UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

RECEIVED
JAN 24 2000
DIVISION OF
OIL, GAS AND MINING

Station # RF-1

Sample Date 11-9-99

Sample Time 1210

Type: Spring ____ Stream X UPDES ____

Sample Collection Point APPROX 150' DOWNSTREAM FROM ROAD CROSSING

Appearance of Water: Clear ✓ Slightly Cloudy ____ Cloudy ____ Opaque ____

Flow/Depth (gpm) 6 GPM

Water Temperature (C) 7°C

pH 8.79

Specific Conductivity 65

Dissolved Oxygen 6

Comments: NO EVIDENCE OF FLOODING OR EXCESSIVE DISTURBANCE

Sampled by: L.P. CLARK

Laboratory CT&E HUNTINGTON Date Shipped 11-9-99

Sample ID# RF-1 Date Results Received ____

COMMERCIAL TESTING & ENGINEERING CO.

3-1-00 DJ

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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020
HUNTINGTON, UT 84528
TEL: (435) 653-2311
FAX: (435) 653-2436

January 17, 2000

UTAH AMERCIAN ENERGY CORP.
P.O. BOX 586
PRICE UT 84501
JAY MARSHALL

Sample identification by

RF-1

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Leo Clark

Date sampled: November 9, 1999

Date received: November 9, 1999

Rec'd 1427 hr.
Sampled 1210 hr.

FIELD MEASUREMENTS

pH	8.79
DO	6
Flow	6 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	7.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20855

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	512	5	mg/l	as HCO_3	EPA 310.1	11-12-1999 0945	MK
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	11-12-1999 0945	MK
Alkalinity, Total	420	5	mg/l	as $CaCO_3$	EPA 310.1	11-12-1999 0945	MK
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	11-15-1999 1025	SC
Anions	22.1	----	meq/l		---------	12-01-1999 0915	MK
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	01-07-2000 1050	SC
Barium, Dissolved	<1	1	mg/l		EPA 208.1	11-15-1999 1110	SC
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	11-16-1999 0700	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	11-15-1999 0903	SC
Calcium, Dissolved	37	1	mg/l		EPA 215.1	11-12-1999 1255	SC
Cations	22.5	----	meq/l		---------	12-01-1999 0915	MK
Chloride	23	2	mg/l		EPA 300.0	11-30-1999 1010	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	11-15-1999 1040	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	11-15-1999 0804	SC
Fluoride	<0.05	0.05	mg/l		EPA 300.0	11-09-1999 1715	RJ
Hardness, Total	652	----	mg/l	as $CaCO_3$	SM2340-B	12-01-1999 0915	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-12-1999 0825	SC
Iron, Total	0.7	0.1	mg/l		EPA 236.1	11-12-1999 0825	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	11-15-1999 1010	SC
Magnesium, Dissolved	136	2	mg/l		EPA 242.1	11-12-1999 1300	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	11-12-1999 0900	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	12-07-1999 1800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	11-15-1999 1240	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	11-15-1999 0845	SC

Post-It® Fax Note 7671	Date 1-18-00	# of pages ▶ 2
To Jay Marshall	From Shellie	
Co./Dept.	Co.	
Phone #	Phone # 435 653-2311	
Fax # 435 613-0393	Fax # 435-653-2436	

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cornell

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

2-29-00 DJT

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: [illegible] FAX: [illegible]

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January 17, 2000

UTAH AMERCIAN ENERGY CORP.
P.O. BOX 986
PRICE UT 84501
JAY MARSHALL

Sample identification by

RF-1

Kind of sample reported to us: Water

Sample taken at: -

Sample taken by: Leo Clark

Date sampled: November 9, 1999

Date received: November 9, 1999

Rec'd 1427 hr.
Sampled 1210 hr.

FIELD MEASUREMENTS	
pH	8.79
DO	6
Flow	6 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	7.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20855

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	12-07-1999 1200 SC
Nitrogen, Nitrate-Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	11-09-1999 1715 RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	11-09-1999 1715 RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	11-09-1999 1715 RJ
Potassium, Dissolved	6	1	mg/l	EPA 258.1	11-12-1999 1020 SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	01-07-2000 1430 SC
Sodium, Dissolved	215	2	mg/l	EPA 273.1	11-12-1999 1220 SC
Solids, Total Dissolved	1697	10	mg/l	EPA 160.1	11-15-1999 0715 RJ
Sulfate	626	6	mg/l	EPA 300.0	11-30-1999 1010 RJ
Sulfide	<1	1	mg/l	EPA 376.1	11-16-1999 0655 SC
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	11-15-1999 0830 SC
Cation/Anion Balance	1.0	----	%		12-01-1999 0915 MK

RECEIVED
JAN 24 2000
DIVISION OF
OIL, GAS AND MINING

Post-it® Fax Note 7671	Date 1-18-00	# of pages ▶ 2
To Jay Marshall	From Shellie	
Co./Dept.	Co.	
Phone #	Phone # 435 653-2311	
Fax # 435 613-0393	Fax # 435-653-2436	

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

Electronic Water Data Report By Individual Sample

19990924	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:10	Time Sampled	HORSE CANYON	Mine Name
2	Site Id	CLARK	Sampler Name	RF-1	Site Name
FLD	Lab Code			STREAM	Site Type
Field Readings Only				R FK Horse Cyn Wash AB mine	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By / Reported / Comments						
1	**FIELD WATER TEMPERATURE**	20		**13.00000**	Deg. C		
	/ / / / / /						
2	**PH (FIELD)**	20		**8.69000**	pH units		
	/ / / / / /						
3	**DISSOLVED OXYGEN (FIELD)**	20		**4.00000**	mg/l		
	/ / / / / /						
4	**SP. CONDUCTIVITY (FIELD)**	20		**730.00000**	umhos/cm		
	/ / / / / /						
11	**FLOW**	20		**8.00000**	GPM		
	/ / / / / /						

added to lab data
4/14/2000 KW

Electronic Water Data Report By Individual Sample

59-20614	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:10	Time Sampled	HORSE CANYON	Mine Name
2	Site Id	CLARK	Sampler Name	RF-1	Site Name
CTE	Lab Code			STREAM	Site Type
Commercial Testing & Engineering				R FK Horse Cyn Wash AB mine	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By / Reported / Comments						
24	SULFIDE	4	<	1.00000	mg/l	1.000000	EPA 376.1
	09/24/1999 09/29/1999 10:00 KP 10/14/1999						
31	AMMONIA AS N	4	<	0.50000	mg/l	0.500000	EPA 350.3
	09/24/1999 10/05/1999 12:00 SC 10/14/1999						
32	DISSOLVED ARSENIC	4	<	0.01000	ug/l	0.010000	EPA 206.2
	09/24/1999 10/04/1999 9:48 MK 10/14/1999						
33	DISSOLVED BARIUM	4	<	1.00000	ug/l	1.000000	EPA 208.1
	09/24/1999 09/30/1999 13:49 SC 10/14/1999						
34	DISSOLVED BORON	4		0.30000	ug/l	0.100000	EPA 212.3
	09/24/1999 10/06/1999 6:00 MK 10/14/1999						
35	DISSOLVED CADMIUM	4	<	0.10000	ug/l	0.010000	EPA 213.1
	09/24/1999 09/30/1999 8:54 SC 10/14/1999						
36	DISSOLVED CALCIUM	4		38.00000	mg/l	1.000000	EPA 215.1
	09/24/1999 09/29/1999 13:49 SC 10/14/1999						
37	DISSOLVED CHROMIUM	4	<	0.10000	ug/l	0.100000	EPA 218.1
	09/24/1999 09/30/1999 13:24 SC 10/14/1999						
39	DISSOLVED COPPER	4	<	0.10000	ug/l	0.100000	EPA 220.1
	09/24/1999 09/30/1999 8:05 SC 10/14/1999						
	DISSOLVED IRON	4	<	0.10000	ug/l	0.100000	EPA 236.1
	09/24/1999 09/29/1999 7:49 SC 10/14/1999						
41	DISSOLVED LEAD	4	<	0.10000	ug/l	0.100000	EPA 239.1
	09/24/1999 09/30/1999 12:08 SC 10/14/1999						
42	DISSOLVED MAGNESIUM	4		65.00000	mg/l	1.000000	EPA 242.1
	09/24/1999 09/30/1999 14:43 SC 10/14/1999						
43	DISSOLVED MANGANESE	4	<	0.10000	ug/l	0.100000	EPA 243.1
	09/24/1999 09/29/1999 10:10 SC 10/14/1999						
44	DISSOLVED NICKEL	4	<	0.10000	ug/l	0.100000	EPA 249.1
	09/24/1999 09/30/1999 8:44 SC 10/14/1999						
45	DISSOLVED POTASSIUM	4		2.00000	mg/l	1.000000	EPA 258.1
	09/24/1999 09/29/1999 11:07 SC 10/14/1999						
46	DISSOLVED SELENIUM	4	<	0.01000	ug/l	0.010000	EPA 270.2
	09/24/1999 10/04/1999 12:18 MK 10/14/1999						
48	DISSOLVED SODIUM	4		153.00000	mg/l	2.000000	EPA 273.1
	09/24/1999 09/29/1999 12:24 SC 10/14/1999						
49	DISSOLVED ZINC	4	<	0.01000	ug/l	0.010000	EPA 289.1
	09/24/1999 09/30/1999 8:33 SC 10/14/1999						
50	BICARBONATE AS HCO3	4		498.00000	mg/l	5.000000	EPA 310.1
	09/24/1999 09/27/1999 15:00 KP 10/14/1999						
52	CARBONATE AS CO3	4		22.00000	mg/l	5.000000	EPA 310.1
	09/24/1999 09/27/1999 15:00 KP 10/14/1999						
53	CHLORIDE	4		14.00000	mg/l	2.000000	EPA 300.0
	09/24/1999 09/28/1999 3:59 RJ 10/14/1999						
	FLUORIDE	4		0.11000	mg/l	0.050000	EPA 300.0
	09/24/1999 06/24/1999 15:33 RJ 10/14/1999						
56	NITRATE AS N	4		0.03000	mg/l	0.030000	EPA 300.0
	09/24/1999 06/24/1999 15:33 RJ 10/14/1999						

