PERMITTEE NAME/ADDRESS *(Include Facility Name/ Location if Different)*
NAME IPA HORSE CANYON MINE
ADDRESS 111 NO. HOPE STREET, ROOM 1164
LOS ANGELES CA 90012

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)
JIG040013	002 A

SEDIMENT POND 2
12345
F - FINAL
MINOR

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	99	02	01	TO	99	02	28
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE [X] ***
NOTE: Read instructions before completing this form.

FACILITY
LOCATION
ATTN: DAVID W. ANDERSON, P.E.

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUANTITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	****		ONCE/ MONTH	PERSON
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 R 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/ MONTH	GRAB
OIL AND GREASE FROM EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/ MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 0 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/ MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
WILLIAM W. ENGELS	I CERTIFY, UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	213 (AREA CODE)	367-0289 (NUMBER)	99 (YEAR)	3 (MO)	31 (DAY)
TYPED OR PRINTED						

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
TSS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN THE APPLICABLE SPACE.

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME IPA HORSE CANYON MINE
ADDRESS 111 NO. HOPE STREET, ROOM 1164
LOS ANGELES CA 90012

FACILITY
LOCATION
ATTN: DAVID W. ANDERSON, P.E. 7013

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
JT3040013	001 A
PERMIT NUMBER	DISCHARGE NUMBER

SEDIMENT POND 1
P - FINAL
MINOR

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98
12345

5/3/99

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	99	02	01	TO	99	02	28
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

*** NO DISCHARGE [X] ***

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	MEASRD
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		TWICE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 P 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/ MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 J 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/ MONTH	GRAB
OIL AND GREASE VISUAL	SAMPLE MEASUREMENT	******		(98)	******	******	******				
84066 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	0 INST MAX	YES=1 NO=0	******	******	******	**** ****		WEEKLY	VISUAL

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
William W. Engels	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*	213	367-0289	99	3	31
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN THE APPLICABLE SPACE.

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: IPA HORSE CANYON MINE

ADDRESS: 111 NO. HOPE STREET, ROOM 1164
LOS ANGELES CA 90012

FACILITY LOCATION

ATTN: DAVID N. ANDERSON, P.E.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)
UTG040013	002 A

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	00	06	01	TO	00	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

SEDIMENT POND 2 12345

P - FINAL
MINOR

*** NO DISCHARGE ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	QUANTITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	MEASRD
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		ONCE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 R 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/ MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/ MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 0 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/ MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE	DATE
Resident Agent M.H. Powers TYPED OR PRINTED	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE 435 NUMBER 472-3414	YEAR 00 MO 12 DAY 10

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

TDS IS LIMITED TO ONE TON PER DAY FROM ALL OUTFALLS. DURING PRECIPITATION EVENTS SETTLEABLE SOLIDS SHALL BE LIMITED INSTEAD OF TSS. REPORT "DOES NOT APPLY" IN THE APPLICABLE SPACE.

PERMITTEE NAME/ADDRESS *(Include Facility Name/ Location if Different)*

NAME IPA HORSE CANYON MINE

ADDRESS 111 NO. HOPE STREET, ROOM 1164
LOS ANGELES CA 90012

FACILITY

LOCATION

ATTN: DAVID W. ANDERSON, P.E.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)
CA0040013	002 A

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	00	07	01	TO	00	07	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

SEDIMENT POND 2

P - FINAL

MINOR

*** NO DISCHARGE ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

12345

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	QUANTITY OR CONCENTRATION (4 Card Only) MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****		ONCE/ MONTH	MEASRD
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		ONCE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 R 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/ MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/ MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 0 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/ MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
President Agent Melvin Cooper	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*	4	12	2	98	08	11
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

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PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*
NAME IPA HORSE CANYON MINE
ADDRESS 111 NO. HOPE STREET, ROOM 1154
LOS ANGELES CA 90012

FACILITY
LOCATION
ATTN: DAVID W. ANDERSON, P.E.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	*(17-19)*
UT0040013	002 A
PERMIT NUMBER	DISCHARGE NUMBER

SEDIMENT POND 2

F - FINAL
MINOR

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98
12345

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	00	05	01	TO	00	06	31
	(20-21)	*(22-23)*	*(24-25)*		*(26-27)*	*(28-29)*	*(30-31)*

*** NO DISCHARGE *** ☐

NOTE: Read Instructions before completing this form.

PARAMETER *(32-37)*		*(3 Card Only)* QUANTITY OR LOADING *(46-53)* AVERAGE	*(54-61)* MAXIMUM	UNITS	*(4 Card Only)* QUANTITY OR CONCENTRATION *(38-45)* MINIMUM	*(46-53)* AVERAGE	*(54-61)* MAXIMUM	UNITS	NO. EX *(62-63)*	FREQUENCY OF ANALYSIS *(64-68)*	SAMPLE TYPE *(69-70)*
FLOW RATE	SAMPLE MEASUREMENT			(07)	******	******	******				
00056 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT 30DA AVG	REPORT DAILY MX	GPD	******	******	******	**** ****	5	ONCE/ MONTH	MEASURED
PH	SAMPLE MEASUREMENT	******	******			******		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	6.5 DAILY MN	******	9.0 DAILY MX	SU		ONCE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	******	******		******			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	25 30DA AVG	70 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	******	******		******	******		(25)			
00545 R 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	******	**** ****	******	******	0.5 DAILY MX	ML/L		ONCE/ MONTH	GRAB
OIL AND GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	******	******		******	******		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	10 DAILY MX	MG/L		ONCE/ MONTH	GRAB
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	******	******		******	******		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	******	******	**** ****	******	******	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
SOLIDS, TOTAL DISSOLVED	SAMPLE MEASUREMENT	******		(26)	******	******		(19)			
70295 0 0 0 SEE COMMENTS BELOW	PERMIT REQUIREMENT	******	2000 DAILY MX	LBS/DY	******	******	REPORT DAILY MX	MG/L		ONCE/ MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
MELVIN A. COONROD
RESIDENT AGENT
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
AREA CODE	NUMBER	YEAR	MO	DAY
435	674-3440	00	08	22

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
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COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306

NCE 1908®

SGS 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

10-96 NB

April 22, 1996

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

Sample identification by
IPA-EARTHFAX ENGINEERING

173187-1

RS-1 Redden Spring
Temperature 8.7°C
Flow 14 GPM
Rec'd 1600 hr.
Sampled 1245 hr.

FIELD MEASUREMENTS
pH 8.00
Conductivity 1005
DO 13

D.O. not entered questionable value

NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Paul Clark

Date sampled March 27, 1996

Date received March 27, 1996

Lab # 59158803

Analysis report no. 59-15880

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	504	2	mg/l	as HCO_3	SM2320-B	04-02-1996 0800	SW
Alkalinity, Carbonate	21	2	mg/l	as CO_3	SM2320-B	04-02-1996 0800	SW
Alkalinity, Total	448	2	mg/l	as $CaCO_3$	EPA 310.1	04-02-1996 0800	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-05-1996 0845	MK
Anions	13.7	----	meq/l		---------	04-11-1996 1600	BR
Arsenic, Dissolved	<0.004	0.004	mg/l		EPA 206.2	03-30-1996 0815	MK
Barium, Dissolved	<0.6	0.6	mg/l		EPA 208.1	04-05-1996 1015	MK
Boron, Dissolved	0.32	0.03	mg/l		EPA 212.3	03-29-1996 0715	MK
Cadmium, Dissolved	<0.004	0.004	mg/l		EPA 213.1	04-08-1996 1345	MK
Calcium, Dissolved	47	0.2	mg/l		EPA 215.1	04-05-1996 1130	MK
Cations	14.9	----	meq/l		---------	04-11-1996 1600	BR
Chloride	19.0	0.4	mg/l		SM4500-Cl-B	04-01-1996 1300	SW
Chromium, Dissolved	<0.02	0.02	mg/l		EPA 218.1	04-05-1996 0930	MK
Copper, Dissolved	<0.03	0.03	mg/l		EPA 220.1	04-08-1996 1130	MK
Fluoride	0.040	0.005	mg/l		SM4500-F-C	04-16-1996 0630	SW
Hardness, Total	395	----	mg/l	as $CaCO_3$	SM2340-B	04-11-1996 1600	BR
Iron, Total	<0.03	0.03	mg/l		EPA 236.1	04-03-1996 0800	MK
Lead, Dissolved	<0.08	0.08	mg/l		EPA 239.1	04-08-1996 1400	MK
Magnesium, Dissolved	68	1.2	mg/l		EPA 242.1	04-05-1996 1230	MK
Manganese, Dissolved	<0.04	0.04	mg/l		EPA 243.1	04-08-1996 0815	MK
Mercury, Dissolved	<0.18	0.18	ug/l		EPA 245.1	04-17-1996 0715	MK
Molybdenum, Dissolved	<0.07	0.07	mg/l		EPA 246.1	04-05-1996 1045	MK
Nickel, Dissolved	<0.04	0.04	mg/l		EPA 249.1	04-08-1996 1330	MK
Nitrogen, Ammonia	<0.2	0.2	mg/l	as N	EPA 350.3	04-08-1996 1330	SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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April 22, 1996

IPA-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 Paul Clark

Date sampled March 27, 1996

Date received March 27, 1996

Sample identification by
IPA-EARTHFAX ENGINEERING

RS-1 Redden Spring
Temperature 8.7°C
Flow 14 GPM
Rec'd 1600 hr.
Sampled 1245 hr.

FIELD MEASUREMENTS

pH	8.00
Conductivity	1005
DO	1.3

D.O. Not entered questional value

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15880

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Nitrate-Nitrite	0.26	0.06	mg/l as N	EPA 353.3	04-09-1996 0700	JC
Nitrogen, Nitrite	<0.002	0.002	mg/l as N	EPA 354.1	03-29-1996 0730	JC
Phosphorous, Ortho-PO_4	0.008	0.003	mg/l as P	SM4500-P-E	03-28-1996 0800	JC
Potassium, Dissolved	1.3	0.6	mg/l	EPA 258.1	04-08-1996 0900	MK
Selenium, Dissolved	<0.003	0.003	mg/l	EPA 270.2	04-01-1996 1030	MK
Sodium, Dissolved	161	1.2	mg/l	EPA 273.1	04-08-1996 0930	MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	03-28-1996 0600	SW
Solids, Total Dissolved	784	9	mg/l	EPA 160.1	03-29-1996 0930	JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	03-30-1996 0700	JC
Sulfate	202.0	20	mg/l	EPA 375.4	04-11-1996 0700	SW
Sulfide	<0.06	0.06	mg/l	EPA 376.1	04-03-1996 1030	BR
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	04-08-1996 1230	MK
Cation/Anion Balance	4.1	----	%		04-11-1996 1600	BR

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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Cott 4/16

July 31, 1996

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

QC cm 5/28

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1 ~~[illegible]~~ (RS-2)
Temperature 14.0°C
Flow 12 GPM
Rec'd 1700 hr.
Sampled 1305 hr.
FIELD MEASUREMENTS
pH 6.82
DO 4
NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled June 27, 1996

Date received June 27, 1996

Analysis report no. 59-16215

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	526	5	mg/l	as HCO_3	SM2320-B	07-02-1996 1000	SW
Alkalinity, Carbonate	9	5	mg/l	as CO_3	SM2320-B	07-02-1996 1000	SW
Alkalinity, Total	446	5	mg/l	as $CaCO_3$	EPA 310.1	07-02-1996 1000	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	07-16-1996 1415	MK
Anions	15.0	----	meq/l		---------	07-31-1996 0930	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	07-12-1996 0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	07-16-1996 1500	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	07-08-1996 0700	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	07-16-1996 0900	MK
Calcium, Dissolved	45	1	mg/l		EPA 215.1	07-16-1996 1245	MK
Cations	14.7	----	meq/l		---------	07-31-1996 0930	JJ
Chloride	18	1	mg/l		SM4500-Cl-B	07-03-1996 0930	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	07-16-1996 1430	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	07-16-1996 0730	MK
Fluoride	0.12	0.01	mg/l		SM4500-F-C	07-12-1996 0830	SW
Hardness, Total	392	----	mg/l	as $CaCO_3$	SM2340-B	07-31-1996 0731	JJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	07-16-1996 1015	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	07-16-1996 1015	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	07-16-1996 0915	MK
Magnesium, Dissolved	68	1	mg/l		EPA 242.1	07-16-1996 1330	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	07-16-1996 1045	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	07-02-1996 1000	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	07-16-1996 1515	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	07-16-1996 0830	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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August 1, 1996

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

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1
Temperature 14.0°C
Flow 12 GPM
Rec'd 1700 hr.
Sampled 1305 hr.

FIELD MEASUREMENTS

pH	6.82
DO	4

NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled June 27, 1996

Date received June 27, 1996

Analysis report no. 59-16215

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	0.6	0.5	mg/l as N	EPA 350.3	07-22-1996 1225 SW
Nitrogen, Nitrate-Nitrite	0.1	0.1	mg/l as N	EPA 353.3	07-16-1996 1100 BR
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	06-28-1996 0855 JJ
Oil & Grease	<4	4	mg/l	SM5520-B	07-11-1996 0800 JC
Phosphorous, Ortho-PO_4	0.01	0.01	mg/l as P	SM4500-P-E	06-28-1996 0930 JJ
Potassium, Dissolved	1	1	mg/l	EPA 258.1	07-16-1996 1115 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	07-13-1996 0730 MK
Sodium, Dissolved	157	2	mg/l	EPA 273.1	07-16-1996 1130 MK
Solids, Total Dissolved	825	10	mg/l	EPA 160.1	07-01-1996 0700 JC
Sulfate	267	17	mg/l	EPA 375.4	07-16-1996 1230 SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	06-28-1996 1030 BR
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	07-16-1996 0800 MK
Cation/Anion Balance	-1.0	----	%		07-31-1996 0930 JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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GH 4/8
DC CM 5/28

September 30, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled August 29, 1996

Date received August 29, 1996

~~ID:RS-1~~ (RS-2)

Temperature 16.0°C
Flow 10 gpm
Rec'd 1330 hr.
Sampled 1015 hr.

FIELD MEASUREMENTS

pH	7.13
Conductivity	620
DO	5

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16437

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
kalinity, Bicarbonate	508	5	mg/l	as HCO_3	SM2320-B	09-10-1996 1230	SW
kalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	09-10-1996 1230	SW
Alkalinity, Total	416	5	mg/l	as $CaCO_3$	EPA 310.1	09-10-1996 1230	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-19-1996 1330	MK
Anions	29.4	----	meq/l		---------	09-27-1996 1200	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	09-10-1996 0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-19-1996 1400	MK
Boron, Dissolved	0.5	0.1	mg/l		EPA 212.3	09-11-1996 0715	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	09-19-1996 0830	MK
Calcium, Dissolved	119	1	mg/l		EPA 215.1	09-19-1996 1200	MK
Cations	29.9	----	meq/l		---------	09-27-1996 1200	JJ
Chloride	43	1	mg/l		SM4500-Cl-B	09-23-1996 1330	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-19-1996 1345	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-19-1996 0730	MK
Fluoride	0.21	0.01	mg/l		SM4500-F-C	09-05-1996 0700	SW
Hardness, Total	968	----	mg/l	as $CaCO_3$	SM2340-B	09-27-1996 1200	JJ
Iron, Total	0.1	0.1	mg/l		EPA 236.1	09-19-1996 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-19-1996 0930	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-19-1996 0845	MK
Magnesium, Dissolved	163	5	mg/l		EPA 242.1	09-19-1996 1230	MK
Manganese, Dissolved	0.1	0.1	mg/l		EPA 243.1	09-19-1996 1000	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-04-1996 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-19-1996 1415	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-19-1996 0800	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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GH 4/8

September 30, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled August 29, 1996

Date received August 29, 1996

ID:RS-1

Temperature 16.0°C
Flow 10 gpm
Rec'd 1330 hr.
Sampled 1015 hr.

FIELD MEASUREMENTS

pH	7.13
Conductivity	620
DO	5

NOTE:Dissolved metals filtered at lab!

Analysis report no. 59-16437

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
trogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	09-19-1996 0800 SW
trogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	09-26-1996 0930 JJ
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	08-30-1996 0630 JC
Phosphorous, Ortho-PO_4	<0.01	0.01	mg/l as P	SM4500-P-E	08-30-1996 0900 JC
Potassium, Dissolved	9	1	mg/l	EPA 258.1	09-19-1996 1030 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	09-10-1996 1130 MK
Sodium, Dissolved	237	5	mg/l	EPA 273.1	09-19-1996 1100 MK
Solids, Total Dissolved	1929	10	mg/l	EPA 160.1	09-03-1996 0700 JC
Sulfate	953	100	mg/l	EPA 375.4	09-16-1996 1230 SW
Sulfide	<0.1	0.1	mg/l	EPA 376.1	09-05-1996 1245 JJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	09-19-1996 0745 MK
Cation/Anion Balance	0.9	----	%		09-27-1996 1200 JJ

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
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Huntington Laboratory

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September 12, 1996

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 L.P. Clark

Date sampled July 25, 1996

Date received July 25, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1 (RS-2)
Temperature 10.0°C
Flow 11 GPM
Rec'd 1525 hr.
Sampled 1240 hr.

FIELD MEASUREMENTS
pH 6.91
Conductivity 85
DO 4

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-16323

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
kalinity, Bicarbonate	488	5	mg/l	as HCO_3	SM2320-B	08-19-1996 0900	SW
kalinity, Carbonate	27	5	mg/l	as CO_3	SM2320-B	08-19-1996 0900	SW
Alkalinity, Total	445	5	mg/l	as $CaCO_3$	EPA 310.1	08-19-1996 0900	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	08-15-1996 1345	MK
Anions	14.5	----	meq/l		---------	09-11-1996 1700	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	09-10-1996 0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	08-15-1996 1430	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	09-11-1996 0715	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	08-15-1996 0845	MK
Calcium, Dissolved	46	1	mg/l		EPA 215.1	08-15-1996 1230	MK
Cations	14.2	----	meq/l		---------	09-11-1996 1700	JJ
Chloride	18	1	mg/l		SM4500-Cl-B	07-29-1996 1200	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	08-15-1996 1400	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	08-15-1996 0730	MK
Fluoride	0.14	0.01	mg/l		SM4500-F-C	08-05-1996 1200	SW
Hardness, Total	378	----	mg/l	as $CaCO_3$	SM2340-B	09-11-1996 1700	JJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	08-15-1996 1000	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	08-15-1996 1000	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	08-15-1996 0900	MK
Magnesium, Dissolved	64	1	mg/l		EPA 242.1	08-15-1996 1245	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	08-15-1996 1030	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	08-06-1996 0800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	08-15-1996 1445	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	08-15-1996 0830	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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September 12, 1996

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 L.P. Clark

Date sampled July 25, 1996

Date received July 25, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1
Temperature 10.0°C
Flow 11 GPM
Rec'd 1525 hr.
Sampled 1240 hr.

FIELD MEASUREMENTS

pH	6.91
Conductivity	85
DO	4

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-16323

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
trogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	08-08-1996 1210 SW
.trogen, Nitrate-Nitrite	1.5	0.5	mg/l as N	EPA 353.3	08-02-1996 0700 MK
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	07-26-1996 0830 MK
Phosphorous, Ortho-PO_4	0.03	0.01	mg/l as P	SM4500-P-E	07-26-1996 1245 MK
Potassium, Dissolved	2	1	mg/l	EPA 258.1	08-15-1996 1100 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	09-10-1996 1130 MK
Sodium, Dissolved	151	1	mg/l	EPA 273.1	08-15-1996 1130 MK
Solids, Total Dissolved	841	10	mg/l	EPA 160.1	07-29-1996 0700 JC
Sulfate	245	10	mg/l	EPA 375.4	08-01-1996 1415 SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	07-31-1996 1600 JJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	08-15-1996 0800 MK
Cation/Anion Balance	-1.1	----	%		09-11-1996 1700 JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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ACT/007/013 # 7

1996 FOURTH QUARTER HYDROLOGIC REPORT

INTERMOUNTAIN POWER AGENCY

HORSE CANYON MINE

CM 3/12

QC 11/3

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # B-1 ✓

Sample Date 11-6-96 ✓

Sample Time _____

Type: Spring _____ Stream ✓ UPDES _____

Sample Collection Point Below Horse Canyon Mine in Horse Canyon Creek

Appearance of Water: Clear ____ Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) NO FLOW ✓

Water Temperature (C) —

pH —

Specific Conductivity —

Dissolved Oxygen —

Comments: NO FLOW IN CHANNEL

Sampled by: L. PAUL CLARK

Laboratory —

Date Shipped —

Sample ID# —

Date Results Received —

CM 3/12 QC 1/3

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1 ✓

Sample Date 11-6-96 ✓

Sample Time 1125 ✓

Type: Spring _____ Stream X UPDES _____

Sample Collection Point Upstream of Mine in Horse Canyon Creek - HC-1

Appearance of Water: Clear ✓ Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) 6 gpm ✓

Water Temperature (C) 6°C ✓

pH 6 ✓

Specific Conductivity 520 ✓

Dissolved Oxygen 6 ✓

Comments: _____

Sampled by: L. Paul Clark

Laboratory CTE Date Shipped 11-6-96

Sample ID# HC-1 Date Results Received 12-12-96

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December 9, 1996

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 November 6, 1996

Date received November 6, 1996

Sample identification by LADWP

ID: HC-1
Rec'd 1355 hr.
Sampled 1125 hr.

