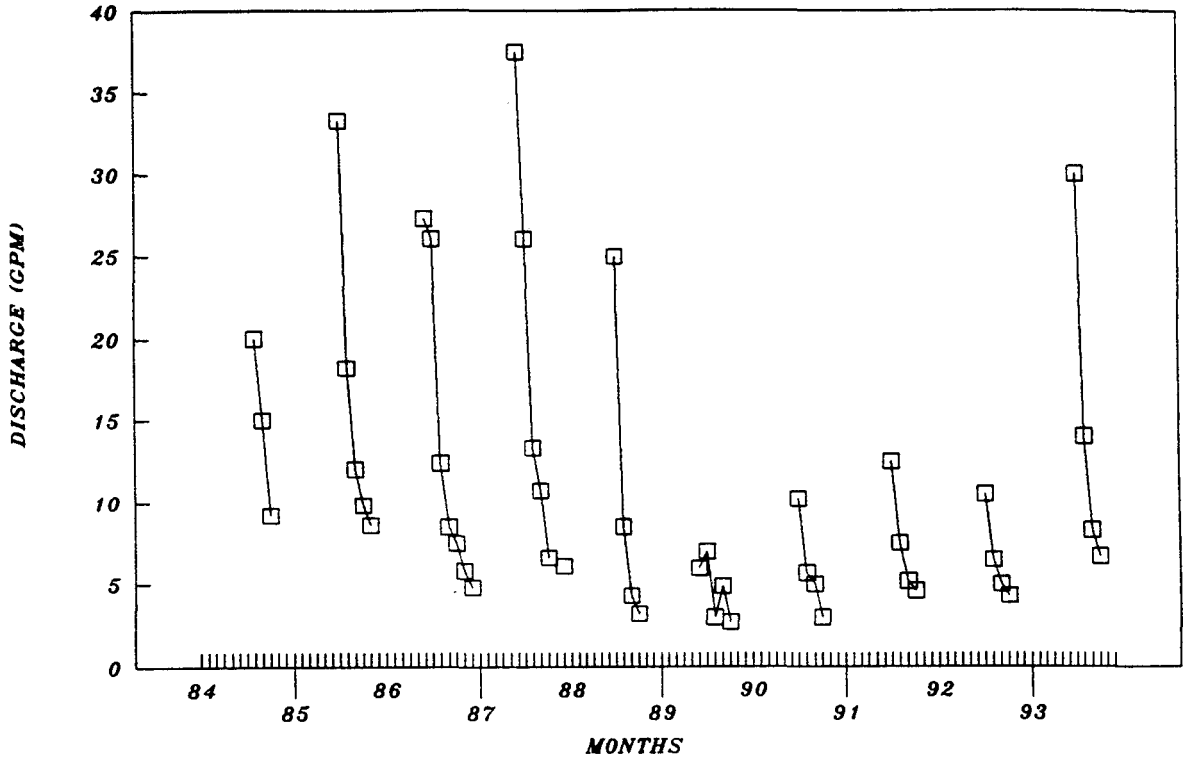
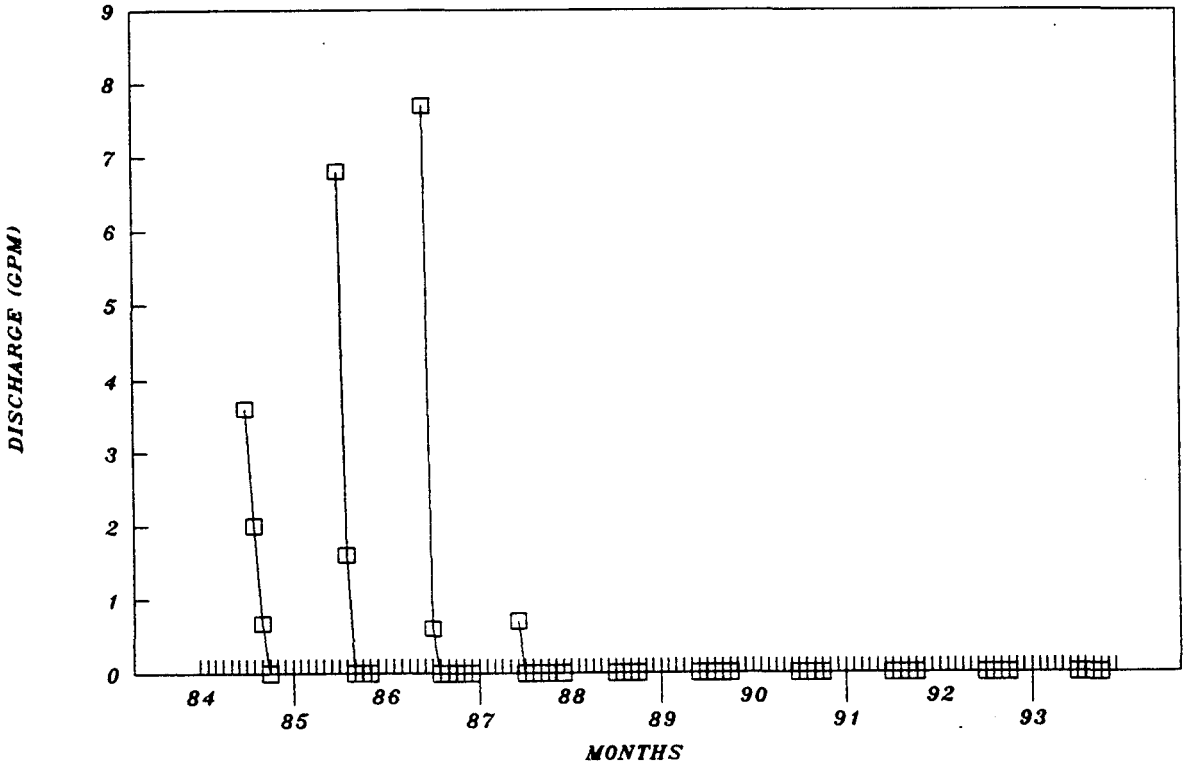
79-10

Discharge Recession Study



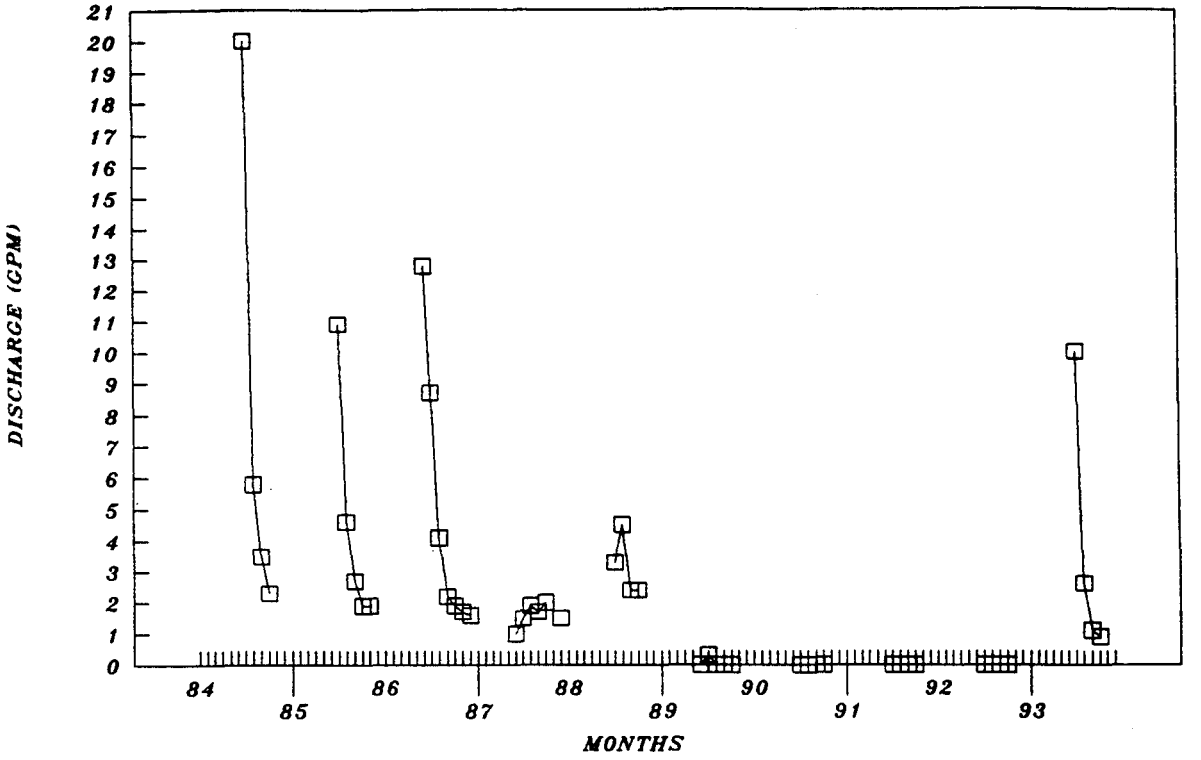
79-23

Discharge Recession Study



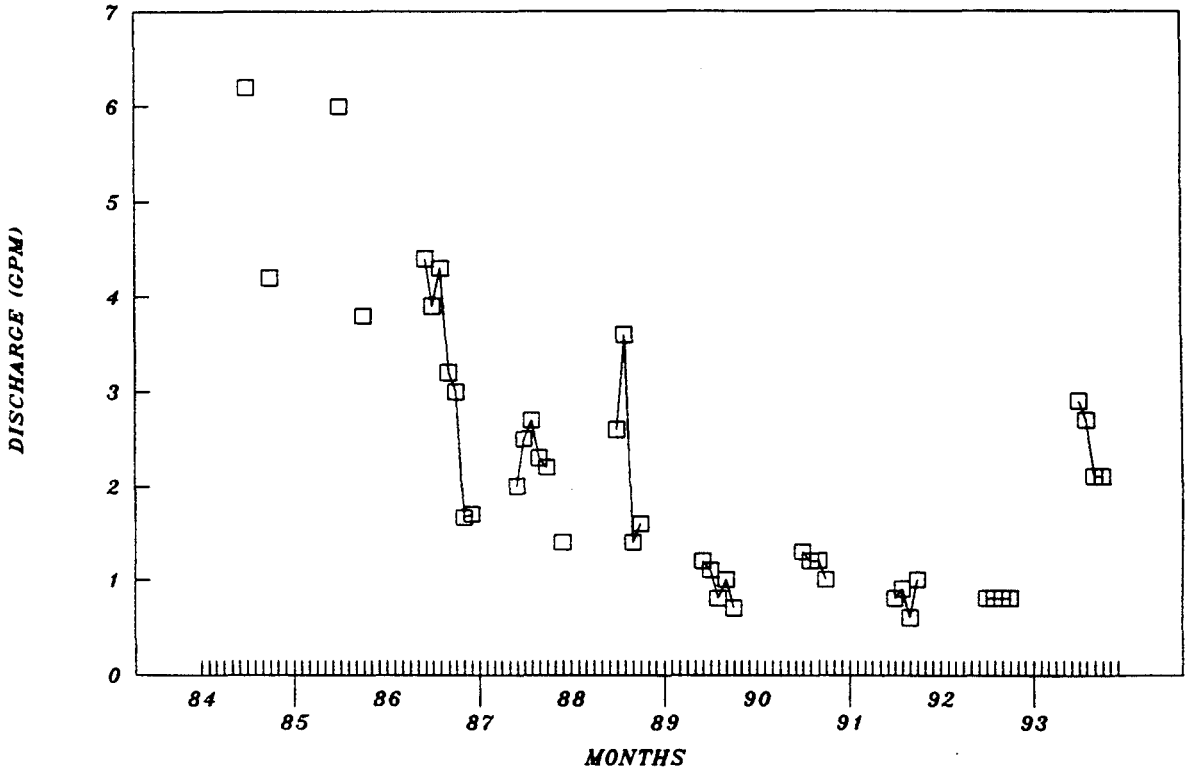
79-26

Discharge Recession Study



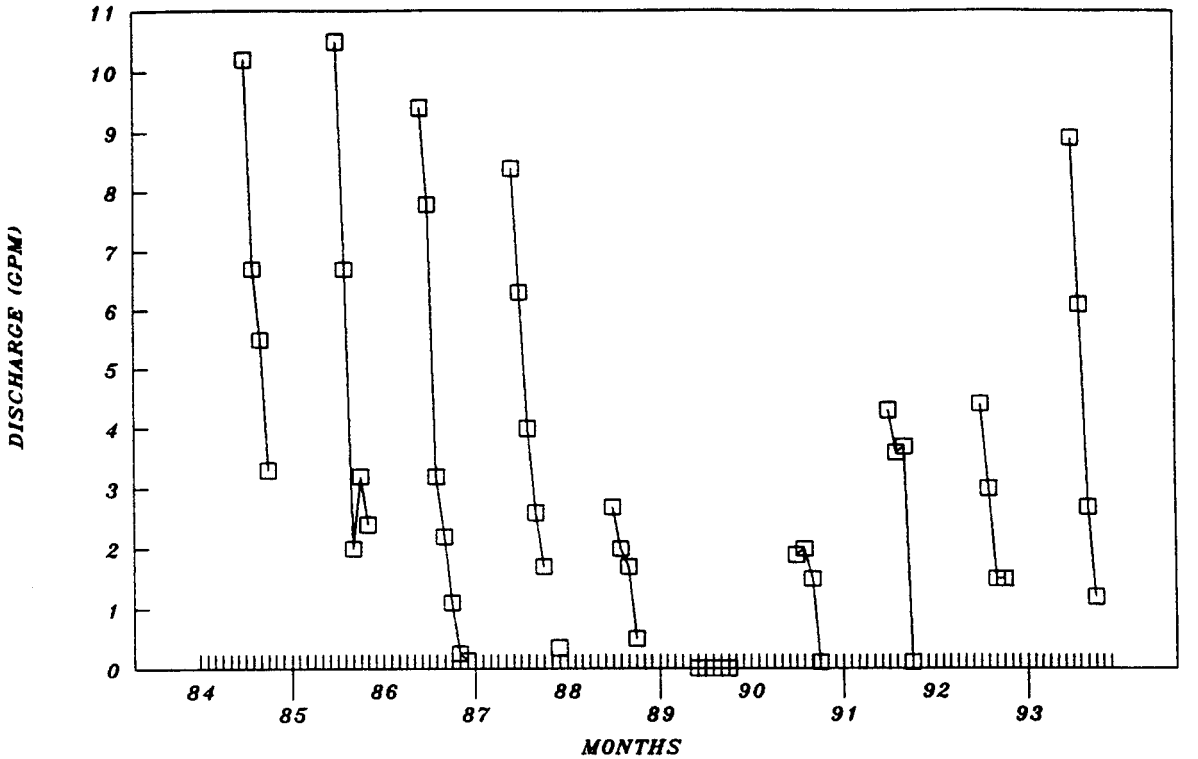
79-29

Discharge Recession Study



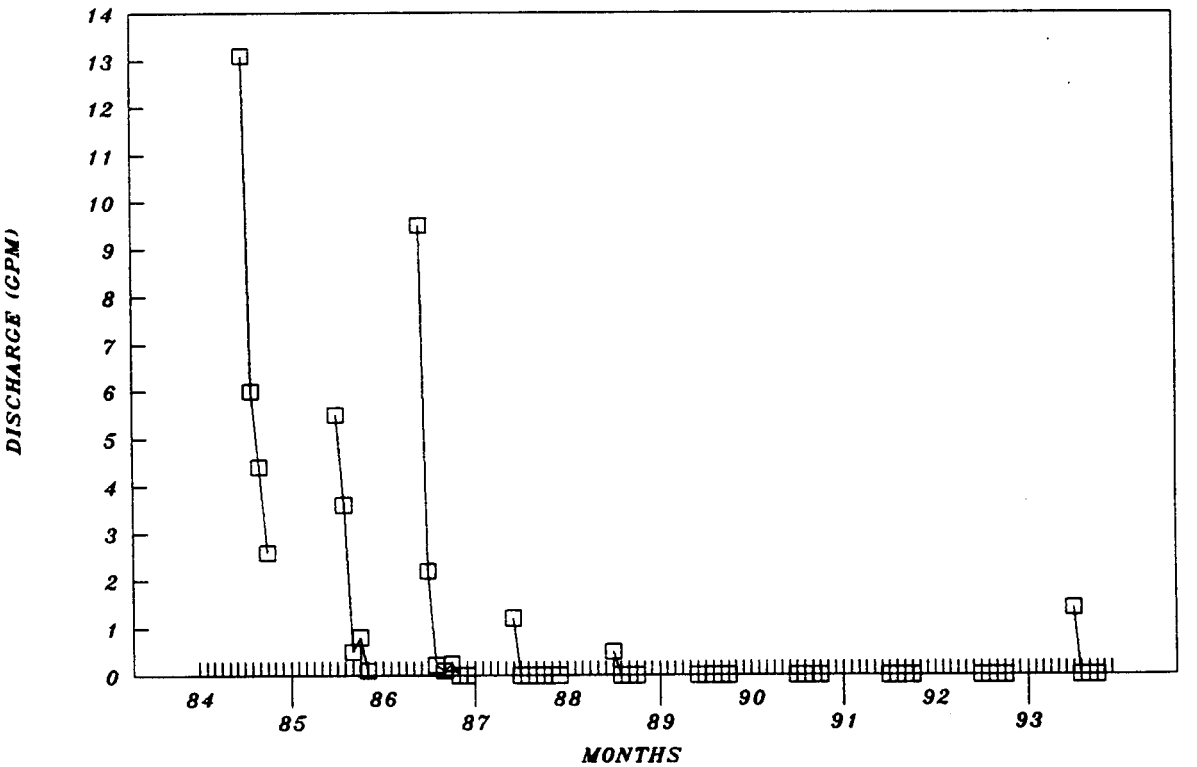
79-35

Discharge Recession Study



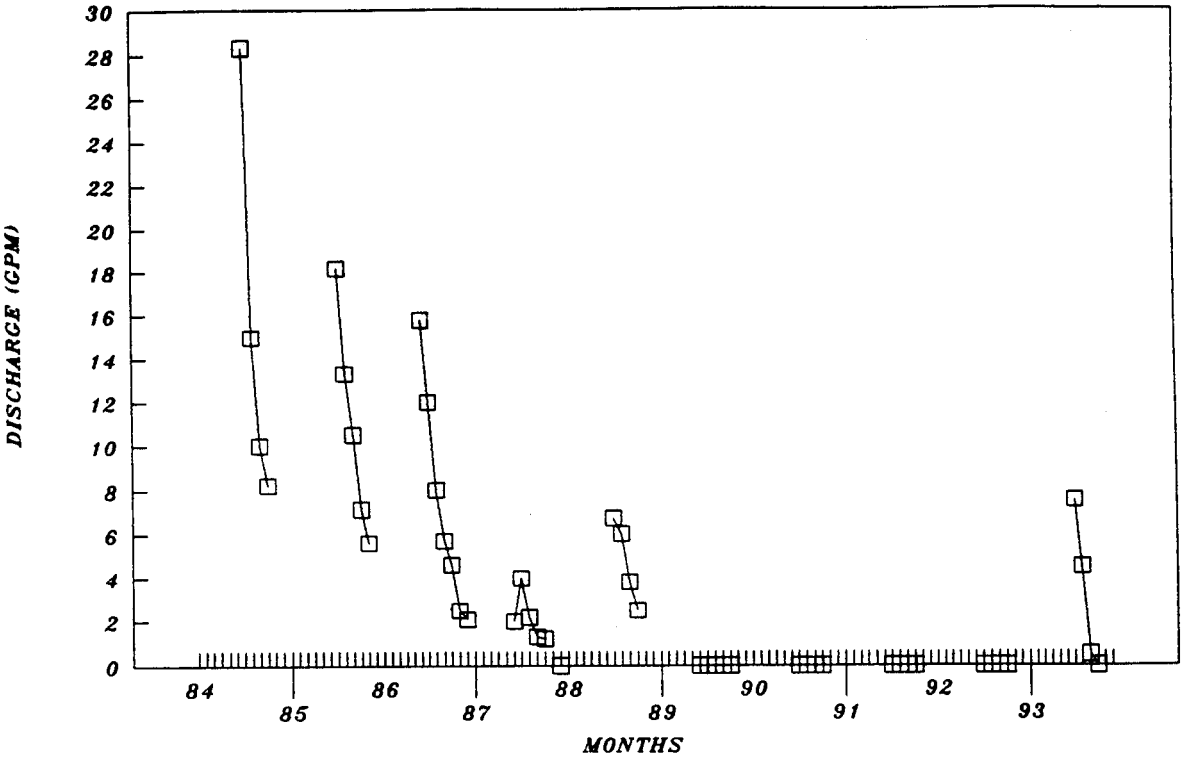
80-44

Discharge Recession Study



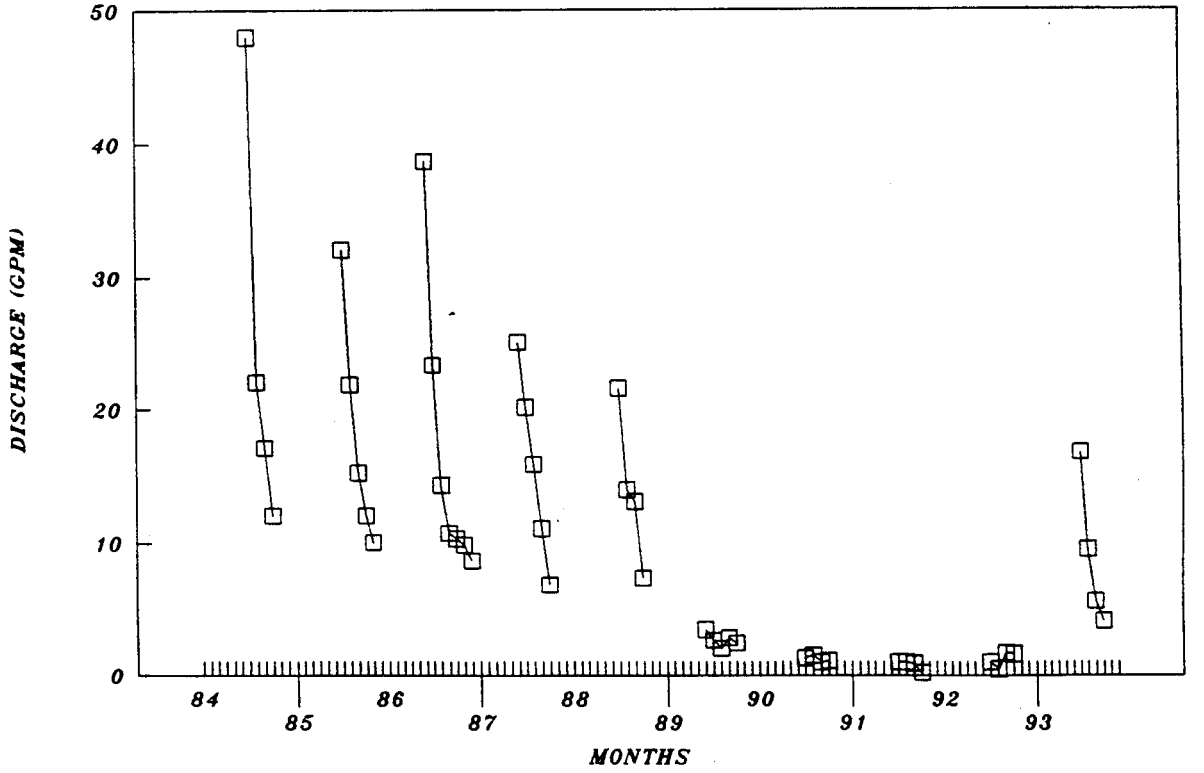
80-46

Discharge Recession Study



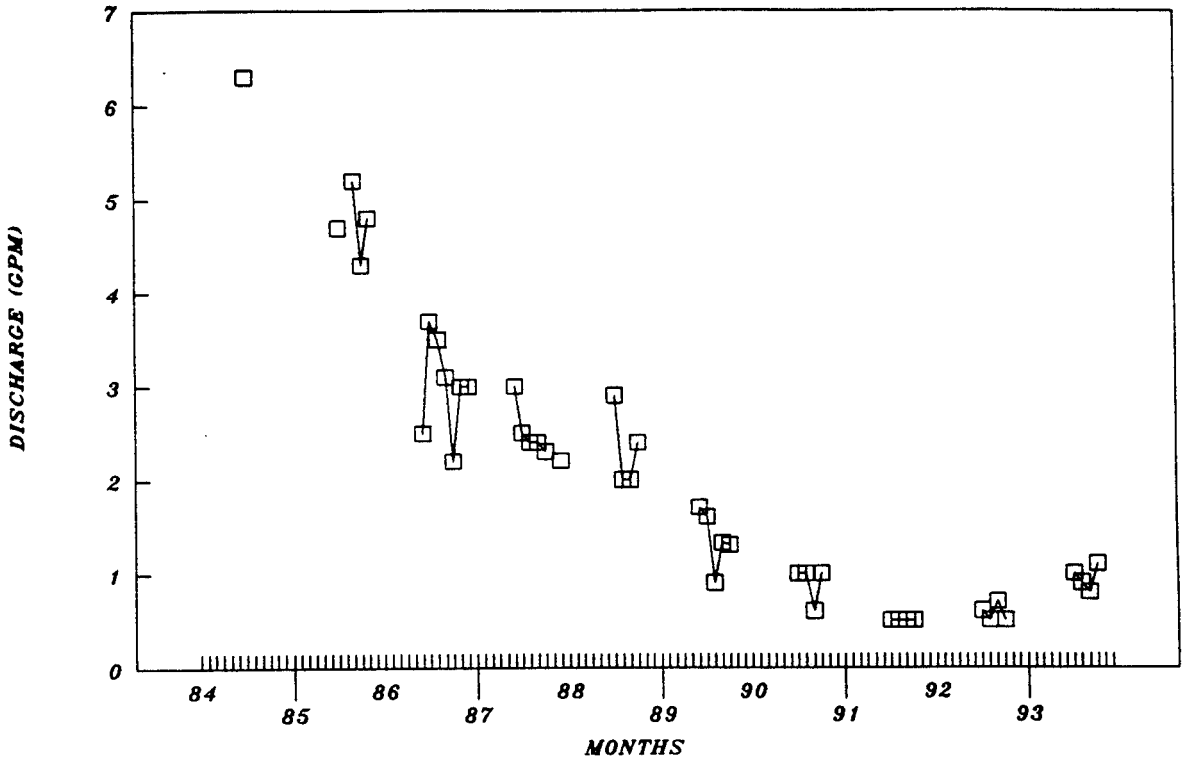
82-52

Discharge Recession Study



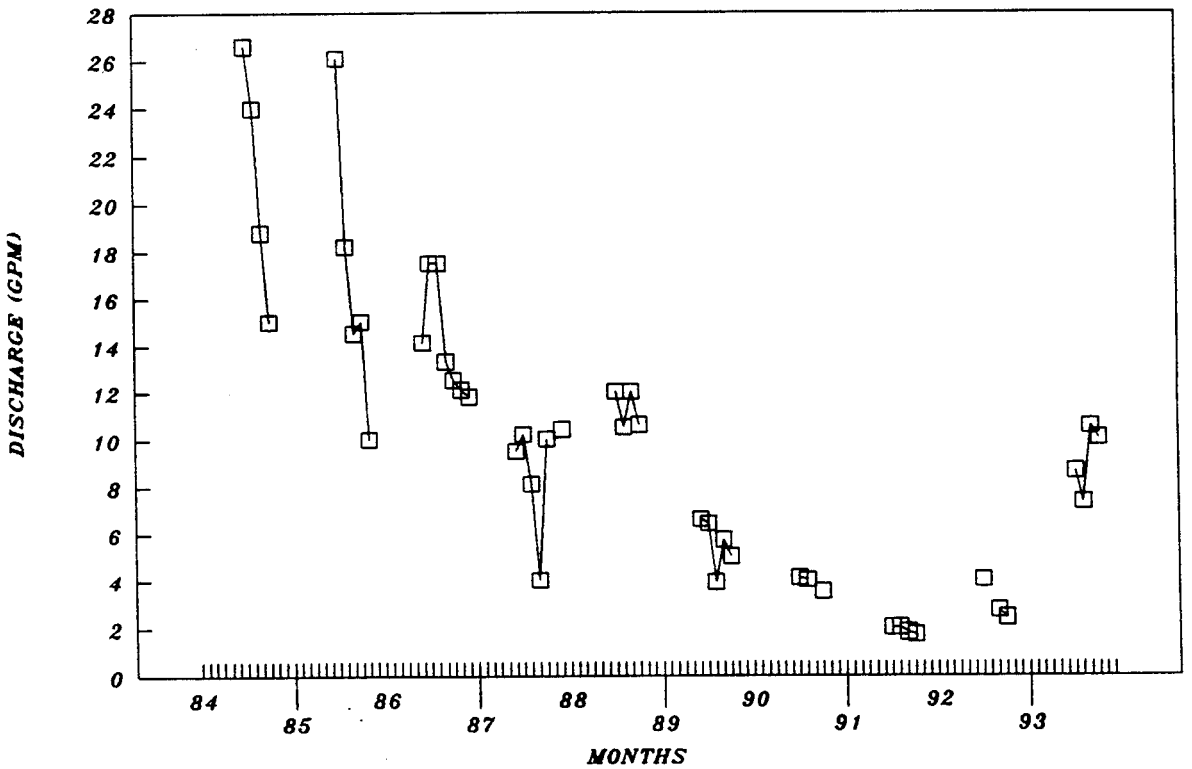
84-56

Discharge Recession Study



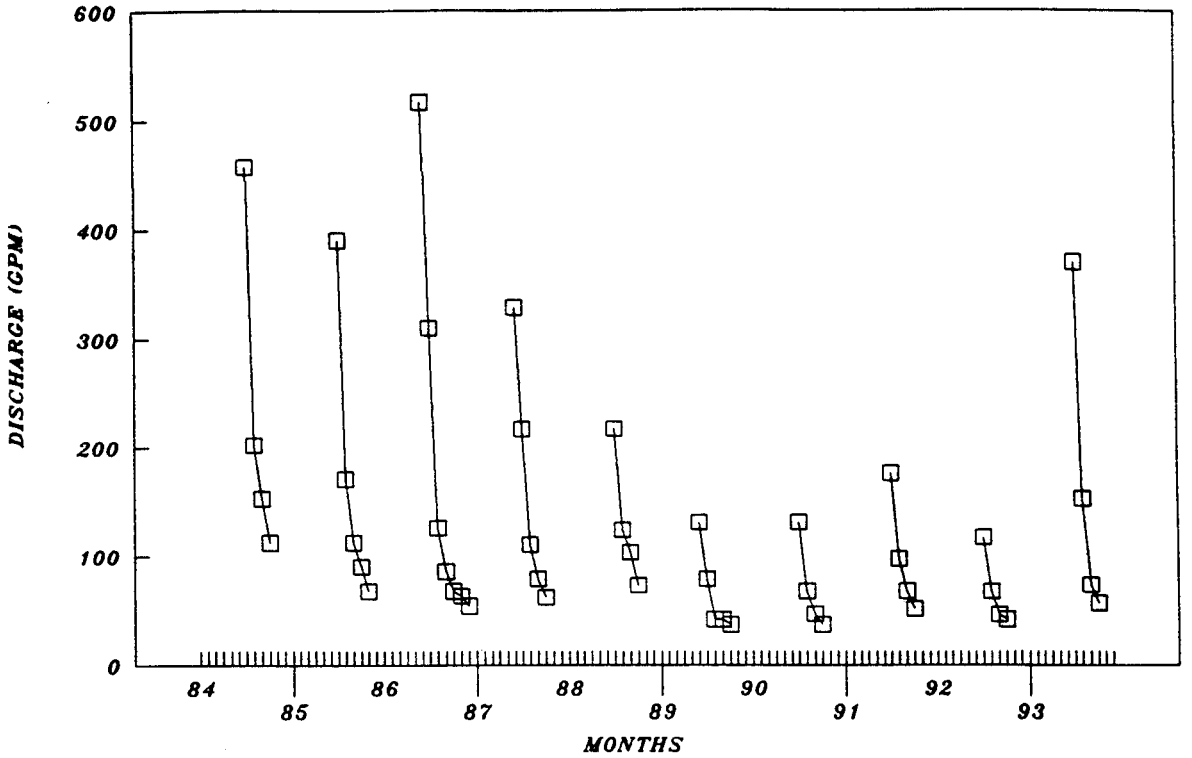
BURNT TREE

Discharge Recession Study



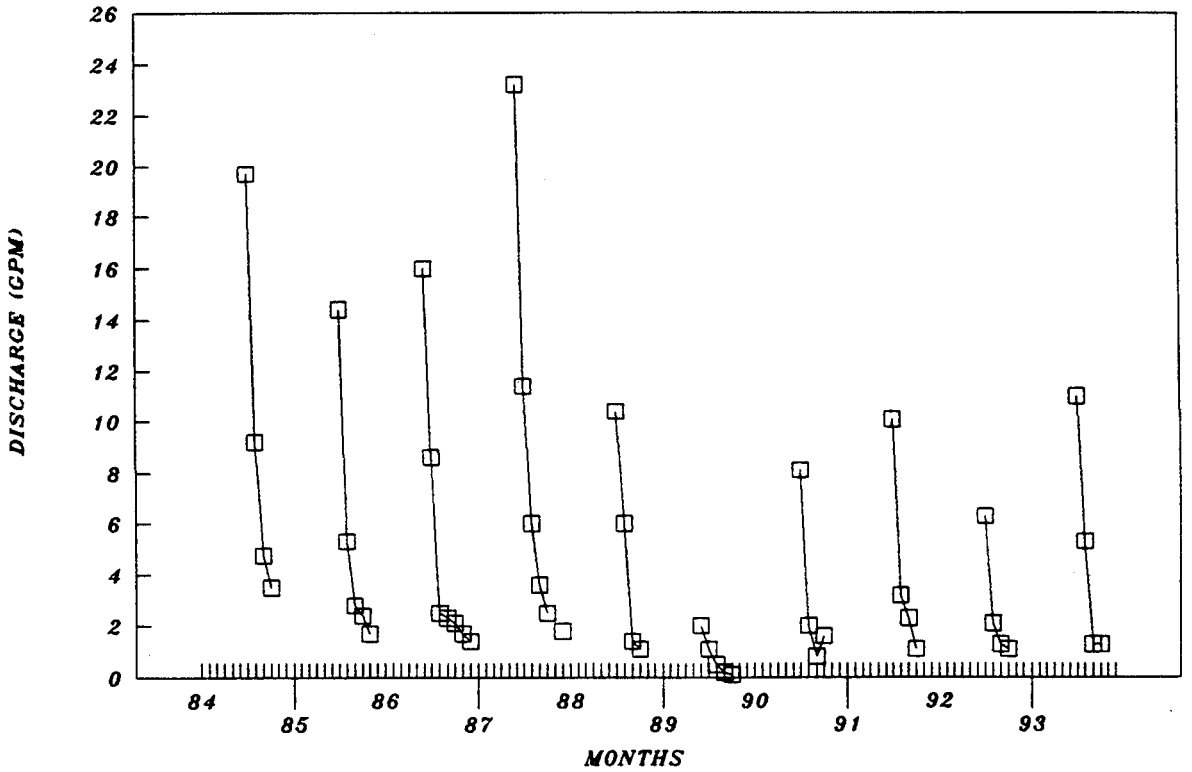
ELK SPRING

Discharge Recession Study

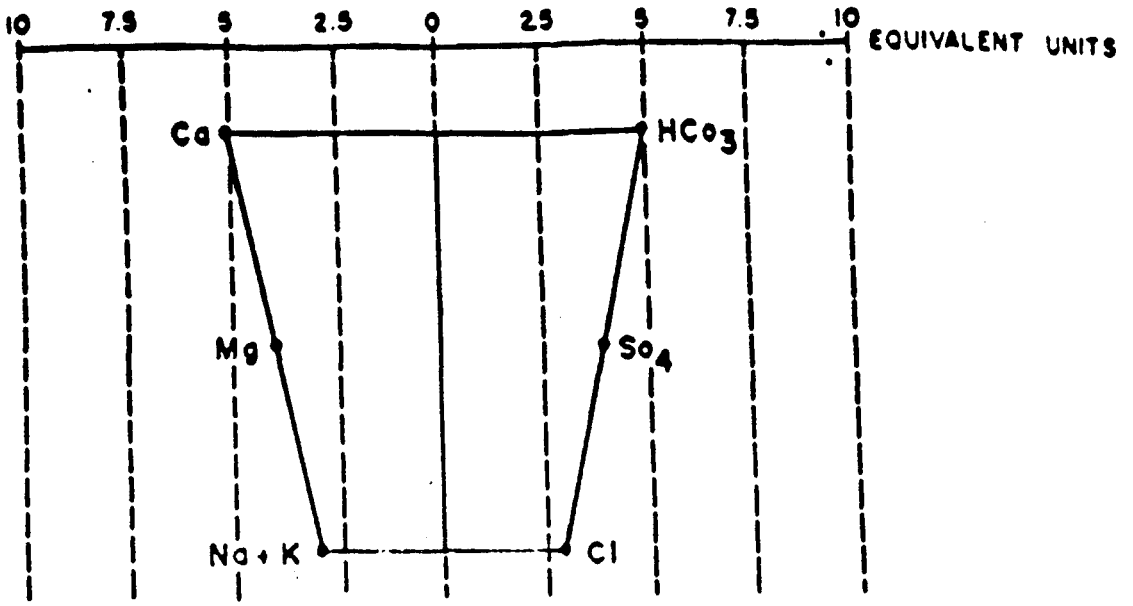


SHEBA SPRINGS

Discharge Recession Study



CATION – ANION DIAGRAMS



$$\frac{\text{P P M}}{\text{Equivalent Weight}} = \text{Equivalent Unit}$$

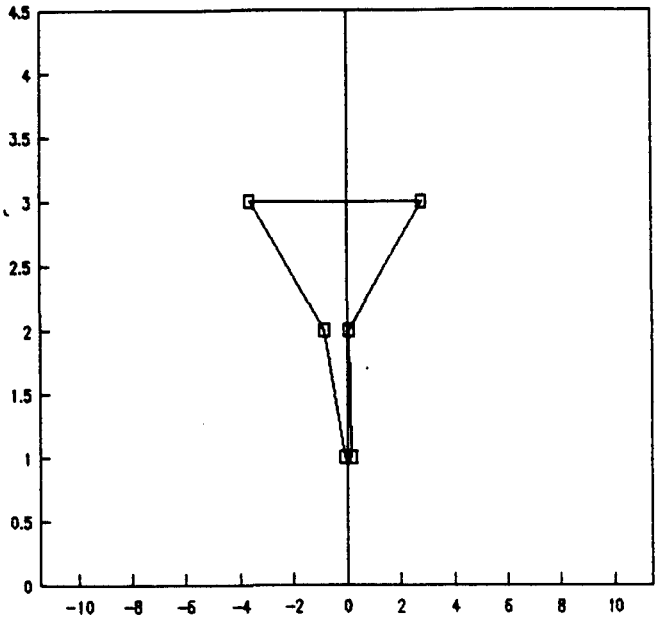
1" = 5 Equivalent Units

Equivalent Weights

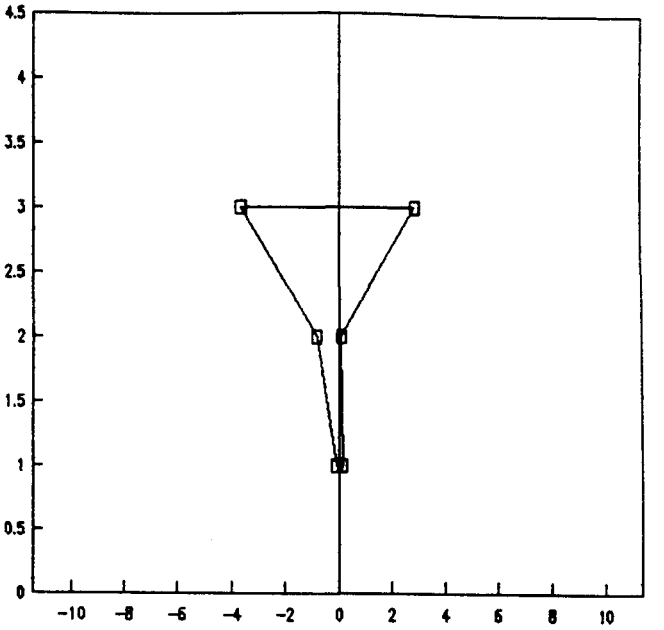
Mg	12.16	(Magnesium)
Ca	20.04	(Calcium)
Na	23.00	(Sodium)
K	39.10	(Potassium)
So_4	48.03	(Sulfate)
$CaCO_3$	100.1	(Total Alkalinity)
Cl	35.46	(Chloride)

FLAGSTAFF LIMESTONE

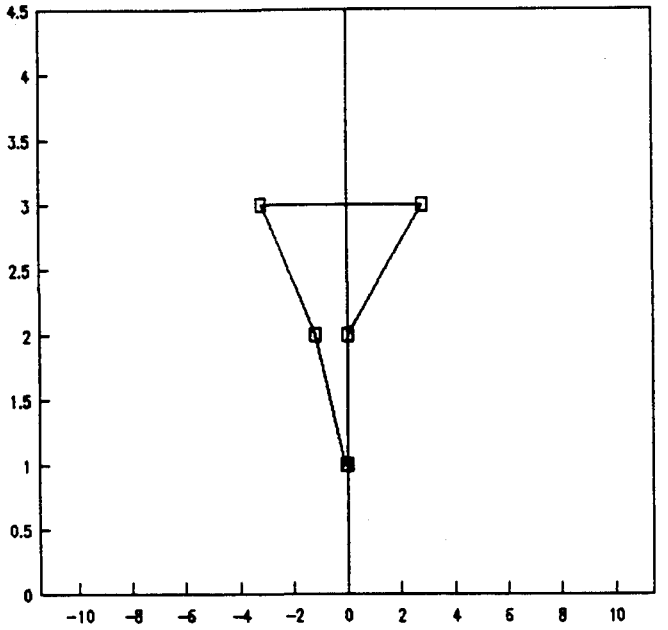
SHEBA SPRINGS
07-15-93



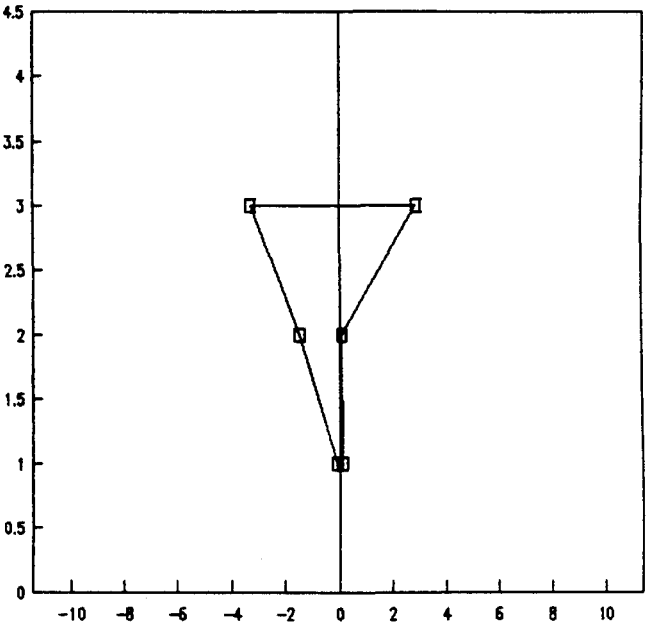
SHEBA SPRINGS
10-29-93



79-35
07-15-93

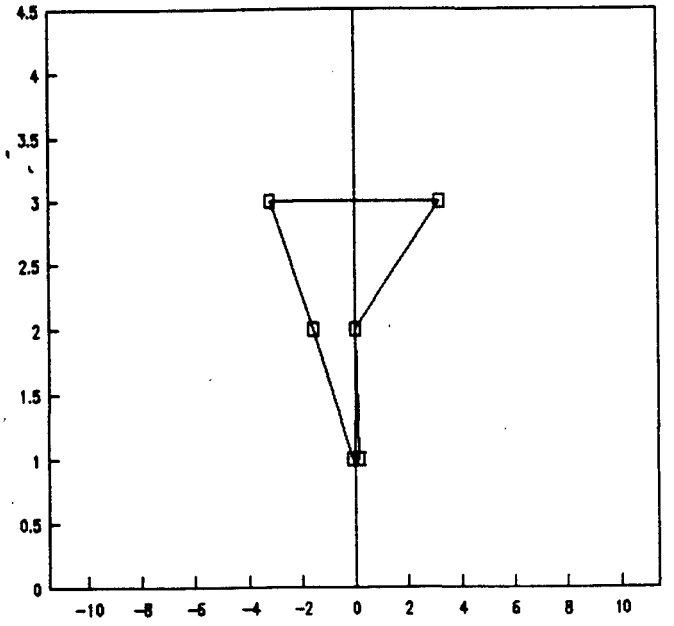


79-35
10-29-93

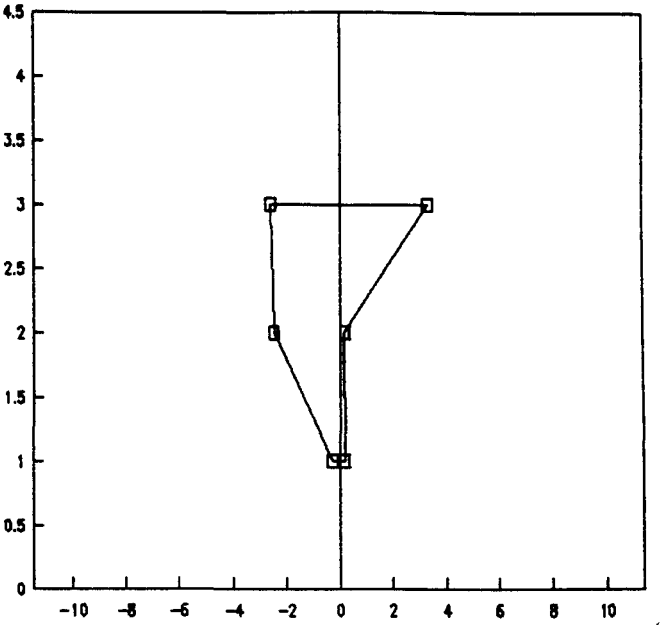


NORTH HORN FORMATION

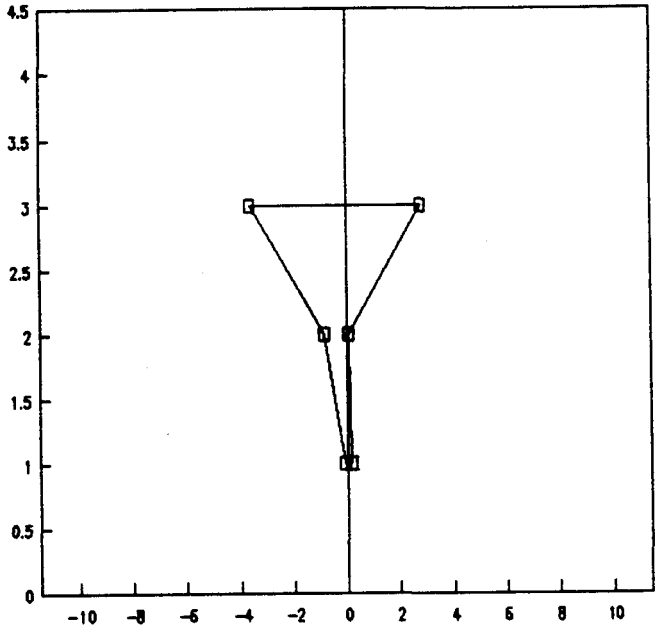
BURNT TREE
07-14-93



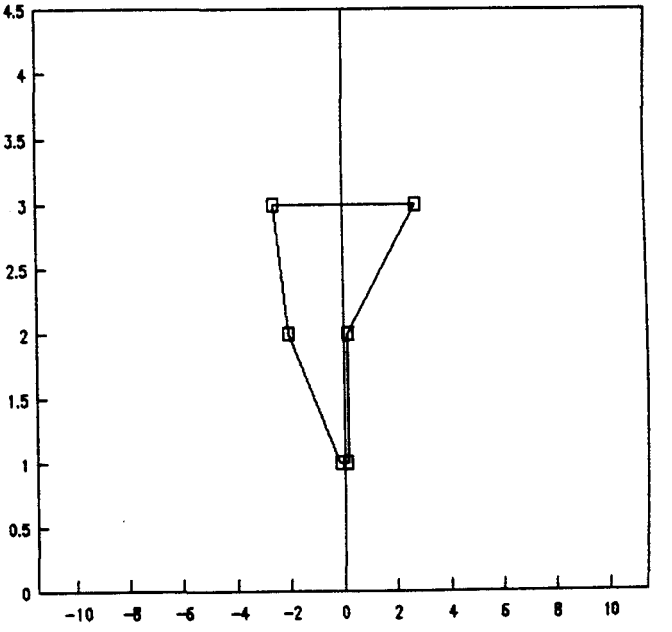
BURNT TREE
11-01-93



ELK SPRINGS
07-15-93

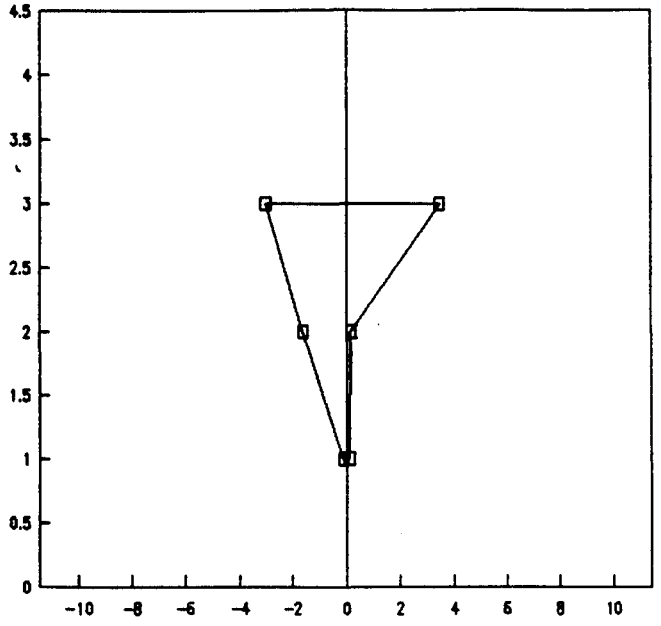


ELK SPRINGS
10-29-93

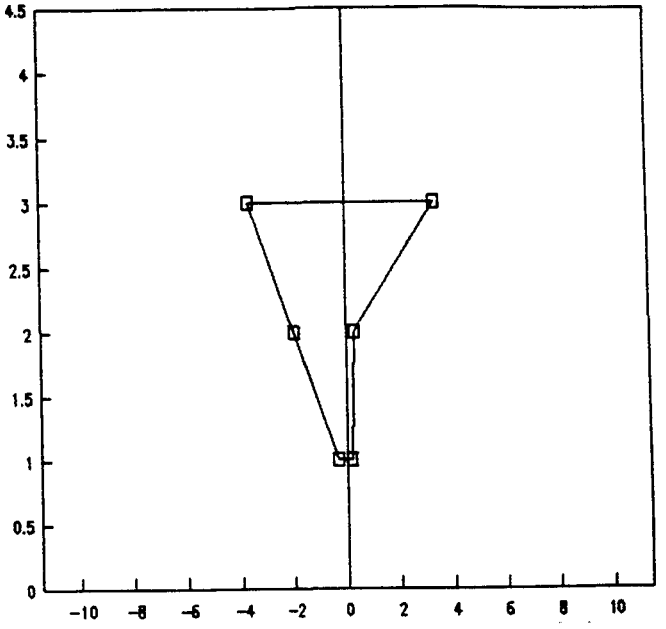


NORTH HORN FORMATION

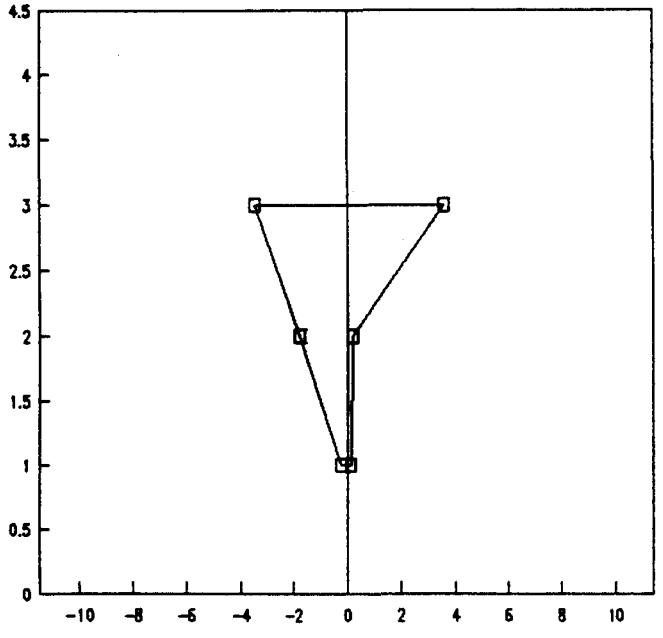
TEDS TUB
07-14-93



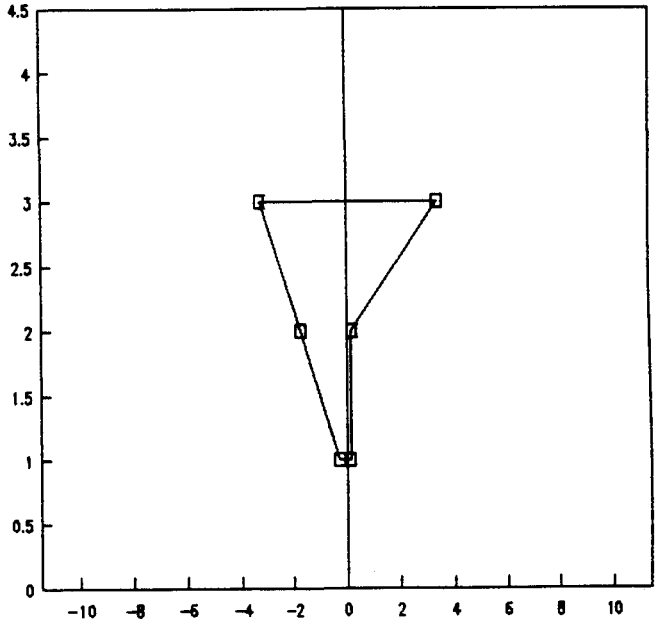
TEDS TUB
11-04-93



79-2
07-14-93

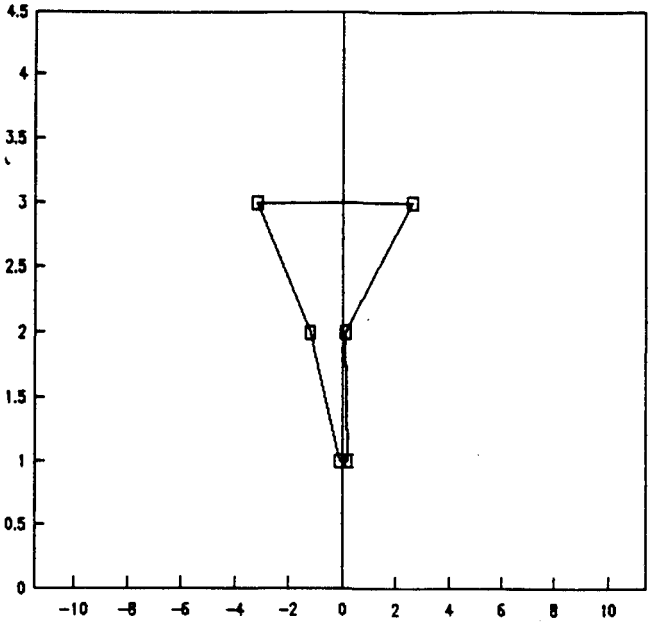


79-2
11-01-93

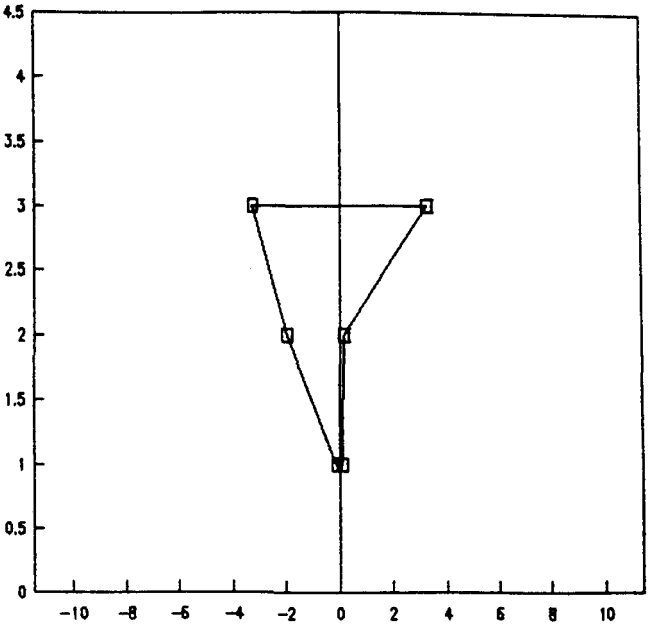


NORTH HORN FORMATION

79-10
7-15-93



79-10
10-29-93



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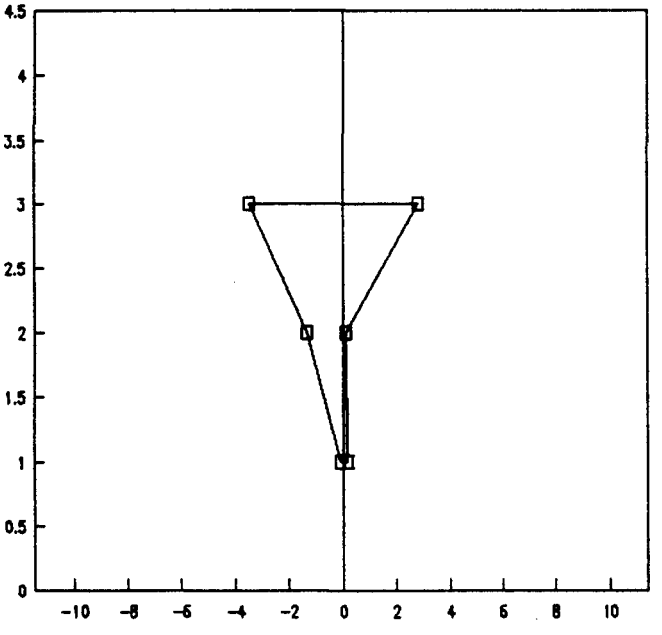
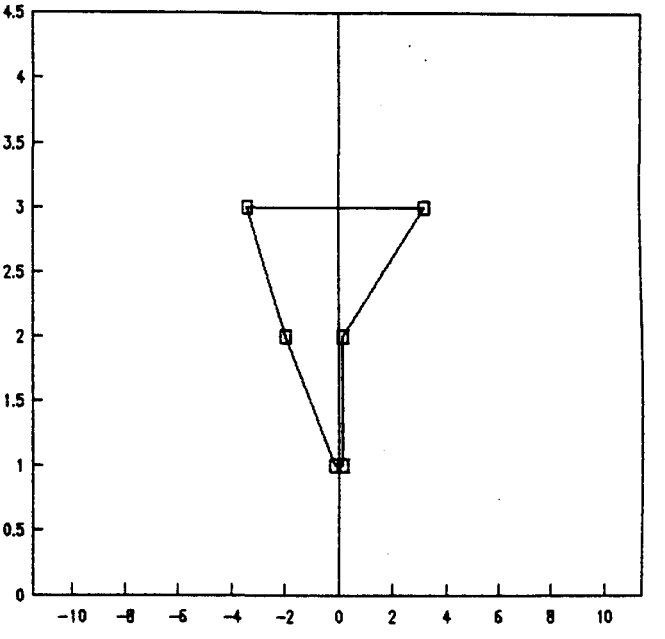
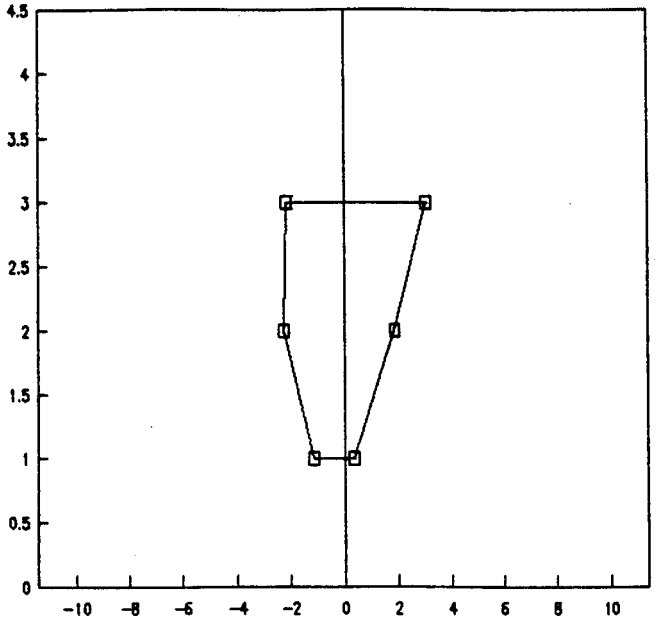


