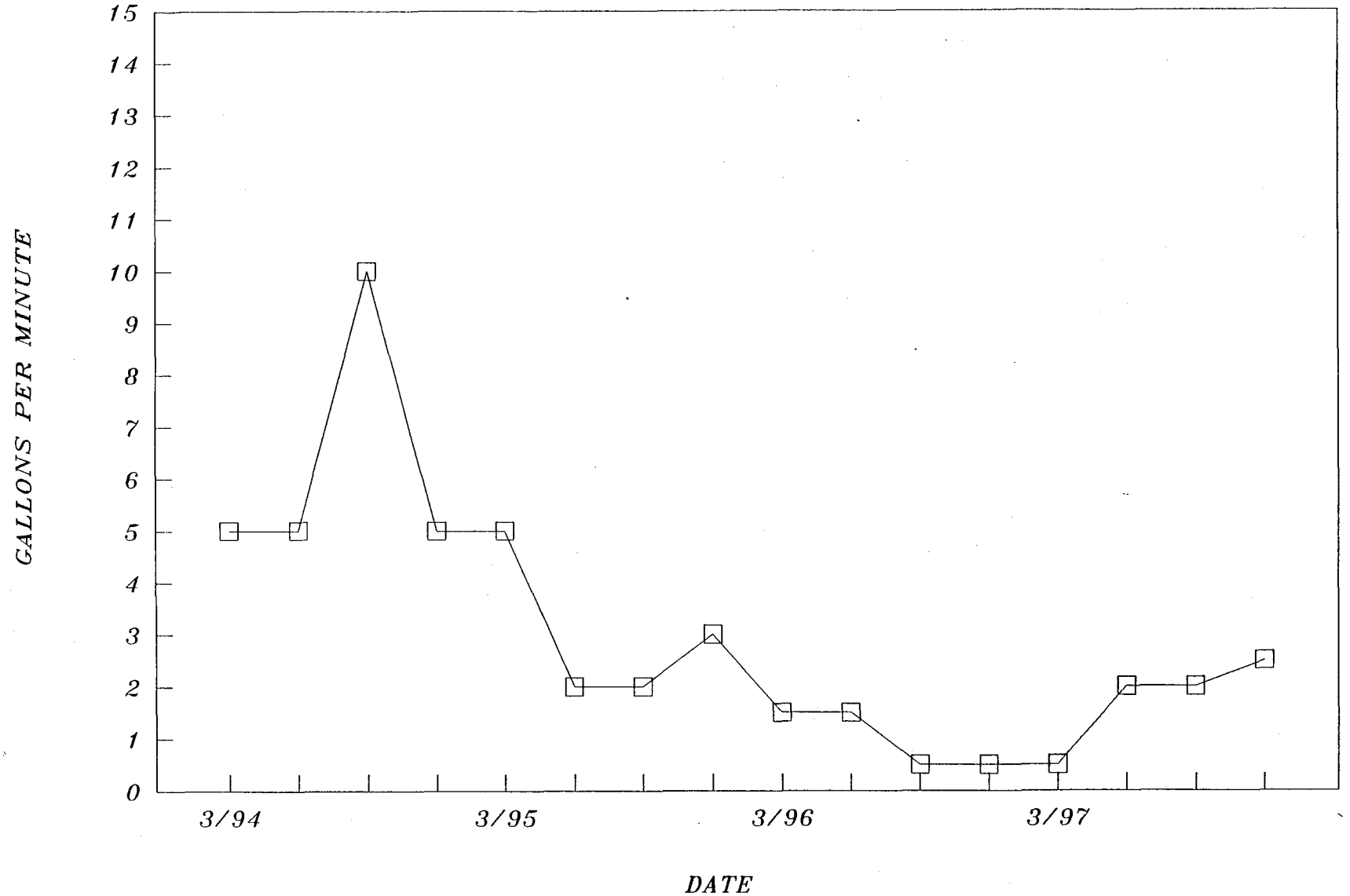
WILBERG/COTTONWOOD IN-MINE 2nd S. xc-11

1984-1997

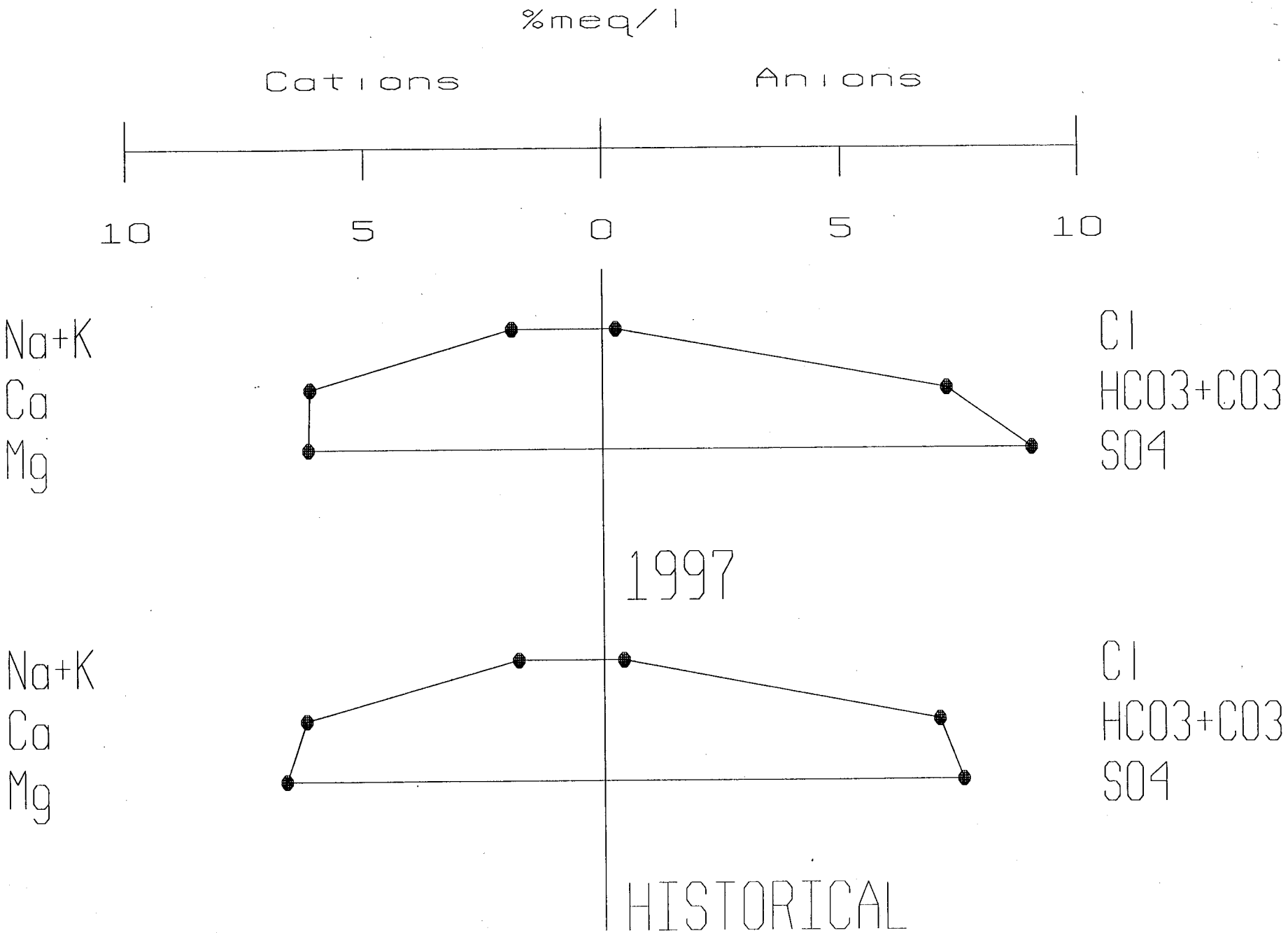


WILBERG/COTTONWOOD IN-MINE: TMA

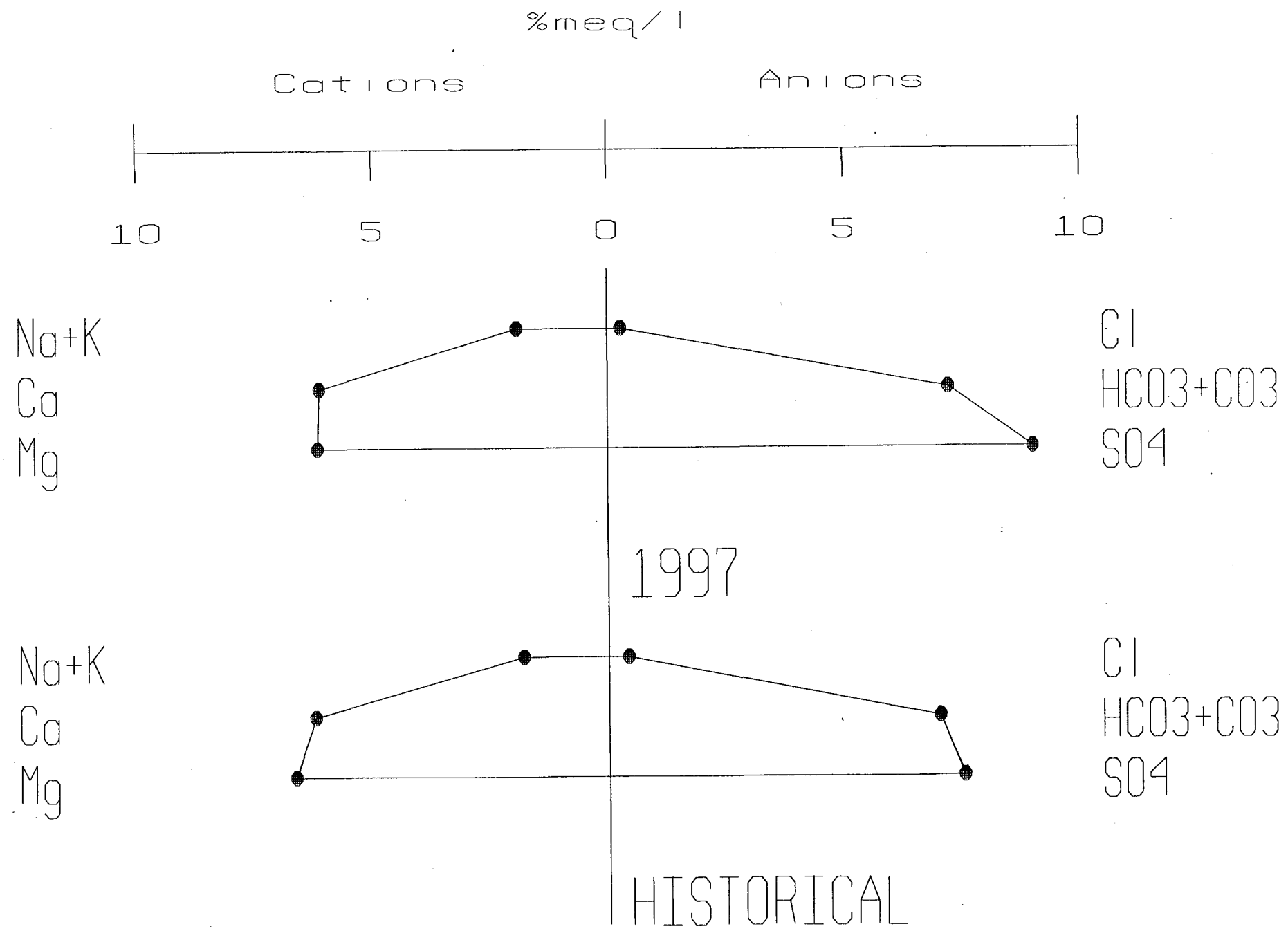
1994-1997



Cottonwood In-mine (TMA xc-32)



Cottonwood In-mine (TMA xc-32)



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April 16, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/CW IN MINE 2ND SOUTH XC-11

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Energy West/M.D.

Date sampled: March 11, 1997

Date received: March 13, 1997

Rec'd 1145 hr.
Sampled 1500 hr.

FIELD MEASUREMENTS
Flow 0.1 gpm
Temperature 14.0°C

NOTE:Acidity reran, amended results!
NOTE:pH expired when received!
NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17045

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	31	10	mg/l as $CaCO_3$	D1067-92	04-15-1997 0900 SW
Alkalinity, Bicarbonate	620	5	mg/l as HCO_3	SM2320-B	03-17-1997 1000 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-17-1997 1000 SW
Alkalinity, Total	508	5	mg/l as $CaCO_3$	EPA 310.1	03-17-1997 1000 SW
Anions	19.5	----	meq/l	---------	03-27-1997 1600 RJ
Calcium, Dissolved	164	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Cations	17.5	----	meq/l	---------	03-27-1997 1600 RJ
Chloride	16	1	mg/l	SM4500-Cl-B	03-18-1997 0800 SW
Conductivity	1641	1	umhos/cm	SM2510-B	03-17-1997 1300 SW
Hardness, Total	830	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1600 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Magnesium, Dissolved	102	2	mg/l	EPA 242.1	03-18-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
pH	7.07	----	pH units	EPA 150.1	03-14-1997 0800 JC
Potassium, Dissolved	4	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Sodium, Dissolved	20	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Solids, Total Dissolved	1070	10	mg/l	EPA 160.1	03-18-1997 0730 JC
Sulfate	426	125	mg/l	EPA 375.4	03-26-1997 0700 SW
Cation/Anion Balance	-5.2	----	%		03-27-1997 1600 RJ

PACIFICORP
APR 16 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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July 30, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/CW IN-MINE 2ND

Rec'd 0900 hr.
Sampled 1325 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/Mike

Date sampled June 26, 1997

Date received June 27, 1997

FIELD MEASUREMENTS
Flow <0.01 gpm
Temperature 7.0°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17423

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	06-28-1997 2235 RJ
Alkalinity, Bicarbonate	603	5	mg/l as HCO_3	SM2320-B	07-08-1997 0800 [illegible]
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-08-1997 0800 [illegible]
Alkalinity, Total	494	5	mg/l as $CaCO_3$	EPA 310.1	07-08-1997 0800 SC
Anions	20.0	----	meq/l	---------	07-29-1997 1300 RJ
Calcium, Dissolved	168	1	mg/l	EPA 215.1	07-09-1997 1030 MK
Cations	18.6	----	meq/l	---------	07-29-1997 1300 RJ
Chloride	15	1	mg/l	SM4500-Cl-B	07-23-1997 0830 SC
Conductivity	1487	1	umhos/cm	SM2510-B	06-30-1997 0630 RJ
Hardness, Total	860	----	mg/l as $CaCO_3$	SM2340-B	07-29-1997 1300 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745 MK
Magnesium, Dissolved	107	2	mg/l	EPA 242.1	07-09-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815 MK
pH	7.28	----	pH units	EPA 150.1	06-27-1997 1020 RJ
Potassium, Dissolved	4	1	mg/l	EPA 258.1	07-09-1997 0845 MK
Sodium, Dissolved	30	1	mg/l	EPA 273.1	07-09-1997 0930 MK
Solids, Total Dissolved	1090	10	mg/l	EPA 160.1	07-02-1997 0700 JC
Sulfate	464	1	mg/l	EPA 375.4	07-11-1997 1000 SC
Cation/Anion Balance	3.6	----	%		07-29-1997 1300 RJ

PACIFICORP
JUL 31 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

October 9, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

OCT - 9 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD
IN MINE 2ND SOUTH XC-11

Rec'd 1220 hr.
Sampled 0940 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/Tom Lloyd

Date sampled September 24, 1997

Date received September 24, 1997

FIELD MEASUREMENTS

Flow	>0.1 gpm
Temperature	14.3°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17803

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	22	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300	SC
Alkalinity, Bicarbonate	609	5	mg/l as HCO_3	SM2320-B	09-30-1997 1000	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1000	SC
Alkalinity, Total	500	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1000	SC
Anions	18.1	----	meq/l	---------	10-08-1997 0900	RJ
Calcium, Dissolved	160	1	mg/l	EPA 215.1	09-25-1997 2030	MK
Cations	17.1	----	meq/l	---------	10-08-1997 0900	RJ
Chloride	12	1	mg/l	SM4500-Cl-B	10-02-1997 1305	SC
Conductivity	1501	1	umhos/cm	SM2510-B	10-03-1997 0145	MK
Hardness, Total	803	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900	RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	09-25-1997 1830	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	09-25-1997 1830	MK
Magnesium, Dissolved	98	2	mg/l	EPA 242.1	09-25-1997 2100	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845	MK
pH	6.90	----	pH units	EPA 150.1	09-24-1997 1500	SC
Potassium, Dissolved	4	1	mg/l	EPA 258.1	09-25-1997 1915	MK
Sodium, Dissolved	22	1	mg/l	EPA 273.1	09-25-1997 1945	MK
Solids, Total Dissolved	1100	10	mg/l	EPA 160.1	09-29-1997 0700	JC
Sulfate	372	250	mg/l	EPA 375.4	10-06-1997 0800	SC
Cation/Anion Balance	2.7	----	%		10-08-1997 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

January 12, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD
IN-MINE 2ND SOUTH XC-11

Kind of sample reported to us Water

Rec'd 1500 hr.
Sampled 1225 hr.

Sample taken at WB/CTW

Sample taken by Energy West/Tom Lloyd

Date sampled December 22, 1997

Date received December 22, 1997

FIELD MEASUREMENTS
Flow .01 gpm
Temperature 6.7°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-18174

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	613	5	mg/l as HCO_3	SM2320-B	12-24-1997 1200 JC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-24-1997 1200
Alkalinity, Total	502	5	mg/l as $CaCO_3$	EPA 310.1	12-24-1997 1200
Anions	19.3	----	meq/l	---------	01-08-1998 1500 RJ
Calcium, Dissolved	148	1	mg/l	EPA 215.1	01-08-1998 1015 MK
Cations	16.6	----	meq/l	---------	01-08-1998 1500 RJ
Chloride	6	1	mg/l	SM4500-Cl-B	12-23-1997 1030 JC
Conductivity	1512	1	umhos/cm	SM2510-B	12-24-1997 1200 RJ
Hardness, Total	781	----	mg/l as $CaCO_3$	SM2340-B	01-08-1998 1500 RJ
Iron, Total	<0.1	.1	mg/l	EPA 236.1	01-08-1998 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	01-08-1998 0745 MK
Magnesium, Dissolved	100	2	mg/l	EPA 242.1	01-08-1998 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	01-08-1998 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	01-08-1998 0830 MK
pH	7.12	----	pH units	EPA 150.1	12-23-1997 0700 JC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	01-08-1998 0845 MK
Sodium, Dissolved	20	1	mg/l	EPA 273.1	01-08-1998 0900 MK
Solids, Total Dissolved	1100	10	mg/l	EPA 160.1	12-23-1997 0700 JC
Sulfate	436	250	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	-7.6	----	%		01-08-1998 1500 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stewart

Huntington Laboratory RJ

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FAX: (801) 653-2436

April 16, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/CW IN MINE TMA

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Energy West/M.D.

Date sampled: March 11, 1997

Date received: March 13, 1997

Rec'd 1145 hr.
Sampled 1432 hr.

FIELD MEASUREMENTS
Flow 2.0 gpm
Temperature 12.0°C

NOTE:Acidity reran, amended results!
NOTE:pH expired when received!
NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17044

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	15	10	mg/l as $CaCO_3$	D1067-92	04-15-1997 0900 SW
Alkalinity, Bicarbonate	449	5	mg/l as HCO_3	SM2320-B	03-17-1997 1000 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-17-1997 1000 SW
Alkalinity, Total	368	5	mg/l as $CaCO_3$	EPA 310.1	03-17-1997 1000 SW
Anions	15.4	----	meq/l	---------	03-27-1997 1600 RJ
Calcium, Dissolved	114	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Cations	13.6	----	meq/l	---------	03-27-1997 1600 RJ
Chloride	13	1	mg/l	SM4500-Cl-B	03-18-1997 0800 SW
Conductivity	1332	1	umhos/cm	SM2510-B	03-17-1997 1300 SW
Hardness, Total	581	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1600 RJ
Iron, Total	0.8	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Magnesium, Dissolved	72	1	mg/l	EPA 242.1	03-18-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
pH	7.28	----	pH units	EPA 150.1	03-14-1997 0800 JC
Potassium, Dissolved	6	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Sodium, Dissolved	42	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Solids, Total Dissolved	860	10	mg/l	EPA 160.1	03-18-1997 0730 JC
Sulfate	369	125	mg/l	EPA 375.4	03-26-1997 0700 SW
Cation/Anion Balance	-6.3	----	%		03-27-1997 1600 RJ

PACIFICORP
APR 16 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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July 30, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/CW IN-MINE TMA

Kind of sample reported to us Water

Rec'd 0900 hr.
Sampled 1305 hr.

Sample taken at

FIELD MEASUREMENTS
Flow 2.0 gpm
Temperature 12°C

Sample taken by ENERGY WEST/TOM LLOYD

Date sampled June 26, 1997

Date received June 27, 1997

DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17425

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	23	10	mg/l as $CaCO_3$	D1067-92	06-28-1997 2235 RJ
Alkalinity, Bicarbonate	439	5	mg/l as HCO_3	SM2320-B	07-09-1997 0700 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-09-1997 0700
Alkalinity, Total	360	5	mg/l as $CaCO_3$	EPA 310.1	07-09-1997 0700 SC
Anions	16.7	----	meq/l	---------	07-28-1997 1400 RJ
Calcium, Dissolved	125	1	mg/l	EPA 215.1	07-09-1997 1030 MK
Cations	14.6	----	meq/l	---------	07-28-1997 1400 RJ
Chloride	12	10	mg/l	SM4500-Cl-B	07-23-1997 0830 SC
Conductivity	1265	1	umhos/cm	SM2510-B	06-30-1997 0630 RJ
Hardness, Total	629	----	mg/l as $CaCO_3$	SM2340-B	07-28-1997 1400 RJ
Iron, Total	1.2	0.1	mg/l	EPA 236.1	07-09-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745 MK
Magnesium, Dissolved	77	10	mg/l	EPA 242.1	07-09-1997 1045 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815 MK
pH	7.37	----	pH units	EPA 150.1	06-27-1997 1020 RJ
Potassium, Dissolved	7	1	mg/l	EPA 258.1	07-09-1997 0845 MK
Sodium, Dissolved	42	100	mg/l	EPA 273.1	07-09-1997 0930 MK
Solids, Total Dissolved	920	10	mg/l	EPA 160.1	07-02-1997 0700 JC
Sulfate	439	125	mg/l	EPA 375.4	07-11-1997 1000 SC
Cation/Anion Balance	6.7	----	%		07-28-1997 1400 RJ

PACIFICORP
31 1997

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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October 9, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
OCT - 9 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD
IN MINE TMA

Rec'd 1220 hr.
Sampled 1010 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/Tom Lloyd

Date sampled September 24, 1997

Date received September 24, 1997

FIELD MEASUREMENTS

Flow 2.0 gpm
Temperature 12.3°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17804

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	22	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300 SC
Alkalinity, Bicarbonate	437	5	mg/l as HCO_3	SM2320-B	09-30-1997 1000 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1000 SC
Alkalinity, Total	358	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1000 SC
Anions	17.6	----	meq/l	---------	10-08-1997 0900 RJ
Calcium, Dissolved	126	1	mg/l	EPA 215.1	09-25-1997 2030 MK
Cations	14.5	----	meq/l	---------	10-08-1997 0900 RJ
Chloride	9	1	mg/l	SM4500-Cl-B	10-02-1997 1400 SC
Conductivity	1321	1	umhos/cm	SM2510-B	10-03-1997 0145 MK
Hardness, Total	632	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900 RJ
Iron, Total	1.6	0.1	mg/l	EPA 236.1	09-25-1997 1830 MK
Iron, Dissolved	0.2	0.1	mg/l	EPA 236.1	09-25-1997 1830 MK
Magnesium, Dissolved	77	2	mg/l	EPA 242.1	09-25-1997 2100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845 MK
pH	7.10	----	pH units	EPA 150.1	09-24-1997 1500 SC
Potassium, Dissolved	7	1	mg/l	EPA 258.1	09-25-1997 1915 MK
Sodium, Dissolved	40	1	mg/l	EPA 273.1	09-25-1997 1945 MK
Solids, Total Dissolved	970	10	mg/l	EPA 160.1	09-29-1997 0700 JC
Sulfate	491	125	mg/l	EPA 375.4	10-06-1997 0800 SC
Cation/Anion Balance	9.6	----	%		10-08-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

January 12, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD
IN-MINE TMA

Rec'd 1500 hr.
Sampled 1210 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/Tom Lloyd

Date sampled December 22, 1997

Date received December 22, 1997

FIELD MEASUREMENTS
Flow 2.5 gpm
Temperature 13.7°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-18175

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	25	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900	RJ
Alkalinity, Bicarbonate	434	5	mg/l as HCO_3	SM2320-B	12-24-1997 1200	JC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-24-1997 1200	
Alkalinity, Total	356	5	mg/l as $CaCO_3$	EPA 310.1	12-24-1997 1200	
Anions	16.2	----	meq/l	---------	01-08-1998 1500	RJ
Calcium, Dissolved	126	1	mg/l	EPA 215.1	01-08-1998 1015	MK
Cations	14.2	----	meq/l	---------	01-08-1998 1500	RJ
Chloride	7	1	mg/l	SM4500-Cl-B	12-23-1997 1030	JC
Conductivity	1352	1	umhos/cm	SM2510-B	12-24-1997 1200	RJ
Hardness, Total	623	----	mg/l as $CaCO_3$	SM2340-B	01-08-1998 1500	RJ
Iron, Total	1.7	0.5	mg/l	EPA 236.1	01-08-1998 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	01-08-1998 0745	MK
Magnesium, Dissolved	75	2	mg/l	EPA 242.1	01-08-1998 1030	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	01-08-1998 0830	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	01-08-1998 0830	MK
pH	7.23	----	pH units	EPA 150.1	12-23-1997 0700	JC
Potassium, Dissolved	6	1	mg/l	EPA 258.1	01-08-1998 0845	MK
Sodium, Dissolved	37	1	mg/l	EPA 273.1	01-08-1998 0900	MK
Solids, Total Dissolved	970	10	mg/l	EPA 160.1	12-23-1997 0700	JC
Sulfate	428	250	mg/l	EPA 375.4	12-30-1997 0900	JC
Cation/Anion Balance	-6.6	----	%		01-08-1998 1500	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Lucy Stout

Huntington Laboratory

MEMBER ACIL

APPENDIX L

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January 21, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE

Kind of sample reported to us Water

Rec'd 1640 hr.
Sampled 1159 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled January 8, 1997

Date received January 8, 1997

FIELD MEASUREMENTS

pH	7.7
DO	7.3
Flow	425 gpm
Conductivity	1222
Temperature	11.9°C

Dissolved metals filtered at lab!

Analysis report no. 59-16922

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	15	10	mg/l as $CaCO_3$	D1067-92	01-09-1997 1300 SW
Alkalinity, Bicarbonate	390	5	mg/l as HCO_3	SM2320-B	01-10-1997 0730 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	01-10-1997 0730 SW
Alkalinity, Total	321	5	mg/l as $CaCO_3$	EPA 310.1	01-10-1997 0730 SW
Anions	14.4	----	meq/l	---------	01-17-1997 1415 RJ
Calcium, Total	130	1	mg/l	EPA 215.1	01-17-1997 1200 MK
Calcium, Dissolved	114	1	mg/l	EPA 215.1	01-17-1997 1200 MK
Cations	14.6	----	meq/l	---------	01-17-1997 1415 RJ
Chloride	15	1	mg/l	SM4500-Cl-B	01-13-1997 0730 SW
Conductivity	1192	1	umhos/cm	SM2510-B	01-10-1997 1500 SW
Hardness, Total	646	----	mg/l as $CaCO_3$	SM2340-B	01-17-1997 1415 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	01-17-1997 0945 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	01-17-1997 0945 MK
Magnesium, Total	78	1	mg/l	EPA 242.1	01-17-1997 1215 MK
Magnesium, Dissolved	71	1	mg/l	EPA 242.1	01-17-1997 1215 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	01-17-1997 1000 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	01-17-1997 1000 MK
Oil & Grease	<2	2	mg/l	SM5520-B	01-14-1997 0700 JC
pH	7.92	----	pH units	EPA 150.1	01-09-1997 1100 RJ
Potassium, Total	7	1	mg/l	EPA 258.1	01-17-1997 1030 MK
Potassium, Dissolved	7	1	mg/l	EPA 258.1	01-17-1997 1030 MK
Sodium, Total	34	1	mg/l	EPA 273.1	01-17-1997 1100 MK
Sodium, Dissolved	32	1	mg/l	EPA 273.1	01-17-1997 1100 MK
Solids, Total Dissolved	872	10	mg/l	EPA 160.1	01-09-1997 0700 JC

PACIFICORP
JAN 21 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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January 21, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE

Kind of sample reported to us Water

Rec'd 1640 hr.
Sampled 1159 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled January 8, 1997

Date received January 8, 1997

FIELD MEASUREMENTS

pH	7.7
DO	7.3
Flow	425 gpm
Conductivity	1222
Temperature	11.9°C

Dissolved metals filtered at lab!

Analysis report no. 59-16922

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	01-09-1997 0700 JC
Sulfate	363	20	mg/l	EPA 375.4	01-14-1997 0800
Cation/Anion Balance	0.7	----	%		01-17-1997 1415

PACIFICORP
JAN 21 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Sorot

Huntington Laboratory

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March 3, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR - 3 1997
FIE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINE
MINE DISCHARGE GRIMES WASH UPDES-001

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled February 9, 1997

Date received February 10, 1997

Rec'd 0920 hr.
Sampled 1420 hr.
AMENDED TEMPERATURE

FIELD MEASUREMENTS

pH	7.64
DO	7.3
Flow	256 gpm
Conductivity	1077
Temperature	11.9°C

Dissolved metals filtered at lab!