FIELD MEASUREMENTS

pH	6.83
DO	6
Flow	6 gpm
Conductivity	520
Turbidity	Clear
Temperature	6.0°C

NOTE: Dissolved metals filtered at lab!
NOTE: Fluoride & Ammonia expired when analyzed!

Analysis report no. 59-16757

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	490	5	mg/l	as HCO_3	SM2320-B	11-06-1996 1400	SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	11-06-1996 1400	SW
Alkalinity, Total	401	5	mg/l	as $CaCO_3$	EPA 310.1	11-06-1996 1400	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	11-26-1996 1300	MK
Anions	27.6	---	meq/l		---------	12-09-1996 1030	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	11-16-1996 0745	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	11-26-1996 1330	MK
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	11-18-1996 0730	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	11-26-1996 0845	MK
Calcium, Dissolved	103	1	mg/l		EPA 215.1	11-26-1996 1145	MK
Cations	25.6	---	meq/l		---------	12-09-1996 1030	RJ
Chloride	36	1	mg/l		SM4500-Cl-B	11-18-1996 1100	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	11-26-1996 1315	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	11-26-1996 0730	MK
Fluoride	0.16	0.01	mg/l		SM4500-F-C	12-05-1996 0800	SW
Hardness, Total	838	----	mg/l	as $CaCO_3$	SM2340-B	12-09-1996 1030	RJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	11-26-1996 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-26-1996 0930	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	11-26-1996 0900	MK
Magnesium, Dissolved	141	1	mg/l		EPA 242.1	11-26-1996 1200	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	11-26-1996 1000	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	11-13-1996 0900	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	11-26-1996 1345	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	11-26-1996 0815	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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QC MB

December 9, 1996

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 November 6, 1996

Date received November 6, 1996

Sample identification by
LADWP

ID: HC-1
Rec'd 1355 hr.
Sampled 1125 hr.

FIELD MEASUREMENTS	
pH	6.83
DO	6
Flow	6 gpm
Conductivity	520
Turbidity	Clear
Temperature	6.0°C

NOTE:Dissolved metals filtered at lab!
NOTE:Fluoride & Ammonia expired when analyzed!

Analysis report no. 59-16757

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	12-04-1996 1300	SW
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	11-20-1996 0700	JC
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	11-07-1996 1030	JC
Oil & Grease	<2	2	mg/l	SM5520-B	11-15-1996 0700	JC
Phosphorous, Ortho-PO_4	0.01	0.01	mg/l as P	SM4500-P-E	11-07-1996 1330	JC
Potassium, Dissolved	6	1	mg/l	EPA 258.1	11-26-1996 1030	MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	11-16-1996 1130	MK
Sodium, Dissolved	199	1	mg/l	EPA 273.1	11-26-1996 1100	MK
Solids, Total Dissolved	1772	10	mg/l	EPA 160.1	11-06-1996 0700	JC
Sulfate	893	1	mg/l	EPA 375.4	11-20-1996 1100	SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	11-13-1996 1300	JJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	11-26-1996 0800	MK
Cation/Anion Balance	-3.9	----	%		12-09-1996 1030	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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TERMS AND CONDITIONS ON REVERSE

QC 115

CM 3/12

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-2 ✓

Sample Date 11-6-96 ✓

Sample Time 1225 ✓

Type: Spring X Stream _____ UPDES _____

Sample Collection Point Flow Pipe below Cliff - RS-2

Appearance of Water: Clear X Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) 11 ✓✓

Water Temperature (C) 9.0°C ✓✓

pH 7.34 ✓ ✓

Specific Conductivity 505 ✓✓

Dissolved Oxygen 5 ✓✓

Comments: _____

Sampled by: L. Paul Clark

Laboratory CTE Date Shipped 11-6-96

Sample ID# RS-2 Date Results Received 12-12-96

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December 10, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

ID: RS-A2

Sample taken at

Rec'd 1355 hr.
Sampled 1225 hr.

Sample taken by Leo Clark

FIELD MEASUREMENTS

pH	7.34
DO	5
Flow	11
Conductivity	505
Turbidity	Clear
Temperature	9.0°C

Date sampled November 6, 1996

Date received November 6, 1996

Analysis report no. 59-16758

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	574	5	mg/l	as HCO_3	SM2320-B	11-06-1996 1400	SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	11-06-1996 1400	SW
Alkalinity, Total	471	5	mg/l	as $CaCO_3$	EPA 310.1	11-06-1996 1400	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	11-26-1996 1300	MK
Anions	15.0	----	meq/l		---------	12-09-1996 1030	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	11-16-1996 0745	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	11-26-1996 1330	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	11-18-1996 0730	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	11-26-1996 0845	MK
Calcium, Dissolved	43	1	mg/l		EPA 215.1	11-26-1996 1145	MK
Cations	14.0	----	meq/l		---------	12-09-1996 1030	RJ
Chloride	18	1	mg/l		SM4500-Cl-B	11-18-1996 1100	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	11-26-1996 1315	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	11-26-1996 0730	MK
Fluoride	0.17	0.01	mg/l		SM4500-F-C	12-05-1996 0800	SW
Hardness, Total	375	----	mg/l	as $CaCO_3$	SM2340-B	12-09-1996 1030	RJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	11-26-1996 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-26-1996 0930	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	11-26-1996 0900	MK
Magnesium, Dissolved	65	1	mg/l		EPA 242.1	11-26-1996 1200	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	11-26-1996 1000	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	11-13-1996 0900	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	11-26-1996 1345	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	11-26-1996 0815	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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December 10, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

ID: RS-~~A~~ 2

Rec'd 1355 hr.
Sampled 1225 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled November 6, 1996

Date received November 6, 1996

FIELD MEASUREMENTS

pH	7.34
DO	5
Flow	11
Conductivity	505
Turbidity	Clear
Temperature	9.0°C

Analysis report no. 59-16758

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	12-04-1996 1300 SW
Nitrogen, Nitrate-Nitrite	0.3	0.1	mg/l as N	EPA 353.3	11-20-1996 0700 JC
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	11-07-1996 1030 JC
Oil & Grease	<2	2	mg/l	SM5520-B	11-15-1996 0700 JC
Phosphorous, Ortho-PO_4	0.02	0.01	mg/l as P	SM4500-P-E	11-07-1996 1330 JC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	11-26-1996 1030 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	11-16-1996 1130 MK
Sodium, Dissolved	150	1	mg/l	EPA 273.1	11-26-1996 1100 MK
Solids, Total Dissolved	866	10	mg/l	EPA 160.1	11-06-1996 0700 JC
Sulfate	242	1	mg/l	EPA 375.4	12-03-1996 0730 SW
Sulfide	<1.0	1.0	mg/l	EPA 376.1	11-13-1996 1300 JJ
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	11-26-1996 0800 MK
Cation/Anion Balance	3.1	----	%		12-09-1996 1030 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
RJ
Huntington Laboratory

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TERMS AND CONDITIONS ON REVERSE

dm 3/12 QC 3/13

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF-1 ✓

Sample Date 11-6-96 ✓

Sample Time —

Type: Spring _____ Stream _____ UPDES _____

Sample Collection Point At CROSSING OF RIGHT FORK OF HORSE CANYON CREEK ABOVE ROAD

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

Flow/Depth (gpm) NO FLOW ✓

Water Temperature (C) —

pH —

Specific Conductivity —

Dissolved Oxygen —

Comments: —

—

Sampled by: L. PAUL CLARK

Laboratory —

Date Shipped —

Sample ID# —

Date Results Received —

IPA
HORSE CANYON MINE
ACT/007/013

1996 WATER MONITORING DATA

QC MB 4-7-97

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

* Inaccessible
NS Not Sampled

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	NS	NS	0	NS
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

Entered from lab sheet

SAMPLE LOCATION: HC - 1 (Horse Canyon Wash)

* Inaccessible
NS Not Sampled

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)	*	*	24	12.2	15	7	2	1.3			6	
pH	standard			8.26	8.4	8.33	7.79	7.69	7.63	NS	NS	6.83	NS
Temp	o C			10.4	17.7	21.0	17.0	NA	24.0			6	
Conductivity	umhos/cm			1490	1370	1300	NR	1800	1870			520	
Dissolved Oxygen	ppm			10	2	6	5	3	4			6	
Aluminum	mg/l			<1	4	<1	<1	<1	<1			<1	
Arsenic	mg/l			<0.004	<0.004	<0.004	<0.01	<0.01	<0.01			<0.01	
Barium	mg/l			0.7	<0.6	<0.6	<0.1	<0.1	<0.1			<1	
Bicarbonate	mg/l			407	403	415	410	446	542			490	
Boron	mg/l			0.38	0.42	0.47	0.5	0.5	0.3			0.4	
Cadmium	mg/l			<0.004	<0.004	<0.004	<0.01	<0.01	<0.01			<0.01	
Calcium	mg/l			94	104	106	104	109	45			103	
Carbonate	mg/l			24	23	30	33	20	<5			<5	
Chloride	mg/l			29	32	32	34	43	18			36	
Chromium	mg/l			<0.02	<0.02	<0.02	<0.01	<0.01	<0.01			<0.1	
Copper	mg/l			<0.03	<0.03	<0.03	<0.1	<0.1	<0.1			<0.1	
Fluoride	mg/l			0.02	0.11	0.195	0.14	0.18	0.17			0.16	
Hardness	mg/l			725	798	797	812	478	376			838	
Iron Total	mg/l			<0.03	0.05	<0.03	<0.1	0.2	<0.1			<0.1	
Lead	mg/l			<0.08	<0.08	<0.08	<0.1	<0.1	<0.1			<0.1	
Magnesium	mg/l			119	129	129	134	144	64			141	
Manganese	mg/l			<0.04	<0.04	<0.04	<0.1	<0.1	<0.1			<0.1	
Mercury	mg/l			<0.18	<0.18	<0.18	<0.2	0.2	<0.2			<0.2	
Molybdenum	mg/l			<0.07	<0.07	<0.07	<0.1	<0.1	<0.1			<0.1	
Nickel	mg/l			<0.04	<0.04	<0.04	<0.1	<0.1	<0.1			<0.1	
Ammonia	mg/l			<0.2	<0.2	<0.2	<0.5	<0.5	<0.5			<0.5	
Nitrate	mg/l			<0.06	<0.06	<0.06	<0.1	<0.1	0.2			<0.1	
Nitrite	mg/l			<0.002	0.06	0.003	<0.1	<0.01	<0.01			<0.01	
Phosphate	mg/l			<0.003	0.0003	<0.003	NR	0.03	<0.01			0.01	
Potassium	mg/l			5.2	6.5	6.8	7	9	1			6	
Selenium	mg/l			<0.003	<0.003	<0.003	<0.01	<0.01	<0.01			<0.01	
Sodium	mg/l			193	206	217	209	231	150			199	
Sulfate	mg/l			732	819	650	676	837	259			893	
Sulfide	mg/l			<0.06	<0.06	<0.06	NR	<0.01	<0.1			<0.1	
TDS	mg/l			1450	1577	1622	1692	1924	841			1772	
Zinc	mg/l			<0.01	0.29	0.03	<0.01	<0.01	0.03			0.01	

IPA
HORSE CANYON MINE
ACT/007/013

1996 WATER MONITORING DATA

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

* Inaccessible
NS Not Sampled

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	NS	NS	0	NS
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

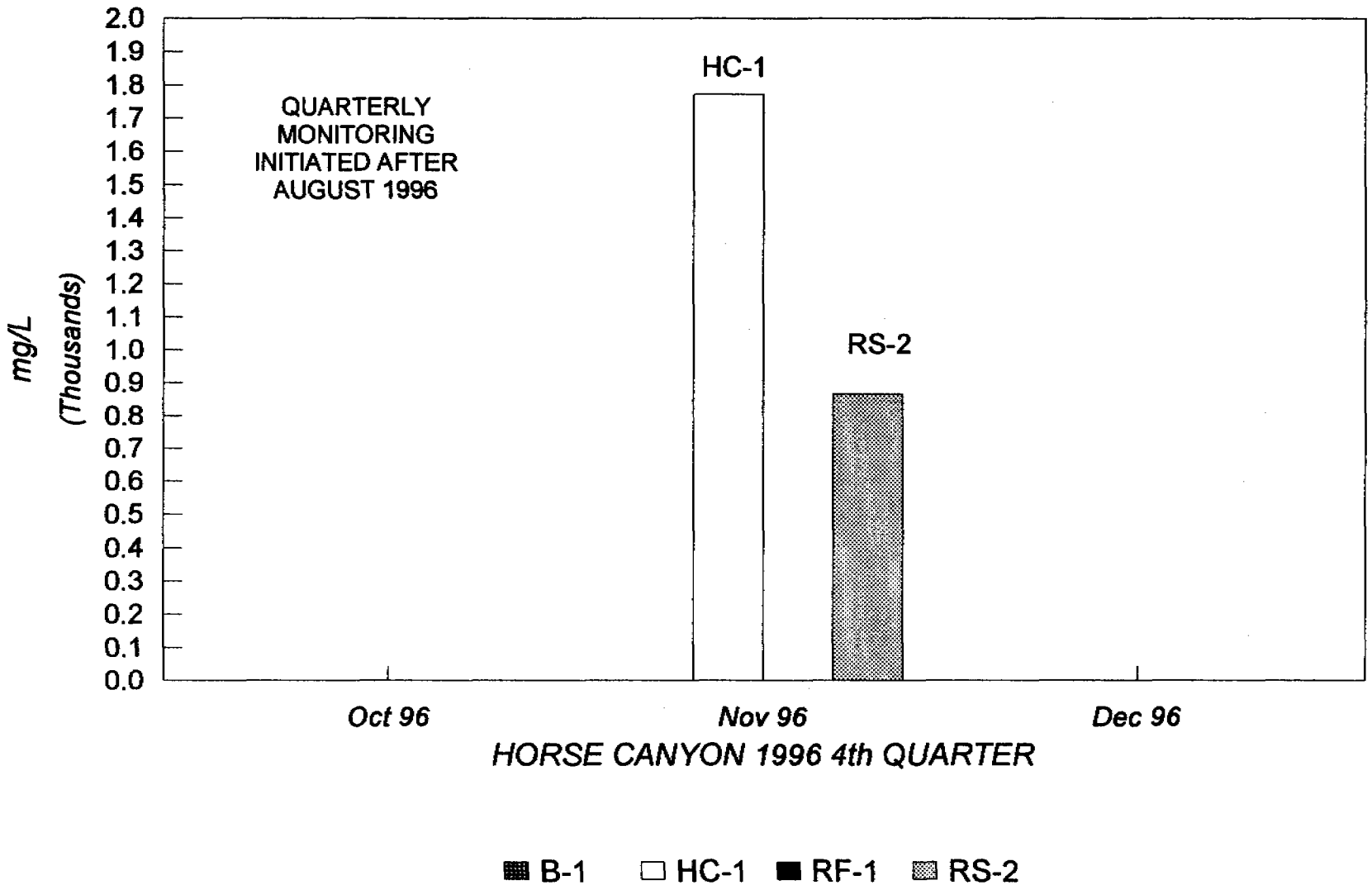
SAMPLE LOCATION: RS - 2 (Redden Spring)

* Inaccessible
NS Not Sampled

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)	*	*	14	10	12	12	11	10	NS	NS	11	NS
pH	standard			8	8.11	7.53	6.82	6.91	7.13			7.34	
Temp	o C			8.7	9	9	14	10	16.0			9	
Conductivity	umhos/cm			1005	850	900	NR	850	620			505	
Dissolved Oxygen	ppm			13	4	8	4	4	5			5	
Aluminum	mg/l			<1	<1	3	<1	<1	<1			<1	
Arsenic	mg/l			<0.004	<0.004	<0.004	<0.01	<0.01	<0.01			<0.01	
Barium	mg/l			<0.6	<0.6	<0.6	1	<1	<0.1			<1	
Bicarbonate	mg/l			504	537	525	526	488	508			574	
Boron	mg/l			0.32	0.31	0.33	0.3	0.3	0.5			0.3	
Cadmium	mg/l			<0.004	<0.004	<0.004	<0.01	<0.01	<0.01			<0.01	
Calcium	mg/l			47	46	46	45	46	119			43	
Carbonate	mg/l			21	<2	10	9	27	<5			<5	
Chloride	mg/l			19	14	18	18	18	43			18	
Chromium	mg/l			<0.02	<0.02	<0.02	<0.1	<0.1	<0.1			<0.1	
Copper	mg/l			<0.03	<0.03	<0.03	<0.1	<0.1	<0.1			<0.1	
Fluoride	mg/l			0.04	0.2	0.168	0.12	0.14	0.21			0.17	
Hardness	mg/l			395	383	383	392	378	968			375	
Iron Total	mg/l			<0.03	<0.03	<0.03	<0.1	<0.1	0.1			<0.1	
Lead	mg/l			<0.08	<0.08	<0.08	<0.1	<0.1	<0.1			<0.1	
Magnesium	mg/l			68	65	65	68	64	163			65	
Manganese	mg/l			<0.04	<0.04	<0.04	<0.1	<0.1	0.1			<0.1	
Mercury	mg/l			<0.18	<0.18	<0.18	<0.2	<0.2	<0.2			<0.2	
Molybdenum	mg/l			<0.07	<0.07	<0.07	<0.1	<0.1	<0.1			<0.1	
Nickel	mg/l			<0.04	<0.04	<0.04	<0.1	<0.1	<0.1			<0.1	
Ammonia	mg/l			<0.2	<0.2	<0.2	0.6	<0.5	<0.5			<0.5	
Nitrate	mg/l			0.26	0.29	0.3	0.1	1.5	<0.1			0.3	
Nitrite	mg/l			<0.002	<0.002	<0.002	<0.01	<0.01	<0.01			<0.01	
Phosphate	mg/l			0.008	0.005	0.005	NR	0.03	<0.01			0.02	
Potassium	mg/l			1.3	1.2	1.4	1	2	9			1	
Selenium	mg/l			<0.003	0.004	0.016	<0.01	<0.01	<0.01			<0.01	
Sodium	mg/l			161	163	160	157	151	237			150	
Sulfate	mg/l			202	269	236	267	245	953			242	
Sulfide	mg/l			<0.06	<0.06	<0.06	NR	<1.0	<0.1			<0.1	
TDS	mg/l			784	820	838	825	841	1929			866	
Zinc	mg/l			0.02	0.07	0.03	0.02	0.01	0.01			0.02	