Electronic Water Data Report By Individual Sample

59-20614	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:10	Time Sampled	HORSE CANYON	Mine Name
2	Site Id	CLARK	Sampler Name	RF-1	Site Name
CTE	Lab Code			STREAM	Site Type
Commercial Testing & Engineering				R FK Horse Cyn Wash AB mine	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By / Reported / Comments						
57	NITRITE AS N	4	<	0.03000	mg/l	0.030000	EPA 300.0
	09/24/1999 06/24/1999 15:33 RJ 10/14/1999						
58	ORTHO. PHOSPHATE	4	<	0.05000	mg/l	0.050000	EPA 300.0
	09/24/1999 06/24/1999 15:33 RJ 10/14/1999						
60	SULFATE	4		274.00000	mg/l	2.000000	EPA 300.0
	09/24/1999 09/28/1999 3:59 RJ 10/14/1999						
62	TOTAL ALKALINITY AS CACO3	4		446.00000	mg/l	5.000000	EPA 310.1
	09/24/1999 09/27/1999 15:00 KP 10/14/1999						
63	TOTAL HARDNESS AS CACO3	4		363.00000	mg/l		SM2340-B
	09/24/1999 10/04/1999 9:00 RJ 10/14/1999						
68	TOTAL DISSOLVED SOLIDS, @ 180 C	4		803.00000	mg/l	10.000000	EPA 160.1
	09/24/1999 09/28/1999 12:00 KP 10/14/1999						
113	DISSOLVED ALUMINUM	4	<	1.00000	ug/l	1.000000	EPA 202.1
	09/24/1999 09/30/1999 13:05 SC 10/14/1999						
129	DISSOLVED MOLYBDENUM	4	<	0.10000	ug/l	0.100000	EPA 246.1
	09/24/1999 09/30/1999 14:20 SC 10/14/1999						
133	TOTAL CATIONS	4		14.00000	meq/l		
	09/24/1999 10/04/1999 9:00 RJ 10/14/1999						
	TOTAL ANIONS	4		15.00000	meq/l		
	09/24/1999 10/04/1999 9:00 RJ 10/14/1999						
145	TOTAL IRON	4	<	0.10000	mg/l	0.100000	EPA 236.1
	09/24/1999 09/29/1999 7:49 SC 10/14/1999						
223	DISSOLVED MERCURY	4	<	0.20000	ug/l	0.200000	EPA 245.1
	09/24/1999 09/29/1999 6:30 MK 10/14/1999						

UEI
~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF - 1

Sample Date 6-22-99

Sample Time 0855

Type: Spring ____ Stream X UPDES ____

Sample Collection Point APPROX 150' DOWNSTREAM FROM ROAD CROSSING

Appearance of Water: Clear ____ Slightly Cloudy X Cloudy ____ Opaque ____

Flow/Depth (gpm) 7 GPM

Water Temperature (C) 15°C

pH 8.75

Specific Conductivity 720

Dissolved Oxygen 5

Comments: NO EVIDENCE OF ADDITIONAL FLOW FROM STORM

Sampled by: L. P. CLARK

Laboratory CTE E, HUNTINGTON Date Shipped 6-22-99

Sample ID# RF - 1 Date Results Received ____

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2-29-00 DJ

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FAX: (435) 653-2436

July 8, 1999

UTAH AMERCIAN ENERGY CORP.
P.O. BOX 986
PRICE UT 84501
JAY MARSHALL

Sample identification by

RF-1

Kind of sample reported to us Water

Rec'd 1100 hr.
Sampled 0855 hr.

FIELD MEASUREMENTS

pH	8.75
DO	5
Flow	7 GPM
Conductivity	720
Turbidity	Murky
Temperature	15.0°C

Sample taken at

Sample taken by Leo Clark

Date sampled June 22, 1999

Date received June 22, 1999

POSSIBLE MATRIX INTERFER. ON SULFIDE.
DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20052

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	530	5	mg/l	as HCO_3	EPA 310.1	06-30-1999 0800	KP
Alkalinity, Carbonate	12	5	mg/l	as CO_3	EPA 310.1	06-30-1999 0800	KP
Alkalinity, Total	455	5	mg/l	as $CaCO_3$	EPA 310.1	06-30-1999 0800	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	07-02-1999 1237	SC
Anions	15.1	----	meq/l		---------	07-07-1999 0930	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	07-06-1999 0936	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	07-02-1999 1356	SC
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	06-23-1999 0730	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	07-02-1999 1040	SC
Calcium, Dissolved	42	1	mg/l		EPA 215.1	07-01-1999 1455	SC
Cations	14.3	----	meq/l		---------	07-07-1999 0930	RJ
Chloride	16	1	mg/l		EPA 300.0	06-24-1999 0930	MK
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	07-02-1999 1345	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	07-02-1999 0843	SC
Fluoride	0.15	0.05	mg/l		EPA 300.0	06-24-1999 0930	MK
Hardness, Total	389	----	mg/l	as $CaCO_3$	SM2340-B	07-07-1999 0930	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	07-01-1999 0818	SC
Iron, Total	0.8	0.1	mg/l		EPA 236.1	07-01-1999 0818	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	07-02-1999 1136	SC
Magnesium, Dissolved	69	1	mg/l		EPA 242.1	07-01-1999 1552	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	07-01-1999 0930	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	07-06-1999 0800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	07-02-1999 1424	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	07-02-1999 0919	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Ralph Cormier

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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2-29-00 DT

July 8, 1999

UTAH AMERCIAN ENERGY CORP.
P.O. BOX 986
PRICE UT 84501
JAY MARSHALL

Sample identification by

RF-1

Rec'd 1100 hr.
Sampled 0855 hr.

FIELD MEASUREMENTS

pH	8.75
DO	5
Flow	7 GPM
Conductivity	720
Turbidity	Murky
Temperature	15.0°C

POSSIBLE MATRIX INTERFER. ON SULFIDE.
DISSOLVED METALS FILTERED AT LAB.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled June 22, 1999

Date received June 22, 1999

Analysis report no. 59-20052

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	06-23-1999 0800 SC
Nitrogen, Nitrate-Nitrite	0.11	0.03	mg/l as N	EPA 300.0	06-24-1999 0930 MK
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 0930 MK
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 0930 MK
Potassium, Dissolved	1	1	mg/l	EPA 258.1	07-01-1999 1046 SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	07-06-1999 1405 MK
Sodium, Dissolved	149	1	mg/l	EPA 273.1	07-01-1999 1308 SC
Solids, Total Dissolved	827	10	mg/l	EPA 160.1	06-24-1999 1400 KP
Sulfate	266	2	mg/l	EPA 300.0	06-24-1999 0930 MK
Sulfide	<1	1	mg/l	EPA 376.1	06-25-1999 1300 KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	07-02-1999 0906 SC
Cation/Anion Balance	-2.7	----	%		07-07-1999 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Ralph J. Cormier

Huntington Laboratory

MEMBER ACIL

UEI

~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF - 1

Sample Date 3-25-99

Sample Time 1035

Type: Spring _____ Stream X UPDES _____

Sample Collection Point APPROX. 150' DOWNSTREAM FROM ROAD CROSSING

Appearance of Water: Clear ✓ Slightly Cloudy____ Cloudy___ Opaque___

Flow/Depth (gpm) 6 GPM

Water Temperature (C) 9°C

pH 8.40

Specific Conductivity 450

Dissolved Oxygen 5

Comments: SMALLER FLOW THAN USUAL -

Sampled by: L. P. CLARK

Laboratory CT&E, HUNTINGTON Date Shipped 3-25-99

Sample ID# RF - 1 Date Results Received _____

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

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SGS Member of the SGS Group (Société Générale de Surveillance)

4-5-00

ACT/007/013

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TEL: (435) 653-2311
FAX: (435) 653-2436

April 29, 1999

UTAH AMERCIAN ENERGY CORP.
P.O. BOX 986
PRICE UT 84501
JAY MARSHALL

Sample identification by

RF-1
Rec'd 1340 hr.
Sampled 1035 hr.