Analysis report no. 59-16974

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
cidity	12	10	mg/l as $CaCO_3$	D1067-92	02-17-1997 0900 SW
lkalinity, Bicarbonate	391	5	mg/l as HCO_3	SM2320-B	02-10-1997 1100 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	02-10-1997 1100 SW
Alkalinity, Total	320	5	mg/l as $CaCO_3$	EPA 310.1	02-10-1997 1100 SW
Anions	14.6	----	meq/l	---------	02-25-1997 1210 RJ
Calcium, Total	123	1	mg/l	EPA 215.1	02-12-1997 1030 MK
Calcium, Dissolved	118	1	mg/l	EPA 215.1	02-12-1997 1030 MK
Cations	14.4	----	meq/l	---------	02-25-1997 1210 RJ
Chloride	16	1	mg/l	SM4500-Cl-B	02-10-1997 1030 SW
Conductivity	1200	1	umhos/cm	SM2510-B	02-10-1997 0900 SW
Hardness, Total	637	----	mg/l as $CaCO_3$	SM2340-B	02-25-1997 1210 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	02-12-1997 0730 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	02-12-1997 0730 MK
Magnesium, Total	80	1	mg/l	EPA 242.1	02-12-1997 1100 MK
Magnesium, Dissolved	75	1	mg/l	EPA 242.1	02-12-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	02-12-1997 0800 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	02-12-1997 0800 MK
Oil & Grease	<2	2	mg/l	SM5520-B	02-12-1997 0700 JC
pH	7.86	----	pH units	EPA 150.1	02-10-1997 1300 JC
Potassium, Total	7	1	mg/l	EPA 258.1	02-12-1997 0830 MK
Potassium, Dissolved	7	1	mg/l	EPA 258.1	02-12-1997 0830 MK
Sodium, Total	34	1	mg/l	EPA 273.1	02-12-1997 0900 MK
Sodium, Dissolved	33	1	mg/l	EPA 273.1	02-12-1997 0900 MK
Solids, Total Dissolved	878	10	mg/l	EPA 160.1	02-10-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

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March 3, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR - 3 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINE
MINE DISCHARGE GRIMES WASH UPDES-001

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled February 9, 1997

Date received February 10, 1997

Rec'd 0920 hr.
Sampled 1420 hr.
AMENDED TEMPERATURE

FIELD MEASUREMENTS

pH	7.64
DO	7.3
Flow	256 gpm
Conductivity	1077
Temperature	11.9°C

Dissolved metals filtered at lab!

Analysis report no. 59-16974

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	02-10-1997 0700 JC
Sulfate	371	65	mg/l	EPA 375.4	02-24-1997 0900
Cation/Anion Balance	-0.7	----	%		02-25-1997 1210

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

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FAX: (801) 653-2436

March 27, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1200 hr.
Sampled 0851 hr.

FIELD MEASUREMENTS

pH	7.7
DO	6.7
Flow	504 gpm
Conductivity	1265
Temperature	10.3°C

Dissolved metals filtered at lab!
NOTE: Sulfate Amended!

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled February 20, 1997

Date received February 20, 1997

Analysis report no. 59-16988

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	30	10	mg/l as $CaCO_3$	D1067-92	02-25-1997 1000 SW
Alkalinity, Bicarbonate	400	5	mg/l as HCO_3	SM2320-B	02-25-1997 1300 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	02-25-1997 1300 SW
Alkalinity, Total	328	5	mg/l as $CaCO_3$	EPA 310.1	02-25-1997 1300 SW
Anions	16.7	----	meq/l	---------	03-03-1997 1230 RJ
Calcium, Total	124	1	mg/l	EPA 215.1	03-01-1997 1300 MK
Calcium, Dissolved	122	1	mg/l	EPA 215.1	03-01-1997 1300 MK
Cations	14.5	----	meq/l	---------	03-03-1997 1230 RJ
Chloride	15	1	mg/l	SM4500-Cl-B	02-26-1997 0930 SW
Conductivity	1170	1	umhos/cm	SM2510-B	02-26-1997 0800 SW
Hardness, Total	643	----	mg/l as $CaCO_3$	SM2340-B	03-03-1997 1230 RJ
Iron, Total	0.5	0.1	mg/l	EPA 236.1	03-01-1997 1115 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-01-1997 1115 MK
Magnesium, Total	81	1	mg/l	EPA 242.1	03-01-1997 1330 MK
Magnesium, Dissolved	78	1	mg/l	EPA 242.1	03-01-1997 1330 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-01-1997 1130 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-01-1997 1130 MK
pH	7.91	----	pH units	EPA 150.1	02-20-1997 1230 JC
Potassium, Total	7	1	mg/l	EPA 258.1	03-01-1997 1200 MK
Potassium, Dissolved	7	1	mg/l	EPA 258.1	03-01-1997 1200 MK
Sodium, Total	33	1	mg/l	EPA 273.1	03-01-1997 1215 MK
Sodium, Dissolved	33	1	mg/l	EPA 273.1	03-01-1997 1215 MK
Solids, Total Dissolved	907	10	mg/l	EPA 160.1	02-24-1997 0700 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	02-24-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Street

Huntington Laboratory RJ

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March 27, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1200 hr.
Sampled 0851 hr.

FIELD MEASUREMENTS

pH	7.7
DO	6.7
Flow	504 gpm
Conductivity	1265
Temperature	10.3°C

Dissolved metals filtered at lab!
NOTE: Sulfate Amended!

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled February 20, 1997

Date received February 20, 1997

Analysis report no. 59-16988

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Sulfate	467	100	mg/l	EPA 375.4	03-20-1997 0930 SW
Cation/Anion Balance	-7.2	----	%		03-03-1997 1230

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory RD

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March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1400 hr.
Sampled 1239 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 10, 1997

Date received March 10, 1997

FIELD MEASUREMENTS

pH	7.73
DO	6.1
Flow	30 gpm
Conductivity	1074
Temperature	12.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17031*

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	25	10	mg/l as $CaCO_3$	D1067-92	03-12-1997 0830 SW
Alkalinity, Bicarbonate	396	5	mg/l as HCO_3	SM2320-B	03-12-1997 1300 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-12-1997 1300 SW
Alkalinity, Total	325	5	mg/l as $CaCO_3$	EPA 310.1	03-12-1997 1300 SW
Anions	15.5	----	meq/l	---------	03-27-1997 1545 RJ
Calcium, Total	129	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Calcium, Dissolved	126	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Cations	14.6	----	meq/l	---------	03-27-1997 1545 RJ
Chloride	18	1	mg/l	SM4500-Cl-B	03-27-1997 1400 RJ
Conductivity	1222	1	umhos/cm	SM2510-B	03-11-1997 0730 SW
Hardness, Total	647	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1545 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Magnesium, Total	79	1	mg/l	EPA 242.1	03-18-1997 1230 MK
Magnesium, Dissolved	76	1	mg/l	EPA 242.1	03-18-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Oil & Grease	<2	2	mg/l	SM5520-B	03-13-1997 0700 JC
pH	7.84	----	pH units	EPA 150.1	03-11-1997 1100 JC
Potassium, Total	8	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Potassium, Dissolved	7	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Sodium, Total	33	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Sodium, Dissolved	33	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Solids, Total Dissolved	890	10	mg/l	EPA 160.1	03-11-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory RD

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March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 10, 1997

Date received March 10, 1997

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1400 hr.
Sampled 1239 hr.

FIELD MEASUREMENTS

pH	7.73
DO	6.1
Flow	30 gpm
Conductivity	1074
Temperature	12.8°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17031

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	03-11-1997 0700 JC
Sulfate	409	250	mg/l	EPA 375.4	03-26-1997 0700
Cation/Anion Balance	-3.1	----	%		03-27-1997 1545

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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April 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 0937 hr.
Sampled 0834 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/Mike D.

Date sampled April 11, 1997

Date received April 11, 1997

FIELD MEASUREMENTS

pH	7.94
DO	8.9
Flow	56 GPM
Conductivity	1160
Temperature	11.1°C

Dissolved metals filtered at lab1

Analysis report no. 59-17098

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	19	10	mg/l as $CaCO_3$	D1067-92	04-14-1997 1300 SW
Alkalinity, Bicarbonate	331	5	mg/l as HCO_3	SM2320-B	04-15-1997 0700 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	04-15-1997 0700 SW
Alkalinity, Total	403	5	mg/l as $CaCO_3$	EPA 310.1	04-15-1997 0700 SW
Anions	14.7	----	meq/l	---------	04-24-1997 1230 RJ
Calcium, Total	127	1	mg/l	EPA 215.1	04-23-1997 1015 MK
Calcium, Dissolved	122	1	mg/l	EPA 215.1	04-23-1997 1015 MK
Cations	14.4	----	meq/l	---------	04-24-1997 1230 RJ
Chloride	29	20	mg/l	SM4500-Cl-B	04-15-1997 1230 SW
Conductivity	1253	1	umhos/cm	SM2510-B	04-16-1997 0700 SW
Hardness, Total	634	----	mg/l as $CaCO_3$	SM2340-B	04-24-1997 1230 RJ
Iron, Total	0.5	0.1	mg/l	EPA 236.1	04-23-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	04-23-1997 0800 MK
Magnesium, Total	77	1	mg/l	EPA 242.1	04-23-1997 1030 MK
Magnesium, Dissolved	77	1	mg/l	EPA 242.1	04-23-1997 1030 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	04-23-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	04-23-1997 0830 MK
Oil & Grease	<2	2	mg/l	SM5520-B	04-17-1997 0700 JC
pH	7.95	----	pH units	EPA 150.1	04-11-1997 1200 MK
Potassium, Total	7	1	mg/l	EPA 258.1	04-23-1997 0900 MK
Potassium, Dissolved	7	1	mg/l	EPA 258.1	04-23-1997 0900 MK
Sodium, Total	42	1	mg/l	EPA 273.1	04-23-1997 0915 MK
Sodium, Dissolved	41	1	mg/l	EPA 273.1	04-23-1997 0915 MK
Solids, Total Dissolved	920	10	mg/l	EPA 160.1	04-15-1997 0800 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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April 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 0937 hr.
Sampled 0834 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/Mike D.

Date sampled April 11, 1997

Date received April 11, 1997

FIELD MEASUREMENTS

pH	7.94
DO	8.9
Flow	56 GPM
Conductivity	1160
Temperature	11.1°C

Dissolved metals filtered at lab1

Analysis report no. 59-17098

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	04-15-1997 0800 JC
Sulfate	412	250	mg/l	EPA 375.4	04-16-1997 0830 [illegible]W
Cation/Anion Balance	-0.5	----	%		04-24-1997 1230 [illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

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May 6, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAY - 6 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg/Cottonwood Mine
Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1504 hr.
Sampled 1130 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled April 17, 1997

Date received April 17, 1997

FIELD MEASUREMENTS

pH	7.9
DO	8.2
Flow	40 gpm
Conductivity	1203
Temperature	12.2°C

Dissolved metals filtered at lab!

Analysis report no. 59-17113

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	12	10	mg/l as $CaCO_3$	D1067-92	04-24-1997 1300	SW
Alkalinity, Bicarbonate	391	5	mg/l as HCO_3	SM2320-B	04-21-1997 1400	SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	04-21-1997 1400	SW
Alkalinity, Total	321	5	mg/l as $CaCO_3$	EPA 310.1	04-21-1997 1400	SW
Anions	14.8	----	meq/l	---------	04-30-1997 1445	RJ
Calcium, Total	125	1	mg/l	EPA 215.1	04-23-1997 1015	MK
Calcium, Dissolved	123	1	mg/l	EPA 215.1	04-23-1997 1015	MK
Cations	14.3	----	meq/l	---------	04-30-1997 1445	RJ
Chloride	35	1	mg/l	SM4500-Cl-B	04-22-1997 0830	SW
Conductivity	1309	1	umhos/cm	SM2510-B	04-23-1997 0800	SW
Hardness, Total	621	----	mg/l as $CaCO_3$	SM2340-B	04-30-1997 1445	RJ
Iron, Total	0.3	0.1	mg/l	EPA 236.1	04-23-1997 0800	MK
Iron, Dissolved	<0.1	.1	mg/l	EPA 236.1	04-23-1997 0800	MK
Magnesium, Total	75	1	mg/l	EPA 242.1	04-23-1997 1030	MK
Magnesium, Dissolved	72	1	mg/l	EPA 242.1	04-23-1997 1030	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	04-23-1997 0830	MK
Manganese, Dissolved	<0.1	.1	mg/l	EPA 243.1	04-23-1997 0830	MK
Oil & Grease	<2	2	mg/l	SM5520-B	04-25-1997 0700	JC
pH	8.05	----	pH units	EPA 150.1	04-17-1997 1015	RJ
Potassium, Total	6	1	mg/l	EPA 258.1	04-23-1997 0900	MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	04-23-1997 0900	MK
Sodium, Total	39	1	mg/l	EPA 273.1	04-23-1997 0915	MK
Sodium, Dissolved	38	1	mg/l	EPA 273.1	04-23-1997 0915	MK
Solids, Total Dissolved	890	10	mg/l	EPA 160.1	04-22-1997 0700	JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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May 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAY - 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg/Cottonwood Mine
Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1504 hr.
Sampled 1130 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled April 17, 1997

Date received April 17, 1997

FIELD MEASUREMENTS

pH	7.9
DO	8.2
Flow	40 gpm
Conductivity	1203
Temperature	12.2°C

Dissolved metals filtered at lab!

Analysis report no. 59-17113

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	04-22-1997 0700 JC
Sulfate	354	83	mg/l	EPA 375.4	04-30-1997 0730 [illegible]
Cation/Anion Balance	-1.7	----	%		04-30-1997 1445 [illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

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June 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUN 16 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg/Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1000 hr.
Sampled 0642 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled May 12, 1997

Date received May 12, 1997

FIELD MEASUREMENTS

pH	7.85
DO	7.9
Flow	62 gpm
Conductivity	1077
Temperature	12.5°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17140

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	05-13-1997 1000 RJ
Alkalinity, Bicarbonate	390	5	mg/l as HCO_3	SM2320-B	05-14-1997 0930 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	05-14-1997 0930 RJ
Alkalinity, Total	319	5	mg/l as $CaCO_3$	EPA 310.1	05-14-1997 0930 RJ
Anions	15.2	----	meq/l	---------	06-10-1997 1430 RJ
Calcium, Total	120	1	mg/l	EPA 215.1	06-07-1997 0745 MK
Calcium, Dissolved	116	1	mg/l	EPA 215.1	06-07-1997 0745 MK
Cations	13.7	----	meq/l	---------	06-10-1997 1430 RJ
Chloride	22	1	mg/l	SM4500-Cl-B	06-09-1997 0930 SW
Conductivity	1215	1	umhos/cm	SM2510-B	05-19-1997 1200 MK
Hardness, Total	608	----	mg/l as $CaCO_3$	SM2340-B	06-10-1997 1430 RJ
Iron, Total	0.3	0.1	mg/l	EPA 236.1	06-07-1997 0945 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	06-07-1997 0945 MK
Magnesium, Total	75	1	mg/l	EPA 242.1	06-07-1997 0830 MK
Magnesium, Dissolved	74	1	mg/l	EPA 242.1	06-07-1997 0830 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	06-07-1997 1030 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	06-07-1997 1030 MK
Oil & Grease	<2	2	mg/l	SM5520-B	05-20-1997 0700 JC
pH	7.85	----	pH units	EPA 150.1	05-12-1997 1145 JC
Potassium, Total	5	1	mg/l	EPA 258.1	06-07-1997 1100 MK
Potassium, Dissolved	4	1	mg/l	EPA 258.1	06-07-1997 1100 MK
Sodium, Total	33	1	mg/l	EPA 273.1	06-07-1997 1130 MK
Sodium, Dissolved	31	1	mg/l	EPA 273.1	06-07-1997 1130 MK
Solids, Total Dissolved	880	10	mg/l	EPA 160.1	05-13-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

COMMERCIAL TESTING & ENGINEERING CO.
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FAX: (801) 653-2436

June 13, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUN 16 1997
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled May 12, 1997

Date received May 12, 1997

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg/Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1000 hr.
Sampled 0642 hr.

FIELD MEASUREMENTS

pH	7.85
DO	7.9
Flow	62 gpm
Conductivity	1077
Temperature	12.5°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17140

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	05-13-1997 0700
Sulfate	395	125	mg/l	EPA 375.4	05-12-1997 0900
Cation Anion Balance	-5.2	----	%		06-10-1997 1430 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

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June 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUN 19 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1215 hr.
Sampled 1004 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled May 29, 1997

Date received May 29, 1997

FIELD MEASUREMENTS

pH	7.8
DO	7.2
Flow	450 gpm
Conductivity	1210
Temperature	12.1°C

Dissolved metals filtered at lab!

Analysis report no. 59-17205

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	13	10	mg/l as $CaCO_3$	D1067-92	06-10-1997 0730	SW
Alkalinity, Bicarbonate	378	5	mg/l as HCO_3	SM2320-B	06-04-1997 1000	RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	06-04-1997 1000	RJ
Alkalinity, Total	310	5	mg/l as $CaCO_3$	EPA 310.1	06-04-1997 1000	RJ
Anions	14.0	----	meq/l	---------	06-18-1997 1400	RJ
Calcium, Total	116	1	mg/l	EPA 215.1	06-11-1997 0915	MK
Calcium, Dissolved	113	1	mg/l	EPA 215.1	06-11-1997 0915	MK
Cations	13.1	----	meq/l	---------	06-18-1997 1400	RJ
Chloride	23	1	mg/l	SM4500-Cl-B	06-09-1997 1230	SW
Conductivity	1165	1	umhos/cm	SM2510-B	06-10-1997 1200	SW
Hardness, Total	582	----	mg/l as $CaCO_3$	SM2340-B	06-18-1997 1400	RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	06-11-1997 1145	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	06-11-1997 1145	MK
Magnesium, Total	71	1	mg/l	EPA 242.1	06-11-1997 1045	MK
Magnesium, Dissolved	70	1	mg/l	EPA 242.1	06-11-1997 1045	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	06-11-1997 1230	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	06-11-1997 1230	MK
pH	7.62	----	pH units	EPA 150.1	05-29-1997 1530	RJ
Potassium, Total	4	1	mg/l	EPA 258.1	06-11-1997 1300	MK
Potassium, Dissolved	4	1	mg/l	EPA 258.1	06-11-1997 1300	MK
Sodium, Total	31	1	mg/l	EPA 273.1	06-11-1997 1330	MK
Sodium, Dissolved	31	1	mg/l	EPA 273.1	06-11-1997 1330	MK
Solids, Total Dissolved	830	10	mg/l	EPA 160.1	05-29-1997 0700	JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	05-29-1997 0700	JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stone

Huntington Laboratory

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June 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUN 19 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1215 hr.
Sampled 1004 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled May 29, 1997

Date received May 29, 1997

FIELD MEASUREMENTS

pH	7.8
DO	7.2
Flow	450 gpm
Conductivity	1210
Temperature	12.1°C

Dissolved metals filtered at lab!

Analysis report no. 59-17205

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Sulfate	342	250	mg/l	EPA 375.4	06-14-1997 1400 RJ
Cation/Anion Balance	-3.3	----	%		06-18-1997 1400 [illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory RJ

COMMERCIAL TESTING & ENGINEERING CO.

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July 2, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg/Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1500 hr.
Sampled 1314 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled June 2, 1997

Date received June 2, 1997

FIELD MEASUREMENTS

pH	7.89
DO	7.8
Flow	413 gpm
Conductivity	1091
Temperature	13.6°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17223

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	13	10	mg/l as $CaCO_3$	D1067-92	06-10-1997 0730 SW
Alkalinity, Bicarbonate	392	5	mg/l as HCO_3	SM2320-B	06-04-1997 1245 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	06-04-1997 1245 RJ
Alkalinity, Total	321	5	mg/l as $CaCO_3$	EPA 310.1	06-04-1997 1245 RJ
Anions	15.0	----	meq/l	---------	06-27-1997 1700 RJ
Calcium, Total	126	1	mg/l	EPA 215.1	06-19-1997 1115 MK
Calcium, Dissolved	112	1	mg/l	EPA 215.1	06-19-1997 1115 MK
Cations	13.3	----	meq/l	---------	06-27-1997 1700 RJ
Chloride	23	1	mg/l	SM4500-Cl-B	06-26-1997 0810 RJ
Conductivity	1205	1	umhos/cm	SM2510-B	06-10-1997 1400 SW
Hardness, Total	580	----	mg/l as $CaCO_3$	SM2340-B	06-27-1997 1700 RJ
Iron, Total	0.4	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Magnesium, Total	79	1	mg/l	EPA 242.1	06-19-1997 1130 MK
Magnesium, Dissolved	73	1	mg/l	EPA 242.1	06-19-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	06-19-1997 0915 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	06-19-1997 0915 MK
Oil & Grease	<2	2	mg/l	SM5520-B	06-11-1997 0700 JC
pH	7.88	----	pH units	EPA 150.1	06-03-1997 0900 RJ
Potassium, Total	7	1	mg/l	EPA 258.1	06-19-1997 0945 MK
Potassium, Dissolved	6	1	mg/l	EPA 258.1	06-19-1997 0945 MK
Sodium, Total	39	1	mg/l	EPA 273.1	06-19-1997 1030 MK
Sodium, Dissolved	36	1	mg/l	EPA 273.1	06-19-1997 1030 MK
Solids, Total Dissolved	930	10	mg/l	EPA 160.1	06-05-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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July 2, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

3 1997
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled June 2, 1997

Date received June 2, 1997

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg/Cottonwood Mines
Mine Discharge @ Grimes Wash
UPDES UT-0022896-001
Rec'd 1500 hr.
Sampled 1314 hr.

FIELD MEASUREMENTS

pH	7.89
DO	7.8
Flow	413 gpm
Conductivity	1091
Temperature	13.6°C

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17223

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	06-05-1997 0700 JC
Sulfate	346	83	mg/l	EPA 375.4	06-24-1997 0830
Cation Anion Balance	5.7	----	%		06-27-1997 1700

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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August 12, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 12 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1400 hr.
Sampled 1210 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled July 14, 1997

Date received July 14, 1997

FIELD MEASUREMENTS

pH	7.88
DO	7.3
Flow	36 gpm
Conductivity	983
Temperature	14.4°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17477

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	17	10	mg/l as $CaCO_3$	D1067-92	07-18-1997 0730 SC
Alkalinity, Bicarbonate	379	5	mg/l as HCO_3	SM2320-B	07-18-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-18-1997 0900 SC
Alkalinity, Total	311	5	mg/l as $CaCO_3$	EPA 310.1	07-18-1997 0900 SC
Anions	13.8	----	meq/l	---------	08-07-1997 1400 RJ
Calcium, Total	113	1	mg/l	EPA 215.1	08-07-1997 1100 MK
Calcium, Dissolved	106	1	mg/l	EPA 215.1	08-07-1997 1100 MK
Cations	12.9	----	meq/l	---------	08-07-1997 1400 RJ
Chloride	20	1	mg/l	SM4500-Cl-B	07-31-1997 0730 SC
Conductivity	1113	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	575	----	mg/l as $CaCO_3$	SM2340-B	08-07-1997 1400 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-07-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-07-1997 0800 MK
Magnesium, Total	71	1	mg/l	EPA 242.1	08-07-1997 1130 MK
Magnesium, Dissolved	67	1	mg/l	EPA 242.1	08-07-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-07-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-07-1997 0830 MK
Oil & Grease	<2	2	mg/l	SM5520-B	07-17-1997 0700 JC
pH	7.85	----	pH units	EPA 150.1	07-15-1997 0900 SC
Potassium, Total	4	1	mg/l	EPA 258.1	08-07-1997 0900 MK
Potassium, Dissolved	4	1	mg/l	EPA 258.1	08-07-1997 0900 MK
Sodium, Total	31	1	mg/l	EPA 273.1	08-07-1997 1000 MK
Sodium, Dissolved	31	1	mg/l	EPA 273.1	08-07-1997 1000 MK
Solids, Total Dissolved	780	10	mg/l	EPA 160.1	07-21-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RO

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August 12, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 12
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1400 hr.
Sampled 1210 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled July 14, 1997

Date received July 14, 1997

FIELD MEASUREMENTS

pH	7.88
DO	7.3
Flow	36 gpm
Conductivity	983
Temperature	14.4°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17477

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	07-21-1997 0700
Sulfate	336	250	mg/l	EPA 375.4	07-29-1997 0715 S
Cation/Anion Balance	-3.1	----	%		08-07-1997 1400 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RO

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August 12, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 12
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by ENERGY WEST/MBD

Date sampled July 16, 1997

Date received July 16, 1997

Rec'd 1430 hr.
Sampled 0955 hr.

FIELD MEASUREMENTS

pH	7.8
DO	7.0
Flow	51 gpm
Conductivity	1058
Temperature	13.5°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17490

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	23	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 0740 SC
Alkalinity, Bicarbonate	353	5	mg/l as HCO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-25-1997 1100 SC
Alkalinity, Total	289	5	mg/l as $CaCO_3$	EPA 310.1	07-25-1997 1100 SC
Anions	12.8	----	meq/l	---------	08-07-1997 1400 RJ
Calcium, Total	111	1	mg/l	EPA 215.1	08-07-1997 1100 MK
Calcium, Dissolved	99	1	mg/l	EPA 215.1	08-07-1997 1100 MK
Cations	12.9	----	meq/l	---------	08-07-1997 1400 RJ
Chloride	17	1	mg/l	SM4500-Cl-B	08-01-1997 0720 SC
Conductivity	1097	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	570	----	mg/l as $CaCO_3$	SM2340-B	08-07-1997 1400 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-07-1997 0800 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-07-1997 0800 MK
Magnesium, Total	71	1	mg/l	EPA 242.1	08-07-1997 1130 MK
Magnesium, Dissolved	64	1	mg/l	EPA 242.1	08-07-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-07-1997 0830 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-07-1997 0830 MK
pH	7.78	----	pH units	EPA 150.1	07-17-1997 0900 SC
Potassium, Total	4	1	mg/l	EPA 258.1	08-07-1997 0900 MK
Potassium, Dissolved	4	1	mg/l	EPA 258.1	08-07-1997 0900 MK
Sodium, Total	32	1	mg/l	EPA 273.1	08-07-1997 1000 MK
Sodium, Dissolved	29	1	mg/l	EPA 273.1	08-07-1997 1000 MK
Solids, Total Dissolved	750	10	mg/l	EPA 160.1	07-21-1997 0700 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	07-21-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 12, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

AUG 12 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by ENERGY WEST/MBD

Date sampled July 16, 1997

Date received July 16, 1997

Rec'd 1430 hr.
Sampled 0955 hr.

FIELD MEASUREMENTS

pH	7.8
DO	7.0
Flow	51 gpm
Conductivity	1058
Temperature	13.5°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17490

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Sulfate	313	50	mg/l	EPA 375.4	07-29-1997 0715 SC
ation/Anion Balance	0.4	----	%		08-07-1997 1400

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RO

COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

August 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1100 hr.
Sampled 0824 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled August 12, 1997

Date received August 12, 1997

FIELD MEASUREMENTS

pH	7.84
DO	7.0
Flow	30 gpm
Conductivity	951
Temperature	13°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17579

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	35	10	mg/l as $CaCO_3$	D1067-92	08-13-1997 1000 SC
Alkalinity, Bicarbonate	346	5	mg/l as HCO_3	SM2320-B	08-15-1997 0730 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	08-15-1997 0730 SC
Alkalinity, Total	283	5	mg/l as $CaCO_3$	EPA 310.1	08-15-1997 0730 SC
Anions	12.3	----	meq/l	---------	08-25-1997 1500 RJ
Calcium, Total	109	1	mg/l	EPA 215.1	08-15-1997 1100 RJ
Calcium, Dissolved	101	1	mg/l	EPA 215.1	08-15-1997 1100 RJ
Cations	12.5	----	meq/l	---------	08-25-1997 1500 RJ
Chloride	21	1	mg/l	SM4500-Cl-B	08-19-1997 0730 SC
Conductivity	1082	1	umhos/cm	SM2510-B	08-25-1997 1300 RJ
Hardness, Total	556	----	mg/l as $CaCO_3$	SM2340-B	08-25-1997 1500 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-15-1997 1340 RJ
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-15-1997 1340 RJ
Magnesium, Total	69	1	mg/l	EPA 242.1	08-15-1997 1120 RJ
Magnesium, Dissolved	64	1	mg/l	EPA 242.1	08-15-1997 1120 RJ
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-15-1997 1410 RJ
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-15-1997 1410 RJ
Oil & Grease	<2	2	mg/l	SM5520-B	08-27-1997 0700 JC
pH	7.87	----	pH units	EPA 150.1	08-12-1997 1345 SC
Potassium, Total	4	1	mg/l	EPA 258.1	08-15-1997 1210 RJ
Potassium, Dissolved	3	1	mg/l	EPA 258.1	08-15-1997 1210 RJ
Sodium, Total	30	1	mg/l	EPA 273.1	08-15-1997 1230 RJ
Sodium, Dissolved	28	1	mg/l	EPA 273.1	08-15-1997 1230 RJ
Solids, Total Dissolved	770	10	mg/l	EPA 160.1	08-13-1997 0700 JC

PACIFICORP
SEP 2 97
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

August 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1100 hr.
Sampled 0824 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled August 12, 1997

Date received August 12, 1997

FIELD MEASUREMENTS

pH	7.84
DO	7.0
Flow	30 gpm
Conductivity	951
Temperature	13°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17579

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	08-13-1997 0700 JG
Sulfate	292	50	mg/l	EPA 375.4	08-25-1997 0730
Cation/Anion Balance	0.7	----	%		08-25-1997 1500 RJ

SEP 2
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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September 8, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1350 hr.
Sampled 1123 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled August 21, 1997

Date received August 21, 1997

FIELD MEASUREMENTS

pH	7.70
DO	7.1
Flow	90 gpm
Conductivity	1054
Temperature	13.79°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17650

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	10	10	mg/l as $CaCO_3$	D1067-92	08-27-1997 1100 SC
Alkalinity, Bicarbonate	340	5	mg/l as HCO_3	SM2320-B	09-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-03-1997 0900 SC
Alkalinity, Total	279	5	mg/l as $CaCO_3$	EPA 310.1	09-03-1997 0900 SC
Anions	11.7	----	meq/l	---------	09-08-1997 0920 RJ
Calcium, Total	113	1	mg/l	EPA 215.1	08-23-1997 1045 MK
Calcium, Dissolved	103	1	mg/l	EPA 215.1	08-23-1997 1045 MK
Cations	12.8	----	meq/l	---------	09-08-1997 0920 RJ
Chloride	33	10	mg/l	SM4500-Cl-B	09-05-1997 0800 SC
Conductivity	1058	1	umhos/cm	SM2510-B	08-25-1997 1400 RJ
Hardness, Total	570	----	mg/l as $CaCO_3$	SM2340-B	09-08-1997 0920 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	08-23-1997 0845 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	08-23-1997 0845 MK
Magnesium, Total	70	1	mg/l	EPA 242.1	08-23-1997 1100 MK
Magnesium, Dissolved	65	1	mg/l	EPA 242.1	08-23-1997 1100 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	08-23-1997 0915 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-23-1997 0915 MK
pH	7.77	----	pH units	EPA 150.1	08-21-1997 1600 S.C.
Potassium, Total	4	1	mg/l	EPA 258.1	08-23-1997 0945 MK
Potassium, Dissolved	4	1	mg/l	EPA 258.1	08-23-1997 0945 MK
Sodium, Total	31	1	mg/l	EPA 273.1	08-23-1997 1000 MK
Sodium, Dissolved	29	1	mg/l	EPA 273.1	08-23-1997 1000 MK
Solids, Total Dissolved	750	10	mg/l	EPA 160.1	08-25-1997 0700 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	08-25-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory

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FAX: (801) 653-2436

September 8, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1350 hr.
Sampled 1123 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled August 21, 1997

Date received August 21, 1997

FIELD MEASUREMENTS

pH	7.70
DO	7.1
Flow	90 gpm
Conductivity	1054
Temperature	13.79°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17650

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Sulfate	250	125	mg/l	EPA 375.4	09-04-1997 0900 SG
Cation/Anion Balance	4.6	----	%		09-08-1997 0920

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory

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November 7, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 7 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1130 hr.
Sampled 0854 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by ENERGY WEST/MBD

Date sampled September 5, 1997

Date received September 5, 1997

FIELD MEASUREMENTS

pH	7.81
DO	6.4
Flow	73 GPM
Conductivity	989
Temperature	13.3°C

Dissolved metals filtered at lab!