IPA

TDS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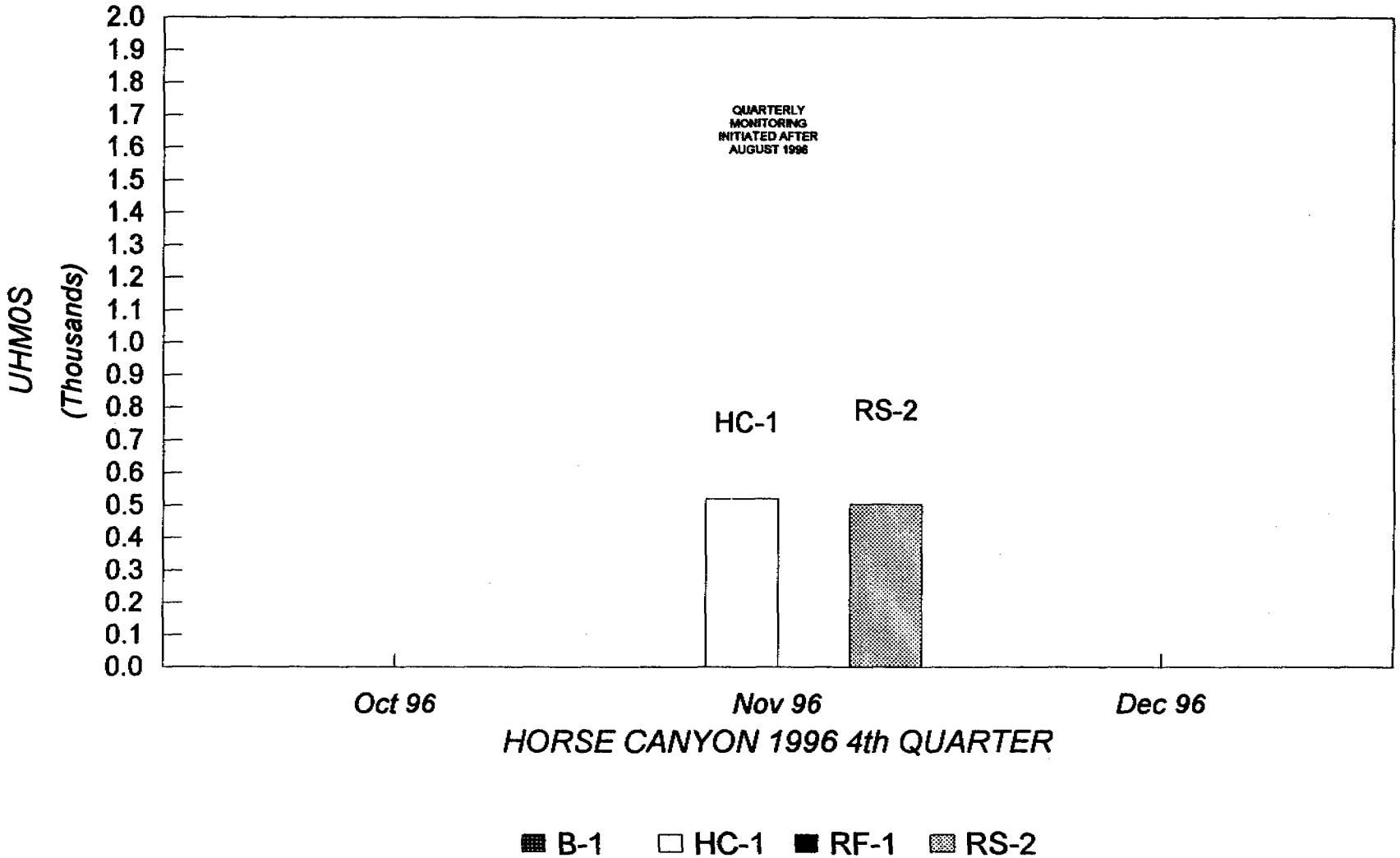
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
mg/L
(Thousands)
QUARTERLY MONITORING INITIATED AFTER AUGUST 1996
HC-1
RS-2
Oct 96
Nov 96
Dec 96
HORSE CANYON 1996 4th QUARTER
B-1
HC-1
RF-1
RS-2

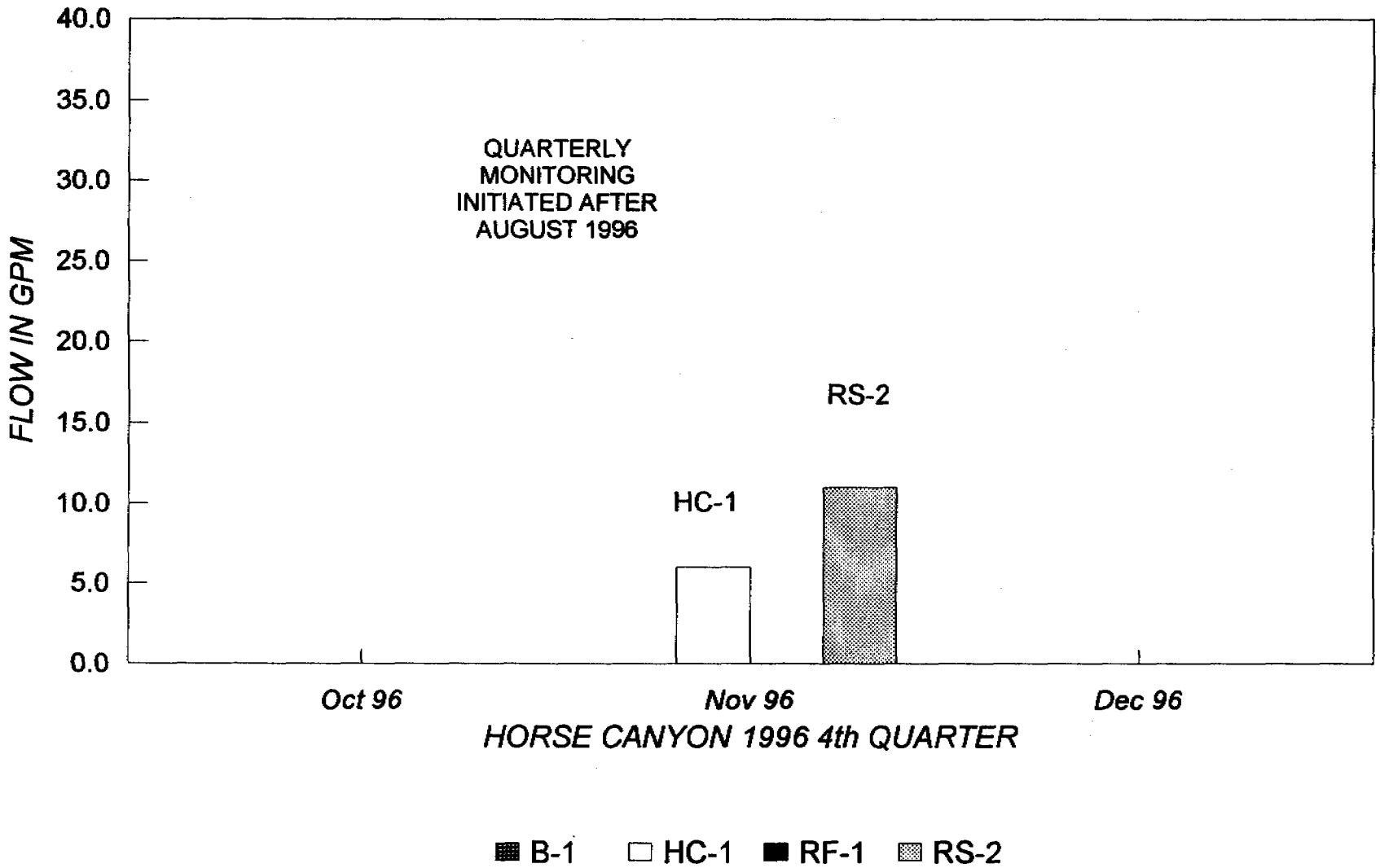
IPA

CONDUCTIVITY



IPA

FLOW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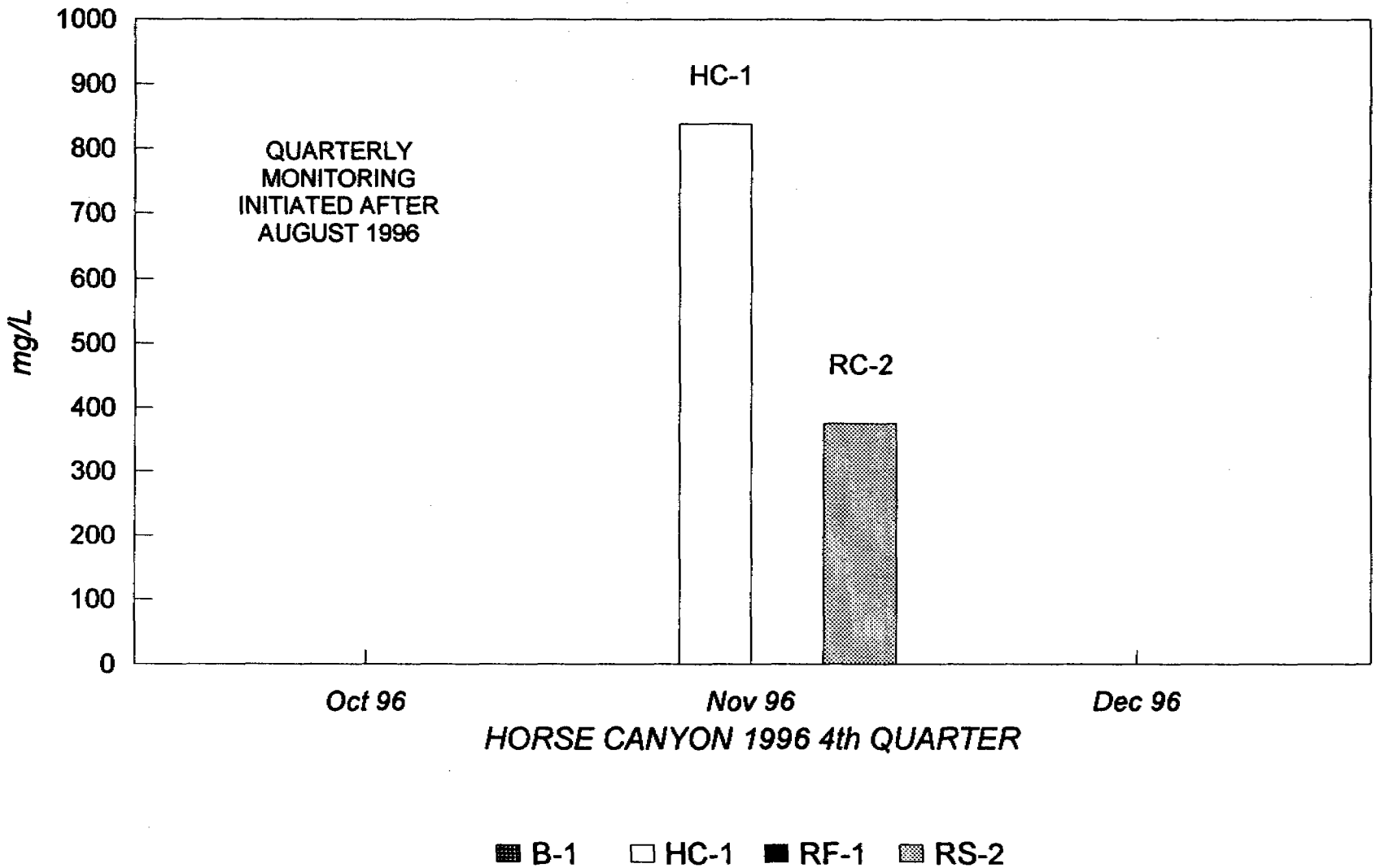
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
FLOW IN GPM
QUARTERLY MONITORING INITIATED AFTER AUGUST 1996
HC-1
RS-2
Oct 96
Nov 96
Dec 96
HORSE CANYON 1996 4th QUARTER
B-1
HC-1
RF-1
RS-2

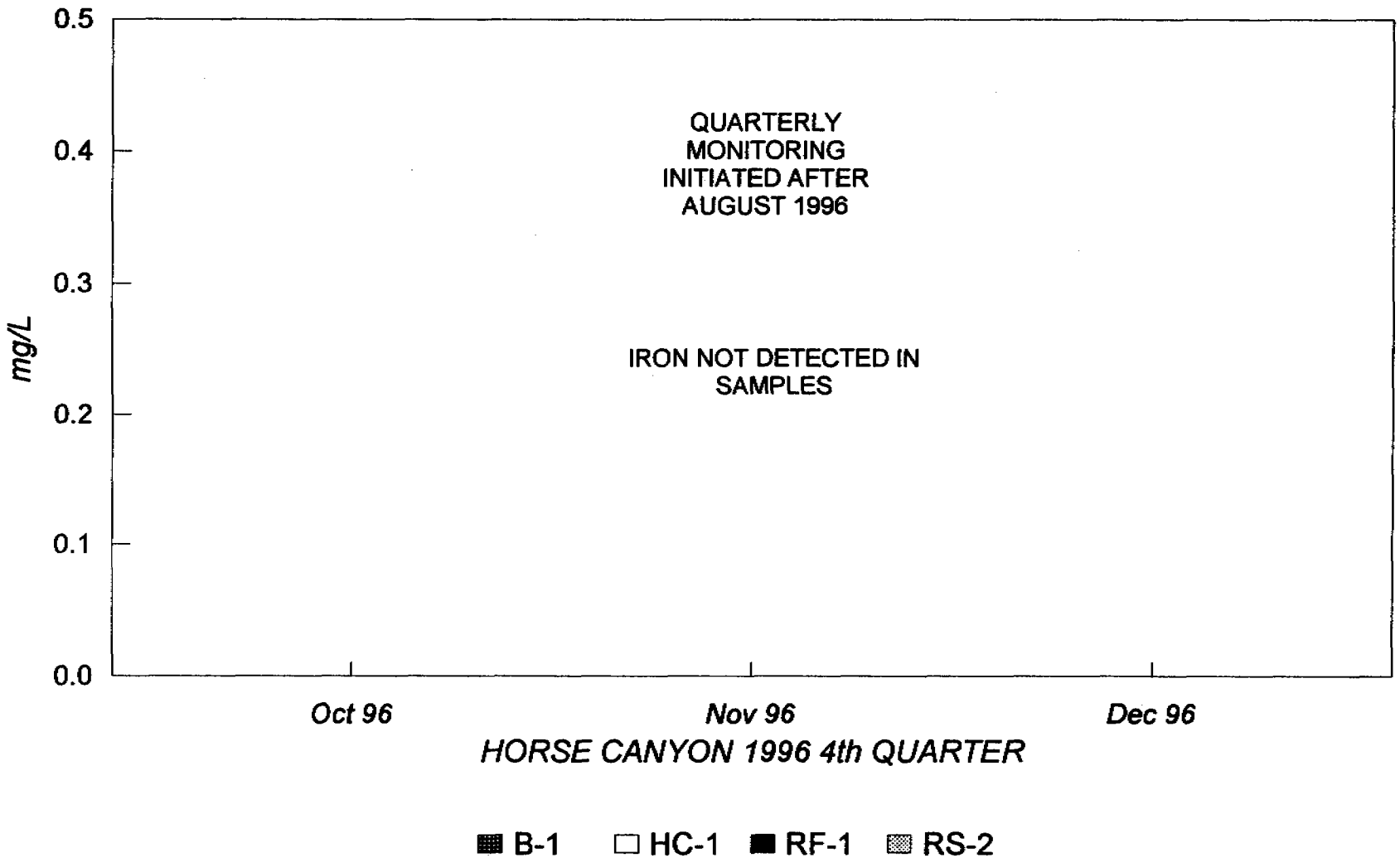
IPA

HARDNESS



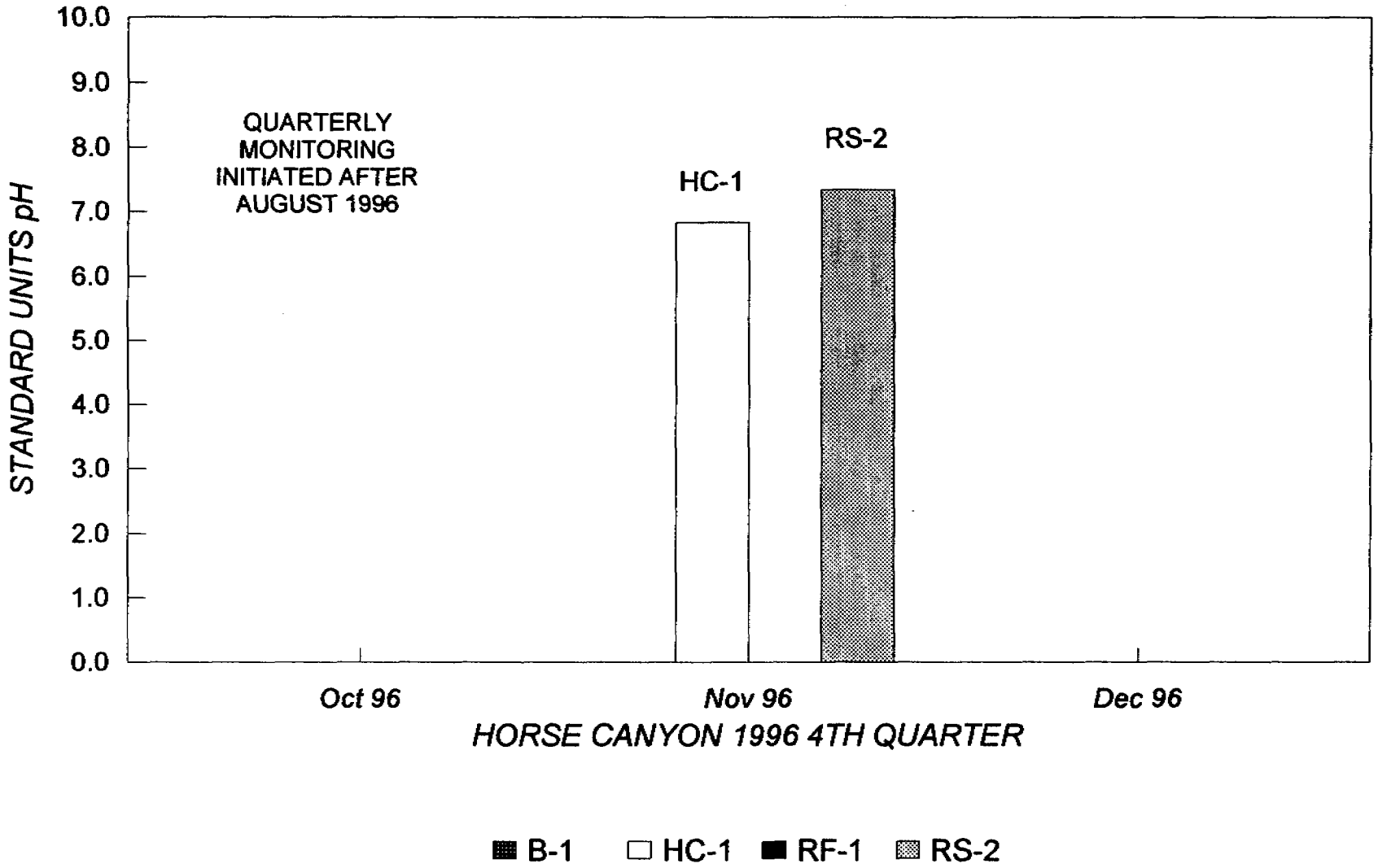
IPA

TOTAL IRON



IPA

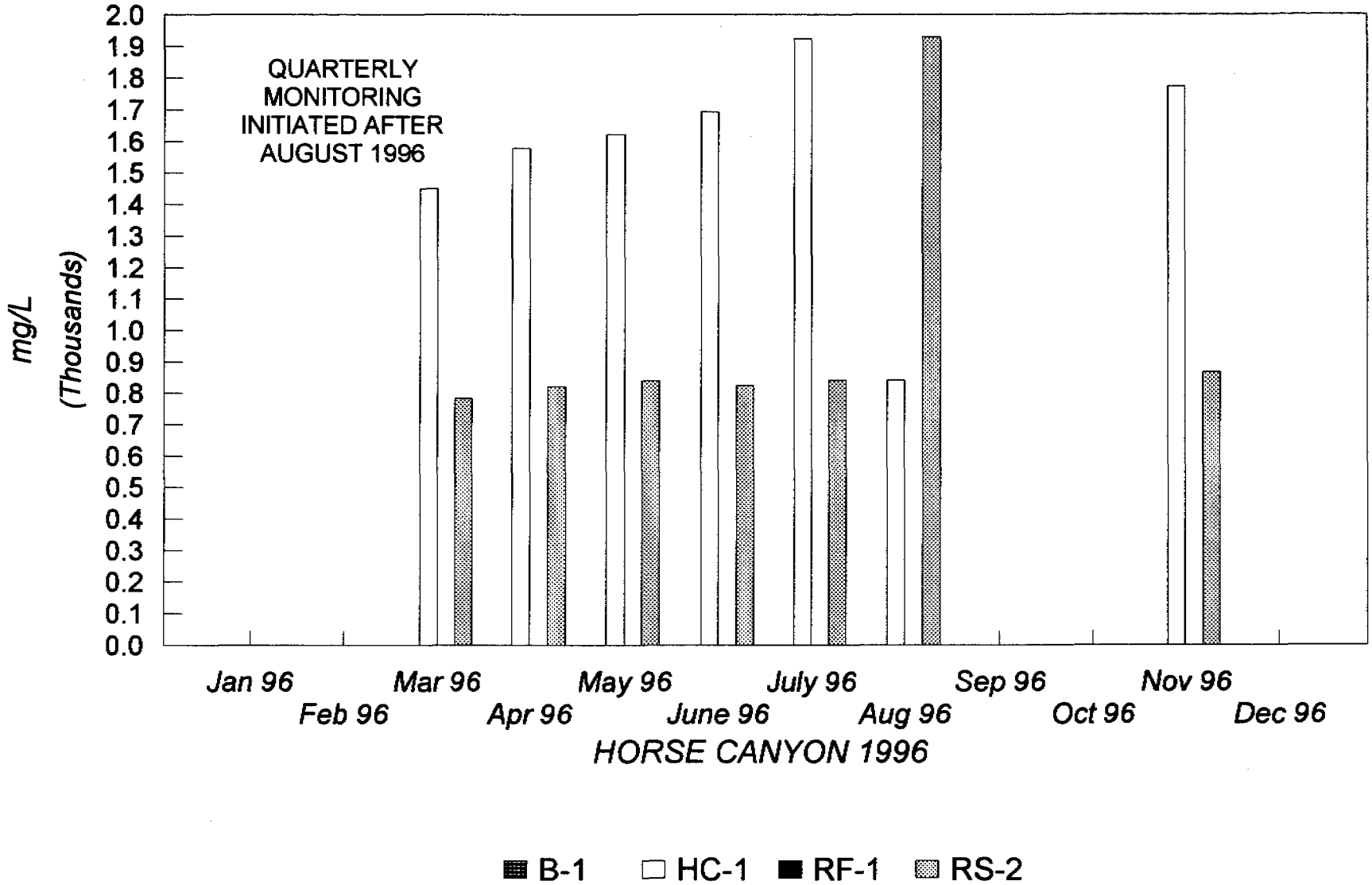
pH


10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
STANDARD UNITS pH
QUARTERLY MONITORING INITIATED AFTER AUGUST 1996
HC-1
RS-2
Oct 96
Nov 96
Dec 96
HORSE CANYON 1996 4TH QUARTER
B-1
HC-1
RF-1
RS-2