FIELD MEASUREMENTS

pH	8.40
DO	5
Flow	6 GPM
Conductivity	450
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB
POSSIBLE MATRIX INTERFERENCE ON-SULFATE,ORTHO PHOS.,AND ALUMINUM.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

Analysis report no. 59-19758

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	528	5	mg/l	as HCO_3	SM2320-B	04-06-1999 1000	KP
Alkalinity, Carbonate	10	5	mg/l	as CO_3	SM2320-B	04-06-1999 1000	KP
Alkalinity, Total	449	5	mg/l	as $CaCO_3$	EPA 310.1	04-06-1999 1000	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-07-1999 0730	MK
Anions	15.2	----	meq/l		---------	04-20-1999 1100	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	04-27-1999 1015	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	04-07-1999 0815	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	03-29-1999 0630	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	04-07-1999 1100	MK
Calcium, Dissolved	47	1	mg/l		EPA 215.1	04-06-1999 1115	MK
Cations	14.8	----	meq/l		---------	04-20-1999 1100	RJ
Chloride	18	1	mg/l		EPA 300.0	03-30-1999 1813	SC
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	04-07-1999 0745	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	04-06-1999 0700	MK
Fluoride	0.19	0.01	mg/l		SM4500-F-C	03-26-1999 1813	SC
Hardness, Total	381	----	mg/l	as $CaCO_3$	SM2340-B	04-20-1999 1100	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	04-06-1999 0830	MK
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	04-06-1999 0830	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	04-07-1999 1115	MK
Magnesium, Dissolved	64	1	mg/l		EPA 242.1	04-06-1999 1145	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	04-06-1999 0915	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	04-12-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	04-07-1999 0830	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	04-07-1999 1000	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

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April 29, 1999

UTAH AMERCIAN ENERGY CORP.
P.O. BOX 986
PRICE UT 84501
JAY MARSHALL

Sample identification by

RF-1
Rec'd 1340 hr.
Sampled 1035 hr.

FIELD MEASUREMENTS

pH	8.40
DO	5
Flow	6 GPM
Conductivity	450
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB
POSSIBLE MATRIX INTERFERENCE ON-SULFATE,ORTHO PHOS.,AND ALUMINUM.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

Analysis report no. 59-19758

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as	N	EPA 350.3	04-22-1999 0800	SC
Nitrogen, Nitrate-Nitrite	0.3	0.1	mg/l as	N	EPA 353.3	03-26-1999 1813	SC
Nitrogen, Nitrite	<0.03	0.03	mg/l as	N	EPA 354.1	03-26-1999 1813	SC
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as	P	SM4500-P-E	03-26-1999 1813	SC
Potassium, Dissolved	2	1	mg/l		EPA 258.1	04-06-1999 1000	MK
Selenium, Dissolved	<0.01	0.01	mg/l		EPA 270.2	04-27-1999 1300	MK
Sodium, Dissolved	165	2	mg/l		EPA 273.1	04-06-1999 1030	MK
Solids, Total Dissolved	816	10	mg/l		EPA 160.1	03-25-1999 1400	KP
Sulfate	274	1	mg/l		EPA 300.0	03-26-1999 1813	SC
Sulfide	<1.0	1.0	mg/l		EPA 376.1	04-01-1999 1100	KP
Zinc, Dissolved	0.03	0.01	mg/l		EPA 289.1	04-07-1999 0930	MK
Cation/Anion Balance	-1.2	----	%			04-20-1999 1100	RJ

Called CT+E 4/5/2000
Shaney stated methods changed in Spring 1999
Cox which changed the MDL.
Ken Wyatt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

MEMBER ACIL

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

4-1-98

Station # RF-1

Sample Date N/A - 4TH Q, DECEMBER 11, 1997, NOT ACCESSABLE, SNOW & ICE

Sample Time " " " " " " " " "

Type: Spring _____ Stream X UPDES _____

Sample Collection Point NOT ACCESSABLE - APPROX 150' DOWNSTREAM FROM ROAD CROSSING

Appearance of Water: Clear ____ Slightly Cloudy ____ Cloudy ____ Opaque ____

Flow/Depth (gpm) _____

Water Temperature (C) _____

pH _____

Specific Conductivity _____

Dissolved Oxygen _____

Comments: NOT SAMPLED DUE TO SNOW & ICE

Sampled by: REPORTED BY. L. PAUL CLARK

Laboratory _____ Date Shipped N/A

Sample ID# N/A Date Results Received N/A

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12-16-97

November 13, 1997

LADWP-EARTHFAX ENGINEERING
7324 SO. UNION PARK AVENUE
SUITE 100
MIDVALE, UTAH 84047
CHRIS HANSEN

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled September 28, 1997

Date received September 29, 1997

Sample identification by
LADWP

ID:RF-1
Rec'd 0820 hr.
Sampled 1410 hr.

FIELD MEASUREMENTS	
pH	7.6
DO	4
Flow	6 GPM
Conductivity	1060
Turbidity	MURKY
Temperature	21°C

NOTE: Dissolved metals filtered at lab
NOTE: Sulfate expired when analyzed due to rerun for charge balance

Analysis report no. 59-17824

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	563	5	mg/l	as HCO_3	SM2320-B	09-30-1997 1200 SC
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	09-30-1997 1200 SC
Alkalinity, Total	461	5	mg/l	as $CaCO_3$	EPA 310.1	09-30-1997 1200 SC
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	10-07-1997 0145 MK
Anions	14.3	----	meq/l		---------	11-12-1997 1400 RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-02-1997 0230 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	10-07-1997 0230 MK
Boron, Dissolved	0.1	0.1	mg/l		EPA 212.3	10-07-1997 1930 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	10-06-1997 0715 MK
Calcium, Dissolved	45	1	mg/l		EPA 215.1	10-07-1997 0030 MK
Cations	14.1	----	meq/l		---------	11-12-1997 1400 RJ
Chloride	17	1	mg/l		SM4500-Cl-B	10-02-1997 1400 SC
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	10-07-1997 0200 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	10-06-1997 0600 MK
Fluoride	<0.10	0.01	mg/l		SM4500-F-C	10-22-1997 0800 SC
Hardness, Total	364	----	mg/l	as $CaCO_3$	SM2340-B	11-12-1997 1400 RJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	10-06-1997 2245 MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	10-06-1997 2245 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	10-06-1997 0730 MK
Magnesium, Dissolved	61	1	mg/l		EPA 242.1	10-07-1997 0100 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	10-06-1997 2315 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1997 2230 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	10-07-1997 0245 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	10-06-1997 0645 MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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12-16-97

November 13, 1997

LADWP-EARTHFAX ENGINEERING
7324 SO. UNION PARK AVENUE
SUITE 100
MIDVALE, UTAH 84047
CHRIS HANSEN

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled September 28, 1997

Date received September 29, 1997

Sample identification by LADWP

ID:RF-1
Rec'd 0820 hr.
Sampled 1410 hr.

FIELD MEASUREMENTS	
pH	7.6
DO	4
Flow	6 GPM
Conductivity	1060
Turbidity	MURKY
Temperature	21°C

NOTE: Dissolved metals filtered at lab
NOTE: Sulfate expired when analyzed due to rerun for charge balance

Analysis report no. 59-17824

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-20-1997 0930 RJ
Nitrogen, Nitrate-Nitrite	0.2	0.1	mg/l as N	EPA 353.3	10-09-1997 0700 JC
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	09-30-1997 0830 JC
Oil & Grease	<2	2	mg/l	SM5520-B	10-23-1997 0700 JC
Phosphorous, Ortho-PO_4	0.02	0.01	mg/l as P	SM4500-P-E	09-30-1997 0730 JC
Potassium, Dissolved	<1	1	mg/l	EPA 258.1	10-06-1997 2330 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-03-1997 0145 MK
Sodium, Dissolved	157	1	mg/l	EPA 273.1	10-07-1997 0000 MK
Solids, Total Dissolved	830	10	mg/l	EPA 160.1	09-29-1997 0700 JC
Sulfate	222	1	mg/l	EPA 375.4	11-12-1997 0900 SC
Sulfide	<1.0	0.1	mg/l	EPA 376.1	10-03-1997 1115 RJ
Zinc, Dissolved	0.03	0.01	mg/l	EPA 289.1	10-06-1997 0630 MK
Cation/Anion Balance	-0.8	----	%		11-12-1997 1400 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMBER ACIL

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

MB 8-22-97

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF-1

Sample Date 6-26-97

Sample Time 1045

Type: Spring _____ Stream X UPDES _____

Sample Collection Point APPROX 150' DOWNSTREAM FROM ROAD CROSSING

Appearance of Water: Clear X Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) 5 GPM

Water Temperature (C) 22°C

pH 8.15

Specific Conductivity 1100

Dissolved Oxygen 5

Comments: STREAM FLOWING CLEAR, BUT AREA HEAVILY DISTURBED WITH CATTLE. ALGAE PRESENT

Sampled by: Leo P. Clark

Laboratory CT & E, HUNTINGTON Date Shipped 6-26-97

Sample ID# _____ Date Results Received _____

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NB 8-22-97

August 6, 1997

LADWP-EARTHFAX ENGINEERING
7324 SO. UNION PARK AVENUE
SUITE 100
MIDVALE, UTAH 84047
CHRIS HANSEN

Sample identification by
LADWP

ID: RF-1

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1045 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	8.15
DO	5
Flow	5 gpm
Conductivity	1100
Turbidity	Clear
Temperature	22.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17414