Analysis report no. 59-17697

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
[illegible]	<10	10	mg/l as $CaCO_3$	D1067-92	09-10-1997 0900 RJ
Alkalinity, Bicarbonate	354	5	mg/l as HCO_3	SM2320-B	09-08-1997 0745 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-08-1997 0745 SC
Alkalinity, Total	290	5	mg/l as $CaCO_3$	EPA 310.1	09-08-1997 0745 SC
Anions	12.0	----	meq/l	---------	09-18-1997 1200 RJ
[illegible]um, Dissolved	105	1	mg/l	EPA 215.1	09-11-1997 0330 MK
[illegible]um, Total	112	1	mg/l	EPA 215.1	09-11-1997 0330 MK
Cations	12.8	----	meq/l	---------	09-18-1997 1200 RJ
Chloride	19	1	mg/l	SM4500-Cl-B	09-17-1997 1030 SC
Conductivity	1104	1	umhos/cm	SM2510-B	09-22-1997 1000 SC
Hardness, Total	564	----	mg/l as $CaCO_3$	SM2340-B	09-18-1997 1200 RJ
[illegible], Total	<0.1	0.1	mg/l	EPA 236.1	09-11-1997 0115 MK
[illegible], Dissolved	<0.1	0.1	mg/l	EPA 236.1	09-11-1997 0115 MK
[illegible]ium, Dissolved	67	1	mg/l	EPA 242.1	09-11-1997 0400 MK
[illegible]ium, Total	69	1	mg/l	EPA 242.1	09-11-1997 0400 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	09-11-1997 0145 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-11-1997 0145 MK
Oil & Grease	<2	2	mg/l	SM5520-B	09-09-1997 0700 JC
pH	7.79	----	pH units	EPA 150.1	09-05-1997 1300 SC
Potassium, Dissolved	4	1	mg/l	EPA 258.1	09-11-1997 0200 MK
Potassium, Total	4	1	mg/l	EPA 258.1	09-11-1997 0200 MK
[illegible]ium, Dissolved	32	1	mg/l	EPA 273.1	09-11-1997 0245 MK
[illegible]ium, Total	32	1	mg/l	EPA 273.1	09-11-1997 0245 MK
[illegible], Total Dissolved	760	10	mg/l	EPA 160.1	09-05-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 7, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

RECEIVED
NOV 7 1997

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1130 hr.
Sampled 0854 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by ENERGY WEST/MBD

Date sampled September 5, 1997

Date received September 5, 1997

FIELD MEASUREMENTS

pH	7.81
DO	6.4
Flow	73 GPM
Conductivity	989
Temperature	13.3°C

Dissolved metals filtered at lab!

Analysis report no. 59-17697

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	09-05-1997 0700 [illegible]
Sulfate	273	50	mg/l	EPA 375.4	09-15-1997 0900 [illegible]
Cation/Anion Balance	3.0	----	%		09-18-1997 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINE
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1230 hr.
Sampled 0905 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled October 14, 1997

Date received October 14, 1997

FIELD MEASUREMENTS

pH	7.83
DO	6.3
Flow	46 GPM
Conductivity	993
Temperature	12.3°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-17927

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	10-16-1997 1030 SC
Alkalinity, Bicarbonate	352	5	mg/l as HCO_3	SM2320-B	10-23-1997 1600 RJ
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	10-23-1997 1600 RJ
Alkalinity, Total	288	5	mg/l as $CaCO_3$	EPA 310.1	10-23-1997 1600 RJ
Anions	14.1	----	meq/l	---------	11-03-1997 0930 RJ
Calcium, Total	109	1	mg/l	EPA 215.1	10-19-1997 1215 MK
Calcium, Dissolved	102	1	mg/l	EPA 215.1	10-19-1997 1215 MK
Cations	12.8	----	meq/l	---------	11-03-1997 0930 RJ
Chloride	18	1	mg/l	SM4500-Cl-B	10-30-1997 1215 SC
Conductivity	1098	1	umhos/cm	SM2510-B	10-21-1997 1500 SC
Hardness, Total	569	----	mg/l as $CaCO_3$	SM2340-B	11-03-1997 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-19-1997 1045 MK
Magnesium, Total	72	1	mg/l	EPA 242.1	10-19-1997 1230 MK
Magnesium, Dissolved	66	1	mg/l	EPA 242.1	10-19-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-19-1997 1100 MK
Oil & Grease	<2	2	mg/l	SM5520-B	10-24-1997 0700 JC
pH	7.28	----	pH units	EPA 150.1	10-15-1997 0800 SC
Potassium, Total	4	1	mg/l	EPA 258.1	10-19-1997 1130 MK
Potassium, Dissolved	4	1	mg/l	EPA 258.1	10-19-1997 1130 MK
Sodium, Total	30	1	mg/l	EPA 273.1	10-19-1997 1145 MK
Sodium, Dissolved	28	1	mg/l	EPA 273.1	10-19-1997 1145 MK
Solids, Total Dissolved	810	10	mg/l	EPA 160.1	10-20-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 5 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINE
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001
Rec'd 1230 hr.
Sampled 0905 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled October 14, 1997

Date received October 14, 1997

FIELD MEASUREMENTS

pH	7.83
DO	6.3
Flow	46 GPM
Conductivity	993
Temperature	12.3°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-17927

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	10-20-1997 0700 JC
Sulfate	374	62	mg/l	EPA 375.4	10-27-1997 0800 [illegible]
Cation/Anion Balance	-4.8	----	%		11-03-1997 0930 [illegible]

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 1 6

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINE
MINE DISCHARGE @ GRIMES WASH
UT-0022896-001
Rec'd 1330 hr.
Sampled 1052 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled October 29, 1997

Date received October 29, 1997

FIELD MEASUREMENTS

pH	7.70
DO	7.2
Flow	45 gpm
Conductivity	1234
Temperature	12.1°C

Dissolved metals filtered at lab

Analysis report no. 59-18018

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900 SC
Alkalinity, Bicarbonate	372	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900 SC
Alkalinity, Total	305	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900 SC
Anions	16.2	----	meq/l	---------	11-17-1997 1000 RJ
Calcium, Total	114	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Calcium, Dissolved	107	1	mg/l	EPA 215.1	11-07-1997 0845 MK
Cations	13.4	----	meq/l	---------	11-17-1997 1000 RJ
Chloride	17	1	mg/l	SM4500-Cl-B	11-04-1997 1230 SC
Conductivity	1175	1	umhos/cm	SM2510-B	10-30-1997 2115 MK
Hardness, Total	598	----	mg/l as $CaCO_3$	SM2340-B	11-17-1997 1000 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-07-1997 0700 MK
Magnesium, Total	76	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Magnesium, Dissolved	68	1	mg/l	EPA 242.1	11-07-1997 0900 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715 MK
pH	7.85	----	pH units	EPA 150.1	10-30-1997 0215 MK
Potassium, Total	6	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	11-07-1997 0745 MK
Sodium, Total	31	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Sodium, Dissolved	31	1	mg/l	EPA 273.1	11-07-1997 0800 MK
Solids, Total Dissolved	840	10	mg/l	EPA 160.1	11-04-1997 0900 RJ
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	11-04-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 18, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

NOV 18 1997

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINE
MINE DISCHARGE @ GRIMES WASH
UT-0022896-001
Rec'd 1330 hr.
Sampled 1052 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled October 29, 1997

Date received October 29, 1997

FIELD MEASUREMENTS

pH	7.70
DO	7.2
Flow	45 gpm
Conductivity	1234
Temperature	12.1°C

Dissolved metals filtered at lab

Analysis report no. 59-18018

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Sulfate	461	125	mg/l	EPA 375.4	11-12-1997 0900 SC
Cation/Anion Balance	-9.2	----	%		11-17-1997 1000

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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December 3, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled November 13, 1997

Date received November 13, 1997

Rec'd 1430 hr.
Sampled 1225 hr.

FIELD MEASUREMENTS

pH	8.44
DO	6.2
Flow	676
Conductivity	1055
Temperature	11.7°C

Analysis report no. 59-18086

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-19-1997 1300 SC
Alkalinity, Bicarbonate	352	5	mg/l as HCO_3	SM2320-B	11-17-1997 1130 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-17-1997 1130 SC
Alkalinity, Total	288	5	mg/l as $CaCO_3$	EPA 310.1	11-17-1997 1130 SC
Anions	15.3	----	meq/l	---------	12-01-1997 1000 RJ
Calcium, Total	120	1	mg/l	EPA 215.1	11-17-1997 2300 MK
Calcium, Dissolved	115	1	mg/l	EPA 215.1	11-17-1997 2300 MK
Cations	13.8	----	meq/l	---------	12-01-1997 1000 RJ
Chloride	17	1	mg/l	SM4500-Cl-B	11-19-1997 0930 SC
Conductivity	1226	1	umhos/cm	SM2510-B	11-14-1997 1700 MK
Hardness, Total	617	----	mg/l as $CaCO_3$	SM2340-B	12-01-1997 1000 RJ
Iron, Total	0.1	0.1	mg/l	EPA 236.1	11-17-1997 2000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	11-17-1997 2000 MK
Magnesium, Total	77	1	mg/l	EPA 242.1	11-18-1997 1200 MK
Magnesium, Dissolved	74	1	mg/l	EPA 242.1	11-18-1997 1200 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-17-1997 2100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-17-1997 2100 MK
Oil & Grease	<2	2	mg/l	SM5520-B	11-18-1997 0700 JC
pH	7.85	----	pH units	EPA 150.1	11-13-1997 1500 SC
Potassium, Total	5	1	mg/l	EPA 258.1	11-17-1997 2130 MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	11-17-1997 2130 MK
Sodium, Total	32	1	mg/l	EPA 273.1	11-17-1997 2200 MK
Sodium, Dissolved	31	1	mg/l	EPA 273.1	11-17-1997 2200 MK
Solids, Total Dissolved	840	10	mg/l	EPA 160.1	11-20-1997 0700 JC

PACIFICORP
DEC - 3 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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December 3, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT-0022896-001

Rec'd 1430 hr.
Sampled 1225 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled November 13, 1997

Date received November 13, 1997

FIELD MEASUREMENTS

pH	8.44
DO	6.2
Flow	676
Conductivity	1055
Temperature	11.7°C

Analysis report no. 59-18086

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	11-20-1997 0700 JC
Sulfate	433	125	mg/l	EPA 375.4	11-20-1997 0800 SC
Cation/Anion Balance	-4.9	----	%		12-01-1997 1000

PACIFICORP
DEC - 3 1997
FIELD OFFICE

Respectfully submitted,
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Huntington Laboratory

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January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT 0022896-001

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled December 15, 1997

Date received December 15, 1997

Rec'd 1240 hr.
Sampled 1057 hr.

FIELD MEASUREMENTS

pH	8.31
Flow	729 GPM
Conductivity	1089
Temperature	12.2°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18163

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	373	5	mg/l as HCO_3	SM2320-B	12-17-1997 0700 JC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-17-1997 0700 JC
Alkalinity, Total	306	5	mg/l as $CaCO_3$	EPA 310.1	12-17-1997 0700 JC
Anions	15.9	----	meq/l	---------	01-02-1998 0930 RJ
Calcium, Total	122	1	mg/l	EPA 215.1	12-18-1997 1400 MK
Calcium, Dissolved	117	1	mg/l	EPA 215.1	12-18-1997 1400 MK
Cations	14.0	----	meq/l	---------	01-02-1998 0930 RJ
Chloride	12	1	mg/l	SM4500-Cl-B	12-23-1997 1030 JC
Conductivity	1184	1	umhos/cm	SM2510-B	12-24-1997 1200 RJ
Hardness, Total	609	----	mg/l as $CaCO_3$	SM2340-B	01-02-1998 0930 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	12-18-1997 1200 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	12-18-1997 1200 MK
Magnesium, Total	81	1	mg/l	EPA 242.1	12-18-1997 1415 MK
Magnesium, Dissolved	77	1	mg/l	EPA 242.1	12-18-1997 1415 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-18-1997 1215 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-18-1997 1215 MK
pH	7.89	----	pH units	EPA 150.1	12-16-1998 1000 MK
Potassium, Total	6	1	mg/l	EPA 258.1	12-18-1997 1300 MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	12-18-1997 1300 MK
Sodium, Total	38	1	mg/l	EPA 273.1	12-18-1997 1315 MK
Sodium, Dissolved	38	1	mg/l	EPA 273.1	12-18-1997 1315 MK
Solids, Total Dissolved	870	10	mg/l	EPA 160.1	12-16-1997 0700 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	12-16-1997 0700 JC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RS

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January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG COTTONWOOD MINES
MINE DISCHARGE @ GRIMES WASH
UPDES UT 0022896-001

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled December 15, 1997

Date received December 15, 1997

Rec'd 1240 hr.
Sampled 1057 hr.

FIELD MEASUREMENTS

pH	8.31
Flow	729 GPM
Conductivity	1089
Temperature	12.2°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18163

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Sulfate	453	250	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	-6.5	----	%		01-02-1998 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

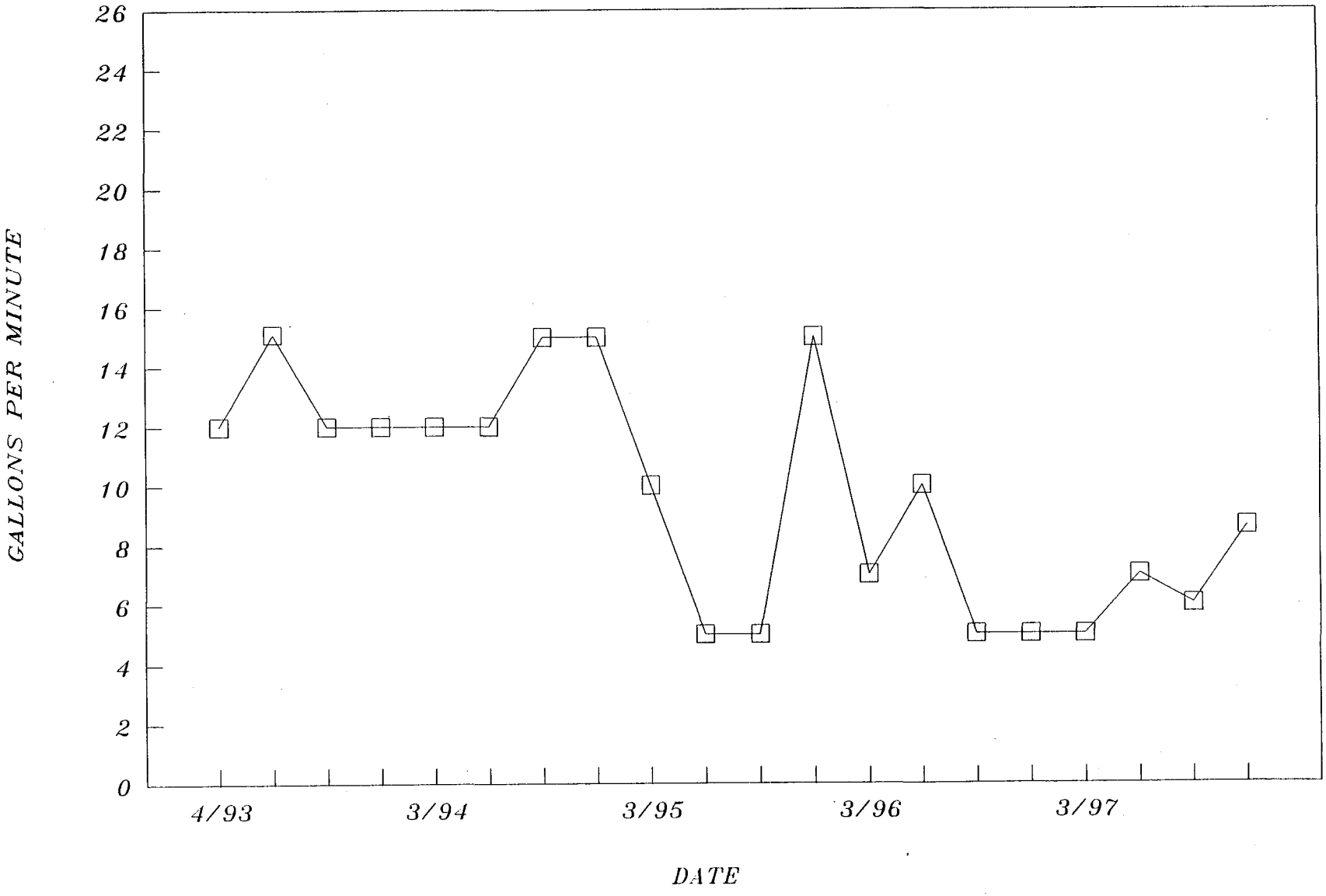
Huntington Laboratory

MEMBER ACIL

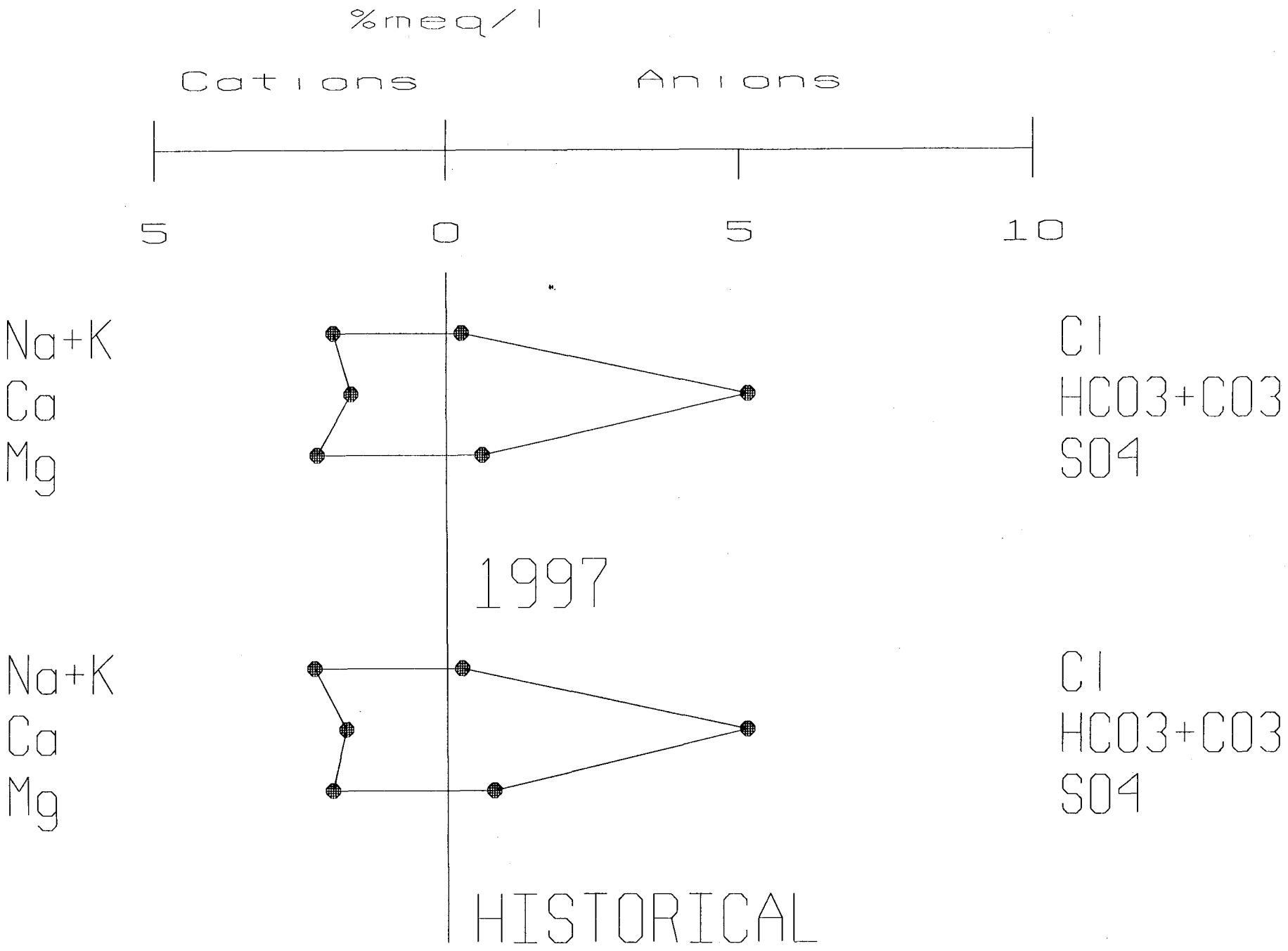
APPENDIX M

TRAIL MOUNTAIN IN-MINE MONITORING

UG-3



UG-3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Cations
Anions
5
0
5
10
Na+K
Ca
Mg
Cl
HCO3+CO3
SO4
1997
Na+K
Ca
Mg
Cl
HCO3+CO3
SO4
HISTORICAL

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March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN IN MINE UG-3

Kind of sample reported to us Water

Rec'd 1145 hr.
Sampled 1410 hr.

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 11, 1997

Date received March 13, 1997

FIELD MEASUREMENTS
Flow 5.0 gpm
Temperature 14.0°C

NOTE:pH expired when received!
NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-17043

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	11	10	mg/l as $CaCO_3$	D1067-92	03-17-1997 0900 SW
Alkalinity, Bicarbonate	320	5	mg/l as HCO_3	SM2320-B	03-17-1997 1000 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-17-1997 1000 SW
Alkalinity, Total	263	5	mg/l as $CaCO_3$	EPA 310.1	03-17-1997 1000 SW
Anions	6.4	----	meq/l	---------	03-27-1997 1600 RJ
Calcium, Dissolved	35	1	mg/l	EPA 215.1	03-18-1997 1215 MK
Cations	6.2	----	meq/l	---------	03-27-1997 1600 RJ
Chloride	16	1	mg/l	SM4500-Cl-B	03-18-1997 0800 SW
Conductivity	636	1	umhos/cm	SM2510-B	03-17-1997 1300 SW
Hardness, Total	207	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1600 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000 MK
Magnesium, Dissolved	29	1	mg/l	EPA 242.1	03-18-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030 MK
Manganese, Dissolved	<0.1	10	mg/l	EPA 243.1	03-18-1997 1030 MK
pH	8.14	----	pH units	EPA 150.1	03-14-1997 0800 JC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	03-18-1997 1100 MK
Sodium, Dissolved	46	1	mg/l	EPA 273.1	03-18-1997 1130 MK
Solids, Total Dissolved	320	10	mg/l	EPA 160.1	03-18-1997 0730 JC
Sulfate	35	17	mg/l	EPA 375.4	03-26-1997 0700 SW
Cation/Anion Balance	-1.7	----	%		03-27-1997 1600 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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FAX: (801) 653-2436

July 30, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN IN-MINE UG-3

Kind of sample reported to us Water

Rec'd 0900 hr.
Sampled 1140 hr.

Sample taken at

FIELD MEASUREMENTS
Flow 17 gpm
Temperature 10°C

Sample taken by Energy West/Mike

Date sampled June 26, 1997

Date received June 27, 1997

DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17424

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	06-28-1997 2235	RJ
Alkalinity, Bicarbonate	311	5	mg/l as HCO_3	SM2320-B	07-08-1997 0800	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-08-1997 0800	
Alkalinity, Total	255	5	mg/l as $CaCO_3$	EPA 310.1	07-08-1997 0800	SC
Anions	5.9	----	meq/l	---------	07-28-1997 1400	RJ
Calcium, Dissolved	32	1	mg/l	EPA 215.1	07-09-1997 1030	MK
Cations	5.8	----	meq/l	---------	07-28-1997 1400	RJ
Chloride	10	10	mg/l	SM4500-Cl-B	07-23-1997 0830	SC
Conductivity	521	1	umhos/cm	SM2510-B	06-30-1997 0630	RJ
Hardness, Total	187	----	mg/l as $CaCO_3$	SM2340-B	07-28-1997 1400	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Magnesium, Dissolved	26	10	mg/l	EPA 242.1	07-09-1997 1045	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
pH	8.18	----	pH units	EPA 150.1	06-27-1997 1020	RJ
Potassium, Dissolved	4	1	mg/l	EPA 258.1	07-09-1997 0845	MK
Sodium, Dissolved	44	100	mg/l	EPA 273.1	07-09-1997 0930	MK
Solids, Total Dissolved	300	10	mg/l	EPA 160.1	07-02-1997 0700	JC
Sulfate	27	10	mg/l	EPA 375.4	07-11-1997 1000	SC
Cation/Anion Balance	1.6	----	%		07-28-1997 1400	RJ

PACIFICORP
1997

Respectfully submitted,
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Huntington Laboratory

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tober 9, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
OCT - 9 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
IN MINE UG-3

Rec'd 1220 hr.
Sampled 1040 hr.

ind of sample Water
eported to us

mple taken at Trail Mountain

ample taken by Energy West/Tom Lloyd

Date sampled September 24, 1997

Date received September 24, 1997

FIELD MEASUREMENTS

Flow 6.0 gpm
Temperature 12°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17805

ameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
ity	<10	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300 SC
linity, Bicarbonate	308	5	mg/l as HCO_3	SM2320-B	09-30-1997 1000 SC
linity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1000 SC
linity, Total	252	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1000 SC
ions	5.7	----	meq/l	---------	10-08-1997 0900 RJ
um, Dissolved	30	1	mg/l	EPA 215.1	09-25-1997 2030 MK
ns	5.3	----	meq/l	---------	10-08-1997 0900 RJ
ide	5	1	mg/l	SM4500-Cl-B	10-02-1997 1400 SC
uctivity	522	1	umhos/cm	SM2510-B	10-03-1997 0145 MK
ness, Total	174	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900 RJ
tal	<0.1	0.1	mg/l	EPA 236.1	09-25-1997 1830 MK
ssolved	<0.1	0.1	mg/l	EPA 236.1	09-25-1997 1830 MK
um, Dissolved	24	2	mg/l	EPA 242.1	09-25-1997 2100 MK
nese, Total	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845 MK
nese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845 MK
	8.04	----	pH units	EPA 150.1	09-24-1997 1500 SC
nesium, Dissolved	3	1	mg/l	EPA 258.1	09-25-1997 1915 MK
um, Dissolved	40	1	mg/l	EPA 273.1	09-25-1997 1945 MK
s, Total Dissolved	300	10	mg/l	EPA 160.1	09-29-1997 0700 JC
ate	26	10	mg/l	EPA 375.4	10-06-1997 0800 SC
n Anion Balance	4.0	----	%		10-08-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

January 12, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

JAN 12
FIELD

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
IN-MINE UG-3

Kind of sample reported to us Water

Rec'd 1500 hr.
Sampled 1135 hr.