GRAPHS OF COMBINED 1996 FIRST, SECOND,
THIRD, AND FOURTH QUARTER RESULTS

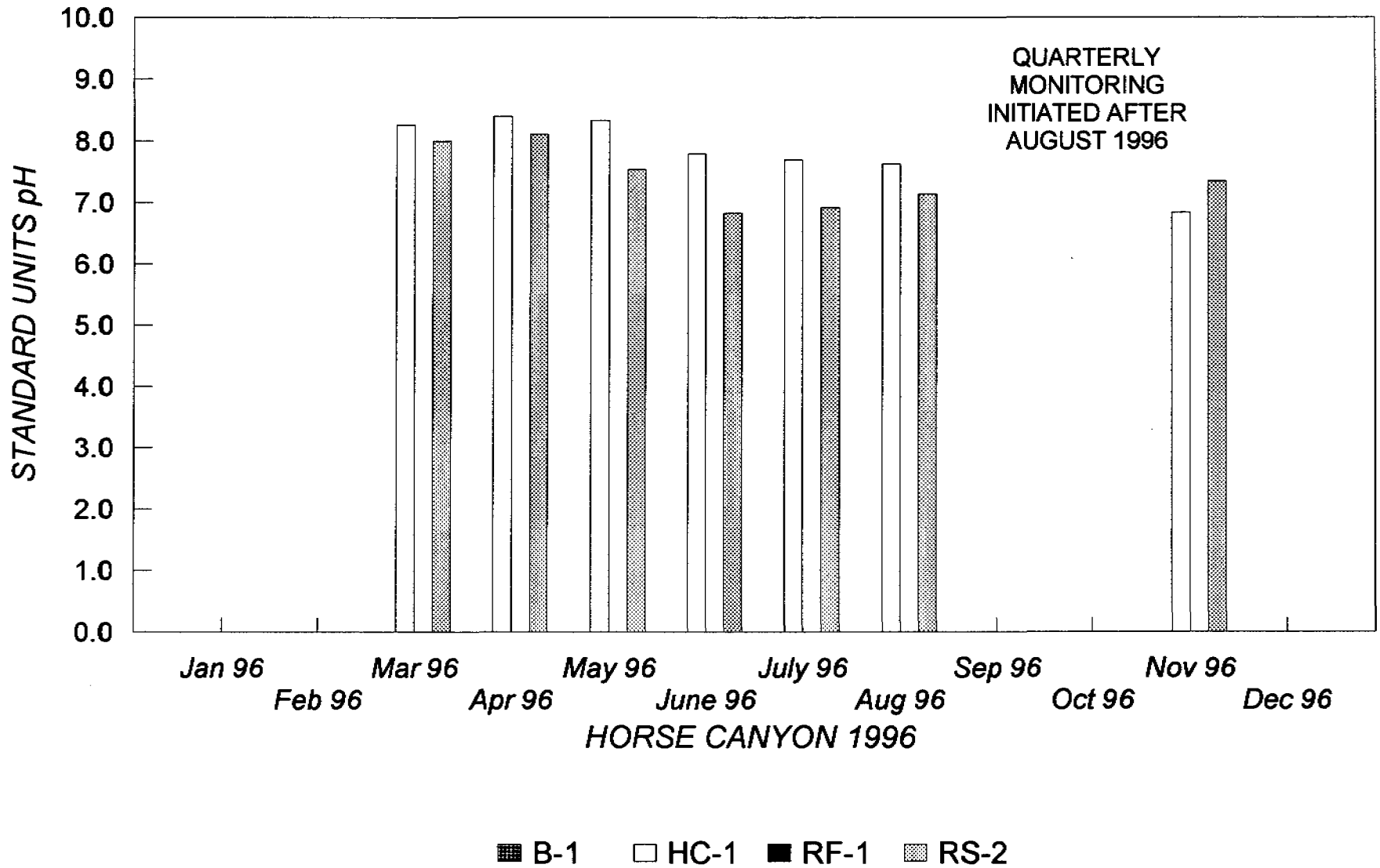
IPA

TDS


QUARTERLY MONITORING INITIATED AFTER AUGUST 1996
mg/L
(Thousands)
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Jan 96
Feb 96
Mar 96
Apr 96
May 96
June 96
July 96
Aug 96
Sep 96
Oct 96
Nov 96
Dec 96
HORSE CANYON 1996
B-1
HC-1
RF-1
RS-2

IPA

pH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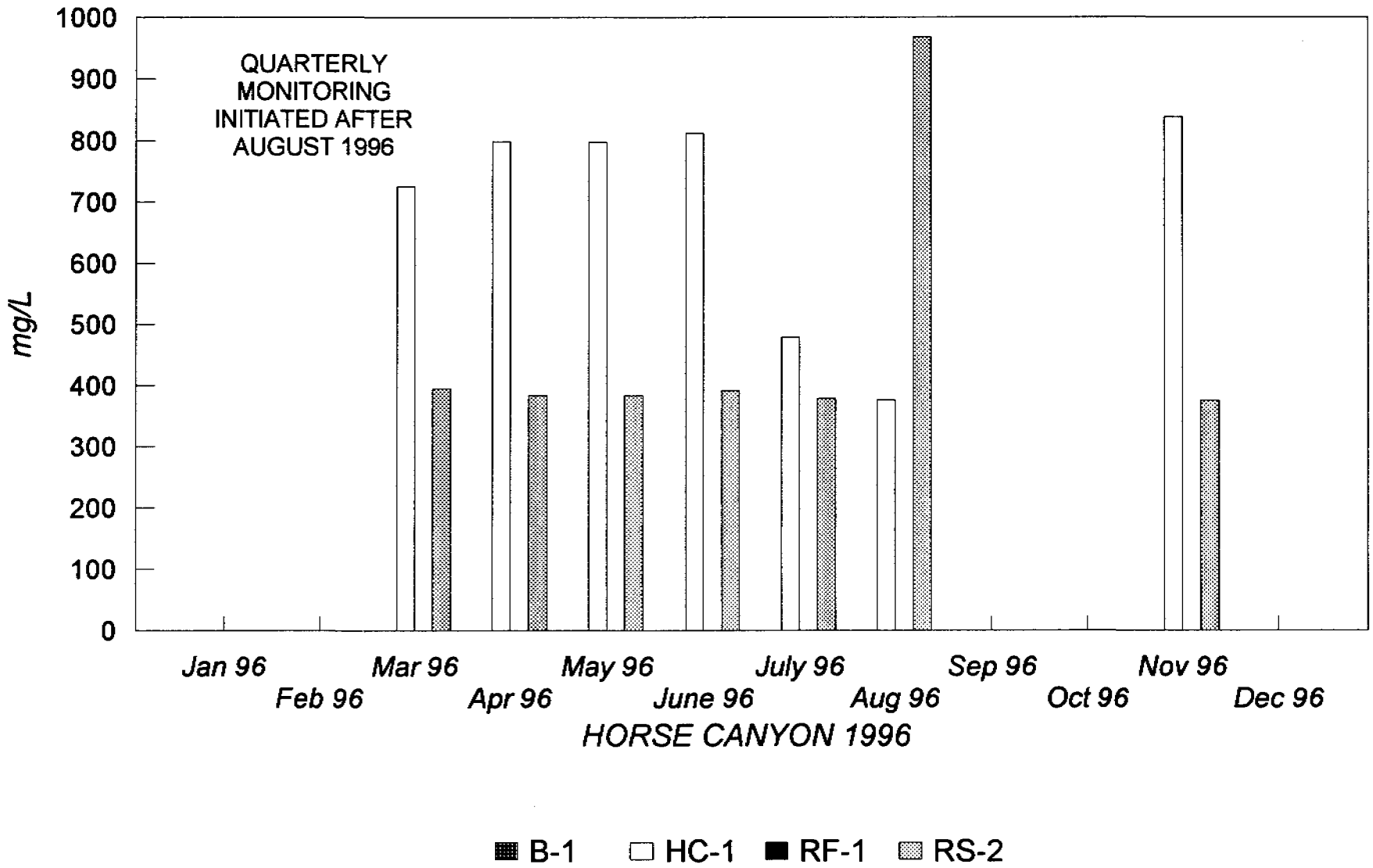
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
STANDARD UNITS pH
QUARTERLY MONITORING INITIATED AFTER AUGUST 1996
Jan 96
Feb 96
Mar 96
Apr 96
May 96
June 96
July 96
Aug 96
Sep 96
Oct 96
Nov 96
Dec 96
HORSE CANYON 1996
B-1
HC-1
RF-1
RS-2

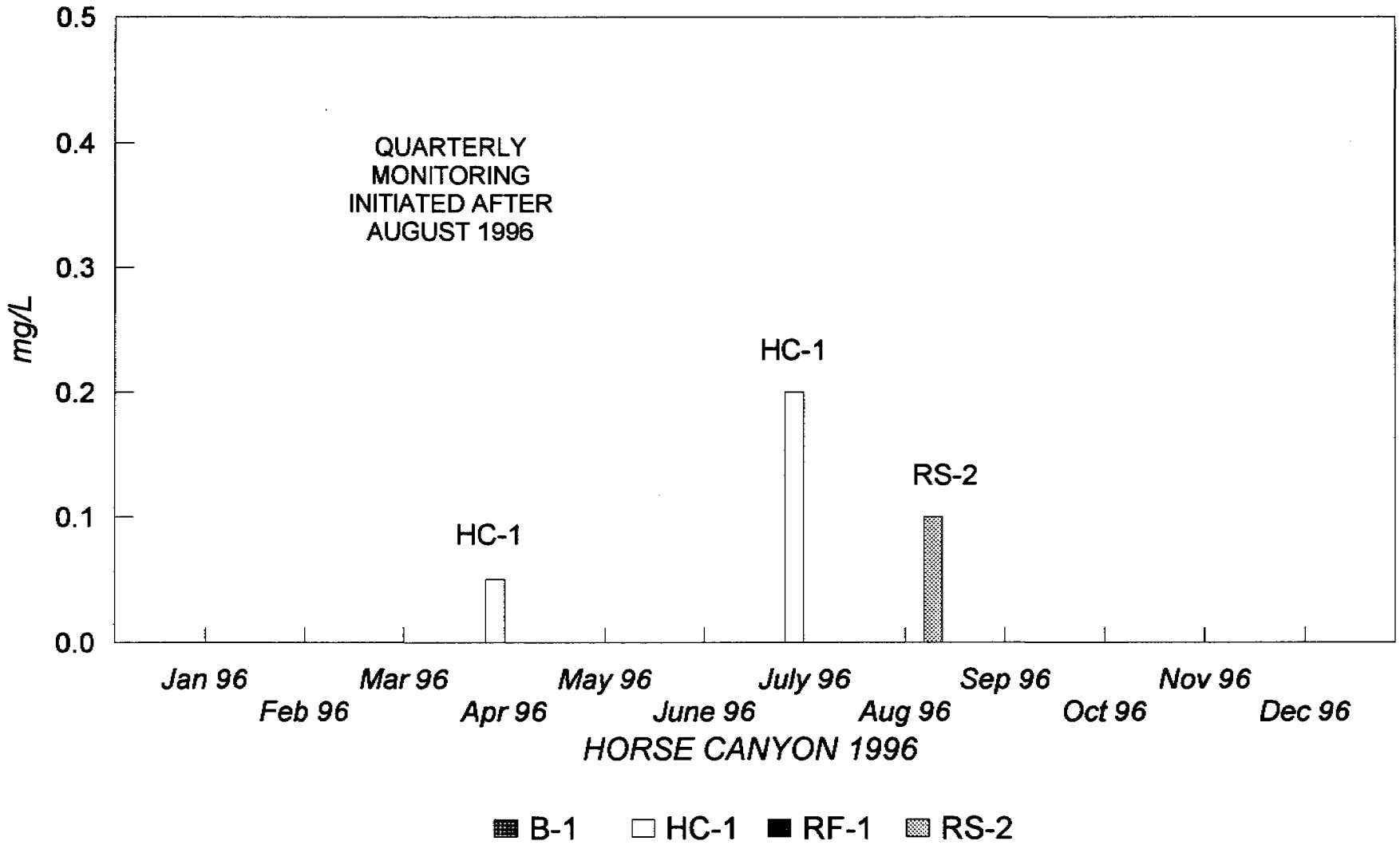
IPA

HARDNESS



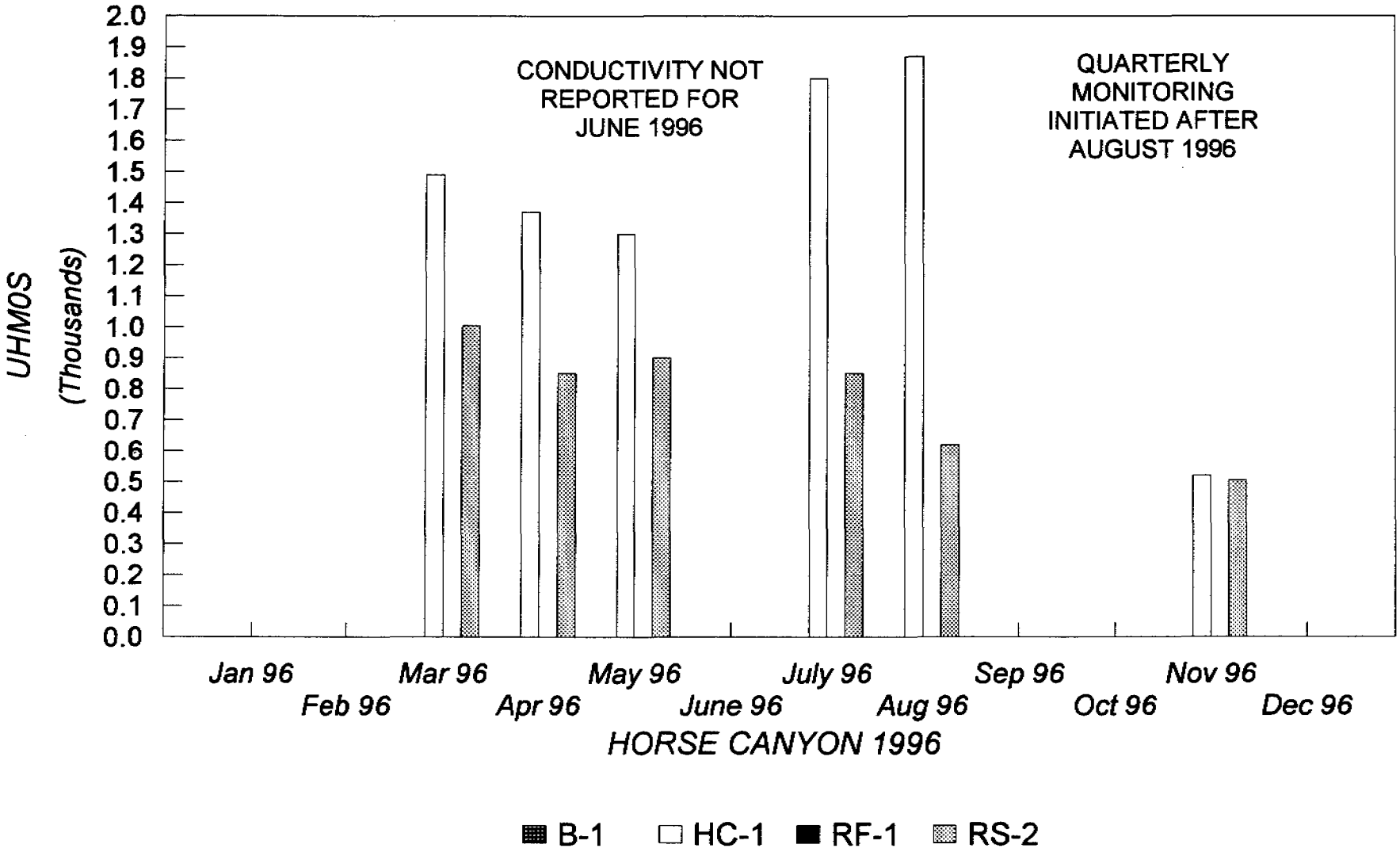
IPA

TOTAL IRON



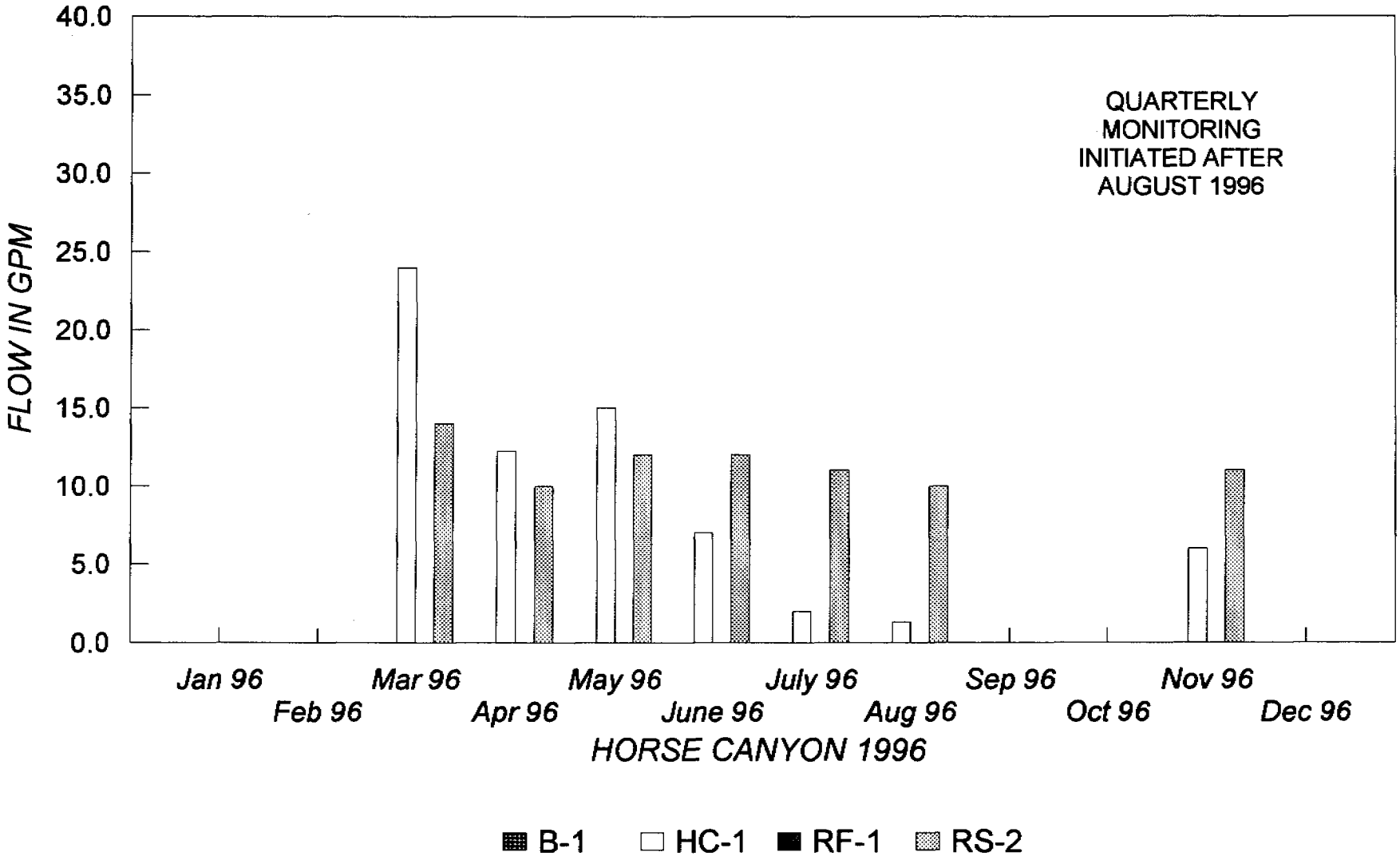
IPA

CONDUCTIVITY



IPA

FLOW


40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
FLOW IN GPM
QUARTERLY MONITORING INITIATED AFTER AUGUST 1996
Jan 96
Feb 96
Mar 96
Apr 96
May 96
June 96
July 96
Aug 96
Sep 96
Oct 96
Nov 96
Dec 96
HORSE CANYON 1996
B-1
HC-1
RF-1
RS-2

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FAX: (801) 653-2436

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: RS-12
Rec'd 1500 hr.
Sampled 1640 hr.