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	513	5	mg/l	as HCO_3	SM2320-B	07-08-1997 0800 SC
Alkalinity, Carbonate	13	5	mg/l	as CO_3	SM2320-B	07-08-1997 0800 SC
Alkalinity, Total	443	5	mg/l	as $CaCO_3$	EPA 310.1	07-08-1997 0800 SC
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	08-05-1997 1315 MK
Anions	16.9	----	meq/l		---------	08-05-1997 1530 RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	07-18-1997 0800 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	08-05-1997 1400 MK
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	07-16-1997 0700 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	08-05-1997 0845 MK
Calcium, Dissolved	26	1	mg/l		EPA 215.1	08-05-1997 1200 MK
Cations	14.1	----	meq/l		---------	08-05-1997 1530 RJ
Chloride	17	1	mg/l		SM4500-Cl-B	07-23-1997 0830 SC
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	08-05-1997 1330 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	08-05-1997 0800 MK
Fluoride	0.27	0.01	mg/l		SM4500-F-C	07-24-1997 0800 RJ
Hardness, Total	328	----	mg/l	as $CaCO_3$	SM2340-B	08-05-1997 1530 RJ
Iron, Total	0.1	0.1	mg/l		EPA 236.1	08-05-1997 1000 MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	08-05-1997 1000 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	08-05-1997 0915 MK
Magnesium, Dissolved	64	2	mg/l		EPA 242.1	08-05-1997 1230 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	08-05-1997 1030 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	07-21-1997 0700 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	08-05-1997 1430 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	08-05-1997 0830 MK

Respectfully submitted,
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NB 8-22-97

August 6, 1997

LADWP-EARTHFAX ENGINEERING
7324 SO. UNION PARK AVENUE
SUITE 100
MIDVALE, UTAH 84047
CHRIS HANSEN

Sample identification by
LADWP

ID: RF-1

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1045 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	8.15
DO	5
Flow	5 gpm
Conductivity	1100
Turbidity	Clear
Temperature	22.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17414

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	07-22-1997 0720	RJ
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	07-21-1997 0400	AR
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	06-27-1997 0700	JC
Phosphorous, Ortho-PO_4	0.04	0.01	mg/l as P	SM4500-P-E	06-25-1997 0730	RJ
Potassium, Dissolved	3	1	mg/l	EPA 258.1	08-05-1997 1045	MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	07-18-1997 1130	MK
Sodium, Dissolved	172	2	mg/l	EPA 273.1	08-05-1997 1130	MK
Solids, Total Dissolved	880	10	mg/l	EPA 160.1	07-02-1997 0700	JC
Sulfate	366	125	mg/l	EPA 375.4	07-16-1997 0730	SC
Sulfide	<1.0	0.1	mg/l	EPA 376.1	07-04-1997 1630	RJ
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	08-05-1997 0815	MK
Cation/Anion Balance	- 9.1	----	%		08-05-1997 1530	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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April 30, 1997

LADWP-EARTHFAX ENGINEERING
7324 SO. UNION PARK AVENUE
SUITE 100
MIDVALE, UTAH 84047
CHRIS HANSEN

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled March 27, 1997

Date received March 28, 1997

Sample identification by
LADWP

ID: RF-1
Rec'd 1500 hr.
Sampled 1515 hr.

FIELD MEASUREMENTS

pH	7.27
DO	6
Flow	20 GPM
Conductivity	720
Turbidity	H1
Temperature	12.0°C

NOTE:Dissolved metals filtered at lab!
NOTE:Nitrate & Ortho Phos. received to late to analyze before time expired!

Analysis report no. 59-17079

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	407	5	mg/l	as HCO_3	SM2320-B	04-04-1997 1000 SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	04-04-1997 1000 SW
Alkalinity, Total	344	5	mg/l	as $CaCO_3$	EPA 310.1	04-04-1997 1000 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-04-1997 1245 MK
Anions	11.2	----	meq/l		---------	04-08-1997 1120 RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	04-15-1997 0830 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	04-04-1997 1330 MK
Boron, Dissolved	0.2	0.1	mg/l		EPA 212.3	04-14-1997 0700 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	04-04-1997 0815 MK
Calcium, Dissolved	35	1	mg/l		EPA 215.1	04-04-1997 1130 MK
Cations	10.1	----	meq/l		---------	04-08-1997 1120 RJ
Chloride	14	1	mg/l		SM4500-Cl-B	04-01-1997 0800 SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	04-04-1997 1300 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	04-04-1997 0730 MK
Fluoride	0.49	0.01	mg/l		SM4500-F-C	04-24-1997 1130 RJ
Hardness, Total	264	----	mg/l	as $CaCO_3$	SM2340-B	04-08-1997 1120 RJ
Iron, Total	10.4	0.5	mg/l		EPA 236.1	04-04-1997 0930 MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	04-04-1997 0930 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	04-04-1997 0845 MK
Magnesium, Dissolved	43	1	mg/l		EPA 242.1	04-04-1997 1145 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	04-04-1997 1000 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	04-01-1997 0700 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	04-04-1997 1345 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	04-04-1997 0800 MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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April 30, 1997

LADWP-EARTHFAX ENGINEERING
7324 SO. UNION PARK AVENUE
SUITE 100
MIDVALE, UTAH 84047
CHRIS HANSEN

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled March 27, 1997

Date received March 28, 1997

Sample identification by
LADWP

ID: RF-1
Rec'd 1500 hr.
Sampled 1515 hr.

FIELD MEASUREMENTS	
pH	7.27
DO	6
Flow	20 GPM
Conductivity	720
Turbidity	H1
Temperature	12.0°C

NOTE:Dissolved metals filtered at lab!
NOTE:Nitrate & Ortho Phos. received to late to analyze before time expired!

Analysis report no. 59-17079

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	0.2	0.5	mg/l as N	EPA 350.3	04-07-1997 0800 SW
Nitrogen, Nitrate-Nitrite	0.1	0.1	mg/l as N	EPA 353.3	04-21-1997 0500 JC
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	03-31-1997 0830 JC
Phosphorous, Ortho-PO_4	0.03	0.01	mg/l as P	SM4500-P-E	03-31-1997 0830 JC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	04-04-1997 1030 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	04-15-1997 1100 MK
Sodium, Dissolved	109	1	mg/l	EPA 273.1	04-04-1997 1045 MK
Solids, Total Dissolved	650	10	mg/l	EPA 160.1	04-03-1997 0700 JC
Sulfate	198	50	mg/l	EPA 375.4	04-02-1997 0700 SW
Sulfide	<1.0	1.0	mg/l	EPA 376.1	04-04-1997 1015 RJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	04-04-1997 0745 MK
Cation/Anion Balance	-5.3	----	%		04-08-1997 1120 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

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
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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

November 14, 1995

IPA
P.O. BOX 152
WELLINGTON, UTAH 84542
KARL R. HOUSKEEPER

Sample identification by
IPA

RF-1

Kind of sample reported to us Water

Temperature 6.9°C
Flow 10 GPM
Rec'd 0930 hr.
Sampled 1451 hr.

Sample taken at

Sample taken by Karl Houskeeper

FIELD MEASUREMENTS

pH	8.76
Conductivity	1007
DO	7.8

Date sampled November 5, 1995

Date received November 6, 1995

Note: Dissolved metals filtered at lab.

Analysis report no. 59-15626

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	460	5	mg/l as HCO_3	SM2320-B	11-08-1995 1300 SW
Alkalinity, Carbonate	20	5	mg/l as CO_3	SM2320-B	11-08-1995 1300 SW
Alkalinity, Total	405	5	mg/l as $CaCO_3$	EPA 310.1	11-08-1995 1300 SW
Aluminum, Dissolved	<1	1	mg/l	EPA 202.1	11-10-1995 0900 MK
Anions	12.8	----	meq/l	---------	---------- ----- --
Arsenic, Dissolved	<0.01	0.01	mg/l	EPA 206.2	11-10-1995 1245 MK
Barium, Dissolved	<1	1	mg/l	EPA 208.1	11-10-1995 0945 MK
Boron, Dissolved	0.3	0.1	mg/l	EPA 212.3	11-11-1995 0830 MK
Cadmium, Dissolved	<0.01	0.01	mg/l	EPA 213.1	11-09-1995 1115 MK
Calcium, Dissolved	39	1	mg/l	EPA 215.1	11-10-1995 0800 MK
Cations	15.2	----	meq/l	---------	---------- ----- --
Chloride	18	1	mg/l	SM4500-Cl-B	11-08-1995 1100 SW
Chromium, Dissolved	<0.1	0.1	mg/l	EPA 218.1	11-10-1995 0915 MK
Copper, Dissolved	<0.1	0.1	mg/l	EPA 220.1	11-09-1995 0930 MK
Fluoride	0.2	0.1	mg/l	SM4500-F-C	11-13-1995 1300 SW
Hardness, Total	349	10	mg/l as $CaCO_3$	SM2340-B	11-10-1995 0800 MK
Iron, Total	5.0	0.1	mg/l	EPA 236.1	11-09-1995 0745 MK
Lead, Dissolved	<0.1	0.1	mg/l	EPA 239.1	11-09-1995 1145 MK
Magnesium, Dissolved	61	1	mg/l	EPA 242.1	11-10-1995 0815 MK
Manganese, Dissolved	<0.1	0.1	mg/l	EPA 243.1	11-09-1995 0800 MK
Mercury, Dissolved	<0.001	0.001	mg/l	EPA 245.1	11-11-1995 0600 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l	EPA 246.1	11-10-1995 1000 MK
Nickel, Dissolved	<0.1	0.1	mg/l	EPA 249.1	11-09-1995 1100 MK
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	11-06-1995 0730 SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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TEL: (801) 653-2311
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November 14, 1995

IPA
P.O. BOX 152
WELLINGTON, UTAH 84542
KARL R. HOUSKEEPER

Sample identification by
IPA

RF-1

Kind of sample reported to us Water

Temperature 6.9°C
Flow 10 GPM
Rec'd 0930 hr.
Sampled 1451 hr.