FIELD MEASUREMENTS
Flow 8.6
Temperature 4.1°C

Sample taken at Trail Mountain

Sample taken by Energy West/Tom Lloyd

Date sampled December 22, 1997

Date received December 22, 1997

NOTE: DISSOLVED METALS FILTERED AT LAB
NOTE: POSSIBLE MATRIX INTERFERENCE IN ALKALINITY

Analysis report no. 59-18173

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900	RJ
Alkalinity, Bicarbonate	316	5	mg/l as HCO_3	SM2320-B	12-24-1997 1200	
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-24-1997 1200	
Alkalinity, Total	259	5	mg/l as $CaCO_3$	EPA 310.1	12-24-1997 1200	JC
Anions	5.9	----	meq/l	---------	01-08-1998 1500	RJ
Calcium, Dissolved	34	1	mg/l	EPA 215.1	01-08-1998 1015	MK
Cations	5.8	----	meq/l	---------	01-08-1998 1500	RJ
Chloride	5	1	mg/l	SM4500-Cl-B	12-23-1997 1030	JC
Conductivity	550	1	umhos/cm	SM2510-B	12-24-1997 1200	RJ
Hardness, Total	196	----	mg/l as $CaCO_3$	SM2340-B	01-08-1998 1500	RJ
Iron, Total	<0.1	.1	mg/l	EPA 236.1	01-08-1998 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	01-08-1998 0745	MK
Magnesium, Dissolved	27	1	mg/l	EPA 242.1	01-08-1998 1030	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	01-08-1998 0830	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	01-08-1998 0830	MK
pH	8.10	----	pH units	EPA 150.1	12-23-1997 0700	JC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	01-08-1998 0845	MK
Sodium, Dissolved	41	1	mg/l	EPA 273.1	01-08-1998 0900	MK
Solids, Total Dissolved	310	10	mg/l	EPA 160.1	12-23-1997 0700	JC
Sulfate	28	10	mg/l	EPA 375.4	12-30-1997 0900	JC
Cation/Anion Balance	-1.1	----	%		01-08-1998 1500	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

MEMBER ACIL

APPENDIX N

COMMERCIAL TESTING & ENGINEERING CO.
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P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

July 1, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUL - 3 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Mine Discharge
UPDES UG-040003-002

Rec'd 1130 hr.
Sampled 0900 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled June 2, 1997

Date received June 2, 1997

FIELD MEASUREMENTS

pH	8.27
DO	8.0
Flow	100 gpm
Conductivity	1259
Temperature	16.0°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17218

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	06-10-1997 0730 SW
Alkalinity, Bicarbonate	601	5	mg/l as HCO_3	SM2320-B	06-04-1997 1000 RJ
Alkalinity, Carbonate	6	5	mg/l as CO_3	SM2320-B	06-04-1997 1000 RJ
Alkalinity, Total	502	5	mg/l as $CaCO_3$	EPA 310.1	06-04-1997 1000 RJ
Anions	15.4	----	meq/l	---------	06-26-1997 1800 RJ
Calcium, Dissolved	34	1	mg/l	EPA 215.1	06-19-1997 1115 MK
Cations	15.6	----	meq/l	---------	06-26-1997 1800 RJ
Chloride	31	1	mg/l	SM4500-Cl-B	06-26-1997 0810 RJ
Conductivity	1421	1	umhos/cm	SM2510-B	06-10-1997 1200 SW
Hardness, Total	175	----	mg/l as $CaCO_3$	SM2340-B	06-26-1997 1800 RJ
Iron, Total	1.4	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Iron, Dissolved	0.3	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Magnesium, Dissolved	22	1	mg/l	EPA 242.1	06-19-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	06-19-1997 0915 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	06-19-1997 0915 MK
Oil & Grease	<2	2	mg/l	SM5520-B	06-11-1997 0700 JC
pH	8.37	----	pH units	EPA 150.1	06-02-1997 1140 RJ
Potassium, Dissolved	5	1	mg/l	EPA 258.1	06-19-1997 0945 MK
Sodium, Dissolved	274	5	mg/l	EPA 273.1	06-19-1997 1030 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	06-02-1997 1230 JC
Solids, Total Dissolved	920	10	mg/l	EPA 160.1	06-05-1997 0700 JC
Solids, Total Suspended	73	5	mg/l	EPA 160.2	06-05-1997 0700 JC
Sulfate	217	83	mg/l	EPA 375.4	06-24-1997 0830 RJ
Cation/Anion Balance	0.4	----	%		06-26-1997 1800 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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July 10, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
JUL 10 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN MINE DISCHARGE
UPDES UG-0400003-002

Rec'd 1440 hr.
Sampled 1345 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/Mike

Date sampled June 13, 1997

Date received June 13, 1997

FIELD MEASUREMENTS

pH	8.45
DO	8.7
Flow	100 gpm
Conductivity	1250
Temperature	16.3°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17316

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	06-23-1997 0900	RJ
Alkalinity, Bicarbonate	602	5	mg/l as HCO_3	SM2320-B	06-16-1997 1700	[illegible]
Alkalinity, Carbonate	14	5	mg/l as CO_3	SM2320-B	06-16-1997 1700	[illegible]
Alkalinity, Total	517	5	mg/l as $CaCO_3$	EPA 310.1	06-16-1997 1700	RJ
Anions	16.9	----	meq/l	---------	07-08-1997 1600	RJ
Calcium, Dissolved	42	1	mg/l	EPA 215.1	07-08-1997 1045	MK
Cations	17.2	----	meq/l	---------	07-08-1997 1600	RJ
Chloride	39	1	mg/l	SM4500-Cl-B	07-02-1997 0730	RJ
Conductivity	1530	1	umhos/cm	SM2510-B	06-30-1997 0340	RJ
Hardness, Total	204	----	mg/l as $CaCO_3$	SM2340-B	07-08-1997 1600	RJ
Iron, Total	1.3	0.1	mg/l	EPA 236.1	07-08-1997 0800	MK
Iron, Dissolved	0.4	0.1	mg/l	EPA 236.1	07-08-1997 0800	MK
Magnesium, Dissolved	24	1	mg/l	EPA 242.1	07-08-1997 1100	MK
Manganese, Total	0.2	0.1	mg/l	EPA 243.1	07-08-1997 0830	MK
Manganese, Dissolved	0.1	0.1	mg/l	EPA 243.1	07-08-1997 0830	MK
Oil & Grease	7	2	mg/l	SM5520-B	06-18-1997 0800	JC
pH	8.48	----	pH units	EPA 150.1	06-14-1997 1020	RJ
Potassium, Dissolved	5	1	mg/l	EPA 258.1	07-08-1997 0900	MK
Sodium, Dissolved	299	5	mg/l	EPA 273.1	07-08-1997 0930	MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	06-14-1997 1000	RJ
Solids, Total Dissolved	1020	10	mg/l	EPA 160.1	06-19-1997 0900	JC
Solids, Total Suspended	46	5	mg/l	EPA 160.2	06-16-1997 0700	JC
Sulfate	263	83	mg/l	EPA 375.4	07-02-1997 0715	SC
Cation/Anion Balance	0.9	----	%		07-08-1997 1600	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

F-465
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FAX: (801) 653-2436

July 2, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN DISCHARGE

Kind of sample reported to us Water

Rec'd 1230 hr.
Sampled 1800 hr.

Sample taken at

FIELD MEASUREMENTS
Flow 100 gpm

Sample taken by Energy West/Delivered for C.S.

Date sampled June 15, 1997

Date received June 16, 1997

Analysis report no. 59-17317

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Iron, Total	1.2	0.1	mg/l	EPA 236.1	06-19-1997 0900 MK
Solids, Total Dissolved	990	10	mg/l	EPA 160.1	06-19-1997 0900 JC
Solids, Total Suspended	13	5	mg/l	EPA 160.2	06-19-1997 0900 JC

PACIFICORP
JUL - 3 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

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FAX: (801) 653-2436

August 27, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG 27 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN MINE DISCHARGE
UPDES UG-040003-002

Rec'd 1010 hr.
Sampled 0858 hr.

Kind of sample reported to us Water

Sample taken at TRAIL MOUNTAIN

Sample taken by ENERGY WEST/MBD

Date sampled July 23, 1997

Date received July 23, 1997

FIELD MEASUREMENTS

pH	8.09
DO	5.9
Flow	180 gpm
Conductivity	1279
Temperature	16.5°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17520

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	22	10	mg/l as $CaCO_3$	D1067-92	07-28-1997 1030 SC
Alkalinity, Bicarbonate	596	5	mg/l as HCO_3	SM2320-B	07-30-1997 0730 [illegible]
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-30-1997 0730 [illegible]
Alkalinity, Total	489	5	mg/l as $CaCO_3$	EPA 310.1	07-30-1997 0730 SC
Anions	15.4	----	meq/l	---------	08-25-1997 0920 MK
Calcium, Dissolved	49	1	mg/l	EPA 215.1	08-21-1997 1330 MK
Cations	16.6	----	meq/l	---------	08-25-1997 0920 RJ
Chloride	36	1	mg/l	SM4500-Cl-B	08-01-1997 1010 SC
Conductivity	1463	1	umhos/cm	SM2510-B	08-11-1997 0800 JC
Hardness, Total	217	----	mg/l as $CaCO_3$	SM2340-B	08-25-1997 0920 RJ
Iron, Total	1.4	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Iron, Dissolved	0.3	0.1	mg/l	EPA 236.1	08-13-1997 0800 MK
Magnesium, Dissolved	23	1	mg/l	EPA 242.1	08-21-1997 1345 MK
Manganese, Total	0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	08-13-1997 0815 MK
Oil & Grease	<2	2	mg/l	SM5520-B	08-04-1997 0700 JC
pH	8.07	----	pH units	EPA 150.1	07-23-1997 0900 MK
Potassium, Dissolved	3	1	mg/l	EPA 258.1	08-13-1997 0845 MK
Sodium, Dissolved	281	1	mg/l	EPA 273.1	08-21-1997 0900 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	07-23-1997 1030 MK
Solids, Total Dissolved	940	10	mg/l	EPA 160.1	07-28-1997 0700 JC
Solids, Total Suspended	14	5	mg/l	EPA 160.2	07-28-1997 0700 JC
Sulfate	277	50	mg/l	EPA 375.4	08-08-1997 0830 SC
Cation/Anion Balance	3.9	----	%		08-25-1997 0920 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

September 17, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
SEP 17 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
MINE DISCHARGE
UPDES UG-040003-002
Rec'd 0745 hr.
Sampled 0700 hr.

Kind of sample reported to us WATER

Sample taken at TRAIL MOUNTAIN

Sample taken by ENERGY WEST/MBD

Date sampled August 28, 1997

Date received August 28, 1997

FIELD MEASUREMENTS

pH	8.51
DO	5.9
Flow	180 GPM
Conductivity	1280
Temperature	16.9°C

Dissolved metals filtered @ lab!

Analysis report no. 59-17671

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	09-10-1997 0900	RJ
Alkalinity, Bicarbonate	688	5	mg/l as HCO_3	SM2320-B	09-05-1997 0600	RJ
Alkalinity, Carbonate	12	5	mg/l as CO_3	SM2320-B	09-05-1997 0600	RJ
Alkalinity, Total	583	5	mg/l as $CaCO_3$	EPA 310.1	09-05-1997 0600	RJ
Anions	16.5	----	meq/l	---------	09-16-1997 0700	RJ
Calcium, Dissolved	20	1	mg/l	EPA 215.1	09-09-1997 1100	MK
Cations	16.9	----	meq/l	---------	09-16-1997 1400	RJ
Chloride	37	10	mg/l	SM4500-Cl-B	09-05-1997 0800	SC
Conductivity	1473	1	umhos/cm	SM2510-B	09-16-1997 1200	SC
Hardness, Total	936	----	mg/l as $CaCO_3$	SM2340-B	09-16-1997 1400	RJ
Iron, Total	1.2	0.1	mg/l	EPA 236.1	09-09-1997 0900	MK
Iron, Dissolved	0.3	0.1	mg/l	EPA 236.1	09-09-1997 0900	MK
Magnesium, Dissolved	17	1	mg/l	EPA 242.1	09-09-1997 1115	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	09-09-1997 0915	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-09-1997 0915	MK
Oil & Grease	2	2	mg/l	SM5520-B	09-04-1997 0700	JC
pH	8.49	----	pH units	EPA 150.1	08-28-1997 1420	SC
Potassium, Dissolved	5	1	mg/l	EPA 258.1	09-09-1997 0945	MK
Sodium, Dissolved	330	2	mg/l	EPA 273.1	09-09-1997 1000	MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	08-28-1997 1300	SC
Solids, Total Dissolved	920	10	mg/l	EPA 160.1	09-02-1997 0700	JC
Solids, Total Suspended	42	5	mg/l	EPA 160.2	09-02-1997 0700	JC
Sulfate	182	83	mg/l	EPA 375.4	09-04-1997 0900	SC
Cation/Anion Balance	1.1	----	%		09-16-1997 1400	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
NOV 11 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
MINE DISCHARGE UPDES UG-04003-002
Rec'd 1530 hr.
Sampled 0723 hr.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled October 28, 1997

Date received October 28, 1997

FIELD MEASUREMENTS

pH	8.94
DO	6.5
Flow	400 gpm
Conductivity	1313
Temperature	12.6°C

NOTE: Dissolved metals filtered at lab
NOTE: TSS expired when analyzed

Analysis report no. 59-18012

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-10-1997 0900	SC
Alkalinity, Bicarbonate	775	5	mg/l as HCO_3	SM2320-B	11-03-1997 0900	[illegible]
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-03-1997 0900	[illegible]
Alkalinity, Total	635	5	mg/l as $CaCO_3$	EPA 310.1	11-03-1997 0900	SC
Anions	17.3	----	meq/l	---------	11-11-1997 1000	RJ
Calcium, Dissolved	20	1	mg/l	EPA 215.1	11-07-1997 0845	MK
Cations	16.4	----	meq/l	---------	11-11-1997 1000	RJ
Chloride	29	1	mg/l	SM4500-Cl-B	11-04-1997 1230	SC
Conductivity	1529	1	umhos/cm	SM2510-B	10-28-1997 2215	MK
Hardness, Total	116	----	mg/l as $CaCO_3$	SM2340-B	11-11-1997 1000	RJ
Iron, Total	1.0	0.1	mg/l	EPA 236.1	11-07-1997 0700	MK
Iron, Dissolved	0.4	0.1	mg/l	EPA 236.1	11-07-1997 0700	MK
Magnesium, Dissolved	16	1	mg/l	EPA 242.1	11-07-1997 0900	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-07-1997 0715	MK
Oil & Grease	<2	2	mg/l	SM5520-B	10-31-1997 0700	JC
pH	8.28	----	pH units	EPA 150.1	10-28-1997 2145	MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	11-07-1997 0745	MK
Sodium, Dissolved	321	5	mg/l	EPA 273.1	11-07-1997 0800	MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	10-28-1997 1745	MK
Solids, Total Dissolved	1020	10	mg/l	EPA 160.1	10-29-1997 0700	JC
Solids, Total Suspended	14	5	mg/l	EPA 160.2	11-04-1997 0900	RJ
Sulfate	183	50	mg/l	EPA 375.4	10-29-1997 1400	SC
Cation/Anion Balance	-2.7	----	%		11-11-1997 1000	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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FAX: (801) 653-2436

December 11, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Energy West Mining Co.
Vendor ____ Processed by ____
PO ____ Date ____
Seq # ____ JID # ____
Received DEC 19 1997 AP Department
Comments

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
MINE DISCHARGE
UPDES UG-040003-002
Rec'd 1430 hr.
Sampled 1251 hr.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled November 13, 1997

Date received November 13, 1997

FIELD MEASUREMENTS	
pH	8.92
DO	5.8
Flow	200 GPM
Conductivity	1384
Temperature	13.6°C

NOTE: DISSOLVED METALS FILTERED AT LAB

Analysis report no. 59-18087

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	11-19-1997 1300 SC
Alkalinity, Bicarbonate	747	5	mg/l as HCO_3	SM2320-B	11-17-1997 1130 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	11-17-1997 1130 SC
Alkalinity, Total	612	5	mg/l as $CaCO_3$	EPA 310.1	11-17-1997 1130 SC
Anions	17.9	----	meq/l	---------	12-11-1997 1100 RJ
Calcium, Dissolved	23	1	mg/l	EPA 215.1	11-17-1997 2300 MK
Cations	16.5	----	meq/l	---------	12-11-1997 1100 RJ
Chloride	35	1	mg/l	SM4500-Cl-B	11-19-1997 0930 SC
Conductivity	1541	1	umhos/cm	SM2510-B	11-14-1997 1700 MK
Hardness, Total	127	----	mg/l as $CaCO_3$	SM2340-B	12-11-1997 1100 RJ
Iron, Total	1.0	0.1	mg/l	EPA 236.1	11-17-1997 2000 MK
Iron, Dissolved	0.4	0.1	mg/l	EPA 236.1	11-17-1997 2000 MK
Magnesium, Dissolved	17	1	mg/l	EPA 242.1	11-18-1997 1200 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	11-17-1997 2100 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-17-1997 2100 MK
Oil & Grease	<2	2	mg/l	SM5520-B	11-18-1997 0700 JC
pH	8.23	----	pH units	EPA 150.1	11-13-1997 1500 SC
Potassium, Dissolved	5	1	mg/l	EPA 258.1	11-17-1997 2130 MK
Sodium, Dissolved	318	5	mg/l	EPA 273.1	11-17-1997 2200 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	11-14-1997 1615 MK
Solids, Total Dissolved	930	10	mg/l	EPA 160.1	11-20-1997 0700 JC
Solids, Total Suspended	19	5	mg/l	EPA 160.2	11-20-1997 0700 JC
Sulfate	224	125	mg/l	EPA 375.4	12-10-1997 1230 SC
Cation/Anion Balance	-4.0	----	%		12-11-1997 1100 RJ

PACIFICORP
DEC 12 1997

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RD

MEMBER ACIL

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FAX: (801) 653-2436

January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
MINE DISCHARGE
UPDES UG 040003-002

Rec'd 0945 hr.
Sampled 0819 hr.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled December 16, 1997

Date received December 16, 1997

FIELD MEASUREMENTS

pH	8.88
Flow	100 GPM
Conductivity	1290
Temperature	13°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18165

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	781	5	mg/l as HCO_3	SM2320-B	12-18-1997 1200 [illegible]
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-18-1997 1200 [illegible]
Alkalinity, Total	640	5	mg/l as $CaCO_3$	EPA 310.1	12-18-1997 1200 JC
Anions	16.7	----	meq/l	---------	01-02-1998 0930 RJ
Calcium, Dissolved	20	1	mg/l	EPA 215.1	12-18-1997 1400 MK
Cations	17.5	----	meq/l	---------	01-02-1998 0930 RJ
Chloride	10	1	mg/l	SM4500-Cl-B	12-23-1997 1030 JC
Conductivity	1497	1	umhos/cm	SM2510-B	12-24-1997 1200 RJ
Hardness, Total	116	----	mg/l as $CaCO_3$	SM2340-B	01-02-1998 0930 RJ
Iron, Total	1.0	0.1	mg/l	EPA 236.1	12-18-1997 1200 MK
Iron, Dissolved	0.4	0.1	mg/l	EPA 236.1	12-18-1997 1200 MK
Magnesium, Dissolved	16	1	mg/l	EPA 242.1	12-18-1997 1415 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-18-1997 1215 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-18-1997 1215 MK
Oil & Grease	<2	2	mg/l	SM5520-B	12-19-1997 0700 JC
pH	8.22	----	pH units	EPA 150.1	12-16-1998 1000 MK
Potassium, Dissolved	5	1	mg/l	EPA 258.1	12-18-1997 1300 MK
Sodium, Dissolved	345	5	mg/l	EPA 273.1	12-18-1997 1315 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	12-16-1997 1000 MK
Solids, Total Dissolved	940	10	mg/l	EPA 160.1	12-16-1997 0700 JC
Solids, Total Suspended	15	5	mg/l	EPA 160.2	12-16-1997 0700 JC
Sulfate	173	125	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	2.2	----	%		01-02-1998 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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April 4, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
APR 7
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
TM-18 (OLIPHANT MINE DISCHARGE)

Rec'd 1200 hr.
Sampled 1013 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 21, 1997

Date received March 21, 1997

FIELD MEASUREMENTS

pH	8.43
DO	9.6
Flow	0.125 gpm
Conductivity	558
Temperature	6.8°C

Analysis report no. 59-17064

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	03-25-1997 0630 SW
Alkalinity, Bicarbonate	272	5	mg/l as HCO_3	SM2320-B	03-25-1997 0930 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-25-1997 0930 SW
Alkalinity, Total	223	5	mg/l as $CaCO_3$	EPA 310.1	03-25-1997 0930 SW
Anions	7.3	----	meq/l	---------	04-01-1997 1300 RJ
Calcium, Dissolved	47	1	mg/l	EPA 215.1	03-27-1997 1115 MK
Cations	6.3	----	meq/l	---------	04-01-1997 1300 RJ
Chloride	9	1	mg/l	SM4500-Cl-B	03-25-1997 1300 SW
Conductivity	645	1	umhos/cm	SM2510-B	03-27-1997 1330 MK
Hardness, Total	372	----	mg/l as $CaCO_3$	SM2340-B	04-01-1997 1300 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	03-27-1997 0730 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-27-1997 0730 MK
Magnesium, Dissolved	38	1	mg/l	EPA 242.1	03-27-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-27-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-27-1997 0815 MK
Oil & Grease	<2	2	mg/l	SM5520-B	04-01-1997 0700 JC
pH	8.32	----	pH units	EPA 150.1	03-21-1997 1345 JC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	03-27-1997 0930 MK
Sodium, Dissolved	18	1	mg/l	EPA 273.1	03-27-1997 1030 MK
Solids, Total Dissolved	360	10	mg/l	EPA 160.1	03-24-1997 0700 JC
Sulfate	126	31	mg/l	EPA 375.4	03-26-1997 0700 SW
Cation/Anion Balance	-7.3	----	%		04-01-1997 1300 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory KG

APPENDIX O

COMMERCIAL TESTING & ENGINEERING CO.
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March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
WASTE ROCK WELL

Rec'd 1200 hr.
Sampled 0747 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 21, 1997

Date received March 21, 1997

FIELD MEASUREMENTS

pH	7.77
DO	4.8
Flow	~~4.64~~ ft. 4.65 ft
Conductivity	1760
Temperature	10.8°C

Analysis report no. 59-17062

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	14	10	mg/l as $CaCO_3$	D1067-92	03-25-1997 0630 SW
Alkalinity, Bicarbonate	834	5	mg/l as HCO_3	SM2320-B	03-25-1997 0930 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-25-1997 0930 SW
Alkalinity, Total	683	5	mg/l as $CaCO_3$	EPA 310.1	03-25-1997 0930 SW
Anions	290.2	----	meq/l	---------	03-27-1997 1600 RJ
Calcium, Dissolved	126	1	mg/l	EPA 215.1	03-27-1997 1115 MK
Cations	325.3	----	meq/l	---------	03-27-1997 1600 RJ
Chloride	815	1	mg/l	SM4500-Cl-B	03-25-1997 1300 SW
Conductivity	23800	1	umhos/cm	SM2510-B	03-27-1997 1330 MK
Hardness, Total	1134	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1600 RJ
Iron, Total	1.0	0.1	mg/l	EPA 236.1	03-27-1997 0730 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-27-1997 0730 MK
Magnesium, Dissolved	199	5	mg/l	EPA 242.1	03-27-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-27-1997 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-27-1997 0815 MK
pH	7.71	----	pH units	EPA 150.1	03-21-1997 1345 JC
Potassium, Dissolved	13	1	mg/l	EPA 258.1	03-27-1997 0930 MK
Sodium, Dissolved	6950	100	mg/l	EPA 273.1	03-27-1997 1030 MK
Solids, Total Dissolved	20770	10	mg/l	EPA 160.1	03-24-1997 0700 JC
Sulfate	12178	2500	mg/l	EPA 375.4	03-26-1997 0700 SW
Cation/Anion Balance	5.7	----	%		03-27-1997 1600 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott

Huntington Laboratory RJ

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July 29, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK WASTE ROCK WELL

Kind of sample reported to us Water

Rec'd 1045 hr.
Sampled 0940 hr.

Sample taken at DC WASTE ROCK WELL

Sample taken by Energy West/Mike

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	7.76
Flow	5.7 ~~gpm~~ Depth
Conductivity	1810
Temperature	13.9°C

DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17411

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	17	10	mg/l as $CaCO_3$	D1067-92	06-28-1997 2235	RJ
Alkalinity, Bicarbonate	800	5	mg/l as HCO_3	SM2320-B	07-08-1997 0800	SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-08-1997 0800	
Alkalinity, Total	666	5	mg/l as $CaCO_3$	EPA 310.1	07-08-1997 0800	SC
Anions	299.0	----	meq/l	---------	07-28-1997 1400	RJ
Calcium, Dissolved	126	1	mg/l	EPA 215.1	07-09-1997 1030	MK
Cations	321.6	----	meq/l	---------	07-28-1997 1400	RJ
Chloride	840	10	mg/l	SM4500-Cl-B	07-23-1997 0830	SC
Conductivity	22600	1	umhos/cm	SM2510-B	06-30-1997 0545	RJ
Hardness, Total	1163	----	mg/l as $CaCO_3$	SM2340-B	07-28-1997 1400	RJ
Iron, Total	0.9	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Magnesium, Dissolved	206	10	mg/l	EPA 242.1	07-09-1997 1045	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
pH	7.93	----	pH units	EPA 150.1	06-26-1997 1630	RJ
Potassium, Dissolved	14	1	mg/l	EPA 258.1	07-09-1997 0845	MK
Sodium, Dissolved	6850	100	mg/l	EPA 273.1	07-09-1997 0930	MK
Solids, Total Dissolved	20400	10	mg/l	EPA 160.1	07-02-1997 0700	JC
Sulfate	12595	2500	mg/l	EPA 375.4	07-07-1997 0750	SC
Cation/Anion Balance	3.6	----	%		07-28-1997 1400	RJ

PACIFICORP
JUL 3
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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October 9, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

OCT 13 1997

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
WASTE ROCK WELL

Rec'd 1430 hr.
Sampled 1014 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/MBD

Date sampled September 16, 1997

Date received September 16, 1997

FIELD MEASUREMENTS

pH	7.76
DO	4.0
Depth	6.76'
Conductivity	1850
Temperature	14.4°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17791

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	14	10	mg/l as $CaCO_3$	D1067-92	09-19-1997 0800 SC
Alkalinity, Bicarbonate	806	5	mg/l as HCO_3	SM2320-B	09-30-1997 0900 SC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 0900 SC
Alkalinity, Total	661	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 0900 SC
Anions	304.1	----	meq/l	---------	10-08-1997 0900 RJ
Calcium, Dissolved	127	1	mg/l	EPA 215.1	09-17-1997 1715 RJ
Cations	267.6	----	meq/l	---------	10-08-1997 0900 RJ
Chloride	865	50	mg/l	SM4500-Cl-B	10-02-1997 1305 SC
Conductivity	21900	1	umhos/cm	SM2510-B	09-22-1997 1400 SC
Hardness, Total	1079	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900 RJ
Iron, Total	0.7	0.1	mg/l	EPA 236.1	09-17-1997 1815 RJ
Iron, Dissolved	0.2	0.1	mg/l	EPA 236.1	09-17-1997 1815 RJ
Magnesium, Dissolved	185	5	mg/l	EPA 242.1	09-17-1997 1730 RJ
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	09-17-1997 1845 RJ
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-17-1997 1845 RJ
pH	7.89	----	pH units	EPA 150.1	09-17-1997 0830 SC
Potassium, Dissolved	11	1	mg/l	EPA 258.1	09-17-1997 1900 RJ
Sodium, Dissolved	5650	100	mg/l	EPA 273.1	09-17-1997 1930 RJ
Solids, Total Dissolved	20060	10	mg/l	EPA 160.1	09-22-1997 0700 JC
Sulfate	12798	5	mg/l	EPA 375.4	09-30-1997 1130 SC
Cation/Anion Balance	6.4	----	%		10-08-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK
WASTE ROCK WELL

Rec'd 1240 hr.
Sampled 1010 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/MBD

Date sampled December 15, 1997

Date received December 15, 1997

FIELD MEASUREMENTS

pH	8.3
Depth	6.06'
Conductivity	1890
Temperature	10.2°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18162

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	15	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	817	5	mg/l as HCO_3	SM2320-B	12-17-1997 0700
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-17-1997 0700
Alkalinity, Total	670	5	mg/l as $CaCO_3$	EPA 310.1	12-17-1997 0700 JC
Anions	280.1	----	meq/l	---------	01-02-1998 0930 RJ
Calcium, Dissolved	113	1	mg/l	EPA 215.1	12-18-1997 1400 MK
Cations	304.8	----	meq/l	---------	01-02-1998 0930 RJ
Chloride	17	1	mg/l	SM4500-Cl-B	12-23-1997 1030 JC
Conductivity	21800	1	umhos/cm	SM2510-B	12-24-1997 1200 RJ
Hardness, Total	1023	----	mg/l as $CaCO_3$	SM2340-B	01-02-1998 0930 RJ
Iron, Total	0.7	0.1	mg/l	EPA 236.1	12-18-1997 1200 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	12-18-1997 1200 MK
Magnesium, Dissolved	180	10	mg/l	EPA 242.1	12-18-1997 1415 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-18-1997 1215 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-18-1997 1215 MK
pH	7.95	----	pH units	EPA 150.1	12-16-1998 1000 MK
Potassium, Dissolved	13	1	mg/l	EPA 258.1	12-18-1997 1300 MK
Sodium, Dissolved	6530	100	mg/l	EPA 273.1	12-18-1997 1315 MK
Solids, Total Dissolved	19730	10	mg/l	EPA 160.1	12-16-1997 0700 JC
Sulfate	12786	5000	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	4.2	----	%		01-02-1998 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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April 1, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD
WASTE ROCK WELL

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 12, 1997

Date received March 12, 1997

Rec'd 1330 hr.
Sampled 1048 hr.

FIELD MEASUREMENTS
Depth 42.16
Temperature 13.3°C

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-17039

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	14	10	mg/l as $CaCO_3$	D1067-92	03-17-1997 0900	
Alkalinity, Bicarbonate	326	5	mg/l as HCO_3	SM2320-B	03-12-1997 1300	SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-12-1997 1300	SW
Alkalinity, Total	368	5	mg/l as $CaCO_3$	EPA 310.1	03-12-1997 1300	SW
Anions	246.9	----	meq/l	---------	03-27-1997 1600	RJ
Calcium, Dissolved	172	1	mg/l	EPA 215.1	03-18-1997 1215	MK
Cations	227.4	----	meq/l	---------	03-27-1997 1600	RJ
Chloride	2820	1	mg/l	SM4500-Cl-B	03-18-1997 0800	SW
Conductivity	19000	1	umhos/cm	SM2510-B	03-17-1997 1300	SW
Hardness, Total	2390	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1600	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-18-1997 1000	MK
Magnesium, Dissolved	476	1	mg/l	EPA 242.1	03-18-1997 1230	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	03-18-1997 1030	MK
pH	7.83	----	pH units	EPA 150.1	03-13-1997 0730	JC
Potassium, Dissolved	18	1	mg/l	EPA 258.1	03-18-1997 1100	MK
Sodium, Dissolved	4120	1	mg/l	EPA 273.1	03-18-1997 1130	MK
Solids, Total Dissolved	14320	10	mg/l	EPA 160.1	03-18-1997 0730	JC
Sulfate	7783	1	mg/l	EPA 375.4	03-26-1997 0700	SW
Cation/Anion Balance	-4.1	----	%		03-27-1997 1600	RJ

PACIFICORP
APR 1 1997
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RG

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July 30, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

WASTE ROCK WELL
Rec'd 1530 hr.
Sampled 1420 hr.