FIELD MEASUREMENTS

pH	7.70
DO	5
Flow	10 GPM
Conductivity	450
Turbidity	Clear
Temperature	10.0°C

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

Analysis report no. 59-17080

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	542	5	mg/l	as HCO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Total	444	5	mg/l	as $CaCO_3$	EPA 310.1	04-01-1997 1100 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-04-1997 1245 MK
Anions	14.7	----	meq/l		---------	04-08-1997 0815 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	0.3	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	44	1	mg/l		EPA 215.1	04-04-1997 1130 MK
Cations	14.4	----	meq/l		---------	04-08-1997 0815 RJ
Chloride	17	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	0.52	0.01	mg/l		SM4500-F-C	04-24-1997 1130 RJ
Hardness, Total	382	----	mg/l	as $CaCO_3$	SM2340-B	04-08-1997 0815 RJ
Iron, Total	<0.1	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	66	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 Scott

Huntington Laboratory

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FAX: (801) 653-2436

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: RS-~~1~~2
Rec'd 1500 hr.
Sampled 1640 hr.

FIELD MEASUREMENTS	
pH	7.70
DO	5
Flow	10 GPM
Conductivity	450
Turbidity	Clear
Temperature	10.0°C

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

Analysis report no. 59-17080

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	04-07-1997 0800 SW
Nitrogen, Nitrate-Nitrite	0.2	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	0.02	0.01	mg/l as P	SM4500-P-E	03-31-1997 0830 JC
Potassium, Dissolved	1	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	156	2	mg/l	EPA 273.1	04-04-1997 1045 MK
Solids, Total Dissolved	820	10	mg/l	EPA 160.1	04-03-1997 0700 JC
Sulfate	257	50	mg/l	EPA 375.4	04-02-1997 0700 SW
Sulfide	<1.0	1.0	mg/l	EPA 376.1	04-02-1997 1015 RJ
Zinc, Dissolved	0.04	0.01	mg/l	EPA 289.1	04-04-1997 0745 MK
Cation/Anion Balance	0.9	----	%		04-08-1997 0815 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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TERMS AND CONDITIONS ON REVERSE

MB 8-22-97

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1 RS-2 Redden Spring

Sample Date 6-26-97

Sample Time 1010

Type: Spring X Stream _____ UPDES _____

Sample Collection Point _____

Appearance of Water: Clear X Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) 12 GPM

Water Temperature (C) 10°C

pH 6.30

Specific Conductivity 850

Dissolved Oxygen 5

Comments: AREA AROUND SPRING DISCHARGE HEAVILY DISTURBED BY CATTLE - HAVE NEVER PREVIOUSLY OBSERVED DAMAGE TO THIS EXTE

Sampled by: Leo R. Clark

Laboratory CTEE, HUNTINGTON Date Shipped 6-26-97

Sample ID# _____ Date Results Received _____

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

NB 5-24-99

PERMIT # ACT/007/013

Station # HC-2

Sample Date N/A 6-26-97 - No Flow

Sample Time 0855

Type: Spring _____ Stream No Flow UPDES _____

Sample Collection Point _____

Appearance of Water: Clear ____ Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) _____

Water Temperature (C) _____

pH _____

Specific Conductivity _____

Dissolved Oxygen _____

Comments: _____

Sampled by: Leo R. Clark (Paul) 435-888-2432

Laboratory ~~GT&L~~ N/A Date Shipped_____

Sample ID# _____ Date Results Received _____

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FAX: (801) 653-2436

August 6, 1997

MB 8-22-97

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

Sample identification by
LADWP

ID: RS-~~1~~2

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1010 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	6.3
DO	5
Flow	12 gpm
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17412

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	549	5	mg/l	as HCO_3	SM2320-B	07-08-1997 0800 SC
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	07-08-1997 0800 SC
Alkalinity, Total	450	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	15.8	----	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	0.2	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	44	1	mg/l		EPA 215.1	08-05-1997 1200 MK
Cations	13.7	----	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	0.37	0.01	mg/l		SM4500-F-C	07-24-1997 0800 RJ
Hardness, Total	361	----	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	61	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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MB 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: RS-~~1~~ 2

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1010 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	6.3
DO	5
Flow	12 gpm
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17412

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	0.3	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	06-27-1997 0730 RJ
Potassium, Dissolved	1	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	149	2	mg/l	EPA 273.1	08-05-1997 1130 MK
Solids, Total Dissolved	870	10	mg/l	EPA 160.1	07-02-1997 0700 JC
Sulfate	303	250	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	-7.0	----	%		08-05-1997 1530 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

4-1-98

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-X2 REDDEN SPRING TS

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

Sample Time " " " " " " " "

Type: Spring _____ Stream _____ UPDES _____

Sample Collection Point _____

Appearance of Water: Clear ____ Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) _____

Water Temperature (C) _____

pH _____

Specific Conductivity _____

Dissolved Oxygen _____

Comments: _____

_____

Sampled by: _____

Laboratory _____ Date Shipped_____

Sample ID# _____ Date Results Received _____

007/013

1998 THIRD QUARTER HYDROLOGIC REPORT

HORSE CANYON MINE

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

QC 12-23-98

WATER MONITORING FORM

PERMIT # ACT/007/013

12/18/98

Station # HC-1

Sample Date 9-25-98

Sample Time 0900

Type: Spring _____ Stream X UPDES _____

Sample Collection Point APPROX. CARBON-EMERY CO. LINE - END OF ROAD

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

Flow/Depth (gpm) 8 GPM

Water Temperature (C) 12° C

pH 7.38

Specific Conductivity 950

Dissolved Oxygen 3

Comments: EVIDENCE OF CATTLE MOVEING OR GRAZING THIS SEASON

Sampled by: L.P. CLARK

Laboratory CTFE - HUNTINGTON, UT Date Shipped 9-25-98

Sample ID# HC-1 Date Results Received _____

COMMERCIAL TESTING & ENGINEERING CO.

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QC 12-28-98

12/18/98

November 11, 1998

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

Sample identification by

HC-1
Rec'd 1440 hr.
Sampled 0900 hr.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled September 25, 1998

Date received September 25, 1998.

FIELD MEASUREMENTS

pH	7.38
DO	3
Flow	8 GPM
Conductivity	950
Temperature	12°C

NOTE: CHLORIDE & SULFATE EXP. WHEN ANALYZED.
NOTE:DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19155

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	522	5	mg/l	as HCO_3	SM2320-B	10-02-1998 0806	DL
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	10-02-1998 0806	DL
Alkalinity, Total	428	5	mg/l	as $CaCO_3$	EPA 310.1	10-02-1998 0806	DL
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	11-03-1998 1530	MK
Anions	26.0	----	meq/l		---------	11-06-1998 0620	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-06-1998 1415	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	11-03-1998 1600	MK
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	10-07-1998 0645	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	11-03-1998 0900	MK
Calcium, Dissolved	94	1	mg/l		EPA 215.1	11-03-1998 1400	MK
Cations	24.4	----	meq/l		---------	11-06-1998 0620	RJ
Chloride	34	1	mg/l		EPA 300.0	10-27-1998 0900	SC
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	11-03-1998 1545	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	11-03-1998 0730	MK
Fluoride	0.06	0.01	mg/l		EPA 300.0	10-23-1998 0917	SC
Hardness, Total	754	----	mg/l	as $CaCO_3$	SM2340-B	11-06-1998 0620	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-03-1998 1000	MK
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	11-03-1998 1000	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	11-03-1998 0915	MK
Magnesium, Dissolved	126	2	mg/l		EPA 242.1	11-03-1998 1430	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	11-03-1998 1200	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	10-14-1998 0700	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	11-03-1998 1630	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	11-03-1998 0815	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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QC 11-9-98

12/18/98 JB

November 11, 1998

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 25, 1998

Date received September 25, 1998

Sample identification by

HC-1
Rec'd 1440 hr.
Sampled 0900 hr.

FIELD MEASUREMENTS

pH	7.38
DO	3
Flow	8 GPM
Conductivity	950
Temperature	12°C

NOTE: CHLORIDE & SULFATE EXP. WHEN ANALYZED.
NOTE:DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19155

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-14-1998 1000 SC
Nitrogen, Nitrate-Nitrite	0.1	0.1	mg/l as N	EPA 300.0	10-23-1998 0917 SC
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	10-23-1998 0917 SC
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	10-23-1998 0917 SC
Potassium, Dissolved	7	1	mg/l	EPA 258.1	11-03-1998 1245 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-06-1998 0945 MK
Sodium, Dissolved	210	2	mg/l	EPA 273.1	11-03-1998 1300 MK
Solids, Total Dissolved	172	10	mg/l	EPA 160.1	10-01-1998 0700 DL
Sulfate	792	1	mg/l	EPA 300.0	10-27-1998 0900 SC
Sulfide	<1.0	1.0	mg/l	EPA 376.1	10-02-1998 0800 SC
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	11-03-1998 0745 MK
Cation/Anion Balance	-3.2	----	%		11-06-1998 0620 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMBER ACIL

IPA
HORSE CANYON MINE
ACT/007/013

1998 WATER MONITORING DATA

SAMPLE LOCATION: HC - 1 (Horse Canyon Wash)

Parameter	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow	(gpm)			*			30			8			
pH	standard						10.88			7.38			
Temp	o C						15			12			
Conductivity	umhos/cm						1100			950			
Dissolved Oxygen	ppm						6			3			
Aluminum	mg/l						<1			<1			
Arsenic	mg/l						<0.01			<0.01			
Barium	mg/l						<1			<1			
Bicarbonate	mg/l						536			522			
Boron	mg/l						0.4			0.4			
Cadmium	mg/l						<0.01			<0.01			
Calcium	mg/l						73			94			
Carbonate	mg/l						<5			<5			
Chloride	mg/l						26			34			
Chromium	mg/l						<0.1			<0.1			
Copper	mg/l						<0.1			<0.1			
Fluoride	mg/l						0.07			0.06			
Hardness	mg/l						635			754			
Iron Total	mg/l						0.2			<0.1			
Lead	mg/l						<0.1			<0.1			
Magnesium	mg/l						110			126			
Manganese	mg/l						<0.1			<0.1			
Mercury	mg/l						<0.2			<0.2			
Molybdenum	mg/l						<0.1			<0.1			
Nickel	mg/l						<0.1			<0.1			
Ammonia	mg/l						<0.5			<0.5			
Nitrate	mg/l						<0.1			0.1			
Nitrite	mg/l						<0.01			<0.03			
Phosphate	mg/l						<0.01			<0.05			
Potassium	mg/l						4			7			
Selenium	mg/l						<0.01			<0.01			
Sodium	mg/l						192			210			
Sulfate	mg/l						598			792			
Sulfide	mg/l						<1.0			<1.0			
TDS	mg/l						1370			172			
Zinc	mg/l						<0.01			<0.01			

* Inaccessible

GCB 12-23-98

12/18/98 fb

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-2 (B-1)

Sample Date N/A No Flow 9-25-98

Sample Time OBSERVED 1040

Type: Spring _____ Stream ✓ UPDES _____

Sample Collection Point _____

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

Flow/Depth (gpm) _____

Water Temperature (C) _____

pH _____

Specific Conductivity _____

Dissolved Oxygen _____

Comments: CHECKED FOR FLOW – NONE PRESENT – EVIDENCE OF SMALL THUNDERSTORM FLOW THIS SEASON

Sampled by: L. P. CLARK

Laboratory N/A Date Shipped N/A

Sample ID# N/A Date Results Received _____

IPA
HORSE CANYON MINE
ACT/007/013

1998 WATER MONITORING DATA

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

Parameter	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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												

* Inaccessible

QC MB 12-28-98

12/18/98 MB

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF-1

Sample Date 9-25-98

Sample Time 0945

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

Water Temperature (C) 11°C

pH 7.55

Specific Conductivity 980

Dissolved Oxygen 3+

Comments: WATER CLEAR ALTHOUGH THERE HAS BEEN RECENT CATTLE DISTURBANCE THERE HAS BEEN FLOW ACROSS ROAD SINCE SPRING THAW

Sampled by: L. P. CLARK

Laboratory CTEE HUNTINGTON, UT Date Shipped_____

Sample ID# RF-1 Date Results Received _____

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QC 12-28-98

12/18/98 JB

November 12, 1998

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 25, 1998

Date received September 25, 1998

Sample identification by

RF-1
Rec'd 1440 hr.
Sampled 0945 hr.
FIELD MEASUREMENTS

pH	7.55
DO	3+
Flow	5 GPM
Conductivity	980
Temperature	11°C
Turbidity	Clear

NOTE: CHLORIDE & SULFATE EXPIRED WHEN ANALYZED.
NOTE:DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19156

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	572	5	mg/l	as HCO_3	SM2320-B	10-02-1998 0806 DL
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	10-02-1998 0806 DL
Alkalinity, Total	469	5	mg/l	as $CaCO_3$	EPA 310.1	10-02-1998 0806 DL
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	11-03-1998 1530 MK
Anions	15.7	----	meq/l		---------	11-06-1998 0620 RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-06-1998 1415 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	11-03-1998 1600 MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-07-1998 0645 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	11-03-1998 0900 MK
Calcium, Dissolved	46	1	mg/l		EPA 215.1	11-03-1998 1400 MK
Cations	14.3	----	meq/l		---------	11-06-1998 0620 RJ
Chloride	18	1	mg/l		EPA 300.0	10-27-1998 0900 SC
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	11-03-1998 1545 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	11-03-1998 0730 MK
Fluoride	0.08	0.01	mg/l		EPA 300.0	10-23-1998 0917 SC
Hardness, Total	387	----	mg/l	as $CaCO_3$	SM2340-B	11-06-1998 0620 RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-03-1998 1000 MK
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	11-03-1998 1000 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	11-03-1998 0915 MK
Magnesium, Dissolved	66	1	mg/l		EPA 242.1	11-03-1998 1430 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	11-03-1998 1200 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	10-14-1998 0700 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	11-03-1998 1630 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	11-03-1998 0815 MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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November 12, 1998

12/18/98

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 25, 1998

Date received September 25, 1998

Sample identification by

RF-1
Rec'd 1440 hr.
Sampled 0945 hr.
FIELD MEASUREMENTS

pH	7.55
DO	3+
Flow	5 GPM
Conductivity	980
Temperature	11°C
Turbidity	Clear

NOTE: CHLORIDE & SULFATE EXPIRED WHEN ANALYZED.
NOTE:DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19156

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-14-1998 1000	SC
Nitrogen, Nitrate-Nitrite	0.3	0.1	mg/l as N	EPA 300.0	10-23-1998 0917	SC
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	10-23-1998 0917	SC
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	10-23-1998 0917	SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	11-03-1998 1245	MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-06-1998 0945	MK
Sodium, Dissolved	151	2	mg/l	EPA 273.1	11-03-1998 1300	MK
Solids, Total Dissolved	863	10	mg/l	EPA 160.1	10-01-1998 0700	DL
Sulfate	279	1	mg/l	EPA 300.0	10-27-1998 0900	SC
Sulfide	<1.0	1.0	mg/l	EPA 376.1	10-02-1998 0800	SC
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	11-03-1998 0745	MK
Cation/Anion Balance	-4.5	----	%		11-06-1998 0620	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

MEMBER ACIL

IPA
HORSE CANYON MINE
ACT/007/013

1998 WATER MONITORING DATA

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

Parameter	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow	(gpm)			9			0			5			
pH	standard			8.65						7.55			
Temp	o C			10						11			
Conductivity	umhos/cm			420						980			
Dissolved Oxygen	ppm			4						3			
Aluminum	mg/l			<1						<1			
Arsenic	mg/l			<0.01						<0.01			
Barium	mg/l			<1						<1			
Bicarbonate	mg/l									572			
Boron	mg/l			0.3						0.3			
Cadmium	mg/l			<0.01						<0.01			
Calcium	mg/l			35						46			
Carbonate	mg/l									<5			
Chloride	mg/l			16						18			
Chromium	mg/l			<0.1						<0.1			
Copper	mg/l			<0.1						<0.1			
Fluoride	mg/l			<0.1						0.08			
Hardness	mg/l			376						387			
Iron Total	mg/l			0.3						<0.1			
Lead	mg/l			<0.1						<0.1			
Magnesium	mg/l			64						66			
Manganese	mg/l			<0.1						<0.1			
Mercury	mg/l			<0.2						<0.2			
Molybdenum	mg/l			<0.1						<0.1			
Nickel	mg/l			<0.1						<0.1			
Ammonia	mg/l			<0.5						<0.5			
Nitrate	mg/l			<0.1						0.3			
Nitrite	mg/l			<0.01						<0.03			
Phosphate	mg/l			0.02						<0.05			
Potassium	mg/l			3						2			
Selenium	mg/l			<0.01						<0.01			
Sodium	mg/l			155						151			
Sulfate	mg/l			255						279			
Sulfide	mg/l			<1.0						<1.0			
TDS	mg/l			813						863			
Zinc	mg/l			<0.01						0.02			

* Inaccessible

12/18/98

QCB 12-28-98

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # ~~RS-1~~ RS-2

Sample Date 9-25-98

Sample Time ~~104~~ 1015

Type: Spring X Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 12 GPM

Water Temperature (C) 10°C

pH 7.45

Specific Conductivity 770

Dissolved Oxygen 4

Comments: CATTLE NOT USING CANYON THIS SEASON

Sampled by: L. P. CLARK

Laboratory CT&E, HUNTINGTON

Date Shipped 9-25-98

Sample ID# RS-1

Date Results Received _____

COMMERCIAL TESTING & ENGINEERING CO.

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QC MB 12/18 12/24

12/18/98 JB

November 11, 1998

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 25, 1998

Date received September 25, 1998

Sample identification by

RF. ~~RS-1~~ RS-2

Rec'd 1440 hr.
Sampled 1015 hr.
FIELD MEASUREMENTS

pH	7.45
DO	4
Flow	12 GPM
Conductivity	770
Temperature	10°C
Turbidity	Clear

NOTE:DISSOLVED METALS FILTERED AT LAB.
NOTE: CHLORIDE & SULFATE EXPIRED WHEN ANALYZED.