Sample taken at

Sample taken by Karl Houskeeper

FIELD MEASUREMENTS

pH	8.76
Conductivity	1007
DO	7.8

Date sampled November 5, 1995

Date received November 6, 1995

Note: Dissolved metals filtered at lab.

Analysis report no. 59-15626

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	11-07-1995 0715 MK
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	11-06-1995 1200 JC
Phosphorous, Ortho-PO_4	0.03	0.01	mg/l as P	SM4500-P-E	11-06-1995 1200 JC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	11-09-1995 0815 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	11-10-1995 1100 MK
Sodium, Dissolved	190	1	mg/l	EPA 273.1	11-09-1995 0845 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	11-06-1995 1030 MK
Solids, Total Dissolved	790	10	mg/l	EPA 160.1	11-06-1995 0745 JC
Solids, Total Suspended	30	5	mg/l	EPA 160.2	11-07-1995 0730 JC
Sulfate	199	1	mg/l	EPA 375.4	11-13-1995 1200 SW
Sulfide	<1	1	mg/l	EPA 376.1	11-10-1995 1530 BR
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	11-09-1995 1015 MK
Cation/Anion Balance	8.8	----	%		

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

October 30, 1995

IPA
P.O. BOX 152
WELLINGTON, UTAH 84542
KARL R. HOUSKEEPER

Sample identification by
IPA

RF-1
Temperature 11.5°C
Flow 4 GPM
Rec'd 0835 hr.
Sampled 1751 hr.

FIELD MEASUREMENTS

pH	8.83
Conductivity	1200
DO	9.5

NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled October 5, 1995

Date received October 6, 1995

Analysis report no. 59-15515

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	530	5	mg/l	as HCO_3	SM2320-B	10-16-1995	1300	SW
Alkalinity, Carbonate	15	5	mg/l	as CO_3	SM2320-B	10-16-1995	1300	SW
Alkalinity, Total	460	5	mg/l	as $CaCO_3$	EPA 310.1	10-16-1995	1300	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	10-28-1995	1115	MK
Anions	15.0	----	meq/l		---------	----------	-----	--
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-16-1995	1145	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	10-28-1995	1215	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-13-1995	0700	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	10-28-1995	1415	MK
Calcium, Dissolved	39	1	mg/l		EPA 215.1	10-24-1995	1100	MK
Cations	14.6	----	meq/l		---------	----------	-----	--
Chloride	21	1	mg/l		SM4500-Cl-B	10-12-1995	1230	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	10-28-1995	1145	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	10-28-1995	1330	MK
Fluoride	0.2	0.1	mg/l		SM4500-F-C	10-12-1995	0730	SW
Hardness, Total	349	10	mg/l	as $CaCO_3$	SM2340-B	10-24-1995	1100	MK
Iron, Total	5.3	0.1	mg/l		EPA 236.1	10-17-1995	1015	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	10-28-1995	1445	MK
Magnesium, Dissolved	61	1	mg/l		EPA 242.1	10-24-1995	1200	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	10-26-1995	0815	MK
Mercury, Dissolved	<0.001	0.001	mg/l		EPA 245.1	10-09-1995	0745	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	10-28-1995	1230	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	10-28-1995	1400	MK
Nitrogen, Ammonia	<0.5	0.5	mg/l	as N	EPA 350.3	10-16-1995	0800	SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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October 30, 1995

IPA
P.O. BOX 152
WELLINGTON, UTAH 84542
KARL R. HOUSKEEPER

Sample identification by
IPA

RF-1
Temperature 11.5°C
Flow 4 GPM
Rec'd 0835 hr.
Sampled 1751 hr.

FIELD MEASUREMENTS

pH	8.83
Conductivity	1200
DO	9.5

NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled October 5, 1995

Date received October 6, 1995

Analysis report no. 59-15515

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Nitrate-Nitrite	0.2	0.1	mg/l as N	EPA 353.3	10-24-1995 0730 MK
Nitrogen, Nitrite	0.01	0.01	mg/l as N	EPA 354.1	10-06-1995 1015 JC
Phosphorous, Ortho-PO_4	0.07	0.01	mg/l as P	SM4500-P-E	10-06-1995 0700 JC
Potassium, Dissolved	3	1	mg/l	EPA 258.1	10-26-1995 0930 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-16-1995 0700 MK
Sodium, Dissolved	175	1	mg/l	EPA 273.1	10-24-1995 1000 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	10-06-1995 1345 MK
Solids, Total Dissolved	860	10	mg/l	EPA 160.1	10-09-1995 0830 JC
Solids, Total Suspended	80	5	mg/l	EPA 160.2	10-09-1995 0730 JC
Sulfate	253	1	mg/l	EPA 375.4	10-26-1995 1500 SW
Sulfide	<1	1	mg/l	EPA 376.1	10-11-1995 1600 BR
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	10-28-1995 1345 MK
Cation/Anion Balance	-1.6	----	%		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

IPA
HORSE CANYON MINE
ACT/007/013

1997 WATER MONITORING DATA

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash)

Parameter	Units	Jan 97	Feb 97	Mar 97	Apr 97	May 97	June 97	July 97	Aug 97	Sep 97	Oct 97	Nov 97	Dec 97
Flow	(gpm)			20			5			6			
pH	standard			7.27			8.15			7.6			
Temp	o C			12			22			21			
Conductivity	umhos/cm			720			1100			1060			
Dissolved Oxygen	ppm			6			5			4			
Aluminum	mg/l			<1			<1			<1			
Arsenic	mg/l			<0.01			<0.01			<0.01			
Barium	mg/l			<1			<1			<1			
Bicarbonate	mg/l			407			513			563			
Boron	mg/l			0.2			0.4			0.1			
Cadmium	mg/l			<0.01			<0.01			<0.01			
Calcium	mg/l			35			26			45			
Carbonate	mg/l			<5			13			<5			
Chloride	mg/l			14			17			17			
Chromium	mg/l			<0.1			<0.1			<0.1			
Copper	mg/l			<0.1			<0.1			<0.1			
Fluoride	mg/l			0.49			0.27			<0.10			
Hardness	mg/l			264			328			364			
Iron Total	mg/l			10.4			0.1			<0.1			
Lead	mg/l			<0.1			<0.1			<0.1			
Magnesium	mg/l			43			64			61			
Manganese	mg/l			<0.1			<0.1			<0.1			
Mercury	mg/l			<0.2			<0.2			<0.2			
Molybdenum	mg/l			<0.1			<0.1			<0.1			
Nickel	mg/l			<0.1			<0.1			<0.1			
Ammonia	mg/l			0.2			<0.5			<0.5			
Nitrate	mg/l			0.1			<0.1			0.2			
Nitrite	mg/l			<0.01			<0.01			<0.01			
Phosphate	mg/l			0.03			0.04			0.02			
Potassium	mg/l			2			3			<1			
Selenium	mg/l			<0.01			<0.01			<0.01			
Sodium	mg/l			109			172			157			
Sulfate	mg/l			198			366			222			
Sulfide	mg/l			<0.1			<0.1			<1.0			
TDS	mg/l			650			880			830			
Zinc	mg/l			<0.01			0.02			0.03			

IPA
HORSE CANYON MINE
ACT/007/013

1996 WATER MONITORING DATA

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 96	Feb 96	Mar 96	Apr 96	May 96	June 96	July 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96
Flow	(gpm)	*	0	0	0	0	0						
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Fluoride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