Kind of sample reported to us Water

FIELD MEASUREMENTS
Depth 40.04'

Sample taken at

Sample taken by WILBERG/CW

Date sampled June 30, 1997

Date received June 30, 1997

NOTE: Sample Preserved at lab!
NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17447

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	07-03-1997 1010 SC
Alkalinity, Bicarbonate	284	5	mg/l as HCO_3	SM2320-B	07-09-1997 0700
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-09-1997 0700
Alkalinity, Total	233	5	mg/l as $CaCO_3$	EPA 310.1	07-09-1997 0700 SC
Anions	197.6	----	meq/l	---------	07-28-1997 1400 RJ
Calcium, Dissolved	151	1	mg/l	EPA 215.1	07-09-1997 1030 MK
Cations	179.0	----	meq/l	---------	07-28-1997 1400 RJ
Chloride	1997	100	mg/l	SM4500-Cl-B	07-23-1997 0830 SC
Conductivity	13580	1	umhos/cm	SM2510-B	07-22-1997 1230 MK
Hardness, Total	1946	----	mg/l as $CaCO_3$	SM2340-B	07-28-1997 1400 RJ
Iron, Total	0.2	0.1	mg/l	EPA 236.1	07-09-1997 0745 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745 MK
Magnesium, Dissolved	381	10	mg/l	EPA 242.1	07-09-1997 1045 MK
Manganese, Total	0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815 MK
Manganese, Dissolved	0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815 MK
pH	7.92	----	pH units	EPA 150.1	07-01-1997 1030 RJ
Potassium, Dissolved	20	1	mg/l	EPA 258.1	07-09-1997 0845 MK
Sodium, Dissolved	3210	100	mg/l	EPA 273.1	07-09-1997 0930 MK
Solids, Total Dissolved	11175	10	mg/l	EPA 160.1	07-03-1997 0700 JC
Sulfate	6561	2500	mg/l	EPA 375.4	07-11-1997 1000 SC
Cation/Anion Balance	4.9	----	%		07-28-1997 1400 RJ

FIELD OFFICE

Respectfully submitted,
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Huntington Laboratory

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ctober 9, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
OCT - 3

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/COTTONWOOD
WASTE ROCK WELL

Rec'd 1400 hr.
Sampled 1127 hr.

ind of **sample** Water
eported **to us**

mple **taken at** WB/CTW

mple **taken by** Energy West/MBD

Date **sampled** September 30, 1997

Date **received** September 30, 1997

FIELD MEASUREMENTS

pH	7.97
Depth	41.66'
Conductivity	1150
Temperature	13.7°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17826

ameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
ity	10	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300	SC
linity, Bicarbonate	264	5	mg/l as HCO_3	SM2320-B	09-30-1997 1200	SC
linity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1200	SC
linity, Total	216	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1200	SC
ons	185.3	----	meq/l	---------	10-08-1997 1400	RJ
lcium, Dissolved	153	1	mg/l	EPA 215.1	10-01-1997 2245	MK
ions	173.0	----	meq/l	---------	10-08-1997 1400	RJ
oride	2325	200	mg/l	SM4500-Cl-B	10-02-1997 1400	SC
nductivity	13490	1	umhos/cm	SM2510-B	10-03-1997 0145	MK
ness, Total	1951	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 1400	RJ
Total	0.2	0.1	mg/l	EPA 236.1	10-01-1997 1945	MK
Dissolved	<0.1	0.1	mg/l	EPA 236.1	10-01-1997 1945	MK
gnesium, Dissolved	381	10	mg/l	EPA 242.1	10-01-1997 2300	MK
nese, Total	0.1	0.1	mg/l	EPA 243.1	10-01-1997 2015	MK
nese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	10-01-1997 2015	MK
	7.78	----	pH units	EPA 150.1	09-30-1997 1645	MK
ssium, Dissolved	21	1	mg/l	EPA 258.1	10-01-1997 2045	MK
ium, Dissolved	3080	100	mg/l	EPA 273.1	10-01-1997 2115	MK
ds, Total Dissolved	11020	10	mg/l	EPA 160.1	10-07-1997 0700	JC
fate	5542	1000	mg/l	EPA 375.4	10-06-1997 0800	SC
tion/Anion Balance	3.4	----	%		10-08-1997 1400	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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January 20, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

JAN 20 1998

Sample identification by
PACIFICORP FIELD OFFICE

WILBERG/CTW
WASTE ROCKE WELL

Rec'd 1345 hr.
Sampled 1109 hr.

Kind of sample reported to us Water

Sample taken at WB/CTW

Sample taken by Energy West/MBD

Date sampled December 18, 1997

Date received December 18, 1997

FIELD MEASUREMENTS
Flow 43.88 Depth
Temperature 8°C

NOTE: DISSOLVED METALS FILTERED AT LAB
NOTE: ALKALINITY EXPIRED WHEN REANALYZED FOR CHARGE BALANCE

Analysis report no. 59-18169

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	19	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	864	5	mg/l as HCO_3	SM2320-B	01-20-1998 0900 S
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	01-20-1997 0900 S
Alkalinity, Total	708	5	mg/l as $CaCO_3$	EPA 310.1	01-20-1997 0900 SC
Anions	141.2	----	meq/l	---------	01-20-1998 1200 RJ
Calcium, Dissolved	198	1	mg/l	EPA 215.1	12-22-1997 1200 MK
Cations	169.5	----	meq/l	---------	01-20-1998 1200 RJ
Chloride	3	1	mg/l	SM4500-Cl-B	12-23-1997 1030 JC
Conductivity	14860	1	umhos/cm	SM2510-B	12-24-1997 1200 RJ
Hardness, Total	2455	----	mg/l as $CaCO_3$	SM2340-B	01-20-1998 1200 RJ
Iron, Total	9.4	0.5	mg/l	EPA 236.1	12-22-1998 1430 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	12-22-1997 1430 MK
Magnesium, Dissolved	476	20	mg/l	EPA 242.1	12-22-1997 1230 MK
Manganese, Total	0.2	0.1	mg/l	EPA 243.1	12-22-1998 1500 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-22-1997 1500 MK
pH	7.77	----	pH units	EPA 150.1	12-18-1997 1230 JC
Potassium, Dissolved	16	1	mg/l	EPA 258.1	12-22-1997 1545 MK
Sodium, Dissolved	2760	100	mg/l	EPA 273.1	12-22-1997 1600 MK
Solids, Total Dissolved	10860	10	mg/l	EPA 160.1	12-23-1997 0700 JC
Sulfate	6088	5000	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	9.1	----	%		01-20-1998 1200 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

March 28, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
MAR 28 1997
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
TM-1B

Rec'd 1200 hr.
Sampled 0940 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Energy West/M.D.

Date sampled March 21, 1997

Date received March 21, 1997

FIELD MEASUREMENTS

pH	8.65
DO	3.4
Flow	23.84 ft.
Conductivity	1720
Temperature	12.6°C

Analysis report no. 59-17063

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	03-25-1997 0630 SW.
Alkalinity, Bicarbonate	1004	5	mg/l as HCO_3	SM2320-B	03-25-1997 0930 SW
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	03-25-1997 0930 SW
Alkalinity, Total	883	5	mg/l as $CaCO_3$	EPA 310.1	03-25-1997 0930 SW
Anions	21.1	----	meq/l	---------	03-27-1997 1615 RJ
Calcium, Dissolved	3	1	mg/l	EPA 215.1	03-27-1997 1115 MK
Cations	22.8	----	meq/l	---------	03-27-1997 1615 RJ
Chloride	155	1	mg/l	SM4500-Cl-B	03-25-1997 1300 SW
Conductivity	2120	1	umhos/cm	SM2510-B	03-27-1997 1330 MK
Hardness, Total	7	----	mg/l as $CaCO_3$	SM2340-B	03-27-1997 1615 RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	03-27-1997 0730 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	03-27-1997 0730 MK
Magnesium, Dissolved	<1	1	mg/l	EPA 242.1	03-27-1997 1130 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	03-27-1997 0815 MK
Manganese, Dissolved	<0.1	.1	mg/l	EPA 243.1	03-27-1997 0815 MK
pH	8.56	----	pH units	EPA 150.1	03-21-1997 1345 JC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	03-27-1997 0930 MK
Sodium, Dissolved	520	10	mg/l	EPA 273.1	03-27-1997 1030 MK
Solids, Total Dissolved	1160	10	mg/l	EPA 160.1	03-24-1997 0700 JC
Sulfate	11	5	mg/l	EPA 375.4	03-26-1997 0700 SW
Cation/Anion Balance	4.8	----	%		03-27-1997 1615 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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August 5, 1997

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

PACIFICORP
AUG - 5
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at

Sample taken by ENERGY WEST/M.D.

Date sampled June 30, 1997

Date received June 30, 1997

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
TM-1B
Rec'd 1530 hr.
Sampled 1128 hr.

FIELD MEASUREMENTS

pH	8.65
Flow	23.84 ~~gpm~~ DEPTH
Conductivity	1630
Temperature	13.7°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17446

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	07-03-1997 1010	SC
Alkalinity, Bicarbonate	944	5	mg/l as HCO_3	SM2320-B	07-09-1997 0700	
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	07-09-1997 0700	
Alkalinity, Total	808	5	mg/l as $CaCO_3$	EPA 310.1	07-09-1997 0700	SC
Anions	20.1	----	meq/l	---------	08-05-1997 1140	RJ
Calcium, Dissolved	3	1	mg/l	EPA 215.1	07-09-1997 1030	MK
Cations	22.6	----	meq/l	---------	08-05-1997 1140	RJ
Chloride	148	1	mg/l	SM4500-Cl-B	07-23-1997 0830	SC
Conductivity	2010	1	umhos/cm	SM2510-B	07-22-1997 1230	MK
Hardness, Total	16	----	mg/l as $CaCO_3$	SM2340-B	08-05-1997 1140	RJ
Iron, Total	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	07-09-1997 0745	MK
Magnesium, Dissolved	2	1	mg/l	EPA 242.1	07-09-1997 1045	MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	07-09-1997 0815	MK
pH	8.58	----	pH units	EPA 150.1	07-01-1997 1030	RJ
Potassium, Dissolved	1	1	mg/l	EPA 258.1	07-09-1997 0845	MK
Sodium, Dissolved	620	10	mg/l	EPA 273.1	07-09-1997 0930	MK
Solids, Total Dissolved	1200	10	mg/l	EPA 160.1	07-03-1997 0700	JC
Sulfate	22	5	mg/l	EPA 375.4	07-11-1997 1000	SC
Cation/Anion Balance	5.8	----	%		08-05-1997 1140	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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tober 9, 1997

ACIFICORP FIELD OFFICE
. Box 1005
untington UT 84528

OCT - 9
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
TM-1B

Rec'd 0900 hr.
Sampled 1311 hr.

ind of **sample** Water
eported **to us**

mple **taken at** Trail Mountain

mple **taken by** Energy West/MBD

ate **sampled** September 22, 1997

te **received** September 24, 1997

FIELD MEASUREMENTS

pH	8.30
Depth	23.86'
Conductivity	714
Temperature	11.3°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17802

rameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
ity	<10	10	mg/l as $CaCO_3$	D1067-92	10-03-1997 1300 SC
inity, Bicarbonate	438	5	mg/l as HCO_3	SM2320-B	09-30-1997 1000 SC
inity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	09-30-1997 1000 SC
inity, Total	359	5	mg/l as $CaCO_3$	EPA 310.1	09-30-1997 1000 SC
	8.1	----	meq/l	---------	10-08-1997 0900 RJ
m, Dissolved	11	1	mg/l	EPA 215.1	09-25-1997 2030 MK
	9.0	----	meq/l	---------	10-08-1997 0900 RJ
	16	1	mg/l	SM4500-Cl-B	10-02-1997 1305 SC
ctivity	798	1	umhos/cm	SM2510-B	10-03-1997 0145 MK
ness, Total	60	----	mg/l as $CaCO_3$	SM2340-B	10-08-1997 0900 RJ
tal	0.2	0.1	mg/l	EPA 236.1	09-25-1997 1830 MK
ssolved	<0.1	0.1	mg/l	EPA 236.1	09-25-1997 1830 MK
sium, Dissolved	8	1	mg/l	EPA 242.1	09-25-1997 2100 MK
nese, Total	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845 MK
nese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	09-25-1997 1845 MK
	8.20	----	pH units	EPA 150.1	09-24-1997 1000 JC
sium, Dissolved	3	1	mg/l	EPA 258.1	09-25-1997 1915 MK
Dissolved	178	10	mg/l	EPA 273.1	09-25-1997 1945 MK
Total Dissolved	450	10	mg/l	EPA 160.1	09-29-1997 0700 JC
	21	10	mg/l	EPA 375.4	10-06-1997 0800 SC
n Anion Balance	5.6	----	%		10-08-1997 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (801) 653-2436

January 2, 1998

PACIFICORP FIELD OFFICE
P.O. Box 1005
Huntington UT 84528

Sample identification by
PACIFICORP FIELD OFFICE

TRAIL MOUNTAIN
TM-1B

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/MBD

Date sampled December 18, 1997

Date received December 18, 1997

Rec'd 1345 hr.
Sampled 1221 hr.

FIELD MEASUREMENTS

pH	9.11
Depth	23.98'
Conductivity	736
Temperature	9.6°C

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-18170

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Acidity	<10	10	mg/l as $CaCO_3$	D1067-92	12-23-1997 0900 RJ
Alkalinity, Bicarbonate	452	5	mg/l as HCO_3	SM2320-B	12-18-1997 1200 JC
Alkalinity, Carbonate	<5	5	mg/l as CO_3	SM2320-B	12-18-1997 1200 [illegible]
Alkalinity, Total	371	5	mg/l as $CaCO_3$	EPA 310.1	12-18-1997 1200 [illegible]
Anions	8.5	----	meq/l	---------	01-02-1998 0930 RJ
Calcium, Dissolved	11	1	mg/l	EPA 215.1	12-22-1997 1200 MK
Cations	8.9	----	meq/l	---------	01-02-1998 0930 RJ
Chloride	22	1	mg/l	SM4500-Cl-B	12-23-1997 1030 JC
Conductivity	805	1	umhos/cm	SM2510-B	12-24-1997 1200 RJ
Hardness, Total	65	----	mg/l as $CaCO_3$	SM2340-B	01-02-1998 0930 RJ
Iron, Total	0.6	0.1	mg/l	EPA 236.1	12-22-1997 1430 MK
Iron, Dissolved	<0.1	0.1	mg/l	EPA 236.1	12-22-1997 1430 MK
Magnesium, Dissolved	9	10	mg/l	EPA 242.1	12-22-1997 1230 MK
Manganese, Total	<0.1	0.1	mg/l	EPA 243.1	12-22-1997 1500 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	12-22-1997 1500 MK
pH	8.29	----	pH units	EPA 150.1	12-18-1997 1230 JC
Potassium, Dissolved	5	1	mg/l	EPA 258.1	12-22-1997 1545 MK
Sodium, Dissolved	171	10	mg/l	EPA 273.1	12-22-1997 1600 MK
Solids, Total Dissolved	470	10	mg/l	EPA 160.1	12-23-1997 0700 JC
Sulfate	23	10	mg/l	EPA 375.4	12-30-1997 0900 JC
Cation/Anion Balance	2.0	----	%		01-02-1998 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RO

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TERMS AND CONDITIONS ON REVERSE

APPENDIX P

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

SURFACE PIEZOMETRIC DATA
COTTONWOOD CANYON

	EM-31		CCCW-1A		CCCW-1S		CCCW-2A		CCCW-3A		CCCW-3S U		CCCW-3S L		TM-1B		TM-3	
Collar Elevation	7417.8		7843.2		7844.5		8133.9		8369.7		8367.6		8366.0		7295 EST		6750.0 EST	
Date	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level
1/12/96	-51.1	7366.7	-102.1	7741.2	-194.7	7649.8	-19.4	8114.5	-50.5	8319.3	-71.6	8296.0	-608.8	7757.2	-23.6	7271.4	145.5	6895.5
2/15/96	-51.6	7366.3	-101.9	7741.3	-195.0	7649.5	-19.5	8114.4	-50.0	8319.8	-71.1	8296.5	-608.8	7757.3	-23.7	7271.4	145.5	6895.5
3/15/96	-53.7	7364.2	-101.6	7741.6	-195.3	7649.2	-19.2	8114.7	-49.4	8320.3	-70.8	8296.8	-608.0	7758.0	-23.7	7271.4	145.5	6895.5
4/18/96	-54.0	7363.8	-100.7	7742.5	-195.3	7649.2	-18.5	8115.4	-48.6	8321.1	-70.0	8297.6	-608.7	7757.3	-23.6	7271.4	145.5	6895.5
5/22/96	-54.5	7363.3	-98.5	7744.8	-195.4	7649.1	-17.4	8116.5	-47.1	8322.7	-68.3	8299.2	-608.9	7757.1	-23.6	7271.4	145.5	6895.5
6/13/96	-55.1	7362.7	-98.6	7744.6	-195.3	7649.2	-16.6	8117.3	-46.0	8323.7	-66.3	8301.3	-609.3	7756.7	-23.6	7271.4	147.8	6897.8
7/19/96	-55.3	7362.5	-95.8	7747.5	-194.6	7649.9	-16.2	8117.7	-46.7	8323.1	-67.2	8300.4	-609.4	7756.6	-23.7	7271.4	147.8	6897.8
8/26/96	-54.7	7363.2	-100.3	7742.9	-194.1	7650.4	-16.9	8117.0	-48.0	8321.7	-68.5	8299.1	-609.4	7756.7	-23.8	7271.3	149.0	6899.0
9/11/96	-55.1	7362.7	-102.5	7740.7	-194.2	7650.3	-17.2	8116.7	-48.3	8321.5	-69.2	8298.4	-609.4	7756.6	-23.6	7271.4	149.0	6899.0
10/23/96	-54.9	7362.9	-102.1	7741.1	-193.7	7650.8	-17.5	8116.4	-48.5	8321.3	-69.6	8298.0	-609.5	7756.5	-23.7	7271.3	149.0	6899.0
11/21/96	-54.8	7363.0	-102.1	7741.2	-193.7	7650.8	-17.7	8116.2	-48.5	8321.2	-69.6	8298.0	-609.1	7756.9	-23.7	7271.4	146.7	6896.7
12/20/96	-55.8	7362.0	-101.6	7741.6	-194.4	7650.1	-17.8	8116.0	-48.6	8321.1	-65.7	8301.9	-609.0	7757.0	-23.8	7271.2	145.5	6895.5
1/28/97	-54.2	7363.6	NA		NA		NA		NA		NA		NA		-23.7	7271.3	124.7	6874.7
2/25/97	-54.2	7363.6	NA		NA		NA		NA		NA		NA		-23.7	7271.3	69.3	6819.3
3/21/97	-53.6	7364.2	-101.4	7741.8	-194.1	7650.4	-17.2	8116.7	-49.0	8320.8	-70.1	8297.5	-608.7	7757.4	-23.7	7271.3	0.0	6750.0
4/24/97	-54.1	7363.8	-96.4	7746.9	-198.7	7645.8	-17.3	8116.6	-48.5	8321.2	-69.3	8298.3	-609.1	7756.9	-23.7	7271.4	-44.6	6705.4
5/22/97	-54.0	7363.8	-88.7	7754.5	-193.8	7650.7	-15.9	8118.0	-44.9	8324.8	-66.1	8301.5	-609.6	7756.4	-23.6	7271.4	-53.7	6696.3
6/25/97	-55.0	7362.9	-86.2	7757.0	-192.8	7651.7	-14.9	8119.0	-44.0	8325.8	-64.3	8303.3	-609.6	7756.4	-23.6	7271.4	-65.5	6684.6
7/25/97	-55.3	7362.6	-95.6	7747.6	-192.2	7652.3	-15.0	8118.9	-45.1	8324.7	-65.8	8301.8	-609.6	7756.4	-23.6	7271.4	-70.5	6679.5
8/22/97	-55.4	7362.4	-96.0	7747.3	-192.1	7652.4	-15.5	8118.4	-46.0	8323.8	-66.7	8300.9	-609.6	7756.4	-23.6	7271.4	-75.4	6674.7
9/23/97	-55.3	7362.6	-95.4	7747.8	-191.9	7652.6	-15.9	8118.0	-46.0	8323.7	-66.9	8300.7	-609.4	7756.6	-23.6	7271.4	-80.1	6669.9
10/22/97	-55.0	7362.8	-95.7	7747.5	-191.9	7652.6	-16.2	8117.7	-45.9	8323.9	-66.9	8300.7	-609.2	7756.8	-23.6	7271.4	-82.6	6667.4
11/27/97	-55.1	7362.7	-97.9	7745.3	-191.7	7652.8	-16.3	8117.6	-45.7	8324.0	-66.8	8300.8	-609.3	7756.7	-23.7	7271.3	-85.5	6664.6
12/23/97	-54.9	7362.9	-98.4	7744.8	-191.5	7653.0	-16.2	8117.6	-45.4	8324.3	-66.5	8301.1	-609.0	7757.0	-23.7	7271.3	-90.5	6659.5

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

SURFACE PIEZOMETRIC DATA
RILDA CANYON

	Rilda Canyon (EM-47)		P - 1		P - 4		P - 5		P - 6		P - 7	
Collar Elevation	8,059.0		7,516.8		7,579.3		7,564.8		7,615.5		7,634.9	
Date	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level	Reading	Level
1/1/96	Inaccessible											
2/1/96	Inaccessible											
4/2/96	Inaccessible		22.8	7,494.0	DAMP		7.8	7,557.0	45.7	7,569.8	43.0	7,591.9
4/30/96	Inaccessible		22.8	7,494.0	DAMP		8.1	7,556.7	42.6	7,572.9	31.2	7,603.7
6/11/96	206.5	7,852.5	22.8	7,494.0	DAMP		8.0	7,556.8	38.9	7,576.6	23.2	7,611.7
7/9/96	207.2	7,851.8										
7/23/96			23.2	7,493.6	DAMP		8.1	7,556.7				
7/25/96									39.4	7,595.5	24.8	7,610.1
8/21/96	211.2	7,847.8	23.3	7,493.5	DAMP		8.2	7,556.6	40.2	7,594.7	27.7	7,607.2
9/16/96	213.8	7,845.2	23.1	7,493.7	DAMP		8.1	7,556.7	42.8	7,592.1	35.3	7,599.6
10/23/96	217.2	7,841.8	23.1	7,493.7	DAMP		8.2	7,556.6	45.2	7,589.7	43.3	7,591.7
11/14/96	217.6	7,841.4	23.1	7,493.7	DAMP		8.3	7,556.5	46.5	7,588.4	45.0	7,589.9
12/16/96	Inaccessible		23.1	7,493.7	DAMP		8.5	7,556.3	46.6	7,588.3	44.9	7,590.0
1/24/97	Inaccessible		Inaccessible		Inaccessible		Inaccessible		Inaccessible		Inaccessible	
2/14/97	Inaccessible		Inaccessible		Inaccessible		Inaccessible		Inaccessible		Inaccessible	
3/19/97	Inaccessible		Inaccessible		Inaccessible		Inaccessible		Inaccessible		Inaccessible	
4/28/97	Inaccessible		22.9	7,493.9	DAMP		8.1	7,556.7	43.9	7,591.0	36.0	7,598.9
5/29/97	204.7	7,854.3	22.6	7,494.2	DAMP		7.8	7,557.0	39.1	7,595.8	23.1	7,611.8
6/26/97	203.3	7,855.7	22.9	7,493.9	DAMP		8.0	7,556.8	38.9	7,596.0	23.6	7,611.3
7/17/97	205.6	7,853.4	23.2	7,493.6	DAMP		8.2	7,556.6	39.0	7,595.9	24.0	7,610.9
8/28/97	208.3	7,850.7	23.2	7,493.6	DAMP		7.8	7,557.0	39.4	7,595.5	25.5	7,609.4
9/15/97	209.5	7,849.5	23.1	7,493.7	DAMP		7.8	7,557.0	40.4	7,594.5	28.4	7,606.5
10/13/97	210.9	7,848.1	23.0	7,493.8	DAMP		7.9	7,556.9	43.0	7,591.9	35.6	7,599.3
11/18/97	211.5	7,847.5	23.0	7,493.8	DAMP		8.1	7,556.7	43.9	7,591.0	37.8	7,597.1
12/4/97	Inaccessible		28.0	7,488.8	DAMP		8.1	7,556.7	44.0	7,590.9	37.7	7,597.2

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK IN -MINE PIEZOMETRIC DATA

	DCP - 1 3rd N. xc-8		DCP - 2 3rd N. xc-29		DCP - 3 3rd N. xc-55		DCP - 4 1st WM xc-29	
Elevation	7530		7567		7577		7529	
DRILL DEPTH	155.4		170.5		148.9		169.6	
Date	**Reading**	**Level**	**Reading**	**Level**	**Reading**	**Level**	**Reading**	**Level**
12-20-89	0.2	7530.2	-35.5	7531.5	-56.3	7520.2	1.7	7529.7
03-16-90	0.0	7530.0	-36.8	7530.2	-59.6	7516.9	1.2	7529.5
07-18-90	0.0	7530.0	-37.8	7529.2	-53.9	7522.6	0.4	7529.2
11-05-90	-4.6	7525.4	-38.0	7529.0	-63.5	7513.0	-5.0	7524.0
12-19-90	-5.4	7524.6	-36.9	7530.1	-60.6	7515.9	-4.9	7524.1
03-05-91	-4.6	7525.4	**		-63.5	7513.0	-5.0	7524.0
06-13-91	-6.6	7523.4			-64.1	7512.4	-3.2	7525.8
09-05-91	-6.9	7523.1			-64.6	7511.9	-3.4	7525.6
12-31-91	-5.7	7524.3			***		-6.7	7522.3
03-20-92	-3.9	7526.1					-7.0	7522.1
06-26-92	-3.6	7526.4					-3.0	7526.0
09-11-92	-5.8	7524.2					-2.7	7526.3
12-09-92	*						-4.2	7524.8
03-17-93	*						-13.2	7515.8
06-23-93	*						-13.6	7515.5
08-04-93	-7.6	7522.4					****	
Dec inaccessible (casing damaged)								
02-04-94	-4.4	7525.7						
03-31-94	-3.6	7526.5						
06-24-94	-2.2	7527.9						
09-02-94	-1.8	7528.2						
11-15-94	-1.1	7528.9						
03-17-95	-0.8	7529.2						
06-17-95	-0.6	7529.4						
09-27-95	-0.4	7529.6						
12-15-95	0.0	7530.0						
3/29/96	0.1	7530.1						
6/19/96	0.0	7530.0						
9/30/96	0.0	7530.0						
12/12/96	1.6	7531.6						
3/27/97	1.6	7531.6						
6/30/97	1.6	7531.6						
9/25/97	1.6	7531.6						
12/9/97	1.6	7531.6						

* Area inaccessible
** Monitoring discontinued, hole caved @ 38'
*** Monitoring discontinued, entry used to access to 8th East
**** Monitoring discontinued, area sealed

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WASTE ROCK DISPOSAL WELLS DATA

	DEER CREEK DCWR1		WILBERG\COTTONWOOD WCWR1		
* Collar Elevation	6313.4	Elevations Adjusted 12/90		6774.5	
Date	**Reading**	**Level**	**Date**	**Reading**	**Level**
05-19-89	-5.4	6308.0	12-05-89	-59.5	6715.0
08-25-89	-5.9	6307.5	03-06-90	-60.0	6714.5
09-21-89	-5.9	6307.5	06-06-90	-59.6	6714.9
12-06-89	-5.1	6308.3	09-24-90	-58.9	6715.6
03-06-90	-4.4	6309.0	12-17-90	-59.2	6715.3
06-13-90	-5.2	6308.2	03-28-91	-59.3	6715.2
09-25-90	-4.0	6309.4	06-06-91	-59.1	6715.4
12-14-90	-4.9	6308.5	09-25-91	-58.5	6716.0
03-28-91	-5.4	6308.0	12-10-91	-58.5	6716.0
06-11-91	-6.4	6307.0	03-19-92	-52.4	6722.1
09-10-91	-7.5	6305.9	06-26-92	-46.3	6728.2
12-12-91	-5.6	6307.8	09-30-92	-49.3	6725.2
03-20-92	-4.5	6308.9	12-23-92	-51.5	6723.0
06-25-92	-7.0	6306.4	04-05-93	-45.8	6728.7
09-03-92	-5.8	6307.6	07-01-93	-39.1	6735.4
12-21-92	-6.2	6307.2	09-13-93	-43.7	6730.8
03-17-93	-3.8	6309.6	12-20-93	-47.4	6727.1
07-01-93	-4.7	6308.7	03-28-94	-50.4	6724.1
09-28-93	-4.5	6308.9	06-16-94	-54.0	6720.5
12-17-93	-4.5	6308.9	09-21-94	-54.9	6719.6
03-23-93	-5.0	6308.4	12-19-94	-53.8	6720.7
06-22-94	-4.8	6308.6	03-29-95	-52.1	6722.4
09-19-94	-5.5	6307.9	06-30-95	-46.3	6728.2
12-19-94	-5.7	6307.7	09-28-95	-47.4	6727.1
03-29-95	-5.2	6308.2	12-18-95	-49.4	6725.1
06-30-95	-5.2	6308.2	4/2/96	-49.5	6725.0
09-18-95	-6.9	6306.5	6/11/96	-51.3	6723.2 Not enough volume to sample T.D. 57'
12-14-95	-5.5	6308.0	9/17/96	-53.2	6721.3 Not enough volume to sample T.D. 57'
4/2/96	-5.2	6308.2	12/22/96	-42.1	6732.4
6/13/96	-6.4	6307.0	3/12/97	-42.2	6732.3
9/30/96	-6.3	6307.1	6/30/97	-40.04	6734.5 Redrilled and replaced casing 5-6-97
12/16/96	-5.5	6307.9	9/30/97	-41.66	6732.8
3/21/97	-4.7	6308.8	12/18/97	-43.88	6730.6
6/26/97	-5.7	6307.7			
9/16/97	-6.8	6306.6			
12/15/97	-6.1	6307.3			

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD\WILBERG IN -MINE PIEZOMETRIC DATA

	WCP - 1 5th W. xc-16		WCP - 2 3rd S. xc-14		WCP - 3 3rd S. xc-44		WCP - 4 9th E. xc-19	
Elevation	7597		7578		7610		7645	
DRILL DEPTH	145.4		69.6		80.8		74.6	
Date	Conspec Reading	Level	Conspec Reading	Level	Conspec Reading	Level	Conspec Reading	Level
01-03-90	119.2	-26.2	62.1	-7.5	20.4	-60.4		
01-10-90	118.7	-26.7	61.6	-8.0	19.9	-60.9		
01-17-90	118.6	-26.8	61.8	-7.8	19.7	-61.1		
01-24-90	118.1	-27.3	61.5	-8.1	19.8	-61.0		
01-31-90	118.6	-26.8	62.3	-7.3	20.0	-60.8		
02-07-90	118.2	-27.2	61.8	-7.8	19.8	-61.0		
02-15-90	118.3	-27.1	62.1	-7.5	20.4	-60.4		
02-21-90	118.2	-27.2	61.5	-8.1	19.8	-61.0		
02-27-90*	109.4	-36.0	61.3	-8.3	19.6	-61.2		
03-07-90	108.9	-36.5	61.5	-8.1	20.1	-60.7		
03-14-90	109.6	-35.8	62.0	-7.6	19.8	-61.0		
03-21-90	109.5	-35.9	61.6	-8.0	19.8	-61.0		
03-29-90	109.1	-36.3	61.7	-7.9	20.2	-60.6		
04-03-90	109.2	-36.2	61.3	-8.3	19.8	-61.0		
04-10-90	108.9	-36.5	61.2	-8.4	20.3	-60.5		
04-17-90	109.3	-36.1	61.8	-7.8	20.9	-59.9		
04-24-90	108.9	-36.5	61.3	-8.3	21.0	-59.8		
05-01-90	109.0	-36.4	62.0	-7.6	20.7	-60.1		
05-08-90	109.1	-36.3	62.1	-7.5	20.8	-60.0		
05-16-90	108.8	-36.6	61.7	-7.9	20.2	-60.6		
05-23-90	109.0	-36.4	62.1	-7.5	20.4	-60.4		
05-30-90	108.8	-36.6	62.0	-7.6	20.7	-60.1		
06-06-90	108.6	-36.8	61.8	-7.8	20.0	-60.8		
06-13-90	108.1	-37.3	61.6	-8.0	20.1	-60.7		