79-15
11-04-93

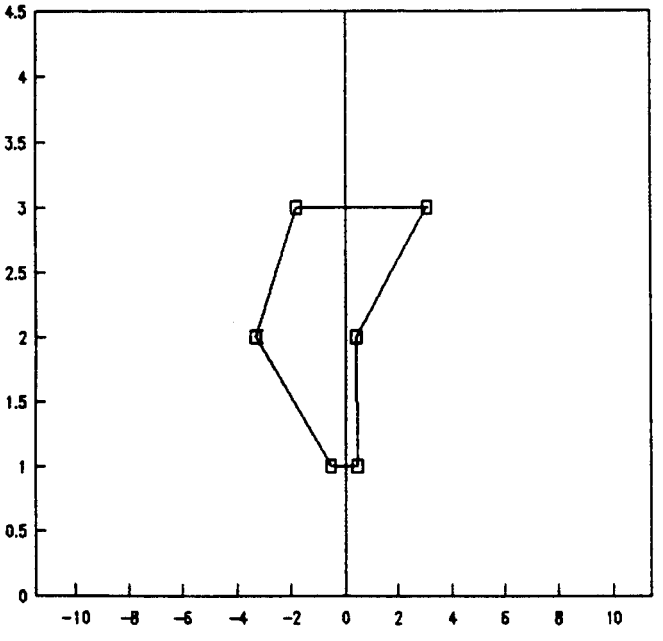


NORTH HORN FORMATION

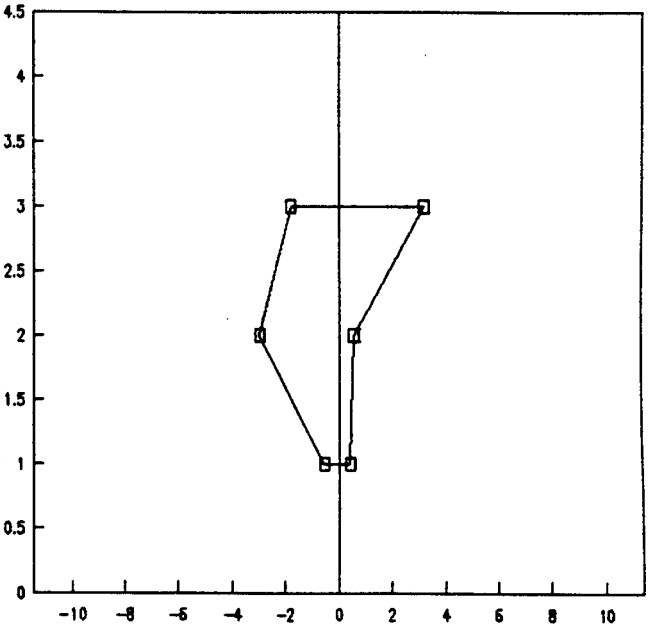
79-28
07-12-93



79-29
07-12-93

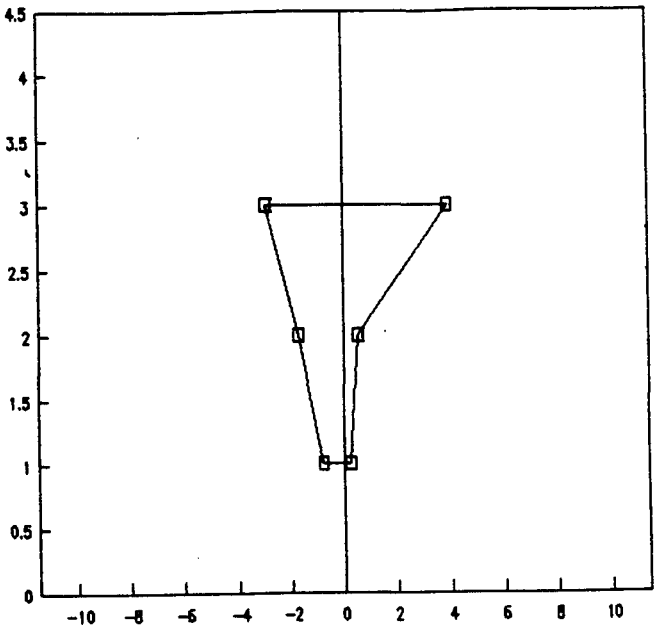


79-29
11-01-93

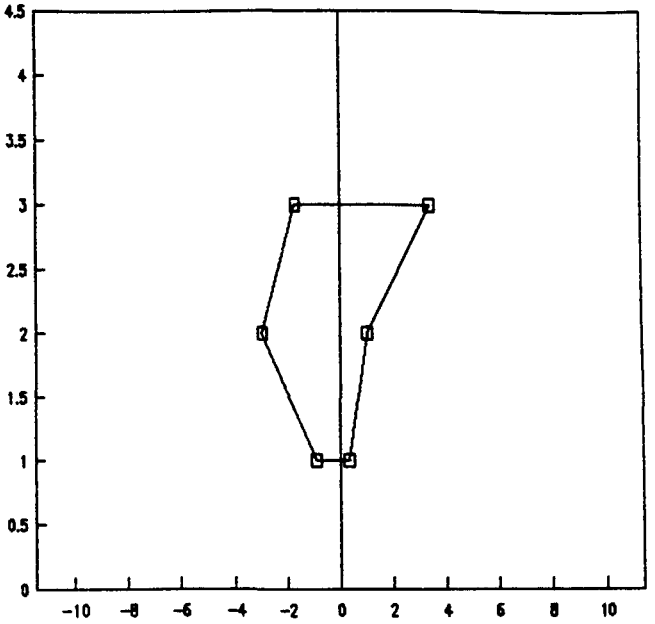


NORTH HORN FORMATION

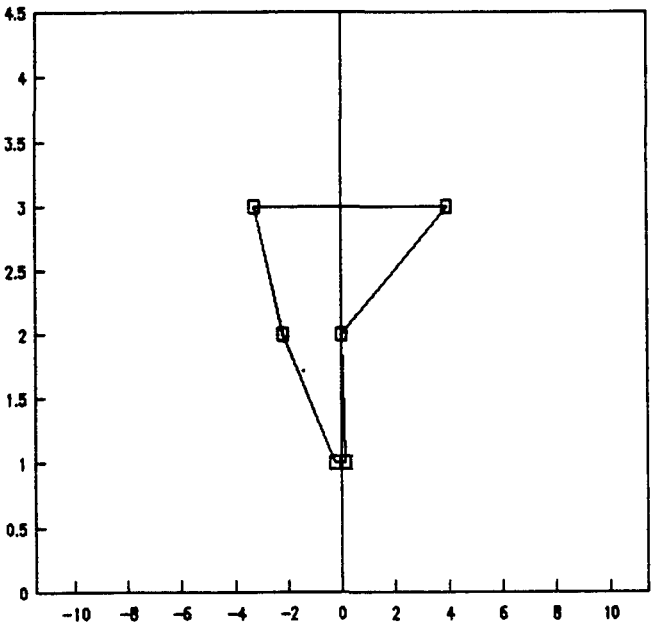
79-38
07-14-93



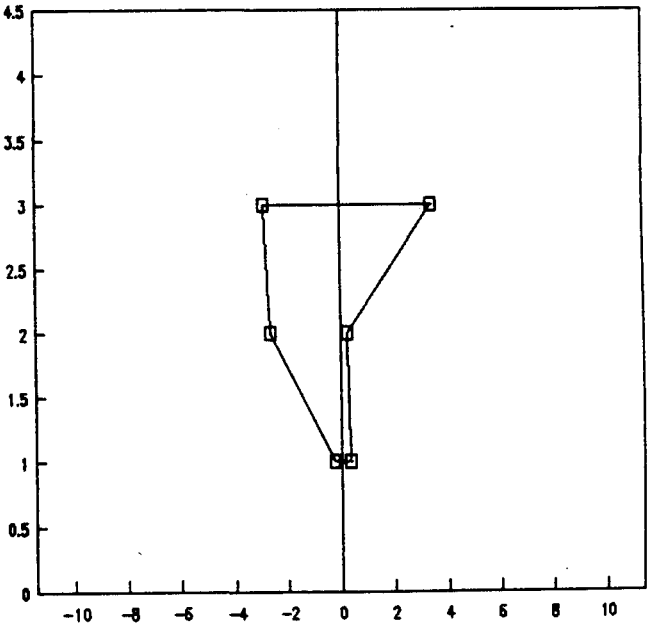
79-38
11-04-93



80-47
07-14-93

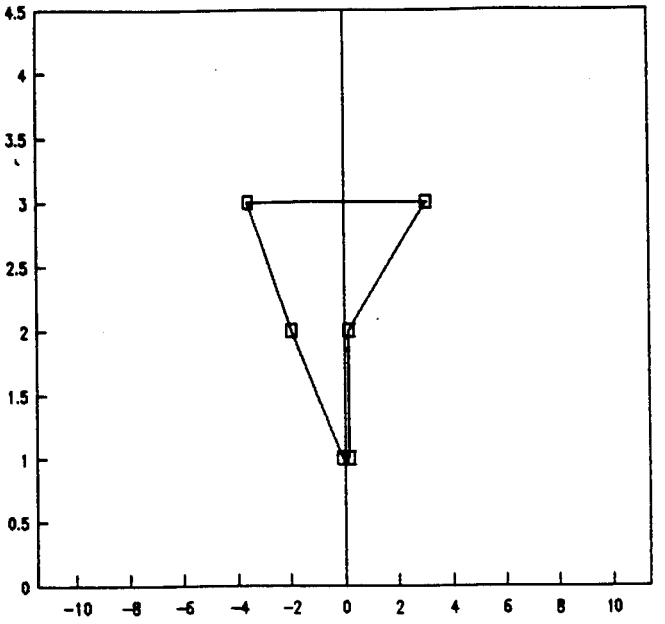


80-47
11-01-93

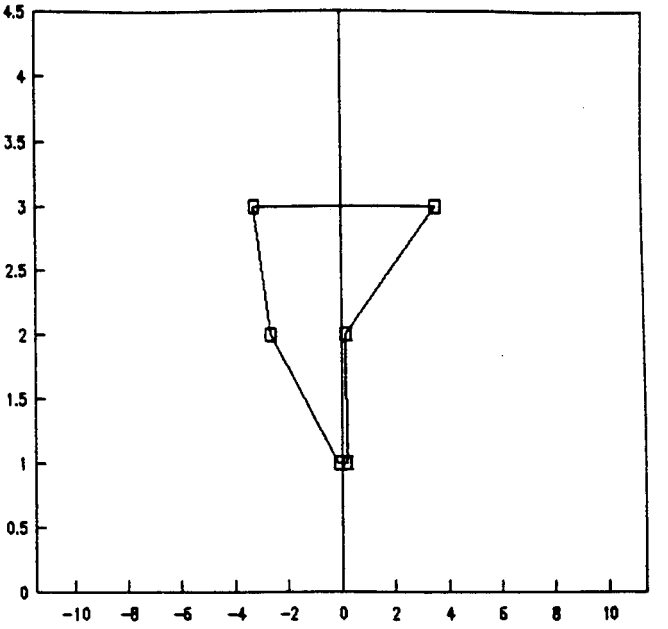


NORTH HORN FORMATION

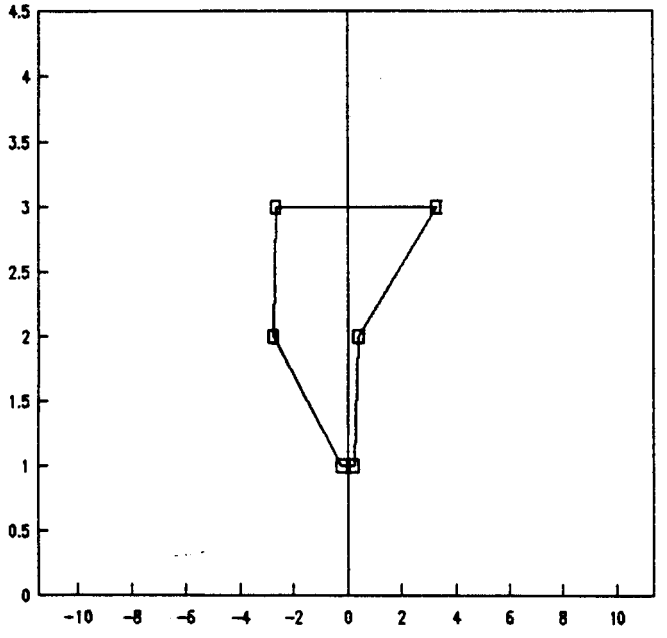
80-48
07-15-93



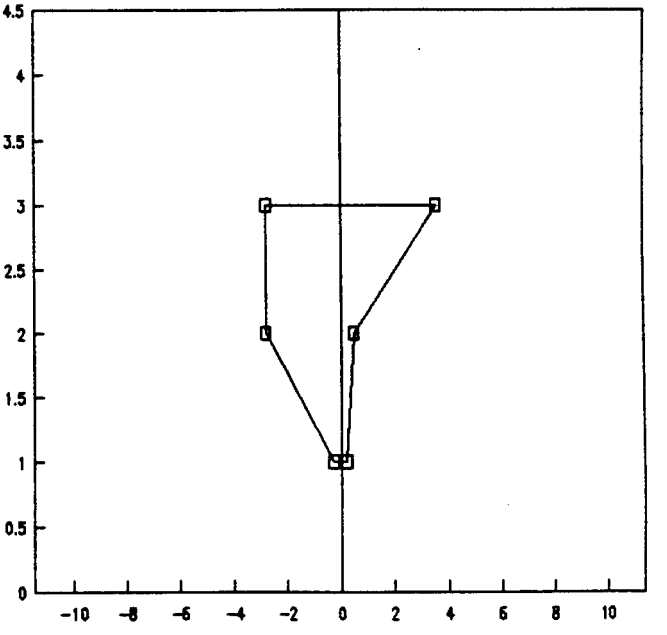
80-48
10-29-93



84-56
07-12-93

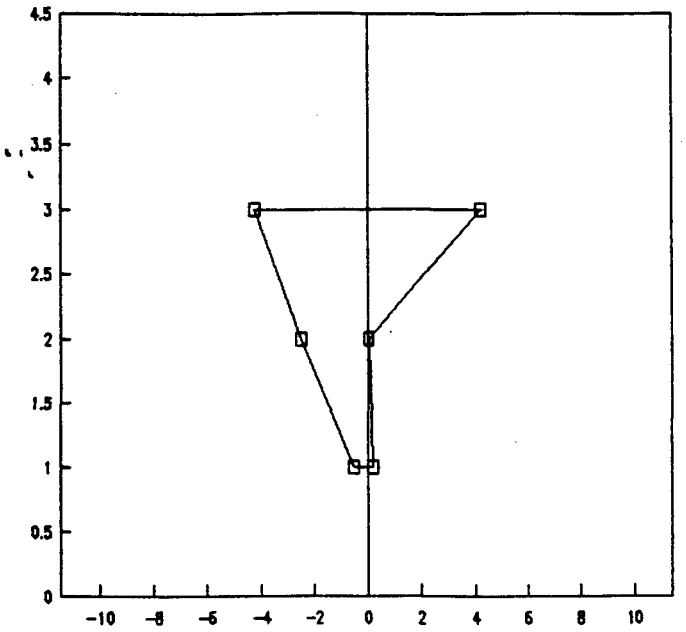


84-56
11-01-93



NORTH HORN FORMATION

89-60
07-14-93



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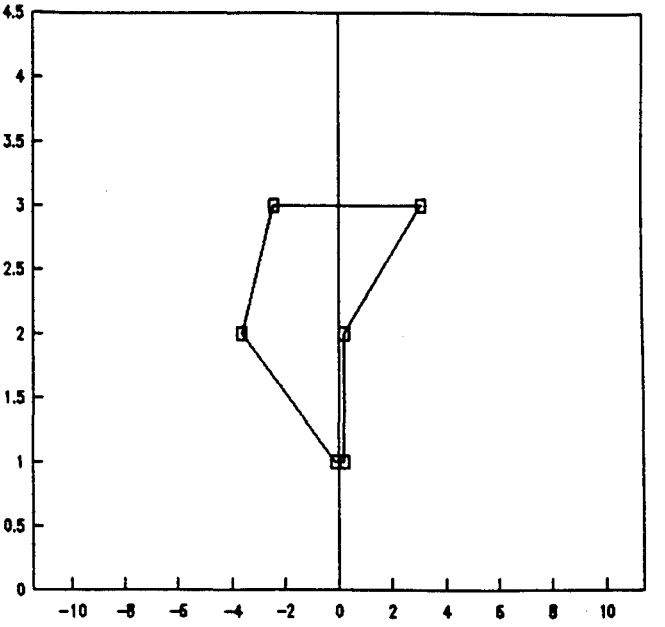
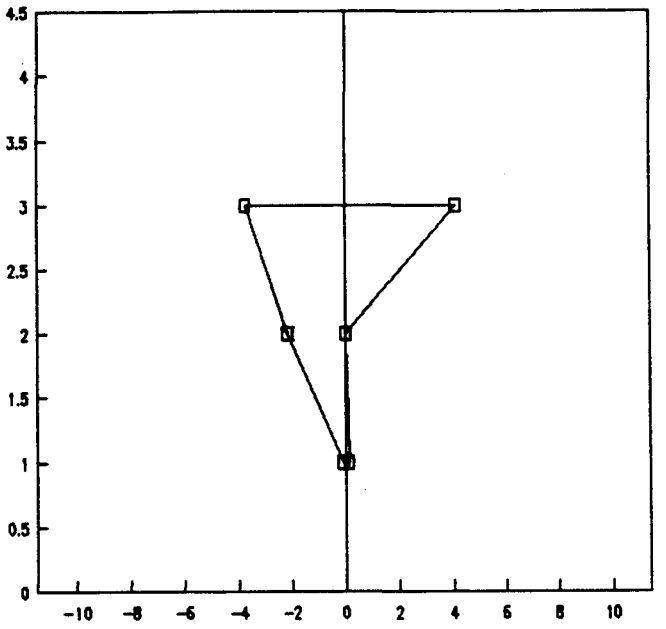
07-15-93



89-61
07-15-93



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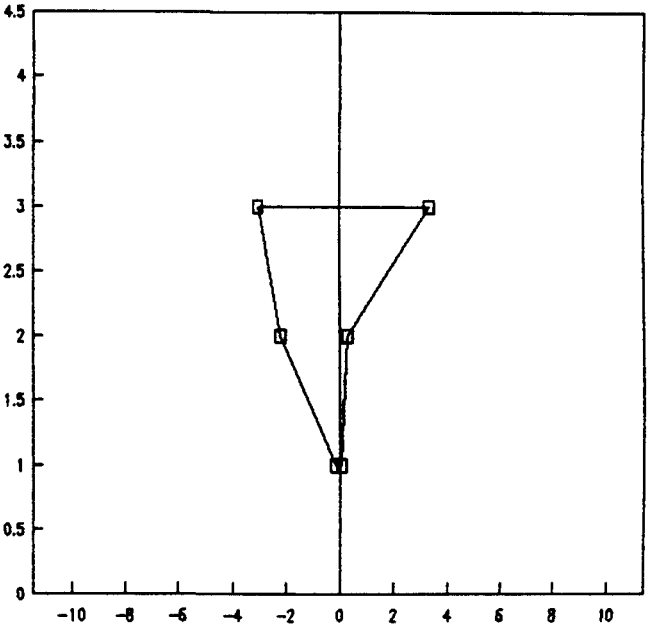
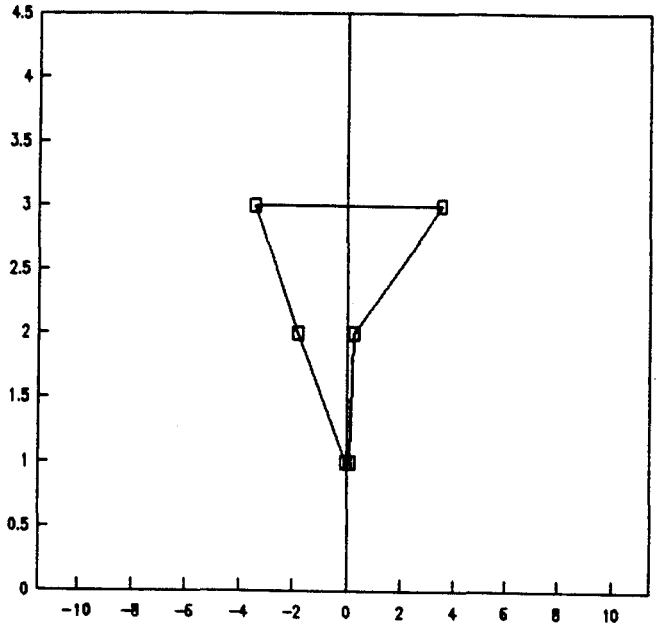
10-29-93



NORTH HORN FORMATION

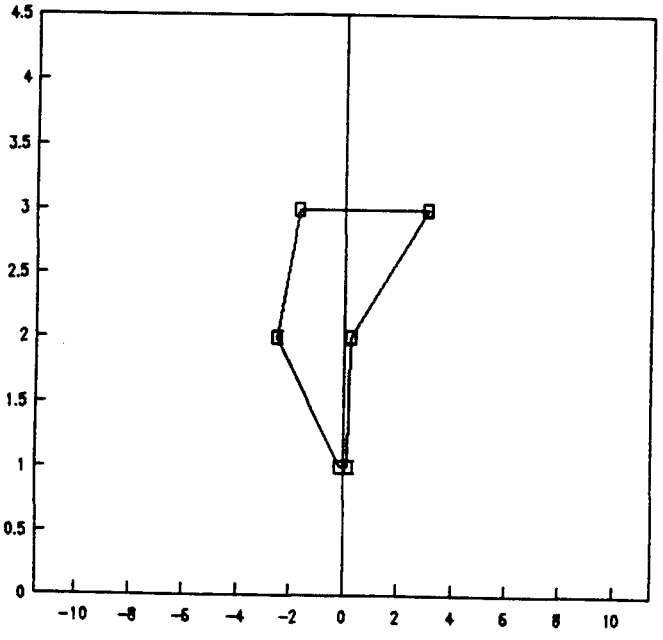
89-65

07-15-93



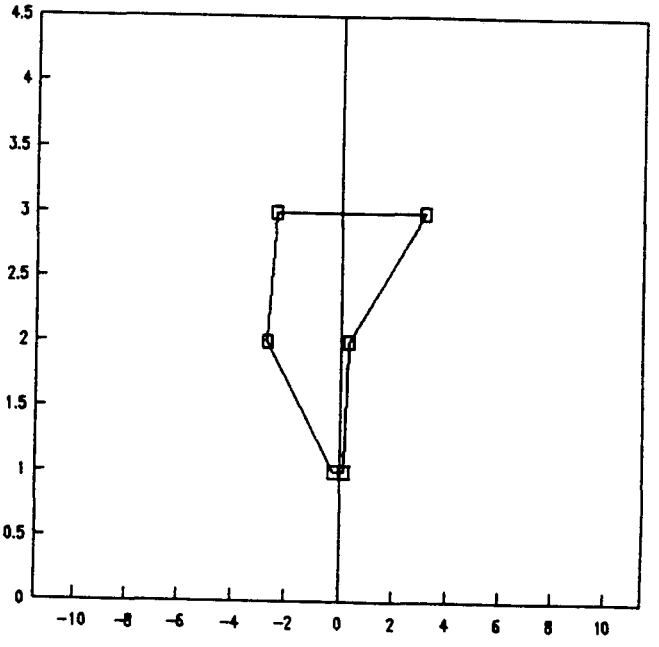
89-67

07-15-93



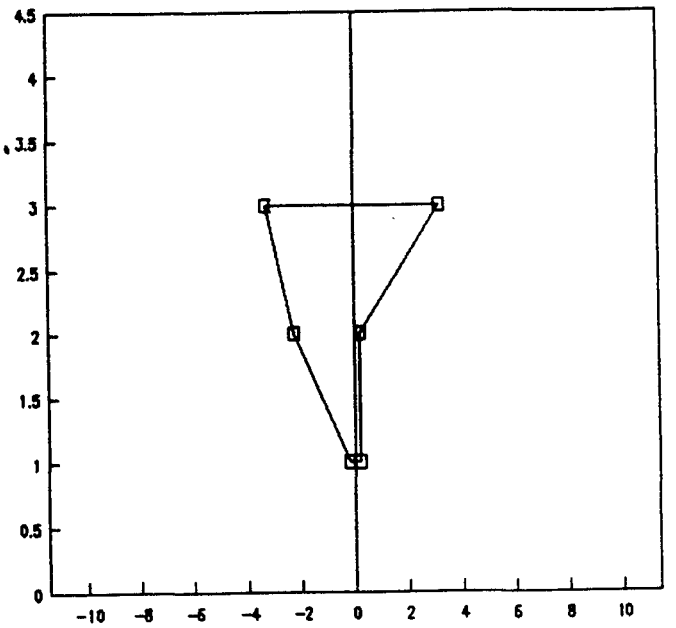
89-67

10-29-93

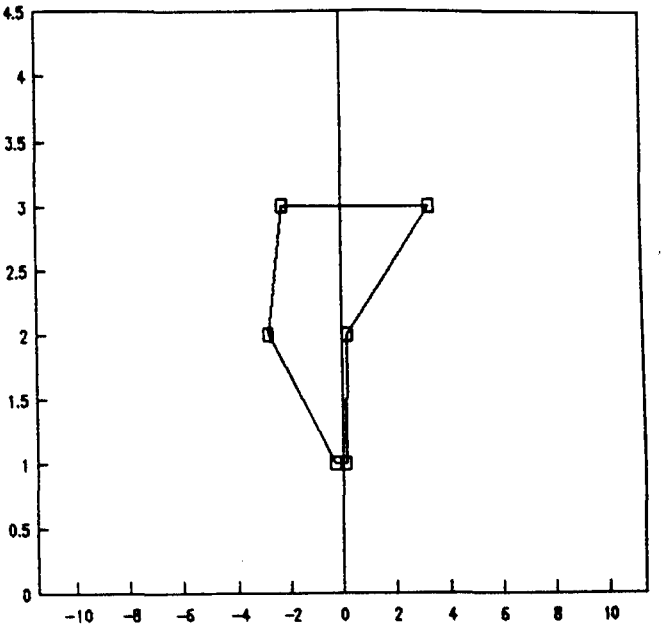


NORTH HORN FORMATION

79-26
07-12-93



79-26
11-01-93



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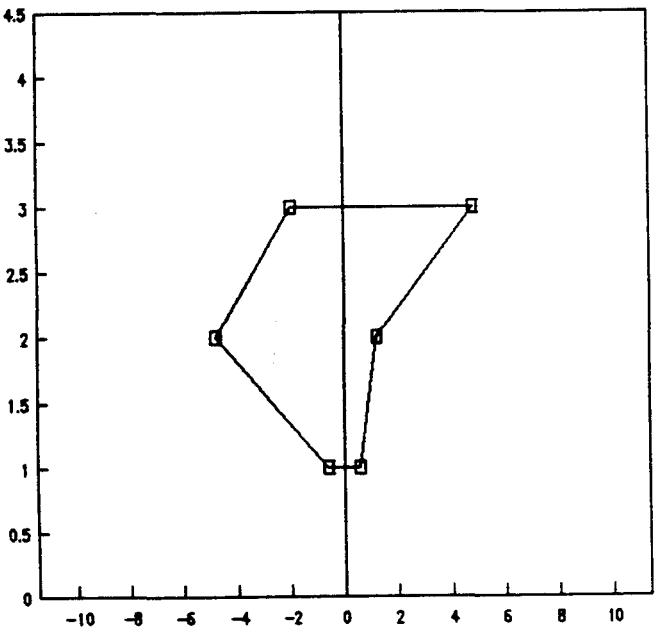
07-12-93



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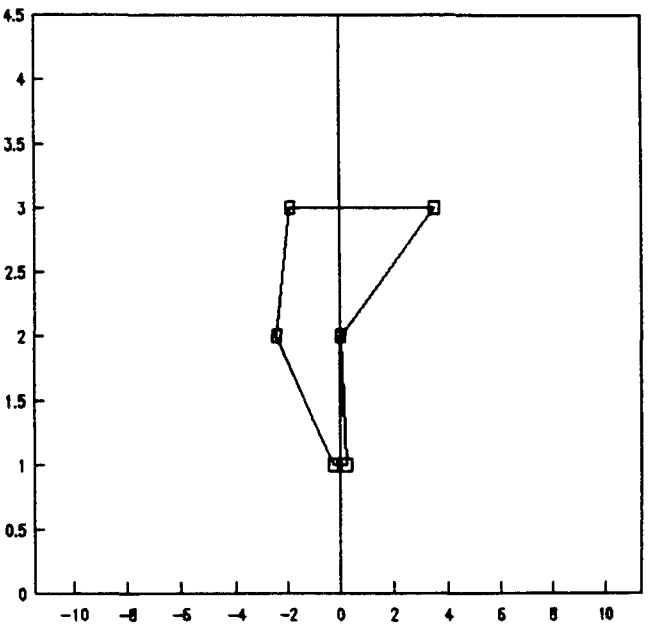
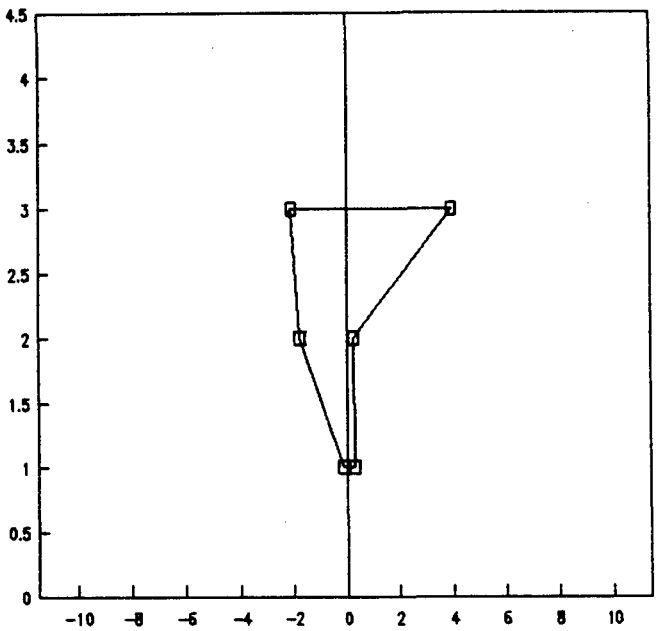
07-15-93



PRICE RIVER FORMATION

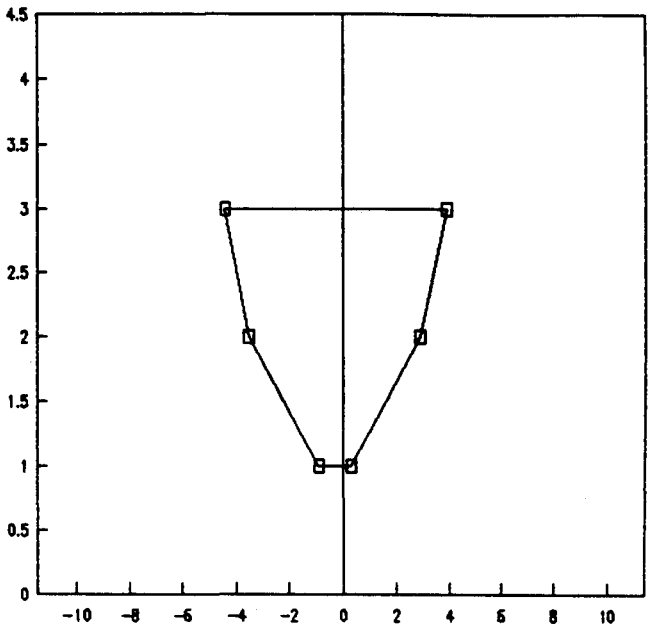
79-40

07-12-93



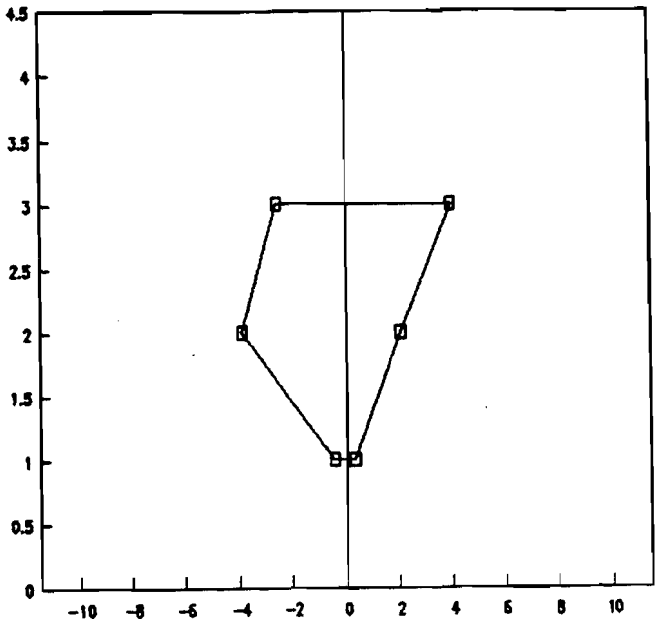
80-44

07-12-93

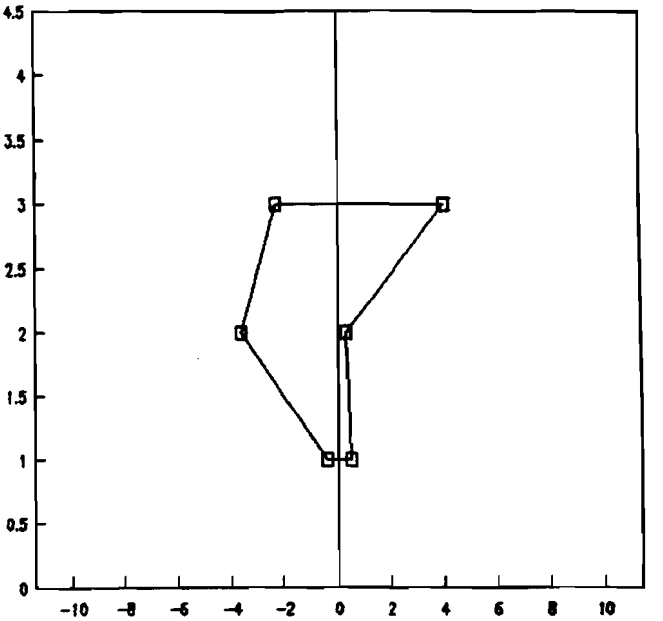


PRICE RIVER FORMATION

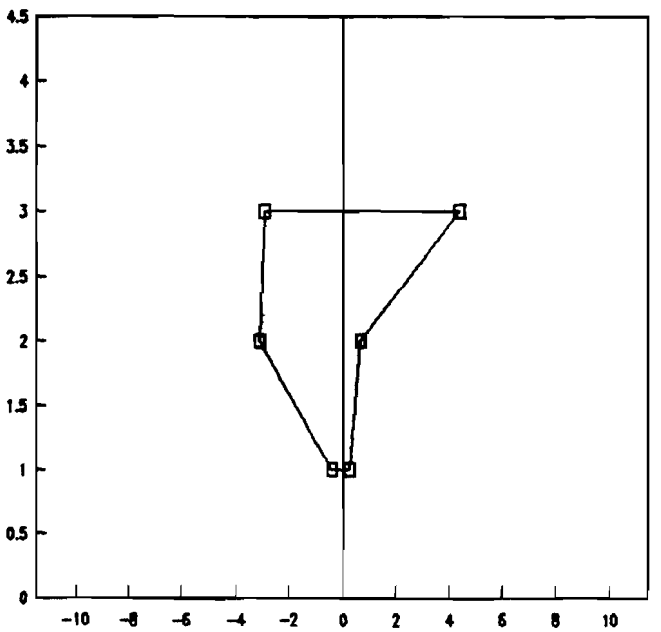
80-41
07-12-93



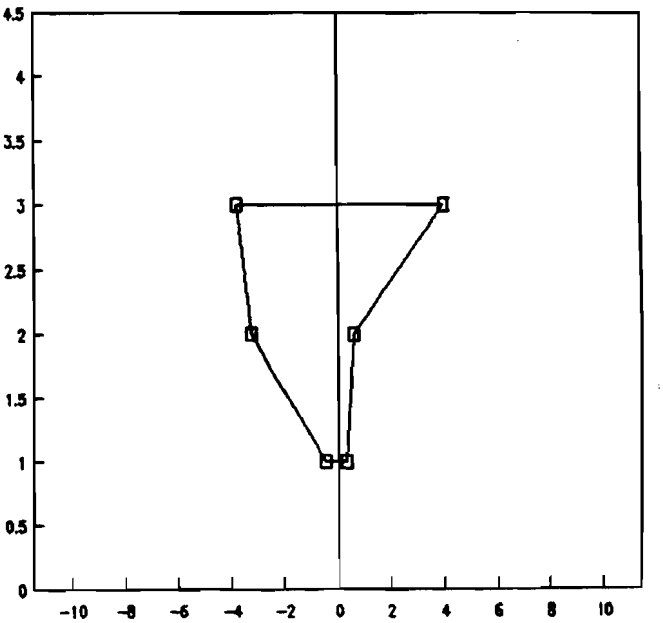
82-51
07-14-93



82-52
07-14-93

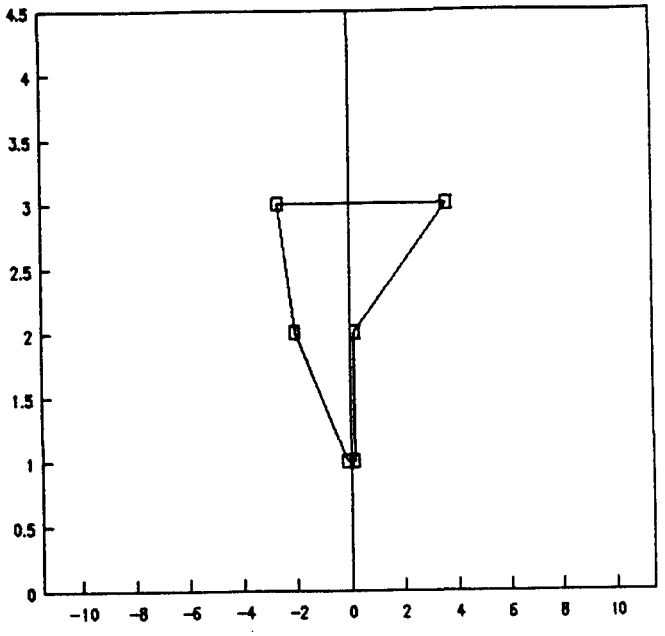


82-52
11-04-93

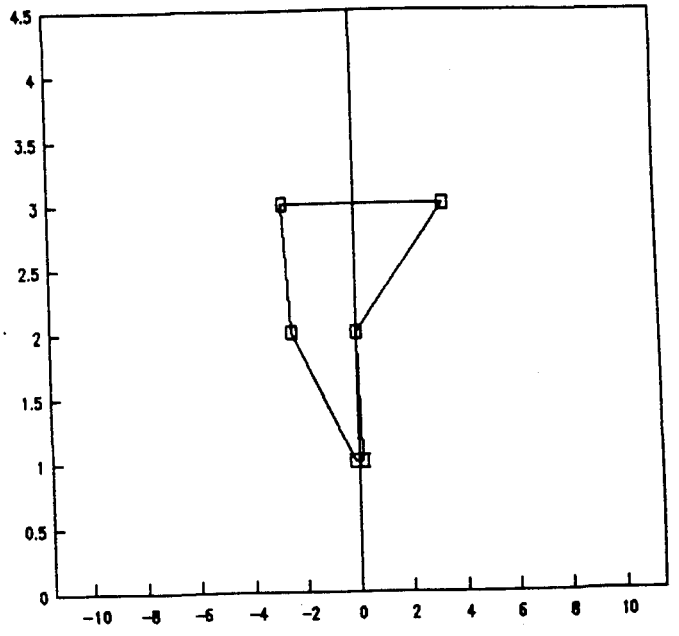


NORTH HORN FORMATION

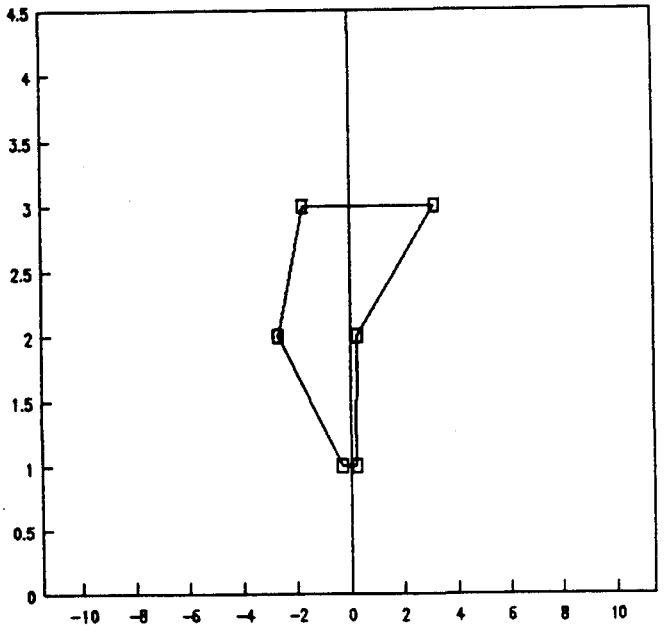
80-43
07-14-93



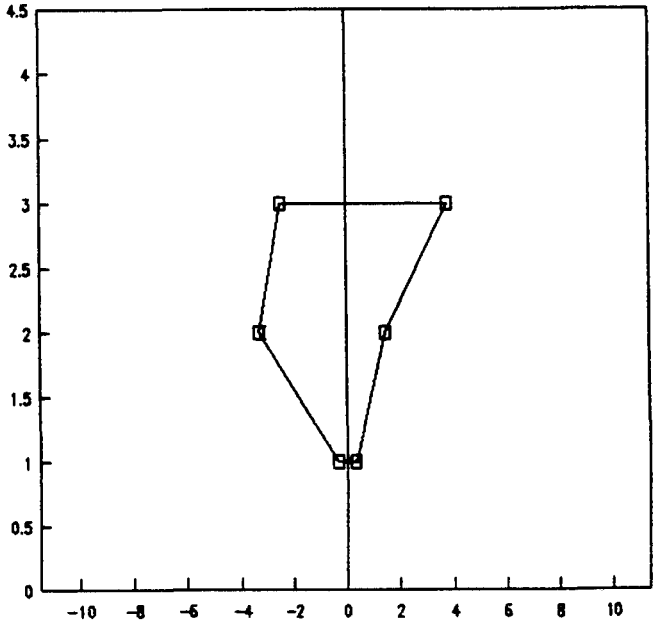
80-46
07-14-93



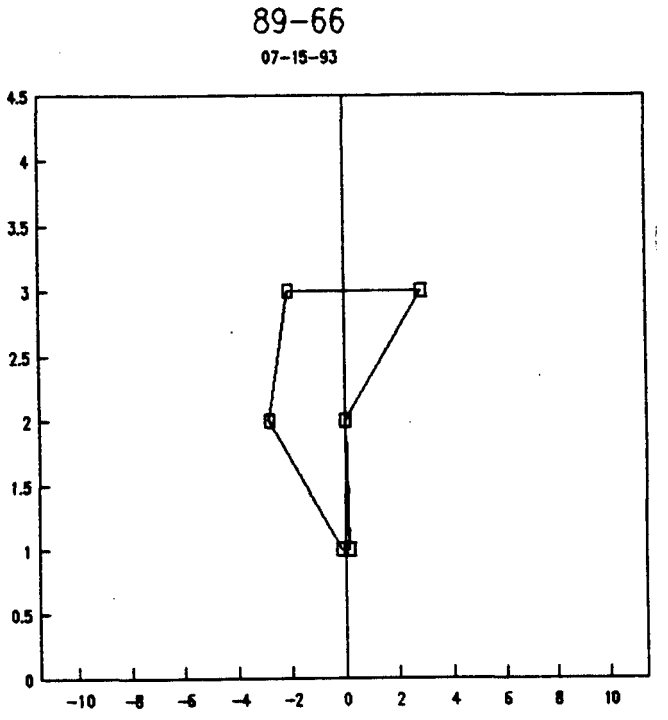
84-53
07-12-93



84-55
07-12-93



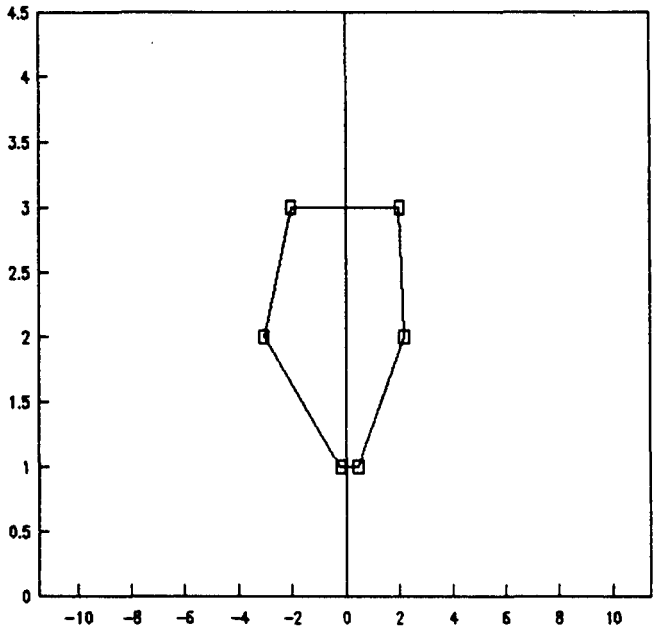
NORTH HORN FORMATION



BLACKHAWK FORMATION

91-73

07-22-93



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P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs Burnt Tree
Temperature 44.9°F
Flow 8.6 GPM
Rec'd 1630 hr.
Sampled 1234 hr.

FIELD MEASUREMENTS

pH	7.51
Conductivity	476
DO	7.5

Analysis report no. 59-13296

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	328	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	263	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.48	----	meq/l	---------	---------- ----- --
Calcium	53.8	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.81	----	meq/l	---------	---------- ----- --
Chloride	5.8	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	515	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	259	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	30.20	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	7.7	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.26	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.00	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	14.90	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	286.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	12.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	9.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	2.98	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

FIELD OFFICE

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F-465
Original Watermarked For Your Protection

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

August 11, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs Elk Springs
Temperature 44.6°F
Flow 370 GPM
Rec'd 1615 hr.
Sampled 1510 hr.

FIELD MEASUREMENTS

pH	7.69
Conductivity	424
DO	9.6

Analysis report no. 59-13304

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	319	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	262	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.27	----	meq/l	---------	---------- ----- --
Calcium	63.9	.03	mg/l	EPA 215.1	08-10-1993 12:30 ED
Cations	4.96	----	meq/l	---------	---------- ----- --
Chloride	5.2	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	459	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	239	.03	mg/l $CaCO_3$	---------	08-10-1993 12:30 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	19.30	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	10.5	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	6.90	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.00	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	4.20	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	261.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	2.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	0.7	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-2.86	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs Sheba Springs
Temperature 44.3°F
Flow 11 GPM
Rec'd 1615 hr.
Sampled 1254 hr.

FIELD MEASUREMENTS	
pH	7.71
Conductivity	381
DO	11.6

Analysis report no. 59-13311

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	280	.4	mg/l HCO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Total	230	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	4.70	----	meq/l	---------	---------- ----- --
Calcium	72.6	.03	mg/l	EPA 215.1	08-23-1993 15:00 ED
Cations	4.65	----	meq/l	---------	---------- ----- --
Chloride	5.4	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	395	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	224	.03	mg/l $CaCO_3$	---------	08-23-1993 15:00 ED
Iron	0.07	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	10.30	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.5	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.04	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.90	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	3.60	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	232.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	3.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	3.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	-0.44	----	%	---------	---------- ----- --

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Respectfully submitted,
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Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

East Mountain Springs Teds Tub
Temperature 51.2°F
Flow 51 GPM
Rec'd 1630 hr.
Sampled 1515 hr.

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

FIELD MEASUREMENTS

pH	7.57
Conductivity	456
DO	8.9

Analysis report no. 59-13295

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	348	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	286	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.88	----	meq/l	---------	---------- ----- --
Calcium	60.7	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	4.92	----	meq/l	---------	---------- ----- --
Chloride	4.2	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	478	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	232	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	19.50	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	7.7	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.30	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.00	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	6.70	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	280.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	21.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	9.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-8.82	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

East Mountain Springs 79-2
Temperature 43.8°F
Flow 7.5 GPM
Rec'd 1630 hr.
Sampled ~~1150~~ hr. 1215

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

FIELD MEASUREMENTS

pH	7.45
Conductivity	493
DO	10.5

Analysis report no. 59-13298

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	359	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	295	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	6.10	----	meq/l	---------	---------- ----- --
Calcium	69.2	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.84	----	meq/l	---------	---------- ----- --
Chloride	4.8	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	540	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	261	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	21.50	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.9	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.13	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.10	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	14.30	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	286.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	10.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-2.09	----	%	---------	---------- ----- --

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Respectfully submitted,
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Manager, Huntington Laboratory

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FAX: (801) 653-2436

August 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 79-10
Temperature 44.5°F
Flow 30 GPM
Rec'd 1615 hr.
Sampled 1226 hr.

FIELD MEASUREMENTS

pH	7.34
Conductivity	466
DO	10.1

Analysis report no. 59-13314

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	264	.4	mg/l HCO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Total	217	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	4.55	----	meq/l	---------	---------- ----- --
Calcium	63.5	.03	mg/l	EPA 215.1	08-23-1993 15:00 ED
Cations	4.58	----	meq/l	---------	---------- ----- --
Chloride	6.9	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	458	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	219	.03	mg/l $CaCO_3$	---------	08-23-1993 15:00 ED
Iron	0.06	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	14.70	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.1	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.25	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	1.40	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	3.90	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	274.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	11.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	6.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	0.44	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

August 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 79-15
Temperature 46.1°F
Flow 20.7 GPM
Rec'd 1615 hr.
Sampled 1120 hr.

FIELD MEASUREMENTS

pH	8.21
Conductivity	443
DO	12.4

Analysis report no. 59-13312

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	281	.4	mg/l HCO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Total	254	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.27	----	meq/l	---------	---------- ----- --
Calcium	69.6	.03	mg/l	EPA 215.1	08-23-1993 15:00 ED
Cations	5.08	----	meq/l	---------	---------- ----- --
Chloride	6.7	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	444	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	241	.03	mg/l $CaCO_3$	---------	08-23-1993 15:00 ED
Iron	0.09	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	16.30	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.5	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.05	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	1.00	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	5.50	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	271.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	10.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	6.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	7.41	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 79-26
Temperature 59.5°F
Flow 10.0 GPM
Rec'd 1630 hr.
Sampled 1235 hr.

FIELD MEASUREMENTS

pH	8.14
Conductivity	498
DO	9.1

Analysis report no. 59-13287

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	322	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	264	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.60	----	meq/l	---------	---------- ----- --
Calcium	66.0	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	6.06	----	meq/l	---------	---------- ----- --
Chloride	7.8	.5	mg/l	EPA 325.3	07-29-1993 10:30 LM
Conductivity	535	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	278	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	2.22	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	27.50	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	0.04	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.3	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.51	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.30	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	11.60	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	288.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	0.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	11.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	3.95	----	%	---------	---------- ----- --

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Respectfully submitted,
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Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 79-28
Temperature 44.2°F
Flow 2.2 GPM
Rec'd 1630 hr.
Sampled 1325 hr.

FIELD MEASUREMENTS

pH	7.50
Conductivity	609
DO	10.2

Analysis report no. 59-13289

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	306	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	251	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	7.14	----	meq/l	---------	---------- ----- --
Calcium	43.0	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	7.40	----	meq/l	---------	---------- ----- --
Chloride	12.6	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	669	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	220	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	0.15	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	27.40	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.1	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.26	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	2.40	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	68.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	385.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	24.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	90.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	1.82	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 79-29
Temperature 42.9°F
Flow 2.9 GPM
Rec'd 1630 hr.
Sampled 1150 hr.

FIELD MEASUREMENTS

pH	7.59
Conductivity	515
DO	11.7

Analysis report no. 59-13290

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	308	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	253	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.79	----	meq/l	---------	---------- ----- --
Calcium	36.4	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	6.56	----	meq/l	---------	---------- ----- --
Chloride	15.6	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	566	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	258	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	40.50	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.1	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.24	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.80	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	32.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	309.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	0.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	20.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	6.27	----	%	---------	---------- ----- --

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FIELD OFFICE

Respectfully submitted,
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Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 79-32
Temperature 53.5°F
Flow 1.3 GPM
Rec'd 1630 hr.
Sampled 1130 hr.

FIELD MEASUREMENTS

pH	8.13
Conductivity	795
DO	12.3

Analysis report no. 59-13288

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	483	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	396	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	9.58	----	meq/l	---------	---------- ----- --
Calcium	39.7	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	8.29	----	meq/l	---------	---------- ----- --
Chloride	21.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LS
Conductivity	844	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	338	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	0.13	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	58.00	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.7	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.73	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	1.30	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	35.30	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	509.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	4.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	60.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	-7.26	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 12, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 79-34
Temperature 46.3°F
Flow 13 GPM
Rec'd 1615 hr.
Sampled 1100 hr.

FIELD MEASUREMENTS

pH	7.23
Conductivity	513
DO	12.3

Analysis report no. 59-13310

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	353	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	290	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.95	----	meq/l	---------	---------- ----- --
Calcium	37.9	.03	mg/l	EPA 215.1	08-10-1993 12:25 ED
Cations	4.92	----	meq/l	---------	---------- ----- --
Chloride	9.1	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	579	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	216	.03	mg/l $CaCO_3$	---------	08-10-1993 12:25 ED
Iron	0.27	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	29.40	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.9	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.08	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	1.70	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	13.20	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	335.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	30.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	2.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	-9.44	----	%	---------	---------- ----- --

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FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout
Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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TEL: (801) 653-2311
FAX: (801) 653-2436

August 12, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 79-35
Temperature 42.9°F
Flow 8.9 GPM
Rec'd 1615 hr.
Sampled 1145 hr.

FIELD MEASUREMENTS

pH	8.14
Conductivity	428
DO	11.0

Analysis report no. 59-13313

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	281	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	231	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	4.65	----	meq/l	---------	---------- ----- --
Calcium	63.9	.03	mg/l	EPA 215.1	08-10-1993 12:25 ED
Cations	4.52	----	meq/l	---------	---------- ----- --
Chloride	4.8	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	376	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	219	.03	mg/l $CaCO_3$	---------	08-10-1993 12:25 ED
Iron	0.16	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	14.50	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	12.0	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.36	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.60	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	2.90	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	260.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	0.3	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	-1.24	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout
Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 79-38
Temperature 54.3°F
Flow 6.4 GPM
Rec'd 1630 hr.
Sampled 1433 hr.

FIELD MEASUREMENTS

pH	7.83
Conductivity	555
DO	10.4

Analysis report no. 59-13294

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	391	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	321	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	7.08	----	meq/l	---------	---------- ----- --
Calcium	58.8	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	6.75	----	meq/l	---------	---------- ----- --
Chloride	9.1	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	637	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	232	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	20.80	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	7.1	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.32	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.10	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	48.90	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	379.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	24.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	27.0	1	mg/l	EPA 375.4	07-30-1993 16:00 ED
Cation/Anion Balance	-2.37	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 3, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 79-40
Temperature 58.0°F
Flow 4 GPM
Rec'd 1630 hr.
Sampled 1440 hr.

FIELD MEASUREMENTS

pH	7.89
Conductivity	673
DO	8.5

Analysis report no. 59-13285

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	396	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	325	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	6.91	----	meq/l	---------	---------- ----- --
Calcium	41.8	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.68	----	meq/l	---------	---------- ----- --
Chloride	10.6	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	687	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	194	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	21.70	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.2	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.18	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.50	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	41.90	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	420.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	0.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	13.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	-9.71	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 3, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 80-41
Temperature 60.7°F
Flow 4 GPM
Rec'd 1630 hr.
Sampled 1430 hr.

FIELD MEASUREMENTS

pH	8.18
Conductivity	606
DO	8.1

Analysis report no. 59-13286

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	396	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	325	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	8.69	----	meq/l	---------	---------- ----- --
Calcium	51.5	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	7.62	----	meq/l	---------	---------- ----- --
Chloride	10.6	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	742	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	323	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	47.10	.007	mg/l	EPA 242.1	07-27-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 10:15 ED
Oxygen, Dissolved	9.2	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.25	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.20	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	27.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	496.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	7.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	98.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	-6.53	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 80-43
Temperature 47.8°F
Flow 2.7 GPM
Rec'd 1630 hr.
Sampled 1150 hr.

FIELD MEASUREMENTS

pH	7.95
Conductivity	480
DO	10.1

Analysis report no. 59-13297

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	363	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	298	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	6.13	----	meq/l	---------	---------- ----- --
Calcium	53.1	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.05	----	meq/l	---------	---------- ----- --
Chloride	4.8	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	527	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	234	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:00 ED
Magnesium	24.70	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.1	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.41	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.20	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	8.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	302.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	19.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	9.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-9.65	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 80-44
Temperature 75.4°F
Flow 1.4 GPM
Rec'd 1630 hr.
Sampled 1415 hr.