IPA
HORSE CANYON MINE
ACT/007/013

1995 WATER MONITORING DATA

CM
6/5

LE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 95	Feb 95	Mar 95	Apr 95	May 95	June 95	July 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95
Flow	(gpm)	*	*	*	*	0	0	6.7	3	4	4	10	0
pH	standard							8.9	8.69	8.72	8.83	8.76	
Temp	o C							18	25.6	20.7	11.5	6.9	
Conductivity	umhos/cm							1210	1240	1262	1200	1007	
Dissolved Oxygen	ppm							12	7.5	6.9	9.5	7.8	
Aluminum	mg/l							<1.0	<1.0	<1	<1	<1	
Arsenic	mg/l							<0.01	<0.01	<0.01	<0.01	<0.01	
Barium	mg/l							<1.0	<1.0	<1.0	<1.0	<1.0	
Bicarbonate	mg/l							430	420	460	530	460	
Boron	mg/l							0.2	0.1	0.2	0.3	0.3	
Cadmium	mg/l							<0.01	<0.01	<0.01	<0.01	<0.01	
Calcium	mg/l							32	28	33	39	39	
Carbonate	mg/l							45	30	30	15	20	
Chloride	mg/l							19	18	20	21	18	
Chromium	mg/l							<0.1	<0.1	<0.1	<0.1	<0.1	
Copper	mg/l							<0.1	<0.1	<0.1	<0.1	<0.1	
Fluoride	mg/l							0.2	0.2	0.2	0.2	0.2	
Hardness	mg/l							340	338	354	349	349	
Iron Total	mg/l							0.3	0.1	0.4	5.3	5	
Lead	mg/l							<0.1	<0.1	<0.1	<0.1	<0.1	
Magnesium	mg/l							64	65	66	61	61	
Manganese	mg/l							<0.1	<0.1	<0.1	<0.1	<0.1	
Mercury	mg/l							<0.001	<0.001	<0.001	<0.001	<0.001	
Molybdenum	mg/l							<0.1	<0.1	<0.1	<0.1	<0.1	
Nickel	mg/l							<0.1	<0.1	<0.1	<0.1	<0.1	
Ammonia	mg/l							<0.5	<0.5	<0.5	<0.5	<0.5	
Nitrate	mg/l							<0.1	<0.1	<0.1	0.2	<0.1	
Nitrite	mg/l							<0.01	<0.01	<0.01	0.01	<0.01	
Phosphate	mg/l							0.02	0.01	0.01	0.07	0.03	
Potassium	mg/l							2	2	2	3	2	
Selenium	mg/l							<0.01	<0.01	<0.01	<0.01	<0.01	
Sodium	mg/l							162	188	170	175	190	
Sulfate	mg/l							250	251	274	253	199	
Sulfide	mg/l							<1.0	<1.0	<1	<1	<1	
TDS	mg/l							820	770	840	860	790	
Zinc	mg/l							<0.01	<0.01	<0.01	<0.01	<0.01	

IPA
HORSE CANYON MINE
ACT/007/013

1994 WATER MONITORING DATA

CM
6/5

SA[illegible] LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 94	Feb 94	Mar 94	Apr 94	May 94	June 94	July 94	Aug 94	Sep 94	Oct 94	Nov 94	Dec 94
Flow	(gpm)	*	*	0	0	0	0	0	0	3	0	0	*
pH	standard									8.92			
Temp	o F									64.94			
Conductivity	umhos/cm									1170			
Dissolved Oxygen	ppm									19.8			
Aluminum	mg/l									<2			
Arsenic	mg/l									<0.01			
Barium	mg/l									<0.5			
Bicarbonate	mg/l									537			
Boron	mg/l									0.3			
Cadmium	mg/l									<0.02			
Calcium	mg/l									50			
Carbonate	mg/l									<1			
Chloride	mg/l									15			
Chromium	mg/l									<0.1			
Copper	mg/l									<0.2			
Fl[illegible]ide	mg/l									0.2			
Ha[illegible]ss	mg/l									380			
Iro[illegible]otal	mg/l									1.3			
Lead	mg/l									<0.2			
Magnesium	mg/l									63			
Manganese	mg/l									<0.2			
Mercury	mg/l									<0.001			
Molybdenum	mg/l									<0.2			
Nickel	mg/l									<0.3			
Ammonia	mg/l									<0.4			
Nitrate	mg/l									0.2			
Nitrite	mg/l									0.01			
Phosphate	mg/l									0.05			
Potassium	mg/l									<5			
Selenium	mg/l									<0.01			
Sodium	mg/l									192			
Sulfate	mg/l									320			
Sulfide	mg/l									<0.5			
TDS	mg/l									811			
Zinc	mg/l									<0.03			

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OIL, GAS & MINING

IPA
HORSE CANYON MINE
ACT/007/013

1993 WATER MONITORING DATA

CM
8/5

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 93	Feb 93	Mar 93	Apr 93	May 93	June 93	July 93	Aug 93	Sep 93	Oct 93	Nov 93	Dec 93
Flow	(gpm)	*	*	*	0	0	0	0	0	0	3	5	*
pH	standard										8.67	8.11	
Temp	o F										55.1	36.6	
Conductivity	umhos/cm										1310	1140	
Dissolved Oxygen	ppm										17.8	13.5	
Aluminum	mg/l										4	<2	
Arsenic	mg/l										<0.010	<0.010	
Barium	mg/l										<1.0	<0.5	
Bicarbonate	mg/l										542	491	
Boron	mg/l										0.1	0.2	
Cadmium	mg/l										<0.0200	<0.0200	
Calcium	mg/l										62	50	
Carbonate	mg/l										<1	<1	
Chloride	mg/l										31	28	
Chromium	mg/l										0.1	<0.1	
Copper	mg/l										<0.05	<0.20	
Flouride	mg/l										0.25	0.27	
Hardness	mg/l										455	409	
Iron total	mg/l										6	1.2	
Lead	mg/l										<0.400	<0.200	
Magnesium	mg/l										73	69	
Manganese	mg/l										0.15	<0.10	
Mercury	mg/l										<0.0010	<0.0010	
Molybdenum	mg/l										0.2	<1.0	
Nickel	mg/l										<1.00	<0.30	
Ammonia	mg/l										<0.08	<0.40	
Nitrate	mg/l										0.32	0.3	
Nitrite	mg/l										0	0.01	
Phosphate	mg/l										0.032	0.009	
Potassium	mg/l										<10.0	2	
Selenium	mg/l										<0.010	<0.010	
Sodium	mg/l										159	150	
Sulfate	mg/l										220	220	
Sulfide	mg/l										<0.9	<1.0	
TDS	mg/l										855	788	
Zinc	mg/l										0.04	<0.03	

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OIL GAS & MINING

IPA
HORSE CANYON MINE
ACT/007/013

1992 WATER MONITORING DATA

UM 6/5

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 92	Feb 92	Mar 92	Apr 92	May 92	June 92	July 92	Aug 92	Sep 92	Oct 92	Nov 92	Dec 92
Flow	(gpm)	*	0	0	0	0	0	0	0	0	0	0	*
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

IPA
HORSE CANYON MINE
ACT/007/013

1991 WATER MONITORING DATA

CNN 6/15

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 91	Feb 91	Mar 91	Apr 91	May 91	June 91	July 91	Aug 91	Sep 91	Oct 91	Nov 91	Dec 91
Flow	(gpm)	Frozen	0	0	10	<1	2	0	0	0	0	0	FROZEN
pH	standard				8.6	8.52	8.29						
Temp	o C				4	12	14						
Conductivity	umhos/cm				4800	2400	2200						
Dissolved Oxygen	ppm				8.5	7.6	8.4						
Aluminum	mg/l				<.1	<.1	<.1						
Arsenic	mg/l				<.01	<.01	<.01						
Barium	mg/l				<.01	0.04	<.01						
Bicarbonate	mg/l				486	456	497						
Boron	mg/l				0.26	0.049	0.12						
Cadmium	mg/l				<.01	<.01	<.01						
Calcium	mg/l				21.1	34.7	36.3						
Carbonate	mg/l				19	0	20.8						
Chloride	mg/l				18.5	19.2	17.9						
Chromium	mg/l				<.01	<.01	<.01						
Copper	mg/l				<.01	<.01	<.01						
Flouride	mg/l				0.25	0.39	0.34						
Hardness	mg/l				395	390	350						
Iron Total	mg/l				0.29	0.277	2.91						
Lead	mg/l				<.01	<.01	<.01						
Magnesium	mg/l				63.9	72.1	89.7						
Manganese	mg/l				<.01	<.01	<.01						
Mercury	mg/l				<.0002	<.0002	<.0002						
Molybdenum	mg/l				<.01	<.01	<.01						
Nickel	mg/l				<.01	<.01	<.01						
Ammonia	mg/l				<.2	<.2	<.2						
Nitrate	mg/l				0.271	0.089	0.14						
Nitrite	mg/l				0.007	<.005	0.019						
Phosphate	mg/l				0.011	<.01	<.01						
Potassium	mg/l				2.5	2.3	2						
Selenium	mg/l				0.011	0.008	<.002						
Sodium	mg/l				223	144	129						
Sulfate	mg/l				261	252	256						
Sulfide	mg/l				<.1	<.5	<.1						
TDS	mg/l				858	857	875						
Zinc	mg/l				<.01	<.01	<.01						

IPA
HORSE CANYON MINE
ACT/007/013

1990 WATER MONITORING DATA

cm 6/5

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 90	Feb 90	Mar 90	Apr 90	May 90	June 90	July 90	Aug 90	Sep 90	Oct 90	Nov 90	Dec 90
Flow	(gpm)	*	*	*	0	0	0	0	0	0			
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