Analysis report no. 59-19157

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	565	5	mg/l	as HCO_3	SM2320-B	10-02-1998 0806 DL
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	10-02-1998 0806 DL
Alkalinity, Total	463	5	mg/l	as $CaCO_3$	EPA 310.1	10-02-1998 0806 DL
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	11-03-1998 1530 MK
Anions	15.1	----	meq/l		---------	11-10-1998 1100 RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-06-1998 1415 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	11-03-1998 1600 MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-07-1998 0645 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	11-03-1998 0900 MK
Calcium, Dissolved	34	1	mg/l		EPA 215.1	11-03-1998 1400 MK
Cations	14.4	----	meq/l		---------	11-10-1998 1100 RJ
Chloride	18	1	mg/l		EPA 300.0	10-23-1998 0900 SC
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	11-03-1998 1545 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	11-03-1998 0730 MK
Fluoride	0.08	0.01	mg/l		EPA 300.0	10-23-1998 0917 SC
Hardness, Total	357	----	mg/l	as $CaCO_3$	SM2340-B	11-10-1998 1100 RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-03-1998 1000 MK
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	11-03-1998 1000 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	11-03-1998 0915 MK
Magnesium, Dissolved	66	1	mg/l		EPA 242.1	11-03-1998 1430 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	11-03-1998 1200 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	10-13-1998 0700 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	11-03-1998 1630 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	11-03-1998 0815 MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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12/18/98

November 11, 1998

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 25, 1998

Date received September 25, 1998

Sample identification by

~~RS-1~~ RS-2
Rec'd 1440 hr.
Sampled 1015 hr.
FIELD MEASUREMENTS

pH	7.45
DO	4
Flow	12 GPM
Conductivity	770
Temperature	10°C
Turbidity	Clear

NOTE:DISSOLVED METALS FILTERED AT LAB.
NOTE: CHLORIDE & SULFATE EXPIRED WHEN ANALYZED.

Analysis report no. 59-19157

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-14-1998 1000 SC
Nitrogen, Nitrate-Nitrite	0.3	0.1	mg/l as N	EPA 300.0	10-23-1998 0917 SC
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	10-23-1998 0917 SC
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	10-23-1998 0917 SC
Potassium, Dissolved	2	1	mg/l	EPA 258.1	11-03-1998 1245 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-06-1998 0945 MK
Sodium, Dissolved	165	2	mg/l	EPA 273.1	11-03-1998 1300 MK
Solids, Total Dissolved	855	10	mg/l	EPA 160.1	10-01-1998 0700 DL
Sulfate	256	1	mg/l	EPA 300.0	10-23-1998 0900 SC
Sulfide	<1.0	1.0	mg/l	EPA 376.1	10-02-1998 0800 SC
Zinc, Dissolved	0.03	0.01	mg/l	EPA 289.1	11-03-1998 0745 MK
Cation/Anion Balance	-2.5	----	%		11-10-1998 1100 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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IPA
HORSE CANYON MINE
ACT/007/013

1998 WATER MONITORING DATA

SAMPLE LOCATION: RS - 2 (Redden Spring)

Parameter	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow	(gpm)			*			12			12			
pH	standard						9.69			7.45			
Temp	o C						8			10			
Conductivity	umhos/cm						850			770			
Dissolved Oxygen	ppm						4			4			
Aluminum	mg/l						<1			<1			
Arsenic	mg/l						<0.01			<0.01			
Barium	mg/l						<1			<1			
Bicarbonate	mg/l						549			565			
Boron	mg/l						0.3			0.3			
Cadmium	mg/l						<0.01			<0.01			
Calcium	mg/l						45			34			
Carbonate	mg/l						<5			<5			
Chloride	mg/l						14			18			
Chromium	mg/l						<0.1			<0.1			
Copper	mg/l						<0.1			<0.1			
Fluoride	mg/l						0.19			0.08			
Hardness	mg/l						384			357			
Iron Total	mg/l						<0.1			<0.1			
Lead	mg/l						<0.1			<0.1			
Magnesium	mg/l						66			66			
Manganese	mg/l						<0.1			<0.1			
Mercury	mg/l						<0.2			<0.2			
Molybdenum	mg/l						<0.1			<0.1			
Nickel	mg/l						<0.1			<0.1			
Ammonia	mg/l						<0.5			<0.5			
Nitrate	mg/l						<0.1			0.3			
Nitrite	mg/l						<0.01			<0.03			
Phosphate	mg/l						<0.01			<0.05			
Potassium	mg/l						1			2			
Selenium	mg/l						<0.01			<0.01			
Sodium	mg/l						147			165			
Sulfate	mg/l						218			256			
Sulfide	mg/l						<1.0			<1.0			
TDS	mg/l						889			855			
Zinc	mg/l						0.02			0.03			

* Inaccessible

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12-16-97

October 30, 1997

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

Sample identification by
LADWP

ID:RS-2

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

Rec'd 0820 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS

pH	7.56
DO	5
Flow	12 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	9°C

Dissolved metals filtered at lab!

Analysis report no. 59-17825

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	518	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	425	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	27.2	----	meq/l		---------	10-08-1997 0900	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	0.3	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	103	1	mg/l		EPA 215.1	10-07-1997 0030	MK
Cations	24.6	----	meq/l		---------	10-08-1997 0900	RJ
Chloride	29	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	747	----	mg/l	as $CaCO_3$	SM2340-B	10-08-1997 0900	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	119	2	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.

Huntington Laboratory

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12-10-97

October 30, 1997

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

Sample identification by
LADWP

ID:RS-2

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

Rec'd 0820 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS	
pH	7.56
DO	5
Flow	12 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	9°C

Dissolved metals filtered at lab!

Analysis report no. 59-17825

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	<0.1	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
Phosphorous, Ortho-PO_4	0.02	0.01	mg/l as P	SM4500-P-E	09-30-1997 0730	JC
Potassium, Dissolved	7	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	217	2	mg/l	EPA 273.1	10-07-1997 0000	MK
Solids, Total Dissolved	1570	10	mg/l	EPA 160.1	09-29-1997 0700	JC
Sulfate	859	250	mg/l	EPA 375.4	10-07-1997 1210	SC
Sulfide	<1.0	0.1	mg/l	EPA 376.1	10-03-1997 1115	RJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	10-06-1997 0630	MK
Cation/Anion Balance	5.1	----	%		10-08-1997 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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U E I

~~INTERMOUNTAIN POWER AGENCY~~

HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1

Sample Date 3-25-99

Sample Time 1105

Type: Spring X Stream _____ UPDES _____

Sample Collection Point _____

Appearance of Water: Clear X Slightly Cloudy____ Cloudy___ Opaque___

Flow/Depth (gpm) 10 GPM

Water Temperature (C) 9°C

pH 7.84

Specific Conductivity 355

Dissolved Oxygen 5

Comments: APPEARED NORMAL, NO LIVESTOCK USE AS YET

Sampled by: L. P. CLARK

Laboratory CTEE, HUNTINGTON Date Shipped 3-25-99

Sample ID# RS-1 Date Results Received _____

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4-500 DT

April 29, 1999

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

Sample identification by

RS-1

Kind of sample reported to us Water

Rec'd 1340 hr.
Sampled 1105 hr.

Sample taken at

FIELD MEASUREMENTS

pH	7.84
DO	5
Flow	10 GPM
Conductivity	355
Turbidity	CLEAR
Temperature	9.0°C

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19759

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	555	5	mg/l	as HCO_3	SM2320-B	04-06-1999 1000 KP
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	04-06-1999 1000 KP
Alkalinity, Total	455	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	15.3	----	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	14.5	----	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	0.16	0.01	mg/l		SM4500-F-C	03-26-1999 1813 SC
Hardness, Total	389	----	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	66	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 Connier

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

4-5-00

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April 29, 1999

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

Sample identification by

RS-1

Kind of sample reported to us Water

Rec'd 1340 hr.
Sampled 1105 hr.

Sample taken at

FIELD MEASUREMENTS

pH	7.84
DO	5
Flow	10 GPM
Conductivity	355
Turbidity	CLEAR
Temperature	9.0°C

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19759

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
itrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	04-22-1999 0800	SC
Nitrogen, Nitrate-Nitrite	0.5	0.1	mg/l as N	EPA 353.3	03-26-1999 1813	SC
Nitrogen, Nitrite	<0.03	0.01	mg/l as N	EPA 354.1	03-26-1999 1813	SC
Phosphorous, Ortho-PO_4	<0.05	0.01	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	153	2	mg/l	EPA 273.1	04-06-1999 1030	MK
Solids, Total Dissolved	828	10	mg/l	EPA 160.1	03-25-1999 1400	KP
Sulfate	272	1	mg/l	EPA 300.0	03-26-1999 1813	SC
Sulfide	<1.0	0.1	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	-2.6	----	%		04-20-1999 1100	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

MEMBER ACIL

UEI
~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1

Sample Date 6-22-99

Sample Time 09 20

Type: Spring X Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 10 GPM

Water Temperature (C) 10°C

pH 7.95

Specific Conductivity 850

Dissolved Oxygen 5-

Comments: EVERYTHING NORMAL - NO EVIDENCE OF LIVESTOCK

Sampled by: L.P. CLARK

Laboratory CT&E, HUNTINGTON

Date Shipped 6-22-99

Sample ID# RS-1

Date Results Received _____

2-29-00 DT

COMMERCIAL TESTING & ENGINEERING CO.

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July 8, 1999

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

Sample identification by

RS-1

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

Rec'd 1100 hr.
Sampled 0920 hr.

FIELD MEASUREMENTS

pH	7.95
DO	5
Flow	10 GPM
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20054

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	145	1	mg/l	EPA 273.1	07-01-1999 1308	SC
Solids, Total Dissolved	805	10	mg/l	EPA 160.1	06-24-1999 1400	KP
Sulfate	249	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	0.02	0.01	mg/l	EPA 289.1	07-02-1999 0906	SC
Cation/Anion Balance	-2.4	----	%		07-07-1999 0930	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cornil

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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

NCE 1908

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

2-29-00 D

July 8, 1999

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

Sample identification by

RS-1

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

Rec'd 1100 hr.
Sampled 0920 hr.

FIELD MEASUREMENTS

pH	7.95
DO	5
Flow	10 GPM
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20054

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	566	5	mg/l	as HCO_3	EPA 310.1	06-30-1999 0800	KP
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	06-30-1999 0800	KP
Alkalinity, Total	464	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	14.9	----	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	45	1	mg/l		EPA 215.1	07-01-1999 1455	SC
Cations	14.2	----	meq/l		---------	07-07-1999 0930	RJ
Chloride	14	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	0.14	0.05	mg/l		EPA 300.0	06-24-1999 0930	MK
Hardness, Total	392	----	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	<0.1	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	68	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.

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	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
FLD	Lab Code			SPRING	Site Type
				Redden Spring	Site Description

Field Readings Only

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
1	FIELD WATER TEMPERATURE	20		10.00000	Deg. C		
2	PH (FIELD)	20		7.73000	pH units		
4	SP. CONDUCTIVITY (FIELD)	20		700.00000	umhos/cm		
11	FLOW	20		11.00000	GPM		

	Received	Analyzed	By	Reported	Comments
1	/ /	/ /		/ /	
2	/ /	/ /		/ /	
4	/ /	/ /		/ /	
11	/ /	/ /		/ /	

added to Lab data
4/14/2000 KV

Electronic Water Data Report By Individual Sample

59-20612	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
CTE	Lab Code			SPRING	Site Type
Commercial Testing & Engineering				Redden Spring	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		EPA 206.2
	09/24/1999 10/04/1999 9:48 MK	10/14/1999					
33	DISSOLVED BARIUM	4	<	1.00000	ug/l		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		45.00000	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		63.00000	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		1.00000	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		568.00000	mg/l		EPA 310.1
	09/24/1999 09/27/1999 15:00 KP	10/14/1999					
52	CARBONATE AS CO3	4	<	5.00000	mg/l		EPA 310.1
	09/24/1999 09/27/1999 15:00 KP	10/14/1999					
53	CHLORIDE	4	<	1.00000	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 15:09 RJ	10/14/1999					
56	NITRATE AS N	4		0.21000	mg/l	0.030000	EPA 300.0
	09/24/1999 06/24/1999 15:09 RJ	10/14/1999					

Electronic Water Data Report By Individual Sample

59-20612	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
CTE	Lab Code			SPRING	Site Type
Commercial Testing & Engineering				Redden Spring	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 15:09 RJ 10/14/1999						
58 ORTHO. PHOSPHATE	4	<	0.05000	mg/l	0.050000	EPA 300.0
09/24/1999 06/24/1999 15:09 RJ 10/14/1999						
60 SULFATE	4		247.00000	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		465.00000	mg/l		EPA 310.1
09/24/1999 09/27/1999 15:00 KP 10/14/1999						
63 TOTAL HARDNESS AS CACO3	4		372.00000	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		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		14.10000	meq/l		
09/24/1999 10/04/1999 9:00 RJ 10/14/1999						
TOTAL ANIONS	4		14.50000	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						

Ken - Extra Copy for you. BM 12/13/99

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-2

Sample Date N/A - OBSERVED 9-24-99

Sample Time N/A " 1110

Type: Spring ____ Stream X UPDES ____

Sample Collection Point MAIN HORSE CANYON STREAM BED, ½ MILE WEST COUNTY ROAD

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: EVIDENCE OF SMALL FLOWS DUE TO SUMMER STORMS

Sampled by: L. P. CLARK

Laboratory N/A

Date Shipped N/A

Sample ID# N/A

Date Results Received ____

Entered 10/6/99 lpm

UtahAmerican Energy Inc.

HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1

Sample Date 9-24-99

Sample Time 0945

Type: Spring ____ Stream X UPDES ____

Sample Collection Point ON STREAM AT APPROX CARBON EMERY LINE

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

Flow/Depth (gpm) 7 GPM

Water Temperature (C) 14° C

pH 8.13

Specific Conductivity 920

Dissolved Oxygen 4

Comments: MINIMAL CLEAR FLOW; CATTLE IN AREA USEING STREAM

Sampled by: L.P. CLARK

Laboratory CTEE, HUNTINGTON

Date Shipped 9-29-99

Sample ID# HC-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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FAX: (435) 653-2436

October 14, 1999

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

Sample identification by

Entd 10/6/99 JPM

HC-1

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

Rec'd 1330 hr.
Sampled 0945 hr.

FIELD MEASUREMENTS

pH	8.13
DO	4
Flow	7 GPM
Conductivity	920
Turbidity	CLEAR
Temperature	14.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20613

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	529	5	mg/l	as HCO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Total	433	5	mg/l	as $CaCO_3$	EPA 310.1	09-27-1999 1500	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-30-1999 1305	SC
Anions	28.0	----	meq/l		---------	10-04-1999 0900	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-04-1999 0948	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-30-1999 1349	SC
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	10-06-1999 0600	MK
Cadmium, Dissolved	<0.10	0.01	mg/l		EPA 213.1	09-30-1999 0854	SC
Calcium, Dissolved	106	1	mg/l		EPA 215.1	09-29-1999 1349	SC
Cations	25.1	----	meq/l		---------	10-04-1999 0900	RJ
Chloride	28	10	mg/l		EPA 300.0	09-28-1999 0359	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-30-1999 1324	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-30-1999 0805	SC
Fluoride	0.05	0.05	mg/l		EPA 300.0	06-24-1999 1521	RJ
Hardness, Total	804	----	mg/l	as $CaCO_3$	SM2340-B	10-04-1999 0900	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-30-1999 1208	SC
Magnesium, Dissolved	131	2	mg/l		EPA 242.1	09-30-1999 1443	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-29-1999 1010	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-30-1999 1420	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-30-1999 0844	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.
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FAX: (435) 653-2436

October 14, 1999

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

Entered 10/16/99

Sample identification by

HC-1

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

Rec'd 1330 hr.
Sampled 0945 hr.

FIELD MEASUREMENTS

pH	8.13
DO	4
Flow	7 GPM
Conductivity	920
Turbidity	CLEAR
Temperature	14.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20613

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-05-1999 1200	SC
Nitrogen, Nitrate-Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1521	RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1521	RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 1521	RJ
Potassium, Dissolved	7	1	mg/l	EPA 258.1	09-29-1999 1107	SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-04-1999 1218	MK
Sodium, Dissolved	204	2	mg/l	EPA 273.1	09-29-1999 1224	SC
Solids, Total Dissolved	1671	10	mg/l	EPA 160.1	09-28-1999 1200	KP
Sulfate	890	10	mg/l	EPA 300.0	09-28-1999 0359	RJ
Sulfide	<1	1	mg/l	EPA 376.1	09-29-1999 1000	KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	09-30-1999 0833	SC
Cation/Anion Balance	-5.4	----	%		10-04-1999 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

Electronic Water Data Report By Individual Sample

59-20613	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	9:45	Time Sampled	HORSE CANYON	Mine Name
1	Site Id	CLARK	Sampler Name	HC-1	Site Name
CTE	Lab Code			STREAM	Site Type
Commercial Testing & Engineering				L FK Horse Cyn Wash AB mine	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By	Reported		Comments			
24	SULFIDE	20	<	1.00000	mg/l	1.000000	EPA 376.1
	08/24/1999 09/29/1999 10:00 KP	10/14/1999					
31	AMMONIA AS N	20	<	0.50000	mg/l	0.500000	EPA 350.3
	08/24/1999 10/05/1999 12:00 SC	10/14/1999					
32	DISSOLVED ARSENIC	20	<	0.01000	ug/l	0.010000	EPA 206.2
	08/24/1999 10/04/1999 9:48 MK	10/14/1999					
33	DISSOLVED BARIUM	20	<	1.00000	ug/l	1.000000	EPA 208.1
	08/24/1999 09/30/1999 13:49 SC	10/14/1999					
34	DISSOLVED BORON	20		0.40000	ug/l	0.100000	EPA 212.3
	08/24/1999 10/06/1999 6:00 MK	10/14/1999					
35	DISSOLVED CADMIUM	20	<	0.10000	ug/l	0.010000	EPA 213.1
	08/24/1999 09/30/1999 8:54 SC	10/14/1999					
36	DISSOLVED CALCIUM	20		106.00000	mg/l	1.000000	EPA 215.1
	08/24/1999 09/29/1999 13:49 SC	10/14/1999					
37	DISSOLVED CHROMIUM	20	<	0.10000	ug/l	0.100000	EPA 218.1
	08/24/1999 09/30/1999 13:24 SC	10/14/1999					
39	DISSOLVED COPPER	20	<	0.10000	ug/l	0.100000	EPA 220.1
	08/24/1999 09/30/1999 8:05 SC	10/14/1999					
40	DISSOLVED IRON	20	<	0.10000	ug/l	0.100000	EPA 236.1
	08/24/1999 09/29/1999 7:49 SC	10/14/1999					
41	DISSOLVED LEAD	20	<	0.10000	ug/l	0.100000	EPA 239.1
	08/24/1999 09/30/1999 12:08 SC	10/14/1999					
42	DISSOLVED MAGNESIUM	20		131.00000	mg/l	2.000000	EPA 242.1
	08/24/1999 09/30/1999 14:43 SC	10/14/1999					
43	DISSOLVED MANGANESE	20	<	0.10000	ug/l	0.100000	EPA 243.1
	08/24/1999 09/29/1999 10:10 SC	10/14/1999					
44	DISSOLVED NICKEL	20	<	0.10000	ug/l	0.100000	EPA 249.1
	08/24/1999 09/30/1999 8:44 SC	10/14/1999					
45	DISSOLVED POTASSIUM	20		7.00000	mg/l	1.000000	EPA 258.1
	08/24/1999 09/29/1999 11:07 SC	10/14/1999					
46	DISSOLVED SELENIUM	20	<	0.01000	ug/l	0.010000	EPA 270.2
	08/24/1999 10/04/1999 12:18 MK	10/14/1999					
48	DISSOLVED SODIUM	20		204.00000	mg/l	2.000000	EPA 273.1
	08/24/1999 09/29/1999 12:24 SC	10/14/1999					
49	DISSOLVED ZINC	20	<	0.01000	ug/l	0.010000	EPA 289.1
	08/24/1999 09/30/1999 8:33 SC	10/14/1999					
50	BICARBONATE AS HCO3	20		529.00000	mg/l	5.000000	EPA 310.1
	08/24/1999 09/27/1999 15:00 KP	10/14/1999					
52	CARBONATE AS CO3	20	<	5.00000	mg/l	5.000000	EPA 310.1
	08/24/1999 09/27/1999 15:00 KP	10/14/1999					
53	CHLORIDE	20		28.00000	mg/l	10.000000	EPA 300.0
	08/24/1999 09/28/1999 3:59 RJ	10/14/1999					
54	FLUORIDE	20		0.05000	mg/l	0.050000	EPA 300.0
	08/24/1999 ~~08/24/1999~~ 9/24 15:21 RJ	10/14/1999					
56	NITRATE AS N	20	<	0.03000	mg/l	0.030000	EPA 300.0
	08/24/1999 ~~08/24/1999~~ 9/24/1999 15:21 RJ	10/14/1999					