FIELD MEASUREMENTS

pH	8.20
Conductivity	809
DO	6.9

Analysis report no. 59-13284

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	392	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	322	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	9.54	----	meq/l	---------	---------- ----- --
Calcium	88.4	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	10.04	----	meq/l	---------	---------- ----- --
Chloride	11.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	907	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	396	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	0.12	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	42.60	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.0	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.70	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	13.00	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	41.70	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	603.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	10.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	140.0	1	mg/l	EPA 375.4	07-29-1993 12:30 LS
Cation/Anion Balance	2.60	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 11, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 80-46
Temperature 43.5°F
Flow 7.5 GPM
Rec'd 1630 hr.
Sampled 1115 hr.

FIELD MEASUREMENTS

pH	7.29
Conductivity	501
DO	9.5

Analysis report no. 59-13299

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	336	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	276	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.60	----	meq/l	---------	---------- ----- --
Calcium	54.5	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.53	----	meq/l	---------	---------- ----- --
Chloride	6.6	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	515	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	259	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	0.42	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	29.90	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.0	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.16	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.00	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	8.10	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	261.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	10.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	1.4	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-0.59	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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August 11, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 80-47
Temperature 48.2°F
Flow 13.3 GPM
Rec'd 1630 hr.
Sampled 1122 hr.

FIELD MEASUREMENTS

pH	7.96
Conductivity	511
DO	12.6

Analysis report no. 59-13302

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	396	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	325	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	6.53	----	meq/l	---------	---------- ----- --
Calcium	65.8	.03	mg/l	EPA 215.1	08-10-1993 12:30 ED
Cations	6.06	----	meq/l	---------	---------- ----- --
Chloride	5.9	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	554	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	275	.03	mg/l $CaCO_3$	---------	08-10-1993 12:30 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	27.00	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.9	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.63	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.70	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	12.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	288.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	1.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	1.5	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-3.79	----	%	---------	---------- ----- --

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Respectfully submitted,
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Manager, Huntington Laboratory

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

August 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 80-48
Temperature 52.8°F
Flow 6.7 GPM
Rec'd 1615 hr.
Sampled 1315 hr.

FIELD MEASUREMENTS

pH	7.76
Conductivity	481
DO	9.9

Analysis report no. 59-13315

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	305	.4	mg/l HCO_3	4500 CO_2D	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2D	07-22-1993 10:30 LS
Alkalinity, Total	250	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.19	----	meq/l	---------	---------- ----- --
Calcium	71.8	.03	mg/l	EPA 215.1	08-23-1993 15:00 ED
Cations	5.80	----	meq/l	---------	---------- ----- --
Chloride	6.1	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	503	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	279	.03	mg/l $CaCO_3$	---------	08-23-1993 15:00 ED
Iron	0.11	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	24.10	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.7	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.41	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.90	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	4.90	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	283.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	11.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	7.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	5.48	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 82-51
Temperature 52.9°F
Flow 3.2 GPM
Rec'd 1630 hr.
Sampled 1310 hr.

FIELD MEASUREMENTS

pH	7.89
Conductivity	728
DO	11.9

Analysis report no. 59-13300

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	402	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	330	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	7.23	----	meq/l	---------	---------- ----- --
Calcium	46.0	.03	mg/l	EPA 215.1	07-29-1993 14:00 ED
Cations	6.97	----	meq/l	---------	---------- ----- --
Chloride	17.9	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	809	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	295	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	43.70	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.1	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.48	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.70	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	24.80	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	485.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	17.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	14.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-1.82	----	%	---------	---------- ----- --

RECEIVED
8/2/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 82-52
Temperature 44.1°F
Flow 16.7 GPM
Rec'd 1630 hr.
Sampled 1358 hr.

FIELD MEASUREMENTS

pH	7.63
Conductivity	606
DO	10.0

Analysis report no. 59-13301

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	440	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	361	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	7.97	----	meq/l	---------	---------- ----- --
Calcium	57.4	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	6.99	----	meq/l	---------	---------- ----- --
Chloride	9.1	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	665	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	297	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	37.30	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.0	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.27	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.40	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	24.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	324.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	13.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	32.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-6.50	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 84-53
Temperature 52.2°F
Flow 13.3 GPM
Rec'd 1630 hr.
Sampled 1258 hr.

FIELD MEASUREMENTS

pH	8.10
Conductivity	487
DO	11.2

Analysis report no. 59-13291

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	318	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	261	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.59	----	meq/l	---------	---------- ----- --
Calcium	34.9	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.20	----	meq/l	---------	---------- ----- --
Chloride	8.3	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	525	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	221	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	32.40	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	9.5	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.37	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.60	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	18.10	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	270.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	15.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	13.0	1	mg/l	EPA 375.4	07-28-1993 08:00 LS
Cation/Anion Balance	-3.70	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 84-55
Temperature 53.5°F
Flow 13 GPM
Rec'd 1630 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS

pH	7.63
Conductivity	649
DO	8.2

Analysis report no. 59-13283

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	380	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	312	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	7.88	----	meq/l	---------	---------- ----- --
Calcium	49.8	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	6.61	----	meq/l	---------	---------- ----- --
Chloride	11.8	.5	mg/l	EPA 325.3	07-21-1993 10:00 LM
Conductivity	725	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	289	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 ED
Magnesium	40.10	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.8	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.08	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.50	.1	mg/l	EPA 258.1	07-29-1993 17:05 LS
Sodium	19.10	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	451.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	0.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	70.0	1	mg/l	EPA 375.4	07-27-1993 08:30 LS
Cation/Anion Balance	-8.75	----	%	---------	---------- ----- --

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8/2/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 12, 1993

Date received July 12, 1993

East Mountain Springs 84-56
Temperature 43.4°F
Flow 1 GPM
Rec'd 1630 hr.
Sampled 1345 hr.

FIELD MEASUREMENTS

pH	7.33
Conductivity	538
DO	8.5

Analysis report no. 59-13292

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	328	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	269	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.88	----	meq/l	---------	---------- ----- --
Calcium	53.3	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	6.01	----	meq/l	---------	---------- ----- --
Chloride	8.4	.5	mg/l	EPA 325.3	07-28-1993 08:00 LS
Conductivity	581	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	271	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	<0.05	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	33.50	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	7.6	.01	mg/l	EPA 360.1	07-12-1993 17:30 LM
pH	7.00	----	Units	EPA 150.1	07-12-1993 17:30 LM
Potassium	0.10	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	13.80	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	307.0	14	mg/l	EPA 160.1	07-13-1993 08:00 LM
Solids, Total Suspended	24.0	7	mg/l	EPA 160.2	07-13-1993 16:00 LM
Sulfate	19.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	1.05	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 14, 1993

Date received July 14, 1993

East Mountain Springs 89-60
Temperature 54.5°F
Flow 2.1 GPM
Rec'd 1630 hr.
Sampled 1445 hr.

FIELD MEASUREMENTS

pH	7.85
Conductivity	653
DO	9.0

Analysis report no. 59-13293

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	422	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	346	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	7.01	----	meq/l	---------	---------- ----- --
Calcium	84.7	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	8.10	----	meq/l	---------	---------- ----- --
Chloride	7.8	.5	mg/l	EPA 325.3	07-28-1993 08:00 LS
Conductivity	702	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	336	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	0.25	.05	mg/l	EPA 236.1	07-23-1993 09:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	30.20	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-27-1993 10:15 ED
Oxygen, Dissolved	8.4	.01	mg/l	EPA 360.1	07-14-1993 16:30 LM
pH	7.80	----	Units	EPA 150.1	07-14-1993 16:30 LM
Potassium	0.30	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	32.10	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	435.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	54.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	2.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	7.20	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 11, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 89-61
Temperature 45.6°F
Flow 129.3 GPM
Rec'd 1615 hr.
Sampled 1451 hr.

FIELD MEASUREMENTS

pH	7.57
Conductivity	484
DO	10.1

Analysis report no. 59-13305

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	412	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	338	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	6.76	----	meq/l	---------	---------- ----- --
Calcium	74.6	.03	mg/l	EPA 215.1	08-10-1993 12:30 ED
Cations	6.11	----	meq/l	---------	---------- ----- --
Chloride	5.0	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	533	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	294	.03	mg/l $CaCO_3$	---------	08-10-1993 12:30 ED
Iron	0.07	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	26.10	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.2	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	6.84	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.00	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	5.60	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	293.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	1.5	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	-6.87	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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FAX: (801) 653-2436

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 89-65
Temperature 45.5°F
Flow 1.6 GPM
Rec'd 1615 hr.
Sampled 1413 hr.

FIELD MEASUREMENTS

pH	7.76
Conductivity	488
DO	9.6

Analysis report no. 59-13307

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	357	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	293	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	6.07	----	meq/l	---------	---------- ----- --
Calcium	68.3	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	5.37	----	meq/l	---------	---------- ----- --
Chloride	3.9	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	537	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	262	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 LS
Iron	0.04	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	22.30	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	0.00	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	10.4	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	6.91	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.60	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	2.50	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	292.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	2.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	12.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-6.18	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

August 12, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 89-66
Temperature 45.0°F
Flow 2.6 GPM
Rec'd 1615 hr.
Sampled 1357 hr.

FIELD MEASUREMENTS

pH	8.13
Conductivity	438
DO	10.3

Analysis report no. 59-13308

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	286	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	235	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	4.76	----	meq/l	---------	---------- ----- --
Calcium	41.9	.03	mg/l	EPA 215.1	08-10-1993 12:25 ED
Cations	5.22	----	meq/l	---------	---------- ----- --
Chloride	5.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	458	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	245	.03	mg/l $CaCO_3$	---------	08-10-1993 12:25 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	34.20	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.4	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.36	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	1.40	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	6.70	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	259.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	8.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	0.9	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	4.77	----	%	---------	---------- ----- --

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Respectfully submitted,
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Larry Stout

Manager, Huntington Laboratory

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

August 2, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 89-67
Temperature 40.4°F
Flow 9.2 GPM
Rec'd 1615 hr.
Sampled 1345 hr.

FIELD MEASUREMENTS

pH	7.99
Conductivity	473
DO	10.4

Analysis report no. 59-13306

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	309	.4	mg/l HCO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-22-1993 10:30 LS
Alkalinity, Total	254	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.41	----	meq/l	---------	---------- ----- --
Calcium	33.9	.03	mg/l	EPA 215.1	07-29-1993 14:00 LS
Cations	4.57	----	meq/l	---------	---------- ----- --
Chloride	6.7	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	502	0.2	umhos/cm	EPA 120.1	07-30-1993 10:30 LS
Hardness, Total	211	.03	mg/l $CaCO_3$	---------	07-29-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 LS
Magnesium	30.60	.007	mg/l	EPA 242.1	07-29-1993 15:15 LS
Manganese	0.00	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	11.2	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	6.95	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	0.40	.1	mg/l	EPA 258.1	07-29-1993 17:05 ED
Sodium	8.20	.2	mg/l	EPA 273.1	07-29-1993 16:00 ED
Solids, Total Dissolved	278.0	14	mg/l	EPA 160.1	07-20-1993 09:30 LM
Solids, Total Suspended	8.0	7	mg/l	EPA 160.2	07-20-1993 08:00 LM
Sulfate	13.0	1	mg/l	EPA 375.4	07-30-1993 10:30 LS
Cation/Anion Balance	-8.40	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

August 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS-KH

Date sampled July 15, 1993

Date received July 15, 1993

East Mountain Springs 89-68
Temperature 47.7°F
Flow 2.7 GPM
Rec'd 1615 hr.
Sampled 1332 hr.

FIELD MEASUREMENTS	
pH	7.66
Conductivity	484
DO	10.7

Analysis report no. 59-13309

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	308	.4	mg/l HCO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	07-22-1993 10:30 LS
Alkalinity, Total	253	.4	mg/l $CaCO_3$	EPA 310.1	07-22-1993 10:30 LS
Anions	5.35	----	meq/l	---------	---------- ----- --
Calcium	48.6	.03	mg/l	EPA 215.1	08-23-1993 15:00 ED
Cations	6.30	----	meq/l	---------	---------- ----- --
Chloride	7.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	494	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	303	.03	mg/l $CaCO_3$	---------	08-23-1993 15:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	44.00	.007	mg/l	EPA 242.1	08-24-1993 13:35 ED
Manganese	0.04	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oxygen, Dissolved	12.7	.01	mg/l	EPA 360.1	07-15-1993 16:45 LM
pH	7.26	----	Units	EPA 150.1	07-15-1993 16:45 LM
Potassium	1.90	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	5.00	.2	mg/l	EPA 273.1	08-24-1993 10:25 ED
Solids, Total Dissolved	287.0	14	mg/l	EPA 160.1	07-21-1993 10:00 LM
Solids, Total Suspended	12.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	10.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	8.19	----	%	---------	---------- ----- --

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FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs 17-14-2 (91-73)
Temperature 62.4°F
Flow 1.0 GPM
Rec'd 1630 hr.
Sampled 1530 hr.

FIELD MEASUREMENTS

pH	8.13
Conductivity	490
DO	9.3

NOTE: CONDUCTIVITY RUN AFTER HOLDING TIME EXPIRED.

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled July 22, 1993

Date received July 22, 1993

Analysis report no. 59-13344

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	202	.4	mg/l HCO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Carbonate	6	.4	mg/l CO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Total	208	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	6.70	----	meq/l	---------	---------- ----- --
Calcium	40.7	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	5.59	----	meq/l	---------	---------- ----- --
Chloride	15.7	.5	mg/l	EPA 325.3	07-29-1993 15:00 LM
Conductivity	550	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	254	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.21	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	0.08	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	37.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oxygen, Dissolved	6.8	.01	mg/l	EPA 360.1	07-22-1993 17:00 LS
pH	8.50	----	Units	EPA 150.1	07-22-1993 17:00 LS
Potassium	1.90	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	11.00	.2	mg/l	EPA 273.1	08-20-1993 13:05 ED
Solids, Total Dissolved	315.0	14	mg/l	EPA 160.1	07-27-1993 13:30 LM
Solids, Total Suspended	5.0	7	mg/l	EPA 160.2	07-23-1993 13:00 LM
Sulfate	105.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Cation/Anion Balance	-8.96	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

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FAX: (801) 653-2436

September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Burnt Tree
Temperature 46.5°F
Flow 7.3 GPM
Rec'd 1600 hr.
Sampled 1426 hr.

FIELD MEASUREMENTS

pH	8.10
Conductivity	475
DO	10.9

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13402

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-11-1993 16:30 LS
Calcium	38.5	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	509	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	224	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	31.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	8.3	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.60	----	Units	EPA 150.1	08-11-1993 16:30 LS

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Manager, Huntington Laboratory

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FAX: (801) 653-2436

September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Elk Springs
Temperature 43.3°F
Flow 152.8 GPM
Rec'd 1600 hr.
Sampled 1231 hr.

FIELD MEASUREMENTS

pH	7.92
Conductivity	415
DO	9.5

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13397

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-16-1993 10:00 LS
Calcium	35.5	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	454	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	192	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	25.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	9.1	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	8.00	----	Units	EPA 150.1	08-11-1993 16:30 LS

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September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Sheba Springs
Temperature 45.2°F
Flow 5.3 GPM
Rec'd 1600 hr.
Sampled 1214 hr.

FIELD MEASUREMENTS

pH	7.64
Conductivity	396
DO	11.2

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13396

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-16-1993 10:00 LS
Calcium	61.3	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	428	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	198	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	11.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	8.6	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.60	----	Units	EPA 150.1	08-11-1993 16:30 LS

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September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

East Mountain Springs 79-10
Temperature 47.1°F
Flow 14.0 GPM
Rec'd 1600 hr.
Sampled 1201 hr.

FIELD MEASUREMENTS

pH	7.74
Conductivity	429
DO	11.4

Analysis report no. 59-13399

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2D	08-11-1993 16:30 LS
Calcium	57.7	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	484	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	243	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	24.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	8.6	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.70	----	Units	EPA 150.1	08-11-1993 16:30 LS

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FAX: (801) 653-2436

September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-26
Temperature 59.2°F
Flow 2.6 GPM
Rec'd 1600 hr.
Sampled 1329 hr.

FIELD MEASUREMENTS

pH	8.60
Conductivity	506
DO	7.8

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

NOTE POSSIBLE MATRIX INTERFERENCE FOR CALCIUM AND MANGANESE.

Analysis report no. 59-13394

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-16-1993 10:00 LS
Calcium	43.2	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	639	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	236	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	31.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	8.4	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	8.20	----	Units	EPA 150.1	08-11-1993 16:30 LS

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Manager, Huntington Laboratory

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

September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-29
Temperature 44.3°F
Flow 2.7 GPM
Rec'd 1600 hr.
Sampled 1316 hr.

FIELD MEASUREMENTS	
pH	7.66
Conductivity	523
DO	9.2

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13393

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Calcium	32.9	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	575	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	226	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	35.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	7.9	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.60	----	Units	EPA 150.1	08-11-1993 16:30 LS

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September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-35
Temperature 44.4°F
Flow 6.1 GPM
Rec'd 1600 hr.
Sampled 1249 hr.

FIELD MEASUREMENTS

pH	7.96
Conductivity	428
DO	9.9

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13395

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2D	08-16-1993 10:00 LS
Calcium	73.7	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	469	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	258	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	18.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	9.1	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.80	----	Units	EPA 150.1	08-11-1993 16:30 LS

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FAX: (801) 653-2436

September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 80-46
Temperature 45.1°F
Flow 4.5 GPM
Rec'd 1600 hr.
Sampled 1401 hr.

FIELD MEASUREMENTS

pH	7.52
Conductivity	480
DO	9.4

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13400

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-11-1993 16:30 LS
Calcium	39.7	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	520	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	227	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	31.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	8.4	.01	mg/l	EPA 360.1	08-11-1993 16:30 ED
pH	7.60	----	Units	EPA 150.1	08-11-1993 16:30 ED

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September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 82-52
Temperature 43.5°F
Flow 9.4 GPM
Rec'd 1600 hr.
Sampled 1444 hr.

FIELD MEASUREMENTS

pH	7.71
Conductivity	613
DO	10.3

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13398

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2D	08-16-1993 10:00 LS
Calcium	38.4	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	676	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	252	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	38.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	9.5	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.70	----	Units	EPA 150.1	08-11-1993 16:30 LS

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September 1, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 84-56
Temperature 45.5°F
Flow 0.85 GPM
Rec'd 1600 hr.
Sampled 1350 hr.

FIELD MEASUREMENTS

pH	7.64
Conductivity	520
DO	9.3

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled August 11, 1993

Date received August 11, 1993

Analysis report no. 59-13401

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-11-1993 16:30 LS
Calcium	39.7	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Conductivity	567	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	235	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Magnesium	33.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	7.2	.01	mg/l	EPA 360.1	08-11-1993 16:30 LS
pH	7.60	----	Units	EPA 150.1	08-11-1993 16:30 LS

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November 16, 1993

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

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11/16/93

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Burnt Tree
Temperature 48.5°F
Flow 10.5 GPM
Rec'd 0745 hr.
Sampled 1443 hr.

FIELD MEASUREMENTS

pH	7.71
Conductivity	472
DO	10.5

Kind of sample reported to us Water

FIELD OFFICE

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13575

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 SD
Alkalinity, Total	277	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 S
Calcium	60.0	.03	mg/l		EPA 215.1	11-08-1993 1450 ED
Conductivity	534.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Magnesium	31.00	.007	mg/l		EPA 242.1	11-08-1993 1630 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	11-16-1993 1215 ET
Oxygen, Dissolved	8.25	.01	mg/l		EPA 360.1	09-27-1993 1240 LS
pH	7.81	----	Units		EPA 150.1	09-27-1993 1300 LS

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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October 20, 1993

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Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

East Mountain Springs Elk Springs
Temperature 43.8°F
Flow 0.20/72.7 GPM
Rec'd 0745 hr.
Sampled 1259 hr.

FIELD MEASUREMENTS

pH	8.21
Conductivity	398
DO	12.7

Analysis report no. 59-13580

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 0740 LS
Alkalinity, Total	249	2	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 0740 LS
Calcium	39.8	.03	mg/l		EPA 215.1	10-19-1993 0925 ED
Conductivity	471.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Magnesium	21.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410 ED
Oxygen, Dissolved	8.26	.01	mg/l		EPA 360.1	09-27-1993 1240 KP
pH	8.00	----	Units		EPA 150.1	09-27-1993 1300 LS

Respectfully submitted,
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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Sheba Springs
Temperature 47.1°F
Flow 1.3 GPM
Rec'd 0745 hr.
Sampled 1246 hr.

FIELD MEASUREMENTS

pH	7.98
Conductivity	395
DO	11.8

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13581

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Ana	
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 0740	LS
Alkalinity, Total	256	2	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 0740	LS
Calcium	53.7	.03	mg/l		EPA 215.1	10-19-1993 0925	ED
Conductivity	466.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	KP
Magnesium	9.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410	ED
Oxygen, Dissolved	8.26	.01	mg/l		EPA 360.1	09-27-1993 1240	KP
pH	8.03	----	Units		EPA 150.1	09-27-1993 1300	LS

Respectfully submitted,
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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-10
Temperature 46.4°F
Flow 8.3 GPM
Rec'd 0745 hr.
Sampled 1232 hr.

FIELD MEASUREMENTS

pH	8.22
Conductivity	431
DO	13.1

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13579

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 LS
Alkalinity, Total	257	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 LS
Calcium	53.7	.03	mg/l		EPA 215.1	10-19-1993 0925 ED
Conductivity	507.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Magnesium	22.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410 ED
Oxygen, Dissolved	8.24	.01	mg/l		EPA 360.1	09-27-1993 1240 KP
pH	7.85	----	Units		EPA 150.1	09-27-1993 1300 LS

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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-26
Temperature 57.5°F
Flow 1.1 GPM
Rec'd 0745 hr.
Sampled 1356 hr.

FIELD MEASUREMENTS

pH	8.40
Conductivity	484
DO	10.0

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13577

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Anal	
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Alkalinity, Total	266	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Calcium	33.5	.03	mg/l		EPA 215.1	10-19-1993 0925	ED
Conductivity	536.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	KP
Magnesium	28.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410	ED
Oxygen, Dissolved	8.16	.01	mg/l		EPA 360.1	09-27-1993 1240	KP
pH	8.26	----	Units		EPA 150.1	09-27-1993 1300	LS

Respectfully submitted,
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Manager, Huntington Laboratory

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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-29
Temperature 48.1°F
Flow 2.1 GPM
Rec'd 0745 hr.
Sampled 1343 hr.

FIELD MEASUREMENTS

pH	7.75
Conductivity	513
DO	9.7

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13573

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 LS
Alkalinity, Total	279	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 LS
Calcium	35.3	.03	mg/l		EPA 215.1	10-19-1993 0925 ED
Conductivity	597.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Magnesium	29.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410 ED
Oxygen, Dissolved	8.11	.01	mg/l		EPA 360.1	09-27-1993 1240 KP
pH	7.69	----	Units		EPA 150.1	09-27-1993 1300 LS

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-35
Temperature 44.5°F
Flow 2.7 GPM
Rec'd 0745 hr.
Sampled 1318 hr.

FIELD MEASUREMENTS

pH	7.77
Conductivity	426
DO	11.5

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13574

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Anal	
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Alkalinity, Total	252	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Calcium	59.8	.03	mg/l		EPA 215.1	10-19-1993 0925	ED
Conductivity	478.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	KP
Magnesium	18.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410	ED
Oxygen, Dissolved	8.24	.01	mg/l		EPA 360.1	09-27-1993 1240	KP
pH	7.80	----	Units		EPA 150.1	09-27-1993 1300	LS

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 82-52
Temperature 42.4°F
Flow 5.5 GPM
Rec'd 0745 hr.
Sampled 1501 hr.

FIELD MEASUREMENTS

pH	7.39
Conductivity	623
DO	11.2

Kind of sample reported to us: Water

Sample taken at: East Mountain Springs

Sample taken by: Energy West/CS

Date sampled: September 26, 1993

Date received: September 27, 1993

Analysis report no. 59-13578

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 LS
Alkalinity, Total	339	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600 LS
Calcium	54.3	.03	mg/l		EPA 215.1	10-19-1993 0925 ED
Conductivity	704.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Magnesium	33.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410 ED
Oxygen, Dissolved	8.16	.01	mg/l		EPA 360.1	09-27-1993 1240 KP
pH	7.79	----	Units		EPA 150.1	09-27-1993 1300 LS

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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October 20, 1993

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

RECEIVED
10/20/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 84-56
Temperature 47.2°F
Flow 0.83 GPM
Rec'd 0745 hr.
Sampled 1416 hr.

FIELD MEASUREMENTS

pH	7.53
Conductivity	529
DO	9.3

Kind of sample reported to us Water

Sample taken at East Mountain Springs

Sample taken by Energy West/CS

Date sampled September 26, 1993

Date received September 27, 1993

Analysis report no. 59-13576

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Anal	
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	[illegible]
Alkalinity, Total	283	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Calcium	47.8	.03	mg/l		EPA 215.1	10-19-1993 0925	ED
Conductivity	598.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	KP
Magnesium	30.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410	ED
Oxygen, Dissolved	8.12	.01	mg/l		EPA 360.1	09-27-1993 1240	KP
pH	7.54	----	Units		EPA 150.1	09-27-1993 1300	LS

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 1, 1993

Date received November 2, 1993

East Mountain Springs Burnt Tree
Temperature 42.7°F
Flow 10.0 GPM
Rec'd 0830 hr.
Sampled 1524 hr.

FIELD MEASUREMENTS

pH	7.63
Conductivity	457
DO	13.0

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13707

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	329	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	270	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	5.80	----	meq/l		---------	----------	-----	--
Calcium	52.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	5.70	----	meq/l		---------	----------	-----	--
Chloride	7.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	458.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	253.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	30.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
Oxygen, Dissolved	7.64	.01	mg/l		EPA 360.1	11-02-1993	1020	LS
pH	7.75	----	Units		EPA 150.1	11-02-1993	1030	LS
Potassium	2.0	.1	mg/l		EPA 258.1	12-13-1993	1220	ED
Sodium	14.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	294	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	1	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	9	1	mg/l		EPA 375.4	12-09-1993	0900	LS
Cation/Anion Balance	-1.00	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 9, 1993

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

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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Elk Springs
Temperature 38.4°F
Flow 0.17/~~GPM~~ 56.2 GPM
Rec'd 1630 hr.
Sampled 1451 hr.

FIELD MEASUREMENTS

pH	8.50
Conductivity	433
DO	8.0

NOTE: DO Probe was inoperational. Holding time expipred when Sulfate was run.

FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Analysis report no. 59-13693

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	276	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	
Alkalinity, Total	227	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	
Anions	4.70	----	meq/l		---------	----------	-----	--
Calcium	52.0	.03	mg/l		EPA 215.1	12-02-1993	1100	DW
Cations	5.00	----	meq/l		---------	----------	-----	--
Chloride	5.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	364.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	233.0	.03	mg/l	$CaCO_3$	---------	12-02-1993	1100	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-01-1993	1500	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993	0920	ED
Magnesium	25.00	.007	mg/l		EPA 242.1	11-30-1993	1100	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993	0830	DW
pH	7.97	----	Units		EPA 150.1	10-29-1993	1730	LM
Potassium	2.0	.1	mg/l		EPA 258.1	11-30-1993	1500	DW
Sodium	7.0	.2	mg/l		EPA 273.1	11-30-1993	1300	DW
Solids, Total Dissolved	283	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	5	7	mg/l		EPA 160.2	11-02-1993	0800	LM
Sulfate	8	1	mg/l		EPA 375.4	12-08-1993	0945	LS
Cation/Anion Balance	2.90	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Sheba Springs
Temperature 41.3°F
Flow 1.3 GPM
Rec'd 1630 hr.
Sampled 1531 hr.

FIELD MEASUREMENTS

pH	8.01
Conductivity	434
DO	11.8

NOTE: Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Analysis report no. 59-13695

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	284	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	233	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	4.90	----	meq/l		---------	----------	-----	--
Calcium	73.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	4.60	----	meq/l		---------	----------	-----	--
Chloride	5.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	304.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	223.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	ED
Iron, Dissolved	0.20	.05	mg/l		EPA 236.1	12-08-1993	0920	ED
Magnesium	10.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
pH	7.38	----	Units		EPA 150.1	10-29-1993	1730	LM
Potassium	<2.0	.1	mg/l		EPA 258.1	12-13-1993	1220	DW
Sodium	3.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	255	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	7	7	mg/l		EPA 160.2	11-02-1993	0800	LM
Sulfate	4	1	mg/l		EPA 375.4	12-09-1993	0900	LS
Cation/Anion Balance	-3.00	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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Huntington UT 84528

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs Teds Tub
Temperature 38.0°F
Flow 6.7 GPM
Rec'd 1500 hr.
Sampled 1121 hr.

FIELD MEASUREMENTS

pH	7.85
Conductivity	487
DO	9.7

NOTE: Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 4, 1993

Date received November 4, 1993

Analysis report no. 59-13714

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	337	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	
Alkalinity, Total	277	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Anions	6.00	----	meq/l		---------	---------- -----	--
Calcium	73.0	.03	mg/l		EPA 215.1	12-13-1993 1500	DW
Cations	6.40	----	meq/l		---------	---------- -----	--
Chloride	7.0	.5	mg/l		EPA 325.3	11-30-1993 1000	LM
Conductivity	462.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500	LS
Hardness, Total	281.0	.03	mg/l	$CaCO_3$	---------	12-13-1993 1500	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500	DW
Magnesium	24.00	.007	mg/l		EPA 242.1	12-14-1993 1100	ED
Manganese	<0.10	.03	mg/l		EPA 243.1	12-13-1993 1400	DW
Oxygen, Dissolved	8.31	.01	mg/l		EPA 360.1	11-04-1993 1530	LS
pH	7.26	----	Units		EPA 150.1	11-04-1993 1520	LS
Potassium	3.0	.1	mg/l		EPA 258.1	12-13-1993 1220	ED
Sodium	17.0	.2	mg/l		EPA 273.1	12-14-1993 1210	ED
Solids, Total Dissolved	304	14	mg/l		EPA 160.1	11-09-1993 1005	LM
Solids, Total Suspended	6	7	mg/l		EPA 160.2	11-05-1993 1000	LM
Sulfate	14	1	mg/l		EPA 375.4	12-10-1993 1030	LS
Cation/Anion Balance	2.70	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 1, 1993

Date received November 2, 1993

East Mountain Springs 79-2
Temperature 41.4°F
Flow 2.2 GPM
Rec'd 0830 hr.
Sampled 1513 hr.

FIELD MEASUREMENTS

pH	7.49
Conductivity	476
DO	10.9

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13703

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	341	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	280	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	5.90	----	meq/l		---------	----------	-----	--
Calcium	66.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	5.60	----	meq/l		---------	----------	-----	--
Chloride	5.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	406.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	251.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	21.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
Oxygen, Dissolved	8.35	.01	mg/l		EPA 360.1	11-02-1993	1020	LS
pH	7.58	----	Units		EPA 150.1	11-02-1993	1030	LS
Potassium	2.0	.1	mg/l		EPA 258.1	12-13-1993	1220	ED
Sodium	14.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	325	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	6	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	9	1	mg/l		EPA 375.4	12-09-1993	0900	LS
Cation/Anion Balance	-2.60	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-10
Temperature 42.2°F
Flow 6.7 GPM
Rec'd 1630 hr.
Sampled 1521 hr.

FIELD MEASUREMENTS

pH	8.56
Conductivity	458
DO	8.8

NOTE: DO Probe was inoperational. Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Analysis report no. 59-13692

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	325	2	mg/l	$CaCO_3$	EPA 310.1	11-05-1993	0845	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-05-1993	0845	LS
Alkalinity, Total	267	2	mg/l	$CaCO_3$	EPA 310.1	11-05-1993	0845	LS
Anions	5.50	----	meq/l		---------	----------	-----	--
Calcium	65.0	.03	mg/l		EPA 215.1	12-02-1993	1100	DW
Cations	5.40	----	meq/l		---------	----------	-----	--
Chloride	4.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	383.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	261.0	.03	mg/l	$CaCO_3$	---------	12-02-1993	1100	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-01-1993	1500	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993	0920	ED
Magnesium	24.00	.007	mg/l		EPA 242.1	11-30-1993	1100	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993	0830	DW
pH	7.06	----	Units		EPA 150.1	10-29-1993	1730	LM
Potassium	<2.0	.1	mg/l		EPA 258.1	11-30-1993	1500	DW
Sodium	5.0	.2	mg/l		EPA 273.1	11-30-1993	1300	DW
Solids, Total Dissolved	302	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	3	7	mg/l		EPA 160.2	11-02-1993	0800	LM
Sulfate	7	1	mg/l		EPA 375.4	12-08-1993	0945	LS
Cation/Anion Balance	-0.20	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-15
Temperature 44.9°F
Flow 3.8 GPM
Rec'd 1500 hr.
Sampled 1104 hr.

FIELD MEASUREMENTS

pH	8.81
Conductivity	447
DO	12.5

NOTE: Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 4, 1993

Date received November 4, 1993

Analysis report no. 59-13717

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	319	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030 LS
Alkalinity, Total	262	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030 LS
Anions	5.60	----	meq/l		---------	---------- ----- --
Calcium	68.0	.03	mg/l		EPA 215.1	12-13-1993 1500 DW
Cations	5.60	----	meq/l		---------	---------- ----- --
Chloride	6.0	.5	mg/l		EPA 325.3	11-30-1993 1000 LM
Conductivity	412.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500 LS
Hardness, Total	269.0	.03	mg/l	$CaCO_3$	---------	12-13-1993 1500 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1240 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500 DW
Magnesium	24.00	.007	mg/l		EPA 242.1	12-14-1993 1100 ED
Manganese	<0.10	.03	mg/l		EPA 243.1	12-13-1993 1400 DW
Oxygen, Dissolved	8.29	.01	mg/l		EPA 360.1	11-04-1993 1530 LS
pH	7.27	----	Units		EPA 150.1	11-04-1993 1520 LS
Potassium	2.0	.1	mg/l		EPA 258.1	12-13-1993 1220 ED
Sodium	6.0	.2	mg/l		EPA 273.1	12-14-1993 1210 ED
Solids, Total Dissolved	287	14	mg/l		EPA 160.1	11-09-1993 1005 LM
Solids, Total Suspended	<4	7	mg/l		EPA 160.2	11-05-1993 1000 LM
Sulfate	8	1	mg/l		EPA 375.4	12-10-1993 1030 LS
Cation/Anion Balance	0.50	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

December 14, 1993

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

RECEIVED
12/14/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-26
Temperature 49.1°F
Flow 0.85 GPM
Rec'd 0830 hr.
Sampled 1407 hr.

FIELD MEASUREMENTS

pH	8.68
Conductivity	471
DO	5.5

NOTE: Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 1, 1993

Date received November 2, 1993

Analysis report no. 59-13706

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	330	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	[illegible]
Alkalinity, Total	271	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	[illegible]
Anions	5.80	----	meq/l		---------	----------	-----	--
Calcium	45.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	5.60	----	meq/l		---------	----------	-----	--
Chloride	5.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	502.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	252.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	34.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
Oxygen, Dissolved	8.49	.01	mg/l		EPA 360.1	11-02-1993	1020	LS
pH	8.20	----	Units		EPA 150.1	11-02-1993	1030	LS
Potassium	3.0	.1	mg/l		EPA 258.1	12-13-1993	1220	ED
Sodium	13.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	316	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	2	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	10	1	mg/l		EPA 375.4	12-09-1993	0900	LS
Cation/Anion Balance	-1.40	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 1, 1993

Date received November 2, 1993

East Mountain Springs 79-29
Temperature 43.2°F
Flow 2.1 GPM
Rec'd 0830 hr.
Sampled 1356 hr.

FIELD MEASUREMENTS

pH	7.62
Conductivity	558
DO	11.9

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13708

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	322	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	264	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	6.30	----	meq/l		---------	----------	-----	--
Calcium	36.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	6.10	----	meq/l		---------	----------	-----	--
Chloride	15.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	564.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LSD
Hardness, Total	238.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	36.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
Oxygen, Dissolved	7.40	.01	mg/l		EPA 360.1	11-02-1993	1020	LS
pH	7.95	----	Units		EPA 150.1	11-02-1993	1030	LS
Potassium	4.0	.1	mg/l		EPA 258.1	12-13-1993	1220	ED
Sodium	30.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	328	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	3	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	27	1	mg/l		EPA 375.4	12-10-1993	1030	LS
Cation/Anion Balance	-1.60	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-35
Temperature 43.2°F
Flow 1.2 GPM
Rec'd 1630 hr.
Sampled 15.07hr.

FIELD MEASUREMENTS

pH	7.80
Conductivity	422
DO	11.1

NOTE: DO Probe was inoperational. Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Analysis report no. 59-13698

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	289	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 [illegible]
Alkalinity, Total	238	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Anions	4.90	----	meq/l		---------	---------- ----- --
Calcium	66.0	.03	mg/l		EPA 215.1	12-08-1993 1330 DW
Cations	4.90	----	meq/l		---------	---------- ----- --
Chloride	4.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	344.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500 LS
Hardness, Total	239.0	.03	mg/l	$CaCO_3$	---------	12-08-1993 1330 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1240 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500 DW
Magnesium	18.00	.007	mg/l		EPA 242.1	12-08-1993 1430 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993 1010 ED
pH	6.95	----	Units		EPA 150.1	10-29-1993 1730 LM
Potassium	2.0	.1	mg/l		EPA 258.1	12-13-1993 1220 ED
Sodium	3.0	.2	mg/l		EPA 273.1	12-09-1993 1000 DW
Solids, Total Dissolved	246	14	mg/l		EPA 160.1	11-05-1993 0730 LM
Solids, Total Suspended	1	7	mg/l		EPA 160.2	11-02-1993 0800 LM
Sulfate	4	1	mg/l		EPA 375.4	12-09-1993 0900 LS
Cation/Anion Balance	-0.40	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 28, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 79-3g

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 4, 1993

Date received November 4, 1993

Temperature 43.2°F
Flow 1.8 GPM
Rec'd 1500 hr.
Sampled 1154 hr.

FIELD MEASUREMENTS

pH	8.02
Conductivity	597
DO	8.8

Note: Sulfate was expired when ran
Amended Alkalinity, Carbonate

Analysis report no. 59-13715

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	341	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Alkalinity, Total	342	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Anions	8.20	----	meq/l		---------	---------- -----	--
Calcium	34.0	.03	mg/l		EPA 215.1	12-22-1993 1430	DW
Cations	7.00	----	meq/l		---------	---------- -----	--
Chloride	13.0	.5	mg/l		EPA 325.3	11-30-1993 1000	LM
Conductivity	599.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500	LS
Hardness, Total	233.0	.03	mg/l	$CaCO_3$	---------	12-22-1993 1430	DW
Iron	5.00	.05	mg/l		EPA 236.1	12-21-1993 1130	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500	DW
Magnesium	36.00	.007	mg/l		EPA 242.1	12-20-1993 1500	DW
Manganese	0.20	.03	mg/l		EPA 243.1	12-21-1993 1030	DW
Oxygen, Dissolved	8.27	.01	mg/l		EPA 360.1	11-04-1993 1530	LS
pH	7.46	----	Units		EPA 150.1	11-04-1993 1520	LS
Potassium	2.0	.1	mg/l		EPA 258.1	12-20-1993 1030	DW
Sodium	54.0	.2	mg/l		EPA 273.1	12-20-1993 1145	DW
Sulfate	50	1	mg/l		EPA 375.4	12-10-1993 1030	LS
Cation/Anion Balance	-8.1	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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December 14, 1993

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

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Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water FIELD OFFICE

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 1, 1993

Date received November 2, 1993

East Mountain Springs 80-47
Temperature 39.1°F
Flow 7.5 GPM
Rec'd 0830 hr.
Sampled 1452 hr.

FIELD MEASUREMENTS

pH	8.56
Conductivity	454
DO	10.0

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13705

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	345	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 [illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 [illegible]
Alkalinity, Total	283	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Anions	6.10	----	meq/l		---------	---------- ----- --
Calcium	58.0	.03	mg/l		EPA 215.1	12-08-1993 1330 DW
Cations	6.10	----	meq/l		---------	---------- ----- --
Chloride	7.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	467.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500 LS
Hardness, Total	277.0	.03	mg/l	$CaCO_3$	---------	12-08-1993 1330 DW
Iron	0.20	.05	mg/l		EPA 236.1	12-10-1993 1240 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500 DW
Magnesium	32.00	.007	mg/l		EPA 242.1	12-08-1993 1430 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993 1010 ED
Oxygen, Dissolved	9.06	.01	mg/l		EPA 360.1	11-02-1993 1020 LS
pH	7.81	----	Units		EPA 150.1	11-02-1993 1030 LS
Potassium	2.0	.1	mg/l		EPA 258.1	12-13-1993 1220 ED
Sodium	13.0	.2	mg/l		EPA 273.1	12-09-1993 1000 DW
Solids, Total Dissolved	335	14	mg/l		EPA 160.1	11-05-1993 0730 LM
Solids, Total Suspended	11	7	mg/l		EPA 160.2	11-05-1993 1000 LM
Sulfate	13	1	mg/l		EPA 375.4	12-09-1993 0900 LS
Cation/Anion Balance	-0.30	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 9, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 80-48
Temperature 46.2°F
Flow 2.4 GPM
Rec'd 1630 hr.
Sampled 1330 hr.

FIELD MEASUREMENTS

pH	8.72
Conductivity	441
DO	12.2

NOTE: DO Probe was inoperational. Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Analysis report no. 59-13694

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	355	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Total	291	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Anions	6.00	----	meq/l		---------	---------- ----- --
Calcium	65.0	.03	mg/l		EPA 215.1	12-02-1993 1100 DW
Cations	6.10	----	meq/l		---------	---------- ----- --
Chloride	7.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	421.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500 LS
Hardness, Total	294.0	.03	mg/l	$CaCO_3$	---------	12-02-1993 1100 DW
Iron	0.30	.05	mg/l		EPA 236.1	12-01-1993 1500 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993 0920 ED
Magnesium	32.00	.007	mg/l		EPA 242.1	11-30-1993 1100 DW
Manganese	0.10	.03	mg/l		EPA 243.1	12-02-1993 0830 DW
pH	7.75	----	Units		EPA 150.1	10-29-1993 1730 LM
Potassium	<2.0	.1	mg/l		EPA 258.1	11-30-1993 1500 DW
Sodium	5.0	.2	mg/l		EPA 273.1	11-30-1993 1300 DW
Solids, Total Dissolved	306	14	mg/l		EPA 160.1	11-05-1993 0730 LM
Solids, Total Suspended	22	7	mg/l		EPA 160.2	11-02-1993 0800 LM
Sulfate	7	1	mg/l		EPA 375.4	12-08-1993 0945 LS
Cation/Anion Balance	0.50	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 82-52
Temperature 44.3°F
Flow 4.0 GPM
Rec'd 1500 hr.
Sampled 1214 hr.

FIELD MEASUREMENTS

pH	7.90
Conductivity	597
DO	12.4

NOTE: Holding time expired when Sulfate was run.

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 4, 1993

Date received November 4, 1993

Analysis report no. 59-13716

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	405	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993	1030	[illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-15-1993	1030	[illegible]
Alkalinity, Total	332	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993	1030	LS
Anions	7.60	----	meq/l		---------	----------	-----	--
Calcium	75.0	.03	mg/l		EPA 215.1	12-13-1993	1500	DW
Cations	8.10	----	meq/l		---------	----------	-----	--
Chloride	11.0	.5	mg/l		EPA 325.3	11-30-1993	1000	LM
Conductivity	573.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	348.0	.03	mg/l	$CaCO_3$	---------	12-13-1993	1500	DW
Iron	0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	39.00	.007	mg/l		EPA 242.1	12-14-1993	1100	ED
Manganese	<0.10	.03	mg/l		EPA 243.1	12-13-1993	1400	DW
Oxygen, Dissolved	8.67	.01	mg/l		EPA 360.1	11-04-1993	1530	LS
pH	7.28	----	Units		EPA 150.1	11-04-1993	1520	LS
Potassium	3.0	.1	mg/l		EPA 258.1	12-13-1993	1220	ED
Sodium	27.0	.2	mg/l		EPA 273.1	12-14-1993	1210	ED
Solids, Total Dissolved	400	14	mg/l		EPA 160.1	11-09-1993	1005	LM
Solids, Total Suspended	7	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	29	1	mg/l		EPA 375.4	12-13-1993	1500	DW
Cation/Anion Balance	3.70	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 14, 1993

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FIELD OFFICE

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled November 1, 1993

Date received November 2, 1993

East Mountain Springs 84-56
Temperature 42.3°F
Flow 1.1 GPM
Rec'd 0830 hr.
Sampled 1423 hr.

FIELD MEASUREMENTS

pH	8.37
Conductivity	522
DO	8.0

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13704

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	357	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Total	293	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Anions	6.60	----	meq/l		---------	---------- ----- --
Calcium	56.0	.03	mg/l		EPA 215.1	12-08-1993 1330 DW
Cations	6.30	----	meq/l		---------	---------- ----- --
Chloride	8.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	557.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500 LS
Hardness, Total	280.0	.03	mg/l	$CaCO_3$	---------	12-08-1993 1330 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1240 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500 DW
Magnesium	34.00	.007	mg/l		EPA 242.1	12-08-1993 1430 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993 1010 ED
Oxygen, Dissolved	7.29	.01	mg/l		EPA 360.1	11-02-1993 1020 LS
pH	7.49	----	Units		EPA 150.1	11-02-1993 1030 LS
Potassium	2.0	.1	mg/l		EPA 258.1	12-13-1993 1220 ED
Sodium	16.0	.2	mg/l		EPA 273.1	12-09-1993 1000 DW
Solids, Total Dissolved	345	14	mg/l		EPA 160.1	11-05-1993 0730 LM
Solids, Total Suspended	5	7	mg/l		EPA 160.2	11-05-1993 1000 LM
Sulfate	23	1	mg/l		EPA 375.4	12-09-1993 0900 LS
Cation/Anion Balance	-2.10	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

December 14, 1993

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

RECEIVED
12/14/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 89-61
Temperature 38.7°F
Flow 24.0 GPM
Rec'd 1630 hr.
Sampled 1426 hr.

FIELD MEASUREMENTS

pH	8.27
Conductivity	500
DO	13.4

NOTE: DO Probe was inoperational. Holding time expired when Sulfate was run.

Analysis report no. 59-13697

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	334	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	274	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	5.90	----	meq/l		---------	----------	-----	--
Calcium	61.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	5.60	----	meq/l		---------	----------	-----	--
Chloride	3.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	457.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	264.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	27.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
pH	6.60	----	Units		EPA 150.1	10-29-1993	1730	LM
Potassium	<2.0	.1	mg/l		EPA 258.1	12-13-1993	1220	DW
Sodium	7.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	300	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	12	7	mg/l		EPA 160.2	11-02-1993	0800	LM
Sulfate	14	1	mg/l		EPA 375.4	12-09-1993	0900	LS
Cation/Anion Balance	-2.50	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306
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PLEASE ADDRESS ALL CORRESPONDENCE TO:
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FAX: (801) 653-2436

December 14, 1993

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

RECEIVED
12/14/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at East Mountain

Sample taken by Energy West/CS

Date sampled October 29, 1993

Date received October 29, 1993

Sample identification by
PACIFICORP FIELD OFFICE

East Mountain Springs 89-67
Temperature 40.5°F
Flow 2.7 GPM
Rec'd 1630 hr.
Sampled 1345 hr.

FIELD MEASUREMENTS

pH	8.50
Conductivity	460
DO	9.9

NOTE: DO Probe was inoperational. Holding time expired when Sulfate was run.

Analysis report no. 59-13696

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	317	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	260	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	5.70	----	meq/l		---------	----------	-----	--
Calcium	48.0	.03	mg/l		EPA 215.1	12-08-1993	1330	DW
Cations	5.60	----	meq/l		---------	----------	-----	--
Chloride	6.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	499.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	259.0	.03	mg/l	$CaCO_3$	---------	12-08-1993	1330	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	33.00	.007	mg/l		EPA 242.1	12-08-1993	1430	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-08-1993	1010	ED
pH	7.42	----	Units		EPA 150.1	10-29-1993	1730	LM
Potassium	<2.0	.1	mg/l		EPA 258.1	12-13-1993	1220	DW
Sodium	11.0	.2	mg/l		EPA 273.1	12-09-1993	1000	DW
Solids, Total Dissolved	288	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	7	7	mg/l		EPA 160.2	11-02-1993	0800	LM
Sulfate	15	1	mg/l		EPA 375.4	12-09-1993	0900	LS
Cation/Anion Balance	-0.80	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

June 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Rilda Canyon

Sample taken by Energy West/CS

Date sampled June 11, 1993

Date received June 11, 1993

Rilda Canyon Meter 2
Temperature 47.9°F
Flow 8.6 GPM
Rec'd 1600 hr.
Sampled 1246 hr.

FIELD MEASUREMENTS

pH	7.43
Conductivity	758
D.O.	3.4

Analysis report no. 59-13180

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	9	1	mg/l $CaCO_3$	EPA 305.1	06-23-1993 10:00 LS
Alkalinity, Bicarbonate	369	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Total	303	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Anions	7.85	----	meq/l	---------	---------- ----- --
Calcium	89.0	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	9.22	----	meq/l	---------	---------- ----- --
Chloride	9.5	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	660	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	422	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	0.46	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	0.17	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	48.60	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oxygen, Dissolved	5.1	.01	mg/l	EPA 360.1	06-11-1993 16:00 LM
pH	6.90	----	Units	EPA 150.1	06-11-1993 16:00 LM
Potassium	6.60	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	14.20	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	492.0	14	mg/l	EPA 160.1	06-14-1993 13:00 LM
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	06-15-1993 08:00 LM
Sulfate	80.0	1	mg/l	EPA 375.4	06-21-1993 13:50 LS
Cation/Anion Balance	8.02	----	%	---------	---------- ----- --

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6/24/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

June 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Rilda Canyon

Sample taken by Energy West/CS

Date sampled June 11, 1993

Date received June 11, 1993

Rilda Canyon Meter 3
Temperature 46.2°F
Flow 90 GPM
Rec'd 1600 hr.
Sampled 1245 hr.

FIELD MEASUREMENTS

pH	7.67
Conductivity	640
DO	5.9

Analysis report no. 59-13186

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	8	1	mg/l $CaCO_3$	EPA 305.1	06-23-1993 10:00 LS
Alkalinity, Bicarbonate	330	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Total	271	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Anions	6.47	----	meq/l	---------	---------- ----- --
Calcium	63.8	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	6.62	----	meq/l	---------	---------- ----- --
Chloride	4.8	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	560	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	309	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	0.17	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	0.09	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	36.30	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oxygen, Dissolved	8.3	.01	mg/l	EPA 360.1	06-11-1993 16:00 LM
pH	7.10	----	Units	EPA 150.1	06-11-1993 16:00 LM
Potassium	0.70	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	10.20	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	371.0	14	mg/l	EPA 160.1	06-14-1993 13:00 LM
Solids, Total Suspended	13.0	7	mg/l	EPA 160.2	06-15-1993 08:00 LM
Sulfate	50.0	1	mg/l	EPA 375.4	06-21-1993 13:50 LS
Cation/Anion Balance	1.22	----	%	---------	---------- ----- --

RECEIVED
6/25/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

June 28, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Rilda Canyon

Sample taken by Energy West/CS

Date sampled June 11, 1993

Date received June 11, 1993

Rilda Canyon Meter 4
Temperature 43.6°F
Flow 150 GPM
Rec'd 1600 hr.
Sampled 1245 hr.

FIELD MEASUREMENTS

pH	7.81
Conductivity	575
DO	6.5

Analysis report no. 59-13181

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	3	1	mg/l $CaCO_3$	EPA 305.1	- - 10:00 LS
Alkalinity, Bicarbonate	312	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Total	256	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Anions	6.24	----	meq/l	---------	---------- ----- --
Calcium	59.4	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	6.47	----	meq/l	---------	---------- ----- --
Chloride	6.5	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	520	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	301	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	0.05	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	37.00	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oxygen, Dissolved	8.8	.01	mg/l	EPA 360.1	06-11-1993 16:00 LM
pH	7.11	----	Units	EPA 150.1	06-11-1993 16:00 LM
Potassium	0.60	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	10.50	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	339.0	14	mg/l	EPA 160.1	06-14-1993 13:00 LM
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	06-15-1993 08:00 LM
Sulfate	51.0	1	mg/l	EPA 375.4	06-28-1993 13:00 LS
Cation/Anion Balance	1.77	----	%	---------	---------- ----- --

RECEIVED
6/28/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

AMERICAN COUNCIL OF INDEPENDENT LABORATORIES, INC.

COMMERCIAL TESTING & ENGINEERING CO.
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PLEASE ADDRESS ALL CORRESPONDENCE TO:
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November 16, 1993

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

RECEIVED
11/16/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Rilda Canyon

Sample taken by Energy West/KH

Date sampled September 28, 1993

Date received September 28, 1993

Rilda Canyon Meter #2
Temperature 50.3°F
Flow 2 GPM
Rec'd 1530 hr.
Sampled 1318 hr.

FIELD MEASUREMENTS

pH	7.38
Conductivity	728
DO	4.3

NOTE: Holding times expired when Conductivity and Chloride were run.

Analysis report no. 59-13593

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	457	2	mg/l	$CaCO_3$	EPA 310.1	10-02-1993 0815 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-02-1993 0815 LS
Alkalinity, Total	375	2	mg/l	$CaCO_3$	EPA 310.1	10-02-1993 0815 LS
Anions	9.00	----	meq/l		---------	---------- ----- --
Calcium	97.0	.03	mg/l		EPA 215.1	11-08-1993 1450 ED
Cations	10.40	----	meq/l		---------	---------- ----- --
Chloride	7.0	.5	mg/l		EPA 325.3	11-01-1993 0900 LM
Conductivity	778.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945 ED
Hardness, Total	485.0	.03	mg/l	$CaCO_3$	---------	11-08-1993 1450 ED
Iron	0.19	.05	mg/l		EPA 236.1	11-16-1993 1100 ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	11-16-1993 1020 ED
Magnesium	59.00	.007	mg/l		EPA 242.1	11-08-1993 1630 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	11-16-1993 1215 ED
Oxygen, Dissolved	10.11	.01	mg/l		EPA 360.1	09-28-1993 1535 LS
pH	6.81	----	Units		EPA 150.1	09-28-1993 1545 LS
Potassium	<10.0	.1	mg/l		EPA 258.1	11-09-1993 1315 ED
Sodium	17.0	.2	mg/l		EPA 273.1	11-09-1993 1135 ED
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	09-29-1993 0930 LS
Solids, Total Dissolved	498	14	mg/l		EPA 160.1	09-30-1993 0745 LM
Solids, Total Suspended	8	7	mg/l		EPA 160.2	10-04-1993 1300 LM
Sulfate	70	1	mg/l		EPA 375.4	11-02-1993 1230 LS
Cation/Anion Balance	7.40	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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TEL: (801) 653-2311
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November 16, 1993

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

RECEIVED
11/16/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Rilda Canyon

Sample taken by Energy West/KH

Date sampled September 28, 1993

Date received September 28, 1993

Rilda Canyon Meter #3
Temperature 48.5°F
Flow 60 GPM
Rec'd 1535 hr.
Sampled 1310 hr.

FIELD MEASUREMENTS

pH	7.55
Conductivity	641
DO	7.0

NOTE: DO Probe was inoperational. Holding times expired when Conductivity and Chloride were run.

Analysis report no. 59-13597

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	408	2	mg/l	$CaCO_3$	EPA 310.1	10-12-1993	0815	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-12-1993	0815	LS
Alkalinity, Total	336	2	mg/l	$CaCO_3$	EPA 310.1	10-12-1993	0815	LS
Anions	8.30	----	meq/l		---------	----------	-----	--
Calcium	85.0	.03	mg/l		EPA 215.1	11-08-1993	1450	ED
Cations	9.50	----	meq/l		---------	----------	-----	--
Chloride	12.0	.5	mg/l		EPA 325.3	11-01-1993	0900	LM
Conductivity	719.00	0.2	umhos/cm		EPA 120.1	10-28-1993	0945	ED
Hardness, Total	435.0	.03	mg/l	$CaCO_3$	---------	11-08-1993	1450	ED
Iron	0.10	.05	mg/l		EPA 236.1	11-16-1993	1100	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	11-16-1993	1020	ED
Magnesium	54.00	.007	mg/l		EPA 242.1	11-08-1993	1630	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	01-16-1993	1215	ED
pH	7.09	----	Units		EPA 150.1	09-28-1993	1545	LS
Potassium	<10.0	.1	mg/l		EPA 258.1	11-09-1993	1315	ED
Sodium	18.0	.2	mg/l		EPA 273.1	11-09-1993	1135	ED
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	09-29-1993	0930	LS
Solids, Total Dissolved	450	14	mg/l		EPA 160.1	09-30-1993	0745	LM
Solids, Total Suspended	46	7	mg/l		EPA 160.2	10-04-1993	1300	LM
Sulfate	70	1	mg/l		EPA 375.4	11-04-1993	1110	LS
Cation/Anion Balance	6.30	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

AMERICAN COUNCIL OF INDEPENDENT LABORATORIES, INC.

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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TERMS AND CONDITIONS ON REVERSE

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November 16, 1993

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

RECEIVED
11/16/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Rilda Canyon

Sample taken by Energy West/KH

Date sampled September 28, 1993

Date received September 28, 1993

Rilda Canyon Meter #4
Temperature 48.5°F
Flow 110 GPM
Rec'd 1535 hr.
Sampled 1300 hr.

FIELD MEASUREMENTS

pH	7.69
Conductivity	576
DO	9.1

NOTE: DO Probe was inoperational. Holding times expired when Conductivity and Chloride were run.