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD CANYON CREEK FLOW & QUALITY

SW-1

	<----------		Field Measurements			------>		
Date	Time	Temp. (oC)	Flow GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	1538		INACCESSIBLE				snow 20's	
2/26/96	930	10.1	10	8.21	761	7.9	snow 30's	
3/26/96	1415	10.2	15	8.71	760	8.3	clear 40's	
4/30/96	1015		35				pc60's	
5/23/96	1050		790				cloudy50's	
6/10/96	1000	12	800	8.49	482	7.6	clear80's	
7/19/96	1150		60				clear 80's	
8/20/96	1109		15				clear 80's	
9/4/96	1140	19.5	6.67	8.62	568	8.2	clear 80's	
10/22/96	1011		6				clear50's	
11/21/96	1019		6				clear40's	
12/26/96	1015	1.7	8	7.88	685	10.9	cloudy30's	
1/31/97	1045	INACCESSIBLE					clear30's	
2-31-97	1132		5				clear20's	
3/10/97	1115	9.1	11	8.08	723	7.7	clear50's	
4/7/97	1238		60				pc40's	
5/27/97	1140		750				clear50's	
6/23/97	759	8.1	250	8.41	480	NA	clear60's	
7/23/97	918		200				cloudy70's	
8/25/97	1230		60				clear80's	
9/8/97	956	12.1	80	8.27	484	7.1	clear70's	
10/14/97	952		60				clear50's	
11/21/97	1050		30				pc30's	
12/5/97	1117	1.8	35	8.55	535	8	cloudy20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD CANYON CREEK FLOW & QUALITY

SW-2

	<----------		Field Measurements			------>		
Date	Time	Temp. (oC)	Flow GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	1528		Inaccessible				snow 20's	
2/26/96	940	3.8	25	8.29	796	7.9	snow 30's	
3/26/96	1428	10.9	10	8.71	760	8.3	clear 40's	
4/30/96	1035		35				pc60's	
5/23/96	1100		785				cloudy50's	
6/10/96	1111	13.4	850	9.14	503	7.3	clear 80's	
7/19/96	1154		60				clear 80's	
8/20/96	1213		5				clear 80's	
9/4/96	1225	18.3	2	9	1410	10.9	clear 80's	
10/22/96	1024		11				clear50's	
11/21/96	1030		10				clear40's	
12/26/96	1000		DRY				cloudy30's	
1/31/97	1050		DRY				clear30's	
2-31-97	1140		10				clear20's	
3/10/97	1128	4.6	18	8.48	1217	8.4	clear50's	
4/7/97	1247		65				pc40's	
5/27/97	1219		750				clear50's	
6/23/97	834	8.9	250	8.5	479	NA	clear60's	
7/23/97	923		400				cloudy70's	
8/25/97	1235		460				clear80's	
9/8/97	1044	16	280	8.72	1024	6.6	clear70's	
10/14/97	1018		90				clear50's	
11/21/97	1100		200				pc30's	
12/5/97	1130	4.5	80	8.92	1101	7.9	cloudy20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD CANYON CREEK
@ USGS FLUME
CCC01

	<---------		Field Measurements ----- ------->						
Date	Time	Temp. (°C)	Flow ft.	GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	1520			No Flow				snow 20's	
2/26/96	950			No Flow				snow 30's	
3/26/96	1436			No Flow				clear 40's	
4/30/96	1113			10				pc60's	
5/23/96	1107			790				cloudy50's	
6/10/96	1120	15		850	9.13	485	7	clear80's	
7/19/96	1200			11				clear 80's	
8/20/96	1217			Dry				clear 80's	
9/4/96	1230			Dry				clear 80's	
10/22/96	1055			Dry				clear50's	
11/21/96	1045			Dry				clear40's	
12/26/96	925			Dry				cloudy30's	
1/31/97	1120			Dry				clear30's	
2-31-97	1146			Dry				clear20's	
3/11/97	1300			Dry				clear50's	
4/7/97	1320			30				pc40's	
5/27/97	1225			1000				clear50's	
6/23/97	915	10.4		276	8.59	502	NA	clear60's	
7/23/97	931			406				cloudy70's	
8/25/97	1244			477				clear80's	
9/8/97	1053	16		280	8.78	1018	6.7	clear80's	
10/14/97	1007			90				clear50's	
11/21/97	1115			200				clear20's	
12/5/97	1140	3		150	9.12	1022	7.6	cloudy20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

COTTONWOOD CANYON CREEK FLOW & QUALITY

SW-3

	<----------		Field Measurements ---			------->		
Date	Time	Temp. (oC)	Flow GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	1515	6.5	5	8.74	1187	7.9	snow 20's	
2/26/96	955	10.9	15	8.68	1223	7.6	snow 30's	
3/26/96	1443	10.9	10	8.53	1193	8.1	clear 40's	
4/30/96	1118		10				pc60's	
5/23/96	1110		790				cloudy50's	
6/10/96	1139	19.9	1000	8.89	574	7.2	clear 80's	
7/19/96	1207		50				clear 80's	
8/20/96	1222		15				clear 80's	
9/4/96	1245	19	25	8.72	1190	9.6	clear 80's	
10/22/96	1100		13.33				clear50's	
11/21/96	1054		10				clear40's	
12/26/96	919	1.6	10	8.21	1334	10.7	cloudy30's	
1/31/97	1300		5				clear30's	
2-31-97	1210		5				clear20's	
3/10/97	1150	9.9	6.67	8.32	1386	8.2	clear50's	
4/7/97	1336		10				pc40's	
5/27/97	1232		1000				clear50's	
6/23/97	922	11.6	400	8.55	710	NA	clear60's	
7/23/97	937		500				cloudy70's	
8/25/97	1248		450				clear80's	
9/8/97	1103	16.6	280	8.66	1071	6.7	clear70's	
10/14/97	1018		150				clear50's	
11/21/97	1120		180				pc30's	
12/5/97	1148	1.6	175	8.7	1177	8.2	cloudy20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

UN-NAMED DRAINAGE OFF STRAIGHT CANYON CREEK

T-19

	<----------		Field Measurements			------>		
Date	Time	Temp. (oC)	Flow GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
3/26/96	1420	1	200	8.77	694	9.7	snow 20's	
4/30/96	1131		450				pc-60's	
5/23/96	940		250				cloudy50's	
6/10/96	1200	17.6	300	9.19	578	7.1	clear 50's	
7/19/96	1219		65				clear 80's	
8/20/96	1231		25				clear 80's	
9/4/96	1329	16	20	9.17	554	9.8	clear 80's	
10/24/96	1300		25				clear40's	
11/21/96	1104		60				clear40's	Snow meltin
12/12/96	1334	2	40	9.02	586	11.7	cloudy30's	Snow melt m
1/31/97	1038		35				clear30's	
2-31-97	1057		60				clear20's	
3/21/97	1032	3.8	175	8.55	727	10.2	clear50's	
4/7/97	1347		250				pc40's	
5/27/97	1311		300				clear50's	
6/23/97	911	10	200	8.73	585	NA	clear60's	
7/23/97	954		150				cloudy70's	
8/25/97	1256		50				clear80's	
9/8/97	1141	15.7	250	8.68	558	6.8	clear70's	
10/14/97	1034		75				clear50's	
11/21/97	1145		30				pc30's	
12/5/97	1048	1.4	30	9.16	820	8.2	cloudy20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

ABOVE THE MINE - DCR01

	<----------	Field Measurements ------>						
Date	Time	Temp. (°C)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1120		Frozen				snow 20's	
2/26/96	1005		Frozen				snow 30's	
3/29/96	1515		No Flow				pc 40's	
4/30/96	1530		No Flow				pc-60's	
5/16/96	1159		0.25	419			pc70's	
6/12/96	1134	11.8	0.2	296	8.78	450	clear80's	
7/23/96	906		0.09	85			clear 80's	
8/20/96	731			30			clear 80's	
9/11/96	959	10		20	9.08	540	rain 70's	
10/23/96	758		Frozen				clear30's	
11/14/96	807		Frozen				cloudy30's	
12/3/96	1049		Frozen				clear20's	
1/24/97	800		Frozen				clear10's	
2/14/97	810		Frozen				clear10's	
3/19/97	1000		Frozen				clear50's	
4/28/97	816			40			clear30's	
5/28/97	722			1151			clear50's	
6/24/97	804	8		706	8.46	477	clear70's	
7/17/97	1209			252			clear80's	
8/26/97	1424			152			pc80's	
9/15/97	950	9.9		100	8.51	547	pc70's	
10/13/97	1035			80			clear60's	
11/18/97	1020			Frozen			clear30's	
12/4/97	900			Frozen			clear20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

@ PERMIT BOUNDARY - DCR04

	<---------	Field Measurements ------>						
Date	Time	Temp. (°C)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1110		Frozen				snow 20's	
2/26/96	955		Frozen				snow 30's	
3/29/96	1545		No Flow				pc 40's	
4/30/96	1545		<.05				pc-60's	
5/16/96	1241		0.22	503			pc70's	
6/12/96	1154	12.9	0.17	336	8.83	564	clear80's	
7/23/96	933		0.09	121			clear 80's	
8/20/96	738		0.03	50			clear 80's	
9/11/96	1031	12.4		45	9	786	rain - 70's	
10/23/96	809			20			clear30's	
11/14/96	812			35			cloudy30's	
12/4/96	830	0.7		30	8.86	2430	clear20's	
1/24/97	815			no flow			clear10's	
2/14/97	820			no flow			clear10's	
3/19/97	1030	4		80	8.41	3530	clear50's	
4/28/97	820			150			clear30's	
5/28/97	837			949			clear50's	
6/24/97	827	8.9		817	8.48	538	clear70's	
7/17/97	1202			170			clear80's	
8/26/97	1417			140			pc80's	
9/15/97	1007	11.7		95	8.65	697	pc70's	
10/13/97	1050			100			clear60's	
11/18/97	1040			Frozen			clear30's	
12/4/97	912			Frozen			clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK FLOW & QUALITY

BELOW THE MINE - DCR06

	<---------	Field Measurements ------>						
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1105		No Flow				snow 20's	
2/26/96	940		No Flow				snow 30's	
3/29/96	1550		No Flow				pc 40's	
4/30/96	1610			25			pc60's	
5/16/96	1300			450			pc70's	
6/12/96	1213	18.4		300	8.73	882	clear80's	
7/23/96	941			109			clear 80's	
8/20/96	743			Dry			clear 80's	
9/11/96	1055			Dry			rain - 70's	
10/23/96	815			Dry			clear30's	
11/14/96	822			10			cloudy30's	
12/4/96	845			5			clear20's	Frozen est.flow
1/24/97	820			Dry			clear10's	
2/14/97	825			Dry			clear10's	
3/19/97	1057	7.5		60	8.59	3750	clear50's	
4/28/97	918			150			clear30's	
5/28/97	1340			950			clear50's	
6/24/97	843	10.2		500	8.56	721	clear70's	
7/17/97	1102			75			clear80's	
8/26/97	1353			40			pc80's	
9/15/97	1028	14.1		80	8.67	1173	pc70's	
10/13/97	1100			60			clear60's	
11/18/97	1040			10			clear30's	
12/4/97	917			Dry			clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

RIGHT FORK - GWR01

	<----	Field Measurements ------->						
Date	Time	Temp. (°C)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1430	-	no flow				snow 20's	
2/26/96	1258	-	no flow				snow 30's	
3/29/96	1508	-	no flow				clear 40's	
4/30/96	1158		no flow				pc-60's	
5/23/96	1130		no flow				cloudy50's	
6/10/96	1245		no flow				clear80's	
7/23/96	1310		no flow				clear 80's	
8/21/96	1300		no flow				clear 80's	
9/11/96	710		no flow				ltrain 70's	
10/22/96	1125		no flow				clear50's	
11/21/96	815		no flow				clear40's	
12/26/96	850		no flow				cloudy30's	
1/31/97	1320		no flow				clear30's	
2/21/97	1230		no flow				clear20's	
3/11/97	1325		no flow				clear50's	
4/7/97	1035		no flow				pc40's	
4/30/97	1320	13		15	7.99	407	clear40's	
5/27/97	1336		no flow				clear70's	
6/23/97	700		no flow				cloudy60's	
7/23/97	1019		no flow				cloudy70's	
8/25/97	1310		no flow				clear80's	
9/8/97	1257		no flow				clear80's	
10/14/97	850		no flow				clear50's	
11/21/97	1000		no flow				pc30's	
12/5/97	1158		no flow				cloudy20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

LEFT FORK - GWR02

	<-----	Field Measurements ------->						
Date	Time	Temp. (°C)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1435			no flow			snow 20's	
2/26/96	1303			no flow			snoe 30's	
3/26/96	1514			no flow			clear 40's	
4/30/96	1204			no flow			pc-60's	
5/23/96	1135			no flow			cloudy50's	
6/10/96	1302			no flow			clear80's	
7/23/96	1330			no flow			clear 80's	
8/21/96	1310			no flow			clear 80's	
9/11/96	720			no flow			lt rain 70's	
10/22/96	1135			no flow			clear50's	
11/21/96	820			no flow			clear40's	
12/26/96	855			no flow			clear30's	
1/31/97	1325			no flow			clear30's	
2/21/97	1235			no flow			clear20's	
3/11/97	1330			no flow			clear50's	
4/7/97	1040			no flow			pc40's	
4/30/97	1350			no flow			clear40's	
5/27/97	1337			no flow			clear70's	
6/23/97	713	8.3		46	7.9	759	cloudy60's	
7/23/97	1021			8			cloudy70's	
8/25/97	1316			5			clear80's	
9/8/97	1301	22.2		10	8.52	593	clear80's	
10/14/97	855			<.1			clear50's	
11/21/97	1010			<.1			pc30's	
12/5/97	1200			Damp			cloudy20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

GRIMES WASH FLOW & QUALITY

BELOW THE MINE - GWR03
** FLOW INCLUDES MINE DISCHARGE

	<----	Field Measurements ------->						
Date	Time	Temp. (°C)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1446	4.8		60**	8.52	6450	snow 20's	
2/26/96	1313	6.1		60**	8.13	1873	snow 30's	
3/26/96	1521	7.3		75**	8.33	2570	clear 40's	
4/30/96	1210			80**			pc-60's	
5/23/96	1140			100**			cloudy50's	
6/10/96	1315	14.4		150**	8.75	1038	clear80's	
7/23/96	1350			100**			clear 80's	
8/21/96	1320			100**			clear 80's	
9/11/96	730	12.6		80**	8.55	1218	lt rain 70's	
10/22/96	1157			85**			clear50's	
11/21/96	830			60**			clear40's	
12/26/96	847	9.7		120**	8.34	1436	cloudy30's	
1/31/97	1330			85**			clear30's	
2/31/97	1245			150**			clear20's	
3/10/97	1259	9.4		60**	8.2	2680	clear50's	
4/7/97	1050			85**			pc40's	
5/27/97	1340			60**			clear40's	
6/23/97	723	10.1		85**	8.46	1221	clear70's	
7/23/97	1030			60**			cloudy60's	
8/25/97	1330			45**			cloudy70's	
9/8/97	1312	16.5		30**	8.14	1290	clear80's	
10/14/97	917			50**			clear80's	
11/21/97	1025			75**			clear50's	
12/5/97	1215	4.3		80**	8.64	1513	pc30's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

HUNTINGTON CREEK FLOW & QUALITY

HUNTINGTON CREEK - HCC01

	<----------		Field Measurements		----------	------->		
Date	Time	Temp. (oC)	Flow CFS	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	906	1.8	25	8.68	392	8.7	snow 20's	
2/26/96	1055	2.1	24	8.71	381	7.2	snow 30's	
3/29/96	1553	8.1	28	8.83	423	8.8	pc 40's	
6/12/96	1220	12.3	284	8.72	276	7.7	clear 80's	
9/11/96	1049	10.7	102	8.89	274	11.6	rain 70's	
12/4/96	856	0.8	31	8.91	435	11.2	clear20's	
3/19/97	1106	4.2	141	8.53	315	9.6	clear50's	
6/24/97	921	9.9	166	8.52	316	6.5	clear70's	
9/16/97	923	10.2	115	8.43	283	7.4	clear70's	
12/4/97	947	1.6	33	8.97	431	8.4	clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

HUNTINGTON CREEK FLOW & QUALITY

HUNTINGTON CREEK - HCC02

	<----------		Field Measurements			------->		
Date	Time	Temp. (oC)	Flow CFS	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	912	1.8	25	8.92	392	8	snow 20's	
2/26/96	1158	2.3	24	8.89	398	7.8	snow 30's	
3/29/96	1601	9.1	28	8.78	428	9.1	pc 40's	
6/12/96	1230	11.9	284	8.78	279	7.7	clear80's	
9/11/96	1102	10.8	102	8.89	268	11.7	rain 70's	
12/4/96	909	0.8	31	8.86	435	11.5	clear20's	
3/19/97	1115	4.8	141	8.51	318	9.6	clear50's	
6/24/97	930	10	166	8.52	309	6.2	clear70's	
9/16/97	934	9.4	115	8.37	284	7.6	clear70's	
12/4/97	956	0.8	33	8.65	433	8.3	clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

HUNTINGTON CREEK FLOW & QUALITY

HUNTINGTON CREEK - HCC04

	<----------		Field Measurements			------->		
Date	Time	Temp. (oC)	Flow CFS	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	917	1.6	25	8.81	449	8.4	snow 20's	
2/26/96	1119	2.1	24	8.68	398	7.8	snow 30's	
3/29/96	1612	8.1	28	8.82	423	8.8	pc 40's	
6/12/96	1240	12.4	284	8.84	286	7.8	clear80's	
9/11/96	1116	10.9	102	8.88	282	11.8	rain 70's	
12/4/96	922	0.8	31	8.82	523	11.5	clear20's	
3/19/97	1125	5.2	141	8.54	342	9.5	clear50's	
6/24/97	939	10.4	166	8.5	329	6.5	clear70's	
9/16/97	946	9.7	115	8.38	303	7.6	clear70's	
12/4/97	1009	0.8	33	8.79	523	8.5	clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

MEETINGHOUSE CANYON
MCH01

	<--------- Field Measurements			----------	----------	--->		
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	1110		No Flow				snow 20's	
2/26/96	930		Frozen				snow 30's	
3/29/96	1245		No Flow				pc 40's	
4/30/96	1515		Dry				pc60's	
5/17/96	706			1868			clear80's	
6/12/96	1041	12	0.66	730	8.69	358	clear80's	
7/23/96	1004		0.24	155			clear 80's	
8/21/96	728		0.09	25			clear 80's	
9/16/96	1000	10		10	8.97	381	pc 70's	
10/23/96	825			5			clear30's	
11/14/96	839			4			cloudy30's	
12/16/96	1102			Frozen			cloudy20's	
1/24/97	830			Inaccessible			clear10's	
2/14/97	830			Inaccessible			clear10's	
3/19/97	1130			Inaccessible			clear50's	
4/28/97	847			1096			clear30's	
5/28/97	1400			2059			clear50's	
6/24/97	859	8.7		942	8.47	387	clear70's	
7/17/97	1120			379			clear80's	
8/26/97	1404			145			pc80's	
9/15/97	1050	12.9		127	8.56	392	pc70's	
10/13/97	1115			75			clear60's	
11/18/97	1055			Frozen			clear30's	
12/4/97	925			Frozen			clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - FLUME #1 (RCF1)

	<——	Field Measurements ——>						
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	755	INACCESSIBLE SNOW					snow 20's	
2/26/96		Rilda Canyon inaccessible because of road conditions					snow 30's	
3/25/96		Postponed because of mud and snow					snow 20's	
4/2/96		INACCESSIBLE SNOW					snow30's	
4/30/96		INACCESSIBLE SNOW					pc60's	
5/17/96		INACCESSIBLE					clear80's	
6/11/96	1117	12.6	0.62	1712	8.71	376	pc80's	Flume not square
7/9/96	845		0.18	252			clear 60's	
8/21/96	817			20			clear80's	
9/16/96	741	6.8		30	8.98	408	clear 60's	Major storms prior to sample
10/23/96	900			20			clear30's	
11/14/96	941			10			cloudy30's	
12/16/96	830	INACCESSIBLE SNOW					cloudy20's	
1/24/97	900	INACCESSIBLE SNOW					clear10's	
2/14/97	840	INACCESSIBLE SNOW					clear10's	
3/19/97	1140	INACCESSIBLE SNOW					clear50's	
4/28/97	1214	INACCESSIBLE SNOW					clear40's	
5/29/97	700			3316			pc40's	
6/25/97	740	6		1200	8.01	392	clear60's	
7/17/97	900			210			clear80's	
8/26/97	1225			50			pc80's	
9/15/97	1148	10.7		200	8.57	412	pc70's	
10/13/97	1200			250			clear60's	
11/13/97	943			60			clear30's	
12/4/97	1045	INACCESSIBLE SNOW					clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - LEFT FORK (RCLF1)

	<----	Field Measurements ------>						
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	805			No Flow			snow 20's	
2/26/96		Rilda Canyon inaccessible because of road conditions					snow 30's	
3/25/96		Postponed because of mud and snow					snow 20's	
4/2/96	1502			Dry			snow30's	
4/30/96	1356			Dry			pc60's	
5/17/96	1400			150			clear80's	
6/11/96	1201	11.7		150	9.09	476	pc80's	
7/23/96	1152			2.53			clear 80's	
8/20/96	940			Dry			clear 80's	
9/16/96	700			Dry			pc 70's	
10/23/96	910			Dry			clear40's	
11/14/96	1005			Dry			cloudy30's	
12/16/96	831			Dry			cloudy20's	
1/24/97	910			INACCESSIBLE			clear10's	
2/14/97	840			INACCESSIBLE			clear10's	
3/19/97	1141			INACCESSIBLE			clear50's	
4/28/97	1147			40			clear40's	
5/29/97	720			75			pc40's	
6/25/97	826	7.7		50	8.45	522	clear60's	
7/17/97	930			20			clear80's	
8/26/97	1235			Dry			pc80's	
9/15/97	1230			<.2			pc70's	
10/13/97	1220			<.1			clear60's	
11/13/97	1000			Dry			clear30's	
12/4/97	1110			Dry			clear20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - LEFT FORK (RCLF2)

	<-----	Field Measurements ------>						
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	755	INACCESSIBLE SNOW					snow 20's	
2/26/96		Rilda Canyon inaccessible because of road conditions					snow 30's	
3/25/96		Postponed because of mud and snow					snow 20's	
4/2/96	1508			Dry			snow30's	
4/30/96	1347			10			pc60's	
5/17/96	1400			150			clear80's	
6/11/96	1150	11.7		150	8.9	493	pc80's	High sediment level
7/24/96	840			3.1			clear 80's	
8/20/96	950			Dry			clear 80's	
9/16/96	702			Dry			pc 70's	
10/23/96	912			Dry			clear40's	
11/14/96	1005			Dry			cloudy30's	
12/16/96	831			Dry			cloudy20's	
1/24/97	915			INACCESSIBLE			clear10's	
2/14/97	840			INACCESSIBLE			clear10's	
3/19/97	1141			INACCESSIBLE			clear50's	
4/28/97	1207			60			clear40's	
5/29/97	725			75			pc40's	
6/25/97	842	7.4		50	8.54	525	clear60's	
7/17/97	940			4.2			clear80's	
8/26/97	1245			Dry			pc80's	
9/15/97	1240			<.2			pc70's	
10/13/97	1228			<.1			clear60's	
11/13/97	1015			Dry			clear30's	
12/4/97	1115			Dry			clear20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - FLUME #2 (RCF2)

	<-----	Field Measurements ------>						
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Weather	Comments
1/31/96	755	INACCESSIBLE SNOW					snow 20's	
2/26/96		Rilda Canyon inaccessible because of road conditions					snow 30's	
3/25/96		Postponed because of mud and snow					snow 20's	
4/2/96	1556			Dry			snow30's	
4/30/96	1403		0.35	536			pc60's	
5/17/96	906			5100			clear80's	
6/11/96	1224	10.1	0.9	2290	8.91	378	ltrain80's	
7\23\96	1116		0.19	209			clear 80's	
8/21/96	927			20			clear 80's	
9/16/96	818	7.3		20	8.91	390	pc 70's	
10/23/96	945			Dry			clear40's	
11/14/96	1039			Dry			cloudy30's	
12/16/96	945			Dry			cloudy20's	
1/24/97	852			INACCESSIBLE			clear10's	
2/14/97	840			INACCESSIBLE			clear10's	
3/19/97	1142			INACCESSIBLE			clear50's	
4/28/97	1220			288			clear40's	
5/29/97	740			5000			pc40's	
6/25/97	909	6.5		1227	8.31	411	clear60's	
7/17/97	953			380			clear80's	
8/26/97	1249			30			pc80's	
9/15/97	1252	11.3		193	8.59	414	pc70's	
10/13/97	1235			150			clear60's	
11/13/97	1022			50			clear30's	
12/4/97	1150			No Flow			clear20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - FLUME #3 (RCF3)

	<----------		Field Measurements			----------	-------->		
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	755	INACCESSIBLE SNOW						snow 20's	
2/26/96		Rilda Canyon inaccessible because of road conditions						snow 30's	
3/25/96		Postponed because of mud and snow						snow 20's	
4/2/96	1523	9.1	0.05	26.9	8.35	654	8.6	snow30's	
4/30/96	1416		0.35	536				pc60's	
5/17/96	1015			5050				clear80's	
6/11/96	1230	9.9	0.9	2290	8.93	386	7.3	ltRain80's	
7/23/96	1110		0.13	117				clear 80's	
8/21/96	943			20				clear 80's	
9/16/96	850	8.4		15	8.51	589	11.7	pc 70's	
10/23/96	1010			25				clear40's	
11/14/96	1055			25				cloudy30's	
12/16/96	1022	3.6		30	8.62	625	13.2	cloudy20's	
1/24/97	855			INACCESSIBLE				clear10's	
2/14/97	840			INACCESSIBLE				clear10's	
3/19/97	1143			INACCESSIBLE				clear50's	
4/28/97	1240			244				clear40's	
5/29/97	750			5000				pc40's	
6/25/97	928	6.5		1227	8.29	410	NA	clear60's	
7/17/97	1006			227				clear80's	
8/26/97	1311			50				pc80's	
9/15/97	1310	11		117	8.23	472	6.9	pc70's	
10/13/97	1300			150				clear60's	
11/13/97	1028			50				clear30's	
12/4/97	1158	4.9		60	8.57	671	7.5	clear20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

RILDA CANYON FLOW & QUALITY

RILDA CANYON - WEIR #4 (RCW4)

		Field Measurements							
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/96	755	INACCESSIBLE SNOW						snow 20's	
2/26/96		Rilda Canyon inaccessible because of road conditions						snow 30's	
3/25/96		Postponed because of mud and snow						snow 20's	
4/2/96	1634	7.5	0.43	132.7	8.7	734	9.1	snow30's	
4/30/96	1450		0.8	636.4				pc60's	
5/17/96	1100			7000				clear80's	
6/11/96	1303	10.3	1.4	2538	8.84	417	8.5	ltRain80's	
7/23/96	1043			358.6				clear 80's	
8/21/96	1011		0.4	110				clear 80's	
9/16/96	928	7.5	0.44	140	8.85	709	12.2	pc 70's	
10/23/96	1239			110.7				clear40's	
11/14/96	1126		0.4	110.7				cloudy30's	
12/16/96	1056	2.6		100	8.9	706	15.1	cloudy20's	Est. flow staff gauge missing
1/24/97	910			117				clear10's	Staff gauge reinstalled
2/14/97	845			90				clear10's	
3/19/97	1230	6.6		140.5	8.41	731	8.7	clear50's	
4/28/97	1318			305.1				clear40's	
5/29/97	820			3350				pc40's	
6/25/97	1000	7.8		1388	8.4	450	NA	clear60's	
7/17/97	1020			481.4				clear80's	
8/26/97	1327			149.5				pc80's	
9/15/97	1342	11		305	8.41	560	7.3	pc70's	
10/13/97	1320			300				clear60's	
11/13/97	1034			193.4				clear30's	
12/4/97	1235	1		157	8.93	714	7.9	clear20's	

EAST MOUNTAIN SPRINGS DISCHARGE

1997

Spring	Date Sampled	Flow (GPM)	Temp. C	Date Sampled	Flow (GPM)	Temp. F	Seasonal Net Change %
Sheba	7/22/97	4.8	6.9	10/16/97	1.6	6.9	-66.53
Elk Spring	7/21/97	235.0	5.1	10/16/97	73.0	4.6	-68.94
Burnt Tree	7/21/97	8.5	7.8	10/27/97	7.3	6.6	-14.24
Jerk Water							
Pine Springs							
Pine Sp. Trough							
Ted's Tub	7/22/97	46.9	5.4	10/28/97	7.0	3.1	-85.00
79-1							
79-2	7/25/97	2.1	6.6	10/27/97	1.6	5.1	-27.57
79-3							
79-4							
79-5							
79-6							
79-7							
79-8							
79-9							
79-10	7/22/97	14.0	6.5	10/16/97	3.9	6.2	-72.14
79-11							
79-12	7/22/97	DAMP		10/28/97	DRY		
79-13							
79-14							
79-15	7/22/97	13.6	6.7	10/28/97	4.6	5.7	-66.18
79-16							
79-17							
79-18							
79-19							
79-20							
79-21							
79-22							
79-23	7/25/97	dry		9/22/97	DRY		
79-24	7/25/97	dry		10/27/97	DRY		
79-25							
79-26	7/24/97	5.0	7.8	10/16/97	1.5	7.8	-71.00
79-27							
79-28	7/24/97	1.1	6.7	10/27/97	1.0	5.2	-8.26
79-29	7/24/97	1.0	5.5	10/16/97	1.6	4.8	55.00
79-30							
79-31							
79-32	7/28/97	1.0	8.0	10/16/97	0.7	8.5	-30.10
79-33							
79-34	7/22/97	5.5	6.4	10/28/97	DAMP		
79-35	7/22/97	13.6	6.7	10/16/97	1.4	6.5	-89.56
79-36							
79-37							
79-38	7/28/97	4.0	5.0	10/28/97	2.0	4.9	-49.00
79-39							
79-40	7/24/97	1.4	6.0	10/28/97	DRY		
80-41	7/24/97	4.5	4.9	10/28/97	0.5	2.3	
80-42							