Electronic Water Data Report By Individual Sample

19990924	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	9:45	Time Sampled	HORSE CANYON	Mine Name
1	Site Id	CLARK	Sampler Name	HC-1	Site Name
FLD	Lab Code			STREAM	Site Type
				L FK Horse Cyn Wash AB mine	Site Description

Field Readings Only

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By / Reported / Comments						
1	FIELD WATER TEMPERATURE	20		14.00000	Deg. C		
	/ / / / / /						
2	PH (FIELD)	20		8.13000	pH units		
	/ / / / / /						
3	DISSOLVED OXYGEN (FIELD)	20		4.00000	mg/l		
	/ / / / / /						
4	SP. CONDUCTIVITY (FIELD)	20		920.00000	umhos/cm		
	/ / / / / /						
11	FLOW	20		7.00000	GPM		
	/ / / / / /						

Electronic Water Data Report By Individual Sample

59-20613	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	9:45	Time Sampled	HORSE CANYON	Mine Name
1	Site Id	CLARK	Sampler Name	HC-1	Site Name
CTE	Lab Code			STREAM	Site Type
Commercial Testing & Engineering				L 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	20	<	0.03000	mg/l	0.030000	EPA 300.0
	08/24/1999 09/24/1999 15:21 RJ 10/14/1999						
58	ORTHO. PHOSPHATE	20	<	0.05000	mg/l	0.050000	EPA 300.0
	08/24/1999 09/24/1999 15:21 RJ 10/14/1999						
60	SULFATE	20		890.00000	mg/l	10.000000	EPA 300.0
	08/24/1999 09/28/1999 3:59 RJ 10/14/1999						
62	TOTAL ALKALINITY AS CACO3	20		433.00000	mg/l	5.000000	EPA 310.1
	08/24/1999 09/27/1999 15:00 KP 10/14/1999						
63	TOTAL HARDNESS AS CACO3	20		804.00000	mg/l		SM2340-B
	08/24/1999 10/04/1999 9:00 RJ 10/14/1999						
68	TOTAL DISSOLVED SOLIDS, @ 180 C	20		1671.00000	mg/l	10.000000	EPA 160.1
	08/24/1999 09/28/1999 12:00 KP 10/14/1999						
113	DISSOLVED ALUMINUM	20	<	1.00000	ug/l	1.000000	EPA 202.1
	08/24/1999 09/30/1999 13:05 SC 10/14/1999						
129	DISSOLVED MOLYBDENUM	20	<	0.10000	ug/l	0.100000	EPA 246.1
	08/24/1999 09/30/1999 14:20 SC 10/14/1999						
133	TOTAL CATIONS	20		25.10000	meq/l		
	08/24/1999 10/04/1999 9:00 RJ 10/14/1999						
134	TOTAL ANIONS	20		28.00000	meq/l		
	08/24/1999 10/04/1999 9:00 RJ 10/14/1999						
145	TOTAL IRON	20	<	0.10000	mg/l	0.100000	EPA 236.1
	08/24/1999 09/29/1999 7:49 SC 10/14/1999						
223	DISSOLVED MERCURY	20	<	0.20000	ug/l	0.200000	EPA 245.1
	08/24/1999 09/29/1999 6:30 MK 10/14/1999						

Entered 12/13/99 RW

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1

Sample Date 9-24-99

Sample Time 1050

Type: Spring X Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 11 GPM

Water Temperature (C) 10°C

pH 7.73

Specific Conductivity 700

Dissolved Oxygen 4

Comments: EVERYTHING NORMAL - SOME LIVESTOCK TRACKS IN AREA

Sampled by: L. P. CLARK

Laboratory CTEE, HUNTINGTON

Date Shipped 9-24-99

Sample ID# RS-1

Date Results Received _____

COMMERCIAL TESTING & ENGINEERING CO.
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P.O. BOX 1020
HUNTINGTON, UT 84528
TEL: (435) 653-2311
FAX: (435) 653-2436

October 14, 1999

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

Sample identification by

RS-1
Rec'd 1330 hr.
Sampled 1050 hr.

FIELD MEASUREMENTS	
pH	7.73
DO	4
Flow	11 GPM
Conductivity	700
Turbidity	CLEAR
Temperature	10.0°C

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

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled September 24, 1999

Date received September 24, 1999

Analysis report no. 59-20612

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
lkalinity, Bicarbonate	568	5	mg/l	as HCO_3	EPA 310.1	09-27-1999 1500	KP
..lkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Total	465	5	mg/l	as $CaCO_3$	EPA 310.1	09-27-1999 1500	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-30-1999 1305	SC
Anions	14.5	----	meq/l		---------	10-04-1999 0900	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-04-1999 0948	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-30-1999 1349	SC
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-06-1999 0600	MK
Cadmium, Dissolved	<0.10	0.01	mg/l		EPA 213.1	09-30-1999 0854	SC
Calcium, Dissolved	45	1	mg/l		EPA 215.1	09-29-1999 1349	SC
Cations	14.1	----	meq/l		---------	10-04-1999 0900	RJ
Chloride	<1	2	mg/l		EPA 300.0	09-28-1999 0359	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-30-1999 1324	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-30-1999 0805	SC
Fluoride	0.11	0.05	mg/l		EPA 300.0	06-24-1999 1509	RJ
Hardness, Total	372	----	mg/l	as $CaCO_3$	SM2340-B	10-04-1999 0900	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-30-1999 1208	SC
Magnesium, Dissolved	63	1	mg/l		EPA 242.1	09-30-1999 1443	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-29-1999 1010	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-30-1999 1420	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-30-1999 0844	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.
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10/13/99 BNF

October 14, 1999

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

Sample identification by

RS-1
Rec'd 1330 hr.
Sampled 1050 hr.

FIELD MEASUREMENTS	
pH	7.73
DO	4
Flow	11 GPM
Conductivity	700
Turbidity	CLEAR
Temperature	10.0°C

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

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled September 24, 1999

Date received September 24, 1999

Analysis report no. 59-20612

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-05-1999 1200	SC
Nitrogen, Nitrate-Nitrite	0.21	0.03	mg/l as N	EPA 300.0	06-24-1999 1509	RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1509	RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 1509	RJ
Potassium, Dissolved	1	1	mg/l	EPA 258.1	09-29-1999 1107	SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-04-1999 1218	MK
Sodium, Dissolved	153	2	mg/l	EPA 273.1	09-29-1999 1224	SC
Solids, Total Dissolved	803	10	mg/l	EPA 160.1	09-28-1999 1200	KP
Sulfate	247	2	mg/l	EPA 300.0	09-28-1999 0359	RJ
Sulfide	<1	1	mg/l	EPA 376.1	09-29-1999 1000	KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	09-30-1999 0833	SC
Cation/Anion Balance	-1.2	----	%		10-04-1999 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

Electronic Water Data Report By Individual Sample

59-20612	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
CTE	Lab Code			SPRING	Site Type
Commercial Testing & Engineering				Redden Spring	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	.01	EPA 206.2
09/24/1999 10/04/1999 9:48 MK 10/14/1999						
33 DISSOLVED BARIUM	4	<	1.00000	ug/l	1.0	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					Δ to 0.1	
36 DISSOLVED CALCIUM	4		45.00000	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						
40 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		63.00000	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		1.00000	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		568.00000	mg/l		EPA 310.1
09/24/1999 09/27/1999 15:00 KP 10/14/1999						
52 CARBONATE AS CO3	4	<	5.00000	mg/l	5.0	EPA 310.1
09/24/1999 09/27/1999 15:00 KP 10/14/1999						
53 CHLORIDE	4	<	1.00000	mg/l	2.000000	EPA 300.0
09/24/1999 09/28/1999 3:59 RJ 10/14/1999						
54 FLUORIDE	4		0.11000	mg/l	0.050000	EPA 300.0
09/24/1999 09/24/1999 15:09 RJ 10/14/1999						
56 NITRATE AS N	4		0.21000	mg/l	0.030000	EPA 300.0
09/24/1999 09/24/1999 15:09 RJ 10/14/1999						

Electronic Water Data Report By Individual Sample

59-20612	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
CTE	Lab Code			SPRING	Site Type
Commercial Testing & Engineering				Redden Spring	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 09/24/1999 15:09 RJ 10/14/1999						
58 ORTHO. PHOSPHATE	4	<	0.05000	mg/l	0.050000	EPA 300.0
09/24/1999 09/24/1999 15:09 RJ 10/14/1999						
60 SULFATE	4		247.00000	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		465.00000	mg/l		EPA 310.1
09/24/1999 09/27/1999 15:00 KP 10/14/1999						
63 TOTAL HARDNESS AS CACO3	4		372.00000	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	1.0	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		14.10000	meq/l		
09/24/1999 10/04/1999 9:00 RJ 10/14/1999						
134 TOTAL ANIONS	4		14.50000	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						

Electronic Water Data Report By Individual Sample

19990924	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
FLD	Lab Code			SPRING	Site Type
				Redden Spring	Site Description

Field Readings Only

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By / Reported / Comments						
1	FIELD WATER TEMPERATURE	20		10.00000	Deg. C		
	/ / / / / /						
2	PH (FIELD)	20		7.73000	pH units		
	/ / / / / /						
4	SP. CONDUCTIVITY (FIELD)	20		700.00000	umhos/cm		
	/ / / / / /						
11	FLOW	20		11.00000	GPM		
	/ / / / / /						

Entered MP 11/6/99

UtahAmerican Energy Inc.

HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF-1

Sample Date 9-24-99

Sample Time 1010

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) 8 GPM

Water Temperature (C) 13°C

pH 8.69

Specific Conductivity 730

Dissolved Oxygen 4

Comments: NO EVIDENCE OF FLOODING FROM STORMS

Sampled by: L.P. CLARK

Laboratory CT&E, HUNTINGTON

Date Shipped 9-24-99

Sample ID# RF-1

Date Results Received ____

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FAX: (435) 653-2436

October 14, 1999

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

Sample identification by

Entered 10/6/99 afn

RF-1

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

Rec'd 1330 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS

pH	8.69
DO	4
Flow	8 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	13.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20614

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	498	5	mg/l	as HCO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Carbonate	22	5	mg/l	as CO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Total	446	5	mg/l	as $CaCO_3$	EPA 310.1	09-27-1999 1500	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-30-1999 1305	SC
Anions	15.0	----	meq/l		---------	10-04-1999 0900	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-04-1999 0948	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-30-1999 1349	SC
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-06-1999 0600	MK
Cadmium, Dissolved	<0.10	0.01	mg/l		EPA 213.1	09-30-1999 0854	SC
Calcium, Dissolved	38	1	mg/l		EPA 215.1	09-29-1999 1349	SC
Cations	14.0	----	meq/l		---------	10-04-1999 0900	RJ
Chloride	14	2	mg/l		EPA 300.0	09-28-1999 0359	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-30-1999 1324	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-30-1999 0805	SC
Fluoride	0.11	0.05	mg/l		EPA 300.0	06-24-1999 1533	RJ
Hardness, Total	363	----	mg/l	as $CaCO_3$	SM2340-B	10-04-1999 0900	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-30-1999 1208	SC
Magnesium, Dissolved	65	1	mg/l		EPA 242.1	09-30-1999 1443	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-29-1999 1010	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-30-1999 1420	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-30-1999 0844	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Connelly

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (435) 653-2436

October 14, 1999

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

Sample identification by Contact 10/6/99 Apm

RF-1

Rec'd 1330 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS

pH	8.69
DO	4
Flow	8 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	13.0°C

Kind of sample reported to us: Water

Sample taken at:

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20614

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-05-1999 1200	SC
Nitrogen, Nitrate-Nitrite	0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1533	RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1533	RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 1533	RJ
Potassium, Dissolved	2	1	mg/l	EPA 258.1	09-29-1999 1107	SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-04-1999 1218	MK
Sodium, Dissolved	153	2	mg/l	EPA 273.1	09-29-1999 1224	SC
Solids, Total Dissolved	803	10	mg/l	EPA 160.1	09-28-1999 1200	KP
Sulfate	274	2	mg/l	EPA 300.0	09-28-1999 0359	RJ
Sulfide	<1	1	mg/l	EPA 376.1	09-29-1999 1000	KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	09-30-1999 0833	SC
Cation/Anion Balance	-3.6	----	%		10-04-1999 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R P Cosmen

Huntington Laboratory

MEMBER ACIL

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				Δ to 0.1	
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					
40	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					
54	FLUORIDE	4		0.11000	mg/l	0.050000	EPA 300.0
	09/24/1999 09/24/1999 15:33 RJ	10/14/1999					
56	NITRATE AS N	4		0.03000	mg/l	0.030000	EPA 300.0
	09/24/1999 09/24/1999 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
57	NITRITE AS N	4	<	0.03000	mg/l	0.030000	EPA 300.0
58	ORTHO. PHOSPHATE	4	<	0.05000	mg/l	0.050000	EPA 300.0
60	SULFATE	4		274.00000	mg/l	2.000000	EPA 300.0
62	TOTAL ALKALINITY AS CACO3	4		446.00000	mg/l	5.000000	EPA 310.1
63	TOTAL HARDNESS AS CACO3	4		363.00000	mg/l		SM2340-B
68	TOTAL DISSOLVED SOLIDS, @ 180 C	4		803.00000	mg/l	10.000000	EPA 160.1
113	DISSOLVED ALUMINUM	4	<	1.00000	ug/l	1.000000	EPA 202.1
129	DISSOLVED MOLYBDENUM	4	<	0.10000	ug/l	0.100000	EPA 246.1
133	TOTAL CATIONS	4		14.00000	meq/l		
134	TOTAL ANIONS	4		15.00000	meq/l		
145	TOTAL IRON	4	<	0.10000	mg/l	0.100000	EPA 236.1
223	DISSOLVED MERCURY	4	<	0.20000	ug/l	0.200000	EPA 245.1

Parameter	Received	Analyzed		By	Reported	Comments
57	09/24/1999	09/24/1999	15:33	RJ	10/14/1999	
58	09/24/1999	09/24/1999	15:33	RJ	10/14/1999	
60	09/24/1999	09/28/1999	3:59	RJ	10/14/1999	
62	09/24/1999	09/27/1999	15:00	KP	10/14/1999	
63	09/24/1999	10/04/1999	9:00	RJ	10/14/1999	
68	09/24/1999	09/28/1999	12:00	KP	10/14/1999	
113	09/24/1999	09/30/1999	13:05	SC	10/14/1999	
129	09/24/1999	09/30/1999	14:20	SC	10/14/1999	
133	09/24/1999	10/04/1999	9:00	RJ	10/14/1999	
134	09/24/1999	10/04/1999	9:00	RJ	10/14/1999	
145	09/24/1999	09/29/1999	7:49	SC	10/14/1999	
223	09/24/1999	09/29/1999	6:30	MK	10/14/1999	

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
				R FK Horse Cyn Wash AB mine	Site Description

Field Readings Only

	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		
	/ / / / / /						

UtahAmerican Energy Inc.

HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

BM 12/13/99

Station # HC-2

Sample Date N/A - OBSERVED 9-24-99

Sample Time N/A " 1110

Type: Spring ____ Stream X UPDES ____

Sample Collection Point MAIN HORSE CANYON STREAM BED, ½ MILE WEST COUNTY ROAD

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: EVIDENCE OF SMALL FLOWS DUE TO SUMMER STORMS

Sampled by: L. P. CLARK

Laboratory N/A

Date Shipped N/A

Sample ID# N/A

Date Results Received ____

Entered 10/13/99 RW

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1

Sample Date 9-24-99

Sample Time 1050

Type: Spring X Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 11 GPM

Water Temperature (C) 10°C

pH 7.73

Specific Conductivity 700

Dissolved Oxygen 4

Comments: EVERYTHING NORMAL - SOME LIVESTOCK TRACKS IN AREA

Sampled by: L. P. CLARK

Laboratory CTEE, HUNTINGTON

Date Shipped 9-24-99

Sample ID# RS-1

Date Results Received _____

Entered 12/6/99

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RF-1

Sample Date 9-24-99

Sample Time 1010

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) 8 GPM ?

Water Temperature (C) 13°C ✓

pH 8.69 ✓

Specific Conductivity 730 ✓

Dissolved Oxygen 4 ✓

Comments: NO EVIDENCE OF FLOODING FROM STORMS

Sampled by: L. P. CLARK

Laboratory CT&E, HUNTINGTON

Date Shipped 9-24-99

Sample ID# RF-1

Date Results Received ____

Entered 10/6/99 lpm

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1

Sample Date 9-24-99

Sample Time 0945

Type: Spring ____ Stream X UPDES ____

Sample Collection Point ON STREAM AT APPROX CARBON EMERY LINE

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

Flow/Depth (gpm) 7 GPM

Water Temperature (C) 14° C

pH 8.13

Specific Conductivity 920

Dissolved Oxygen 4

Comments: MINIMAL CLEAR FLOW; CATTLE IN AREA USEING STREAM

Sampled by: L.P. CLARK

Laboratory CTEE, HUNTINGTON Date Shipped 9-24-99

Sample ID# HC-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

SINCE 1908

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

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

October 14, 1999

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

Sample identification by

RS-1
Rec'd 1330 hr.
Sampled 1050 hr.

FIELD MEASUREMENTS

pH	7.73
DO	4
Flow	11 GPM
Conductivity	700
Turbidity	CLEAR
Temperature	10.0°C

Kind of sample reported to us: Water

Sample taken at:

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

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

Analysis report no. 59-20612

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
lkalinity, Bicarbonate	568	5	mg/l	as HCO_3	EPA 310.1	09-27-1999 1500	KP
lkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Total	465	5	mg/l	as $CaCO_3$	EPA 310.1	09-27-1999 1500	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-30-1999 1305	SC
Anions	14.5	----	meq/l		---------	10-04-1999 0900	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-04-1999 0948	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-30-1999 1349	SC
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-06-1999 0600	MK
Cadmium, Dissolved	<0.10	0.01	mg/l		EPA 213.1	09-30-1999 0854	SC
Calcium, Dissolved	45	1	mg/l		EPA 215.1	09-29-1999 1349	SC
Cations	14.1	----	meq/l		---------	10-04-1999 0900	RJ
Chloride	<1	2	mg/l		EPA 300.0	09-28-1999 0359	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-30-1999 1324	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-30-1999 0805	SC
Fluoride	0.11	0.05	mg/l		EPA 300.0	06-24-1999 1509	RJ
Hardness, Total	372	----	mg/l	as $CaCO_3$	SM2340-B	10-04-1999 0900	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-30-1999 1208	SC
Magnesium, Dissolved	63	1	mg/l		EPA 242.1	09-30-1999 1443	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-29-1999 1010	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-30-1999 1420	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-30-1999 0844	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

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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FAX: (435) 653-2436

10/13/99 BN JM

October 14, 1999

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

Sample identification by

RS-1
Rec'd 1330 hr.
Sampled 1050 hr.