Analysis report no. 59-13599

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	376	2	mg/l	$CaCO_3$	EPA 310.1	10-02-1993	0815	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-02-1993	0815	LS
Alkalinity, Total	331	2	mg/l	$CaCO_3$	EPA 310.1	10-02-1993	0815	LS
Anions	7.30	----	meq/l		---------	----------	-----	--
Calcium	54.0	.03	mg/l		EPA 215.1	11-16-1993	1310	ED
Cations	7.90	----	meq/l		---------	----------	-----	--
Chloride	9.0	.5	mg/l		EPA 325.3	11-01-1993	0900	LM
Conductivity	673.00	0.2	umhos/cm		EPA 120.1	10-28-1993	0945	ED
Hardness, Total	365.0	.03	mg/l	$CaCO_3$	---------	11-16-1993	1310	ED
Iron	0.06	.05	mg/l		EPA 236.1	11-16-1993	1100	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	11-16-1993	1020	ED
Magnesium	56.00	.007	mg/l		EPA 242.1	11-08-1993	1630	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	01-16-1993	1215	ED
pH	7.09	----	Units		EPA 150.1	09-28-1993	1545	LS
Potassium	<10.0	.1	mg/l		EPA 258.1	11-09-1993	1315	ED
Sodium	15.0	.2	mg/l		EPA 273.1	11-09-1993	1135	ED
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	09-29-1993	0930	LS
Solids, Total Dissolved	406	14	mg/l		EPA 160.1	09-30-1993	0745	LM
Solids, Total Suspended	14	7	mg/l		EPA 160.2	10-04-1993	1300	LM
Sulfate	50	1	mg/l		EPA 375.4	11-04-1993	1110	LS
Cation/Anion Balance	4.10	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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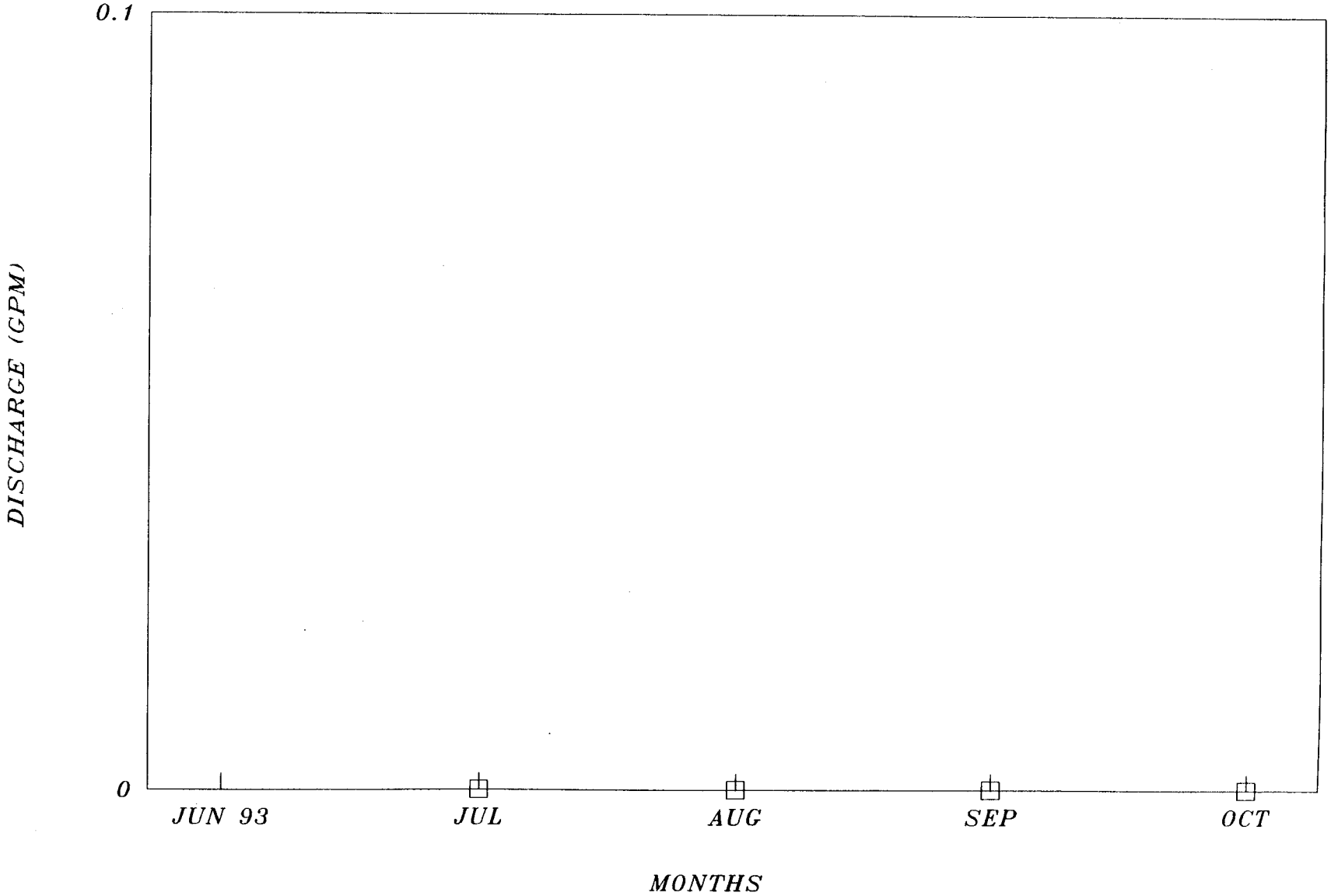
TERMS AND CONDITIONS ON REVERSE

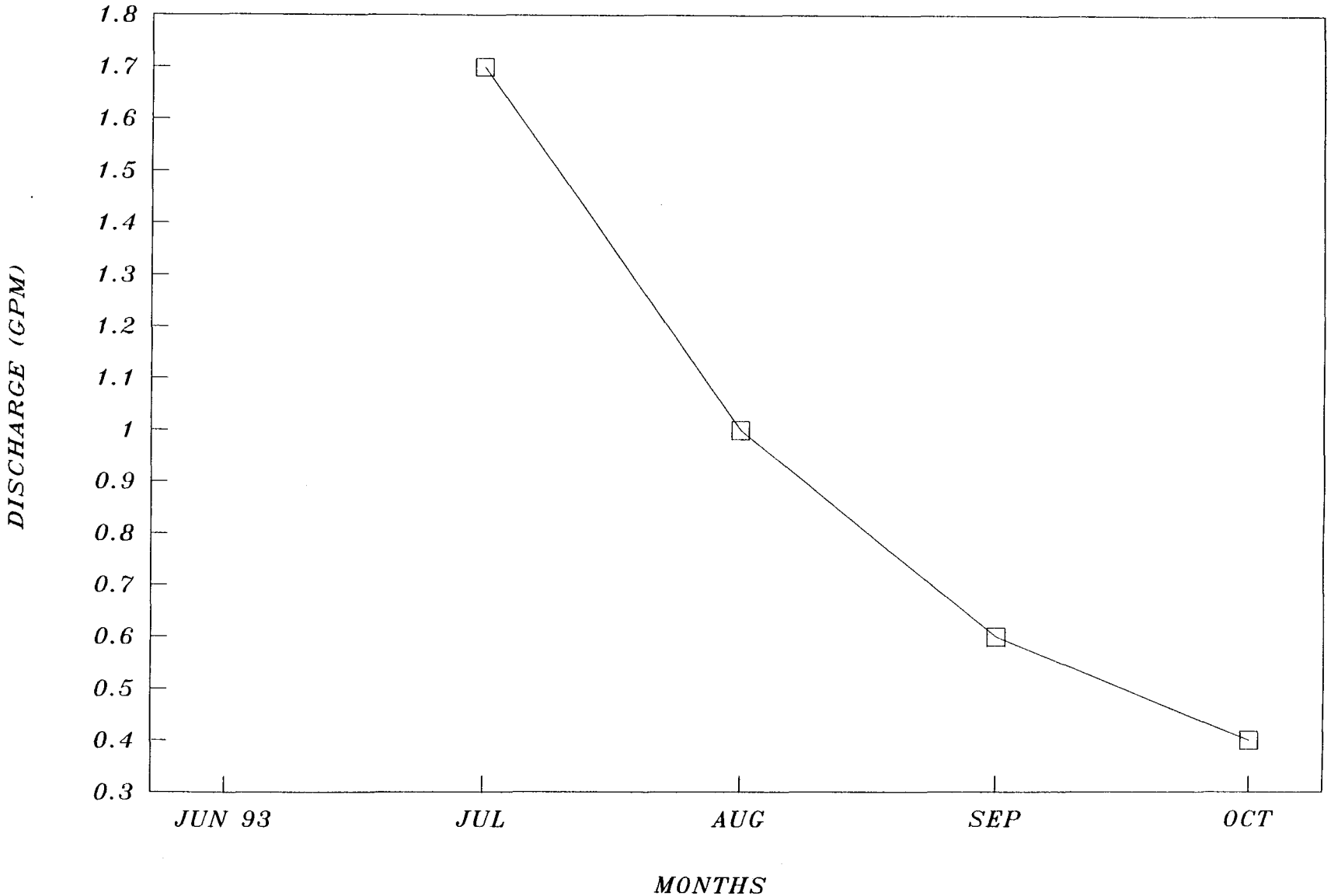
17-14-4

Discharge Recession Study



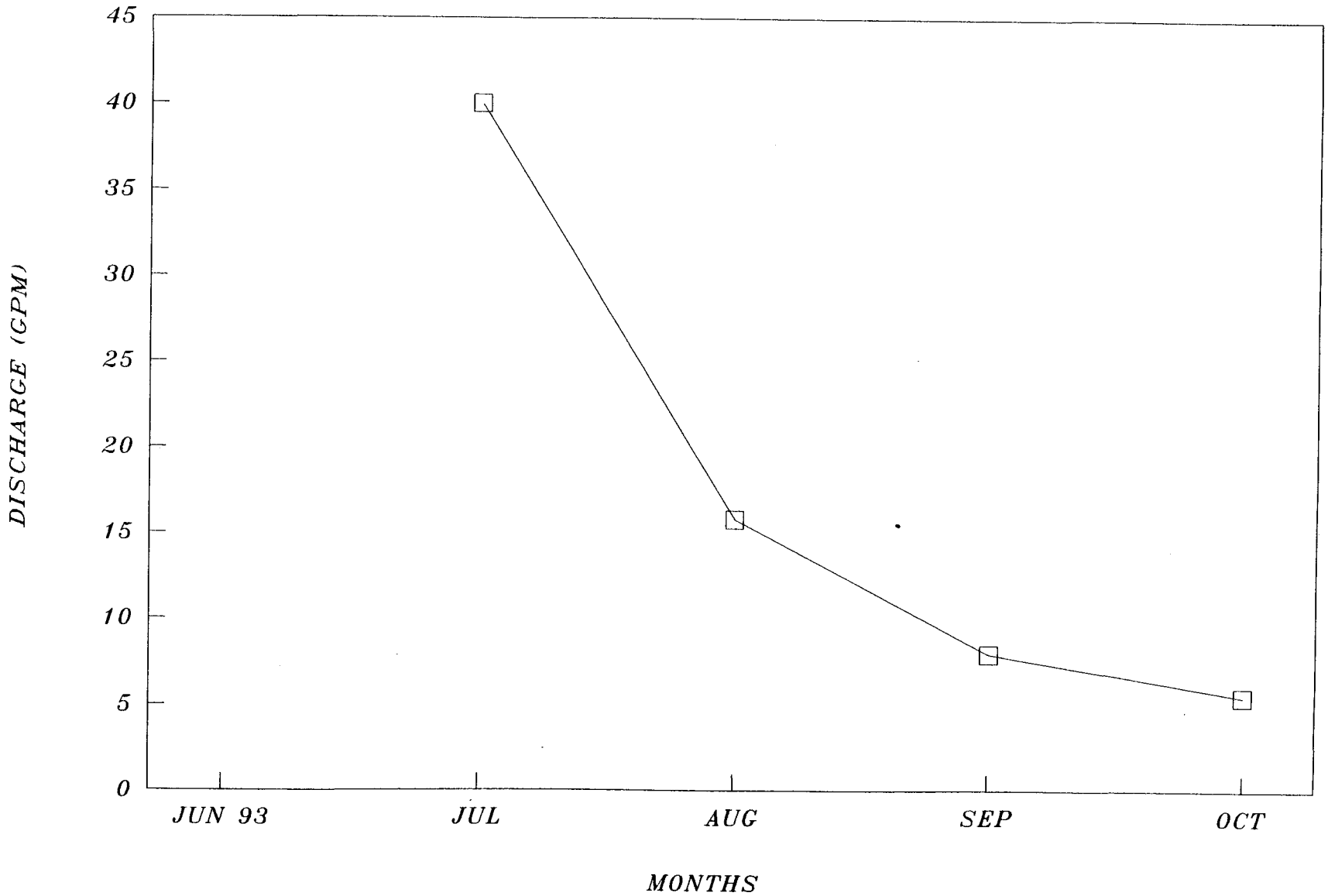
17-21-1

Discharge Recession Study



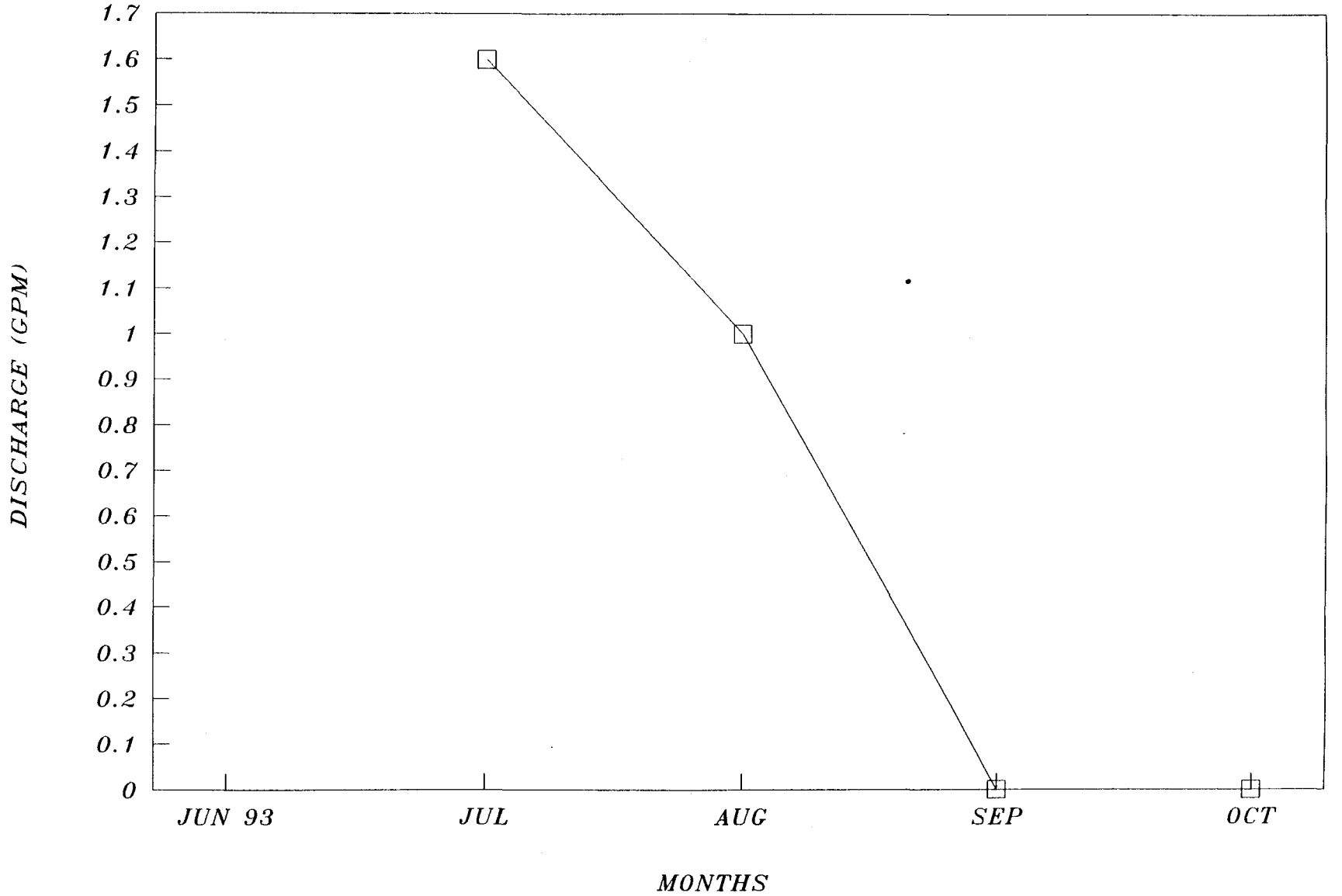
17-22-1

Discharge Recession Study



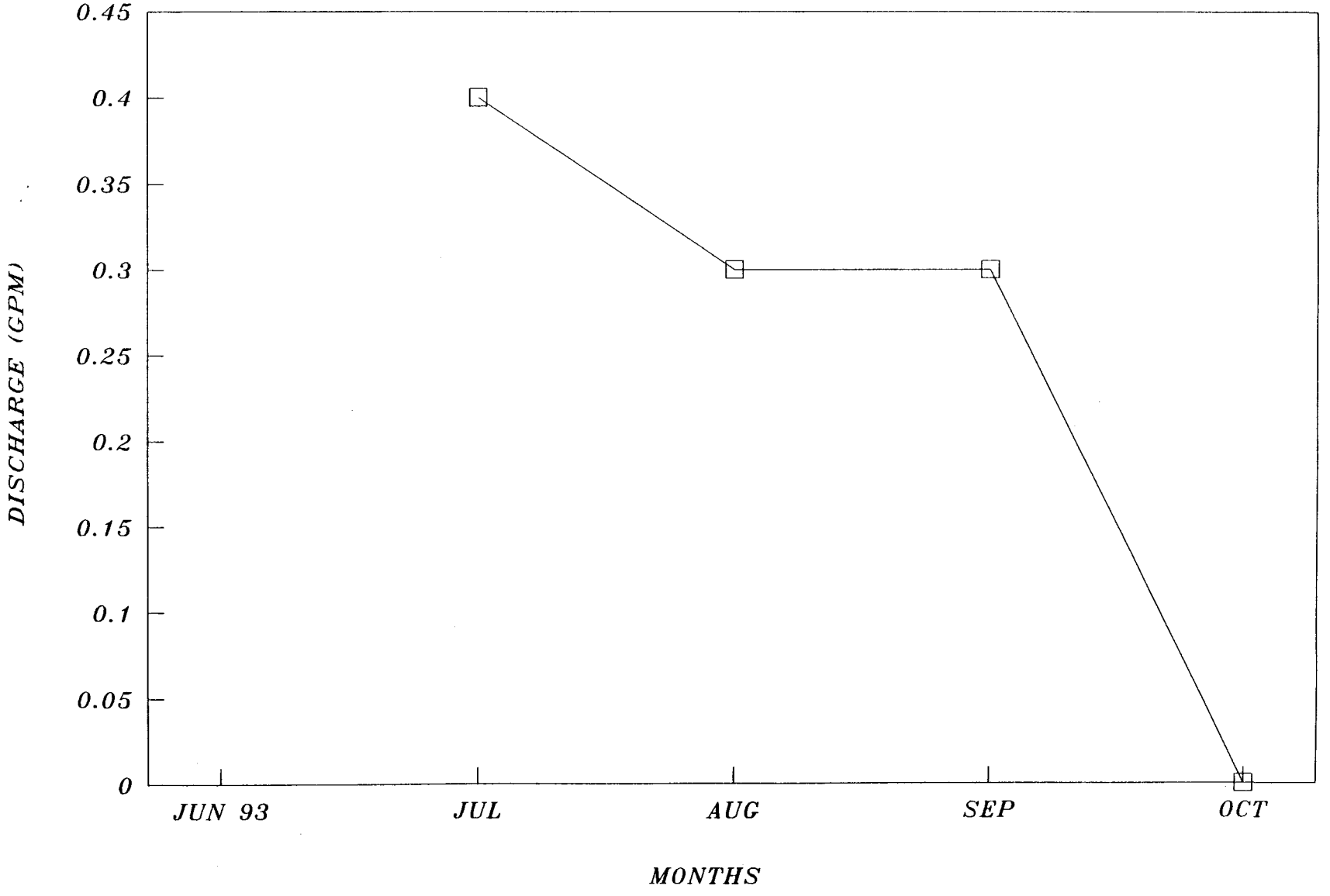
17-25-1

Discharge Recession Study



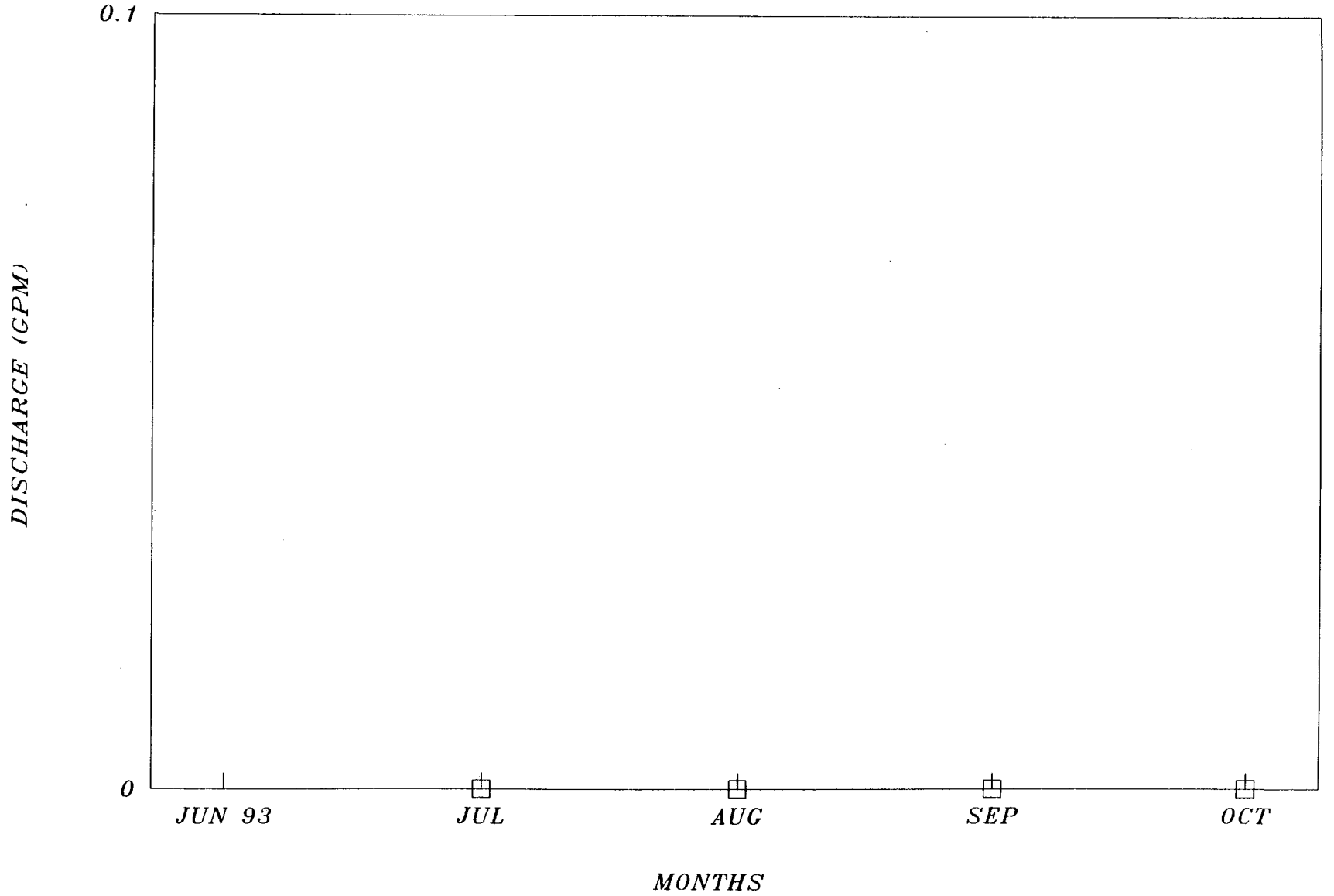
17-26-4

Discharge Recession Study



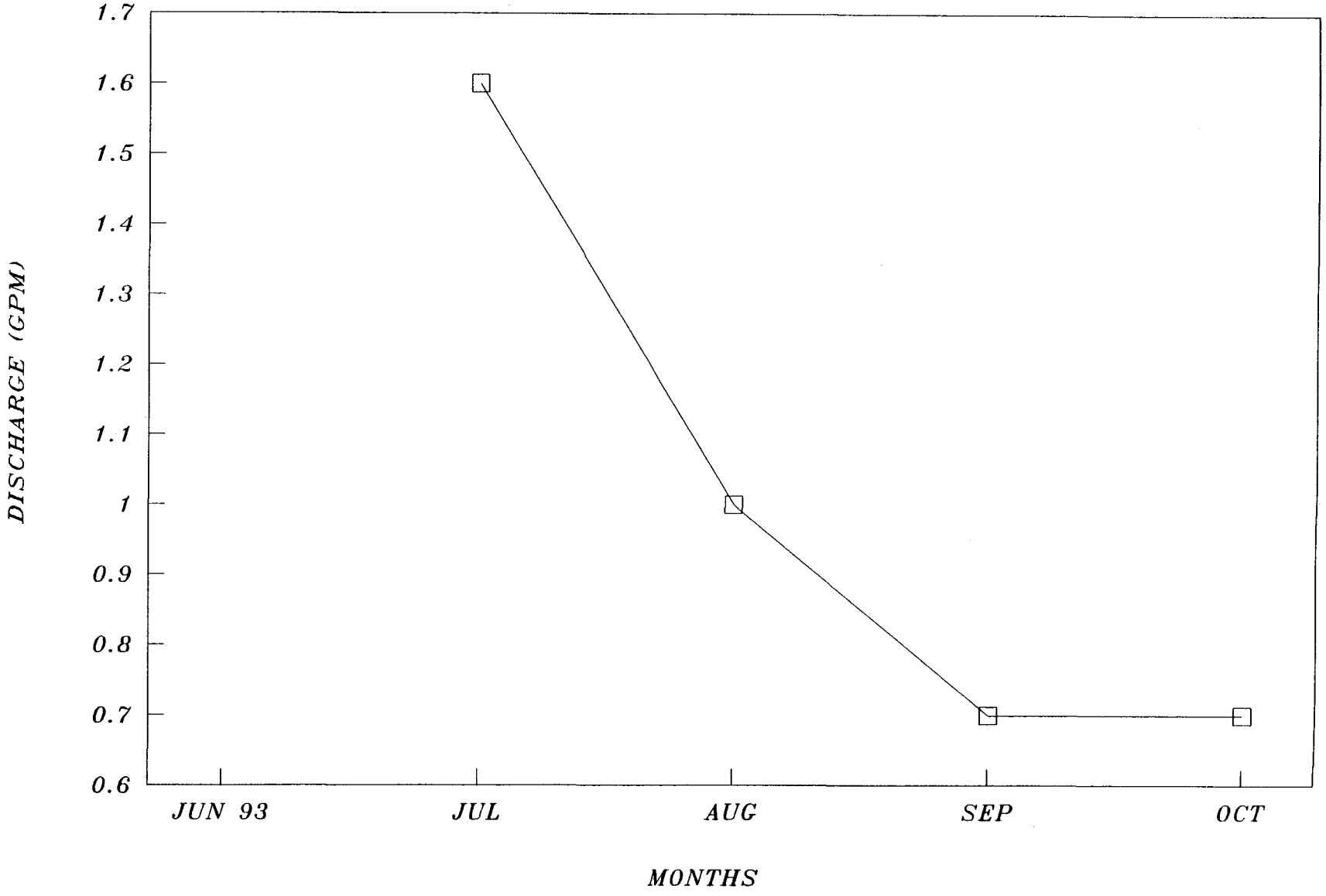
17-26-5

Discharge Recession Study



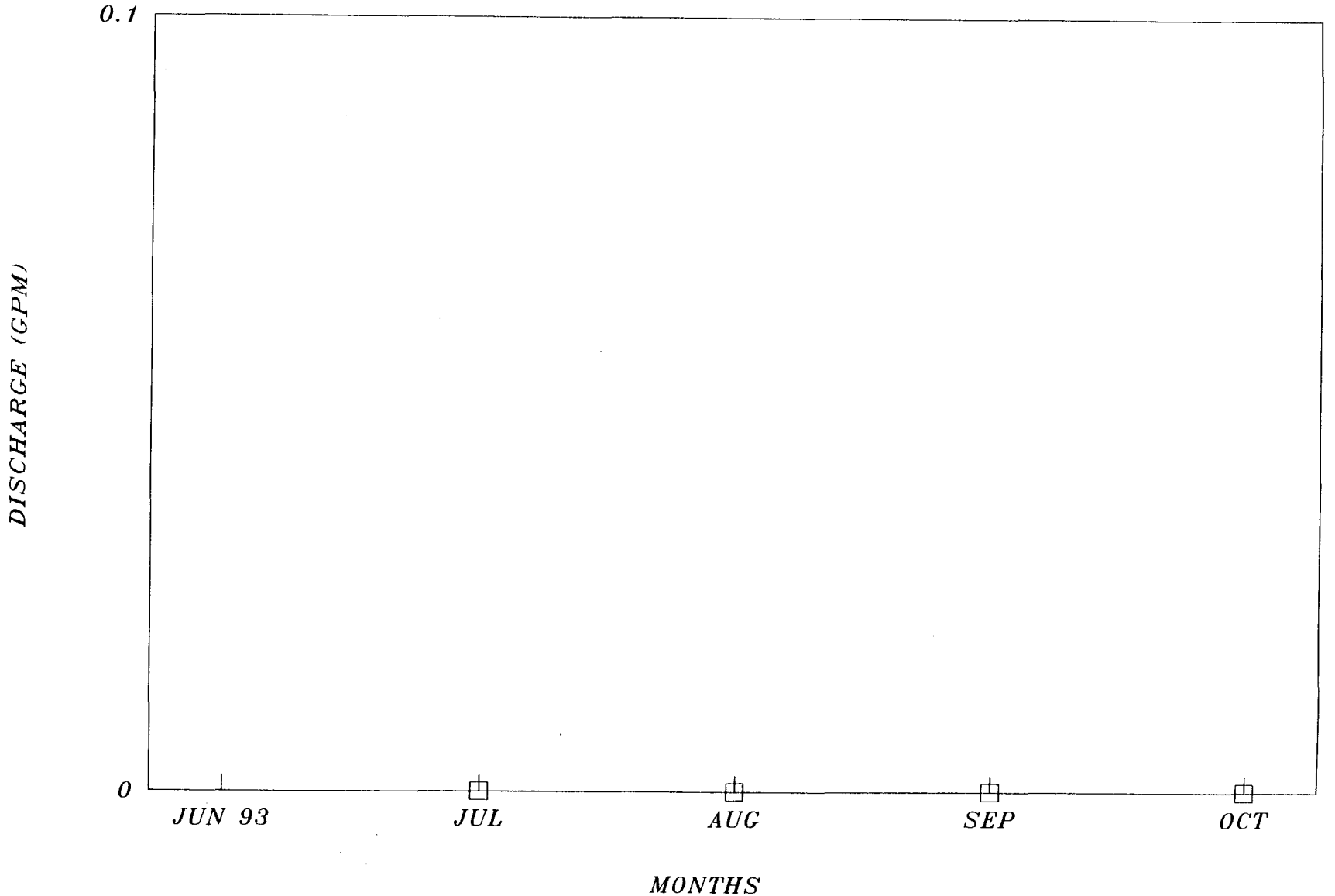
17-35-1

Discharge Recession Study



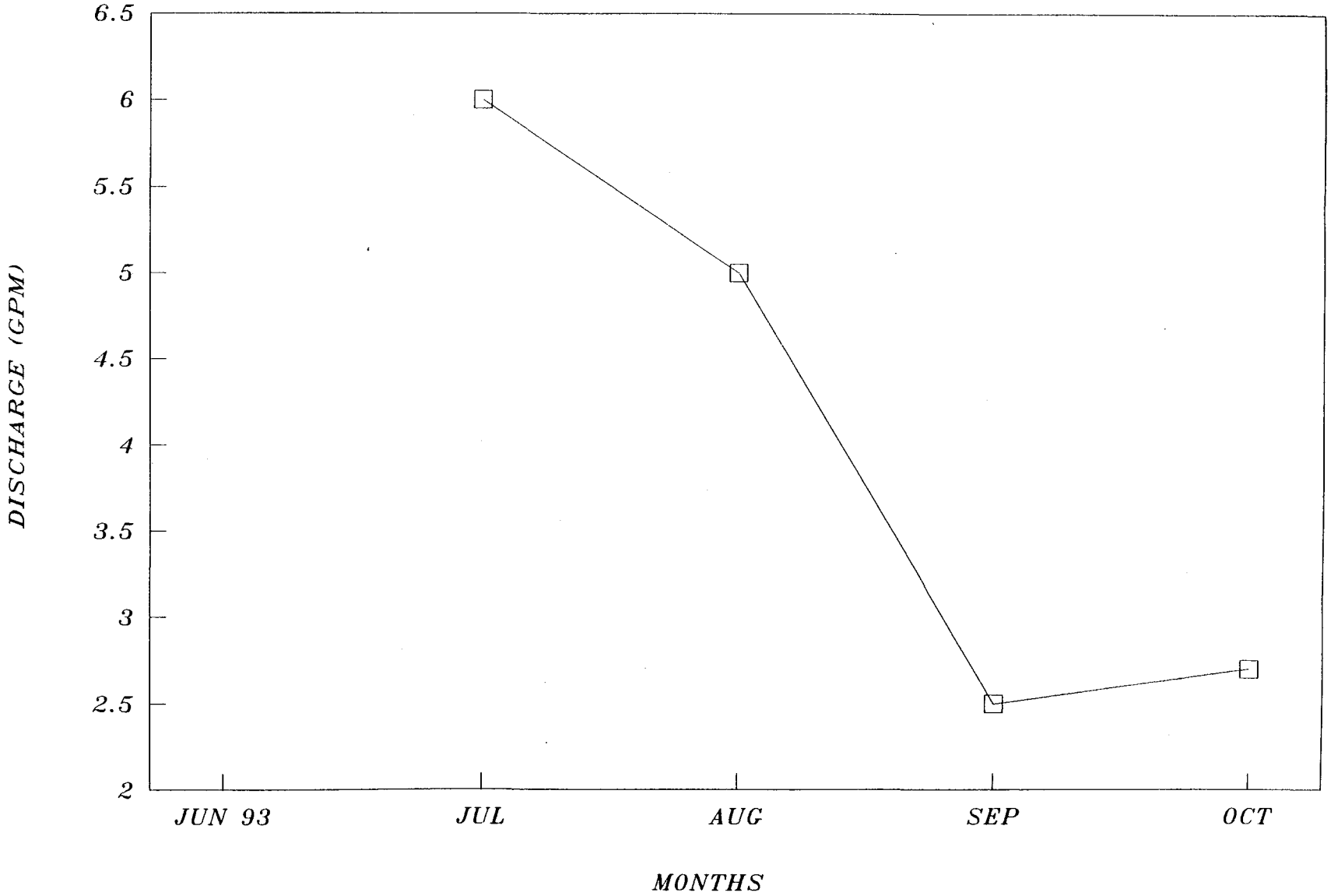
17-35-2

Discharge Recession Study

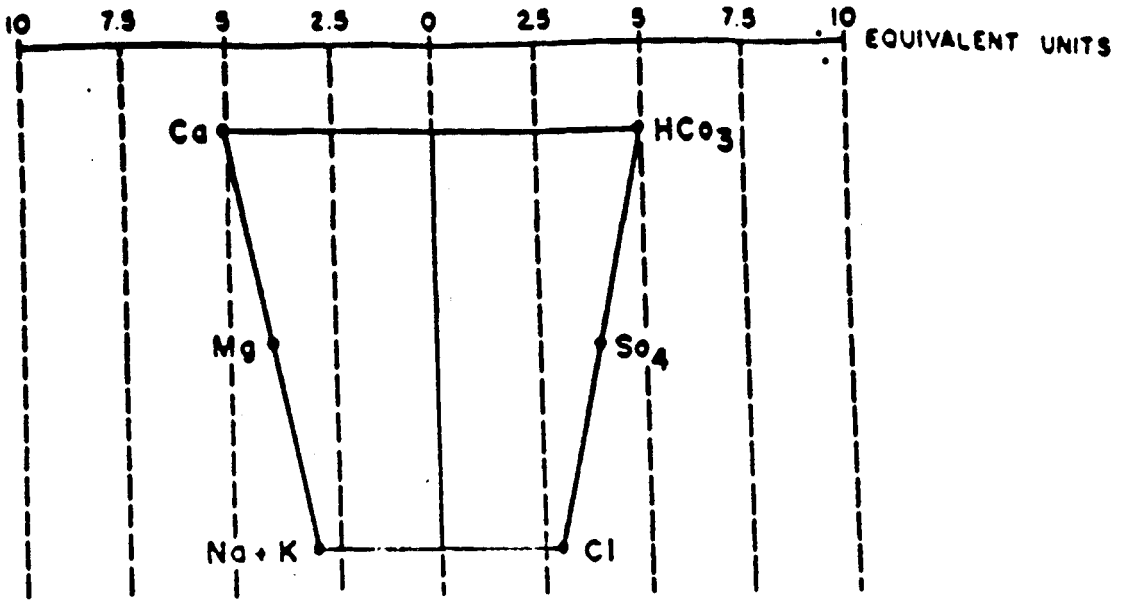


18-2-1

Discharge Recession Study



CATION – ANION DIAGRAMS



$$\frac{\text{P P M}}{\text{Equivalent Weight}} = \text{Equivalent Unit}$$

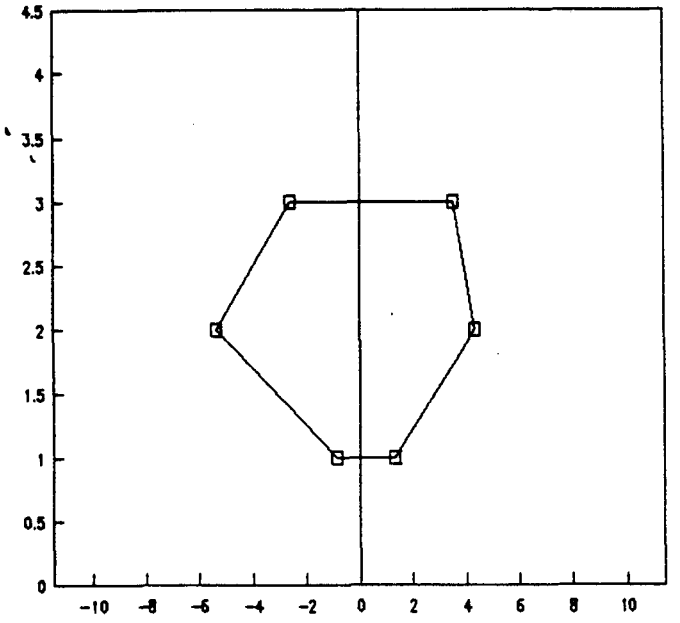
1" = 5 Equivalent Units

Equivalent Weights

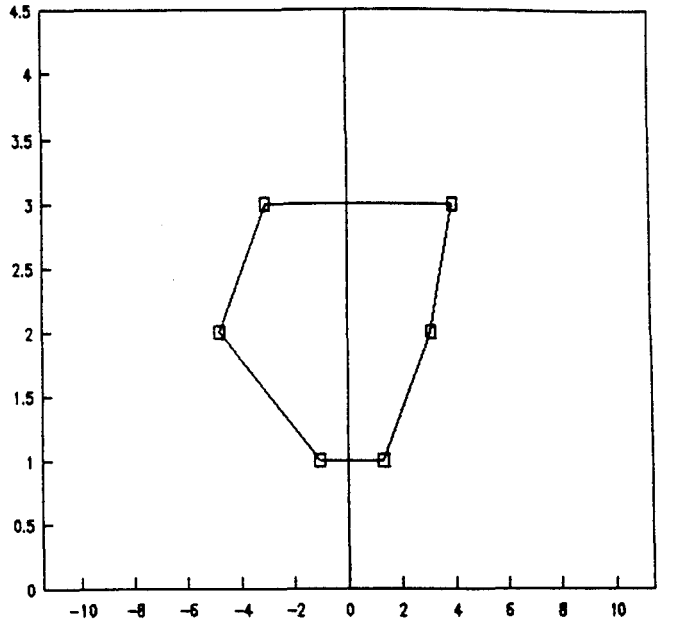
Mg	12.16	(Magnesium)
Ca	20.04	(Calcium)
Na	23.00	(Sodium)
K	39.10	(Potassium)
So_4	48.03	(Sulfate)
$CaCO_3$	100.1	(Total Alkalinity)
Cl	35.46	(Chloride)

NORTH HORN FORMATION

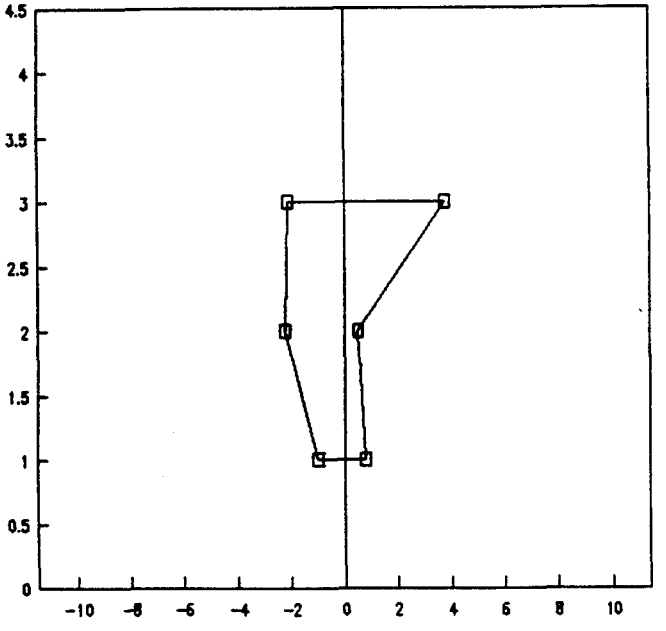
18-2-1
07-20-93



18-2-1
10-26-93



17-21-1
07-22-93



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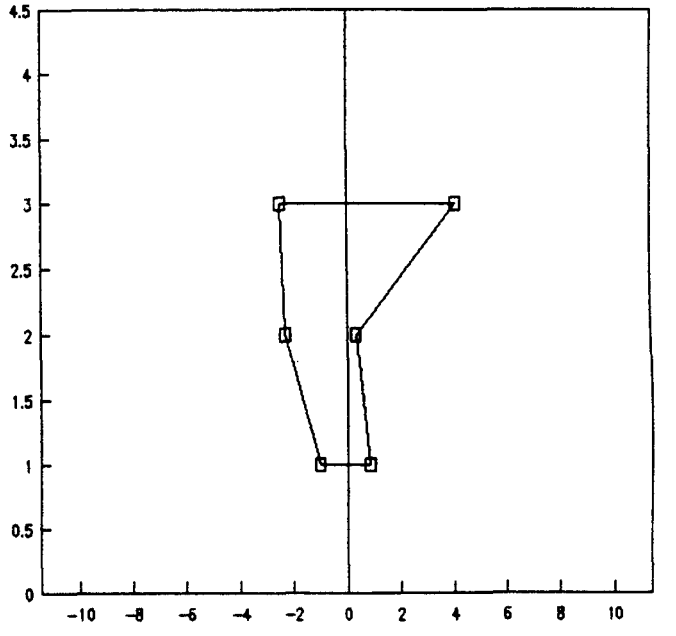
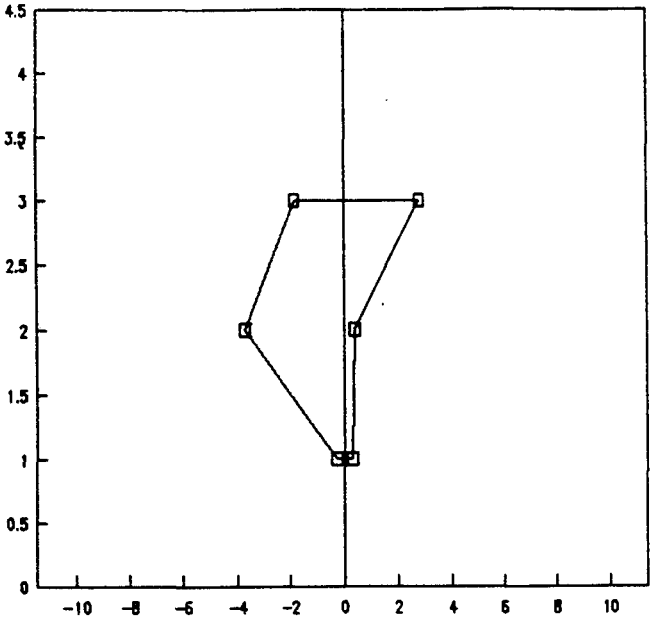
10-26-93



NORTH HORN FORMATION

17-22-1
07-21-93



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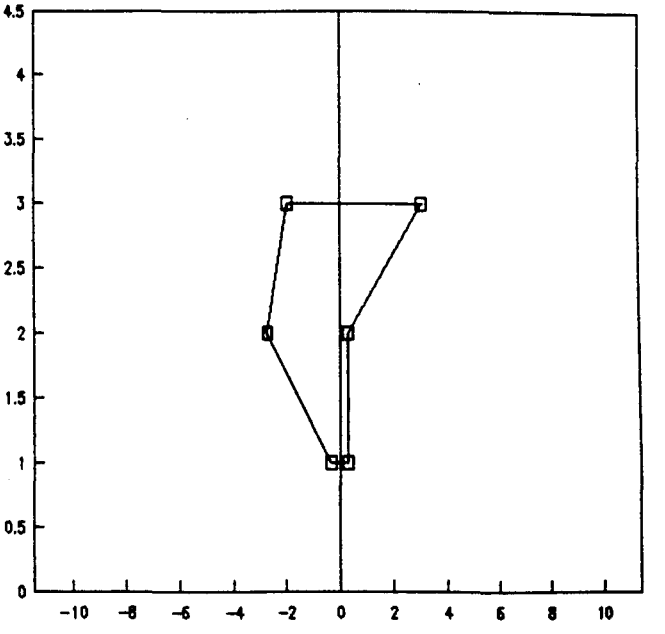
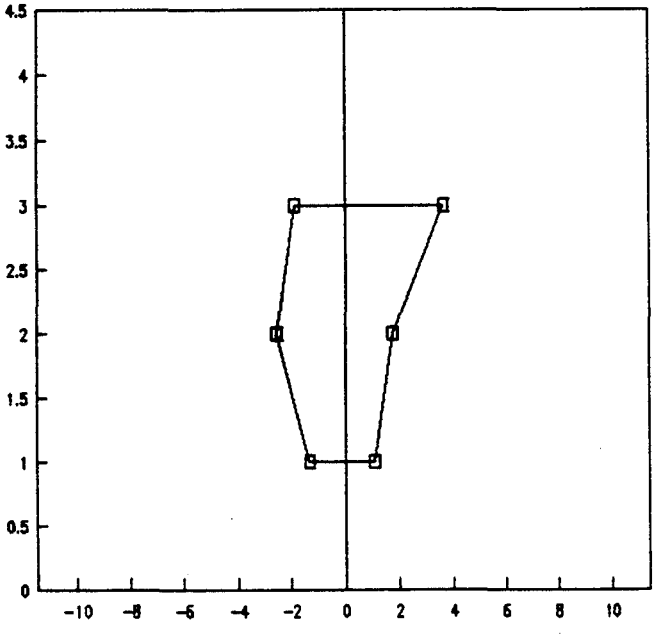
10-26-93



17-35-1
07-20-93



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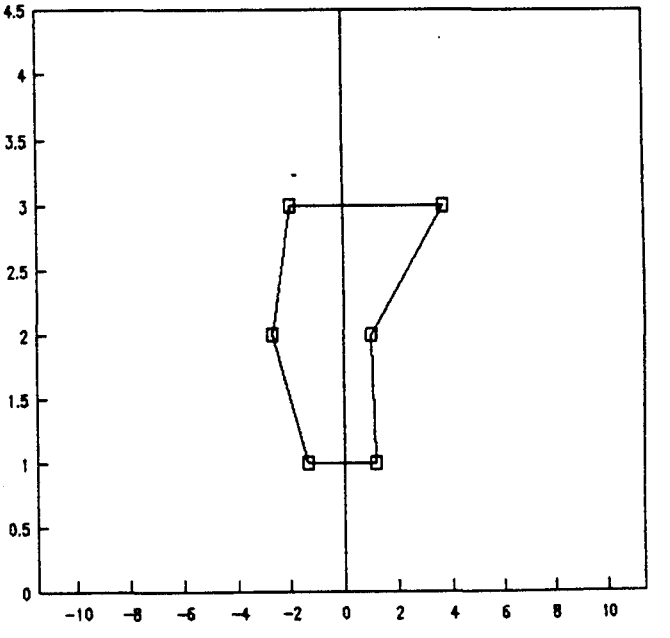
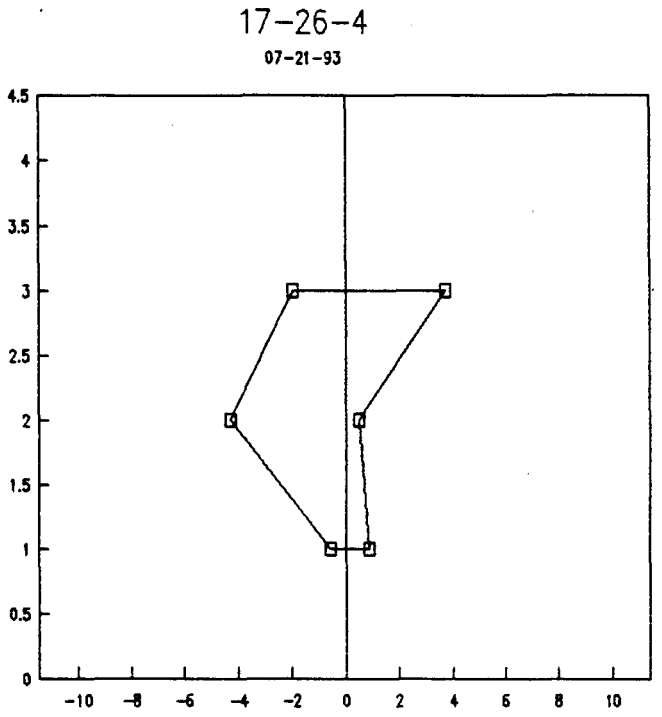
10-26-93



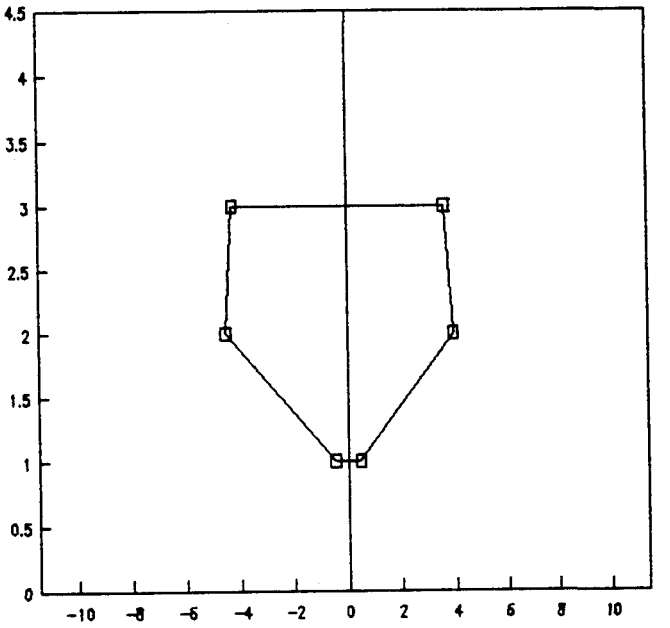
NORTH HORN FORMATION



CASTLE GATE FORMATION

17-25-1

07-21-93



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August 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs 18-2-1
Temperature 61.2°F
Flow 6.0 GPM
Rec'd 1300 hr.
Sampled 1300 hr.

FIELD MEASUREMENTS

pH	8.40
Conductivity	844
DO	10.6

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled July 20, 1993

Date received July 21, 1993

Analysis report no. 59-13327

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	355	.4	mg/l HCO_3	4500 CO_2 D	07-23-1993 13:15 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	07-23-1993 13:15 LS
Alkalinity, Total	297	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	11.50	----	meq/l	---------	---------- ----- --
Calcium	51.8	.03	mg/l	EPA 215.1	08-23-1993 15:00 ED
Cations	10.21	----	meq/l	---------	---------- ----- --
Chloride	46.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	860	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	397	.03	mg/l $CaCO_3$	---------	08-23-1993 15:00 ED
Iron	0.08	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	65.00	.007	mg/l	EPA 242.1	08-24-1993 13:35 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oxygen, Dissolved	12.3	.01	mg/l	EPA 360.1	07-21-1993 16:00 LS
pH	7.90	----	Units	EPA 150.1	07-21-1993 16:00 LS
Potassium	0.60	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	53.00	.2	mg/l	EPA 273.1	08-24-1993 13:05 ED
Solids, Total Dissolved	576.0	14	mg/l	EPA 160.1	07-23-1993 08:25 LM
Solids, Total Suspended	0.0	7	mg/l	EPA 160.2	07-23-1993 13:00 LM
Sulfate	210.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Cation/Anion Balance	-5.45	----	%	---------	---------- ----- --

RECEIVED
8/25/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

September 15, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs 18-2-1 (T-6)
Temperature 55.4°F
Flow 5.0 GPM
Rec'd 1600 hr.
Sampled 1100 hr.

FIELD MEASUREMENTS

pH	8.64
Conductivity	829
DO	12.7

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled August 10, 1993

Date received August 10, 1993

Analysis report no. 59-13387

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	452	.4	mg/l HCO_3	4500 CO_2 D	08-16-1993 10:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-10-1993 16:00 LS
Alkalinity, Total	371	.4	mg/l $CaCO_3$	EPA 310.1	08-16-1993 10:00 LS
Anions	11.48	----	meq/l	---------	---------- ----- --
Calcium	45.7	.03	mg/l	EPA 215.1	09-14-1993 14:00 ED
Cations	9.62	----	meq/l	---------	---------- ----- --
Chloride	46.6	.5	mg/l	EPA 325.3	09-09-1993 13:00 LM
Conductivity	921	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	365	.03	mg/l $CaCO_3$	---------	09-14-1993 14:00 ED
Iron	0.22	.05	mg/l	EPA 236.1	08-31-1993 16:30 ED
Iron, Dissolved	0.06	.05	mg/l	EPA 236.1	09-03-1993 09:15 ED
Magnesium	61.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	7.7	.01	mg/l	EPA 360.1	08-10-1993 16:00 LM
pH	8.15	----	Units	EPA 150.1	08-10-1993 16:00 LM
Potassium	1.20	.1	mg/l	EPA 258.1	08-31-1993 17:15 ED
Sodium	53.60	.2	mg/l	EPA 273.1	08-31-1993 14:40 ED
Solids, Total Dissolved	553.0	14	mg/l	EPA 160.1	08-12-1993 14:20 LM
Solids, Total Suspended	18.0	7	mg/l	EPA 160.2	08-11-1993 12:00 LM
Sulfate	140.0	1	mg/l	EPA 375.4	09-01-1993 11:30 LS
Cation/Anion Balance	-8.79	----	%	---------	---------- ----- --

RECEIVED
9/17/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

October 27, 1993

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

RECEIVED
10/27/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

T-6

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled September 17, 1993

Date received September 17, 1993

Temperature 57.5°F
Flow 2.5 GPM
Rec'd 1530 hr.
Sampled 1133 hr.

FIELD MEASUREMENTS

pH	8.68
Conductivity	858
DO	11.2

NOTE: Magnesium determined on undigested sample.

Analysis report no. 59-13549

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	400	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Alkalinity, Total	328	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Anions	10.50	----	meq/l		---------	---------- -----	--
Calcium	67.5	.03	mg/l		EPA 215.1	10-12-1993 1330	ED
Cations	10.60	----	meq/l		---------	---------- -----	--
Chloride	48.7	.5	mg/l		EPA 325.3	10-01-1993 0700	LM
Conductivity	968.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	KP
Hardness, Total	403.0	.03	mg/l	$CaCO_3$	---------	10-12-1993 1330	ED
Iron	0.87	.05	mg/l		EPA 236.1	10-12-1993 1700	ED
Iron, Dissolved	0.08	.05	mg/l		EPA 236.1	10-19-1993 1220	ED
Magnesium	57.00	.007	mg/l		EPA 242.1	10-26-1993 1500	ED
Manganese	0.05	.03	mg/l		EPA 243.1	10-12-1993 1730	ED
Oxygen, Dissolved	8.34	.01	mg/l		EPA 360.1	09-17-1993 1630	ED
pH	8.12	----	Units		EPA 150.1	09-17-1993 1620	ED
Potassium	1.0	.1	mg/l		EPA 258.1	10-13-1993 1250	ED
Sodium	59.0	.2	mg/l		EPA 273.1	10-26-1993 1425	ED
Solids, Total Dissolved	569	14	mg/l		EPA 160.1	09-21-1993 0800	LM
Solids, Total Suspended	32	7	mg/l		EPA 160.2	09-23-1993 1230	LM
Sulfate	130	1	mg/l		EPA 375.4	10-16-1993 1245	LS
Cation/Anion Balance	0.60	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

December 8, 1993

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

RECEIVED
12/8/93

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water FIELD OFFICE

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled October 26, 1993

Date received October 28, 1993

Trail Mountain Springs 18-2-1
Temperature 51.6°F
Flow 2.7 GPM
Rec'd 0730 hr.
Sampled 1345 hr.

FIELD MEASUREMENTS

pH	8.62
Conductivity	848
DO	13.1

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13682

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	395	2	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400	
Alkalinity, Total	324	2	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400	LS
Anions	10.80	----	meq/l		---------	---------- -----	--
Calcium	61.0	.03	mg/l		EPA 215.1	12-02-1993 1100	DW
Cations	10.50	----	meq/l		---------	---------- -----	--
Chloride	47.0	.5	mg/l		EPA 325.3	11-22-1993 0930	LM
Conductivity	968.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945	ED
Hardness, Total	391.0	.03	mg/l	$CaCO_3$	---------	12-02-1993 1100	DW
Iron	0.50	.05	mg/l		EPA 236.1	12-01-1993 1500	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993 0920	ED
Magnesium	58.00	.007	mg/l		EPA 242.1	11-30-1993 1100	DW
Manganese	0.10	.03	mg/l		EPA 243.1	12-02-1993 0830	DW
Oxygen, Dissolved	9.26	.01	mg/l		EPA 360.1	10-28-1993 0745	LM
pH	8.11	----	Units		EPA 150.1	10-28-1993 1430	LM
Potassium	<2.0	.1	mg/l		EPA 258.1	11-30-1993 1500	DW
Sodium	63.0	.2	mg/l		EPA 273.1	11-30-1993 1300	DW
Solids, Total Dissolved	500	14	mg/l		EPA 160.1	11-02-1993 0730	LM
Solids, Total Suspended	29	7	mg/l		EPA 160.2	11-02-1993 0800	LM
Sulfate	150	1	mg/l		EPA 375.4	12-03-1993 1010	LS
Cation/Anion Balance	-1.30	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 23, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled July 22, 1993

Date received July 22, 1993

Trail Mountain Springs 17-21-1
Temperature 46.1°F
Flow 1.7 GPM
Rec'd 1630 hr.
Sampled 1335 hr.

FIELD MEASUREMENTS

pH	7.91
Conductivity	627
DO	8.1

NOTE: CONDUCTIVITY RUN AFTER HOLDING TIME EXPIRED.