EAST MOUNTAIN SPRINGS DISCHARGE

1997

Spring	Date Sampled	Flow (GPM)	Temp. C	Date Sampled	Flow (GPM)	Temp. F	Seasonal Net Change %
80-43	7/25/97	Damp		10/27/97	DRY		
80-44	7/24/97	0.2	16.2	10/28/97	DAMP		
80-45							
80-46	7/24/97	4.0	6.2	10/27/97	DAMP		
80-47	7/24/97	9.2	5.0	10/27/97	6.0	2.6	-34.99
80-48	7/21/97	4.6	7.7	10/16/97	2.6	5.6	-43.48
80-49							
80-50	7/30/97	3.0	7.8	10/30/97	2.5	7.7	-18.33
82-51	7/25/97	2.0	9.5	10/27/97	0.4	4.3	-82.00
82-52	7/25/97	12.0	4.7	10/27/97	5.5	4.4	-54.58
84-53							
84-54							
84-55							
84-56	7/24/97	0.7	6.4	10/27/97	0.9	5.3	40.30
85-57							
86-58							
86-59							
89-60	7/28/97	1.0	6.4	10/28/97	0.4	5.4	-60.00
89-61	7/21/97	115.3	5.1	10/16/97	38.5	4.3	-66.64
89-62							
89-63							
89-64							
89-65	7/21/97	1.0	7.1	10/16/97	0.9	5.8	-8.00
89-66	7/21/97	2.3	6.3	10/16/97	0.4	6.6	-83.04
89-67	7/21/97	6.0	5.0	10/16/97	4.4	4.4	-26.67
89-68	7/21/97	1.7	7.9	10/16/97	1.1	6.8	-35.29
89-69							
89-70							
89-71							
91-72	7/25/97	10.7	8.9	10/30/97	8.6	8.7	-19.91
91-73	7/25/97	1.6	9.1	10/30/97	0.8	6.9	-50.62

TOTAL FLOW FOR JULY **522.0** **171.2**
(W\OUT 80-50, 91-72 & 73)

Net Change - Average -42.10
Net Change - By Volume -67.21

TOTAL FOR JULY 1996 = 573.6 GPM
JULY 1997 9 % LOWER THAN JULY 1996

EAST MOUNTAIN

SPRING DISCHARGE RECESSION STUDY

YEAR 1997

SPRING		JUL	AUG	SEP	OCT
79-10	Flow (GPM)	14.0	7.3	6.0	3.9
	Temp. (C)	6.5	6.9	6.6	6.2
SHEBA SPRINGS	Flow (GPM)	4.8	1.8	1.7	1.6
	Temp. (C)	6.9	7.5	7.5	6.9
ELK SPRING	Flow (GPM)	235.0	110.0	73.0	73.0
	Temp. (C)	5.1	6.1	5.5	4.6
79-35	Flow (GPM)	8.6	2.7	2.5	1.4
	Temp. (C)	6.0	6.8	6.0	6.5
79-26	Flow (GPM)	5.0	3.1	1.3	1.5
	Temp. (C)	7.8	6.2	7.0	7.8
79-29	Flow (GPM)	1.0	1.9	1.9	1.6
	Temp. (C)	5.5	7.5	5.6	4.8
84-56	Flow (GPM)	0.7	0.7	1.0	0.9
	Temp. (C)	6.9	6.5	6.5	5.3
80-44	Flow (GPM)	0.2	DAMP	DAMP	DAMP
	Temp. (C)	16.2			
80-46	Flow (GPM)	4.0	0.3	<.1	DAMP
	Temp. (C)	6.2	6.5		
BURNT TREE	Flow (GPM)	8.5	7.3	7.2	7.3
	Temp. (C)	7.8	7.2	7.1	6.6
79-23	Flow (GPM)	DRY	DRY	DRY	DRY
	Temp. (C)				
82-52	Flow (GPM)	12.0	8.0	7.5	5.5
	Temp. (C)	4.7	6.5	5.5	4.4

TRAIL MOUNTAIN

SPRING DISCHARGE RECESSION STUDY

YEAR 1997

SPRING		JUL	AUG	SEP	OCT	Seasonal Net Change %
T-6	Flow (GPM)	7.5	6.7	4.9	4.3	-42.7
18-2-1	Temp. (C)	9	9	10	8	
T-8	Flow (GPM)	0.9	0.6	0.5	0.6	-40.2
17-21-1	Temp. (C)	7	9	10	7	
T-9	Flow (GPM)	4.8	7.0	12.0	5.0	4.2
17-22-1	Temp. (C)	7	8	9	7	
T-10	Flow (GPM)	0.4	0.3	0.3	0.1	-76.2
17-26-4	Temp. (C)	10	8	9	5	
T-14	Flow (GPM)	1.0	0.3	0.2	0.1	-90.0
17-25-1	Temp. (C)	8	9		7	
T-14A	Flow (GPM)	dry	dry	dry	dry	
17-26-5	Temp. (C)					
T-15	Flow (GPM)	1.0	1.5	1.7	2.0	100.0
17-35-1	Temp. (C)	8	9	9	9	
T-16	Flow (GPM)	dry	dry	dry	dry	
17-35-2	Temp. (C)					
TM-23	Flow (GPM)	dry	dry	dry	dry	
	Temp. (C)					

JULY TOTAL **15.6**

OCTOBER TOTAL **12.1**

Net Change - Average -24.15

Net Change - By Volume -22.95

TOTAL FOR JULY 1996 = 14.4

JULY 1997 8.3% GREATER THAN JULY 1996

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

MILL FORK CANYON FLOW & QUALITY

MILL FORK CANYON ABOVE MINE (MFA1)

		Field Measurements							
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/31/97	900	INACCESSIBLE						clear10's	
2/14/97	901	INACCESSIBLE						clear10's	
3/19/97	1135	INACCESSIBLE						clear50's	
4/28/97	1335			Dry				clear40's	
5/28/97	1428			500				pc70's	
6/26/97	901	8		400	8.47	398	NA	clear60's	
7/17/97	1041			80				clear80's	
8/26/97	1338			Dry				pc80's	
9/15/97	1350			Dry				pc70's	
10/13/97	1330			Dry				clear60's	
11/18/97	945			Dry				clear30's	
12/4/97	1300			Dry				clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

MILL FORK CANYON FLOW & QUALITY

MILL FORK CANYON BELOW MINE (MFB2)

		Field Measurements							
Date	Time	Temp. (oC)	Flow ft.	GPM	pH	Cond. (uS)	Dis. Oxygen	Weather	Comments
1/24/97	900	INACCESSIBLE						clear10's	
2/14/97	90	INACCESSIBLE						clear10's	
3/19/97	1135	INACCESSIBLE						clear50's	
4/28/97	1342			Dry				clear40's	
5/28/97	1435			600				pc70's	
6/26/97	916	8		350	8.54	460	NA	clear60's	
7/17/97	1051			55				clear80's	
8/26/97	1345			20				pc80's	
9/15/97	1400	13		30	8.54	636	7.2	pc70's	
10/13/97	1345			30				clear60's	
11/18/97	1000			Frozen				clear30's	
12/4/97	1310			Frozen				clear20's	

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TECHNICAL SERVICES - HYDROLOGIC MONITORING
DEER CREEK MINE / DISCHARGE

PERMIT # 0023604-002
(DCD)

Quality				Quantity	
Date	Time	GPM	Temp. (^{o}C)	Month	Gallons/day
1/31/96	1130	823	14	Jan-96	894,844
2/28/96	830	588	12	Feb	999,559
3/29/96	1526	450	12	Mar	848,067
5/2/96	1205	150	12	April	951,024
5/16/96	1024	765	14	May	1,206,023
6/6/96	1320	2647	11	June	1,196,640
7/31/96	935	980	14	July	1,272,138
8/8/96	658	2784	13	August	1,439,443
9/6/96	654	647	14	September	1,320,864
10/3/96	957	843	13	October	1,733,063
11/18/96	1118	1019	14	November	1,602,144
12/5/96	957	376	13	December	1,612,614
1/20/97	925	2039	11	January	1,387,556
2/10/97	751	1117	12	February	949,953
3/11/97	1037	700	13	March	1,242,999
4/17/97	1310	2274	12	April	1,626,960
5/12/97	759	800	13	May	2,207,825
6/2/97	1220	2050	14	June	2,054,208
7/14/97	1040	1372	13	July	2,963,381
8/12/97	630	1078	14	August	2,312,408
9/5/97	722	941	14	September	1,853,856
10/14/97	740	803	13	October	1,599,747
11/13/97	1114	1960	12	November	1,860,288
12/4/97	850	745	12	December	1,060,026

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TECHNICAL SERVICES - HYDROLOGIC MONITORING

OLIPHANT MINE - STRAIGHT CANYON

(T-18)
Quality

Date	Time	GPM	Temp. (°C)	pH	Cond. (uS)	Oxygen	Quantity Dis. Gallons/day
15-Dec-92	1155	0.7	8	8.21	587	9.6	1,008
23-Mar-93	1450	1.1	14	8.31	580	9.2	1,584
10-Jun-93	1305	1.0	17	8.48	608	7.3	1,440
10-Sep-93	1450	1.0	14	8.70	603	3.9	1,440
13-Dec-93	1400	Frozen					
24-Mar-94	1226	1.3	3	Meter Out For Repair			1,872
22-Jun-94	1352	0.9	19	8.53	1280	6.5	1,282
16-Sep-94	1020	1.3	13	8.52	607	7.8	1,800
19-Dec-94	1140	Frozen					
Jan-Feb95		Frozen					
03-29-95	909	1.2	3	8.91	575	3.6	1,728
06-29-95	1017	1.0	16	Meter Out For Repair			1,440
09-27-95	1115	1.0	16	8.70	562	5.8	1,440
12-18-95	1055	0.7	2	8.83	568	7.3	950
3/25/96	1440	1.1	4	8.74	589	5.9	1,584
6/10/96	1230	0.27	18	9.07	559	6.9	389
9/4/96	1357	0.15	19	9.06	596	8.8	216
12/13/96	1624	1.3	11	8.8	542	14.7	1857.6
3/21/97	1013	0.1	7	8.43	558	9.6	144
6/23/97	955	Damp					
9/8/97	1200	Damp					
12/5/97	1055	Dry					

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

TRAIL MOUNTAIN MINE - COTTONWOOD CANYON
PERMIT # UTG040003-002
(TRAIL MOUNTAIN MINE DISCHARGE to COTTONWOOD CANYON CREEK)

		Quality			Quantity
Date	Time	GPM	Temp. (^{o}C)	Month	Gallons/day
28-Jan-93	930	30	11	Jan-93	20,903
22-Feb-93	1145	30	9	Feb	21,600
23-Mar-93	1538	60	9	Mar	21,600
21-Apr-93	1403	84	12	Apr	60,266
May-Aug	No Discharge			May-Aug	No Discharge
09-13-93	1020	40	14	Sep	57,600
Oct93-Dec	No Discharge			Oct-Dec	No Discharge
Jan94-Dec	No Discharge			Jan94-Dec	No Discharge
Jan95-Dec	No Discharge			Jan95-Dec	No Discharge
Jan96-Dec.	No Discharge			Jan96-Dec.	No Discharge
Jan97-May	No Discharge			Jan97-May	No Discharge
6/2/97	900	100	16	June	144,000
6-13-97	1345	100	16.3		
6/15/97	1230	100	16		
7/16/97	900	No Discharge		July	No Discharge
7/23/97	858	180	16.5	July	259,200
8/28/97	700	180+	16.9	August	259,200
9/5/97	938	No Discharge		September	No Discharge
10/28/97	720	400	12.6	October	225,448
11/13/97	1251	200	13.6	November	353,667
12/16/97	819	100	13	December	232,419

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WILBERG MINE - GRIMES WASH
PERMIT # 0022896-001A
(WMDO1)
Left Fork Grimes Wash

		Quality			Quantity	
Date	Time	GPM	Temp. (°C)	Month	Gallons/day	Comments
1/22/96	940	1.33	10	Jan	15,062	
2/14/96	1107	23	5	Feb	123,600	
3/26/96	1508	1.5	11	Mar	49,769	
4/30/96	1204	40	13	Apr	239,158	
5/15/96	1145	65	14	May	678,562	
5/22/96	1427	69.4	14	May		Spilt with State Health
6/6/96	830	152	13	Jun	95,487	
7/11/96	949	50	14	Jul	272,968	Split with State Health
8/8/96	1020	251	15	Aug	292,515	
8/14/96	1450	27.8	15	Aug		Split with State Health
9/6/96	858	50	14	Sept	347,162	
9/25/96	1355	205	14	Sept		Split with State Health
10/3/96	1144	18.8	14	Oct	351,030	
11/6/96	1423	15.3	12	Nov	313,653	Split with State Health
12/5/96	1128	29	12	Dec	335,927	
1/8/96	1159	425	12	Jan	415,439	Split with State Health
2/9/97	1420	256	12	Feb	169,966	Split with State Health
3/10/97	1239	30	13	Mar	236,447	
4/11/97	834	56	11	April		
4/17/97	1130	40	12	April	265,109	Split with State Health
5/12/97	642	62	13	May		
5/29/97	1004	450	12	May	206,517	Split with State Health
6/2/97	1344	413	14	June	187,956	
7/14/97	1210	36	14	July	87,158	
7/16/97	955	51	14	July		Split with State Health
8/12/97	824	30	13	August		
8/21/97	1123	90	14	August	26,151	Split with State Health
9/5/97	854	73	13	September	108,717	
10/14/97	905	46	12	October		
10/29/97	1052	45	12	October	135,564	Split with State Health
11/13/97	1225	676	12	November	96,761	
12/15/97	1057	729	12	December	259,143	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WILBERG MINE - MILLER CANYON
PERMIT # 0022896-004A

Miller Canyon Breakout
(MILLER)

		Quality			Quantity	
Date	Time	GPM	Temp. (^{o}C)	Month	Gallons/day	Comments
1/31/96	1515	Frozen, no discharge.		Jan-96	Frozen	
2/26/96	945	Frozen, no discharge.		Feb	Frozen	
4/3/96	1440	3	15.1	Mar	4320	
4/30/96	1050	4	11.7	April	5760	
5/15/96	1050	3	16.5	May	4320	
5/22/96	1404	3.5	18.1	May	5040	Split with State Health
6/6/96	748	3.5	11.9	Jun	5040	
7/11/96	921	3	15.9	Jul	4320	Split with State Health
8/8/96	940	Dry		Aug	No Discharge	
9/4/96	1230	Dry		Sep	No Discharge	
10/22/96	1045	Dry		Oct	No Discharge	
11/18/96	1200	Dry		Nov.	No Discharge	
12/26/96	940	Dry		Dec.	No Discharge	
1/31/97	1130	Inaccessible		Jan.97		
2-31-97	1145	Inaccessible		Feb.		
3/11/97	1301	Inaccessible		Mar		
4/7/97	1300	Dry		April	No Discharge	
5/29/97	1200	Dry		May	No Discharge	
6/23/97	850	Dry		June	No Discharge	
7/16/97	920	Dry		July	No Discharge	
8/21/97	1400	Dry		August	No Discharge	
9/5/97	1015	Dry		September	No Discharge	
10/14/97	925	Dry		October	No Discharge	
11/13/97	1315	Dry		November	No Discharge	
12/5/97	1135	Dry		December	No Discharge	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

DEER CREEK IN-MINE QUALTIY & LONG TERM FLOW

QUALITY					LONG TERM FLOW (GPM)		
Date	Location	Time	Temp. (°C)	GPM	Date	Site #1	Site #2
3/29/96	MAIN N.-MAIN E.	1415	6.5	0.2	03-24-94	0.3	3.0
3/29/96	TW-10	1347	6.5	4.0	06-14-94	0.3	2.4
5/2/96	6 WEST XC-20	1105	11.5	<.5	09-21-94	0.2	2.0
6/19/96	MAIN N.-MAIN E.	1050	7.5	0.1	12-21-94	0.2	2.0
6/19/96	TW-10	1030	6	4.1	3/17/95	0.2	1.5
6/19/96	5th W-X-cut 19	1500	9.5	7.5	6/16/95	0.3	2.4
9/30/96	TW-10	1050	6.5	4.6	9/28/95	0.1	6.7
9/30/96	MAIN N.-MAIN E.	830	7.5	0.2	12/15/96	0.2	5.0
12/12/96	MAIN N.-MAIN E.	1010	7.5	0.2	3/29/96	0.2	4.0
12/12/96	TW-10	945	5.5	3.5	6/19/96	0.1	4.1
3/27/97	MAIN N.-MAIN E.	1240	6	0.33	9/30/96	0.2	4.6
3/27/97	TW-10	1226	6	2.7	12/12/96	0.2	3.5
6/26/97	MAIN N.-MAIN E.	1100	8.2	0.16	3/27/97	0.33	2.7
6/26/97	TW-10	1045	7.3	4.8	6/26/97	0.16	4.8
9/25/97	MAIN N.-MAIN E.	1210	7	0.14	9/25/97	0.14	4.6
9/25/97	TW-10	1150	5	4.6	12/9/97	0.14	3.75
12/9/97	MAIN N.-MAIN E.	945	7	0.14			
12/9/97	TW-10	930	7.3	3.75			

Site #1 Main North - Main West
Site #2 3rd North XC-65 2R, TW-10

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

TRAIL MOUNTAIN IN-MINE QUALTIY & LONG TERM FLOW

		QUALITY				LONG TERM FLOW (GPM)	
Date	Location	Time	Temp. (oC)	GPM	Date	UG-2	UG-3
04-02-93	UG-2	1450	13	0.10	04-02-93	0.10	12.00
04-02-93	UG-3	1500	12	12.00	07-03-93	0.10	15.10
07-03-93	UG-2	1005	13	0.10	09-23-93	0.10	12.00
08-23-93	UG-3	1206	13	15.10	12-16-93	0.10	12.00
09-23-93	UG-2	1038	10	0.10	03-28-94	0.10	12.00
09-23-93	UG-3	1112	12	12.00	06-21-94	0.10	12.00
12-16-93	UG-3	1045	11	0.10	09-26-94	0.03	15.00
12-16-93	UG-2	1115	11	12.00	12-20-94	0.03	15.00
03-28-94	UG-3	930	11	12.00	03-16-95	*	10.00
03-28-94	UG-2	840	11	0.10	06-23-95	*	5.00
06-21-94	UG-3	1330	11	12.00	09-28-95	*	5.00
06-21-94	UG-2	1245	11	0.10	12-22-95	*	15.00
09-26-94	UG-3	1100	12	15.00	3/28/96		7.00
09-26-94	UG-2	1130	11	0.03	6/19/96		10.00
12-20-94	UG-3	1235	11	15.00	9/25/96		5.00
12-20-94	UG-2	1220	11	0.03	12/3/96		5.00
03-16-95	UG-3	1030	11	10.00	3/11/97		5.00
06-23-95	UG-3	1445	12	5.00	6/26/97		7.00
09-28-95	UG-3	1030	12	5.00	9/24/97		6.00
12-22-95	UG-3	1030	12	15	12/22/97		8.60
3/28/96	UG-3	1334	10	7.00			
6/19/96	UG-3	1245	11	10.00			
9/25/96	UG-3	1530	11.3	5.00			
12/3/96	UG-3	1415	11.5	5.00			
3/11/97	UG-3	1410	14	5.00			
6/26/97	UG-3	1140	10	7.0			
9/24/97	UG-3	1040	12	6			
12/22/97	UG-3	1135	4.1	8.6			

* UG-2 Monitoring Discontinued, insufficient flow

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

WILBERG-COTTONWOOD IN-MINE QUALTIY & LONG TERM FLOW

QUALITY					LONG TERM FLOW (GPM)			
Date	Location	Time	Temp. (°C)	GPM	Date	Site #1	Site #2	Site #3
3/28/96	TMA @ 32	1440	11	1.50	3/28/96	0.06	1.50	
3/28/96	2nd S XC-11	1357	10	0.06	6/19/96	0.06	1.50	
6/19/96	2nd S XC-11	1000	10	0.06	9/25/96	0.06	0.50	
6/19/96	TMA @ 32	945	11	1.50	12/3/96	0.06	0.50	
9/25/96	TMA @ 32	1430	14.8	0.50	3/11/97	0.07	0.50	
9/25/96	2nd S XC-11	1455	11.7	0.10	6/26/97	0.01	2.00	
12/3/96	2nd S XC-11	1323	11	0.06	9/24/97	0.01	2.00	
12/3/96	TMA @ 32	1400	10.5	0.50	12/22/97	0.01	2.50	
3/11/97	2nd S XC-11	1500	14	0.07				
3/11/97	TMA @ 32	1432	12	0.50				
6/26/97	2nd S XC-11	1325	7	0.01				
6/26/97	TMA @ 32	1305	12	2.00				
9/24/97	2nd S XC-11	940	14.3	0.01				
9/24/97	TMA @ 32	1010	12.3	2.00				
12/22/97	2nd S XC-11	1225	6.7	0.01				
12/22/97	TMA @ 32	1210	13.7	2.50				

Site #1 2nd South cross cut 11
Site #2 TMA cross cut 32-33 #3
* sampling hose plugged

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

Sediment Pond Analysis

Cottonwood Canyon Creek
Permit # 0022896-002A

Date	Time	GPM	Temp. (°C)	Weather	Comments
Jan.-Dec., 1986		no discharge			
Jan.-Dec., 1987		no discharge			
Jan.-Dec., 1988		no discharge			
Jan.-Dec., 1989		no discharge			
Jan.-Dec., 1990		no discharge			
Jan.-Dec., 1991		no discharge			
Jan.-Dec., 1992		no discharge			
Jan.-Dec., 1993		no discharge			
Jan.-Dec., 1994		no discharge			
Jan.-Dec., 1995		no discharge			
Jan.-Dec., 1996		no discharge			
Jan.-Dec.,1997		no discharge			

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

Sediment Pond Analysis

Deer Creek
Permit # 0023604-001

Date	Time	GPM	Temp. (°C)	Weather	Comments
1/4/96	905	28	3	clear 20's	
2/14/96	1203	40	5	clear50's	
3/29/96	1536	34	4	pc 40's	
4/3/96	1622	55	5	pc 40's	split with state health
5/16/96	1222	28	12	pc70's	
5/22/96	1441	38	12	pc60's	split with state health
6/6/96	1258	31	13	clear80's	
7/11/96	1055	40	15	clear80's	split with state health
8/8/96	720	28	13	clear70's	
8/14/96	1400	32	15	pc80's	split with state health
9/6/96	715	15	13	rain60's	Prec. event, <10y/24 hr
9/25/96	1455	46	10	clear60's	split with state health
10/3/96	1018	54	10	rain50's	Prec. event, <10y/24 hr
11/6/96	1317	43	4	clear40's	split with state health
12/5/96	1024	45	2	snow20's	Prec. event, <10y/24 hr
1/8/97	1113	20	0	clear30's	split with state health
2/20/97	759	26	1	cloudy20's	split with state health
3/11/97	1103	28	3	clear50's	
4/11/97	731	34	5	Ltsnow20's	Prec. event, <10y/24 hr
4/17/97	1050	26	4	clear50's	split with state health
5/12/97	729	85	11	clear40's	
5/29/97	1102	20	10	cloudy50's	split with state health
6/2/97	1227	20	14	rain70's	
7/14/97	1050	20	14	clear80's	
7/16/97	1101	20	14	clear80's	split with state health
8/12/97	700	15	16	pc60's	Prec. event, <10y/24 hr
8/21/97	1220	23	14	clear80's	Prec. event, <10y/24 hr. Split w/State
9/5/97	800	45	14	clear60's	Prec. event, <10y/24 hr
10/14/97	725	20	5	cloudy40's	
11/13/97	1125	no discharge		clear40's	Cleaning Pond
12/4/97	910	no discharge		clear20's	Cleaning Pond

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

Sediment Pond Analysis

Des-Bee-Dove
Permit # 0023591-001

Date	Time	GPM	Temp. (°C)	Weather	Comments
Jan.-Feb.,1986	no discharge				
03-21-86	1500	<1.0		PC 40's	
Apr.-Aug.	no discharge				
09-26-86	1425	100.0	14	PC 40's	
10-13-86	1700	20.0	4	clear 40's	
Nov.-Dec.	no discharge				
Jan.-Dec.,1987	no discharge				
Jan.-Dec.,1988	no discharge				
Jan.-Dec.,1989	no discharge				
Jan.-Dec.,1990	no discharge				
Jan.-Jul.,1991	no discharge				
08-30-91	1440	18.5	21	showers 70's	prec. event <10y/24h
09-06-91	1005	17.2	16	prec. event >10y/24h	
10-03-91	1135	12.0	14	clear 60's	
Nov.-Dec.,199	no discharge				
Jan.-Dec.,1992	no discharge				
Jan.-Mar.,1993	no discharge				
04-7-93	1450	8.0	9	prec. event <10y/24h	
05-07-93	1335	6.0	12	rain 50's	
Jun.- Dec.,199	no discharge				
Jan.- Dec.,1994	no discharge				
Jan.- Dec.,1995	no discharge				
Jan.-August 96	no discharge				
9-17-96	1223	12.0	12	rain 60's	Opened valve to decant pond.
Oct.-Dec 96		no discharge			
Jan.-Feb.97		no discharge			
3-12-97	957	80.0	1	clear40's	Opened valve to decant pond.
4/7/97	1020	no discharge		pc40's	
5/29/97	730	no discharge		cloudy50's	
6/2/97	1500	no discharge		rain70's	
7/14/97	1150	5.0	21	clear80's	Opened valve to decant pond.
8/21/97	1430	no discharge			
9/18/97	1030	40.0	17	clear50's	Opened valve to decant pond.
10/14/97	830	no discharge		clear50's	
11/13/97	1430	no discharge		clear40's	
12/15/97	1140	no discharge		cloudy20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORIN

Sediment Pond Analysis

Wilberg Mine
Permit # 0022896-003A

Date	Time	GPM	Temp. (°C)	Weather	Comments
1/4/96	950	30	2.3	clear20's	
2/14/96	1118	40	5	clear50's	
3/25/96	1511	38	6	snow20's	
4/3/96	1524	31	8	pc40's	Spit with State Health
5/15/96	1200	20	14	clear80's	
5/22/96	1441	38	12	pc60's	Spit with State Health
6/6/96	850	20	14	clear80's	
7/11/96	1019	17	15	clear80's	Split with State Health
8/8/96	1102	45	15	clear70's	
8/14/96	1445	36	15	pc80's	Split with State Health
8/27/96	630	20		clear 70's	Resample
9/6/96	934	30	14	rain 60's	Prec. event,<10y/24hr.
9/25/96	1411	18	11	clear60's	Split with State Health
10/3/96	1157	20	10	rain50's	Prec. event,<10y/24hr.
10/22/96	1145	20		clear30's	Resample
11/6/96	1426	18	6	clear40's	Split with State Health
12/5/96	1144	12	3	snow20's	Prec. event,<10y/24hr.
1/8/97	1210	40	1	clear30's	Split with State Health
2/20/97	859	50	4	cloudy20's	Split with State Health
3/11/97	653	42	6	clear30's	
4/11/97	847	24	5	Ltsnow20's	Prec. event,<10y/24hr.
4/17/97	1140	26	6	clear50's	Split with State Health
5/12/97	628	15	11	clear40's	
5/29/97	1017	31	11	cloudy50's	Split with State Health
6/2/97	1355	30	15	rain70's	Prec. event,<10y/24hr.
7/14/97	1230	2	15	clear80's	
7/16/97	1016	23	15	clear80's	Split with State Health
8/12/97	836	32	16	pc60's	Prec. event,<10y/24hr.
8/21/97	1137	22	16	clear80's	Prec. event, <10y/24 hr. Split w/State
9/5/97	911	32	15	clear60's	Prec. event,<10y/24hr.
10/29/97	1105	27	4	clear50's	Split with State Health
11/13/97	1213	28	4	clear40's	Prec. event,<10y/24hr.
12/15/97	1129	13	4	cloudy20's	

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

Sediment Pond Analysis

Trail Mountain Mine
Permit # UTG040003-001

Date	Time	GPM	Temp. (°C)	Weather	Comments
Jan-Aug.-1996		no discharge			
9/17/96	1334	0.44	10.1	Rain 50's	Prec. Event <10y/24H
10/3/96	1232	1.14	11.2	Rain 50's	Prec. Event <10y/24H
11/18/96	1141	60	7.7	Rain30's	Prec. Event <10y/24H
12/5/96	1233	4	1.9	snow20's	Prec. Event <10y/24H
1/31/97	1110	no discharge		clear30's	
2/21/97	1141	no discharge		clear20's	
3/11/97	718	30	4.4	clear30's	
4/7/97	1245	no discharge		pc40's	
4/17/97	1412	50	9.1	clear50's	
5/12/97	800	no discharge		clear50's	
6/2/97	1420	40	15.8	pc70's	
7/16/97	905	no discharge		clear70's	
8/12/97	900	80	15.2	pc60's	Prec. Event <10y/24H
9/5/97	937	50	15.1	cloudy60's	Prec. Event <10y/24H
10/14/97	934	50	4.9	clear50's	
11/13/97	1258	50	6.8	clear40's	
12/5/97	1125	no discharge			