KAISER COAL CORPORATION
HORSE CANYON MINE
ACT/007/013

1989 WATER MONITORING DATA

cm
6/5

SAMPLE LOCATION: RF - 1 (Right Fork, Horse Canyon Wash) * INACCESSIBLE

Parameter	Units	Jan 89	Feb 89	Mar 89	Apr 89	May 89	June 89	July 89	Aug 89	Sep 89	Oct 89	Nov 89	Dec 89
Flow	(gpm)	*	*	<1	<1	0	0	0	0	0	1	0	0
pH	standard			8.45	8.51						8.72		
Temp	o C			11	11						8		
Conductivity	umhos/cm			2300	2700						2500		
Dissolved Oxygen	ppm			3.9	4.9						8.9		
Aluminum	mg/l			<.1	<.1						<.1		
Arsenic	mg/l			<.01	<.01						0.012		
Barium	mg/l			<.01	<.01						<.01		
Bicarbonate	mg/l			336	513						523		
Boron	mg/l			0.18	0.18						0.39		
Cadmium	mg/l			<.01	<.01						<.01		
Calcium	mg/l			52.8	44.8						28.9		
Carbonate	mg/l			72	16						0		
Chloride	mg/l			22	26.3						28.4		
Chromium	mg/l			<.01	<.01						<.01		
Copper	mg/l			<.01	<.01						<.01		
Flouride	mg/l			0.78	0.48						0.29		
Hardness	mg/l			433	387						382		
Iron Total	mg/l			0.144	0.065						0.115		
Lead	mg/l			<.01	<.01						<.01		
Magnesium	mg/l			70.8	70.1						64		
Manganese	mg/l			<.01	<.01						<.01		
Mercury	mg/l			<.0002	<.0002						<.0002		
Molybdenum	mg/l			<.01	<.01						<.01		
Nickel	mg/l			<.01	<.01						<.01		
Ammonia	mg/l			0.2	0.44						<.2		
Nitrate	mg/l			<.01	0.12						0.74		
Nitrite	mg/l			0.021	<.01						<.005		
Phosphate	mg/l			<.01	<.01						<.01		
Potassium	mg/l			1.8	2.8						2.6		
Selenium	mg/l			<.002	<.002						<.002		
Sodium	mg/l			180	179						161		
Sulfate	mg/l			308	288						195		
Sulfide	mg/l			<.1	<.1						<.1		
TDS	mg/l			847	876						857		
Zinc	mg/l			<.01	<.1						<.01		

CM
6/5

SURFACE WATER QUALITY MONITORING

GENEVA COAL MINE

RF-1

Sample Date:	4-27-83	11-18-83
Aluminum, Al mg/l	.03	.041
Ammonia, NH3 mg/l	.16	1.00
Arsenic, As mg/l	<.001	<.001
Barium, Ba mg/l	.300	.103
Bicarbonate, HNO3 mg/l	541.70	524.60
Boron, B mg/l	.11	.15
Cadmium, Cd mg/l	<.001	<.001
Calcium,Ca mg/l	40.00	60.00
Carbonate, CO3 mg/l	28.80	<.01
Chloride, Cl mg/l	19.70	24.00
Chromium, Cr mg/l	<.001	<.001
Conductivity, umhos/cm	1,420	1,400
Copper, Cu mg/l	.01	.033
Flouride, F mg/l	.23	.22
Iron, Fe (total) mg/l	26.500	.040
Lead, Pb mg/l	<.001	.020
Magnesium, Mg mg/l	67.20	72.00
Manganese, Mn mg/l	.360	.020
Mercury, Hg mg/l	<.0002	<.0002
Molybdenum, Mo mg/l	<.01	.021
Nickel, Ni mg/l	<.01	.04
Nitrate, NO3-N mg/l	.36	.28
Nitrite, NO2-N mg/l	.04	<.01
Phosphate, PO4 mg/l	.98	.44
Potassium, K mg/l	6.30	2.9
Selenium, Se mg/l	.003	<.001
Sodium, Na mg/l	205	170.00
Sulfate, SO4 mg/l	310	330
Sulfide, S mg/l	1.20	1.25
Suspended Solids mg/l	1,648	4.0
Total Dissolved Solids mg/l	940	960
Zinc, Zn mg/l	.002	.010
pH Units	8.10	8.20

SURFACE WATER QUALITY DATA

GENEVA COAL MINE

CM 6/5

Sampling Date:	2-12-81	3-11-81	4-20-81	5-13-81	6-24-81	7-8-81
RF-1						
Flow (gpm)	NA	NA	NA	10	NA	5
Acidity as $CaCO_3$ mg/l	< .1	14.0	< .01	4.00	< .01	4.00
Alkalinity as $CaCO_3$ mg/l	520.00	444.00	386.00	400.00	404.00	438.00
Dissolved Iron mg/l	.218	.020	.820	.070	.030	.010
Iron as Fe (Total) mg/l	1.100	.450	3.080	.180	.050	.020
Manganese as Mn (Tot) mg/l	.060	.020	.290	.020	.010	.010
Suspended Solids mg/l	59.0	10.0	303	104	15.0	8.0
Total Dissolved Solids mg/l	1,000	1,700	950	900	950	1,000
pH Units	8.00	7.60	8.10	8.20	8.20	7.70

Sampling Date:	8-12-81	9-9-81	10-14-81	11-10-81	12-9-81	3-9-82
RF-1						
Flow (gpm)	7	15	25	15	15	18
Acidity as $CaCO_3$ mg/l	< .01	< .01	10.00	< .01	< .01	4.50
Alkalinity as $CaCO_3$ mg/l	390.00	396.00	46.00	485.00	380.00	293.60
Dissolved Iron mg/l	< .001	.024	.030	.033	.026	.640
Iron as Fe (Total) mg/l	.070	.065	.140	.065	.095	1.110
Manganese as Mn (Tot) mg/l	< .001	.013	.020	.020	.013	.022
Suspended Solids mg/l	2.0	7.0	6.2	5.0	2.0	18.0
Total Dissolved Solids mg/l	900	950	987	950	900	362
pH Units	8.60	8.30	8.00	8.20	8.10	8.20

Sampling Date:	4-13-82	5-17-82	6-8-82	7-12-82	8-11-82	9-15-82
RF-1						
Flow (gpm)	20	20	25	10	NA	20
Acidity as $CaCO_3$ mg/l	< .01	< .01	< .01	< .01	< .01	< .01
Alkalinity as $CaCO_3$ mg/l	345.00	485.00	413.50	327.20	505.00	364.40
Dissolved Iron mg/l	NA	NA	.030	.030	.020	.036
Iron as Fe (Total) mg/l	.200	1.100	.100	.040	.025	.052
Manganese as Mn (Tot) mg/l	.020	.035	.008	.003	.008	.008
Suspended Solids mg/l	15.0	59.0	13.0	< 1.0	4.0	9.0
Total Dissolved Solids mg/l	988	862	925	915	874	890
pH Units	8.10	8.20	8.40	8.50	8.30	8.40

NA - Not Available

TRACK
ACT/007/013

UtahAmerican Energy Inc.
HORSE CANYON MINE

Filing

WATER MONITORING FORM

PERMIT # ACT/007/013

RECEIVED
JAN 24 2000
DIVISION OF
OIL, GAS AND MINING

Station # HC-2 (B-1)

Sample Date N/A - OBSERVED 11-9-99

Sample Time N/A " 1315

Type: Spring ____ Stream X UPDES ____

Sample Collection Point MAIN HORSE CANYON STREAM BED, ½ MILE WEST OF O POND

Appearance of Water: Clear ____ Slightly Cloudy ____ Cloudy ____ Opaque ____

Flow/Depth (gpm) NONE

Water Temperature (C) N/A

pH N/A

Specific Conductivity N/A

Dissolved Oxygen N/A

Comments: NO EVIDENCE OF RECENT FLOW IN STREAM BED.

Sampled by: L.P. CLARK

Laboratory N/A Date Shipped N/A

Sample ID# N/A Date Results Received ____

Electronic Water Data Report By Individual Sample

19990624	Lab Id Sheet#	06/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	11:10	Time Sampled	HORSE CANYON	Mine Name
3	Site Id	CLARK	Sampler Name	B-1	Site Name
NOF	Lab Code			STREAM	Site Type
No Flow				(HC-2) Horse Cyn Wash BL mine	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
11	FLOW	10		0.00000	GPM		

Received	Analyzed	By	Reported	Comments
/ /	/ /		/ /	No Flow

EDI processed
12/9/99
KW

complete processing
12/14/99
KW

updated to database
4/13/2006 KW

UEI
~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

B-1

Station # HC-2

Sample Date N/A - OBSERVED 6-22-99

Sample Time N/A - " 0955

Type: Spring _____ Stream X UPDES _____

Sample Collection Point MAIN H.C. STREAM, ½ MILE BELOW COUNTY ROAD X-ING

Appearance of Water: Clear ____ Slightly Cloudy ____ Cloudy ____ Opaque ____

Flow/Depth (gpm) NONE

Water Temperature (C) N/A

pH N/A

Specific Conductivity N/A

Dissolved Oxygen N/A

Comments: SOME RUN OFF OR FLASH FLOW (W) VERY SMALL FLOW HAD REACHED THIS POINT THIS SPRING

Sampled by: L. P. CLARK

Laboratory N/A

Date Shipped N/A

Sample ID# N/A

Date Results Received _____

UEI

~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

B-1

Station # HC-2

Sample Date N/A - No Flow 3-25-99

Sample Time OBSERVED 1120

Type: Spring ____ Stream X UPDES ____

Sample Collection Point MAIN H. CANYON STREAM - BELOW COUNTY ROAD X-ING

Appearance of Water: Clear ____ Slightly Cloudy ____ Cloudy ____ Opaque ____ N/A

Flow/Depth (gpm) N/A

Water Temperature (C) N/A

pH N/A

Specific Conductivity N/A

Dissolved Oxygen N/A

Comments: NO EVIDENCE OF ANY RUN-OFF FLOW

Sampled by: L. P. CLARK

Laboratory N/A Date Shipped N/A

Sample ID# N/A Date Results Received ____

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

NB 4-1-98

Station # HC-2 (B-1)