Analysis report no. 59-13342

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	380	.4	mg/l HCO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Total	312	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	7.38	----	meq/l	---------	---------- ----- --
Calcium	42.4	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	6.99	----	meq/l	---------	---------- ----- --
Chloride	27.7	.5	mg/l	EPA 325.3	07-29-1993 15:00 LM
Conductivity	690	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	217	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.05	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	0.16	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	27.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oxygen, Dissolved	5.3	.01	mg/l	EPA 360.1	07-22-1993 17:00 LS
pH	7.40	----	Units	EPA 150.1	07-22-1993 17:00 LS
Potassium	1.60	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	60.70	.2	mg/l	EPA 273.1	08-20-1993 13:05 ED
Solids, Total Dissolved	379.0	14	mg/l	EPA 160.1	07-27-1993 13:30 LM
Solids, Total Suspended	1.0	7	mg/l	EPA 160.2	07-23-1993 13:00 LM
Sulfate	25.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Cation/Anion Balance	-2.74	----	%	---------	---------- ----- --

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Respectfully submitted,
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FAX: (801) 653-2436

September 8, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs (T-8)
Temperature 46.6°F
Flow 1.0 GPM
Rec'd 1600 hr.
Sampled 1420 hr.

FIELD MEASUREMENTS	
pH	8.20
Conductivity	641
DO	8.5

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled August 10, 1993

Date received August 10, 1993

Analysis report no. 59-13391

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analys	
Alkalinity, Bicarbonate	437	.4	mg/l HCO_3	4500 CO_2 D	08-16-1993 10:00	LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-16-1993 10:00	LS
Alkalinity, Total	359	.4	mg/l $CaCO_3$	EPA 310.1	08-10-1993 16:20	LS
Anions	8.37	----	meq/l	---------	---------- -----	--
Calcium	36.6	.03	mg/l	EPA 215.1	08-31-1993 11:55	ED
Cations	7.14	----	meq/l	---------	---------- -----	--
Chloride	30.1	.5	mg/l	EPA 325.3	08-13-1993 13:30	LM
Conductivity	694	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15	LS
Hardness, Total	207	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55	ED
Iron	0.19	.05	mg/l	EPA 236.1	08-31-1993 16:30	ED
Iron, Dissolved	0.23	.05	mg/l	EPA 236.1	09-03-1993 09:15	ED
Magnesium	28.00	.007	mg/l	EPA 242.1	08-31-1993 13:50	ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10	ED
Oxygen, Dissolved	6.5	.01	mg/l	EPA 360.1	08-10-1993 16:20	LM
pH	6.54	----	Units	EPA 150.1	08-10-1993 16:20	LM
Potassium	1.80	.1	mg/l	EPA 258.1	08-31-1993 17:15	ED
Sodium	69.00	.2	mg/l	EPA 273.1	08-31-1993 14:40	ED
Solids, Total Dissolved	391.0	14	mg/l	EPA 160.1	08-12-1993 14:20	LM
Solids, Total Suspended	15.0	7	mg/l	EPA 160.2	08-11-1993 12:00	LM
Sulfate	25.0	1	mg/l	EPA 375.4	08-21-1993 09:15	LS
Cation/Anion Balance	7.86	----	%	---------	---------- -----	--

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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October 20, 1993

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

RECEIVED
10/20/93

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

T-8

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled September 17, 1993

Date received September 17, 1993

Temperature 46.0°F
Flow 0.6 GPM
Rec'd 1530 hr.
Sampled 1419 hr.

FIELD MEASUREMENTS

pH	8.14
Conductivity	649
DO	7.2

Analysis report no. 59-13548

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	405	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993	0830	LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993	0830	LS
Alkalinity, Total	332	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993	0830	LS
Anions	7.65	----	meq/l		---------	----------	-----	--
Calcium	46.7	.03	mg/l		EPA 215.1	10-12-1993	1330	ED
Cations	7.05	----	meq/l		---------	----------	-----	--
Chloride	28.9	.5	mg/l		EPA 325.3	10-01-1993	0700	LM
Conductivity	721.00	0.2	umhos/cm		EPA 120.1	09-27-1993	1400	KP
Hardness, Total	227.8	.03	mg/l	$CaCO_3$	---------	10-12-1993	1330	ED
Iron	0.12	.05	mg/l		EPA 236.1	10-12-1993	1700	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993	1220	ED
Magnesium	27.00	.007	mg/l		EPA 242.1	10-18-1993	1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993	1730	ED
Oxygen, Dissolved	4.76	.01	mg/l		EPA 360.1	09-17-1993	1630	ED
pH	7.34	----	Units		EPA 150.1	09-17-1993	1620	ED
Potassium	2.0	.1	mg/l		EPA 258.1	10-13-1993	1250	ED
Sodium	57.0	.2	mg/l		EPA 273.1	10-18-1993	1650	ED
Solids, Total Dissolved	393	14	mg/l		EPA 160.1	09-21-1993	0800	LM
Solids, Total Suspended	8	7	mg/l		EPA 160.2	09-23-1993	1230	LM
Sulfate	17	1	mg/l		EPA 375.4	10-16-1993	1245	LS
Cation/Anion Balance	-4.05	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 8, 1993

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

RECEIVED
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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled October 26, 1993

Date received October 28, 1993

Trail Mountain Springs 17-21-1
Temperature 42.2°F
Flow 0.43 GPM
Rec'd 0730 hr.
Sampled 1902 hr.

FIELD MEASUREMENTS

pH	8.65
Conductivity	642
DO	9.9

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13687

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	408	2	mg/l	$CaCO_3$	EPA 310.1	11-05-1993 0845 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-05-1993 0845 [illegible]
Alkalinity, Total	335	2	mg/l	$CaCO_3$	EPA 310.1	11-05-1993 0845 LS
Anions	7.70	----	meq/l		---------	---------- ----- --
Calcium	50.0	.03	mg/l		EPA 215.1	12-02-1993 1100 DW
Cations	7.50	----	meq/l		---------	---------- ----- --
Chloride	30.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	718.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945 ED
Hardness, Total	240.0	.03	mg/l	$CaCO_3$	---------	12-02-1993 1100 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-01-1993 1500 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993 0920 ED
Magnesium	28.00	.007	mg/l		EPA 242.1	11-30-1993 1100 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993 0830 DW
Oxygen, Dissolved	6.28	.01	mg/l		EPA 360.1	10-28-1993 0745 LM
pH	7.52	----	Units		EPA 150.1	10-28-1993 1430 LM
Potassium	2.0	.1	mg/l		EPA 258.1	11-30-1993 1500 DW
Sodium	61.0	.2	mg/l		EPA 273.1	11-30-1993 1500 DW
Solids, Total Dissolved	343	14	mg/l		EPA 160.1	11-02-1993 0730 LM
Solids, Total Suspended	10	7	mg/l		EPA 160.2	11-02-1993 0800 LM
Sulfate	16	1	mg/l		EPA 375.4	12-08-1993 0945 LS
Cation/Anion Balance	-1.50	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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September 17, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs (T-9)
Temperature 49.6°F
Flow 15.8 GPM
Rec'd 1600 hr.
Sampled 1400 hr.

FIELD MEASUREMENTS	
pH	7.87
Conductivity	425
DO	9.4

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled August 10, 1993

Date received August 10, 1993

Analysis report no. 59-13390

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	222	.4	mg/l HCO_3	4500 CO_2 D	08-16-1993 10:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-10-1993 16:20 LS
Alkalinity, Total	182	.4	mg/l $CaCO_3$	EPA 310.1	08-16-1993 10:00 LS
Anions	4.19	----	meq/l	---------	---------- ----- --
Calcium	34.4	.03	mg/l	EPA 215.1	09-14-1993 14:10 ED
Cations	4.70	----	meq/l	---------	---------- ----- --
Chloride	13.3	.5	mg/l	EPA 325.3	08-13-1993 13:30 LM
Conductivity	475	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	193	.03	mg/l $CaCO_3$	---------	09-14-1993 14:10 ED
Iron	1.67	.05	mg/l	EPA 236.1	08-31-1993 16:30 ED
Iron, Dissolved	0.12	.05	mg/l	EPA 236.1	09-16-1993 12:15 ED
Magnesium	26.00	.007	mg/l	EPA 242.1	09-14-1993 15:20 ED
Manganese	0.18	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	8.4	.01	mg/l	EPA 360.1	08-10-1993 16:20 LM
pH	6.92	----	Units	EPA 150.1	08-10-1993 16:20 LM
Potassium	3.10	.1	mg/l	EPA 258.1	08-31-1993 17:15 ED
Sodium	17.80	.2	mg/l	EPA 273.1	08-31-1993 14:40 ED
Solids, Total Dissolved	271.0	14	mg/l	EPA 160.1	08-12-1993 14:20 LM
Solids, Total Suspended	112.0	7	mg/l	EPA 160.2	08-11-1993 12:00 LM
Sulfate	13.0	1	mg/l	EPA 375.4	09-01-1993 11:30 LS
Cation/Anion Balance	5.63	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry D Stout
Manager, Huntington Laboratory

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August 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs 17-22-1 (T-9)
Temperature 47.0°F
Flow 40 GPM
Rec'd 1650 hr.
Sampled 1415 hr.

FIELD MEASUREMENTS

pH	7.90
Conductivity	448
DO	9.3

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled July 21, 1993

Date received July 21, 1993

Analysis report no. 59-13331

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	279	.4	mg/l HCO_3	4500 CO_2 D	07-23-1993 13:15 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	07-23-1993 13:15 LS
Alkalinity, Total	229	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	5.18	----	meq/l	---------	---------- ----- --
Calcium	36.8	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	6.27	----	meq/l	---------	---------- ----- --
Chloride	10.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	480	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	277	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.20	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	0.18	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	45.00	.007	mg/l	EPA 242.1	08-24-1993 13:35 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oxygen, Dissolved	12.2	.01	mg/l	EPA 360.1	07-21-1993 17:50 ED
pH	7.60	----	Units	EPA 150.1	07-21-1993 17:50 ED
Potassium	1.00	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	16.50	.2	mg/l	EPA 273.1	08-20-1993 13:05 ED
Solids, Total Dissolved	267.0	14	mg/l	EPA 160.1	07-23-1993 08:25 LM
Solids, Total Suspended	14.0	7	mg/l	EPA 160.2	07-23-1993 13:00 LM
Sulfate	20.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Cation/Anion Balance	9.52	----	%	---------	---------- ----- --

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Respectfully submitted,
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Manager, Huntington Laboratory

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FAX: (801) 653-2436

November 3, 1993

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

RECEIVED
11/3/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

T-9

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled September 17, 1993

Date received September 17, 1993

Temperature 47.1°F
Flow 8 GPM
Rec'd 1530 hr.
Sampled 1402 hr.

FIELD MEASUREMENTS

pH	7.92
Conductivity	450
DO	12.1

Analysis report no. 59-13547

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	303	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Alkalinity, Total	249	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Anions	5.30	----	meq/l		---------	---------- -----	--
Calcium	40.0	.03	mg/l		EPA 215.1	10-12-1993 1330	ED
Cations	5.90	----	meq/l		---------	---------- -----	--
Chloride	9.2	.5	mg/l		EPA 325.3	10-01-1993 0700	LM
Conductivity	503.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	LS
Hardness, Total	252.0	.03	mg/l	$CaCO_3$	---------	10-12-1993 1330	ED
Iron	0.13	.05	mg/l		EPA 236.1	10-12-1993 1700	ED
Iron, Dissolved	0.06	.05	mg/l		EPA 236.1	10-19-1993 1220	ED
Magnesium	37.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993 1730	ED
Oxygen, Dissolved	8.66	.01	mg/l		EPA 360.1	09-17-1993 1630	ED
pH	7.86	----	Units		EPA 150.1	09-17-1993 1620	ED
Potassium	1.0	.1	mg/l		EPA 258.1	10-13-1993 1250	ED
Sodium	18.7	.2	mg/l		EPA 273.1	10-18-1993 1650	ED
Solids, Total Dissolved	258	14	mg/l		EPA 160.1	09-21-1993 0800	LM
Solids, Total Suspended	16	7	mg/l		EPA 160.2	09-23-1993 1230	LM
Sulfate	20	1	mg/l		EPA 375.4	10-16-1993 1245	LS
Cation/Anion Balance	4.70	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

December 8, 1993

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

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12/8/93

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water FIELD OFFICE

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled October 26, 1993

Date received October 28, 1993

Trail Mountain Springs 17-22-1
Temperature 45.5°F
Flow 5.5 GPM
Rec'd 0730 hr.
Sampled 1652 hr.

FIELD MEASUREMENTS

pH	7.87
Conductivity	451
DO	12.6

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13680

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	306	2	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400	[illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400	[illegible]
Alkalinity, Total	251	2	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400	
Anions	5.50	----	meq/l		---------	----------	-----
Calcium	39.0	.03	mg/l		EPA 215.1	12-02-1993 1100	DW
Cations	5.40	----	meq/l		---------	----------	----- --
Chloride	11.0	.5	mg/l		EPA 325.3	11-22-1993 0930	LM
Conductivity	502.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945	ED
Hardness, Total	233.0	.03	mg/l	$CaCO_3$	---------	12-02-1993 1100	DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-01-1993 1500	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993 0920	ED
Magnesium	33.00	.007	mg/l		EPA 242.1	11-30-1993 1100	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993 0830	DW
Oxygen, Dissolved	9.42	.01	mg/l		EPA 360.1	10-28-1993 0745	LM
pH	7.84	----	Units		EPA 150.1	10-28-1993 1430	LM
Potassium	<2.0	.1	mg/l		EPA 258.1	11-30-1993 1500	DW
Sodium	17.0	.2	mg/l		EPA 273.1	11-30-1993 1300	DW
Solids, Total Dissolved	250	14	mg/l		EPA 160.1	11-02-1993 0730	LM
Solids, Total Suspended	13	7	mg/l		EPA 160.2	11-02-1993 0800	LM
Sulfate	15	1	mg/l		EPA 375.4	12-03-1993 1010	LS
Cation/Anion Balance	-1.20	----	%		---------	----------	----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

August 23, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled July 21, 1993

Date received July 21, 1993

Trail Mountain Springs 17-26-4 (T-10)
Temperature 65.3°F
Flow 0.4 GPM
Rec'd 1650 hr.
Sampled 1145 hr.

FIELD MEASUREMENTS

pH	8.63
Conductivity	637
DO	9.7

NOTE: CONDUCTIVITY RUN AFTER HOLDING TIME EXPIRED.

Analysis report no. 59-13336

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	374	.4	mg/l HCO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Total	307	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	7.37	----	meq/l	---------	---------- ----- --
Calcium	39.7	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	7.71	----	meq/l	---------	---------- ----- --
Chloride	31.3	.5	mg/l	EPA 325.3	07-29-1993 15:00 LM
Conductivity	660	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	313	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.17	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	0.14	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	52.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oxygen, Dissolved	12.5	.01	mg/l	EPA 360.1	07-21-1993 17:50 ED
pH	8.27	----	Units	EPA 150.1	07-21-1993 17:50 ED
Potassium	4.10	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	31.50	.2	mg/l	EPA 273.1	08-20-1993 13:05 ED
Solids, Total Dissolved	401.0	14	mg/l	EPA 160.1	07-23-1993 08:25 LM
Solids, Total Suspended	19.0	7	mg/l	EPA 160.2	07-23-1993 13:00 LM
Sulfate	24.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Cation/Anion Balance	2.29	----	%	---------	---------- ----- --

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8/23/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

September 8, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs (T-10)
Temperature 54.6°F
Flow 0.3 GPM
Rec'd 1600 hr.
Sampled 1325 hr.

FIELD MEASUREMENTS

pH	7.61
Conductivity	613
DO	10.1

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled August 10, 1993

Date received August 10, 1993

Analysis report no. 59-13388

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analys	
Alkalinity, Bicarbonate	346	.4	mg/l HCO_3	4500 CO_2 D	08-16-1993 10:00	LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-16-1993 10:00	LS
Alkalinity, Total	284	.4	mg/l $CaCO_3$	EPA 310.1	08-10-1993 16:20	LS
Anions	8.26	----	meq/l	---------	----------	----- --
Calcium	80.2	.03	mg/l	EPA 215.1	08-31-1993 11:55	ED
Cations	9.76	----	meq/l	---------	----------	----- --
Chloride	29.6	.5	mg/l	EPA 325.3	08-13-1993 13:30	LM
Conductivity	686	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15	LS
Hardness, Total	423	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55	ED
Iron	2.16	.05	mg/l	EPA 236.1	08-31-1993 16:30	ED
Iron, Dissolved	0.13	.05	mg/l	EPA 236.1	09-03-1993 09:15	ED
Magnesium	54.00	.007	mg/l	EPA 242.1	08-31-1993 13:50	ED
Manganese	0.13	.03	mg/l	EPA 243.1	08-31-1993 15:10	ED
Oxygen, Dissolved	8.1	.01	mg/l	EPA 360.1	08-10-1993 16:20	LM
pH	7.82	----	Units	EPA 150.1	08-10-1993 16:20	LM
Potassium	1.60	.1	mg/l	EPA 258.1	08-31-1993 17:15	ED
Sodium	29.70	.2	mg/l	EPA 273.1	08-31-1993 14:40	ED
Solids, Total Dissolved	391.0	14	mg/l	EPA 160.1	08-12-1993 14:20	LM
Solids, Total Suspended	378.0	7	mg/l	EPA 160.2	08-11-1993 12:00	LM
Sulfate	90.0	1	mg/l	EPA 375.4	09-01-1993 11:30	LS
Cation/Anion Balance	8.34	----	%	---------	----------	----- --

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9/8/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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October 25, 1993

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

RECEIVED
10/26/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

T-10

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled September 17, 1993

Date received September 17, 1993

Temperature 56.2°F
Flow 0.3 GPM
Rec'd 1530 hr.
Sampled 1345 hr.

FIELD MEASUREMENTS

pH	8.53
Conductivity	606
DO	10.3

Analysis report no. 59-13546

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	392	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Alkalinity, Total	322	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830	LS
Anions	7.76	----	meq/l		---------	---------- -----	--
Calcium	91.8	.03	mg/l		EPA 215.1	10-12-1993 1330	ED
Cations	9.35	----	meq/l		---------	---------- -----	--
Chloride	26.0	.5	mg/l		EPA 325.3	10-01-1993 0700	LM
Conductivity	716.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	KP
Hardness, Total	410.4	.03	mg/l	$CaCO_3$	---------	10-12-1993 1330	ED
Iron	1.75	.05	mg/l		EPA 236.1	10-12-1993 1700	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993 1220	ED
Magnesium	44.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	0.12	.03	mg/l		EPA 243.1	10-12-1993 1730	ED
Oxygen, Dissolved	8.86	.01	mg/l		EPA 360.1	09-17-1993 1630	ED
pH	7.85	----	Units		EPA 150.1	09-17-1993 1620	ED
Potassium	2.0	.1	mg/l		EPA 258.1	10-13-1993 1250	ED
Sodium	25.5	.2	mg/l		EPA 273.1	10-18-1993 1650	ED
Solids, Total Dissolved	404	14	mg/l		EPA 160.1	09-21-1993 0800	LM
Solids, Total Suspended	151	7	mg/l		EPA 160.2	09-23-1993 1230	LM
Sulfate	36	1	mg/l		EPA 375.4	10-16-1993 1245	LS
Cation/Anion Balance	9.29	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

AMERICAN COUNCIL OF INDEPENDENT LABS

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FAX: (801) 653-2436

January 11, 1994

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

RECEIVED
1/11/94
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountai

Sample taken by Energy West/CS

Date sampled July 21, 1993

Date received July 21, 1993

Trail Mountain Springs 17-25-1

Temperature 63.5°F
Flow 1.6 GPM
Rec'd 1650 hr.
Sampled 1230 hr.

FIELD MEASUREMENTS
pH 7.91
Conductivity 790

NOTE: Holding time expired when Conductivity was run.

Analysis report no. 59-13335

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	365	1	mg/l	$CaCO_3$	4500 CO_2D	07-23-1993 1315 LS
Alkalinity, Carbonate	2	1	mg/l	$CaCO_3$	4500 CO_2D	07-23-1993 1315 LS
Alkalinity, Total	367	1	mg/l	$CaCO_3$	EPA 310.1	07-23-1993 1315 LS
Anions	11.80	----	meq/l		---------	---------- ----- --
Calcium	85.4	1	mg/l		EPA 215.1	08-20-1993 1010 ED
Cations	9.90	----	meq/l		---------	---------- ----- --
Chloride	16.6	1	mg/l		EPA 325.3	07-29-1993 1500 LM
Conductivity	840.00	0.2	umhos/cm		EPA 120.1	08-20-1993 1430 LS
Hardness, Total	440.0	1	mg/l	$CaCO_3$	2340 B	08-20-1993 1010 ED
Iron	1.92	0.2	mg/l		EPA 236.1	08-02-1993 1645 ED
Iron, Dissolved	0.16	0.2	mg/l		EPA 236.1	08-19-1993 1105 ED
Magnesium	55.00	1	mg/l		EPA 242.1	08-20-1993 1115 ED
Manganese	0.03	0.1	mg/l		EPA 243.1	08-02-1993 1450 ED
Oxygen, Dissolved	12.53	.01	mg/l		EPA 360.1	07-21-1993 1750 ED
pH	7.70	----	Units		EPA 150.1	07-21-1993 1750 ED
Potassium	2.9	2	mg/l		EPA 258.1	08-10-1993 1550 ED
Sodium	26.0	1	mg/l		EPA 273.1	08-20-1993 1305 ED
Solids, Total Dissolved	583	10	mg/l		EPA 160.1	07-23-1993 0825 LM
Solids, Total Suspended	61	4	mg/l		EPA 160.2	07-23-1993 1300 LM
Sulfate	190	1	mg/l		EPA 375.4	08-16-1993 0800 LS
Cation/Anion Balance	-8.50	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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August 23, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled July 20, 1993

Date received July 21, 1993

Trail Mountain Springs 17-35-1
Temperature 52.7°F
Flow 1.6 GPM
Rec'd 1300 hr.
Sampled 1425 hr.

FIELD MEASUREMENTS

pH	8.32
Conductivity	725
DO	10.4

NOTE: CONDUCTIVITY RUN AFTER HOLDING TIME EXPIRED.

Analysis report no. 59-13326

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	366	.4	mg/l HCO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Total	300	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	8.71	----	meq/l	---------	---------- ----- --
Calcium	37.6	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	7.91	----	meq/l	---------	---------- ----- --
Chloride	38.5	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	780	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	222	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.06	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	0.06	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	31.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oxygen, Dissolved	11.9	.01	mg/l	EPA 360.1	07-21-1993 16:00 LS
pH	8.10	----	Units	EPA 150.1	07-21-1993 16:00 LS
Potassium	1.00	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	80.40	.2	mg/l	EPA 273.1	08-20-1993 13:05 ED
Solids, Total Dissolved	455.0	14	mg/l	EPA 160.1	07-23-1993 08:25 LM
Solids, Total Suspended	2.0	7	mg/l	EPA 160.2	07-23-1993 13:00 LM
Sulfate	85.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Cation/Anion Balance	-4.90	----	%	---------	---------- ----- --

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8/23/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

September 15, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain Springs 17-35-1 (T-15)
Temperature 51.9°F
Flow 1.0 GPM
Rec'd 1600 hr.
Sampled 1150 hr.

FIELD MEASUREMENTS

pH	7.90
Conductivity	682
DO	10.5

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled August 10, 1993

Date received August 10, 1993

Analysis report no. 59-13389

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	206	.4	mg/l HCO_3	4500 CO_2 D	08-16-1993 10:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-10-1993 16:20 LS
Alkalinity, Total	169	.4	mg/l $CaCO_3$	EPA 310.1	08-16-1993 10:00 LS
Anions	5.69	----	meq/l	---------	---------- ----- --
Calcium	30.8	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Cations	6.49	----	meq/l	---------	---------- ----- --
Chloride	33.0	.5	mg/l	EPA 325.3	08-13-1993 13:30 LM
Conductivity	775	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	180	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Iron	0.68	.05	mg/l	EPA 236.1	08-31-1993 16:30 ED
Iron, Dissolved	0.07	.05	mg/l	EPA 236.1	09-03-1993 09:15 ED
Magnesium	25.00	.007	mg/l	EPA 242.1	09-14-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oxygen, Dissolved	7.4	.01	mg/l	EPA 360.1	08-10-1993 16:20 LM
pH	7.80	----	Units	EPA 150.1	08-10-1993 16:20 LM
Potassium	0.80	.1	mg/l	EPA 258.1	08-31-1993 17:15 ED
Sodium	67.00	.2	mg/l	EPA 273.1	09-14-1993 16:49 ED
Solids, Total Dissolved	449.0	14	mg/l	EPA 160.1	08-12-1993 14:20 LM
Solids, Total Suspended	3.0	7	mg/l	EPA 160.2	08-11-1993 12:00 LM
Sulfate	70.0	1	mg/l	EPA 375.4	09-01-1993 11:30 LS
Cation/Anion Balance	6.58	----	%	---------	---------- ----- --

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9/17/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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October 20, 1993

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

RECEIVED
10/20/93

Sample identification by
PACIFICORP FIELD OFFICE

T-15

Kind of sample reported to us Water

FIELD OFFICE

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled September 17, 1993

Date received September 17, 1993

Temperature 52.0°F
Flow 0.7 GPM
Rec'd 1530 hr.
Sampled 1241 hr.

FIELD MEASUREMENTS

pH	8.08
Conductivity	681
DO	11.2

Analysis report no. 59-13545

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	373	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993	1550	LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993	1550	LS
Alkalinity, Total	306	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993	1550	LS
Anions	8.26	----	meq/l		---------	----------	-----	--
Calcium	37.4	.03	mg/l		EPA 215.1	10-12-1993	1330	ED
Cations	7.62	----	meq/l		---------	----------	-----	--
Chloride	44.4	.5	mg/l		EPA 325.3	10-01-1993	0700	LM
Conductivity	796.00	0.2	umhos/cm		EPA 120.1	09-27-1993	1400	KP
Hardness, Total	221.1	.03	mg/l	$CaCO_3$	---------	10-12-1993	1330	ED
Iron	0.06	.05	mg/l		EPA 236.1	10-12-1993	1700	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993	1220	ED
Magnesium	31.00	.007	mg/l		EPA 242.1	10-18-1993	1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993	1730	ED
Oxygen, Dissolved	8.08	.01	mg/l		EPA 360.1	09-17-1993	1630	ED
pH	7.70	----	Units		EPA 150.1	09-17-1993	1620	ED
Potassium	1.0	.1	mg/l		EPA 258.1	10-13-1993	1250	ED
Sodium	74.0	.2	mg/l		EPA 273.1	10-18-1993	1650	ED
Solids, Total Dissolved	447	14	mg/l		EPA 160.1	09-21-1993	0800	LM
Solids, Total Suspended	1	7	mg/l		EPA 160.2	09-23-1993	1230	LM
Sulfate	50	1	mg/l		EPA 375.4	10-16-1993	1245	LS
Cation/Anion Balance	-4.03	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 8, 1993

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

RECEIVED
12/8/93

Sample identification by
PACIFICORP FIELD OFFICE

FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled October 26, 1993

Date received October 28, 1993

Trail Mountain Springs 17-35-1
Temperature 48.8°F
Flow 0.65 GPM
Rec'd 0730 hr.
Sampled 1546 hr.

FIELD MEASUREMENTS

pH	7.95
Conductivity	664
DO	13.9

NOTE: Holding time expired when Sulfate was run.

Analysis report no. 59-13681

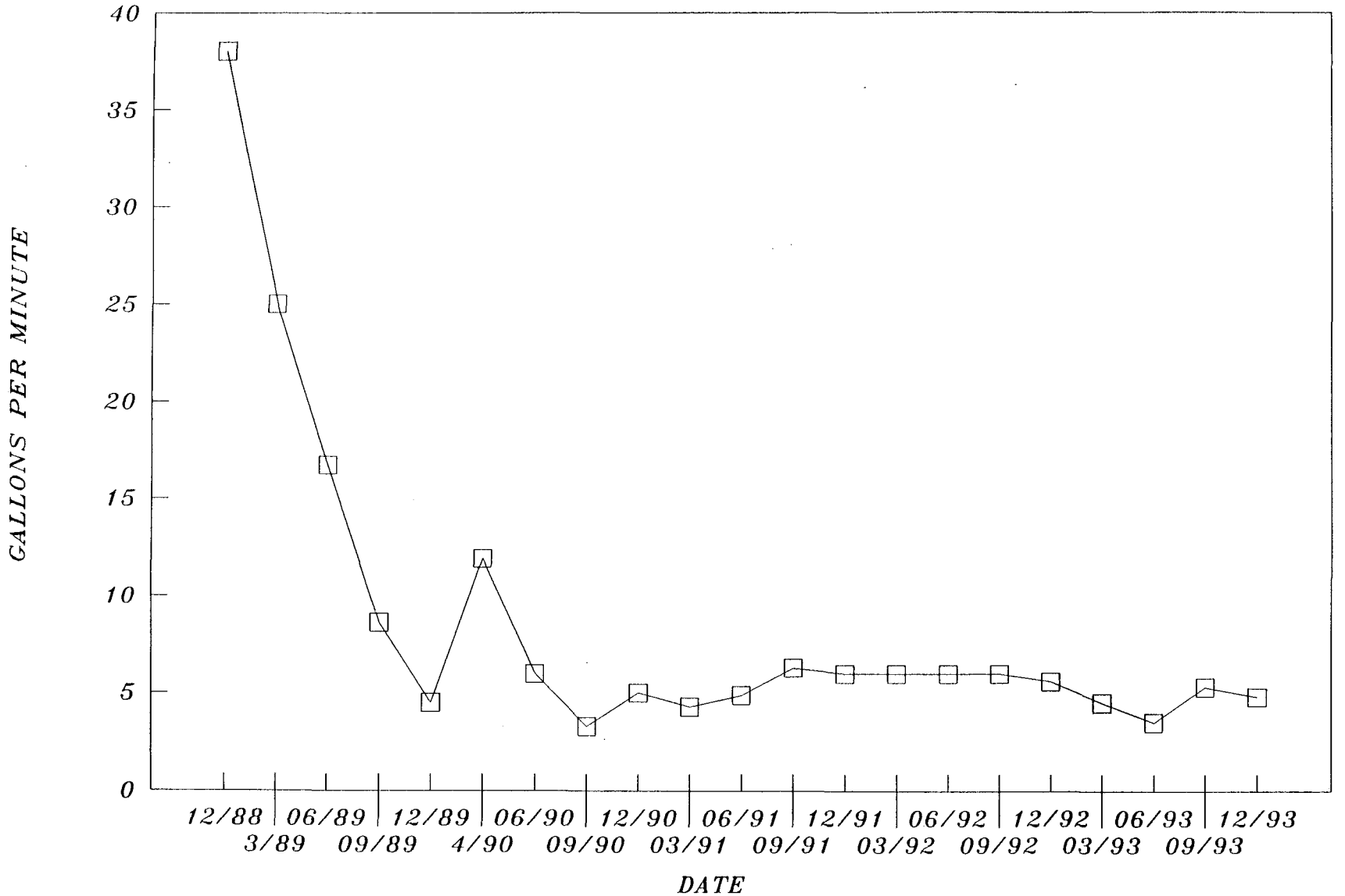
Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	374	2	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400 [illegible]
Alkalinity, Total	307	2	mg/l	$CaCO_3$	EPA 310.1	11-03-1993 1400 LS
Anions	8.20	----	meq/l		---------	---------- ----- --
Calcium	39.0	.03	mg/l		EPA 215.1	12-02-1993 1100 DW
Cations	8.20	----	meq/l		---------	---------- ----- --
Chloride	42.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	790.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945 ED
Hardness, Total	229.0	.03	mg/l	$CaCO_3$	---------	12-02-1993 1100 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-01-1993 1500 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-08-1993 0920 ED
Magnesium	32.00	.007	mg/l		EPA 242.1	11-30-1993 1100 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993 0830 DW
Oxygen, Dissolved	8.42	.01	mg/l		EPA 360.1	10-28-1993 0745 LM
pH	7.68	----	Units		EPA 150.1	10-28-1993 1430 LM
Potassium	2.0	.1	mg/l		EPA 258.1	11-30-1993 1500 DW
Sodium	82.0	.2	mg/l		EPA 273.1	11-30-1993 1300 DW
Solids, Total Dissolved	395	14	mg/l		EPA 160.1	11-02-1993 0730 LM
Solids, Total Suspended	13	7	mg/l		EPA 160.2	11-02-1993 0800 LM
Sulfate	50	1	mg/l		EPA 375.4	12-03-1993 1010 LS
Cation/Anion Balance	0.40	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

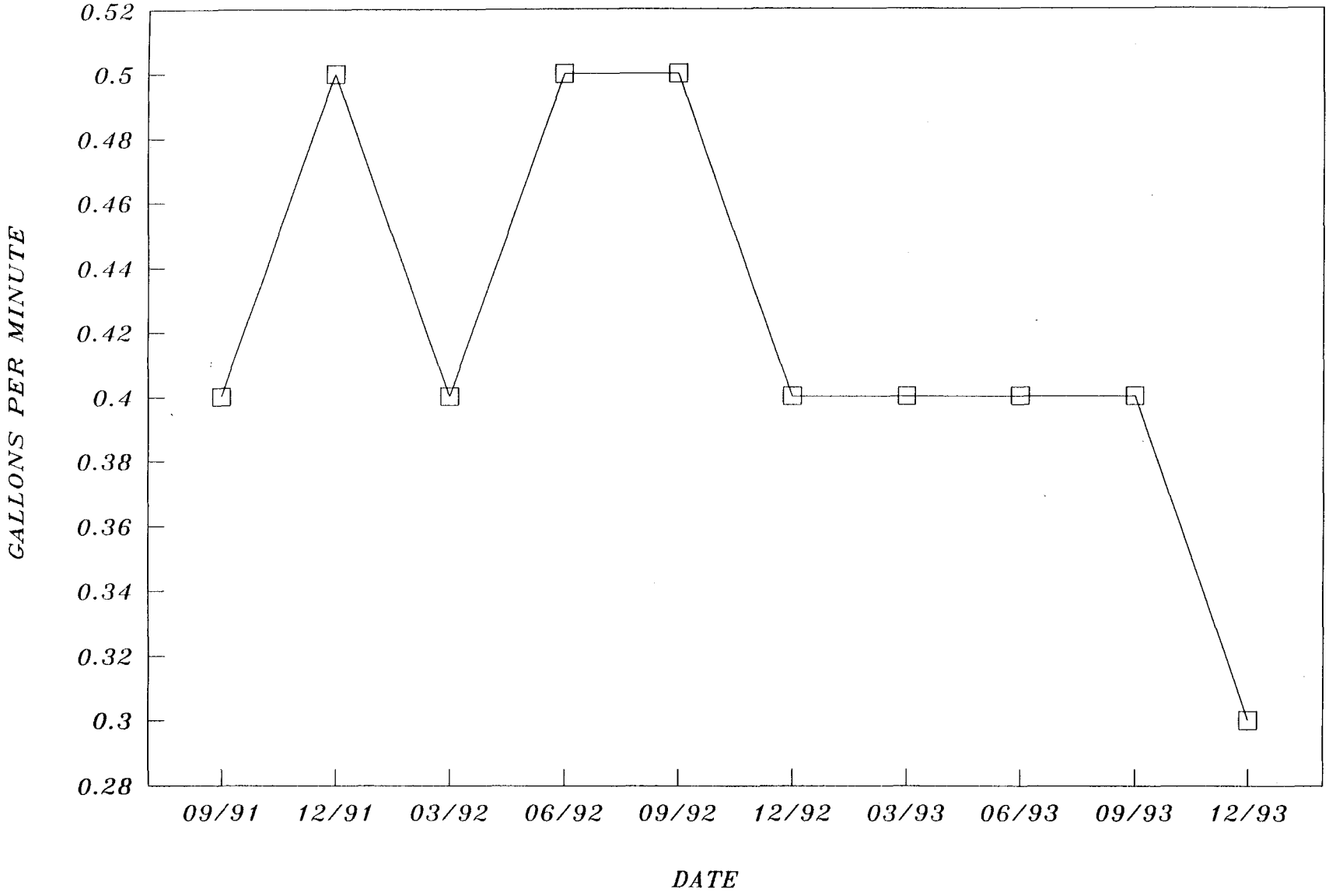
DEER CREEK IN-MINE MONITORING

3rd North xc-65(TW-10)

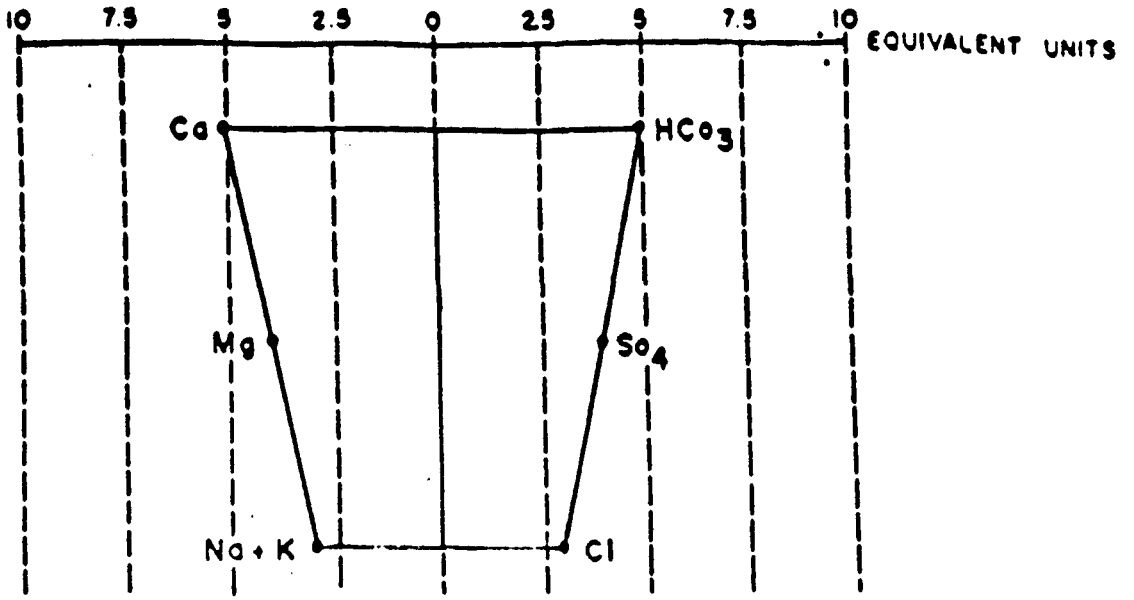


DEER CREEK IN-MINE MONITORING

Main North - Main East



CATION – ANION DIAGRAMS



$$\frac{\text{P P M}}{\text{Equivalent Weight}} = \text{Equivalent Unit}$$

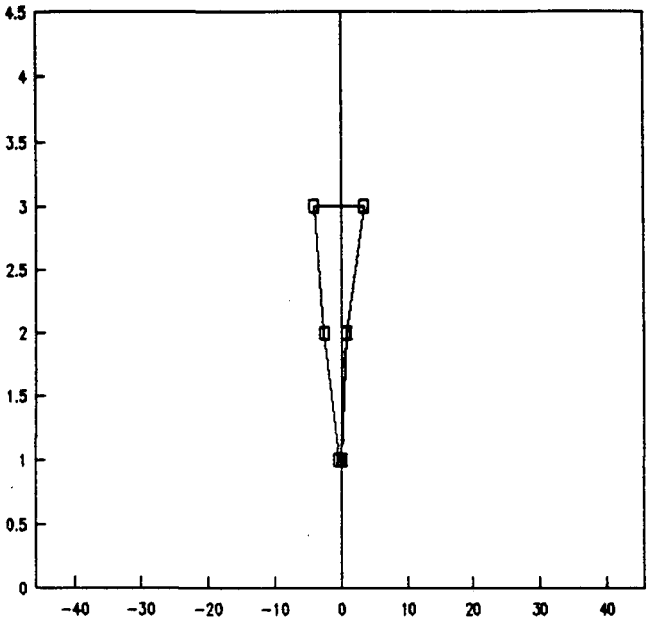
1" = 5 Equivalent Units

Equivalent Weights

Mg	12.16	(Magnesium)
Ca	20.04	(Calcium)
Na	23.00	(Sodium)
K	39.10	(Potassium)
So_4	48.03	(Sulfate)
$CaCO_3$	100.1	(Total Alkalinity)
Cl	35.46	(Chloride)

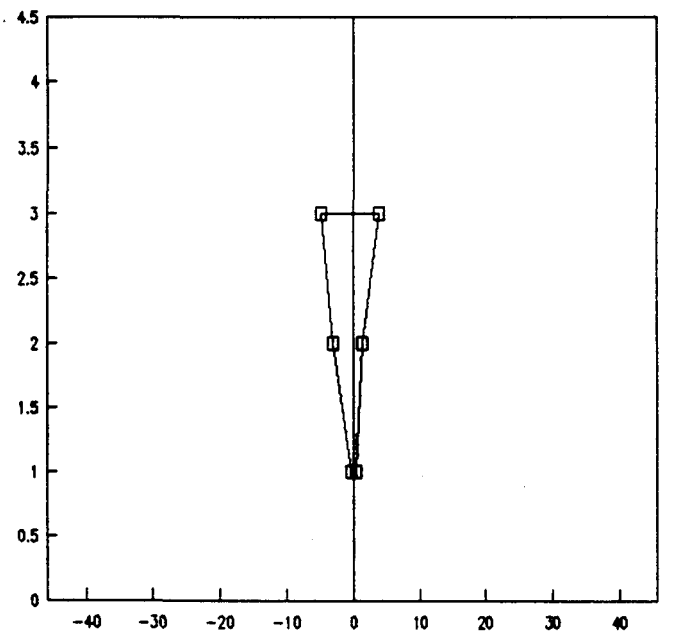
TW-10

1993



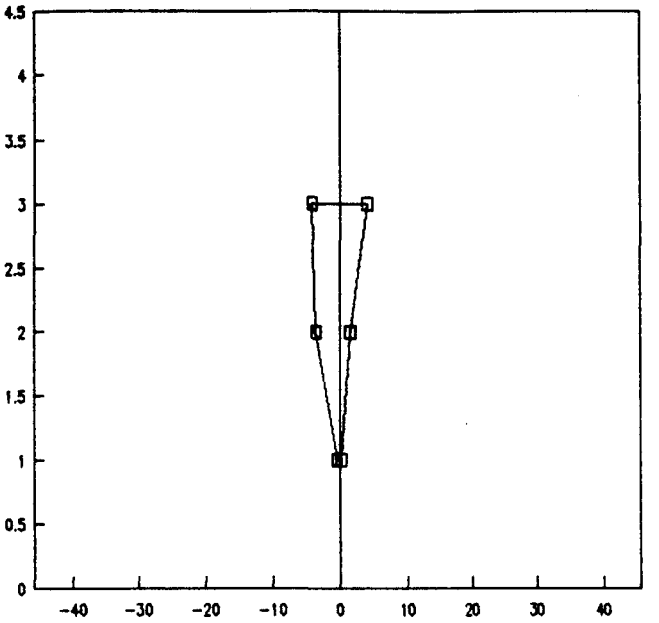
TW-10

HISTORICAL



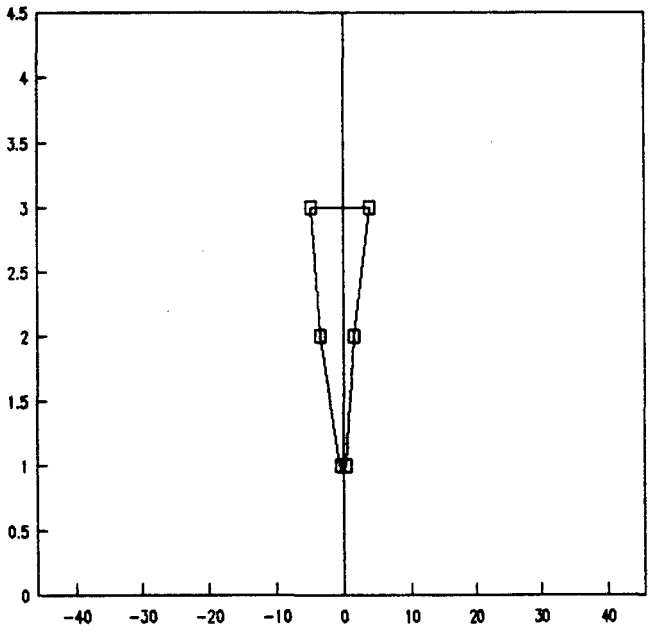
MN-ME

1993



MN-ME

HISTORICAL



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

March 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 17, 1993

Date received March 17, 1993

Deer Creek In-Mine TW-10
Temperature 44.0°F
Flow ~~0.45~~ GPM 4.5
Rec'd 1530 hr.
Sampled 1325 hr.

Analysis report no. 59-12945

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	279	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Total	229	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Anions	5.21	----	meq/l	---------	---------- ----- --
Calcium	61.3	.1	mg/l	EPA 215.1	03-22-1993 13:20 ED
Cations	6.16	----	meq/l	---------	---------- ----- --
Chloride	0.4	.1	mg/l	EPA 325.3	03-22-1993 14:20 LM
Conductivity	610	2	umhos/cm	EPA 120.1	03-24-1993 11:00 LS
Hardness, Total	279	1	mg/l $CaCO_3$	---------	03-22-1993 13:20 ED
Iron	0.12	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Iron, Dissolved	0.00	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Magnesium	30.60	.01	mg/l	EPA 242.1	03-22-1993 13:20 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-23-1993 08:35 ED
Oxygen, Dissolved	5.5	.01	mg/l	EPA 360.1	03-17-1993 16:00 LS
pH	7.20	----	Units	EPA 150.1	03-17-1993 16:00 LS
Potassium	0.00	.01	mg/l	EPA 258.1	03-22-1993 13:20 ED
Sodium	13.70	.01	mg/l	EPA 273.1	03-22-1993 13:20 ED
Solids, Total Dissolved	391.0	.5	mg/l	EPA 160.1	03-19-1993 10:45 LM
Solids, Total Suspended	9.0	.5	mg/l	EPA 160.2	03-19-1993 10:45 LM
Sulfate	35.0	.1	mg/l	EPA 375.4	03-23-1993 12:00 LS
Cation/Anion Balance	8.57	----	%	---------	---------- ----- --

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3/24/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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FAX: (801) 653-2436

July 21, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled June 29, 1993

Date received June 30, 1993

DC In Mine TW-10
Temperature 46.0°F
Flow 3.5 GPM
Rec'd 0800 hr.
Sampled 1040 hr.

NOTE: pH AND DO WERE EXPIRED WHEN RUN.

Analysis report no. 59-13230

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	375	.4	mg/l HCO_3	EPA 310.1	07-06-1993 15:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-06-1993 15:00 LS
Alkalinity, Total	308	.4	mg/l $CaCO_3$	EPA 310.1	07-06-1993 15:00 LS
Anions	6.98	----	meq/l	---------	---------- ----- --
Calcium	81.7	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	6.26	----	meq/l	---------	---------- ----- --
Chloride	4.9	.5	mg/l	EPA 325.3	07-08-1993 11:00 LM
Conductivity	530	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	281	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	18.70	.007	mg/l	EPA 242.1	07-20-1993 16:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	11.3	.01	mg/l	EPA 360.1	07-20-1993 10:00 LS
pH	8.40	----	Units	EPA 150.1	07-20-1993 10:00 LS
Potassium	0.30	.1	mg/l	EPA 258.1	07-13-1993 10:15 ED
Sodium	14.80	.2	mg/l	EPA 273.1	07-20-1993 16:25 ED
Solids, Total Dissolved	364.0	14	mg/l	EPA 160.1	07-02-1993 09:00 LM
Solids, Total Suspended	4.0	7	mg/l	EPA 160.2	07-02-1993 13:00 LM
Sulfate	40.0	1	mg/l	EPA 375.4	07-08-1993 13:15 LS
Cation/Anion Balance	-5.39	----	%	---------	---------- ----- --

RECEIVED
7/23/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

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October 20, 1993

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

RECEIVED
10/20/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek In-Mine TW-10

Temperature 56.0°F
Flow 5.3 GPM
Rec'd 1500 hr.
Sampled 1205 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled September 15, 1993

Date received September 16, 1993

NOTE: Holding times for DO and pH were expired when received at Lab; they were not run.

Analysis report no. 59-13543

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	376	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830 LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830 LS
Alkalinity, Total	309	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830 LS
Anions	7.09	----	meq/l		---------	---------- ----- --
Calcium	89.0	.03	mg/l		EPA 215.1	10-12-1993 1330 ED
Cations	8.38	----	meq/l		---------	---------- ----- --
Chloride	8.2	.5	mg/l		EPA 325.3	10-01-1993 0700 LM
Conductivity	652.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Hardness, Total	382.8	.03	mg/l	$CaCO_3$	---------	10-12-1993 1330 ED
Iron	0.13	.05	mg/l		EPA 236.1	10-12-1993 1700 ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993 1220 ED
Magnesium	39.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993 1730 ED
Potassium	2.0	.1	mg/l		EPA 258.1	10-13-1993 1250 ED
Sodium	15.9	.2	mg/l		EPA 273.1	10-18-1993 1650 ED
Solids, Total Dissolved	375	14	mg/l		EPA 160.1	09-21-1993 0800 LM
Solids, Total Suspended	0	7	mg/l		EPA 160.2	09-20-1993 0745 LM
Sulfate	40	1	mg/l		EPA 375.4	10-16-1993 1245 LS
Cation/Anion Balance	8.39	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

December 28, 1993

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

RECEIVED
12/30/93

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek TW-10

Temperature 44.0°F
Flow 4.8 GPM
Rec'd 0820 hr.
Sampled 1045 hr.

FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled December 15, 1993

Date received December 16, 1993

Analysis report no. 59-13794

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	302	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1415 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1245
Alkalinity, Total	302	1	mg/l	$CaCO_3$	EPA 310.1	12-17-1993 1415 LS
Anions	6.90	----	meq/l		---------	---------- ----- --
Calcium	94.0	1	mg/l		EPA 215.1	12-20-1993 1600 DW
Cations	8.30	----	meq/l		---------	---------- ----- --
Chloride	6.0	1	mg/l		EPA 325.3	12-22-1993 1255 ED
Conductivity	641.00	0.2	umhos/cm		EPA 120.1	12-16-1993 1035 ED
Hardness, Total	383.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Magnesium	36.00	1	mg/l		EPA 242.1	12-22-1993 0830 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-21-1993 1030 DW
Oxygen, Dissolved	4.51	.01	mg/l		EPA 360.1	12-16-1993 0900 LM
pH	6.88	----	Units		EPA 150.1	12-16-1993 0930 LM
Potassium	2.0	2	mg/l		EPA 258.1	12-20-1993 1030 DW
Sodium	15.0	1	mg/l		EPA 273.1	12-21-1993 1530 DW
Solids, Total Dissolved	384	10	mg/l		EPA 160.1	12-21-1993 1200 LM
Solids, Total Suspended	<4	4	mg/l		EPA 160.2	12-21-1993 1230 LM
Sulfate	33	1	mg/l		EPA 375.4	12-21-1993 1000 LS
Cation/Anion Balance	9.3	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry D Stout

Manager, Huntington Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITI
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TEL: (801) 653-2311
FAX: (801) 653-2436

April 15, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Deer Creek In- Mine
Main North Main East
Temperature 52.0°F
Flow 2'.30/GAL= 0.9 GPM
Rec'd 1530 hr.
Sampled 1035 hr.

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 17, 1993

Date received March 17, 1993

Analysis report no. 59-12950

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	413	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Total	339	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Aluminum	0.27	.5	mg/l	EPA 202.1	04-02-1993 10:30 ED
Anions	8.49	----	meq/l	---------	---------- ----- --
Arsenic	0.000	.002	mg/l	EPA 206.2	04-07-1993 11:10 ED
Barium	0.00	.03	mg/l	EPA 208.1	04-02-1993 10:30 ED
Boron	0.42	.01	mg/l	EPA 212.3	04-14-1993 15:45 LM
Cadmium	0.000	.00	mg/l	EPA 213.2	04-06-1993 07:45 ED
Calcium	72.6	.1	mg/l	EPA 215.1	03-22-1993 13:20 ED
Cations	7.62	----	meq/l	---------	---------- ----- --
Chloride	7.3	.1	mg/l	EPA 325.3	03-22-1993 14:20 LM
Chromium	0.00	.001	mg/l	EPA 218.2	04-05-1993 12:45 ED
Conductivity	720	2	umhos/cm	EPA 120.1	03-24-1993 11:00 LS
Copper	0.000	.01	mg/l	EPA 220.1	04-01-1993 10:15 ED
Fluoride	0.22	.01	mg/l	EPA 340.2	04-07-1993 13:30 LS
Hardness, Total	343	1	mg/l $CaCO_3$	---------	03-22-1993 13:20 ED
Iron	0.11	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Iron, Dissolved	0.00	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Lead	0.000	.001	mg/l	EPA 239.2	04-05-1993 07:40 ED
Magnesium	39.20	.01	mg/l	EPA 242.1	03-22-1993 13:20 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-23-1993 08:35 ED
Mercury	0.000	.002	mg/l	EPA 245.1	03-23-1993 13:55 ED
Molybdenum	0.00	.1	mg/l	EPA 246.1	04-02-1993 10:30 ED

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry D Stout

Manager, Huntington Laboratory JK

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

April 15, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 17, 1993

Date received March 17, 1993

Deer Creek In- Mine
Main North Main East
Temperature 52.0°F
Flow 2'.30/GAL= 0.4 GPM
Rec'd 1530 hr.
Sampled 1035 hr.

Analysis report no. 59-12950

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nickel	0.10	.02	mg/l	EPA 249.1	04-01-1993 10:15 ED
Nitrogen, Ammonia	0.09	.01	mg/l	EPA 350.3	04-05-1993 11:15 LS
Nitrogen, Nitrate	0.13	.01	mg/l	EPA 353.3	03-18-1993 11:00 LM
Nitrogen, Nitrite	0.00	.01	mg/l	EPA 354.1	03-19-1993 09:00 LM
Oxygen, Dissolved	6.0	.01	mg/l	EPA 360.1	03-18-1993 07:30 LS
pH	7.10	----	Units	EPA 150.1	03-18-1993 07:30 LS
Phosphorus, Total	0.02	.01	mg/l	EPA 365.2	04-02-1993 13:00 LM
Potassium	1.90	.01	mg/l	EPA 258.1	03-22-1993 13:20 ED
Selenium	0.014	.002	mg/l	EPA 270.2	04-08-1993 08:00 ED
Sodium	17.00	.01	mg/l	EPA 273.1	03-22-1993 13:20 ED
Solids, Total Dissolved	453.0	.5	mg/l	EPA 160.1	03-19-1993 10:45 LM
Solids, Total Suspended	6.0	.5	mg/l	EPA 160.2	03-19-1993 10:45 LM
Sulfate	80.0	.1	mg/l	EPA 375.4	03-23-1993 12:00 LS
Sulfide	0.80	.1	mg/l	EPA 376.1	03-19-1993 15:30 LM
Zinc	0.07	.01	mg/l	EPA 289.1	04-01-1993 10:15 ED
Cation/Anion Balance	-5.38	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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July 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

DC In Mine Mine Main North Main East
Temperature 54.0°F
Flow 0.4 GPM
Rec'd 1400 hr.
Sampled 1105 hr.

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled June 28, 1993

Date received June 28, 1993

Analysis report no. 59-13229

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	406	2	mg/l HCO_3	EPA 310.1	06-29-1993 15:00 LS
Alkalinity, Carbonate	0	1	mg/l CO_3	EPA 310.1	06-29-1993 15:00 LS
Alkalinity, Total	333	2	mg/l $CaCO_3$	EPA 310.1	06-29-1993 15:00 LS
Anions	8.48	----	meq/l	---------	---------- ----- --
Calcium	91.9	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	8.91	----	meq/l	---------	---------- ----- --
Chloride	11.1	.5	mg/l	EPA 325.3	07-08-1993 11:00 LM
Conductivity	620	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	399	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	0.05	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	41.10	.007	mg/l	EPA 242.1	07-14-1993 16:20 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	0.7	.01	mg/l	EPA 360.1	06-29-1993 17:10 ED
pH	7.02	----	Units	EPA 150.1	06-29-1993 17:10 ED
Potassium	0.80	.1	mg/l	EPA 258.1	07-13-1993 18:15 ED
Sodium	21.60	.2	mg/l	EPA 273.1	07-13-1993 16:25 ED
Solids, Total Dissolved	426.0	14	mg/l	EPA 160.1	07-02-1993 09:00 LM
Solids, Total Suspended	8.0	7	mg/l	EPA 160.2	07-02-1993 13:00 LM
Sulfate	80.0	1	mg/l	EPA 375.4	07-08-1993 13:15 LS
Cation/Anion Balance	2.47	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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October 20, 1993

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

RECEIVED
10/20/93

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Main North Main East

Kind of sample reported to us Water

Sample taken at Deer Creek FIELD OFFICE

Sample taken by Energy West/CS

Date sampled September 15, 1993

Date received September 16, 1993

Temperature 56.0°F
Flow 0.4 GPM
Rec'd 1500 hr.
Sampled 1440 hr.

NOTE: Holding times for DO and pH were expired when received at Lab; they were not run.

Analysis report no. 59-13544

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	424	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830 LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830 LS
Alkalinity, Total	348	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 0830 LS
Anions	8.65	----	meq/l		---------	---------- ----- --
Calcium	89.4	.03	mg/l		EPA 215.1	10-12-1993 1330 ED
Cations	9.35	----	meq/l		---------	---------- ----- --
Chloride	6.8	.5	mg/l		EPA 325.3	10-01-1993 0700 LM
Conductivity	757.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Hardness, Total	420.9	.03	mg/l	$CaCO_3$	---------	10-12-1993 1245 LS
Iron	0.07	.05	mg/l		EPA 236.1	10-12-1993 1700 ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993 1220 ED
Magnesium	48.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993 1730 ED
Potassium	3.0	.1	mg/l		EPA 258.1	10-13-1993 1250 ED
Sodium	20.2	.2	mg/l		EPA 273.1	10-18-1993 1650 ED
Solids, Total Dissolved	439	14	mg/l		EPA 160.1	09-21-1993 0800 LM
Solids, Total Suspended	3	7	mg/l		EPA 160.2	09-20-1993 0745 LM
Sulfate	80	1	mg/l		EPA 375.4	10-16-1993 1245 LS
Cation/Anion Balance	3.89	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2479

December 28, 1993

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

12/28/93

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Main North/Main East Deer Creek In-Mine

Temperature 52.0°F
Flow 0.3 GPM
Rec'd 0820 hr.
Sampled 1011 hr.

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled December 15, 1993

Date received December 16, 1993

Analysis report no. 59-13795

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	326	1	mg/l	$CaCO_3$	4500 CO_2D	12-20-1993 1330 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	4500 CO_2D	12-20-1993 1330 LS
Alkalinity, Total	326	1	mg/l	$CaCO_3$	EPA 310.1	12-20-1993 1330 LS
Anions	8.40	----	meq/l		---------	---------- ----- --
Calcium	76.0	1	mg/l		EPA 215.1	12-20-1993 1600 DW
Cations	8.10	----	meq/l		---------	---------- ----- --
Chloride	7.0	1	mg/l		EPA 325.3	12-22-1993 1255 ED
Conductivity	750.00	0.2	umhos/cm		EPA 120.1	12-16-1993 1035 ED
Hardness, Total	367.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Magnesium	43.00	1	mg/l		EPA 242.1	12-22-1993 0830 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-21-1993 1030 DW
Oxygen, Dissolved	4.57	.01	mg/l		EPA 360.1	12-16-1993 0900 LM
pH	7.03	----	Units		EPA 150.1	12-16-1993 0930 LM
Potassium	14.0	2	mg/l		EPA 258.1	12-20-1993 1030 DW
Sodium	18.0	1	mg/l		EPA 273.1	12-21-1993 1530 DW
Solids, Total Dissolved	453	10	mg/l		EPA 160.1	12-21-1993 1200 LM
Solids, Total Suspended	<4	4	mg/l		EPA 160.2	12-21-1993 1230 LM
Sulfate	80	1	mg/l		EPA 375.4	12-21-1993 1000 LS
Cation/Anion Balance	-1.6	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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FAX: (801) 653-2436

March 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Deer Creek In- Mine
4th South Seals
Temperature 55.0°F
Rec'd 1530 hr.
Sampled 1235 hr.