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
		DEGREES F		
DATE	TIME	HIGH	LOW	
1-Oct-96	8:24 AM		49.2	LOW
1-Oct-96	9:23 PM	65.2		HIGH
2-Oct-96	3:26 PM	60.7		HIGH
2-Oct-96	10:02 PM		47.4	LOW
3-Oct-96	6:39 AM		40.2	LOW
3-Oct-96	6:33 PM	49.8		HIGH
4-Oct-96	6:39 AM		41.6	LOW
4-Oct-96	6:50 PM	58.4		HIGH
5-Oct-96	8:20 AM		43.4	LOW
5-Oct-96	6:13 PM	60.7		HIGH
6-Oct-96	3:44 AM		46.8	LOW
6-Oct-96	8:03 PM	66.9		HIGH
7-Oct-96	5:09 AM		50.2	LOW
7-Oct-96	9:16 PM	69.4		HIGH
8-Oct-96	9:50 AM		51.1	LOW
8-Oct-96	8:45 PM	71.8		HIGH
9-Oct-96	8:54 AM		51.6	LOW
9-Oct-96	8:05 PM	71.7		HIGH
10-Oct-96	7:50 AM		52.5	LOW
10-Oct-96	7:58 PM	70.4		HIGH
11-Oct-96	9:48 AM		53.6	LOW
11-Oct-96	7:34 PM	70		HIGH
12-Oct-96	9:34 AM		48.6	LOW
12-Oct-96	7:14 PM	65.5		HIGH
13-Oct-96	5:10 AM		45.9	LOW
13-Oct-96	6:10 PM	64.5		HIGH
14-Oct-96	6:48 AM		39.5	LOW
14-Oct-96	4:59 PM	57.1		HIGH
15-Oct-96	8:47 AM		42.7	LOW
15-Oct-96	5:17 PM	58.5		HIGH
16-Oct-96	2:45 AM	45.3		HIGH
16-Oct-96	6:39 PM		27.4	LOW
17-Oct-96	3:58 AM		19.7	LOW
17-Oct-96	3:50 PM	40.1		HIGH
18-Oct-96	4:34 AM		26.1	LOW
18-Oct-96	5:14 PM	46.2		HIGH
19-Oct-96	9:55 AM	41.7		HIGH
19-Oct-96	6:34 PM		20.4	LOW
20-Oct-96	3:03 AM		14.6	LOW
20-Oct-96	12:04 PM	25.4		HIGH
21-Oct-96	12:52 AM		13.4	LOW
21-Oct-96	11:10 AM	28.8		HIGH
22-Oct-96	4:09 AM		20.7	LOW
22-Oct-96	2:59 PM	39.9		HIGH
23-Oct-96	3:59 AM		28.7	LOW
23-Oct-96	1:56 PM	43.7		HIGH
24-Oct-96	1:35 AM		27.8	LOW
24-Oct-96	12:05 PM	38.3		HIGH

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
		DEGREES F		
DATE	TIME	HIGH	LOW	
24-Oct-96	10:52 PM	29.1		HIGH
25-Oct-96	4:31 PM		17.2	LOW
25-Oct-96	11:39 PM		14.9	LOW
26-Oct-96	7:54 AM	23.6		HIGH
27-Oct-96	12:10 AM		21.7	LOW
27-Oct-96	10:05 AM	36.4		HIGH
28-Oct-96	6:16 AM	32.9		HIGH
28-Oct-96	4:42 PM		25.3	LOW
29-Oct-96	12:32 AM		24	LOW Oct-96 SUMMARY
29-Oct-96	9:45 AM	35.7		HIGH ==========
30-Oct-96	12:38 AM		23.8	LOW HIGH LOW
30-Oct-96	10:30 AM	37.9		HIGH AVG. 49.6 33.9
31-Oct-96	2:25 AM	31		HIGH MAX. 71.8 53.6
31-Oct-96	2:29 PM		21.3	LOW MIN. 23.6 13.4
1-Nov-96	1:26 AM		23.4	LOW
1-Nov-96	11:25 AM	44		HIGH
2-Nov-96	2:36 AM		31.2	LOW
2-Nov-96	10:03 AM	46.7		HIGH
3-Nov-96	8:16 AM	38.4		HIGH
3-Nov-96	8:56 PM		31.7	LOW
4-Nov-96	2:01 AM		31.4	LOW
4-Nov-96	9:38 AM	43		HIGH
5-Nov-96	7:04 AM	35.6		HIGH
5-Nov-96	9:00 PM		17.5	LOW
6-Nov-96	3:15 AM		14.7	LOW
6-Nov-96	11:17 AM	32.6		HIGH
7-Nov-96	2:47 AM		19.9	LOW
7-Nov-96	11:02 AM	37.8		HIGH
8-Nov-96	3:04 AM		31.1	LOW
8-Nov-96	8:45 AM	44.6		HIGH
9-Nov-96	2:33 AM		35.5	LOW
9-Nov-96	12:53 PM	52.8		HIGH
10-Nov-96	9:59 AM	55.2		HIGH
10-Nov-96	8:55 PM		41.8	LOW
11-Nov-96	2:42 AM		41.1	LOW
11-Nov-96	10:05 AM	55.8		HIGH
12-Nov-96	2:13 AM		44	LOW
12-Nov-96	8:57 AM	55.5		HIGH
13-Nov-96	8:49 AM	48.3		HIGH
13-Nov-96	5:29 PM		36	LOW
14-Nov-96	7:30 AM	43.9		HIGH
14-Nov-96	8:56 PM		26.6	LOW
15-Nov-96	4:55 AM	27.4		HIGH
15-Nov-96	5:11 PM		18.8	LOW
16-Nov-96	9:01 AM	27.3		HIGH
16-Nov-96	5:42 PM		14.7	LOW
17-Nov-96	2:26 AM		19.1	LOW

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES							
		DEGREES F					
DATE	TIME	HIGH	LOW				
17-Nov-96	8:55 PM	35.9		HIGH			
18-Nov-96	3:16 AM		40.3	LOW			
18-Nov-96	6:51 AM	49.1		HIGH			
19-Nov-96	7:36 AM	50.4		HIGH			
19-Nov-96	12:23 PM		36.9	LOW			
20-Nov-96	9:24 AM	51.5		HIGH			
20-Nov-96	10:02 PM		37.5	LOW			
21-Nov-96	4:34 AM		37.8	LOW			
21-Nov-96	8:48 AM	47.7		HIGH			
22-Nov-96	7:16 AM	41.7		HIGH			
22-Nov-96	10:03 PM		31.1	LOW			
23-Nov-96	6:38 AM	38.2		HIGH			
23-Nov-96	10:46 PM		26.8	LOW			
24-Nov-96	2:49 AM		26.7	LOW			
24-Nov-96	9:12 AM	38		HIGH			
25-Nov-96	7:23 AM	40.9		HIGH			
25-Nov-96	10:00 PM		28.1	LOW			
26-Nov-96	9:32 AM	33.7		HIGH			
26-Nov-96	9:45 PM		18.6	LOW			
27-Nov-96	3:29 AM		20.5	LOW			
27-Nov-96	12:55 PM	32.9		HIGH			
28-Nov-96	5:21 AM		21	LOW	Nov-96 SUMMARY		
28-Nov-96	11:44 AM	32		HIGH	==========		
29-Nov-96	6:40 AM	26.1		HIGH		HIGH	LOW
29-Nov-96	8:52 PM		15.7	LOW	AVG.	41.2	27.9
30-Nov-96	3:42 AM		16.3	LOW	MAX.	55.8	44.0
30-Nov-96	9:40 AM	28		HIGH	MIN.	26.1	14.7
1-Dec-96	10:18 AM	32		HIGH			
1-Dec-96	8:00 PM		15.5	LOW			
2-Dec-96	4:42 AM		11.8	LOW			
2-Dec-96	9:12 AM	24		HIGH			
3-Dec-96	1:52 AM		12.1	LOW			
3-Dec-96	8:04 AM	24		HIGH			
4-Dec-96	3:07 AM		15.3	LOW			
4-Dec-96	8:25 AM	27.2		HIGH			
5-Dec-96	7:31 AM	33.3		HIGH			
5-Dec-96	4:47 PM		23.7	LOW			
6-Dec-96	7:51 AM	28.7		HIGH			
6-Dec-96	8:41 PM		20.6	LOW			
7-Dec-96	2:05 AM		21.5	LOW			
7-Dec-96	7:32 AM	33.6		HIGH			
8-Dec-96	3:19 AM		27.1	LOW			
8-Dec-96	7:32 AM	34.8		HIGH			
9-Dec-96	3:18 AM		30.6	LOW			
9-Dec-96	7:39 AM	37.5		HIGH			
10-Dec-96	6:43 AM	38.3		HIGH			
10-Dec-96	2:27 PM		29.7	LOW			

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES							
		DEGREES F					
DATE	TIME	HIGH	LOW				
11-Dec-96	6:41 AM	38.3		HIGH			
11-Dec-96	3:44 PM		30.2	LOW			
12-Dec-96	5:39 AM	41.5		HIGH			
12-Dec-96	7:50 PM		31.1	LOW			
13-Dec-96	4:39 AM	40.7		HIGH			
13-Dec-96	7:50 PM		21	LOW			
14-Dec-96	6:37 AM	23.7		HIGH			
14-Dec-96	8:06 PM		10.5	LOW			
15-Dec-96	1:05 AM		10.6	LOW			
15-Dec-96	8:39 PM	31.6		HIGH			
16-Dec-96	1:16 AM	32		HIGH			
16-Dec-96	8:50 PM		5.9	LOW			
17-Dec-96	10:27 AM		5.1	LOW			
17-Dec-96	7:35 PM	9.4		HIGH			
18-Dec-96	12:21 AM		10.3	LOW			
18-Dec-96	7:57 PM	24.5		HIGH			
19-Dec-96	8:24 AM	25.5		HIGH			
19-Dec-96	4:23 PM		19.3	LOW			
20-Dec-96	1:48 AM		20.1	LOW			
20-Dec-96	2:12 PM	33		HIGH			
21-Dec-96	7:40 AM	29		HIGH			
21-Dec-96	1:58 AM		23.2	LOW			
22-Dec-96	5:47 AM	28.2		HIGH			
22-Dec-96	7:55 PM		18.5	LOW			
23-Dec-96	3:53 AM	21.4		HIGH			
23-Dec-96	5:43 PM		16.1	LOW			
24-Dec-96	1:02 AM		21.7	LOW			
24-Dec-96	5:29 AM	31.2		HIGH			
25-Dec-96	1:52 AM		26.5	LOW			
25-Dec-96	6:08 AM	35.1		HIGH			
26-Dec-96	3:34 AM	38.9		HIGH			
26-Dec-96	8:10 PM		27.3	LOW			
27-Dec-96	3:41 AM	34.8		HIGH			
27-Dec-96	7:49 PM		22.8	LOW			
28-Dec-96	4:11 AM	35.3		HIGH			
28-Dec-96	11:28 AM		24.9	LOW			
29-Dec-96	4:25 AM	38.4		HIGH	Dec-96 SUMMARY		
29-Dec-96	9:28 AM		27.9	LOW	==========		
30-Dec-96	4:29 AM	43.1		HIGH		HIGH	LOW
30-Dec-96	5:19 PM		29.7	LOW	AVG.	32.0	20.7
31-Dec-96	2:45 AM	43.9		HIGH	MAX.	43.9	31.6
31-Dec-96	8:40 PM		31.6	LOW	MIN.	9.4	5.1
1-Jan-97	4:15 AM	39.6		HIGH			
1-Jan-97	3:00 PM		33.5	LOW			
2-Jan-97	6:49 AM	39.6		HIGH			
2-Jan-97	4:01 PM		27.1	LOW			
3-Jan-97	2:21 AM	27.6		HIGH			

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
		DEGREES F		
DATE	TIME	HIGH	LOW	
3-Jan-97	9:23 PM		13.1	LOW
4-Jan-97	4:48 AM		5.7	LOW
4-Jan-97	10:27 AM	19.6		HIGH
5-Jan-97	11:38 AM	12.6		HIGH
5-Jan-97	3:59 PM		5.7	LOW
6-Jan-97	5:00 AM		2.3	LOW
6-Jan-97	6:48 PM	11.7		HIGH
7-Jan-97	5:16 AM		11.6	LOW
7-Jan-97	9:10 AM	21.5		HIGH
8-Jan-97	3:39 AM		11.5	LOW
8-Jan-97	11:09 AM	18.5		HIGH
9-Jan-97	3:06 AM		15.2	LOW
9-Jan-97	12:01 PM	22.7		HIGH
10-Jan-97	7:00 AM	23.9		HIGH
10-Jan-97	8:29 PM		19.2	LOW
11-Jan-97	6:57 AM	26.8		HIGH
11-Jan-97	7:54 PM		15.3	LOW
12-Jan-97	6:56 AM	17.9		HIGH
12-Jan-97	5:16 PM		10.9	LOW
13-Jan-97	3:03 AM		11.4	LOW
13-Jan-97	9:27 AM	17.8		HIGH
14-Jan-97	8:36 AM	17.7		HIGH
14-Jan-97	7:48 PM		8.2	LOW
15-Jan-97	1:04 AM		7.7	LOW
15-Jan-97	9:43 AM	25.9		HIGH
16-Jan-97	2:11 AM		7.3	LOW
16-Jan-97	9:11 AM	24.2		HIGH
17-Jan-97	4:58 AM		14.5	LOW
17-Jan-97	10:39 AM	33.2		HIGH
18-Jan-97	2:06 AM		23.7	LOW
18-Jan-97	10:47 AM	41.3		HIGH
19-Jan-97	10:53 AM	41.9		HIGH
19-Jan-97	9:15 PM		17.9	LOW
20-Jan-97	7:57 AM	28		HIGH
20-Jan-97	8:35 PM		15.1	LOW
21-Jan-97	8:10 AM	20.6		HIGH
21-Jan-97	6:01 PM		11.3	LOW
22-Jan-97	4:33 AM		13	LOW
22-Jan-97	7:58 AM	23.7		HIGH
23-Jan-97	5:56 AM	25.6		HIGH
23-Jan-97	7:54 PM		13.6	LOW
24-Jan-97	3:22 AM		13.6	LOW
24-Jan-97	9:03 AM	22.3		HIGH
25-Jan-97	4:34 AM		16.7	LOW
25-Jan-97	11:51 AM	27.9		HIGH
26-Jan-97	10:04 AM	34.4		HIGH
26-Jan-97	6:27 PM		22.5	LOW
27-Jan-97	10:02 AM	34.4		HIGH

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
		DEGREES F		
DATE	TIME	HIGH	LOW	
27-Jan-97	8:50 PM		15.2	LOW
28-Jan-97	3:09 AM		16.3	LOW
28-Jan-97	11:09 AM	28.3		HIGH
29-Jan-97	5:08 AM		18.4	LOW
29-Jan-97	8:33 PM	26.8		HIGH
30-Jan-97	3:53 AM		25	LOW
30-Jan-97	8:34 PM	35.8		HIGH
31-Jan-97	3:02 AM	36.1		HIGH
31-Jan-97	6:44 PM		27.1	LOW
1-Feb-97	4:23 AM	26.9		HIGH
1-Feb-97	5:33 AM		21.9	LOW
2-Feb-97	4:32 AM		23.6	LOW
2-Feb-97	9:00 AM	28.8		HIGH
3-Feb-97	5:39 AM	33.5		HIGH
3-Feb-97	1:14 PM		18.6	LOW
4-Feb-97	5:43 AM	31.6		HIGH
4-Feb-97	3:01 PM		16.8	LOW
5-Feb-97	4:05 AM	30.6		HIGH
5-Feb-97	2:42 PM		15.2	LOW
6-Feb-97	5:13 AM	30.5		HIGH
6-Feb-97	1:02 PM		9.6	LOW
7-Feb-97	4:14 AM	26.6		HIGH
7-Feb-97	6:16 PM		8.6	LOW
8-Feb-97	3:46 AM	27.1		HIGH
8-Feb-97	8:22 AM		14.6	LOW
9-Feb-97	12:01 AM		19.2	LOW
9-Feb-97	5:09 AM	36.2		HIGH
10-Feb-97	5:10 AM	34.8		HIGH
10-Feb-97	7:48 AM		21.2	LOW
11-Feb-97	4:45 AM	44.4		HIGH
11-Feb-97	10:55 AM		23.1	LOW
12-Feb-97	4:54 AM	36.2		HIGH
12-Feb-97	3:55 PM		12.2	LOW
13-Feb-97	3:18 AM	31.4		HIGH
13-Feb-97	8:26 AM		20	LOW
14-Feb-97	5:05 AM	39.6		HIGH
14-Feb-97	9:52 AM		26.7	LOW
15-Feb-97	4:21 AM	43.5		HIGH
15-Feb-97	3:04 PM		23.5	LOW
16-Feb-97	2:39 AM	40.5		HIGH
16-Feb-97	6:18 AM		26.6	LOW
17-Feb-97	2:41 AM	41.9		HIGH
17-Feb-97	8:55 AM		28.9	LOW
18-Feb-97	2:35 AM	37.8		HIGH
18-Feb-97	11:47 AM		23.4	LOW
19-Feb-97	3:54 AM	46.2		HIGH
19-Feb-97	5:30 PM		20.8	LOW

Jan-97 SUMMARY
==========

	HIGH	LOW
AVG.	26.7	15.2
MAX.	41.9	33.5
MIN.	11.7	2.3

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES							
		DEGREES F					
DATE	TIME	HIGH	LOW				
20-Feb-97	12:49 AM	23.7		HIGH			
20-Feb-97	4:02 PM		10.4	LOW			
21-Feb-97	4:45 AM	32		HIGH			
21-Feb-97	3:18 PM		11.4	LOW			
22-Feb-97	1:00 AM	29.3		HIGH			
22-Feb-97	1:48 PM		13.7	LOW			
23-Feb-97	12:22 AM	25		HIGH			
23-Feb-97	2:50 PM		7.7	LOW			
24-Feb-97	5:02 AM	32.3		HIGH			
24-Feb-97	9:20 AM		16.9	LOW			
25-Feb-97	3:51 AM	40		HIGH			
25-Feb-97	12:34 PM		21.5	LOW			
26-Feb-97	12:51 AM	37.5		HIGH	Feb-97 SUMMARY		
26-Feb-97	11:21 AM		21.3	LOW	==========		
27-Feb-97	12:25 AM	27.6		HIGH		HIGH	LOW
27-Feb-97	4:16 PM		16.3	LOW	AVG.	33.4	17.9
28-Feb-97	1:02 AM	19.8		HIGH	MAX.	46.2	28.9
28-Feb-97	1:43 PM		8.8	LOW	MIN.	19.8	7.7
1-Mar-97	4:22 AM	32		HIGH			
1-Mar-97	9:00 AM		15.8	LOW			
2-Mar-97	8:40 AM	33.1		HIGH			
2-Mar-97	7:16 PM		19.5	LOW			
3-Mar-97	5:46 AM	34.4		HIGH			
3-Mar-97	7:29 PM		10.9	LOW			
4-Mar-97	6:56 AM	21.6		HIGH			
4-Mar-97	3:22 PM		8.6	LOW			
5-Mar-97	12:02 AM		11.7	LOW			
5-Mar-97	8:27 AM	34.7		HIGH			
6-Mar-97	12:28 AM		18.9	LOW			
6-Mar-97	9:03 AM	39.6		HIGH			
7-Mar-97	12:13 AM		25.2	LOW			
7-Mar-97	10:19 AM	46.5		HIGH			
8-Mar-97	8:07 AM	45.5		HIGH			
8-Mar-97	8:05 PM		25.1	LOW			
9-Mar-97	1:07 AM		25.2	LOW			
9-Mar-97	9:52 AM	48.6		HIGH			
10-Mar-97	1:21 AM		35.2	LOW			
10-Mar-97	10:23 AM	52.9		HIGH			
11-Mar-97	12:18 AM		34.9	LOW			
11-Mar-97	10:17 AM	53.5		HIGH			
12-Mar-97	1:17 AM		39	LOW			
12-Mar-97	10:04 AM	56.9		HIGH			
13-Mar-97	7:46 AM	38.2		HIGH			
13-Mar-97	7:18 PM		29.7	LOW			
14-Mar-97	1:14 AM		27.4	LOW			
14-Mar-97	9:08 AM	43		HIGH			
15-Mar-97	1:25 AM		32.1	LOW			

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
		DEGREES F		
DATE	TIME	HIGH	LOW	
15-Mar-97	11:01 AM	50.4		HIGH
16-Mar-97	12:42 AM		37.1	LOW
16-Mar-97	9:32 AM	52.3		HIGH
17-Mar-97	12:37 AM		34.2	LOW
17-Mar-97	6:42 AM	43.1		HIGH
18-Mar-97	1:37 AM		34.1	LOW
18-Mar-97	10:46 AM	54.6		HIGH
19-Mar-97	2:42 AM		39.5	LOW
19-Mar-97	10:51 AM	61		HIGH
20-Mar-97	1:48 AM		43.5	LOW
20-Mar-97	11:40 AM	63.6		HIGH
21-Mar-97	9:12 AM	56.1		HIGH
21-Mar-97	5:02 PM		40.1	LOW
22-Mar-97	1:13 AM		39.6	LOW
22-Mar-97	10:33 AM	61.2		HIGH
23-Mar-97	7:59 AM	58.9		HIGH
23-Mar-97	6:15 PM		34.8	LOW
24-Mar-97	1:44 AM	29.5		HIGH
24-Mar-97	5:09 PM		19.7	LOW
25-Mar-97	1:19 AM		28.2	LOW
25-Mar-97	8:12 AM	48.8		HIGH
25-Mar-97	11:23 PM		35.6	LOW
26-Mar-97	9:50 AM	56.6		HIGH
27-Mar-97	7:22 AM	48		HIGH
27-Mar-97	6:39 PM		36.2	LOW
28-Mar-97	5:12 AM	46.9		HIGH
28-Mar-97	4:54 PM		19.7	LOW
29-Mar-97	2:35 AM		26.1	LOW Mar-97 SUMMARY
29-Mar-97	12:25 PM	45.9		HIGH ==========
30-Mar-97	12:09 AM		29.2	LOW HIGH LOW
30-Mar-97	11:40 AM	53.6		HIGH AVG. 47.2 28.3
31-Mar-97	6:45 AM	52.6		HIGH MAX. 63.6 43.5
31-Mar-97	2:06 PM		19.4	LOW MIN. 21.6 8.6
1-Apr-97	12:11 AM		18.8	LOW
1-Apr-97	9:44 AM	34.3		HIGH
2-Apr-97	1:31 AM		21.9	LOW
2-Apr-97	11:08 AM	31.6		HIGH
3-Apr-97	4:32 AM		29.9	LOW
3-Apr-97	11:25 AM	46.6		HIGH
4-Apr-97	8:23 AM	43		HIGH
4-Apr-97	7:47 PM		11.9	LOW
5-Apr-97	1:08 AM		12.5	LOW
5-Apr-97	10:16 AM	27.7		HIGH
6-Apr-97	12:45 AM		14.2	LOW
6-Apr-97	11:35 AM	42		HIGH
7-Apr-97	12:53 AM		23.3	LOW
7-Apr-97	9:46 AM	44.6		HIGH

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES							
DATE	TIME	DEGREES F					
		HIGH	LOW				
8-Apr-97	1:18 AM		25.7	LOW			
8-Apr-97	8:03 AM	41.7		HIGH			
9-Apr-97	10:55 AM	46.1		HIGH			
9-Apr-97	9:12 PM		24.3	LOW			
10-Apr-97	5:00 AM	35.1		HIGH			
10-Apr-97	8:33 PM		14	LOW			
11-Apr-97	8:12 AM	35.5		HIGH			
11-Apr-97	6:36 PM		14.6	LOW			
12-Apr-97	10:50 AM	30.9		HIGH			
12-Apr-97	6:22 PM		11.3	LOW			
13-Apr-97	1:46 AM		20.4	LOW			
13-Apr-97	10:00 AM	41.7		HIGH			
14-Apr-97	1:58 AM		28.1	LOW			
14-Apr-97	10:11 AM	50.7		HIGH			
15-Apr-97	1:43 AM		32.6	LOW			
15-Apr-97	11:32 AM	51.8		HIGH			
16-Apr-97	1:26 AM		36.2	LOW			
16-Apr-97	10:48 AM	60.4		HIGH			
17-Apr-97	2:02 AM		40.4	LOW			
17-Apr-97	10:55 AM	61.6		HIGH			
18-Apr-97	2:30 AM		45.3	LOW			
18-Apr-97	10:53 AM	62.6		HIGH			
19-Apr-97	1:50 AM		46.1	LOW			
19-Apr-97	11:07 AM	60.3		HIGH			
20-Apr-97	2:03 AM		43.7	LOW			
20-Apr-97	10:30 AM	59.5		HIGH			
21-Apr-97	4:33 AM	46.4		HIGH			
21-Apr-97	4:01 PM		34.9	LOW			
22-Apr-97	8:12 AM	51.5		HIGH			
22-Apr-97	5:21 PM		37.9	LOW			
23-Apr-97	6:39 AM	42.6		HIGH			
23-Apr-97	2:36 PM		26.5	LOW			
24-Apr-97	9:45 AM	42.3		HIGH			
24-Apr-97	5:38 PM		31.9	LOW			
25-Apr-97	7:01 AM	49.8		HIGH			
25-Apr-97	7:42 PM		36.3	LOW			
26-Apr-97	11:50 AM	58.3		HIGH			
26-Apr-97	8:04 PM		38.2	LOW			
27-Apr-97	9:23 AM	61.8		HIGH			
27-Apr-97	5:03 PM		39.6	LOW			
28-Apr-97	9:39 AM	60.9		HIGH	Apr-97 SUMMARY		
28-Apr-97	6:57 PM		37.1	LOW	==========		
29-Apr-97	8:43 AM	44		HIGH		HIGH	LOW
29-Apr-97	6:01 PM		32.4	LOW	AVG.	46.9	28.8
30-Apr-97	1:43 AM		34.6	LOW	MAX.	62.6	46.1
30-Apr-97	5:42 AM	42.5		HIGH	MIN.	27.7	11.3
LOST DUE TO RECORDER					May Avg. SUMMARY		

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
		DEGREES F		
DATE	TIME	HIGH	LOW	
HISTORICAL AVERAGES				==========
USED.				HIGH LOW
				AVG. 54.2 34.3
				MAX. 79.4 56.6
				MIN. 15.8 3.4
1-Jun-97	11:24 AM	81.8		HIGH
1-Jun-97	7:10 PM		58.9	LOW
2-Jun-97	10:49 AM	70.5		HIGH
2-Jun-97	4:46 PM		53.4	LOW
3-Jun-97	12:55 AM		46.9	LOW
3-Jun-97	12:12 PM	74.7		HIGH
4-Jun-97	1:08 AM		54.5	LOW
4-Jun-97	12:01 PM	78.3		HIGH
5-Jun-97	2:23 AM		50.8	LOW
5-Jun-97	2:04 PM	73.8		HIGH
6-Jun-97	2:20 PM	70.9		HIGH
6-Jun-97	7:47 PM		49.2	LOW
7-Jun-97	10:35 AM	65.6		HIGH
7-Jun-97	5:48 PM		47	LOW
8-Jun-97	12:05 AM		44.1	LOW
8-Jun-97	11:09 AM	58.9		HIGH
9-Jun-97	4:12 AM	52.7		HIGH
9-Jun-97	4:37 PM		45	LOW
10-Jun-97	12:00 AM		44.2	LOW
10-Jun-97	8:46 AM	58.8		HIGH
11-Jun-97	2:24 AM		45.2	LOW
11-Jun-97	9:52 AM	63.7		HIGH
12-Jun-97	7:04 AM	60.9		HIGH
12-Jun-97	4:54 PM		41.2	LOW
13-Jun-97	11:59 AM	54.5		HIGH
13-Jun-97	5:14 PM		40.2	LOW
14-Jun-97	11:23 AM	56.6		HIGH
14-Jun-97	3:31 PM		42.5	LOW
15-Jun-97	1:12 AM		42.9	LOW
15-Jun-97	10:32 AM	63.9		HIGH
16-Jun-97	1:01 AM		46.4	LOW
16-Jun-97	11:21 AM	62.4		HIGH
17-Jun-97	12:28 AM		47.5	LOW
17-Jun-97	8:22 AM	68		HIGH
18-Jun-97	12:14 AM		55.7	LOW
18-Jun-97	12:40 PM	76.5		HIGH
19-Jun-97	12:08 AM		61	LOW
19-Jun-97	1:56 PM	76.6		HIGH
20-Jun-97	12:54 AM		60.5	LOW
20-Jun-97	11:05 AM	74.6		HIGH
21-Jun-97	2:37 AM		58.4	LOW
21-Jun-97	1:59 PM	81		HIGH

EAST MOUNTAIN WEATHER STATION 1997 WATER YEAR TEMPERATURES				
DATE	TIME	DEGREES F HIGH	LOW	
22-Jun-97	2:04 AM		57.2	LOW
22-Jun-97	1:36 PM	80.5		HIGH
23-Jun-97	12:46 PM	73.2		HIGH
23-Jun-97	7:08 PM		55.3	LOW
24-Jun-97	1:40 AM		49.2	LOW
24-Jun-97	1:45 PM	72.2		HIGH
25-Jun-97	3:00 AM		50.7	LOW
25-Jun-97	2:08 PM	76.9		HIGH
26-Jun-97	1:41 AM		53.8	LOW
26-Jun-97	1:39 PM	81.3		HIGH
27-Jun-97	3:25 AM		56.1	LOW
27-Jun-97	12:15 PM	76.7		HIGH
28-Jun-97	3:40 AM		56.3	LOW Jun-97 SUMMARY
28-Jun-97	2:33 PM	77.4		HIGH ==========
29-Jun-97	2:54 AM		50.1	LOW HIGH LOW
29-Jun-97	2:56 PM	77.7		HIGH AVG. 70.6 50.5
30-Jun-97	3:00 AM		51.9	LOW MAX. 81.8 61.0
30-Jun-97	2:53 PM	77.9		HIGH MIN. 52.7 40.2
1-Jul-97	12:52 AM		40.7	LOW
1-Jul-97	3:02 PM	74.9		HIGH
2-Jul-97	10:30 AM	72.5		HIGH
2-Jul-97	7:18 PM		45.6	LOW
3-Jul-97	2:29 AM		38.3	LOW
3-Jul-97	12:19 PM	69.6		HIGH
4-Jul-97	2:52 AM		48.9	LOW
4-Jul-97	12:14 PM	78.9		HIGH
5-Jul-97	1:56 AM		54.8	LOW
5-Jul-97	11:33 AM	80.7		HIGH
6-Jul-97	3:34 AM		58.7	LOW
6-Jul-97	1:07 PM	79.9		HIGH
7-Jul-97	2:18 AM		56.4	LOW
7-Jul-97	8:43 AM	80.1		HIGH
8-Jul-97	4:04 AM		54.9	LOW
8-Jul-97	8:42 AM	75.8		HIGH
9-Jul-97	2:31 AM		55.8	LOW
9-Jul-97	2:09 PM	78.6		HIGH
10-Jul-97	2:53 AM		57.6	LOW
10-Jul-97	10:14 AM	74.3		HIGH
11-Jul-97	3:47 AM		53.5	LOW
11-Jul-97	11:28 AM	70.3		HIGH
12-Jul-97	1:22 PM	65.6		HIGH
12-Jul-97	7:09 PM		48.6	LOW
13-Jul-97	1:24 AM		39.8	LOW
13-Jul-97	1:14 PM	72.6		HIGH
14-Jul-97	1:56 AM		52.5	LOW
14-Jul-97	2:36 PM	81.2		HIGH
15-Jul-97	2:54 AM		59.3	LOW