Sample Date N/A - NO FLOW DURING 4TH Q, 1997 December 11, 1997

Sample Time N/A

Type: Spring _____ Stream X UPDES _____

Sample Collection Point _____

Appearance of Water: Clear ____ Slightly Cloudy ____ Cloudy ____ Opaque ____

Flow/Depth (gpm) _____

Water Temperature (C) _____

pH _____

Specific Conductivity _____

Dissolved Oxygen _____

Comments: NO FLOW IN HORSE CANYON WASH AT THIS POINT DURING 4TH Q. '98

Sampled by: L. PAUL CLARK

Laboratory N/A Date Shipped N/A

Sample ID# N/A Date Results Received N/A

IPA
HORSE CANYON MINE
ACT/007/013

1997 WATER MONITORING DATA

SAMPLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) ✓

Parameter	Units	Jan 97	Feb 97	Mar 97	Apr 97	May 97	June 97	July 97	Aug 97	Sep 97	Oct 97	Nov 97	Dec 97
Flow	(gpm)			0			0			0			
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Fluoride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

IPA
HORSE CANYON MINE
ACT/007/013

1996 WATER MONITORING DATA

Cm
6/5

SAMPLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 96	Feb 96	Mar 96	Apr 96	May 96	June 96	July 96	Aug 96	Sep 96	Oct 96	Nov 96	Dec 96
Flow	(gpm)	0	0	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Fluoride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

IPA
HORSE CANYON MINE
ACT/007/013

1995 WATER MONITORING DATA

Cm
6-5

LE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 95	Feb 95	Mar 95	Apr 95	May 95	June 95	July 95	Aug 95	Sep 95	Oct 95	Nov 95	Dec 95
Flow	(gpm)	0	0	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Fluoride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

IPA
HORSE CANYON MINE
ACT/007/013

1994 WATER MONITORING DATA

CM
6-5

S[illegible]E LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 94	Feb 94	Mar 94	Apr 94	May 94	June 94	July 94	Aug 94	Sep 94	Oct 94	Nov 94	Dec 94
Flow	(gpm)	0	0	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o F												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Fl[illegible]ide	mg/l												
H[illegible]ss	mg/l												
Ir[illegible]total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

RECEIVED
JAN 31 1994
DIVISION OF
OIL, GAS & MINING

IPA
HORSE CANYON MINE
ACT/007/013

1993 WATER MONITORING DATA

Cm
6-5

SAMPLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 93	Feb 93	Mar 93	Apr 93	May 93	June 93	July 93	Aug 93	Sep 93	Oct 93	Nov 93	Dec 93
Flow	(gpm)	0	0	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o F												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
Hardness	mg/l												
Iron total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

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IPR
HORSE CANYON MINE
ACT/007/013

1992 WATER MONITORING DATA

6-5

SAMPLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 92	Feb 92	Mar 92	Apr 92	May 92	June 92	July 92	Aug 92	Sep 92	Oct 92	Nov 92	Dec 92
Flow	(gpm)	0	0	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

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IPA
HORSE CANYON MINE
ACT/007/013

1991 WATER MONITORING DATA

PLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 91	Feb 91	Mar 91	Apr 91	May 91	June 91	July 91	Aug 91	Sep 91	Oct 91	Nov 91	Dec 91
Flow	(gpm)	0	0	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
dness	mg/l												
on Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

Cm
6-5

IPA
HORSE CANYON MINE
ACT/007/013

1990 WATER MONITORING DATA

SAMPLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 90	Feb 90	Mar 90	Apr 90	May 90	June 90	July 90	Aug 90	Sep 90	Oct 90	Nov 90	Dec 90
Flow	(gpm)	0	0	0	0	0	0	0	0	0			
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

Cm
65

FILE ACT/007/013
WATER QUALITY FILE
#7

KAISER COAL CORPORATION
HORSE CANYON MINE
ACT/007/013

1989 WATER MONITORING DATA

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SAMPLE LOCATION: B - 1 (Horse Canyon Wash Below Mine) * INACCESSIBLE

Parameter	Units	Jan 89	Feb 89	Mar 89	Apr 89	May 89	June 89	July 89	Aug 89	Sep 89	Oct 89	Nov 89	Dec 89
Flow	(gpm)	*	*	0	0	0	0	0	0	0	0	0	0
pH	standard												
Temp	o C												
Conductivity	umhos/cm												
Dissolved Oxygen	ppm												
Aluminum	mg/l												
Arsenic	mg/l												
Barium	mg/l												
Bicarbonate	mg/l												
Boron	mg/l												
Cadmium	mg/l												
Calcium	mg/l												
Carbonate	mg/l												
Chloride	mg/l												
Chromium	mg/l												
Copper	mg/l												
Flouride	mg/l												
Hardness	mg/l												
Iron Total	mg/l												
Lead	mg/l												
Magnesium	mg/l												
Manganese	mg/l												
Mercury	mg/l												
Molybdenum	mg/l												
Nickel	mg/l												
Ammonia	mg/l												
Nitrate	mg/l												
Nitrite	mg/l												
Phosphate	mg/l												
Potassium	mg/l												
Selenium	mg/l												
Sodium	mg/l												
Sulfate	mg/l												
Sulfide	mg/l												
TDS	mg/l												
Zinc	mg/l												

Cm
6-5

CW
6/5

SURFACE WATER QUALITY MONITORING

GENEVA COAL MINE

	B-1	
Sample Date:	4-27-83	11-18-83
Aluminum, Al mg/l	.05	.027
Ammonia, NH3 mg/l	.21	.70
Arsenic, As mg/l	<.001	<.001
Barium, Ba mg/l	.070	.034
Bicarbonate, HNO3 mg/l	463.60	429.44
Boron, B mg/l	.30	.37
Cadmium, Cd mg/l	<.001	<.001
Calcium,Ca mg/l	60.00	104.00
Carbonate, CO3 mg/l	24.00	<.01
Chloride, Cl mg/l	15.80	70.00
Chromium, Cr mg/l	.005	<.001
Conductivity, umhos/cm	2,450	3,340
Copper, Cu mg/l	.02	.040
Flouride, F mg/l	.34	.23
Iron, Fe (total) mg/l	14.800	.050
Lead, Pb mg/l	.003	.070
Magnesium, Mg mg/l	110.40	148.80
Manganese, Mn mg/l	.515	.030
Mercury, Hg mg/l	<.0002	<.0002
Molybdenum, Mo mg/l	<.01	.035
Nickel, Ni mg/l	.02	.05
Nitrate, NO3-N mg/l	1.02	1.06
Nitrite, NO2-N mg/l	.02	<.01
Phosphate, PO4 mg/l	.37	.85
Potassium, K mg/l	4.25	7.7
Selenium, Se mg/l	.002	<.001
Sodium, Na mg/l	320	352.00
Sulfate, SO4 mg/l	835	1,140
Sulfide, S mg/l	.80	.95
Suspended Solids mg/l	640	2.0
Total Dissolved Solids mg/l	1,688	2,075
Zinc, Zn mg/l	.045	.010
pH Units	7.80	8.00

SURFACE WATER QUALITY DATA

GENEVA COAL MINE

Cw
6-5

Sampling Date:	2-12-81	3-11-81	4-22-81	5-12-81	6-24-81	7-8-81
B-1						
Flow (gpm)	NA	NA	NA	370	NA	375
Acidity as $CaCO_3$ mg/l	<.1	<.1	<.01	6.00		<.01
Alkalinity as $CaCO_3$ mg/l	424.00	372.00	346.00	330.00		356.00
Dissolved Iron mg/l	.270	.210	.190	.520		.020
Iron as Fe (Total) mg/l	.310	.250	.560	.950		.440
Manganese as Mn (Tot) mg/l	.020	.010	.030	.050		.030
Suspended Solids mg/l	18.0	9.0	87.0	50.00		136
Total Dissolved Solids mg/l	1,900	1,800	2,050	1,700		1,850
pH Units	8.40	8.00	8.30	8.10		8.20

Sampling Date:	8-12-81	9-9-81	10-14-81	11-10-81	12-9-81	3-9-82
B-1						
Flow (gpm)	NA	310	650	NA	No Flow	300
Acidity as $CaCO_3$ mg/l		<.01	<.01			4.50
Alkalinity as $CaCO_3$ mg/l		298.00	1,095.00			293.60
Dissolved Iron mg/l		.075	.080			.640
Iron as Fe (Total) mg/l		.280	.255			1.110
Manganese as Mn (Tot) mg/l		.014	.019			.022
Suspended Solids mg/l		10.0	8.1			18.0
Total Dissolved Solids mg/l		2,000	1,850			362
pH Units		8.30	8.30			8.20

Sampling Date:	4-13-82	5-17-82	6-8-82	7-12-82	8-11-82	9-15-82
B-1						
Flow (gpm)	425	400	500	No Flow	NA	400
Acidity as $CaCO_3$ mg/l	<.01	<.01	<.01		<.01	<.01
Alkalinity as $CaCO_3$ mg/l	291.60	350.30	366.90		297.50	304.00
Dissolved Iron mg/l	NA	NA	.760		.810	.820
Iron as Fe (Total) mg/l	1.600	.060	1.720		1.920	1.890
Manganese as Mn (Tot) mg/l	.060	.015	.070		.090	.095
Suspended Solids mg/l	105	3.0	98.0		114	21.0
Total Dissolved Solids mg/l	2,708	2,178	2,175		2,372	2,120
pH Units	7.80	8.10	7.90		8.10	8.20

NA - Not Available