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 17, 1993

Date received March 17, 1993

Analysis report no. 59-12951

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	412	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Total	338	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Anions	11.02	----	meq/l	---------	---------- ----- --
Calcium	80.2	.1	mg/l	EPA 215.1	03-22-1993 13:20 ED
Cations	10.14	----	meq/l	---------	---------- ----- --
Chloride	8.1	.1	mg/l	EPA 325.3	03-22-1993 14:30 LM
Conductivity	810	2	umhos/cm	EPA 120.1	03-24-1993 11:00 LS
Hardness, Total	388	1	mg/l $CaCO_3$	---------	03-22-1993 13:20 ED
Iron	1.63	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Iron, Dissolved	1.53	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Magnesium	45.60	.01	mg/l	EPA 242.1	03-22-1993 13:20 ED
Manganese	0.04	.01	mg/l	EPA 243.1	03-23-1993 08:35 ED
Oxygen, Dissolved	3.9	.01	mg/l	EPA 360.1	03-17-1993 16:00 LS
pH	6.90	----	Units	EPA 150.1	03-17-1993 16:00 LS
Potassium	7.00	.01	mg/l	EPA 258.1	03-22-1993 13:20 ED
Sodium	51.30	.01	mg/l	EPA 273.1	03-22-1993 13:20 ED
Solids, Total Dissolved	513.0	.5	mg/l	EPA 160.1	03-19-1993 10:45 LM
Solids, Total Suspended	9.0	.5	mg/l	EPA 160.2	03-19-1993 10:45 LM
Sulfate	200.0	.1	mg/l	EPA 375.4	03-23-1993 12:00 LS
Cation/Anion Balance	-4.16	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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July 20, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

DC In Mine 4th South Seals
Temperature 54.0°F
Rec'd 0800 hr.
Sampled 1040 hr.

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled June 29, 1993

Date received June 30, 1993

NOTE: pH and DO was expired when run.

Analysis report no. 59-13231

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	437	.4	mg/l HCO_3	EPA 310.1	07-06-1993 15:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-06-1993 15:00 LS
Alkalinity, Total	359	.4	mg/l $CaCO_3$	EPA 310.1	07-06-1993 15:00 LS
Anions	10.16	----	meq/l	---------	---------- ----- --
Calcium	92.2	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	9.06	----	meq/l	---------	---------- ----- --
Chloride	8.0	.5	mg/l	EPA 325.3	07-08-1993 11:00 LM
Conductivity	720	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	403	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	2.02	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	0.14	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	42.00	.007	mg/l	EPA 242.1	07-14-1993 16:20 ED
Manganese	0.04	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	11.2	.01	mg/l	EPA 360.1	07-20-1993 11:30 LS
pH	8.40	----	Units	EPA 150.1	07-20-1993 11:30 LS
Potassium	4.00	.1	mg/l	EPA 258.1	07-13-1993 18:15 ED
Sodium	21.00	.2	mg/l	EPA 273.1	07-13-1993 16:25 ED
Solids, Total Dissolved	517.0	14	mg/l	EPA 160.1	07-02-1993 09:00 ED
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	07-02-1993 13:00 ED
Sulfate	140.0	1	mg/l	EPA 375.4	07-08-1993 13:15 LS
Cation/Anion Balance	-5.69	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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January 22, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by PacifiCorp

Date sampled January 15, 1993

Date received January 15, 1993

Deer Creek Mine Discharge
DCD EW
Temperature 56.2°F
Flow 1000 GPM
Rec'd 1200 hr.
Sampled 0957 hr.

FIELD MEASUREMENTS

pH	7.12
Conductivity	834
DO	6.2
Turbidity	1.1

Analysis report no. 59-12817

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	12	1	mg/l $CaCO_3$	EPA 305.1	01-20-1993 14:15 LM
Alkalinity, Bicarbonate	407	1	mg/l $CaCO_3$	EPA 310.1	01-18-1993 08:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	01-18-1993 08:00 LS
Alkalinity, Total	334	1	mg/l $CaCO_3$	EPA 310.1	01-18-1993 08:00 LS
Anions	10.71	----	meq/l	---------	---------- ----- --
Calcium	113.0	.1	mg/l	EPA 215.1	01-20-1993 13:00 LS
Cations	11.21	----	meq/l	---------	---------- ----- --
Chloride	15.0	.1	mg/l	EPA 325.3	01-18-1993 09:00 LS
Conductivity	880	2	umhos/cm	EPA 120.1	01-18-1993 10:00 LS
Hardness, Total	500	1	mg/l $CaCO_3$	---------	01-20-1993 13:00 LS
Iron	0.05	.02	mg/l	EPA 236.1	01-20-1993 13:45 LS
Iron, Dissolved	0.04	.02	mg/l	EPA 236.1	01-20-1993 13:45 LS
Magnesium	52.80	.01	mg/l	EPA 242.1	01-20-1993 13:00 LS
Manganese	0.00	.01	mg/l	EPA 243.1	01-20-1993 13:45 LS
Oil & Grease	0.0	1	mg/l	EPA 413.1	01-19-1993 10:30 LM
Oxygen, Dissolved	6.4	.01	mg/l	EPA 360.1	01-15-1993 13:00 LM
pH	7.50	----	Units	EPA 150.1	01-15-1993 13:00 LM
Potassium	2.40	.01	mg/l	EPA 258.1	01-20-1993 13:00 LS
Sodium	27.20	.01	mg/l	EPA 273.1	01-20-1993 13:00 LS
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	01-15-1993 08:30 LM
Solids, Total Dissolved	622.0	.5	mg/l	EPA 160.1	01-19-1993 11:30 LM
Solids, Total Suspended	3.0	.5	mg/l	EPA 160.2	01-19-1993 11:30 LM
Sulfate	180.0	.1	mg/l	EPA 375.4	01-14-1993 11:00 LS
Turbidity	0.5	.1	NTU	EPA 180.1	01-15-1993 15:00 LM

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout 1/22/93
Manager, Huntington Laboratory

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FAX: (801) 653-2436

March 16, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled February 26, 1993

Date received February 26, 1993

Deer Creek Discharge DCD
Temperature 56.0°F
Flow 1058 GPM
Rec'd 1230 hr.
Sampled 1038 hr.

FIELD MEASUREMENTS

pH	7.66
Conductivity	842
Turbidity	~~108~~ 18
DO	5.4

Analysis report no. 59-12905

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	9	1	mg/l $CaCO_3$	EPA 305.1	03-04-1993 10:20 LS
Alkalinity, Bicarbonate	418	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Total	343	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Anions	10.34	----	meq/l	---------	---------- ----- --
Calcium	89.5	.1	mg/l	EPA 215.1	03-04-1993 13:30 ED
Cations	10.10	----	meq/l	---------	---------- ----- --
Chloride	10.5	.1	mg/l	EPA 325.3	03-08-1993 08:00 LM
Conductivity	900	2	umhos/cm	EPA 120.1	03-04-1993 15:30 LS
Hardness, Total	433	1	mg/l $CaCO_3$	---------	03-04-1993 13:30 LS
Iron	0.24	.02	mg/l	EPA 236.1	03-05-1993 08:10 ED
Iron, Dissolved	0.09	.02	mg/l	EPA 236.1	03-05-1993 08:10 ED
Magnesium	51.00	.01	mg/l	EPA 242.1	03-12-1993 08:10 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-05-1993 08:10 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	03-03-1993 08:00 LM
Oxygen, Dissolved	5.8	.01	mg/l	EPA 360.1	02-26-1993 13:20 LS
pH	7.20	----	Units	EPA 150.1	02-26-1993 13:20 LS
Potassium	8.50	.01	mg/l	EPA 258.1	03-12-1993 12:55 ED
Sodium	28.50	.01	mg/l	EPA 273.1	03-12-1993 12:55 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	02-27-1993 07:30 LS
Solids, Total Dissolved	616.0	.5	mg/l	EPA 160.1	03-04-1993 09:30 LM
Solids, Total Suspended	5.0	.5	mg/l	EPA 160.2	03-04-1993 09:30 LM
Sulfate	160.0	.1	mg/l	EPA 375.4	03-10-1993 09:00 LS
Turbidity	19.0	.1	NTU	EPA 180.1	02-27-1993 07:30 LS
Cation/Anion Balance	16		%		

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3/16/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory JK

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

March 12, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 2, 1993

Date received March 2, 1993

Deer Creek Discharge DCD
Flow 941 GPM TEMP 13.1°C
Rec'd 1230 hr.
Sampled 1105 hr.

FIELD MEASUREMENTS

pH	6.90
Conductivity	922
DO	5.3

Analysis report no. 59-12906

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	9	1	mg/l $CaCO_3$	EPA 305.1	03-04-1993 10:20 LS
Alkalinity, Bicarbonate	422	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Total	346	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Anions	8.87	----	meq/l	---------	---------- ----- --
Calcium	86.4	.1	mg/l	EPA 215.1	03-04-1993 13:30 ED
Cations	10.02	----	meq/l	---------	---------- ----- --
Chloride	0.7	.1	mg/l	EPA 325.3	03-08-1993 08:00 LM
Conductivity	890	2	umhos/cm	EPA 120.1	03-04-1993 15:30 LS
Hardness, Total	430	1	mg/l $CaCO_3$	---------	03-04-1993 13:30 ED
Iron	0.21	.02	mg/l	EPA 236.1	03-04-1993 13:30 ED
Iron, Dissolved	0.09	.02	mg/l	EPA 236.1	03-04-1993 13:30 ED
Magnesium	52.00	.01	mg/l	EPA 242.1	03-04-1993 13:30 ED
Manganese	0.04	.01	mg/l	EPA 243.1	03-04-1993 13:30 ED
Oil & Grease	0.2	1	mg/l	EPA 413.1	03-03-1993 08:00 LM
Oxygen, Dissolved	7.8	.01	mg/l	EPA 360.1	03-02-1993 14:10 LM
pH	6.96	----	Units	EPA 150.1	03-02-1993 14:10 LM
Potassium	11.30	.01	mg/l	EPA 258.1	03-04-1993 13:30 ED
Sodium	26.50	.01	mg/l	EPA 273.1	03-04-1993 13:30 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	03-02-1993 13:00 ED
Solids, Total Dissolved	572.0	.5	mg/l	EPA 160.1	03-04-1993 09:30 LM
Solids, Total Suspended	7.0	.5	mg/l	EPA 160.2	03-04-1993 09:30 LM
Sulfate	100.0	.1	mg/l	EPA 375.4	03-10-1993 09:00 LS
Turbidity	1.0	.1	NTU	EPA 180.1	03-03-1993 07:30 LS
Cati[illegible]	6.06		%		

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Manager, Huntington Laboratory

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

April 5, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 17, 1993

Date received March 17, 1993

Deer Creek Discharge DCD
Temperature 59.5°F
Flow 960 GPM
Rec'd 1530 hr.
Sampled 1430 hr.

FIELD MEASUREMENTS

pH	7.57
Conductivity	775
Turbidity	2.3
DO	7.6

Analysis report no. 59-12948

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	12	1	mg/l $CaCO_3$	EPA 305.1	03-19-1993 12:15 LS
Alkalinity, Bicarbonate	409	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Alkalinity, Total	336	1	mg/l $CaCO_3$	EPA 310.1	03-19-1993 12:15 LS
Anions	9.96	----	meq/l	---------	---------- ----- --
Calcium	99.1	.1	mg/l	EPA 215.1	04-02-1993 09:00 ED
Cations	10.24	----	meq/l	---------	---------- ----- --
Chloride	9.1	.1	mg/l	EPA 325.3	03-22-1993 14:30 LM
Conductivity	900	2	umhos/cm	EPA 120.1	03-24-1993 11:00 LS
Hardness, Total	462	1	mg/l $CaCO_3$	---------	04-02-1993 09:00 ED
Iron	0.06	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Iron, Dissolved	0.02	.02	mg/l	EPA 236.1	03-23-1993 08:35 ED
Magnesium	52.00	.01	mg/l	EPA 242.1	04-02-1993 09:00 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-23-1993 08:35 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	03-23-1993 13:00 LS
Oxygen, Dissolved	6.2	.01	mg/l	EPA 360.1	03-17-1993 15:00 LS
pH	6.90	----	Units	EPA 150.1	03-17-1993 15:00 LS
Potassium	3.20	.01	mg/l	EPA 258.1	03-22-1993 13:20 ED
Sodium	21.70	.01	mg/l	EPA 273.1	03-22-1993 13:20 ED
Solids, Total Dissolved	613.0	.5	mg/l	EPA 160.1	03-19-1993 10:45 LM
Solids, Total Suspended	6.0	.5	mg/l	EPA 160.2	03-19-1993 10:45 LM
Sulfate	150.0	.1	mg/l	EPA 375.4	03-23-1993 12:00 LS
Turbidity	1.0	.1	NTU	EPA 180.1	03-18-1993 09:00 LS
Cation/Anion Balance	1.42	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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April 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Discharge DCD
Temperature 56.5°F
Flow 980 GPM
Rec'd 1545 hr.
Sampled 1341 hr.

FIELD MEASURMENTS

pH	7.18
Conductivity	789
DO	8.3

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled April 6, 1993

Date received April 6, 1993

Analysis report no. 59-12994

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	8	1	mg/l $CaCO_3$	EPA 305.1	04-13-1993 10:30 LS
Alkalinity, Bicarbonate	409	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Total	336	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Anions	12.27	----	meq/l	---------	---------- ----- --
Calcium	86.8	.1	mg/l	EPA 215.1	04-15-1993 11:05 ED
Cations	10.37	----	meq/l	---------	---------- ----- --
Chloride	9.2	.1	mg/l	EPA 325.3	04-13-1993 13:00 LM
Conductivity	900	2	umhos/cm	EPA 120.1	04-17-1993 08:00 LS
Hardness, Total	430	1	mg/l $CaCO_3$	---------	04-15-1993 11:05 ED
Iron	0.43	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Iron, Dissolved	0.25	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Magnesium	51.90	.01	mg/l	EPA 242.1	04-15-1993 11:25 ED
Manganese	0.00	.01	mg/l	EPA 243.1	04-15-1993 14:10 ED
Oil & Grease	1.5	1	mg/l	EPA 413.1	04-15-1993 08:30 LM
Oxygen, Dissolved	7.1	.01	mg/l	EPA 360.1	04-07-1993 16:00 LS
pH	7.09	----	Units	EPA 150.1	07-07-1993 16:00 LS
Potassium	6.70	.01	mg/l	EPA 258.1	04-16-1993 08:20 ED
Sodium	37.20	.01	mg/l	EPA 273.1	04-16-1993 07:35 ED
Solids, Total Dissolved	588.0	.5	mg/l	EPA 160.1	04-08-1993 10:00 LM
Solids, Total Suspended	49.0	.5	mg/l	EPA 160.2	04-08-1993 10:00 LM
Sulfate	260.0	.1	mg/l	EPA 375.4	04-15-1993 10:20 LS
Turbidity	1.1	.1	NTU	EPA 180.1	04-07-1993 07:30 LS
Cation/Anion Balance	-8.36	----	%	---------	---------- ----- --

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COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

April 30, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled April 22, 1993

Date received April 22, 1993

Deer Creek Discharge DCD
Temperature 56.0°F
Flow 725 GPM
Rec'd 1100 hr.
Sampled 0845 hr.

Field Measurements

pH	8.25
Conductivity	853
Turbidity	6.9
Dis. Oxy	8.6

Analysis report no. 59-13036

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	6	1	mg/l $CaCO_3$	EPA 305.1	04-23-1993 12:45 LS
Alkalinity, Bicarbonate	395	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Total	324	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Anions	9.93	----	meq/l	---------	---------- ----- --
Calcium	87.0	.1	mg/l	EPA 215.1	04-28-1993 13:40 ED
Cations	10.14	----	meq/l	---------	---------- ----- --
Chloride	9.1	.1	mg/l	EPA 325.3	04-22-1993 13:00 LM
Conductivity	748	2	umhos/cm	EPA 120.1	04-27-1993 14:00 LS
Hardness, Total	442	1	mg/l $CaCO_3$	---------	04-28-1993 13:40 ED
Iron	0.90	.02	mg/l	EPA 236.1	04-29-1993 10:35 ED
Iron, Dissolved	0.10	.02	mg/l	EPA 236.1	04-30-1993 08:55 ED
Magnesium	54.50	.01	mg/l	EPA 242.1	04-28-1993 14:15 ED
Manganese	0.07	.01	mg/l	EPA 243.1	04-28-1993 15:20 ED
Oil & Grease	0.9	1	mg/l	EPA 413.1	04-26-1993 08:00 LM
Oxygen, Dissolved	6.9	.01	mg/l	EPA 360.1	04-22-1993 16:00 LS
pH	6.80	----	Units	EPA 150.1	04-22-1993 16:00 LS
Potassium	6.30	.01	mg/l	EPA 258.1	04-29-1993 13:30 ED
Sodium	26.80	.01	mg/l	EPA 273.1	04-29-1993 13:30 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	04-23-1993 07:30 LM
Solids, Total Dissolved	582.0	.5	mg/l	EPA 160.1	04-23-1993 08:00 LM
Solids, Total Suspended	3.0	.5	mg/l	EPA 160.2	04-23-1993 08:00 LM
Sulfate	160.0	.1	mg/l	EPA 375.4	04-26-1993 08:30 LS
Turbidity	17.0	.1	NTU	EPA 180.1	04-23-1993 13:00 LS
Canio[illegible]	1.00		%		

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FAX: (801) 653-2436

May 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled May 13, 1993

Date received May 13, 1993

Deer Creek Discharge
Temperature 55.9°F
Flow 921 GPM
Rec'd 1500 hr.
Sampled 1344 hr.

FIELD MEASUREMENTS	
pH	7.30
Conductivity	830
Turbidity	13
DO	6.0

Analysis report no. 59-13079

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	5	1	mg/l $CaCO_3$	EPA 305.1	05-23-1993 15:00 LS
Alkalinity, Bicarbonate	369	2	mg/l $CaCO_3$	EPA 310.1	05-23-1993 15:00 LS
Alkalinity, Carbonate	<1	1	mg/l $CaCO_3$	EPA 310.1	05-23-1993 15:00 LS
Alkalinity, Total	303	2	mg/l $CaCO_3$	EPA 310.1	05-23-1993 15:00 LS
Anions	9.32	----	meq/l	---------	---------- ----- --
Calcium	82.4	.03	mg/l	EPA 215.1	05-21-1993 14:30 ED
Cations	10.09	----	meq/l	---------	---------- ----- --
Chloride	9.2	.5	mg/l	EPA 325.3	05-24-1993 07:45 LM
Conductivity	690	0.2	umhos/cm	EPA 120.1	05-24-1993 09:00 LS
Hardness, Total	444	.03	mg/l $CaCO_3$	---------	05-21-1993 14:30 ED
Iron	0.29	.05	mg/l	EPA 236.1	05-21-1993 12:55 ED
Iron, Dissolved	0.11	.05	mg/l	EPA 236.1	05-21-1993 12:55 ED
Magnesium	57.90	.01	mg/l	EPA 242.1	05-21-1993 15:00 ED
Manganese	0.03	.03	mg/l	EPA 243.1	05-21-1993 14:05 ED
Oil & Grease	1.4	1	mg/l	EPA 413.1	05-18-1993 09:30 LM
Oxygen, Dissolved	7.1	.01	mg/l	EPA 360.1	05-13-1993 15:15 LM
pH	6.73	----	Units	EPA 150.1	05-13-1993 15:15 LM
Potassium	5.00	.1	mg/l	EPA 258.1	05-24-1993 07:50 ED
Sodium	25.30	.2	mg/l	EPA 273.1	05-21-1993 15:30 ED
Solids, Settleable	<0.5	.5	mg/l	EPA 160.5	05-14-1993 07:30 LS
Solids, Total Dissolved	502.0	14	mg/l	EPA 160.1	05-17-1993 10:30 LM
Solids, Total Suspended	15.0	7	mg/l	EPA 160.2	05-17-1993 10:30 LM
Sulfate	150.0	1	mg/l	EPA 375.4	05-24-1993 08:15 LS
Turbidity	38.0	.1	NTU	EPA 180.1	05-14-1993 09:00 LS
Natural Gamma Radiation	3.34		%		

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

June 14, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled June 1, 1993

Date received June 2, 1993

Deer Creek Discharge DCD
Temperature 14.7°C
Flow 1000 Est.
Rec'd 0830 hr.
Sampled 1513 hr.

FIELD MEASUREMENTS

pH	7.60
Conductivity	823
DO	4.5

Analysis report no. 59-13129

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	24	1	mg/l $CaCO_3$	EPA 305.1	06-08-1993 12:00 LS
Alkalinity, Bicarbonate	395	2	mg/l $CaCO_3$	EPA 310.1	06-08-1993 12:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-08-1993 12:00 LS
Alkalinity, Total	324	2	mg/l $CaCO_3$	EPA 310.1	06-08-1993 12:00 LS
Anions	9.49	----	meq/l	---------	---------- ----- --
Calcium	84.0	.03	mg/l	EPA 215.1	06-14-1993 11:20 ED
Cations	9.48	----	meq/l	---------	---------- ----- --
Chloride	8.2	.5	mg/l	EPA 325.3	06-03-1993 10:00 LM
Conductivity	740	0.2	umhos/cm	EPA 120.1	06-14-1993 11:00 LS
Hardness, Total	410	.03	mg/l $CaCO_3$	---------	06-14-1993 11:20 ED
Iron	0.32	.05	mg/l	EPA 236.1	06-14-1993 09:25 ED
Iron, Dissolved	0.08	.05	mg/l	EPA 236.1	06-14-1993 09:25 ED
Magnesium	48.60	.007	mg/l	EPA 242.1	06-14-1993 11:40 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-14-1993 09:25 ED
Oil & Grease	4.4	1	mg/l	EPA 413.1	06-11-1993 07:30 LM
Oxygen, Dissolved	5.0	.01	mg/l	EPA 360.1	06-02-1993 15:00 LM
pH	6.60	----	Units	EPA 150.1	06-02-1993 15:00 LM
Potassium	6.20	.1	mg/l	EPA 258.1	06-14-1993 12:30 ED
Sodium	26.40	.2	mg/l	EPA 273.1	06-14-1993 12:10 ED
Solids, Total Dissolved	597.0	14	mg/l	EPA 160.1	06-08-1993 08:30 LM
Solids, Total Suspended	57.0	7	mg/l	EPA 160.2	06-08-1993 08:30 LM
Sulfate	140.0	1	mg/l	EPA 375.4	06-14-1993 12:00 LS
Turbidity	61.0	.1	NTU	EPA 180.1	06-03-1993 07:30 LS
Cation/Anion Balance	-0.04	----	%	---------	---------- ----- --

RECEIVED
6/14/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

June 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled June 11, 1993

Date received June 11, 1993

Deer Creek Discharge DCD
Temperature 56.7°F
Flow 979 GPM
Rec'd 1600 hr.
Sampled 1411 hr.

FIELD MEASUREMENTS

pH	7.42
Conductivity	822
DO	4.7
TURBIDITY	4.3

Analysis report no. 59-13177

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	8	1	mg/l $CaCO_3$	EPA 305.1	06-23-1993 10:00 LS
Alkalinity, Bicarbonate	333	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Total	273	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Anions	8.66	----	meq/l	---------	---------- ----- --
Calcium	90.9	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	9.77	----	meq/l	---------	---------- ----- --
Chloride	6.7	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	730	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	427	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	0.13	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	0.11	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	48.50	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oil & Grease	1.1	1	mg/l	EPA 413.1	06-23-1993 08:00 LM
Oxygen, Dissolved	5.0	.01	mg/l	EPA 360.1	06-11-1993 16:00 LM
pH	7.10	----	Units	EPA 150.1	06-11-1993 16:00 LM
Potassium	6.00	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	25.30	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	587.0	14	mg/l	EPA 160.1	06-14-1993 13:00 LM
Solids, Total Suspended	7.0	7	mg/l	EPA 160.2	06-15-1993 08:00 LM
Sulfate	150.0	1	mg/l	EPA 375.4	06-21-1993 13:50 LS
Turbidity	2.9	.1	NTU	EPA 180.1	06-12-1993 08:00 LS
Cation/Anion Balance	5.98	----	%	---------	---------- ----- --

RECEIVED
6/25/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

July 7, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us: Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled June 28, 1993

Date received June 28, 1993

Deer Creek Discharge
Temperature 56.0°F
Flow 550 GPM
Rec'd 1400 hr.
Sampled 1255 hr.

Analysis report no. 59-13227

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Solids, Total Suspended	7.0	7	mg/l	EPA 160.2	07-02-1993 13:00 LM

RECEIVED
7/7/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

August 23, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS-KH

Date sampled July 16, 1993

Date received July 16, 1993

Deer Creek Discharge DCD
Temperature 55.2°F
Flow 1117 GPM
Rec'd 1300 hr.
Sampled 0955 hr.

FIELD MEASUREMENTS	
pH	7.28
Conductivity	815
DO	5.6
Turbidity	4.8

Analysis report no. 59-13321

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	07-23-1993 13:15 LS
Alkalinity, Bicarbonate	383	.4	mg/l HCO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-23-1993 13:15 LS
Alkalinity, Total	314	.4	mg/l $CaCO_3$	EPA 310.1	07-23-1993 13:15 LS
Anions	8.95	----	meq/l	---------	---------- ----- --
Calcium	67.6	.03	mg/l	EPA 215.1	08-10-1993 12:25 ED
Cations	8.56	----	meq/l	---------	---------- ----- --
Chloride	10.9	.5	mg/l	EPA 325.3	07-28-1993 08:00 LM
Conductivity	800	0.2	umhos/cm	EPA 120.1	08-11-1993 14:35 LS
Hardness, Total	367	.03	mg/l $CaCO_3$	---------	08-10-1993 12:25 ED
Iron	0.19	.05	mg/l	EPA 236.1	07-29-1993 12:30 LS
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-28-1993 16:10 JK
Magnesium	48.20	.007	mg/l	EPA 242.1	08-10-1993 13:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-29-1993 13:05 LS
Oil & Grease	<1.0	1	mg/l	EPA 413.1	07-26-1993 08:00 LM
Oxygen, Dissolved	15.6	.01	mg/l	EPA 360.1	07-16-1993 16:00 LM
pH	7.06	----	Units	EPA 150.1	07-16-1993 16:00 LM
Potassium	6.70	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	24.60	.2	mg/l	EPA 273.1	08-10-1993 14:05 ED
Solids, Total Dissolved	554.0	14	mg/l	EPA 160.1	07-23-1993 08:25 LM
Solids, Total Suspended	5.0	7	mg/l	EPA 160.2	07-21-1993 08:30 LM
Sulfate	120.0	1	mg/l	EPA 375.4	08-04-1993 13:00 LS
Cation/Anion Balance	-2.22	----	%	---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
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TEL: (801) 653-2311
FAX: (801) 653-2436

September 8, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled August 3, 1993

Date received August 3, 1993

Deer Creek Discharge DCD
Temperature 58.2°F
Flow 1250 GPM
Rec'd 1400 hr.
Sampled 1152 hr.

FIELD MEASUREMENTS

pH	7.60
Conductivity	789
DO	9.8

NOTE: SULFATE ANALYZED AFTER HOLDING TIME EXPIRED.

Analysis report no. 59-13360

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	08-09-1993 11:00 LS
Alkalinity, Bicarbonate	389	.4	mg/l HCO_3	4500 CO_2D	08-09-1993 11:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2D	08-09-1993 11:00 LS
Alkalinity, Total	319	.4	mg/l $CaCO_3$	EPA 310.1	08-09-1993 11:00 LS
Anions	10.89	----	meq/l	---------	---------- ----- --
Calcium	92.2	.03	mg/l	EPA 215.1	08-31-1993 11:55 ED
Cations	10.73	----	meq/l	---------	---------- ----- --
Chloride	9.4	.5	mg/l	EPA 325.3	08-13-1993 13:30 LM
Conductivity	825	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	461	.03	mg/l $CaCO_3$	---------	08-31-1993 11:55 ED
Iron	0.19	.05	mg/l	EPA 236.1	08-31-1993 16:30 ED
Iron, Dissolved	0.09	.05	mg/l	EPA 236.1	09-03-1993 09:15 ED
Magnesium	56.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	08-25-1993 14:00 LM
Oxygen, Dissolved	7.6	.01	mg/l	EPA 360.1	08-03-1993 15:00 LS
pH	7.32	----	Units	EPA 150.1	08-03-1993 15:00 LS
Potassium	6.70	.1	mg/l	EPA 258.1	08-31-1993 17:15 ED
Sodium	31.50	.2	mg/l	EPA 273.1	08-31-1993 14:40 ED
Solids, Total Dissolved	600.0	14	mg/l	EPA 160.1	08-05-1993 09:00 LS
Solids, Total Suspended	27.0	7	mg/l	EPA 160.2	08-11-1993 12:00 LM
Sulfate	210.0	1	mg/l	EPA 375.4	09-01-1993 11:20 LS
Cation/Anion Balance	-0.76	----	%	---------	---------- ----- --

RECEIVED
9/8/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
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TEL: (801) 653-2311
FAX: (801) 653-2436

September 28, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled August 23, 1993

Date received August 23, 1993

Deer Creek Discharge
Temperature 59.9°F
Flow 594 GPM
Rec'd 1430 hr.
Sampled 1220 hr.

FIELD MEASUREMENTS

pH	7.43
Conductivity	798
DO	8.0
Turbidity	5.2

Analysis report no. 59-13444

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	09-01-1993 15:30 LS
Alkalinity, Bicarbonate	262	.4	mg/l HCO_3	4500 CO_2 D	09-01-1993 15:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	09-01-1993 15:30 LS
Alkalinity, Total	215	.4	mg/l $CaCO_3$	EPA 310.1	09-01-1993 15:30 LS
Anions	7.34	----	meq/l	---------	---------- ----- --
Calcium	63.8	.03	mg/l	EPA 215.1	09-21-1993 14:45 JK
Cations	7.56	----	meq/l	---------	---------- ----- --
Chloride	7.4	.5	mg/l	EPA 325.3	09-07-1993 13:00 LM
Conductivity	887	0.2	umhos/cm	EPA 120.1	08-25-1993 09:15 LS
Hardness, Total	328	.03	mg/l $CaCO_3$	---------	09-21-1993 14:45 JK
Iron	0.07	.05	mg/l	EPA 236.1	09-17-1993 14:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	09-16-1993 12:15 ED
Magnesium	41.00	.007	mg/l	EPA 242.1	09-21-1993 15:26 JK
Manganese	<0.03	.03	mg/l	EPA 243.1	09-17-1993 14:05 ED
Oil & Grease	<0.5	1	mg/l	EPA 413.1	09-03-1993 10:00 LM
Oxygen, Dissolved	7.6	.01	mg/l	EPA 360.1	08-23-1993 16:00 LS
pH	7.70	----	Units	EPA 150.1	08-23-1993 16:00 LS
Potassium	5.76	.1	mg/l	EPA 258.1	09-22-1993 11:47 JK
Sodium	19.90	.2	mg/l	EPA 273.1	09-22-1993 08:40 JK
Solids, Total Dissolved	570.0	14	mg/l	EPA 160.1	08-25-1993 10:45 LM
Solids, Total Suspended	7.0	7	mg/l	EPA 160.2	08-24-1993 07:30 LM
Sulfate	140.0	1	mg/l	EPA 375.4	09-13-1993 09:30 LS
Turbidity	2.0	.1	NTU	EPA 180.1	08-24-1993 16:00 LS
Cation/Anion Balance	2.93	----	%	---------	---------- -----

RECEIVED
9/28/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, 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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Original Watermarked For Your Protection
TERMS AND CONDITIONS ON REVERSE

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

October 20, 1993

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

RECEIVED
10/20/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled September 20, 1993

Date received September 22, 1993

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Discharge DCD
Temperature 58.2°F
Flow 58GPM
Rec'd 0845 hr.
Sampled 1431 hr.

FIELD MEASUREMENTS

pH	7.36
Conductivity	845
DO	9.2
Turbidity	4

NOTE: pH & DO holding times were expired when received at Lab.

Analysis report no. 59-13552

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Acidity	3	1	mg/l	$CaCO_3$	EPA 305.1	10-01-1993 1550 LS
Alkalinity, Bicarbonate	411	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 1550 LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 1550 LS
Alkalinity, Total	337	2	mg/l	$CaCO_3$	EPA 310.1	10-01-1993 1550 LS
Anions	9.98	----	meq/l		---------	---------- ----- --
Calcium	87.6	.03	mg/l		EPA 215.1	10-19-1993 0925 ED
Cations	11.49	----	meq/l		---------	---------- ----- --
Chloride	9.0	.5	mg/l		EPA 325.3	10-13-1993 0830 LM
Conductivity	932.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 KP
Hardness, Total	469.9	.03	mg/l	$CaCO_3$	---------	10-19-1993 0925 ED
Iron	0.16	.05	mg/l		EPA 236.1	10-19-1993 1150 ED
Iron, Dissolved	0.07	.05	mg/l		EPA 236.1	10-19-1993 1220 ED
Magnesium	61.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410 ED
Oil & Grease	<1	1	mg/l		EPA 413.1	09-21-1993 1100 LM
Oxygen, Dissolved	7.20	.01	mg/l		EPA 360.1	09-22-1993 1500 LM
pH	7.43	----	Units		EPA 150.1	09-22-1993 1500 LM
Potassium	7.0	.1	mg/l		EPA 258.1	10-19-1993 1515 ED
Sodium	44.9	.2	mg/l		EPA 273.1	10-18-1993 1650 ED
Solids, Total Dissolved	571	14	mg/l		EPA 160.1	09-23-1993 1300 LM
Solids, Total Suspended	14	7	mg/l		EPA 160.2	09-23-1993 1230 LM
Sulfate	150	1	mg/l		EPA 375.4	10-19-1993 1400 LS
Turbidity	2.0	.1	NTU		EPA 180.1	09-22-1993 1430 LS
Cation/Anion Balance	7.06	----	%		---------	---------- -----

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

November 16, 1993

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

RECEIVED
11/16/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/GD

Date sampled September 29, 1993

Date received September 29, 1993

Deer Creek Mine Discharge
Temperature 14.1°C
Flow 932 GPM
Rec'd 1400 hr.
Sampled 1325 hr.

FIELD MEASUREMENTS

pH	7.40
Conductivity	862
DO	5.6

NOTE: DO Probe was inoperational. Holding times expired when Conductivity and Chloride were run.

Analysis report no. 59-13602

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Acidity	10	1	mg/l	$CaCO_3$	EPA 305.1	10-08-1993 1430	LS
Alkalinity, Bicarbonate	440	2	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 1430	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 1430	LS
Alkalinity, Total	361	2	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 1430	LS
Anions	13.70	----	meq/l		---------	----------	----- --
Calcium	120.0	.03	mg/l		EPA 215.1	11-08-1993 1450	ED
Cations	12.70	----	meq/l		---------	----------	----- --
Chloride	37.0	.5	mg/l		EPA 325.3	11-01-1993 0900	LM
Conductivity	889.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945	ED
Hardness, Total	567.0	.03	mg/l	$CaCO_3$	---------	11-08-1993 1450	ED
Iron	0.16	.05	mg/l		EPA 236.1	11-16-1993 1100	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	11-16-1993 1020	ED
Magnesium	65.00	.007	mg/l		EPA 242.1	11-08-1993 1630	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	11-16-1993 1215	ED
Oil & Grease	0	1	mg/l		EPA 413.1	10-02-1993 0930	LM
pH	6.76	----	Units		EPA 150.1	09-29-1993 1615	ED
Potassium	<10.0	.1	mg/l		EPA 258.1	11-09-1993 1315	ED
Sodium	32.0	.2	mg/l		EPA 273.1	11-09-1993 1135	ED
Solids, Total Dissolved	546	14	mg/l		EPA 160.1	09-30-1993 0745	LM
Solids, Total Suspended	10	7	mg/l		EPA 160.2	09-30-1993 0730	LM
Sulfate	270	1	mg/l		EPA 375.4	11-04-1993 1110	LS
Turbidity	1.5	.1	NTU		EPA 180.1	09-29-1993 0830	LS
Cation/Anion Balance	-3.90	----	%		---------	----------	----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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TEL: (801) 653-2311
FAX: (801) 653-2436

December 2, 1993

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

RECEIVED
12/2/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Discharge DCD

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled October 22, 1993

Date received October 22, 1993

Temperature 53.8°F
Flow 979 GPM
Rec'd 1130 hr.
Sampled 0930 hr.

FIELD MEASUREMENTS

pH	7.50
Conductivity	821
DO	12.4
Turbidity	14

Analysis report no. 59-13658

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	10-28-1993 1850	LS
Alkalinity, Bicarbonate	431	2	mg/l	$CaCO_3$	EPA 310.1	10-28-1993 1850	[illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-28-1993 1850	[illegible]
Alkalinity, Total	354	2	mg/l	$CaCO_3$	EPA 310.1	10-28-1993 1850	ED
Anions	10.90	----	meq/l		---------	---------- -----	--
Calcium	91.0	.03	mg/l		EPA 215.1	11-29-1993 1630	DW
Cations	10.10	----	meq/l		---------	---------- -----	--
Chloride	9.0	.5	mg/l		EPA 325.3	11-19-1993 1000	LM
Conductivity	926.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945	ED
Hardness, Total	466.0	.03	mg/l	$CaCO_3$	---------	11-29-1993 1630	DW
Iron	<0.20	.05	mg/l		EPA 236.1	11-24-1993 1200	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-01-1993 1500	DW
Magnesium	58.00	.007	mg/l		EPA 242.1	11-30-1993 1100	DW
Manganese	0.20	.03	mg/l		EPA 243.1	11-29-1993 1500	DW
Oil & Grease	0	1	mg/l		EPA 413.1	11-08-1993 1000	LM
Oxygen, Dissolved	6.71	.01	mg/l		EPA 360.1	10-22-1993 1530	LS
pH	6.94	----	Units		EPA 150.1	10-22-1993 1610	LS
Potassium	5.0	.1	mg/l		EPA 258.1	11-30-1993 1500	DW
Sodium	16.0	.2	mg/l		EPA 273.1	11-30-1993 1300	DW
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	10-23-1993 0930	LM
Solids, Total Dissolved	562	14	mg/l		EPA 160.1	10-29-1993 0730	LM
Solids, Total Suspended	7	7	mg/l		EPA 160.2	10-27-1993 0800	LM
Sulfate	180	1	mg/l		EPA 375.4	11-19-1993 1400	LS
Cation/Anion Balance	-3.80	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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TEL: (801) 653-2311
FAX: (801) 653-2436

December 14, 1993

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

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12/14/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/GD

Date sampled November 2, 1993

Date received November 3, 1993

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Discharge
Temperature 13.2°C
Flow 643 GPM
Rec'd 0900 hr.
Sampled 1525 hr.

FIELD MEASUREMENTS

pH	7.10
Conductivity	841
DO	6.2

NOTE: Holding times expired when Sulfate and Oil & Grease were run.

Analysis report no. 59-13711

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Acidity	5	1	mg/l	$CaCO_3$	EPA 305.1	11-08-1993	0820	LS
Alkalinity, Bicarbonate	428	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	351	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Anions	10.40	----	meq/l		---------	----------	-----	--
Calcium	94.0	.03	mg/l		EPA 215.1	12-13-1993	1500	DW
Cations	9.90	----	meq/l		---------	----------	-----	--
Chloride	10.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	783.00	0.2	umhos/cm		EPA 120.1	11-29-1993	1500	LS
Hardness, Total	441.0	.03	mg/l	$CaCO_3$	---------	12-13-1993	1500	DW
Iron	0.20	.05	mg/l		EPA 236.1	12-10-1993	1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993	1500	DW
Magnesium	50.00	.007	mg/l		EPA 242.1	12-14-1993	1100	ED
Manganese	<0.10	.03	mg/l		EPA 243.1	12-13-1993	1400	DW
Oil & Grease	<5	1	mg/l		EPA 413.1	12-10-1993	1030	LM
Oxygen, Dissolved	6.30	.01	mg/l		EPA 360.1	11-03-1993	1030	LM
pH	6.94	----	Units		EPA 150.1	11-03-1993	1130	LM
Potassium	9.0	.1	mg/l		EPA 258.1	12-13-1993	1220	ED
Sodium	26.0	.2	mg/l		EPA 273.1	12-14-1993	1210	ED
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	11-03-1993	1500	LM
Solids, Total Dissolved	572	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	10	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	150	1	mg/l		EPA 375.4	12-10-1993	1030	LS
Turbidity	0.9	.1	NTU		EPA 180.1	11-03-1993	0830	LS
Cation/Anion Balance	-2.40		%					

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 17, 1993

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

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12/17/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Deer Creek Discharge DCD

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled November 22, 1993

Date received November 22, 1993

Temperature 48.2°F
Flow 411 GPM
Rec'd 1310 hr.
Sampled 0847 hr.

FIELD MEASUREMENTS

pH	8.82
Conductivity	765
DO	7.5
Turbidity	38

Analysis report no. 59-13747

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	12-02-1993 1500 ED
Alkalinity, Bicarbonate	319	2	mg/l	$CaCO_3$	EPA 310.1	12-02-1993 1500 [illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	12-02-1993 1500 [illegible]
Alkalinity, Total	319	2	mg/l	$CaCO_3$	EPA 310.1	12-02-1993 1500 LS
Anions	9.60	----	meq/l		---------	---------- ----- --
Calcium	80.0	.03	mg/l		EPA 215.1	12-16-1993 1045 DW
Cations	9.30	----	meq/l		---------	---------- ----- --
Chloride	17.0	.5	mg/l		EPA 325.3	11-30-1993 1000 LM
Conductivity	762.00	0.2	umhos/cm		EPA 120.1	12-16-1993 1035 ED
Hardness, Total	426.0	.03	mg/l	$CaCO_3$	---------	12-16-1993 1045 DW
Iron	0.80	.05	mg/l		EPA 236.1	12-17-1993 1030 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-15-1993 0830 DW
Magnesium	55.00	.007	mg/l		EPA 242.1	12-16-1993 1230 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-16-1993 1600 DW
Oil & Grease	<5	1	mg/l		EPA 413.1	12-14-1993 1000 LM
Oxygen, Dissolved	7.48	.01	mg/l		EPA 360.1	11-22-1993 1400 LS
pH	7.58	----	Units		EPA 150.1	11-22-1993 1330 LS
Potassium	5.0	.1	mg/l		EPA 258.1	12-16-1993 0830 DW
Sodium	19.0	.2	mg/l		EPA 273.1	12-16-1993 1430 DW
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	11-22-1993 1515 LS
Solids, Total Dissolved	537	14	mg/l		EPA 160.1	11-23-1993 0845 LM
Solids, Total Suspended	32	7	mg/l		EPA 160.2	11-24-1993 1530 LM
Sulfate	130	1	mg/l		EPA 375.4	12-14-1993 1130 LS
Turbidity	17.0	.1	NTU		EPA 180.1	11-22-1993 1450 LS
Cation/Anion Balance	-1.20		%			

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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January 4, 1994

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

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1/4/94
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK DISCHARGE
TIME 1340
Flow 20 gpm
Conductivity 1208
Temp 41.8
pH 8.04
Dissolved Oxygen 12.2

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled December 17, 1993

Date received December 17, 1993

Analysis report no. 59-13798

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Acidity	<10	1	mg/l	$CaCO_3$	EPA 305.1	12-30-1994 1530 ED
Alkalinity, Bicarbonate	255	2	mg/l	$CaCO_3$	EPA 310.1	12-20-1994 1330 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	12-20-1994 1330 LS
Alkalinity, Total	255	2	mg/l	$CaCO_3$	EPA 310.1	12-20-1994 1330 LS
Anions	14.80	----	meq/l		---------	---------- ----- --
Calcium	158.0	.03	mg/l		EPA 215.1	12-28-1994 1100 DW
Cations	17.20	----	meq/l		---------	---------- ----- --
Chloride	49.0	.5	mg/l		EPA 325.3	12-22-1994 1255 ED
Conductivity	1424.00	0.2	umhos/cm		EPA 120.1	12-29-1994 0935 ED
Hardness, Total	773.0	.03	mg/l	$CaCO_3$	---------	12-28-1994 1100 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-29-1994 0830 DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-21-1994 1430 DW
Magnesium	92.00	.007	mg/l		EPA 242.1	12-28-1994 1330 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-28-1994 1600 DW
Oil & Grease	<5	1	mg/l		EPA 413.1	12-22-1994 0900 LM
Oxygen, Dissolved	7.33	.01	mg/l		EPA 360.1	12-17-1994 1515 LS
pH	7.32	----	Units		EPA 150.1	12-17-1994 1535 LS
Potassium	5.0	.1	mg/l		EPA 258.1	12-28-1994 1515 DW
Sodium	40.0	.2	mg/l		EPA 273.1	12-28-1994 1230 DW
Solids, Total Dissolved	1027	14	mg/l		EPA 160.1	12-21-1994 1200 LM
Solids, Total Suspended	6	7	mg/l		EPA 160.2	12-21-1994 1230 LM
Sulfate	400	1	mg/l		EPA 375.4	01-03-1994 1030 LS
Cation/Anion Balance	7.50	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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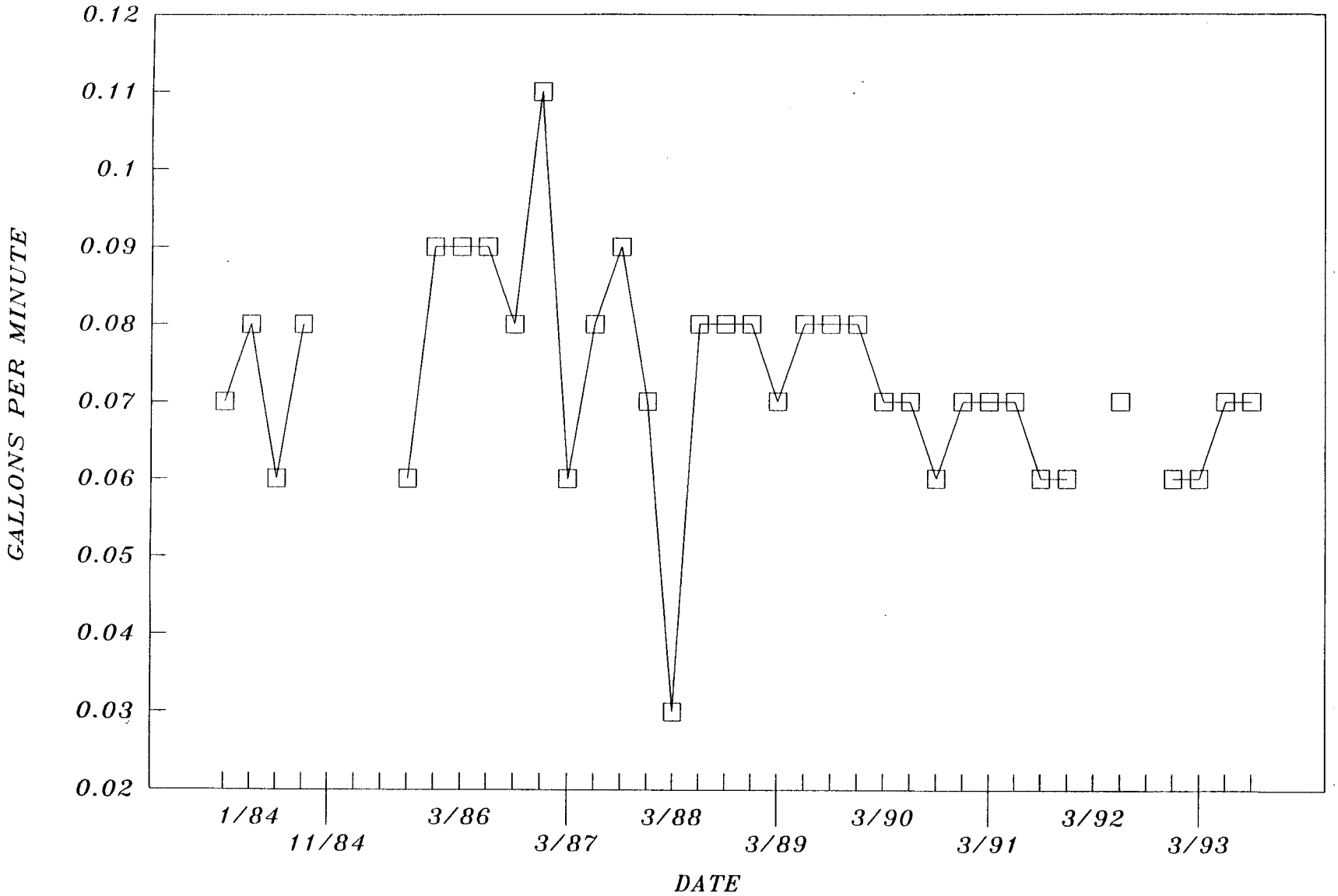
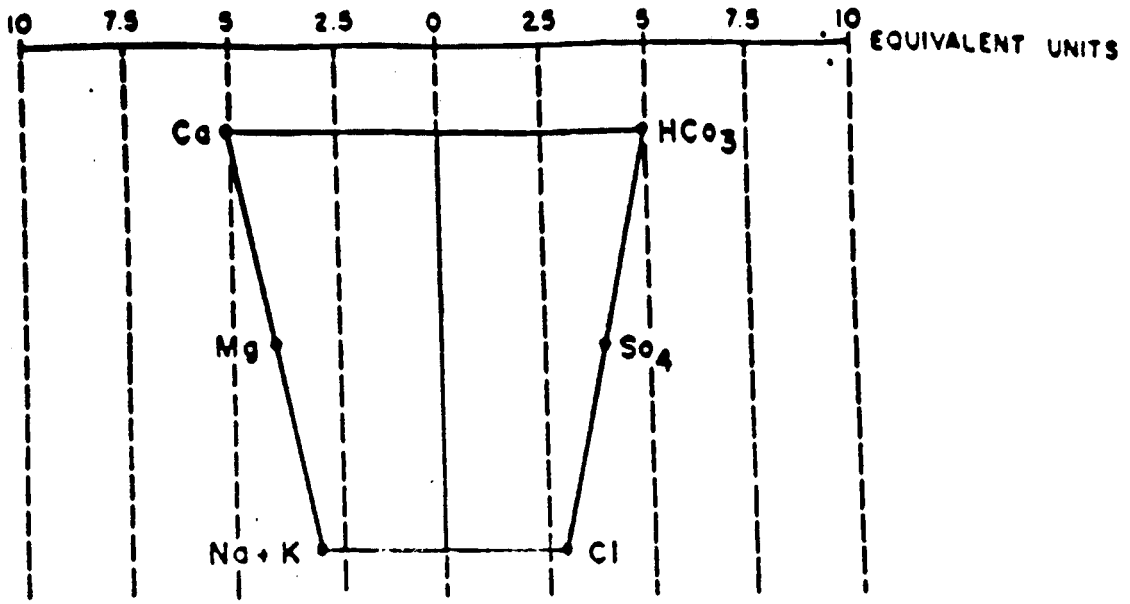
TERMS AND CONDITIONS ON REVERSE

WILBERG/COTTONWOOD IN-MINE MONITORING

2nd South xc-11



CATION – ANION DIAGRAMS



$$\frac{\text{P P M}}{\text{Equivalent Weight}} = \text{Equivalent Unit}$$

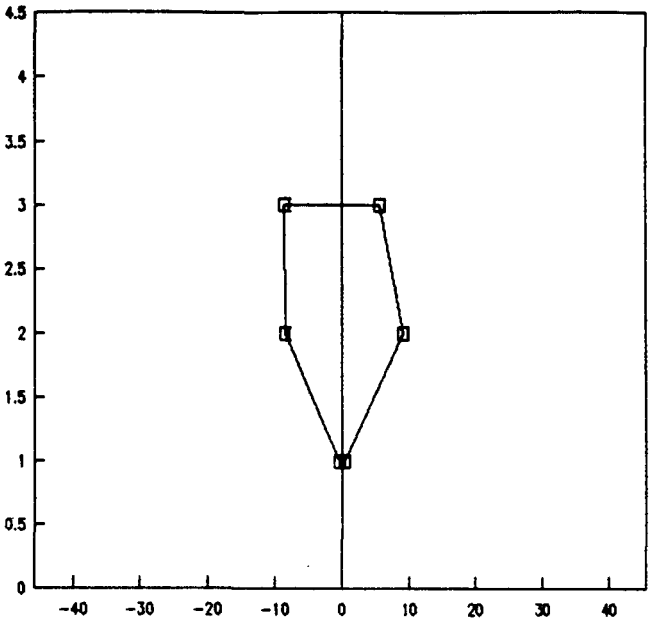
1" = 5 Equivalent Units

Equivalent Weights

Mg	12.16	(Magnesium)
Ca	20.04	(Calcium)
Na	23.00	(Sodium)
K	39.10	(Potassium)
So_4	48.03	(Sulfate)
$CaCO_3$	100.1	(Total Alkalinity)
Cl	35.46	(Chloride)

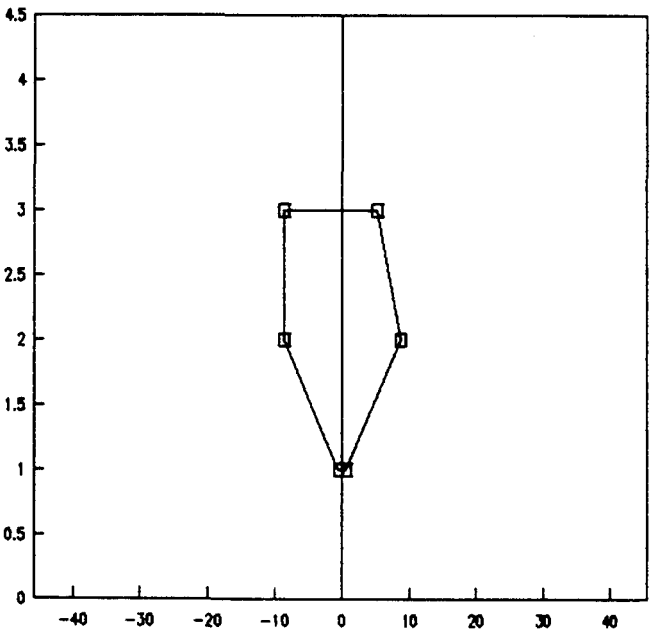
2ND S XC11

1993



2ND S XC11

HISTORICAL



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FAX: (801) 653-2436

April 5, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Cottonwood In-Mine 2nd S. XC-11
Temperature 52.0°F
Flow 0.06 GPM
Rec'd 1000 hr.
Sampled 1105 hr.

Sample taken at Cottonwood Mine

Sample taken by Energy West/CS

Date sampled March 23, 1993

Date received March 24, 1993

Analysis report no. 59-12969

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	568	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Total	466	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Anions	17.47	----	meq/l	---------	---------- ----- --
Calcium	172.0	.1	mg/l	EPA 215.1	04-02-1993 09:00 ED
Cations	17.95	----	meq/l	---------	---------- ----- --
Chloride	14.3	.1	mg/l	EPA 325.3	03-29-1993 13:05 LM
Conductivity	1450	2	umhos/cm	EPA 120.1	04-01-1993 10:00 LS
Hardness, Total	887	1	mg/l $CaCO_3$	---------	04-02-1993 09:00 ED
Iron	0.29	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Iron, Dissolved	0.20	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Magnesium	111.00	.01	mg/l	EPA 242.1	03-31-1993 13:40 ED
Manganese	0.10	.01	mg/l	EPA 243.1	03-31-1993 13:40 ED
Oxygen, Dissolved	6.4	.01	mg/l	EPA 360.1	03-24-1993 11:00 LS
pH	7.00	----	Units	EPA 150.1	03-24-1993 11:00 LS
Potassium	0.00	.01	mg/l	EPA 258.1	03-31-1993 08:50 ED
Sodium	5.80	.01	mg/l	EPA 273.1	03-31-1993 08:50 ED
Solids, Total Dissolved	1066.0	.5	mg/l	EPA 160.1	03-29-1993 10:00 LM
Solids, Total Suspended	1.0	.5	mg/l	EPA 160.2	03-29-1993 10:00 LM
Sulfate	380.0	.1	mg/l	EPA 375.4	03-30-1993 08:30 LS
Turbidity	2.1	.1	NTU	EPA 180.1	03-24-1993 11:30 LS
Cation/Anion Balance	1.36	----	%	---------	---------- ----- --

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4/6/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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July 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Wilberg In-Mine 2nd XC-11
Temperature 55.0°F
Flow 0.06 GPM
Rec'd 1640 hr.
Sampled 1235 hr.

Sample taken at Wilberg Mine

Sample taken by Energy West/KH

Date sampled July 1, 1993

Date received July 1, 1993

Analysis report no. 59-13237

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	569	2	mg/l HCO_3	EPA 310.1	07-07-1993 10:30 LS
Alkalinity, Carbonate	0	1	mg/l CO_3	EPA 310.1	07-07-1993 10:30 LS
Alkalinity, Total	467	2	mg/l $CaCO_3$	EPA 310.1	07-07-1993 10:30 LS
Anions	20.05	----	meq/l	---------	---------- ----- --
Calcium	175.2	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	17.67	----	meq/l	---------	---------- ----- --
Chloride	16.0	.5	mg/l	EPA 325.3	07-17-1993 10:30 LM
Conductivity	1260	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	833	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	0.08	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	96.10	.007	mg/l	EPA 242.1	07-14-1993 16:20 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	6.2	.01	mg/l	EPA 360.1	07-01-1993 15:00 LS
pH	7.09	----	Units	EPA 150.1	07-01-1993 15:00 LS
Potassium	2.40	.1	mg/l	EPA 258.1	07-13-1993 18:15 ED
Sodium	22.50	.2	mg/l	EPA 273.1	07-13-1993 16:25 ED
Solids, Total Dissolved	1094.0	14	mg/l	EPA 160.1	07-06-1993 11:00 LM
Solids, Total Suspended	10.0	7	mg/l	EPA 160.2	07-06-1993 10:00 LM
Sulfate	500.0	1	mg/l	EPA 375.4	07-08-1993 13:15 LS
Cation/Anion Balance	-6.31	----	%	---------	---------- ----- --

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7/19/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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October 28, 1993

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

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10/28/93

Sample identification by
PACIFICORP FIELD OFFICE

FIELD OFFICE

Kind of sample reported to us Water

2nd south XCut 11
Temperature 55.0°F
Rec'd 1415 hr.
Sampled 1120 hr.
FLOW 0.07 GPM

Sample taken at Cottonwood

Sample taken by Energy West/KH

Date sampled September 23, 1993

Date received September 23, 1993

Analysis report no. 59-13572

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	597	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Alkalinity, Total	490	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 1600	LS
Anions	15.30	----	meq/l		---------	---------- -----	--
Calcium	150.0	.03	mg/l		EPA 215.1	10-19-1993 0925	ED
Cations	15.80	----	meq/l		---------	---------- -----	--
Chloride	16.7	.5	mg/l		EPA 325.3	10-26-1993 1700	LM
Conductivity	1536.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	LS
Hardness, Total	745.0	.03	mg/l	$CaCO_3$	---------	10-19-1993 0925	ED
Iron	0.29	.05	mg/l		EPA 236.1	10-19-1993 1150	ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993 1220	ED
Magnesium	90.00	.007	mg/l		EPA 242.1	10-12-1993 1405	ED
Manganese	0.03	.03	mg/l		EPA 243.1	10-19-1993 1410	ED
Oxygen, Dissolved	9.16	.01	mg/l		EPA 360.1	09-23-1993 1530	LS
pH	6.77	----	Units		EPA 150.1	09-23-1993 1530	LS
Potassium	4.0	.1	mg/l		EPA 258.1	10-19-1993 1515	ED
Sodium	18.0	.2	mg/l		EPA 273.1	10-18-1993 1650	ED
Solids, Total Dissolved	991	14	mg/l		EPA 160.1	09-30-1993 0745	LM
Solids, Total Suspended	4	7	mg/l		EPA 160.2	09-30-1993 0730	LM
Sulfate	250	1	mg/l		EPA 375.4	10-20-1993 1055	LS
Cation/Anion Balance	1.60	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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TEL: (801) 653-2311
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December 28, 1993

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

12-28/93

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

2ND S xc-11
CT2 SX11 Cottonwood

Kind of sample reported to us Water

Sample taken at Cottonwood

Sample taken by Energy West/KH

Date sampled December 13, 1993

Date received December 14, 1993

Temperature 52.0°F
Flow .07 GPM
Rec'd 1410 hr.
Sampled 1245 hr.

Note: Amended Alkalinity Carbonate

Analysis report no. 59-13781

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	491	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1143 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1143 [illegible]
Alkalinity, Total	491	1	mg/l	$CaCO_3$	EPA 310.1	12-17-1993 1143 [illegible]
Anions	20.70	----	meq/l		---------	---------- ----- --
Calcium	162.0	1	mg/l		EPA 215.1	12-20-1993 1600 DW
Cations	17.80	----	meq/l		---------	---------- ----- --
Chloride	16.0	1	mg/l		EPA 325.3	12-22-1993 1255 ED
Conductivity	1523.00	0.2	umhos/cm		EPA 120.1	12-16-1993 1035 ED
Hardness, Total	841.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Magnesium	106.00	1	mg/l		EPA 242.1	12-22-1993 0830 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-21-1993 1030 DW
Oil & Grease	xxxx	5	mg/l		EPA 413.1	- -
Oxygen, Dissolved	2.00	.01	mg/l		EPA 360.1	12-14-1993 1515 LS
pH	6.72	----	Units		EPA 150.1	12-14-1993 1600 LM
Potassium	6.0	2	mg/l		EPA 258.1	12-20-1993 1030 DW
Sodium	22.0	1	mg/l		EPA 273.1	12-21-1993 1530 DW
Solids, Total Dissolved	1059	10	mg/l		EPA 160.1	12-15-1993 1500 LM
Solids, Total Suspended	11	4	mg/l		EPA 160.2	12-16-1993 1430 LM
Sulfate	500	1	mg/l		EPA 375.4	12-16-1993 1345 LS
Cation/Anion Balance	-7.6	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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April 5, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Cottonwood In-Mine 5th Right XC 9 1/2
Temperature 52.0°F FLOW < 1.0 GPM
Rec'd 1000 hr.
Sampled 1235 hr.

Sample taken at Cottonwood Mine

Sample taken by Energy West/CS

Date sampled March 23, 1993

Date received March 24, 1993

Analysis report no. 59-12964

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	400	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Total	328	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Anions	11.34	----	meq/l	---------	---------- ----- --
Calcium	112.9	.1	mg/l	EPA 215.1	04-02-1993 09:00 ED
Cations	11.69	----	meq/l	---------	---------- ----- --
Chloride	11.6	.1	mg/l	EPA 325.3	03-29-1993 13:05 LM
Conductivity	1000	2	umhos/cm	EPA 120.1	04-01-1993 10:00 LS
Hardness, Total	537	1	mg/l $CaCO_3$	---------	04-02-1993 09:00 ED
Iron	0.30	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Iron, Dissolved	0.27	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Magnesium	62.00	.01	mg/l	EPA 242.1	03-31-1993 13:40 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-31-1993 13:40 ED
Oxygen, Dissolved	4.5	.01	mg/l	EPA 360.1	03-24-1993 11:00 LS
pH	7.00	----	Units	EPA 150.1	03-24-1993 11:00 LS
Potassium	0.20	.01	mg/l	EPA 258.1	03-31-1993 08:50 ED
Sodium	22.30	.01	mg/l	EPA 273.1	03-31-1993 08:50 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	03-25-1993 07:30 LM
Solids, Total Dissolved	685.0	.5	mg/l	EPA 160.1	03-29-1993 10:00 LM
Solids, Total Suspended	4/6/93	.5	mg/l	EPA 160.2	03-29-1993 10:00 LM
Sulfate	220.0	.1	mg/l	EPA 375.4	03-30-1993 08:30 LS
Cation/Anion Balance	1.51	----	%	---------	---------- ----- --

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4/6/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

July 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Wilberg Mine

Sample taken by Energy West/KH

Date sampled July 1, 1993

Date received July 1, 1993

Wilberg In-Mine 3R, XC6, B(1)
Temperature 55.0°F
Flow 0.06 GPM
Rec'd 1640 hr.
Sampled 1215 hr.

Analysis report no. 59-13238

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	396	2	mg/l HCO_3	EPA 310.1	07-07-1993 10:30 LS
Alkalinity, Carbonate	0	1	mg/l CO_3	EPA 310.1	07-07-1993 10:30 LS
Alkalinity, Total	325	2	mg/l $CaCO_3$	EPA 310.1	07-07-1993 10:30 LS
Anions	10.46	----	meq/l	---------	---------- ----- --
Calcium	86.9	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	9.42	----	meq/l	---------	---------- ----- --
Chloride	12.1	.5	mg/l	EPA 325.3	07-17-1993 10:30 LM
Conductivity	760	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	414	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	0.18	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	47.90	.007	mg/l	EPA 242.1	07-14-1993 16:20 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	6.3	.01	mg/l	EPA 360.1	07-01-1993 15:00 LS
pH	7.30	----	Units	EPA 150.1	07-01-1993 15:00 LS
Potassium	5.60	.1	mg/l	EPA 258.1	07-13-1993 18:15 ED
Sodium	23.20	.2	mg/l	EPA 273.1	07-13-1993 16:25 ED
Solids, Total Dissolved	580.0	14	mg/l	EPA 160.1	07-06-1993 11:00 LM
Solids, Total Suspended	9.0	7	mg/l	EPA 160.2	07-06-1993 10:00 LM
Sulfate	180.0	1	mg/l	EPA 375.4	07-08-1993 13:15 LS
Cation/Anion Balance	-5.22	----	%	---------	---------- ----- --

RECEIVED
7/19/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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October 28, 1993

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

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10/28/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Cottonwood MWE X20,2.3 Entry
Temperature 55.0°F
Rec'd 1500 hr.
Sampled 1100 hr.
FLOW <0.5GPM

Kind of sample reported to us Water

Sample taken at Cottonwood

Sample taken by Energy West/KH

Date sampled September 23, 1993

Date received September 23, 1993

Analysis report no. 59-13570

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	433	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 0900	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 0900	LS
Alkalinity, Total	355	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 0900	LS
Anions	13.40	----	meq/l		---------	---------- -----	--
Calcium	109.5	.03	mg/l		EPA 215.1	10-19-1993 0925	ED
Cations	12.00	----	meq/l		---------	---------- -----	--
Chloride	15.2	.5	mg/l		EPA 325.3	10-26-1993 1700	LM
Conductivity	1193.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400	LS
Hardness, Total	533.0	.03	mg/l	$CaCO_3$	---------	10-19-1993 0925	ED
Iron	0.54	.05	mg/l		EPA 236.1	10-19-1993 1150	ED
Iron, Dissolved	0.35	.05	mg/l		EPA 236.1	10-19-1993 1220	ED
Magnesium	63.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410	ED
Oxygen, Dissolved	7.58	.01	mg/l		EPA 360.1	09-23-1993 1530	LS
pH	6.84	----	Units		EPA 150.1	09-23-1993 1500	LS
Potassium	6.0	.1	mg/l		EPA 258.1	10-19-1993 1515	ED
Sodium	27.0	.2	mg/l		EPA 273.1	10-18-1993 1650	ED
Solids, Total Dissolved	793	14	mg/l		EPA 160.1	09-30-1993 0745	LM
Solids, Total Suspended	4	7	mg/l		EPA 160.2	09-30-1993 0730	LM
Sulfate	290	1	mg/l		EPA 375.4	10-20-1993 1055	LS
Cation/Anion Balance	-5.80	----	%		---------	---------- -----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 28, 1993

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

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12/28/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

2nd Right XCut #13 Cottonwood

Kind of sample reported to us Water

Sample taken at Cottonwood

Sample taken by Energy West/KH

Date sampled December 13, 1993

Date received December 14, 1993

Temperature 54.0°F
Flow <1.0 GPM
Rec'd 1410 hr.
Sampled 1430 hr.

Note: Amended Alkalinity, Carbonate
Solids, Total Suspended

Analysis report no. 59-13782

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	410	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1143 L[illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1143 L[illegible]
Alkalinity, Total	410	1	mg/l	$CaCO_3$	EPA 310.1	12-17-1993 1143 LS
Anions	11.60	----	meq/l		---------	---------- ----- --
Calcium	115.0	1	mg/l		EPA 215.1	12-20-1993 1600 DW
Cations	11.00	----	meq/l		---------	---------- ----- --
Chloride	10.0	1	mg/l		EPA 325.3	12-22-1993 1255 ED
Conductivity	1011.00	0.2	umhos/cm		EPA 120.1	12-16-1993 1035 ED
Hardness, Total	510.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Magnesium	54.00	1	mg/l		EPA 242.1	12-22-1993 0830 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-21-1993 1030 DW
Oil & Grease	xxxx	5	mg/l		EPA 413.1	- -
Oxygen, Dissolved	2.30	.01	mg/l		EPA 360.1	12-14-1993 1515 LS
pH	6.82	----	Units		EPA 150.1	12-14-1993 1600 LM
Potassium	4.0	2	mg/l		EPA 258.1	12-20-1993 1030 DW
Sodium	19.0	1	mg/l		EPA 273.1	12-21-1993 1530 DW
Solids, Total Dissolved	651	10	mg/l		EPA 160.1	12-15-1993 1500 LM
Solids, Total Suspended	<4	4	mg/l		EPA 160.2	12-16-1993 1430 LM
Sulfate	150	1	mg/l		EPA 375.4	12-16-1993 1345 LS
Cation/Anion Balance	-2.6	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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FAX: (801) 653-2479

January 22, 1993

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

Sample identification by

Kind of sample reported to us WATER

Sample taken at COTTONWOOD

Sample taken by ENERY WEST (JP)

Date sampled January 20, 1993

Date received January 22, 1993

#1 COTTONWOOD MINE DISCHARGE @ GRIMES WASH
Temp 12.0°C/53.6°F
Flow .06 million gal day 42 GPM
pH 7.7
DO 7.1
Cond 1072
Time Rec'd 11.45 hr.
Time Sampled 09:40 hr.

Analysis report no. 59-12826

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	2	1	mg/l $CaCO_3$	EPA 305.1	01-20-1993 14:00 LM
Alkalinity, Bicarbonate	364	1	mg/l $CaCO_3$	EPA 310.1	01-20-1993 14:00 LM
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	01-20-1993 14:00 LM
Alkalinity, Total	299	1	mg/l $CaCO_3$	EPA 310.1	01-20-1993 14:00 LM
Anions	12.55	----	meq/l	---------	---------- ----- --
Calcium	135.0	.1	mg/l	EPA 215.1	01-20-1993 13:00 LS
Cations	13.47	----	meq/l	---------	---------- ----- --
Chloride	15.0	.1	mg/l	EPA 325.3	01-21-1993 12:45 LS
Conductivity	1016	2	umhos/cm	EPA 120.1	01-20-1993 13:00 LM
Hardness, Total	583	1	mg/l $CaCO_3$	---------	01-20-1993 13:00 LS
Iron	0.19	.02	mg/l	EPA 236.1	01-20-1993 13:45 LS
Iron, Dissolved	0.06	.02	mg/l	EPA 236.1	01-20-1993 13:45 LS
Magnesium	59.70	.01	mg/l	EPA 242.1	01-20-1993 13:00 LS
Manganese	0.00	.01	mg/l	EPA 243.1	01-20-1993 13:45 LS
Oil & Grease	0.0	1	mg/l	EPA 413.1	01-21-1993 08:00 LM
Oxygen, Dissolved	6.8	.01	mg/l	EPA 360.1	01-20-1993 12:45 LM
pH	7.90	----	Units	EPA 150.1	01-20-1993 12:45 LM
Potassium	3.50	.01	mg/l	EPA 258.1	01-20-1993 13:00 LS
Sodium	40.30	.01	mg/l	EPA 273.1	01-20-1993 13:00 LS
Solids, Total Dissolved	691.0	.5	mg/l	EPA 160.1	01-21-1993 10:30 LM
Solids, Total Suspended	8.0	.5	mg/l	EPA 160.2	01-21-1993 10:30 LS
Sulfate	300.0	.1	mg/l	EPA 375.4	01-21-1993 11:15 LS
Turbidity	5.0	.1	NTU	EPA 180.1	01-21-1993 10:38 LM

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout 1/24/93
Manager, Huntington Laboratory

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March 9, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Cottonwood

Sample taken by Energy West/KH

Date sampled February 22, 1993

Date received February 22, 1993

Cottonwood Mine Discharge
Temperature 52.1°F
Flow 12 GPM
Rec'd 1300 hr.
Sampled 1250 hr.

FIELD MEASUREMENTS

pH	7.85
Conductivity	949
DO	4.6

Analysis report no. 59-12894

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	362	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Total	297	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Anions	10.02	----	meq/l	---------	---------- ----- --
Calcium	89.9	.1	mg/l	EPA 215.1	03-04-1993 13:30 ED
Cations	11.20	----	meq/l	---------	---------- ----- --
Chloride	0.9	.1	mg/l	EPA 325.3	- - 09:00 LM
Conductivity	990	2	umhos/cm	EPA 120.1	03-04-1993 15:30 LS
Hardness, Total	463	1	mg/l $CaCO_3$	---------	03-04-1993 13:30 ED
Iron	0.07	.02	mg/l	EPA 236.1	03-05-1993 08:10 ED
Iron, Dissolved	0.00	.02	mg/l	EPA 236.1	03-05-1993 08:10 ED
Magnesium	58.00	.01	mg/l	EPA 242.1	03-04-1993 13:30 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-05-1993 08:10 ED
Oil & Grease	0.4	1	mg/l	EPA 413.1	03-02-1993 10:00 LM
Oxygen, Dissolved	7.3	.01	mg/l	EPA 360.1	02-22-1993 13:30 LS
pH	7.50	----	Units	EPA 150.1	02-22-1993 13:30 LS
Potassium	10.00	.01	mg/l	EPA 258.1	03-04-1993 13:30 ED
Sodium	39.20	.01	mg/l	EPA 273.1	03-04-1993 13:30 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	02-23-1993 07:30 LS
Solids, Total Dissolved	709.0	.5	mg/l	EPA 160.1	02-26-1993 12:30 LM
Solids, Total Suspended	0.0	.5	mg/l	EPA 160.2	02-26-1993 12:30 LM
Sulfate	200.0	.1	mg/l	EPA 375.4	03-08-1993 07:45 LS
Turbidity	1.0	.1	NTU	EPA 180.1	02-23-1993 10:00 LS
Cation/Anion Balance	5.56	----	%	---------	---------- ----- --

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3/9/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

TERMS AND CONDITIONS ON REVERSE

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

March 12, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Wilberg Mine

Sample taken by Energy West/CS

Date sampled March 2, 1993

Date received March 2, 1993

Wilberg Mine Discharge WMD01
Temperature 12.3°C
Flow 312 GPM
Rec'd 1230 hr.
Sampled 1155 hr.

FIELD MEASUREMENTS

pH	7.70
Conductivity	1033
DO	5.3

Analysis report no. 59-12907

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	03-04-1993 10:20 LS
Alkalinity, Bicarbonate	366	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Total	300	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Anions	10.07	----	meq/l	---------	---------- ----- --
Calcium	87.0	.1	mg/l	EPA 215.1	03-04-1993 13:30 ED
Cations	10.77	----	meq/l	---------	---------- ----- --
Chloride	0.6	.1	mg/l	EPA 325.3	03-08-1993 08:00 LM
Conductivity	980	2	umhos/cm	EPA 120.1	03-04-1993 15:30 LS
Hardness, Total	444	1	mg/l $CaCO_3$	---------	03-04-1993 13:30 LS
Iron	0.16	.02	mg/l	EPA 236.1	03-04-1993 13:30 ED
Iron, Dissolved	0.03	.02	mg/l	EPA 236.1	03-04-1993 13:30 ED
Magnesium	55.00	.01	mg/l	EPA 242.1	03-04-1993 13:30 ED
Manganese	0.03	.01	mg/l	EPA 243.1	03-04-1993 13:30 ED
Oil & Grease	0.3	1	mg/l	EPA 413.1	03-03-1993 08:00 LM
Oxygen, Dissolved	7.9	.01	mg/l	EPA 360.1	03-02-1993 14:10 LM
pH	7.62	----	Units	EPA 150.1	03-02-1993 14:10 LM
Potassium	10.50	.01	mg/l	EPA 258.1	03-04-1993 13:30 ED
Sodium	38.10	.01	mg/l	EPA 273.1	03-04-1993 13:30 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	03-02-1993 13:00 LS
Solids, Total Dissolved	651.0	.5	mg/l	EPA 160.1	03-04-1993 09:30 LM
Solids, Total Suspended	12.0	.5	mg/l	EPA 160.2	03-04-1993 09:30 LM
Sulfate	200.0	.1	mg/l	EPA 375.4	03-10-1993 09:00 LS
Turbidity	2.4	.1	NTU	EPA 180.1	03-03-1993 07:30 LS
Cation/Anion Balance	3.35		%		

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Manager, Huntington Laboratory

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

April 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Grimes Wash

Sample taken by Energy West/CS

Date sampled April 6, 1993

Date received April 6, 1993

Wilberg Mine Discharge At Grimes Wash
Temperature 53.9°F
Flow 20 GPM
Rec'd 1545 hr.
Sampled 1447 hr.

FIELD MEASURMENTS

pH	7.86
Conductivity	901
DO	7.4

Analysis report no. 59-12995

arameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	8	1	mg/l $CaCO_3$	EPA 305.1	04-13-1993 10:30 LS
Alkalinity, Bicarbonate	353	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Total	290	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Anions	12.35	----	meq/l	---------	---------- ----- --
Calcium	97.4	.1	mg/l	EPA 215.1	04-15-1993 11:05 ED
Cations	11.33	----	meq/l	---------	---------- ----- --
Chloride	14.1	.1	mg/l	EPA 325.3	04-13-1993 13:00 LM
Conductivity	870	2	umhos/cm	EPA 120.1	04-17-1993 09:00 LS
Hardness, Total	495	1	mg/l $CaCO_3$	---------	04-15-1993 11:05 ED
Iron	0.43	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Iron, Dissolved	0.13	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Magnesium	61.20	.01	mg/l	EPA 242.1	04-15-1993 11:25 ED
Manganese	0.00	.01	mg/l	EPA 243.1	04-15-1993 14:10 ED
Oil & Grease	0.3	1	mg/l	EPA 413.1	04-15-1993 08:30 LM
Oxygen, Dissolved	7.2	.01	mg/l	EPA 360.1	04-07-1993 16:00 LS
pH	7.40	----	Units	EPA 150.1	04-07-1993 16:00 LS
Potassium	1.70	.01	mg/l	EPA 258.1	04-16-1993 08:20 ED
Sodium	32.50	.01	mg/l	EPA 273.1	04-16-1993 07:35 ED
Solids, Total Dissolved	725.0	.5	mg/l	EPA 160.1	04-08-1993 10:00 LM
Solids, Total Suspended	17.0	.5	mg/l	EPA 160.2	04-08-1993 10:00 LM
Sulfate	300.0	.1	mg/l	EPA 375.4	04-15-1993 10:20 LS
Turbidity	0.0	.1	NTU	EPA 180.1	04-07-1993 07:30 LS
Cation/Anion Balance	-4.28	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

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FAX: (801) 653-2436

April 30, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Cottonwood Mine

Sample taken by Energy West/KH

Date sampled April 21, 1993

Date received April 21, 1993

Cottonwood Mine Discharge
Temperature 54.1°F
Flow 20 GPM
Rec'd 1530 hr.
Sampled 1251 hr.

FIELD MEASUREMENTS

pH	7.70
Conductivity	954
DO	9.3

Analysis report no. 59-13028

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	5	1	mg/l $CaCO_3$	EPA 305.1	04-23-1993 12:45 LS
Alkalinity, Bicarbonate	353	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Total	240	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Anions	10.17	----	meq/l	---------	---------- ----- --
Calcium	110.4	.1	mg/l	EPA 215.1	04-28-1993 13:40 ED
Cations	11.31	----	meq/l	---------	---------- ----- --
Chloride	16.1	.1	mg/l	EPA 325.3	04-22-1993 13:00 LM
Conductivity	870	2	umhos/cm	EPA 120.1	04-27-1993 14:00 LS
Hardness, Total	513	1	mg/l $CaCO_3$	---------	04-28-1993 13:40 ED
Iron	0.48	.02	mg/l	EPA 236.1	04-29-1993 10:35 ED
Iron, Dissolved	0.13	.02	mg/l	EPA 236.1	04-30-1993 08:55 ED
Magnesium	57.70	.01	mg/l	EPA 242.1	04-28-1993 14:15 ED
Manganese	0.03	.01	mg/l	EPA 243.1	04-28-1993 15:20 ED
Oil & Grease	0.1	1	mg/l	EPA 413.1	04-26-1993 08:00 LM
Oxygen, Dissolved	7.0	.01	mg/l	EPA 360.1	04-21-1993 16:00 LS
pH	7.97	----	Units	EPA 150.1	04-21-1993 16:00 LS
Potassium	2.60	.01	mg/l	EPA 258.1	04-29-1993 13:30 ED
Sodium	23.10	.01	mg/l	EPA 273.1	04-29-1993 11:50 ED
Solids, Total Dissolved	705.0	.5	mg/l	EPA 160.1	04-23-1993 08:00 LM
Solids, Total Suspended	2.0	.5	mg/l	EPA 160.2	04-23-1993 08:00 LM
Sulfate	240.0	.1	mg/l	EPA 375.4	04-26-1993 08:30 LS
Turbidity	0.5	.1	NTU	EPA 180.1	04-22-1993 07:30 LS
Cation/Anion Balance	0.77	----	%	---------	---------- ----- --

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FAX: (801) 653-2436

June 11, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us: Water

Sample taken at: Wilberg Mine

Sample taken by: Energy West/KH

Date sampled: May 19, 1993

Date received: May 19, 1993

Wilberg Mine Discharge At Grimes Wash
Temperature 52.3°F
Flow 12 GPM
Rec'd 1330 hr.
Sampled 1030 hr.

FIELD MEASUREMENTS

pH	7.86
Conductivity	1020
DO	6.3

Analysis report no. 59-13091

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	4	1	mg/l $CaCO_3$	EPA 305.1	05-26-1993 13:00 LS
Alkalinity, Bicarbonate	337	2	mg/l $CaCO_3$	EPA 310.1	05-26-1993 13:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	05-26-1993 13:00 LS
Alkalinity, Total	277	2	mg/l $CaCO_3$	EPA 310.1	05-26-1993 13:00 LS
Anions	12.17	----	meq/l	---------	---------- ----- --
Calcium	106.6	.03	mg/l	EPA 215.1	06-01-1993 14:45 ED
Cations	12.45	----	meq/l	---------	---------- ----- --
Chloride	16.8	.5	mg/l	EPA 325.3	05-24-1993 07:45 LM
Conductivity	920	0.2	umhos/cm	EPA 120.1	06-02-1993 14:00 LS
Hardness, Total	557	.03	mg/l $CaCO_3$	---------	06-01-1993 14:45 ED
Iron	0.26	.05	mg/l	EPA 236.1	06-01-1993 16:55 ED
Iron, Dissolved	0.15	.05	mg/l	EPA 236.1	06-01-1993 16:55 ED
Magnesium	70.60	.007	mg/l	EPA 242.1	06-01-1993 15:30 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-01-1993 15:55 ED
Oil & Grease	0.5	1	mg/l	EPA 413.1	06-10-1993 14:00 LM
Oxygen, Dissolved	6.4	.01	mg/l	EPA 360.1	05-19-1993 13:00 LS
pH	7.20	----	Units	EPA 150.1	05-19-1993 13:00 LS
Potassium	4.00	.1	mg/l	EPA 258.1	06-02-1993 09:50 ED
Sodium	28.50	.2	mg/l	EPA 273.1	06-02-1993 09:20 ED
Solids, Total Dissolved	769.0	14	mg/l	EPA 160.1	05-26-1993 07:45 LM
Solids, Total Suspended	6.0	7	mg/l	EPA 160.2	05-28-1993 14:30 LM
Sulfate	300.0	1	mg/l	EPA 375.4	06-02-1993 09:45 LS
Turbidity	0.7	.1	NTU	EPA 180.1	05-20-1993 08:00 LS
Cation/Anion Balance	1.16	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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June 14, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Cottonwood

Sample taken by Energy West/KH

Date sampled June 1, 1993

Date received June 2, 1993

Cottonwood/Wilberg Coal Mine Discharge @ Grimes Wash
Temperature 12.5°C
Flow 22 GPM
Rec'd 0830 hr.
Sampled 1612 hr.

FIELD MEASUREMENTS

pH	7.80
Conductivity	1026
DO	7.0

Analysis report no. 59-13130

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	14	1	mg/l $CaCO_3$	EPA 305.1	06-08-1993 12:00 LS
Alkalinity, Bicarbonate	366	2	mg/l $CaCO_3$	EPA 310.1	06-08-1993 12:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-08-1993 12:00 LS
Alkalinity, Total	300	2	mg/l $CaCO_3$	EPA 310.1	06-08-1993 12:00 LS
Anions	9.65	----	meq/l	---------	---------- ----- --
Calcium	102.9	.03	mg/l	EPA 215.1	06-14-1993 11:20 ED
Cations	11.75	----	meq/l	---------	---------- ----- --
Chloride	15.8	.5	mg/l	EPA 325.3	06-03-1993 10:00 LM
Conductivity	920	0.2	umhos/cm	EPA 120.1	06-14-1993 11:00 LS
Hardness, Total	528	.03	mg/l $CaCO_3$	---------	06-14-1993 11:20 ED
Iron	0.18	.05	mg/l	EPA 236.1	06-14-1993 09:25 ED
Iron, Dissolved	0.11	.05	mg/l	EPA 236.1	06-14-1993 09:25 ED
Magnesium	65.90	.007	mg/l	EPA 242.1	06-14-1993 11:40 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-14-1993 09:25 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	06-11-1993 07:30 LM
Oxygen, Dissolved	6.4	.01	mg/l	EPA 360.1	06-02-1993 15:00 LM
pH	7.33	----	Units	EPA 150.1	06-02-1993 15:00 LM
Potassium	3.30	.1	mg/l	EPA 258.1	06-14-1993 12:30 ED
Sodium	26.00	.2	mg/l	EPA 273.1	06-14-1993 12:10 ED
Solids, Total Dissolved	768.0	14	mg/l	EPA 160.1	06-08-1993 08:30 LM
Solids, Total Suspended	9.0	7	mg/l	EPA 160.2	06-08-1993 08:30 LM
Sulfate	160.0	1	mg/l	EPA 375.4	06-14-1993 12:00 LS
Turbidity	17.0	.1	NTU	EPA 180.1	06-03-1993 07:30 LS
Cation/Anion Balance	9.78	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

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June 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us: Water

Sample taken at: Grimes Wash

Sample taken by: Energy West/KH

Date sampled: June 10, 1993

Date received: June 10, 1993

WMD01
Wilberg Mine Discharge At Grimes Wash
Temperature 52.8°F
Flow 20 GPM
Rec'd 1600 hr.
Sampled 1056 hr.

FIELD MEASUREMENTS

pH	8.13
Conductivity	975
DO	7.6

Analysis report no. 59-13174

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	4	1	mg/l $CaCO_3$	EPA 305.1	06-15-1993 13:30 LS
Alkalinity, Bicarbonate	324	2	mg/l $CaCO_3$	EPA 310.1	06-15-1993 13:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-15-1993 13:30 LS
Alkalinity, Total	266	2	mg/l $CaCO_3$	EPA 310.1	06-15-1993 13:30 LS
Anions	11.34	----	meq/l	---------	---------- ----- --
Calcium	103.0	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	10.89	----	meq/l	---------	---------- ----- --
Chloride	17.1	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	880	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	495	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	0.15	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	0.29	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	57.70	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oil & Grease	0.1	1	mg/l	EPA 413.1	06-23-1993 08:00 LM
Oxygen, Dissolved	6.6	.01	mg/l	EPA 360.1	06-10-1993 17:30 LS
pH	7.30	----	Units	EPA 150.1	06-10-1993 17:30 LS
Potassium	2.90	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	21.70	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	728.0	14	mg/l	EPA 160.1	06-14-1993 13:00 LM
Solids, Total Suspended	2.0	7	mg/l	EPA 160.2	06-15-1993 08:00 LM
Sulfate	270.0	1	mg/l	EPA 375.4	06-21-1993 13:50 LS
Turbidity	1.1	.1	NTU	EPA 180.1	06-11-1993 08:00 LS
Cation/Anion Balance	2.00	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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August 23, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Mine Discharge At Grimes Wash
Temperature 57.1°F
Flow 1[illegible] GPM
Rec'd 1345 hr.
Sampled 1220 hr.

FIELD MEASUREMENTS

pH	7.81
Conductivity	935
DO	8.6

Kind of sample reported to us Water

Sample taken at Wilberg Mine

Sample taken by Energy West/CS

Date sampled July 23, 1993

Date received July 23, 1993

Analysis report no. 59-13349

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	08-04-1993 09:00 LS
Alkalinity, Bicarbonate	317	.4	mg/l HCO_3	EPA 310.1	08-04-1993 09:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	08-04-1993 09:00 LS
Alkalinity, Total	260	.4	mg/l $CaCO_3$	EPA 310.1	08-04-1993 09:00 LS
Anions	11.49	----	meq/l	---------	---------- ----- --
Calcium	86.2	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	9.78	----	meq/l	---------	---------- ----- --
Chloride	19.4	.5	mg/l	EPA 325.3	07-29-1993 15:00 LM
Conductivity	1010	0.2	umhos/cm	EPA 120.1	08-20-1993 13:00 LS
Hardness, Total	438	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.13	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	0.06	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	54.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oil & Grease	0.9	1	mg/l	EPA 413.1	07-26-1993 08:00 LM
Oxygen, Dissolved	6.4	.01	mg/l	EPA 360.1	07-23-1993 14:30 LS
pH	7.82	----	Units	EPA 150.1	07-23-1993 14:30 LS
Potassium	4.70	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	21.30	.2	mg/l	EPA 273.1	08-20-1993 13:05 ED
Solids, Total Dissolved	723.0	14	mg/l	EPA 160.1	07-27-1993 13:30 LM
Solids, Total Suspended	2.0	7	mg/l	EPA 160.2	07-27-1993 15:00 LM
Sulfate	280.0	1	mg/l	EPA 375.4	08-16-1993 08:00 LS
Turbidity	1.0	.1	NTU	EPA 180.1	07-23-1993 14:30 LS
Cation/Anion Balance	-8.08	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

September 15, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Grimes Wash

Sample taken by Energy West/CS

Date sampled August 3, 1993

Date received August 3, 1993

Wilberg Mine Discharge at Grimes Wash
WMD01
Temperature 57.4°F
Flow 12 GPM
Rec'd 1400 hr.
Sampled 1256 hr.

FIELD MEASUREMENTS

pH	7.91
Conductivity	978
DO	8.5

Analysis report no. 59-13359

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	08-09-1993 11:00 LS
Alkalinity, Bicarbonate	334	.4	mg/l HCO_3	4500 CO_2 D	08-09-1993 11:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-09-1993 11:00 LS
Alkalinity, Total	274	.4	mg/l $CaCO_3$	EPA 310.1	08-09-1993 11:00 LS
Anions	11.71	----	meq/l	---------	---------- ----- --
Calcium	72.4	.03	mg/l	EPA 215.1	09-14-1993 14:10 ED
Cations	9.82	----	meq/l	---------	---------- ----- --
Chloride	17.3	.5	mg/l	EPA 325.3	08-13-1993 13:30 LM
Conductivity	963	0.2	umhos/cm	EPA 120.1	08-21-1993 09:15 LS
Hardness, Total	465	.03	mg/l $CaCO_3$	---------	09-14-1993 14:10 ED
Iron	0.14	.05	mg/l	EPA 236.1	08-31-1993 16:30 ED
Iron, Dissolved	0.20	.05	mg/l	EPA 236.1	09-03-1993 09:15 ED
Magnesium	69.00	.007	mg/l	EPA 242.1	09-14-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oil & Grease	0.7	1	mg/l	EPA 413.1	08-18-1993 14:00 LM
Oxygen, Dissolved	7.6	.01	mg/l	EPA 360.1	08-03-1993 15:00 LS
pH	7.76	----	Units	EPA 150.1	08-03-1993 15:00 LS
Potassium	3.20	.1	mg/l	EPA 258.1	08-31-1993 17:15 ED
Sodium	10.60	.2	mg/l	EPA 273.1	08-31-1993 14:40 ED
Solids, Total Dissolved	760.0	14	mg/l	EPA 160.1	08-05-1993 09:00 LS
Solids, Total Suspended	16.0	7	mg/l	EPA 160.2	08-11-1993 12:00 LM
Sulfate	280.0	1	mg/l	EPA 375.4	09-01-1993 11:20 LS
Turbidity	0.8	.1	NTU	EPA 180.1	08-04-1993 07:30 LS
Cation/Anion Balance	-8.78	----	%	---------	---------- ----- --

RECEIVED
9/17/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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October 21, 1993

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

RECEIVED
10/4/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Grimes Wash

Sample taken by Energy West/CS

Date sampled September 13, 1993

Date received September 13, 1993

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Mine Discharge At Grimes Wash
Temperature 59.9°F
Flow 12 GPM
Rec'd 1500 hr.
Sampled 1201 hr.

FIELD MEASUREMENTS

pH	7.81
Conductivity	999
DO	9.8

NOTE Holding time expired when sulfate was run. Possible matrix interference with alkalinity.

Analysis report no. 59-13517

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	09-28-1993	1030	LS
Alkalinity, Bicarbonate	342	2	mg/l	$CaCO_3$	EPA 310.1	09-24-1993	1030	LS
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	09-24-1993	1030	LS
Alkalinity, Total	281	2	mg/l	$CaCO_3$	EPA 310.1	09-28-1993	1030	LS
Anions	12.23	----	meq/l		---------	----------	-----	--
Calcium	148.0	.03	mg/l		EPA 215.1	10-12-1993	1330	ED
Cations	11.49	----	meq/l		---------	----------	-----	--
Chloride	16.4	.5	mg/l		EPA 325.3	10-01-1993	0700	LM
Conductivity	1163.00	0.2	umhos/cm		EPA 120.1	09-14-1993	1215	LS
Hardness, Total	468.4	.03	mg/l	$CaCO_3$	---------	10-12-1993	1330	ED
Iron	0.41	.05	mg/l		EPA 236.1	10-12-1993	1700	ED
Iron, Dissolved	0.07	.05	mg/l		EPA 236.1	10-19-1993	1220	ED
Magnesium	24.00	.007	mg/l		EPA 242.1	10-18-1993	1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993	1730	ED
Oil & Grease	<1	1	mg/l		EPA 413.1	09-21-1993	1100	LM
Oxygen, Dissolved	6.95	.01	mg/l		EPA 360.1	09-13-1993	1745	ED
pH	7.46	----	Units		EPA 150.1	09-13-1993	1730	ED
Potassium	9.0	.1	mg/l		EPA 258.1	10-13-1993	1250	ED
Sodium	44.0	.2	mg/l		EPA 273.1	10-18-1993	1650	ED
Solids, Total Dissolved	823	14	mg/l		EPA 160.1	09-20-1993	0900	LM
Solids, Total Suspended	3	7	mg/l		EPA 160.2	09-20-1993	0745	LM
Sulfate	300	1	mg/l		EPA 375.4	10-21-1993	1330	LS
Turbidity	2.2	.1	NTU		EPA 180.1	09-14-1993	1300	LS
Cation/Anion Balance	-3.11	----	%		---------	----------	----	

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 1, 1993

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

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12/1/93

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

FIELD OFFICE

Sample taken at Cottonwood

Sample taken by Energy West/GD

Date sampled September 29, 1993

Date received September 29, 1993

Cottonwood Mine Discharge @ GRIMES WASH
Temperature 14.0°C
Flow 525 GPM
Rec'd 1400 hr.
Sampled 1235 hr.

FIELD MEASUREMENTS

pH	7.60
Conductivity	1070
DO	6.0

NOTE: DO Probe was inoperational. Holding times were expired when Chloride and Conductivity were run.

Analysis report no. 59-13603

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Acidity	2	1	mg/l	$CaCO_3$	EPA 305.1	10-08-1993 1430 LS
Alkalinity, Bicarbonate	407	2	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 1430 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 1430 LS
Alkalinity, Total	334	2	mg/l	$CaCO_3$	EPA 310.1	10-08-1993 1430 LS
Anions	12.60	----	meq/l		---------	---------- ----- --
Calcium	130.0	.03	mg/l		EPA 215.1	11-08-1993 1450 ED
Cations	14.00	----	meq/l		---------	---------- ----- --
Chloride	16.0	.5	mg/l		EPA 325.3	11-01-1993 0900 LM
Conductivity	1119.00	0.2	umhos/cm		EPA 120.1	10-28-1993 0945 ED
Hardness, Total	621.0	.03	mg/l	$CaCO_3$	---------	11-08-1993 1450 ED
Iron	<0.20	.05	mg/l		EPA 236.1	11-24-1993 1200 DW
Iron, Dissolved	0.05	.05	mg/l		EPA 236.1	11-16-1993 1020 ED
Magnesium	72.00	.007	mg/l		EPA 242.1	11-08-1993 1630 ED
Manganese	0.10	.03	mg/l		EPA 243.1	11-29-1993 1500 DW
Oil & Grease	< 0	1	mg/l		EPA 413.1	10-02-1993 0930 LM
pH	7.34	----	Units		EPA 150.1	09-29-1993 1615 ED
Potassium	<10.0	.1	mg/l		EPA 258.1	11-09-1993 1315 ED
Sodium	38.0	.2	mg/l		EPA 273.1	11-09-1993 1135 ED
Solids, Total Dissolved	764	14	mg/l		EPA 160.1	09-30-1993 0745 LM
Solids, Total Suspended	4	7	mg/l		EPA 160.2	09-30-1993 0730 LM
Sulfate	270	1	mg/l		EPA 375.4	11-04-1993 1110 LS
Turbidity	1.4	.1	NTU		EPA 180.1	09-30-1993 0830 LS
Cation/Anion Balance	5.30	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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January 7, 1994

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1/7/94

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

Sample identification by
PACIFICORP FIELD OFFICE

FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Grimes Wash

Sample taken by Energy West/KH

Date sampled October 30, 1993

Date received November 1, 1993

Grimes Wash Mine Discharge

Temperature 53.9°F
Flow 20 GPM
Rec'd 0820 hr.
Sampled 1105 hr.

FIELD MEASUREMENTS

pH	7.85
Conductivity	1020
DO	6.3

Analysis report no. 59-13700

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Acidity	2	1	mg/l	$CaCO_3$	EPA 305.1	11-08-1993	0820	LS
Alkalinity, Bicarbonate	381	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0820	LS
Alkalinity, Total	313	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993	0830	LS
Anions	12.90	----	meq/l		---------	----------	-----	--
Calcium	95.0	.03	mg/l		EPA 215.1	12-02-1993	1100	DW
Cations	11.70	----	meq/l		---------	----------	-----	--
Chloride	11.0	.5	mg/l		EPA 325.3	11-22-1993	0930	LM
Conductivity	1224.00	0.2	umhos/cm		EPA 120.1	11-28-1993	1000	LS
Hardness, Total	509.0	.03	mg/l	$CaCO_3$	---------	12-02-1993	1100	DW
Iron	0.20	.05	mg/l		EPA 236.1	12-01-1993	1500	DW
Iron, Dissolved	<0.30	.05	mg/l		EPA 236.1	12-01-1993	1500	DW
Magnesium	66.00	.007	mg/l		EPA 242.1	11-30-1993	1100	DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993	0830	LS
Oil & Grease	<1	1	mg/l		EPA 413.1	11-16-1993	1000	LM
Oxygen, Dissolved	6.68	.01	mg/l		EPA 360.1	11-01-1993	1015	LS
pH	7.63	----	Units		EPA 150.1	11-01-1993	1000	LS
Potassium	7.0	.1	mg/l		EPA 258.1	11-30-1993	1500	DW
Sodium	31.0	.2	mg/l		EPA 273.1	11-30-1993	1300	DW
Solids, Total Dissolved	866	14	mg/l		EPA 160.1	11-05-1993	0730	LM
Solids, Total Suspended	3	7	mg/l		EPA 160.2	11-05-1993	1000	LM
Sulfate	310	1	mg/l		EPA 375.4	12-03-1993	1100	LS
Turbidity	5.0	.1	NTU		EPA 180.1	11-01-1993	1030	LS
Cation/Anion Balance	-5.00	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout
Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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December 14, 1993

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

RECEIVED
12/14/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Wilberg Mine

Sample taken by Energy West/GD

Date sampled November 2, 1993

Date received November 3, 1993

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Mine Discharge WMDO1
Temperature 11.9°C FLOW 526 GPM
Rec'd 0900 hr.
Sampled 1652 hr.

FIELD MEASUREMENTS

pH	7.70
Conductivity	1059
DO	6.3

NOTE: Holding times expired when Sulfate and Oil & Grease were run.

Analysis report no. 59-13712

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	11-15-1993 1030	[illegible]
Alkalinity, Bicarbonate	347	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	[illegible]
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Alkalinity, Total	285	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Anions	12.30	----	meq/l		---------	---------- -----	--
Calcium	119.0	.03	mg/l		EPA 215.1	12-13-1993 1500	DW
Cations	12.70	----	meq/l		---------	---------- -----	--
Chloride	14.0	.5	mg/l		EPA 325.3	11-22-1993 0930	LM
Conductivity	994.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500	LS
Hardness, Total	569.0	.03	mg/l	$CaCO_3$	---------	12-13-1993 1500	DW
Iron	0.60	.05	mg/l		EPA 236.1	12-10-1993 1240	DW
Iron, Dissolved	0.20	.05	mg/l		EPA 236.1	12-10-1993 1500	DW
Magnesium	66.00	.007	mg/l		EPA 242.1	12-14-1993 1100	ED
Manganese	<0.10	.03	mg/l		EPA 243.1	12-13-1993 1400	DW
Oil & Grease	<5	1	mg/l		EPA 413.1	12-10-1993 1030	LM
Oxygen, Dissolved	5.50	.01	mg/l		EPA 360.1	11-03-1993 1030	LM
pH	7.49	----	Units		EPA 150.1	11-03-1993 1130	LM
Potassium	9.0	.1	mg/l		EPA 258.1	12-13-1993 1220	ED
Sodium	31.0	.2	mg/l		EPA 273.1	12-14-1993 1210	ED
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	11-03-1993 1500	LM
Solids, Total Dissolved	750	14	mg/l		EPA 160.1	11-05-1993 0730	LM
Solids, Total Suspended	2	7	mg/l		EPA 160.2	11-05-1993 1000	LM
Sulfate	300	1	mg/l		EPA 375.4	12-10-1993 1030	LS
Turbidity	1.0	.1	NTU		EPA 180.1	11-03-1993 0830	LS
Cation/Anion Balance	1.50		%				

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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December 28, 1993

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

RECEIVED
12/28/93

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Wilberg Mine FIELD OFFICE

Sample taken by Energy West/KH

Date sampled December 13, 1993

Date received December 13, 1993

Wilberg Mine Discharge WMDO1

Temperature 52.9°F
Flow 12 GPM
Rec'd 1545 hr.
Sampled 1130 hr.

FIELD MEASUREMENTS

pH	7.98
Conductivity	967
DO	9.2

Note: Amended Alkalinity, Carbonate
Solids, Total Suspended

Analysis report no. 59-13777

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Acidity	20	1	mg/l	$CaCO_3$	2310 B	12-15-1993 0955 ED
Alkalinity, Bicarbonate	346	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1143 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	4500 CO_2D	12-17-1993 1143 LS
Alkalinity, Total	346	1	mg/l	$CaCO_3$	EPA 310.1	12-17-1993 1143 LS
Anions	13.00	----	meq/l		---------	---------- ----- --
Calcium	109.0	1	mg/l		EPA 215.1	12-20-1993 1000 DW
Cations	12.10	----	meq/l		---------	---------- ----- --
Chloride	16.0	1	mg/l		EPA 325.3	12-21-1993 1300 LM
Conductivity	1130.00	0.2	umhos/cm		EPA 120.1	12-16-1993 1055 ED
Hardness, Total	532.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	0.30	0.2	mg/l		EPA 236.1	12-21-1993 1130 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1200 DW
Magnesium	63.00	1	mg/l		EPA 242.1	12-20-1993 1500 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-21-1993 1030 DW
Oil & Grease	<5	5	mg/l		EPA 413.1	12-22-1993 0900 LM
Oxygen, Dissolved	6.39	.01	mg/l		EPA 360.1	12-13-1993 1550 LS
pH	7.21	----	Units		EPA 150.1	12-13-1993 1600 LS
Potassium	10.0	2	mg/l		EPA 258.1	12-20-1993 1030 DW
Sodium	33.0	1	mg/l		EPA 273.1	12-20-1993 1145 DW
Solids, Total Dissolved	768	10	mg/l		EPA 160.1	12-15-1993 1500 LM
Solids, Total Suspended	<4	4	mg/l		EPA 160.2	12-16-1993 1430 LM
Sulfate	270	1	mg/l		EPA 375.4	12-16-1993 1345 LS
Cation/Anion Balance	-3.7	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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

April 30, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Miller Canyon

Sample taken by Energy West/KH

Date sampled April 21, 1993

Date received April 21, 1993

Miller Canyon Discharge
Temperature 60.3°F
Flow 10 GPM
Rec'd 1530 hr.
Sampled 1430 hr.

FIELD MEASUREMENTS	
pH	7.36
Conductivity	1230
DO	4.9

Analysis report no. 59-13029

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	8	1	mg/l $CaCO_3$	EPA 305.1	04-23-1993 12:45 LS
Alkalinity, Bicarbonate	296	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Total	243	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Anions	13.20	----	meq/l	---------	---------- ----- --
Calcium	144.5	.1	mg/l	EPA 215.1	04-28-1993 13:40 ED
Cations	15.10	----	meq/l	---------	---------- ----- --
Chloride	17.2	.1	mg/l	EPA 325.3	04-22-1993 13:00 LM
Conductivity	1160	2	umhos/cm	EPA 120.1	04-27-1993 14:00 LS
Hardness, Total	677	1	mg/l $CaCO_3$	---------	04-28-1993 13:40 ED
Iron	0.21	.02	mg/l	EPA 236.1	04-29-1993 10:35 ED
Iron, Dissolved	0.15	.02	mg/l	EPA 236.1	04-30-1993 08:55 ED
Magnesium	76.70	.01	mg/l	EPA 242.1	04-28-1993 14:15 ED
Manganese	0.03	.01	mg/l	EPA 243.1	04-28-1993 15:20 ED
Oil & Grease	7.2	1	mg/l	EPA 413.1	04-26-1993 08:00 LM
Oxygen, Dissolved	4.4	.01	mg/l	EPA 360.1	04-21-1993 16:00 LS
pH	6.15	----	Units	EPA 150.1	04-21-1993 16:00 LS
Potassium	5.40	.01	mg/l	EPA 258.1	04-29-1993 13:30 ED
Sodium	33.50	.01	mg/l	EPA 273.1	04-29-1993 11:50 ED
Solids, Total Dissolved	1030.0	.5	mg/l	EPA 160.1	04-23-1993 08:00 LM
Solids, Total Suspended	1.0	.5	mg/l	EPA 160.2	04-23-1993 08:00 LM
Sulfate	380.0	.1	mg/l	EPA 375.4	04-26-1993 08:30 LS
Turbidity	0.7	.1	NTU	EPA 180.1	04-22-1993 07:30 LS
Cation/Anion Balance	6.71	----	%	---------	---------- ----- --

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4/30/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

June 3, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Wilberg Mine

Sample taken by Energy West/KH

Date sampled May 19, 1993

Date received May 19, 1993

Wilberg Mine Discharge At Miller Canyon
Temperature 58.0°F
Flow 12 GPM
Rec'd 1330 hr.
Sampled 1155 hr.

FIELD MEASUREMENTS

pH	7.37
Conductivity	1240
DO	6.6

Analysis report no. 59-13089

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	5	1	mg/l $CaCO_3$	EPA 305.1	05-26-1993 13:00 LS
Alkalinity, Bicarbonate	430	2	mg/l $CaCO_3$	EPA 310.1	05-26-1993 13:00 LS
Alkalinity, Carbonate	<1	1	mg/l $CaCO_3$	EPA 310.1	05-26-1993 13:00 LS
Alkalinity, Total	353	2	mg/l $CaCO_3$	EPA 310.1	05-26-1993 13:00 LS
Anions	17.83	----	meq/l	---------	---------- ----- --
Calcium	122.3	.03	mg/l	EPA 215.1	06-01-1993 14:45 ED
Cations	15.03	----	meq/l	---------	---------- ----- --
Chloride	16.0	.5	mg/l	EPA 325.3	05-24-1993 07:45 LM
Conductivity	1130	0.2	umhos/cm	EPA 120.1	06-02-1993 14:00 LS
Hardness, Total	676	.03	mg/l $CaCO_3$	---------	06-01-1993 14:45 ED
Iron	0.25	.05	mg/l	EPA 236.1	06-01-1993 16:55 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	06-01-1993 16:55 ED
Magnesium	89.90	.01	mg/l	EPA 242.1	06-01-1993 15:30 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-01-1993 15:55 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	06-01-1993 08:00 LM
Oxygen, Dissolved	3.3	.01	mg/l	EPA 360.1	05-19-1993 13:00 LS
pH	6.60	----	Units	EPA 150.1	05-19-1993 13:00 LS
Potassium	4.60	.1	mg/l	EPA 258.1	06-02-1993 09:50 ED
Sodium	33.20	.2	mg/l	EPA 273.1	06-02-1993 09:20 ED
Solids, Total Dissolved	999.0	14	mg/l	EPA 160.1	05-26-1993 07:45 LM
Solids, Total Suspended	4.0	7	mg/l	EPA 160.2	05-28-1993 14:30 LM
Sulfate	500.0	1	mg/l	EPA 375.4	06-02-1993 09:45 LS
Turbidity	6.0	.1	NTU	EPA 180.1	05-20-1993 08:00 LS
Cation/Anion Balance	-8.49	----	%	---------	---------- ----- --

RECEIVED
6/3/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

June 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us: Water

Sample taken at: Miller Canyon

Sample taken by: Energy West/CS

Date sampled: June 14, 1993

Date received: June 14, 1993

Wilberg Mine Discharge At Miller Canyon
Temperature 59.5°F
Flow 10 GPM
Rec'd 1330 hr.
Sampled 1240 hr.

FIELD MEASUREMENTS

pH	7.43
Conductivity	1110
DO	7.3

Analysis report no. 59-13191

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	6	1	mg/l $CaCO_3$	EPA 305.1	06-23-1993 10:00 LS
Alkalinity, Bicarbonate	294	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Alkalinity, Total	241	2	mg/l $CaCO_3$	EPA 310.1	06-23-1993 10:00 LS
Anions	13.16	----	meq/l	---------	---------- ----- --
Calcium	97.5	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	12.72	----	meq/l	---------	---------- ----- --
Chloride	17.3	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	1040	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	546	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	<0.05	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	73.50	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oil & Grease	0.6	1	mg/l	EPA 413.1	06-23-1993 08:00 LM
Oxygen, Dissolved	8.8	.01	mg/l	EPA 360.1	06-14-1993 14:00 LS
pH	7.50	----	Units	EPA 150.1	06-14-1993 14:00 LS
Potassium	7.20	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	37.90	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	940.0	14	mg/l	EPA 160.1	06-21-1993 08:00 LM
Solids, Total Suspended	5.0	7	mg/l	EPA 160.2	06-21-1993 09:00 LM
Sulfate	380.0	1	mg/l	EPA 375.4	06-21-1993 13:40 LS
Turbidity	2.4	.1	NTU	EPA 180.1	06-14-1993 15:00 LS
Cation/Anion Balance	-1.73	----	%	---------	---------- ----- --

RECEIVED
6/25/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
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TEL: (801) 653-2311
FAX: (801) 653-2436

August 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Mine Discharge At Miller Canyon
Temperature 58.0°F
Flow 8.0 GPM
Rec'd 1345 hr.
Sampled 1140 hr.

FIELD MEASUREMENTS

pH	8.06
Conductivity	1090
DO	8.7

Kind of sample reported to us Water

Sample taken at Wilberg Mine

Sample taken by Energy West/CS

Date sampled July 23, 1993

Date received July 23, 1993

Analysis report no. 59-13348

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	08-04-1993 09:00 LS
Alkalinity, Bicarbonate	294	.4	mg/l HCO_3	4500 CO_2 D	08-04-1993 09:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	08-04-1993 09:00 LS
Alkalinity, Total	241	.4	mg/l $CaCO_3$	EPA 310.1	08-04-1993 09:00 LS
Anions	14.17	----	meq/l	---------	---------- ----- --
Calcium	98.1	.03	mg/l	EPA 215.1	08-20-1993 10:10 ED
Cations	14.18	----	meq/l	---------	---------- ----- --
Chloride	15.7	.5	mg/l	EPA 325.3	07-29-1993 15:00 LM
Conductivity	1200	0.2	umhos/cm	EPA 120.1	08-20-1993 14:30 LS
Hardness, Total	624	.03	mg/l $CaCO_3$	---------	08-20-1993 10:10 ED
Iron	0.11	.05	mg/l	EPA 236.1	08-02-1993 16:45 ED
Iron, Dissolved	<0.05	.05	mg/l	EPA 236.1	08-19-1993 11:05 ED
Magnesium	92.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	08-02-1993 14:50 ED
Oil & Grease	<1.0	1	mg/l	EPA 413.1	07-26-1993 08:00 LM
Oxygen, Dissolved	8.1	.01	mg/l	EPA 360.1	07-23-1993 14:30 LS
pH	8.43	----	Units	EPA 150.1	07-23-1993 14:30 LS
Potassium	5.40	.1	mg/l	EPA 258.1	08-10-1993 15:50 ED
Sodium	37.00	.2	mg/l	EPA 273.1	08-24-1993 10:25 ED
Solids, Total Dissolved	873.0	14	mg/l	EPA 160.1	07-27-1993 13:30 LM
Solids, Total Suspended	2.0	7	mg/l	EPA 160.2	07-27-1993 15:00 LM
Sulfate	430.0	1	mg/l	EPA 375.4	08-20-1993 08:00 LS
Turbidity	0.3	.1	NTU	EPA 180.1	07-23-1993 14:30 LS
Cation/Anion Balance	0.03	----	%	---------	---------- ----- --

RECEIVED
8/25/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

September 24, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Cottonwood Mine Discharge
At Miller Canyon
Temperature 64.5°F
Flow 10 GPM
Rec'd 1440 hr.
Sampled 1320 hr.

FIELD MEASUREMENTS

pH	7.56
Conductivity	1190
DO	9.5

Kind of sample reported to us Water

Sample taken at Miller Canyon

Sample taken by Energy West/KH

Date sampled August 18, 1993

Date received August 18, 1993

Analysis report no. 59-13424

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	09-01-1993 15:30 LS
Alkalinity, Bicarbonate	268	.4	mg/l HCO_3	4500 CO_2 D	09-01-1993 15:30 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	09-01-1993 15:30 LS
Alkalinity, Total	220	.4	mg/l $CaCO_3$	EPA 310.1	09-01-1993 15:30 LS
Anions	10.99	----	meq/l	---------	---------- ----- --
Calcium	71.5	.03	mg/l	EPA 215.1	09-14-1993 14:10 ED
Cations	12.60	----	meq/l	---------	---------- ----- --
Chloride	14.2	.5	mg/l	EPA 325.3	09-07-1993 13:00 LM
Conductivity	1183	0.2	umhos/cm	EPA 120.1	08-25-1993 09:15 LS
Hardness, Total	545	.03	mg/l $CaCO_3$	---------	09-14-1993 14:10 ED
Iron	0.14	.05	mg/l	EPA 236.1	08-31-1993 16:30 ED
Iron, Dissolved	0.09	.05	mg/l	EPA 236.1	09-03-1993 09:15 ED
Magnesium	89.00	.007	mg/l	EPA 242.1	08-31-1993 13:50 ED
Manganese	0.03	.03	mg/l	EPA 243.1	08-31-1993 15:10 ED
Oil & Grease	0.2	1	mg/l	EPA 413.1	09-01-1993 11:45 LM
Oxygen, Dissolved	8.6	.01	mg/l	EPA 360.1	08-18-1993 15:00 LS
pH	8.10	----	Units	EPA 150.1	08-18-1993 15:00 LS
Potassium	5.20	.1	mg/l	EPA 258.1	08-31-1993 17:15 ED
Sodium	37.10	.2	mg/l	EPA 273.1	08-31-1993 14:40 ED
Solids, Total Dissolved	888.0	14	mg/l	EPA 160.1	08-18-1993 15:30 LM
Solids, Total Suspended	17.0	7	mg/l	EPA 160.2	08-19-1993 08:00 LM
Sulfate	300.0	1	mg/l	EPA 375.4	09-01-1993 11:30 LS
Turbidity	8.0	.1	NTU	EPA 180.1	08-19-1993 09:00 LS
Cation/Anion Balance	6.86	----	%	---------	---------- ----- --

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9/24/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDEN
P.O. BOX 1020, HUNTINGTON, UT
TEL: (801) 653-2311
FAX: (801) 653-2436

October 21, 1993

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

RECEIVED
10/21/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Miller Canyon

Sample taken by Energy West/CS

Date sampled September 13, 1993

Date received September 13, 1993

Sample identification by
PACIFICORP FIELD OFFICE

Wilberg Mine Discharge At Miller Canyon
Temperature 47.9°F
Flow 12 GPM
Rec'd 1500 hr.
Sampled 1113 hr.

FIELD MEASUREMENTS

pH	8.74
Conductivity	1040
DO	12.9

NOTE Holding time expired when alkalinity was run.

Analysis report no. 59-13519

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	09-13-1993 1730	
Alkalinity, Bicarbonate	267	2	mg/l	$CaCO_3$	EPA 310.1	10-16-1993 0915	
Alkalinity, Carbonate	0	1	mg/l	$CaCO_3$	EPA 310.1	10-16-1993 0915	LS
Alkalinity, Total	219	2	mg/l	$CaCO_3$	EPA 310.1	10-16-1993 0915	LS
Anions	8.92	----	meq/l		---------	----------	----- --
Calcium	1.4	.03	mg/l		EPA 215.1	10-12-1993 1330	ED
Cations	9.17	----	meq/l		---------	----------	----- --
Chloride	15.9	.5	mg/l		EPA 325.3	10-01-1993 0700	LM
Conductivity	1245.00	0.2	umhos/cm		EPA 120.1	09-14-1993 1215	LS
Hardness, Total	365.8	.03	mg/l	$CaCO_3$	---------	10-12-1993 1330	ED
Iron	0.70	.05	mg/l		EPA 236.1	10-12-1993 1700	ED
Magnesium	88.00	.007	mg/l		EPA 242.1	10-18-1993 1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-12-1993 1730	ED
Oil & Grease	0	1	mg/l		EPA 413.1	09-21-1993 1100	LM
Oxygen, Dissolved	9.42	.01	mg/l		EPA 360.1	09-13-1993 1745	ED
pH	8.51	----	Units		EPA 150.1	09-13-1993 1730	ED
Potassium	6.0	.1	mg/l		EPA 258.1	10-13-1993 1250	ED
Sodium	40.2	.2	mg/l		EPA 273.1	10-18-1993 1650	ED
Solids, Total Dissolved	861	14	mg/l		EPA 160.1	09-20-1993 0900	LM
Solids, Total Suspended	7	7	mg/l		EPA 160.2	09-20-1993 0745	LM
Sulfate	200	1	mg/l		EPA 375.4	10-03-1993 1030	LS
Turbidity	1.9	.1	NTU		EPA 180.1	09-14-1993 1300	LS
Cation/Anion Balance	1.39	----	%		---------	----------	----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

January 7, 1994

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

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1/7/94
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Miller Canyon Mine Discharge

Kind of sample reported to us Water

Sample taken at Miller Canyon

Sample taken by Energy West/KH

Date sampled October 30, 1993

Date received November 1, 1993

Temperature 35.1°F
Flow 12 GPM
Rec'd 0820 hr.
Sampled 1154 hr.

FIELD MEASUREMENTS

pH	8.46
Conductivity	1100
DO	8.7

Analysis report no. 59-13699

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	11-08-1993 0820 LS
Alkalinity, Bicarbonate	312	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Alkalinity, Total	256	2	mg/l	$CaCO_3$	EPA 310.1	11-08-1993 0820 LS
Anions	13.80	----	meq/l		---------	---------- ----- --
Calcium	110.0	.03	mg/l		EPA 215.1	12-02-1993 1100 DW
Cations	14.50	----	meq/l		---------	---------- ----- --
Chloride	15.0	.5	mg/l		EPA 325.3	11-22-1993 0930 LM
Conductivity	1255.00	0.2	umhos/cm		EPA 120.1	11-28-1993 1000 LS
Hardness, Total	641.0	.03	mg/l	$CaCO_3$	---------	12-02-1993 1100 DW
Iron	<0.20	.05	mg/l		EPA 236.1	12-01-1993 1500 DW
Iron, Dissolved	<0.30	.05	mg/l		EPA 236.1	12-01-1993 1500 DW
Magnesium	89.00	.007	mg/l		EPA 242.1	11-30-1993 1100 DW
Manganese	<0.10	.03	mg/l		EPA 243.1	12-02-1993 0830 DW
Oil & Grease	<1	1	mg/l		EPA 413.1	11-16-1993 1000 LM
Oxygen, Dissolved	8.52	.01	mg/l		EPA 360.1	11-01-1993 1015 LS
pH	7.89	----	Units		EPA 150.1	11-01-1993 1000 LS
Potassium	6.0	.1	mg/l		EPA 258.1	11-30-1993 1500 DW
Sodium	35.0	.2	mg/l		EPA 273.1	11-30-1993 1300 DW
Solids, Total Dissolved	963	14	mg/l		EPA 160.1	11-05-1993 0730 LM
Solids, Total Suspended	1	7	mg/l		EPA 160.2	11-05-1993 1000 LM
Sulfate	400	1	mg/l		EPA 375.4	12-03-1993 1100 LS
Turbidity	5.0	.1	NTU		EPA 180.1	11-01-1993 1030 LS
Cation/Anion Balance	2.30	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, Huntington Laboratory

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

December 14, 1993

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

RECEIVED
1-4-94 93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Miller Canyon Discharge
Temperature 8.3°C
Flow 12 GPM
Rec'd 0920 hr.
Sampled 0830 hr.

FIELD MEASUREMENTS

pH	7.00
Conductivity	1261
DO	2.8

NOTE: Holding times expired when Sulfate and Oil & Grease were run.

Kind of sample reported to us Water

Sample taken at Miller Canyon

Sample taken by Energy West/KH

Date sampled November 3, 1993

Date received November 3, 1993

Analysis report no. 59-13713

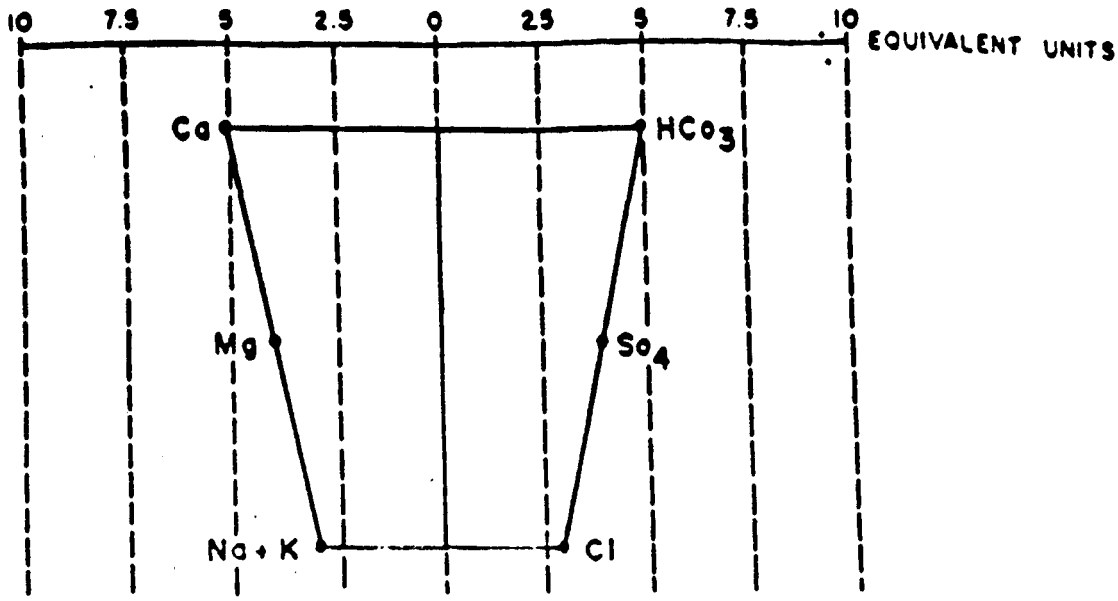
Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Acidity	5	1	mg/l	$CaCO_3$	EPA 305.1	11-15-1993 1030	
Alkalinity, Bicarbonate	402	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Alkalinity, Total	330	2	mg/l	$CaCO_3$	EPA 310.1	11-15-1993 1030	LS
Anions	17.50	----	meq/l		---------	----------	----- --
Calcium	153.0	.03	mg/l		EPA 215.1	12-13-1993 1500	DW
Cations	16.20	----	meq/l		---------	----------	----- --
Chloride	16.0	.5	mg/l		EPA 325.3	11-22-1993 0930	LM
Conductivity	1245.00	0.2	umhos/cm		EPA 120.1	11-29-1993 1500	LS
Hardness, Total	736.0	.03	mg/l	$CaCO_3$	---------	12-13-1993 1500	DW
Iron	0.20	.05	mg/l		EPA 236.1	12-10-1993 1240	DW
Iron, Dissolved	<0.20	.05	mg/l		EPA 236.1	12-10-1993 1500	DW
Magnesium	86.00	.007	mg/l		EPA 242.1	12-14-1993 1100	ED
Manganese	<0.20	.03	mg/l		EPA 243.1	12-13-1993 1400	DW
Oil & Grease	<5	1	mg/l		EPA 413.1	12-10-1993 1030	LM
Oxygen, Dissolved	4.20	.01	mg/l		EPA 360.1	11-03-1993 1030	LM
pH	6.86	----	Units		EPA 150.1	11-03-1993 1130	LM
Potassium	8.0	.1	mg/l		EPA 258.1	12-13-1993 1220	ED
Sodium	34.0	.2	mg/l		EPA 273.1	12-14-1993 1210	ED
Solids, Settleable	<0.5	.5	mg/l		EPA 160.5	11-03-1993 1500	LM
Solids, Total Dissolved	978	14	mg/l		EPA 160.1	11-09-1993 1005	LM
Solids, Total Suspended	4	7	mg/l		EPA 160.2	11-05-1993 1000	LM
Sulfate	500	1	mg/l		EPA 375.4	12-10-1993 1030	LS
Turbidity	1.0	.1	NTU		EPA 180.1	11-03-1993 0830	LS

Cation/Anion Balamce -3.80 %

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

CATION – ANION DIAGRAMS



$$\frac{\text{P P M}}{\text{Equivalent Weight}} = \text{Equivalent Unit}$$

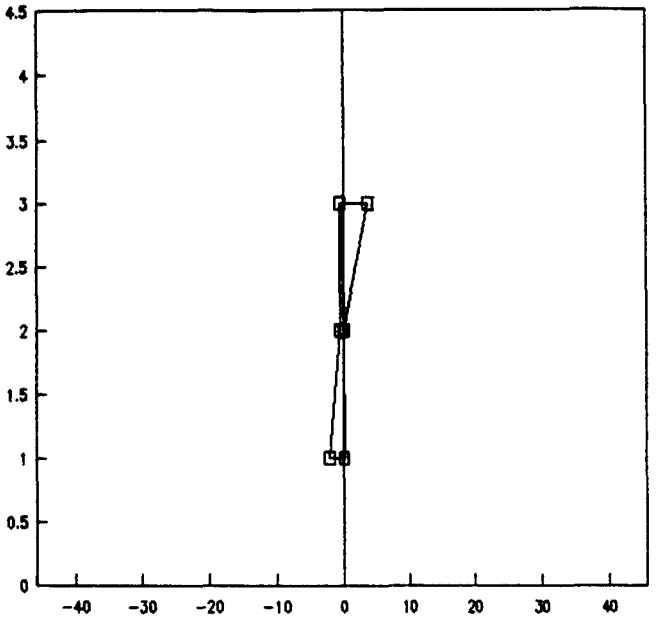
1" = 5 Equivalent Units

Equivalent Weights

Mg	12.16	(Magnesium)
Ca	20.04	(Calcium)
Na	23.00	(Sodium)
K	39.10	(Potassium)
So_4	48.03	(Sulfate)
$CaCO_3$	100.1	(Total Alkalinity)
Cl	35.46	(Chloride)

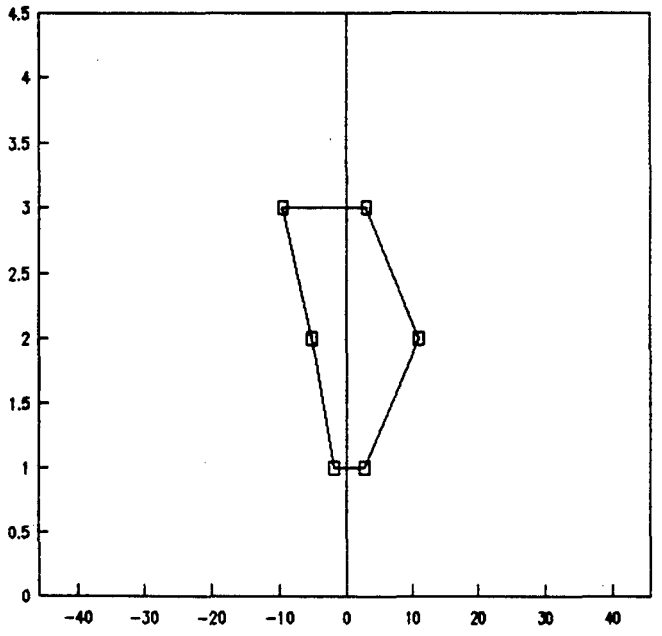
UG-2

1993



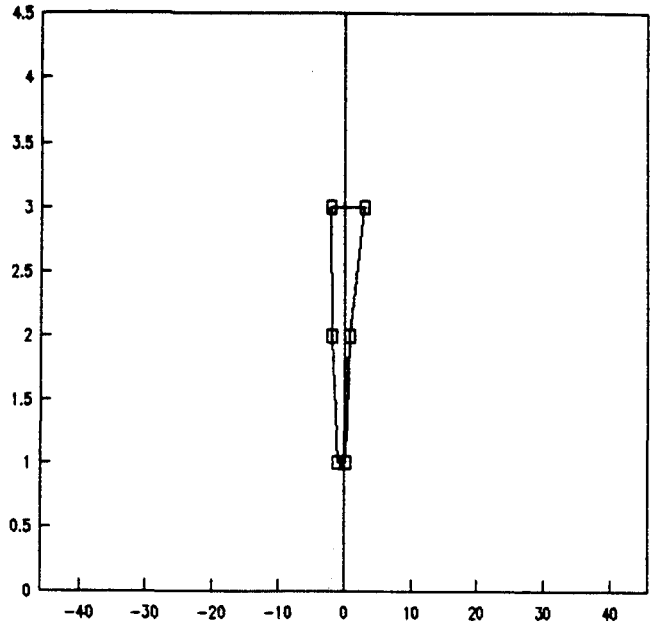
UG-2

HISTORICAL



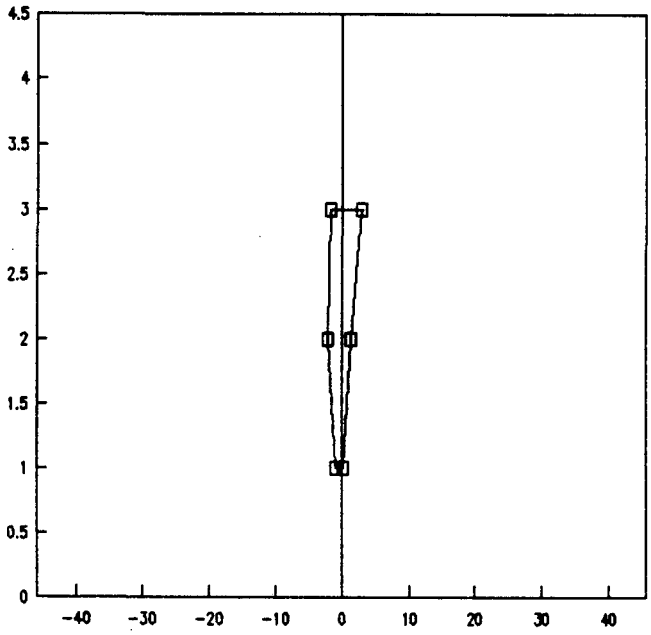
UG-3

HISTORICAL



UG-3

1993



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

April 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain In Mine UG-2
Temperature 56.0°F
Flow <0.01 GPM
Rec'd 1000 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS

pH	8.01
Conductivity	529
DO	6.5

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled April 2, 1993

Date received April 5, 1993

Analysis report no. 59-12992

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	04-13-1993 10:30 LS
Alkalinity, Bicarbonate	379	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Total	311	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Anions	6.26	----	meq/l	---------	---------- ----- --
Calcium	8.0	.1	mg/l	EPA 215.1	04-15-1993 11:05 ED
Cations	6.28	----	meq/l	---------	---------- ----- --
Chloride	6.4	.1	mg/l	EPA 325.3	04-13-1993 13:00 LM
Conductivity	495	2	umhos/cm	EPA 120.1	04-17-1993 08:00 LS
Hardness, Total	43	1	mg/l $CaCO_3$	---------	04-15-1993 11:05 ED
Iron	0.10	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Iron, Dissolved	0.07	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Magnesium	5.55	.01	mg/l	EPA 242.1	04-15-1993 11:25 ED
Manganese	0.00	.01	mg/l	EPA 243.1	04-15-1993 14:10 ED
Oxygen, Dissolved	4.9	.01	mg/l	EPA 360.1	04-05-1993 11:00 LS
pH	7.60	----	Units	EPA 150.1	04-05-1993 11:00 LS
Potassium	2.30	.01	mg/l	EPA 258.1	04-16-1993 08:20 ED
Sodium	124.70	.01	mg/l	EPA 273.1	04-16-1993 07:35 ED
Solids, Total Dissolved	356.0	.5	mg/l	EPA 160.1	04-06-1993 09:00 LM
Solids, Total Suspended	0.0	.5	mg/l	EPA 160.2	04-06-1993 09:00 LM
Sulfate	0.7	.1	mg/l	EPA 375.4	04-15-1993 10:20 LS
Cation/Anion Balance	0.16	----	%	---------	---------- ----- --

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4/20/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

July 20, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Trail Mountain In-Mine UG-2
Flow <0.1 GPM
Rec'd 1530 hr.
Sampled 1005 hr.

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Date sampled July 2, 1993

Date received July 2, 1993

Analysis report no. 59-13249

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	359	.4	mg/l HCO_3	EPA 310.1	07-07-1993 10:00 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	EPA 310.1	07-07-1993 10:00 LS
Alkalinity, Total	295	.4	mg/l $CaCO_3$	EPA 310.1	07-07-1993 10:00 LS
Anions	5.82	----	meq/l	---------	---------- ----- --
Calcium	14.7	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	6.73	----	meq/l	---------	---------- ----- --
Chloride	2.5	.5	mg/l	EPA 325.3	07-17-1993 10:30 LM
Conductivity	500	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	65	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	<0.05	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	0.06	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	6.80	.007	mg/l	EPA 242.1	07-14-1993 16:20 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	7.2	.01	mg/l	EPA 360.1	07-03-1993 11:00 LS
pH	7.64	----	Units	EPA 150.1	07-03-1993 11:00 LS
Potassium	1.40	.1	mg/l	EPA 258.1	07-13-1993 18:15 ED
Sodium	125.70	.2	mg/l	EPA 273.1	07-13-1993 16:25 ED
Solids, Total Dissolved	348.0	14	mg/l	EPA 160.1	07-06-1993 11:00 LM
Solids, Total Suspended	12.0	7	mg/l	EPA 160.2	07-06-1993 10:00 LM
Sulfate	0.0	1	mg/l	EPA 375.4	07-20-1993 08:15 LS
Cation/Anion Balance	7.34	----	%	---------	---------- ----- --

RECEIVED
7/20/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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November 16, 1993

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

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11/16/93

Sample identification by
PACIFICORP FIELD OFFICE

FIELD OFFICE

Trail Mountain UG-2
Rec'd 1415 hr.
Sampled 1038 hr.
FLOW <0.1 GPM
TEMP 50°

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Date sampled September 23, 1993

Date received September 23, 1993

Analysis report no. 59-13571

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	379	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993	0900	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993	0900	LS
Alkalinity, Total	312	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993	0900	LS
Anions	6.40	----	meq/l		---------	----------	-----	--
Calcium	7.1	.03	mg/l		EPA 215.1	10-19-1993	0925	ED
Cations	6.20	----	meq/l		---------	----------	-----	--
Chloride	11.2	.5	mg/l		EPA 325.3	10-26-1993	1700	LM
Conductivity	600.00	0.2	umhos/cm		EPA 120.1	09-27-1993	1400	LS
Hardness, Total	24.0	.03	mg/l	$CaCO_3$	---------	10-19-1993	0925	ED
Iron	0.09	.05	mg/l		EPA 236.1	10-19-1993	1150	ED
Iron, Dissolved	0.09	.05	mg/l		EPA 236.1	10-19-1993	1220	ED
Magnesium	5.80	.007	mg/l		EPA 242.1	10-18-1993	1405	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993	1410	ED
pH	7.86	----	Units		EPA 150.1	09-23-1993	1530	LS
Potassium	3.0	.1	mg/l		EPA 258.1	10-19-1993	1515	ED
Sodium	123.0	.2	mg/l		EPA 273.1	11-16-1993	1510	ED
Solids, Total Dissolved	337	14	mg/l		EPA 160.1	09-30-1993	0745	LM
Solids, Total Suspended	0	7	mg/l		EPA 160.2	09-30-1993	0730	LM
Sulfate	<1	1	mg/l		EPA 375.4	10-20-1993	1055	LS
Cation/Anion Balance	-1.40	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

December 30, 1993

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

RECEIVED
12/30/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain In-Mine UG-2

Kind of sample reported to us Water

Rec'd 15:15 hr. FLOW 12 GPM
Sampled 11:15 hr. TEMP 51°

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Note: Conducivity was not analyzed due to lab accident.

Date sampled December 16, 1993

Date received December 16, 1993

Analysis report no. 59-13796

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Carbonate	6	1	mg/l	$CaCO_3$	4500 CO_2D	12-20-1993 1330 LS
Alkalinity, Total	314	1	mg/l	$CaCO_3$	EPA 310.1	12-20-1993 1330
Anions	6.40	----	meq/l		---------	---------- -----
Calcium	8.0	1	mg/l		EPA 215.1	12-28-1993 1100 DW
Cations	5.90	----	meq/l		---------	---------- ----- --
Chloride	5.0	1	mg/l		EPA 325.3	12-22-1993 1255 ED
Hardness, Total	41.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Magnesium	5.00	1	mg/l		EPA 242.1	12-22-1993 0830 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-28-1993 1600 DW
Oxygen, Dissolved	6.26	.01	mg/l		EPA 360.1	12-16-1993 0900 LS
pH	8.33	----	Units		EPA 150.1	12-16-1993 1530 LS
Potassium	3.0	2	mg/l		EPA 258.1	12-28-1993 1515 DW
Sodium	117.0	1	mg/l		EPA 273.1	12-21-1993 1530 DW
Solids, Total Dissolved	364	10	mg/l		EPA 160.1	12-21-1993 1200 LM
Solids, Total Suspended	4	4	mg/l		EPA 160.2	12-21-1993 1230 LM
Sulfate	<1	1	mg/l		EPA 375.4	12-21-1993 1000 LS
Cation/Anion Balance	-4.2	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

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

April 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain In Mine UG-3
Temperature 54.0°F
Flow 12 GPM
Rec'd 1000 hr.
Sampled 1500 hr.

FIELD MEASUREMENTS

pH	7.91
Conductivity	469
DO	5.8

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled April 2, 1993

Date received April 5, 1993

Analysis report no. 59-12991

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	04-13-1993 10:30 LS
Alkalinity, Bicarbonate	305	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Alkalinity, Total	250	1	mg/l $CaCO_3$	EPA 310.1	04-13-1993 08:30 LS
Anions	5.51	----	meq/l	---------	---------- ----- --
Calcium	26.4	.1	mg/l	EPA 215.1	04-15-1993 11:05 ED
Cations	5.29	----	meq/l	---------	---------- ----- --
Chloride	7.8	.1	mg/l	EPA 325.3	04-13-1993 13:00 LM
Conductivity	436	2	umhos/cm	EPA 120.1	04-17-1993 08:00 LS
Hardness, Total	153	1	mg/l $CaCO_3$	---------	04-15-1993 11:05 ED
Iron	0.11	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Iron, Dissolved	0.03	.02	mg/l	EPA 236.1	04-15-1993 14:40 ED
Magnesium	21.20	.01	mg/l	EPA 242.1	04-15-1993 11:25 ED
Manganese	0.00	.01	mg/l	EPA 243.1	04-15-1993 14:10 ED
Oxygen, Dissolved	7.7	.01	mg/l	EPA 360.1	04-05-1993 11:00 LS
pH	7.70	----	Units	EPA 150.1	04-05-1993 11:00 LS
Potassium	2.10	.01	mg/l	EPA 258.1	04-16-1993 08:20 ED
Sodium	50.70	.01	mg/l	EPA 273.1	04-16-1993 07:35 ED
Solids, Total Dissolved	297.0	.5	mg/l	EPA 160.1	04-06-1993 09:00 LM
Solids, Total Suspended	2.0	.5	mg/l	EPA 160.2	04-06-1993 09:00 LM
Sulfate	20.0	.1	mg/l	EPA 375.4	04-15-1993 10:20 LS
Cation/Anion Balance	-2.08	----	%	---------	---------- ----- --

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4/20/93

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Manager, Huntington Laboratory

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September 23, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

UG-3
Rec'd 1430 hr.
Sampled 1220 hr.

Sample taken at

Sample taken by Energy West/KH

Date sampled August 23, 1993

Date received August 23, 1993

Analysis report no. 59-13445

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	274	.4	mg/l HCO_3	4500 CO_2 D	09-08-1993 12:20 LS
Alkalinity, Carbonate	0	.4	mg/l CO_3	4500 CO_2 D	09-08-1993 12:20 LS
Alkalinity, Total	225	.4	mg/l $CaCO_3$	EPA 310.1	09-08-1993 12:20 ED
Anions	7.40	----	meq/l	---------	---------- ----- --
Calcium	34.7	.03	mg/l	EPA 215.1	09-21-1993 14:45 JK
Cations	6.30	----	meq/l	---------	---------- ----- --
Chloride	10.0	.5	mg/l	EPA 325.3	09-07-1993 13:00 LM
Conductivity	696	0.2	umhos/cm	EPA 120.1	08-25-1993 09:15 LS
Hardness, Total	206	.03	mg/l $CaCO_3$	---------	09-21-1993 14:45 JK
Iron	0.06	.05	mg/l	EPA 236.1	09-17-1993 14:45 ED
Iron, Dissolved	0.13	.05	mg/l	EPA 236.1	09-16-1993 12:15 ED
Magnesium	29.00	.007	mg/l	EPA 242.1	08-20-1993 11:15 JK
Manganese	<0.03	.03	mg/l	EPA 243.1	09-17-1993 14:05 ED
Oxygen, Dissolved	9.5	.01	mg/l	EPA 360.1	08-23-1993 16:00 LS
pH	8.10	----	Units	EPA 150.1	08-23-1993 16:00 LS
Potassium	3.05	.1	mg/l	EPA 258.1	09-22-1993 11:47 JK
Sodium	49.00	.2	mg/l	EPA 273.1	09-22-1993 08:40 JK
Solids, Total Dissolved	424.0	14	mg/l	EPA 160.1	08-25-1993 10:45 LM
Solids, Total Suspended	3.0	7	mg/l	EPA 160.2	08-24-1993 07:30 LM
Sulfate	130.0	1	mg/l	EPA 375.4	09-13-1993 09:30 LS
Cation/Anion Balance	-7.99	----	%	---------	---------- ----- --

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9/23/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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October 28, 1993

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

RECEIVED
10/28/93
FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain UG-3
Rec'd 1500 hr.
Sampled 1112 hr.
TEMP 54.0
FLOW 12.0 GPM

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Date sampled September 23, 1993

Date received September 23, 1993

Analysis report no. 59-13569

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	302	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 0900 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 0900 LS
Alkalinity, Total	248	2	mg/l	$CaCO_3$	EPA 310.1	10-04-1993 0900 LS
Anions	7.00	----	meq/l		---------	---------- ----- --
Calcium	38.3	.03	mg/l		EPA 215.1	10-19-1993 0925 ED
Cations	6.40	----	meq/l		---------	---------- ----- --
Chloride	9.7	.5	mg/l		EPA 325.3	10-26-1993 1700 LM
Conductivity	640.00	0.2	umhos/cm		EPA 120.1	09-27-1993 1400 LS
Hardness, Total	194.0	.03	mg/l	$CaCO_3$	---------	10-19-1993 0925 ED
Iron	0.09	.05	mg/l		EPA 236.1	10-19-1993 1150 ED
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	10-19-1993 1220 ED
Magnesium	24.00	.007	mg/l		EPA 242.1	10-18-1993 1405 ED
Manganese	<0.03	.03	mg/l		EPA 243.1	10-19-1993 1410 ED
Oxygen, Dissolved	10.14	.01	mg/l		EPA 360.1	09-23-1993 1530 LS
pH	7.41	----	Units		EPA 150.1	09-23-1993 1500 LS
Potassium	4.0	.1	mg/l		EPA 258.1	10-19-1993 1515 ED
Sodium	55.0	.2	mg/l		EPA 273.1	10-18-1993 1650 ED
Solids, Total Dissolved	366	14	mg/l		EPA 160.1	09-30-1993 0745 LM
Solids, Total Suspended	2	7	mg/l		EPA 160.2	09-30-1993 0730 LM
Sulfate	90	1	mg/l		EPA 375.4	10-20-1993 1055 LS
Cation/Anion Balance	-4.80	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

December 30, 1993

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

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FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Trail Mountain In-Mine UG-3

Kind of sample reported to us Water

Rec'd 15:15 hr.
Sampled 10:45 hr.
FLOW <0.1 GPM
TEMP 52°

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Date sampled December 16, 1993

Date received December 16, 1993

Analysis report no. 59-13797

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	250	1	mg/l	$CaCO_3$ 4500 CO_2D	12-20-1993 1330 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$ 4500 CO_2D	12-20-1993 1330 [illegible]
Alkalinity, Total	250	1	mg/l	$CaCO_3$ EPA 310.1	12-20-1993 1330 [illegible]
Anions	5.70	----	meq/l	---------	---------- ----- --
Calcium	32.0	1	mg/l	EPA 215.1	12-28-1993 1100 DW
Cations	5.60	----	meq/l	---------	---------- ----- --
Chloride	8.0	1	mg/l	EPA 325.3	12-22-1993 1255 ED
Conductivity	536.00	0.2	umhos/cm	EPA 120.1	12-22-1993 0935 ED
Hardness, Total	175.0	1	mg/l	$CaCO_3$ 2340 B	- -
Iron	<0.20	0.2	mg/l	EPA 236.1	12-29-1993 0830 DW
Iron, Dissolved	<0.20	0.2	mg/l	EPA 236.1	12-21-1993 1430 DW
Magnesium	23.00	1	mg/l	EPA 242.1	12-28-1993 1330 DW
Manganese	<0.10	0.1	mg/l	EPA 243.1	12-28-1993 1600 DW
Oxygen, Dissolved	7.71	.01	mg/l	EPA 360.1	12-16-1993 1530 LS
pH	7.63	----	Units	EPA 150.1	12-16-1993 1530 LS
Potassium	3.0	2	mg/l	EPA 258.1	12-28-1993 1515 DW
Sodium	49.0	1	mg/l	EPA 273.1	12-28-1993 1230 DW
Solids, Total Dissolved	323	10	mg/l	EPA 160.1	12-21-1993 1200 LM
Solids, Total Suspended	<4	4	mg/l	EPA 160.2	12-21-1993 1230 LM
Sulfate	25	1	mg/l	EPA 375.4	12-22-1993 1330 LS
Cation/Anion Balance	-1.1	----	%	---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Manager, 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) 653-2479

February 9, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE
* ICE REMOVED FROM DISCHARGE PIPE PRIOR TO SAMPLING - DISTURBED SAMPLE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/GD

Date sampled January 28, 1993

Date received January 28, 1993

Trail Mountain Discharge
Temperature 51.0°F
Flow 30 GPM
Rec'd 1230 hr.
Sampled 0930 hr.

FIELD MEASUREMENTS

pH	8.31
Conductivity	560
DO	7.1

Analysis report no. 59-12846

rameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
cidity	0	1	mg/l $CaCO_3$	EPA 305.1	02-01-1993 09:30 LS
Alkalinity, Bicarbonate	240	1	mg/l $CaCO_3$	EPA 310.1	02-01-1993 09:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	02-01-1993 09:30 LS
Alkalinity, Total	194	1	mg/l $CaCO_3$	EPA 310.1	02-01-1993 09:30 LS
Anions	7.00	----	meq/l	---------	---------- ----- --
Calcium	43.7	.1	mg/l	EPA 215.1	02-04-1993 10:00 ED
Cations	6.41	----	meq/l	---------	---------- ----- --
Chloride	10.0	.1	mg/l	EPA 325.3	02-01-1993 10:50 LS
Conductivity	610	2	umhos/cm	EPA 120.1	01-29-1993 15:00 LS
Hardness, Total	253	1	mg/l $CaCO_3$	---------	02-04-1993 10:00 ED
Iron	0.16	.02	mg/l	EPA 236.1	02-04-1993 09:05 ED
Iron, Dissolved	0.04	.02	mg/l	EPA 236.1	02-04-1993 09:05 ED
Magnesium	35.00	.01	mg/l	EPA 242.1	02-04-1993 10:00 ED
Manganese	0.00	.01	mg/l	EPA 243.1	02-03-1993 11:15 ED
Oil & Grease	0.3	1	mg/l	EPA 413.1	02-02-1993 15:00 LM
Oxygen, Dissolved	7.1	.01	mg/l	EPA 360.1	01-28-1993 13:50 LM
pH	8.31	----	Units	EPA 150.1	01-28-1993 13:50 LM
Potassium	4.76	.01	mg/l	EPA 258.1	02-04-1993 10:00 ED
Sodium	28.60	.01	mg/l	EPA 273.1	02-04-1993 10:00 ED
Solids, Total Dissolved	373.0	.5	mg/l	EPA 160.1	02-01-1993 10:00 LM
*Solids, Total Suspended	62.0	.5	mg/l	EPA 160.2	02-01-1993 10:00 LM
Sulfate	140.0	.1	mg/l	EPA 375.4	02-01-1993 13:10 LS
Cation/Anion Balance	-4.83	----	%	---------	---------- ----- --

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FAX: (801) 653-2436

March 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Date sampled February 22, 1993

Date received February 22, 1993

Trail Mountain Mine Discharge
Rec'd 1300 hr.
Sampled 1145 hr.
TEMP. 49.0
FLOW 30 GPM
pH 8.48
COND 481
DO 7.3

Analysis report no. 59-12895

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
dity	0	1	mg/l $CaCO_3$	EPA 305.1	03-04-1993 10:20 LS
Alkalinity, Bicarbonate	247	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Alkalinity, Total	203	1	mg/l $CaCO_3$	EPA 310.1	03-04-1993 10:20 LS
Anions	5.88	----	meq/l	---------	---------- ----- --
Calcium	34.9	.1	mg/l	EPA 215.1	03-04-1993 13:30 ED
Cations	6.05	----	meq/l	---------	---------- ----- --
Chloride	8.5	.1	mg/l	EPA 325.3	03-08-1993 08:00 LM
Conductivity	540	2	umhos/cm	EPA 120.1	03-04-1993 15:30 LS
Hardness, Total	219	1	mg/l $CaCO_3$	---------	03-04-1993 13:30 ED
Iron	0.18	.02	mg/l	EPA 236.1	03-05-1993 08:10 ED
Iron, Dissolved	0.14	.02	mg/l	EPA 236.1	03-05-1993 08:10 ED
Magnesium	32.00	.01	mg/l	EPA 242.1	03-12-1993 12:55 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-05-1993 08:10 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	03-02-1993 10:00 LM
Oxygen, Dissolved	8.6	.01	mg/l	EPA 360.1	02-22-1993 13:00 LS
pH	7.90	----	Units	EPA 150.1	02-22-1993 13:00 LS
Potassium	7.00	.01	mg/l	EPA 258.1	03-04-1993 13:30 ED
Sodium	34.80	.01	mg/l	EPA 273.1	03-04-1993 13:30 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	02-22-1993 14:30 LS
Solids, Total Dissolved	353.0	.5	mg/l	EPA 160.1	02-26-1993 12:30 LM
Solids, Total Suspended	1.0	.5	mg/l	EPA 160.2	02-26-1993 12:30 LM
Sulfate	80.0	.1	mg/l	EPA 375.4	03-09-1993 10:40 LS
Turbidity	1.0	.1	NTU	EPA 180.1	02-23-1993 08:00 LS
Cation/Anion Balance	1.49	----	%	---------	---------- ----- --

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

April 5, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled March 23, 1993

Date received March 24, 1993

Trail Mountain Mine Discharge
Temperature 49.3°F
Flow 60 GPM
Rec'd 1000 hr.
Sampled 1538 hr.

FIELD MEASUREMENTS

pH	8.52
Conductivity	564
DO	10.2

Analysis report no. 59-12963

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	03-31-1993 10:10 LS
Alkalinity, Bicarbonate	236	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Total	194	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Anions	6.14	----	meq/l	---------	---------- ----- --
Calcium	39.2	.1	mg/l	EPA 215.1	03-31-1993 08:50 ED
Cations	5.85	----	meq/l	---------	---------- ----- --
Chloride	9.3	.1	mg/l	EPA 325.3	03-29-1993 13:05 LM
Conductivity	590	2	umhos/cm	EPA 120.1	04-01-1993 10:00 LS
Hardness, Total	221	1	mg/l $CaCO_3$	---------	03-31-1993 08:50 ED
Iron	1.51	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Iron, Dissolved	1.23	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Magnesium	30.00	.01	mg/l	EPA 242.1	03-31-1993 08:50 ED
Manganese	0.02	.01	mg/l	EPA 243.1	03-31-1993 13:40 ED
Oil & Grease	1.3	1	mg/l	EPA 413.1	03-30-1993 08:00 LM
Oxygen, Dissolved	8.0	.01	mg/l	EPA 360.1	03-24-1993 11:00 LS
pH	8.00	----	Units	EPA 150.1	03-24-1993 11:00 LS
Potassium	1.50	.01	mg/l	EPA 258.1	03-31-1993 08:50 ED
Sodium	32.30	.01	mg/l	EPA 273.1	03-31-1993 08:50 ED
Solids, Total Dissolved	328.0	.5	mg/l	EPA 160.1	03-29-1993 10:00 LM
Solids, Total Suspended	10.0	.5	mg/l	EPA 160.2	03-29-1993 10:00 LM
Sulfate	100.0	.1	mg/l	EPA 375.4	03-30-1993 08:30 LS
Turbidity	7.0	.1	NTU	EPA 180.1	03-24-1993 11:30 LS
Cation/Anion Balance	-2.40	----	%	---------	---------- ----- --

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Manager, Huntington Laboratory

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April 30, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us: Water

Sample taken at: Trail Mountain

Sample taken by: Energy West/KH

Date sampled: April 21, 1993

Date received: April 21, 1993

Trail Mountain Mine Discharge
Temperature 53.4°F
Flow 84 GPM
Rec'd 1530 hr.
Sampled 1403 hr.

FIELD MEASUREMENTS

pH	8.18
Conductivity	614
DO	8.7

Analysis report no. 59-13031

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	04-23-1993 12:45 LS
Alkalinity, Bicarbonate	258	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Alkalinity, Total	212	1	mg/l $CaCO_3$	EPA 310.1	04-23-1993 12:45 LS
Anions	8.00	----	meq/l	---------	---------- ----- --
Calcium	49.9	.1	mg/l	EPA 215.1	04-28-1993 13:40 ED
Cations	6.86	----	meq/l	---------	---------- ----- --
Chloride	10.7	.1	mg/l	EPA 325.3	04-22-1993 13:00 LM
Conductivity	578	2	umhos/cm	EPA 120.1	04-27-1993 14:00 LS
Hardness, Total	260	1	mg/l $CaCO_3$	---------	04-28-1993 13:40 ED
Iron	2.37	.02	mg/l	EPA 236.1	04-29-1993 14:00 ED
Iron, Dissolved	0.13	.02	mg/l	EPA 236.1	04-30-1993 08:55 ED
Magnesium	33.00	.01	mg/l	EPA 242.1	04-28-1993 14:15 ED
Manganese	0.12	.01	mg/l	EPA 243.1	04-28-1993 15:20 ED
Oil & Grease	0.5	1	mg/l	EPA 413.1	04-26-1993 08:00 LM
Oxygen, Dissolved	7.9	.01	mg/l	EPA 360.1	04-21-1993 16:00 LS
pH	8.14	----	Units	EPA 150.1	04-21-1993 16:00 LS
Potassium	2.80	.01	mg/l	EPA 258.1	04-29-1993 13:30 ED
Sodium	36.80	.01	mg/l	EPA 273.1	04-29-1993 11:50 LM
Solids, Total Dissolved	409.0	.5	mg/l	EPA 160.1	04-23-1993 08:00 LM
Solids, Total Suspended	61.0	.5	mg/l	EPA 160.2	04-23-1993 08:00 LM
Sulfate	170.0	.1	mg/l	EPA 375.4	04-26-1993 08:30 LS
Turbidity	20.0	.1	NTU	EPA 180.1	04-22-1993 07:30 LS
Cation/Anion Balance	-7.69	----	%	---------	---------- ----- --

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Respectfully submitted,
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Manager, Huntington Laboratory

PACIFICORP
TECHNICAL SERVICES - HYDROLOGIC MONITORING

OLIPHANT MINE - STRAIGHT CANYON

T-18

Date	Time	Quality GPM	Temp. (F)	pH	Cond. (uS)	Dis. Oxygen	Quantity Gallons/day
15-Dec-92	1155	0.7	46	8.21	587	9.6	1,008
23-Mar-93	1450	1.1	57	8.31	580	9.2	1,584
10-Jun-93	1305	1.0	62	8.48	608	7.3	1,440
10-Sep-93	1450	1.0	58	8.70	603	3.9	1,440
13-Dec-93	1400	Frozen					

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April 5, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled March 23, 1993

Date received March 24, 1993

Trail Mountain T-18
Temperature 57.1°F
Flow 1.1 GPM
Rec'd 1000 hr.
Sampled 1450 hr.

FIELD MESUREMENTS

pH	8.31
Conductivity	580
DO	9.2

Analysis report no. 59-12967

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	03-31-1993 10:10 LS
Alkalinity, Bicarbonate	270	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Alkalinity, Total	222	1	mg/l $CaCO_3$	EPA 310.1	03-31-1993 10:10 LS
Anions	7.07	----	meq/l	---------	---------- ----- --
Calcium	50.0	.1	mg/l	EPA 215.1	03-31-1993 08:50 ED
Cations	6.40	----	meq/l	---------	---------- ----- --
Chloride	7.8	.1	mg/l	EPA 325.3	03-29-1993 13:05 LM
Conductivity	620	2	umhos/cm	EPA 120.1	04-01-1993 10:00 LS
Hardness, Total	277	1	mg/l $CaCO_3$	---------	03-31-1993 08:50 ED
Iron	0.09	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Iron, Dissolved	0.06	.02	mg/l	EPA 236.1	03-31-1993 13:40 ED
Magnesium	37.00	.01	mg/l	EPA 242.1	03-31-1993 08:50 ED
Manganese	0.00	.01	mg/l	EPA 243.1	03-31-1993 13:40 ED
Oil & Grease	0.0	1	mg/l	EPA 413.1	03-30-1993 08:00 LM
Oxygen, Dissolved	8.7	.01	mg/l	EPA 360.1	03-24-1993 11:00 LS
pH	8.20	----	Units	EPA 150.1	03-24-1993 11:00 LS
Potassium	1.20	.01	mg/l	EPA 258.1	03-31-1993 08:50 ED
Sodium	19.40	.01	mg/l	EPA 273.1	03-31-1993 08:50 ED
Solids, Settleable	0.0	.5	mg/l	EPA 160.5	03-25-1993 07:30 LM
Solids, Total Dissolved	403.0	.5	mg/l	EPA 160.1	03-29-1993 10:00 LM
Solids, Total Suspended	1.0	.5	mg/l	EPA 160.2	03-29-1993 10:00 LM
Sulfate	120.0	.1	mg/l	EPA 375.4	03-30-1993 08:30 LS
Turbidity	1.3	.1	NTU	EPA 180.1	03-24-1993 11:30 LS
tion/Anion Balance	-4.89		%		

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

June 25, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/KH

Date sampled June 10, 1993

Date received June 10, 1993

Trail Mountain T-18 Mine Discharge
Temperature 62.2°F
Flow 1 GPM
Rec'd 1600 hr.
Sampled 1305 hr.

FIELD MEASUREMENTS

pH	8.48
Conductivity	608
DO	7.3

Analysis report no. 59-13172

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Acidity	0	1	mg/l $CaCO_3$	EPA 305.1	06-15-1993 13:30 LS
Alkalinity, Bicarbonate	240	2	mg/l $CaCO_3$	EPA 310.1	06-15-1993 13:30 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	06-15-1993 13:30 LS
Alkalinity, Total	197	2	mg/l $CaCO_3$	EPA 310.1	06-15-1993 13:30 LS
Anions	6.73	----	meq/l	---------	---------- ----- --
Calcium	40.1	.03	mg/l	EPA 215.1	06-21-1993 13:05 ED
Cations	5.81	----	meq/l	---------	---------- ----- --
Chloride	5.6	.5	mg/l	EPA 325.3	06-23-1993 09:10 LM
Conductivity	540	0.2	umhos/cm	EPA 120.1	06-24-1993 09:00 LS
Hardness, Total	245	.03	mg/l $CaCO_3$	---------	06-21-1993 13:05 ED
Iron	<0.05	.05	mg/l	EPA 236.1	06-17-1993 09:40 ED
Iron, Dissolved	0.46	.05	mg/l	EPA 236.1	06-22-1993 09:15 ED
Magnesium	35.30	.007	mg/l	EPA 242.1	06-21-1993 15:10 ED
Manganese	<0.03	.03	mg/l	EPA 243.1	06-22-1993 10:05 ED
Oil & Grease	0.7	1	mg/l	EPA 413.1	06-23-1993 08:00 LM
Oxygen, Dissolved	7.2	.01	mg/l	EPA 360.1	06-10-1993 17:30 LS
pH	7.90	----	Units	EPA 150.1	06-10-1993 17:30 LS
Potassium	4.20	.1	mg/l	EPA 258.1	06-22-1993 12:20 ED
Sodium	18.60	.2	mg/l	EPA 273.1	06-22-1993 11:15 ED
Solids, Total Dissolved	385.0	14	mg/l	EPA 160.1	06-14-1993 13:00 LM
Solids, Total Suspended	13.0	7	mg/l	EPA 160.2	06-15-1993 08:00 LM
Sulfate	130.0	1	mg/l	EPA 375.4	06-21-1993 13:50 LS
Turbidity	1.6	.1	NTU	EPA 180.1	06-11-1993 08:00 LS
Cation/Anion Balance	-7.32	----	%	---------	---------- -----

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6/25/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

October 14, 1993

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

RECEIVED
10/14/93
FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Trail Mountain

Sample taken by Energy West/CS

Date sampled September 10, 1993

Date received September 10, 1993

Sample identification by
PACIFICORP FIELD OFFICE

Oliphant Mine T-18
Temperature 67.9°F
Flow 1 GPM
Rec'd 1535 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS

pH	8.70
Conductivity	603
DO	3.9

NOTE: HOLDING TIME EXPIRED WHEN ALKALINITY WAS RUN.
AMENDED ALKALINITY DATE

Analysis report no. 59-13503

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Anal	
Acidity	0	1	mg/l	$CaCO_3$	EPA 305.1	09-23-1993 1000	[illegible]
Alkalinity, Bicarbonate	230	2	mg/l	$CaCO_3$	EPA 310.1	09-27-1993 1000	LS
Alkalinity, Carbonate	7	1	mg/l	$CaCO_3$	EPA 310.1	09-27-1993 1000	LS
Alkalinity, Total	237	2	mg/l	$CaCO_3$	EPA 310.1	09-27-1993 1000	LS
Anions	7.61	----	meq/l		---------	---------- -----	--
Calcium	37.7	.03	mg/l		EPA 215.1	10-01-1993 1220	ED
Cations	6.77	----	meq/l		---------	---------- -----	--
Chloride	10.1	.5	mg/l		EPA 325.3	10-01-1993 0700	LM
Conductivity	642.00	0.2	umhos/cm		EPA 120.1	09-14-1993 1215	LS
Hardness, Total	246.5	.03	mg/l	$CaCO_3$	---------	10-01-1993 1220	ED
Iron	<0.05	.05	mg/l		EPA 236.1	09-29-1993 1030	ED
Iron, Dissolved	0.14	.05	mg/l		EPA 236.1	10-04-1993 0920	ED
Magnesium	37.00	.007	mg/l		EPA 242.1	10-01-1993 1410	ED
Manganese	<0.03	.03	mg/l		EPA 243.1	09-30-1993 1545	ED
Oil & Grease	0	1	mg/l		EPA 413.1	09-17-1993 1000	LM
Oxygen, Dissolved	7.02	.01	mg/l		EPA 360.1	09-10-1993 1605	ED
pH	9.11	----	Units		EPA 150.1	09-10-1993 1605	ED
Potassium	4.0	.1	mg/l		EPA 258.1	10-01-1993 1700	ED
Sodium	40.6	.2	mg/l		EPA 273.1	10-01-1993 1700	ED
Solids, Total Dissolved	434	14	mg/l		EPA 160.1	09-13-1993 0800	LM
Solids, Total Suspended	9	7	mg/l		EPA 160.2	09-13-1993 1410	LM
Sulfate	130	1	mg/l		EPA 375.4	10-03-1993 1030	LS
Turbidity	1.0	.1	NTU		EPA 180.1	09-12-1993 0800	LS
Cation/Anion Balance	-5.82	----	%		---------	----------	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

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TERMS AND CONDITIONS ON REVERSE

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
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TEL: (801) 653-2311
FAX: (801) 653-2436

April 5, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Deer Creek Waste Rock Well
Depth 3.8'
Rec'd 1530 hr.
Sampled 1555 hr.

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled March 17, 1993

Date received March 17, 1993

Analysis report no. 59-12954

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	767	1	mg/l $CaCO_3$	EPA 310.1	- - 12:15 LS
Alkalinity, Carbonate	0	1	mg/l $CaCO_3$	EPA 310.1	- - 12:15 LS
Alkalinity, Total	629	1	mg/l $CaCO_3$	EPA 310.1	- - 12:15 LS
Anions	71.56	----	meq/l	---------	---------- ----- --
Calcium	156.9	.1	mg/l	EPA 215.1	- - 13:20 ED
Cations	59.91	----	meq/l	---------	---------- ----- --
Chloride	992.5	.1	mg/l	EPA 325.3	- - 14:30 LM
Conductivity	24500	2	umhos/cm	EPA 120.1	- - 11:00 LS
Hardness, Total	1300	1	mg/l $CaCO_3$	---------	- - 13:20 ED
Iron	0.19	.02	mg/l	EPA 236.1	- - 08:35 ED
Iron, Dissolved	0.07	.02	mg/l	EPA 236.1	- - 08:35 ED
Magnesium	220.50	.01	mg/l	EPA 242.1	- - 08:50 ED
Manganese	0.05	.01	mg/l	EPA 243.1	- - 08:35 ED
Oxygen, Dissolved	2.2	.01	mg/l	EPA 360.1	- - 16:00 LS
pH	7.50	----	Units	EPA 150.1	- - 16:00 LS
Potassium	222.00	.01	mg/l	EPA 258.1	- - 13:20 ED
Sodium	656.00	.01	mg/l	EPA 273.1	- - 08:50 ED
Solids, Total Dissolved	23169.0	.5	mg/l	EPA 160.1	- - 10:45 LM
Solids, Total Suspended	54.0	.5	mg/l	EPA 160.2	- - 10:45 LM
Sulfate	1500.0	.1	mg/l	EPA 375.4	- - 12:00 LS
Cation/Anion Balance	-8.85	----	%	---------	---------- ----- --

RECEIVED
4/6/93
FIELD OFFICE

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

July 19, 1993

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

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Deer Creek Waste Rock Well
(Filtered in the field)
Depth 4.72
Rec'd 1400 hr.
Sampled 1135 hr.

Sample taken at Deer Creek

Sample taken by Energy West/CS

Date sampled July 1, 1993

Date received July 1, 1993

Analysis report no. 59-13234

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	777	2	mg/l HCO_3	EPA 310.1	07-07-1993 10:30 LS
Alkalinity, Carbonate	0	1	mg/l CO_3	EPA 310.1	07-07-1993 10:30 LS
Alkalinity, Total	632	2	mg/l $CaCO_3$	EPA 310.1	07-07-1993 10:30 LS
Anions	312.04	----	meq/l	---------	---------- ----- --
Calcium	146.2	.03	mg/l	EPA 215.1	07-13-1993 14:00 ED
Cations	263.80	----	meq/l	---------	---------- ----- --
Chloride	954.3	.5	mg/l	EPA 325.3	07-08-1993 11:00 LM
Conductivity	34800	0.2	umhos/cm	EPA 120.1	07-07-1993 16:00 LS
Hardness, Total	1220	.03	mg/l $CaCO_3$	---------	07-13-1993 14:00 ED
Iron	0.59	.05	mg/l	EPA 236.1	07-12-1993 14:40 ED
Iron, Dissolved	0.16	.05	mg/l	EPA 236.1	07-16-1993 12:30 ED
Magnesium	207.70	.007	mg/l	EPA 242.1	07-14-1993 16:20 ED
Manganese	0.03	.03	mg/l	EPA 243.1	07-12-1993 10:00 ED
Oxygen, Dissolved	4.9	.01	mg/l	EPA 360.1	07-01-1993 15:00 LS
pH	7.55	----	Units	EPA 150.1	07-01-1993 15:00 LS
Potassium	31.10	.1	mg/l	EPA 258.1	07-13-1993 18:15 ED
Sodium	5550.00	.2	mg/l	EPA 273.1	07-13-1993 16:25 ED
Solids, Total Dissolved	22789.0	14	mg/l	EPA 160.1	07-06-1993 11:00 LM
Solids, Total Suspended	57.0	7	mg/l	EPA 160.2	07-06-1993 10:00 LM
Sulfate	13000.0	1	mg/l	EPA 375.4	07-08-1993 13:15 LS
Cation/Anion Balance	-8.40	----	%	---------	---------- ----- --

RECEIVED
7/19/93

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

FIELD OFFICE

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

December 1, 1993

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

RECEIVED
12/1/93

FIELD OFFICE

Sample identification by
PACIFICORP FIELD OFFICE

Kind of sample reported to us Water

Sample taken at Deer Creek

Sample taken by Energy West/KH

Date sampled September 28, 1993

Date received September 28, 1993

Deer Creek Waste Rock Well
Temperature 58.8°F
Depth 4.52
Rec'd 1535 hr.
Sampled 1445 hr.

FIELD MEASUREMENTS

pH	7.78
Conductivity	17,300
DO	2.0

NOTE: DO Probe was inoperational. Holding time expired when Conductivity was run.

Analysis report no. 59-13595

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	807	2	mg/l	$CaCO_3$	EPA 310.1	10-12-1993	0815	LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	EPA 310.1	10-12-1993	0815	LS
Alkalinity, Total	662	2	mg/l	$CaCO_3$	EPA 310.1	10-12-1993	0815	LS
Anions	289.30	----	meq/l		---------	----------	-----	--
Calcium	205.0	.03	mg/l		EPA 215.1	11-08-1993	1450	ED
Cations	339.70	----	meq/l		---------	----------	-----	--
Chloride	872.1	.5	mg/l		EPA 325.3	10-11-1993	0800	LM
Conductivity	24400.00	0.2	umhos/cm		EPA 120.1	10-28-1993	0945	ED
Hardness, Total	1706.0	.03	mg/l	$CaCO_3$	---------	11-08-1993	1450	ED
Iron	1.00	.05	mg/l		EPA 236.1	11-24-1993	1200	DW
Iron, Dissolved	<0.05	.05	mg/l		EPA 236.1	11-16-1993	1020	ED
Magnesium	290.00	.007	mg/l		EPA 242.1	11-08-1993	1630	ED
Manganese	0.20	.03	mg/l		EPA 243.1	11-29-1993	1500	DW
pH	7.68	----	Units		EPA 150.1	09-28-1993	1545	LS
Potassium	14.0	.1	mg/l		EPA 258.1	11-09-1993	1315	ED
Sodium	7100.0	.2	mg/l		EPA 273.1	11-09-1993	1135	ED
Solids, Total Dissolved	22324	14	mg/l		EPA 160.1	09-30-1993	0745	LM
Solids, Total Suspended	30	7	mg/l		EPA 160.2	10-04-1993	1300	LM
Sulfate	12000	1	mg/l		EPA 375.4	11-02-1993	1230	LS
Cation/Anion Balance	1706	----	%		---------	----------	-----	--

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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FAX: (801) 653-2436

December 30, 1993

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

RECEIVED
12/30/93

Sample identification by
PACIFICORP FIELD OFFICE

DEER CREEK WASTE ROCK WELL

Kind of sample reported to us Water

Sample taken at Deer Creek FIELD OFFICE

Sample taken by Energy West/KH

Date sampled December 17, 1993

Date received December 17, 1993

Depth 4.52 hr.
Conductivity 17,900
Temp 49.2
pH 8.21
Dissolved Oxygen 5.0
Rec'd 15:00 hr.
Sampled 14:45 hr.

Analysis report no. 59-13799

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	626	1	mg/l	$CaCO_3$	4500 CO_2D	12-20-1993 1330 LS
Alkalinity, Carbonate	<1	1	mg/l	$CaCO_3$	4500 CO_2D	12-20-1993 1330 LS
Alkalinity, Total	626	1	mg/l	$CaCO_3$	EPA 310.1	12-20-1993 1330 [illegible]
Anions	307.20	----	meq/l		---------	---------- ----- --
Calcium	185.0	1	mg/l		EPA 215.1	12-28-1993 1100 DW
Cations	324.30	----	meq/l		---------	---------- ----- --
Chloride	850.0	1	mg/l		EPA 325.3	12-22-1993 1255 ED
Conductivity	23800.00	0.2	umhos/cm		EPA 120.1	12-29-1993 0935 ED
Hardness, Total	1533.0	1	mg/l	$CaCO_3$	2340 B	- -
Iron	1.30	0.2	mg/l		EPA 236.1	12-29-1993 0830 DW
Iron, Dissolved	<0.20	0.2	mg/l		EPA 236.1	12-21-1993 1430 DW
Magnesium	260.00	1	mg/l		EPA 242.1	12-28-1993 1330 DW
Manganese	<0.10	0.1	mg/l		EPA 243.1	12-21-1993 1430 DW
Oxygen, Dissolved	2.44	.01	mg/l		EPA 360.1	12-17-1993 1515 LS
pH	7.77	----	Units		EPA 150.1	12-17-1993 1535 LS
Potassium	15.0	2	mg/l		EPA 258.1	12-28-1993 1515 DW
Sodium	6750.0	1	mg/l		EPA 273.1	12-28-1993 1230 DW
Solids, Total Dissolved	21751	10	mg/l		EPA 160.1	12-21-1993 1200 LM
Solids, Total Suspended	42	4	mg/l		EPA 160.2	12-21-1993 1230 LM
Sulfate	13000	1	mg/l		EPA 375.4	12-22-1993 1330 LS
Cation/Anion Balance	2.7	----	%		---------	---------- ----- --

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry D. Stout

Manager, Huntington Laboratory