FIELD MEASUREMENTS	
pH	7.73
DO	4
Flow	11 GPM
Conductivity	700
Turbidity	CLEAR
Temperature	10.0°C

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

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled September 24, 1999

Date received September 24, 1999

Analysis report no. 59-20612

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-05-1999 1200	SC
Nitrogen, Nitrate-Nitrite	0.21	0.03	mg/l as N	EPA 300.0	06-24-1999 1509	RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1509	RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 1509	RJ
Potassium, Dissolved	1	1	mg/l	EPA 258.1	09-29-1999 1107	SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-04-1999 1218	MK
Sodium, Dissolved	153	2	mg/l	EPA 273.1	09-29-1999 1224	SC
Solids, Total Dissolved	803	10	mg/l	EPA 160.1	09-28-1999 1200	KP
Sulfate	247	2	mg/l	EPA 300.0	09-28-1999 0359	RJ
Sulfide	<1	1	mg/l	EPA 376.1	09-29-1999 1000	KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	09-30-1999 0833	SC
Cation/Anion Balance	-1.2	----	%		10-04-1999 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R.J. Lomma

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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October 14, 1999

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

Sample identification by

Earlene 10/6/99 sign

RF-1

Rec'd 1330 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS

pH	8.69
DO	4
Flow	8 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	13.0°C

Kind of sample reported to us: Water

Sample taken at:

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20614

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	498	5	mg/l	as HCO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Carbonate	22	5	mg/l	as CO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Total	446	5	mg/l	as $CaCO_3$	EPA 310.1	09-27-1999 1500	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-30-1999 1305	SC
Anions	15.0	----	meq/l		---------	10-04-1999 0900	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-04-1999 0948	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-30-1999 1349	SC
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	10-06-1999 0600	MK
Cadmium, Dissolved	<0.10	0.01	mg/l		EPA 213.1	09-30-1999 0854	SC
Calcium, Dissolved	38	1	mg/l		EPA 215.1	09-29-1999 1349	SC
Cations	14.0	----	meq/l		---------	10-04-1999 0900	RJ
Chloride	14	2	mg/l		EPA 300.0	09-28-1999 0359	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-30-1999 1324	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-30-1999 0805	SC
Fluoride	0.11	0.05	mg/l		EPA 300.0	06-24-1999 1533	RJ
Hardness, Total	363	----	mg/l	as $CaCO_3$	SM2340-B	10-04-1999 0900	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-30-1999 1208	SC
Magnesium, Dissolved	65	1	mg/l		EPA 242.1	09-30-1999 1443	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-29-1999 1010	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-30-1999 1420	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-30-1999 0844	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. J. Cormally

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.
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October 14, 1999

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

Sample identification by Carbon 1/16/99 Apr

RF-1

Rec'd 1330 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS

pH	8.69
DO	4
Flow	8 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	13.0°C

Kind of sample reported to us: Water

Sample taken at:

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20614

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-05-1999 1200 SC
Nitrogen, Nitrate-Nitrite	0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1533 RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1533 RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 1533 RJ
Potassium, Dissolved	2	1	mg/l	EPA 258.1	09-29-1999 1107 SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-04-1999 1218 MK
Sodium, Dissolved	~~153~~	2	mg/l	EPA 273.1	09-29-1999 1224 SC
Solids, Total Dissolved	803 ✓	10	mg/l	EPA 160.1	09-28-1999 1200 KP
Sulfate	274	2	mg/l	EPA 300.0	09-28-1999 0359 RJ
Sulfide	<1	1	mg/l	EPA 376.1	09-29-1999 1000 KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	09-30-1999 0833 SC
Cation/Anion Balance	-3.6	----	%		10-04-1999 0900 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cosmen

Huntington Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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October 14, 1999

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

Sample identification by

HC-1

Rec'd 1330 hr.
Sampled 0945 hr.

FIELD MEASUREMENTS	
pH	8.13
DO	4
Flow	7 GPM
Conductivity	920
Turbidity	CLEAR
Temperature	14.0°C

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20613

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
lkalinity, Bicarbonate	529	5	mg/l	as HCO_3	EPA 310.1	09-27-1999 1500	KP
lkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	09-27-1999 1500	KP
Alkalinity, Total	433	5	mg/l	as $CaCO_3$	EPA 310.1	09-27-1999 1500	KP
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-30-1999 1305	SC
Anions	28.0	----	meq/l		---------	10-04-1999 0900	RJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	10-04-1999 0948	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-30-1999 1349	SC
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	10-06-1999 0600	MK
Cadmium, Dissolved	<0.10	0.01	mg/l		EPA 213.1	09-30-1999 0854	SC
Calcium, Dissolved	106	1	mg/l		EPA 215.1	09-29-1999 1349	SC
Cations	25.1	----	meq/l		---------	10-04-1999 0900	RJ
Chloride	28	10	mg/l		EPA 300.0	09-28-1999 0359	RJ
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-30-1999 1324	SC
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-30-1999 0805	SC
Fluoride	0.05	0.05	mg/l		EPA 300.0	06-24-1999 1521	RJ
Hardness, Total	804	----	mg/l	as $CaCO_3$	SM2340-B	10-04-1999 0900	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-29-1999 0749	SC
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-30-1999 1208	SC
Magnesium, Dissolved	131	2	mg/l		EPA 242.1	09-30-1999 1443	SC
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-29-1999 1010	SC
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-29-1999 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-30-1999 1420	SC
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-30-1999 0844	SC

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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October 14, 1999

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

Entered 10/16/99 RJM

Sample identification by

HC-1

Kind of sample reported to us: Water

Sample taken at

Sample taken by: Leo Clark

Date sampled: September 24, 1999

Date received: September 24, 1999

Rec'd 1330 hr.
Sampled 0945 hr.

FIELD MEASUREMENTS

pH	8.13
DO	4
Flow	7 GPM
Conductivity	920
Turbidity	CLEAR
Temperature	14.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20613

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	10-05-1999 1200	SC
Nitrogen, Nitrate-Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1521	RJ
Nitrogen, Nitrite	<0.03	0.03	mg/l as N	EPA 300.0	06-24-1999 1521	RJ
Phosphorous, Ortho-PO_4	<0.05	0.05	mg/l as P	EPA 300.0	06-24-1999 1521	RJ
Potassium, Dissolved	7	1	mg/l	EPA 258.1	09-29-1999 1107	SC
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	10-04-1999 1218	MK
Sodium, Dissolved	204	2	mg/l	EPA 273.1	09-29-1999 1224	SC
Solids, Total Dissolved	1671	10	mg/l	EPA 160.1	09-28-1999 1200	KP
Sulfate	890	10	mg/l	EPA 300.0	09-28-1999 0359	RJ
Sulfide	<1	1	mg/l	EPA 376.1	09-29-1999 1000	KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	09-30-1999 0833	SC
Cation/Anion Balance	-5.4	----	%		10-04-1999 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

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 ____

.52 .52 TDS/SC 1697 .55-.26 .65 650 1.6 3900 65.0 65.0 TDS Cond

Data Submitted under Table RS-1

3-1-00 DJ

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January 17, 2000

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

updated to DB 4/13/2000 KN

Sample identification by

RS-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 1240 hr.

FIELD MEASUREMENTS

pH	7.87
DO	4
Flow	11 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-29854

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	555	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	455	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	14.7	----	meq/l		---------	11-29-1999 1000	RJ
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	0.3	0.1	mg/l		EPA 212.3	11-16-1999 0700	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.2	11-15-1999 0903	SC
Calcium, Dissolved	45	1	mg/l		EPA 215.1	11-12-1999 1255	SC
Cations	14.5	----	meq/l		---------	11-29-1999 1000	RJ
Chloride	15	2	mg/l		EPA 300.0	11-16-1999 0814	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	0.07	0.05	mg/l		EPA 300.0	11-09-1999 1715	RJ
Hardness, Total	384	----	mg/l	as $CaCO_3$	SM2340-B	11-29-1999 1000	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-12-1999 0825	SC
Iron, Total	<0.1	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	66	1	mg/l		EPA 242.1	11-12-1999 1300	SC
Mangenese, 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 1-17	# of pages ▶ 6
To JAY MARSHALL	From ALLISA	
Co./Dept.	Co.	
Phone #	Phone #	
(435) 613-0393	Fax #	

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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3-1-00

January 17, 2000

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

Sample identification by

RS-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 1240 hr.

FIELD MEASUREMENTS

pH	7.87
DO	4
Flow	11 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20854

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	0.22	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	1	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	157	2	mg/l	EPA 273.1	11-12-1999 1220	SC
Solids, Total Dissolved	844	10	mg/l	EPA 160.1	11-15-1999 0715	RJ
Sulfate	249	2	mg/l	EPA 300.0	11-33-1999 1035	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	-0.6	----	%		11-29-1999 1000	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

QC + update to dbase 4/14/2000 KW

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

RECEIVED
JAN 24 2000
DIVISION OF OIL, GAS AND MINING

Station # RS-1

Sample Date 11-9-99

Sample Time 1240

Type: Spring ✓ Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 11 GPM

Water Temperature (C) 9°C

pH 7.87

Specific Conductivity 65

Dissolved Oxygen 4

Comments: EVERYTHING NORMAL - NO LIVESTOCK RECENTLY

Sampled by: L. P. CLARK

Laboratory CT&E HUNTSMAN

Date Shipped 11-9-99

Sample ID# RS-1

Date Results Received _____

1/24/00

Dave - Extra Copy, For You Pam

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-2

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, 1/2 MILE WEST OF ID ROAD

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 ____

RECEIVED

JAN 24 2000

DIVISION OF
OIL, GAS AND MINING

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1

Sample Date 11-9-99

Sample Time 1130

Type: Spring _____ Stream X UPDES _____

Sample Collection Point ON STREAM AT APPROXIMATE CROSS, EVERY OLINE

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

Flow/Depth (gpm) 7 GPM

Water Temperature (C) 11°C

pH 8.16

Specific Conductivity 80

Dissolved Oxygen 5+

Comments: CLEAR FLOW, NO OBSERVED LIVESTOCK DISTURBANCE

Sampled by: L.P. CLARK

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

Sample ID# HC-1 Date Results Received _____

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DIVISION OF
OIL, GAS AND MINING

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HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

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 ____

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UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1

Sample Date 11-9-99

Sample Time 1240

Type: Spring ✓ Stream ____ UPDES ____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 11 GPM

Water Temperature (C) 9°C

pH 7.87

Specific Conductivity 65

Dissolved Oxygen 4

Comments: EVERYTHING NORMAL - NO LIVESTOCK RECENTLY

Sampled by: L. P. CLARK

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

Sample ID# RS-1 Date Results Received ____

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January 17, 2000

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

Sample identification by

HC-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 1130 hr.

FIELD MEASUREMENTS

pH	8.16
DO	5
Flow	7 GPM
Conductivity	80
Turbidity	CLEAR
Temperature	11.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20856

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	0.10	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	2	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	162	2	mg/l	EPA 273.1	11-12-1999 1220	SC
Solids, Total Dissolved	839	10	mg/l	EPA 160.1	11-15-1999 0715	RJ
Sulfate	226	2	mg/l	EPA 300.0	11-22-1999 1035	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	11.7	----	%		12-16-1999 0945	MK

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DIVISION OF
OIL, GAS AND MINING

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. J. Cormier

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January 17, 2000

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

Sample identification by

HC-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 1130 hr.

FIELD MEASUREMENTS

pH	8.16
DO	5
Flow	7 GPM
Conductivity	80
Turbidity	CLEAR
Temperature	11.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20856

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	0.10	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	2	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	162	2	mg/l	EPA 273.1	11-12-1999 1220 SC
Solids, Total Dissolved	839	10	mg/l	EPA 160.1	11-15-1999 0715 RJ
Sulfate	226	2	mg/l	EPA 300.0	11-22-1999 1035 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	11.7	----	%		12-16-1999 0945 MK

RECEIVED
JAN 24 2000
DIVISION OF
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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

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FAX: (435) 653-2436

January 17, 2000

UTAH AMERICAN 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.

Kf Cormack

Huntington Laboratory

MEMBER

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TERMS AND CONDITIONS ON REVERSE

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-8300 FAX: 630-953-8305
INDE 19059
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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	5
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 Nerdsh II	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

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HUNTINGTON, UT 84528
TEL: (435) 653-2311
FAX: (435) 653-2436

January 17, 2000

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

Sample identification by

RS-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 1240 hr.

FIELD MEASUREMENTS

pH	7.87
DO	4
Flow	11 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20854

Parameter	Result	MRL	Units		Method	Analysed Date/Time/Analyst	
Alkalinity, Bicarbonate	555	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	455	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	14.7	----	meq/l		---------	11-29-1999 1000	RJ
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	0.3	0.1	mg/l		EPA 212.3	11-16-1999 0700	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.2	11-15-1999 0903	SC
Calcium, Dissolved	45	1	mg/l		EPA 215.1	11-12-1999 1255	SC
✓ Cations	14.5	----	meq/l		---------	11-29-1999 1000	RJ
Chloride	15	2	mg/l		EPA 300.0	11-16-1999 0814	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	0.07	0.05	mg/l		EPA 300.0	11-09-1999 1715	RJ
Hardness, Total	384	----	mg/l	as $CaCO_3$	SM2340-B	11-29-1999 1000	RJ
✓ Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-12-1999 0825	SC
✓ Iron, Total	<0.1	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	66	1	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 1-17	# of pages ▶ 6
To JAY MARSHALL	From LALIZA	
Co./Dept.	Co.	
Phone #	Phone #	
(435) 613-0393	Fax #	

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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

January 17, 2000

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

Sample identification by

RS-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 1240 hr.

FIELD MEASUREMENTS

pH	7.87
DO	4
Flow	11 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20854

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	0.22	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	1	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	127	2	mg/l	EPA 273.1	11-12-1999 1220	SC
Solids, Total Dissolved	844	10	mg/l	EPA 160.1	11-15-1999 0715	RJ
Sulfate	249	2	mg/l	EPA 300.0	11-11-1999 1035	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	-0.6	----	%		11-29-1999 1000	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

E.I.S. Hydrology
Field Measurements Form

Date 4/27/2000 Station # RE-1

Company UGR

Time 11:40

Flow/Depth 62 gpm

pH 8.83

Specific Conductivity 1000

Water Temperature 10°

Air Temperature 68°

Dissolved Oxygen 6

Type: Spring ✓ Stream___ Well___ Discharge___ NPDES___

Collection Point Above Crossing

Appearance of Water: Clear ✓ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes ✓ No___

Pump Reading___

Comments___

Field Monitor [signature]

When Sample or Measurements Not Taken:

Reason: ___

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Need # HC-2

Date 7/27/2000

Station # Lower Hane Creek

Company CBE

Time 12:10

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring____ Stream____ Well____ Discharge____ NPDES____

Collection Point

Appearance of Water: Clear___ Milky____ Cloudy____ Opaque____

Quality Sample Taken: Yes____ No____

Pump Reading

Comments

Field Monitor

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. Hydrology
Field Measurements Form

Date 7/14/00

Station # Pond #2
UTG040013-002

Company UAE

Time 1530

Flow/Depth NOF DRY

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES X

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading

Comments Sed pond dry.

Field Monitor Kathe D + Dave V

When Sample or Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

T2 miles

E.I.S. Hydrology
Field Measurements Form

Date 7/14/00

Station # Bridge Pond #1
UTG040013.001

Company UAE

Time 1523

Flow/Depth NOF DRY

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES X

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading

Comments

Field Monitor Katie & Dave V

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 07/14/00

Station # Pond # 2
UTG040013-002
Flow, Field Parameters, UPDES per occurrence

Company UtahAmerican Energy, Inc.

Time 1530

Flow/Depth Dry

pH _____

Specific Conductivity _____

Water Temperature _____ C

Dissolved Oxygen _____

Oil/Grease _____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point _____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☐

Comments: _____

_____

Field Monitor _____

When Sample of Measurements Not Taken:

Reason: _____

D = Dry **F = Frozen** **N/A = Not Accessible** **N/R = Not Required**

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 07/14/00

Station # Pond # 1
UTG040013-001
Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 1523

Flow/Depth Dry

pH_____

Specific Conductivity_____

Water Temperature_____ **C**

Dissolved Oxygen_____

Oil/Grease_____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point_____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☐

Comments:_____

Field Monitor_____

When Sample of Measurements Not Taken:

Reason:_____

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 08/23/00

Station # Pond # 1
UTG040013-001
Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:45

Flow/Depth Dry

pH _____

Specific Conductivity _____

Water Temperature _____ C

Dissolved Oxygen _____

Oil/Grease _____

Type: Spring ☐ **Stream** ☐ **Well** ☐ **Discharge** ☐ **NPDES** ☐

Collection Point _____

Appearance of Water: Clear ☐ **Milky** ☐ **Cloudy** ☐ **Opaque** ☐

Quality Sample Taken: Yes ☐ **No** ☐

Comments: _____

_____

Field Monitor _____

When Sample of Measurements Not Taken:

Reason: _____

D = Dry **F = Frozen** **N/A = Not Accessible** **N/R = Not Required**

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 08/23/00

Station # Pond # 2
UTG040013-002
Flow, Field Parameters, UPDES per occurrence

Company UtahAmerican Energy, Inc.

Time 12:00

Flow/Depth Dry

pH _____

Specific Conductivity _____

Water Temperature _____ C

Dissolved Oxygen _____

Oil/Grease _____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point _____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☐

Comments: _____

_____

Field Monitor _____

When Sample of Measurements Not Taken:

Reason: _____

D = Dry **F = Frozen** **N/A = Not Accessible** **N/R = Not Required**

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 08/23/00

Station # Pond # 2
UTG040013-002
Flow, Field Parameters, UPDES per occurrence

Company UtahAmerican Energy, Inc.

Time 12:00

Flow/Depth Dry

pH _____

Specific Conductivity _____

Water Temperature _____ C

Dissolved Oxygen _____

Oil/Grease _____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point _____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☒

Comments: _____

Field Monitor Dave Varner

When Sample of Measurements Not Taken:

Reason: _____

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 08/23/00

Station # Pond # 1
UTG040013-001
Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:45

Flow/Depth Dry

pH _____

Specific Conductivity _____

Water Temperature _____ C

Dissolved Oxygen _____

Oil/Grease _____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point _____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☒

Comments: _____

Field Monitor Dave Varner

When Sample of Measurements Not Taken:

Reason: _____

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

Inter-Mountain Laboratories, Inc.

2986 West Main Street, Farmington, NM 87401
Phone (505) 326-4737 Fax (505) 325-4182

Client: Utah American Energy
Project: Horse Canyon
Sample ID: RT-1
Lab ID: 0300W01854
Matrix: Water
Condition: Intact

Date Received: 05/01/00
Date Reported: 05/24/00
[redacted]
Time Sampled: 1140

Parameter	Analytical Result	Units		Units	PQL	Method	Analysis Date	Analysis Time	Analysis Init.
General Parameters									
PH	8.6	s.u.			0.1	EPA 150.1	05/01/00	1630	BJ
Acidity (CaCO3)	<1	mg/L			1	EPA 305.1	05/12/00	1105	CM
Electrical Conductivity	1,350	umhos/cm			10	EPA 120.1	05/01/00	1630	BJ
Alkalinity (CaCO3)	446	mg/L			1	EPA 310.1	05/16/00	1105	BJ
Hardness (CaCO3)	379	mg/L			0.2	Calculation	05/12/00	1520	BJ
Solids - Settleable	<0.1	mL/L			0.1	EPA 160.5	05/01/00	1700	BJ
Solids - Total Dissolved	860	mg/L			10	EPA 160.1	05/10/00	0830	CM
Solids - Total Suspended	7	mg/L			2	EPA 160.2	05/10/00	0800	WL
Major Cations									
Calcium	31.6	mg/L	1.58	meq/L	0.2	EPA 200.7	05/24/00	1821	WL
Magnesium	72.8	mg/L	5.99	meq/L	0.2	EPA 200.7	05/24/00	1821	WL
Potassium	1.9	mg/L	0.05	meq/L	0.2	EPA 200.7	05/24/00	1821	WL
Sodium	200	mg/L	8.69	meq/L	0.2	EPA 200.7	05/24/00	1821	WL
Major Anions									
Bicarbonate (HCO3)	536	mg/L	8.79	meq/L	1	EPA 310.1	05/16/00	1105	BJ
Carbonate (CO3)	4	mg/L	0.13	meq/L	1	EPA 310.1	05/16/00	1105	BJ
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	05/16/00	1105	BJ
Chloride	41	mg/L	1.16	meq/L	1	EPA 325.3			
Sulfate	242	mg/L	5.05	meq/L	5	EPA 300.0	05/16/00	0800	BJ
Anion/Cation Balance QC Information									
Anion Sum			15.13	meq/L	0.01	Calculation	05/16/00	1000	BJ
Cation Sum			16.31	meq/L	0.01	Calculation	05/16/00	1110	BJ
Cation/Anion Balance			3.75	%	N/A	N/A	05/16/00	1130	BJ
Dissolved Metals									
Iron	<0.02	mg/L			0.02	EPA 200.7	05/24/00	1821	WL
Total Metals									
Iron	0.15	mg/L			0.02	EPA 200.7	05/05/00	1546	WL
Manganese	<0.01	mg/L			0.01	EPA 200.7	05/05/00	1546	WL

References: EPA - "Methods for Chemical Analysis of Water and Wastes (MCAWW)" - EPA/600/4-79-020 - March, 1983.
EPA - "Methods for the Determination of Metals in Environmental Samples" - Supplement I - 600/R-94-111 - May, 1994.

Reviewed By: [signature]

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NOV 22 2000
DIV. OF OIL, GAS & MINING

mcg 7/3/01

E.I.S. Hydrology
Field Measurements Form

Date 11/07/2000 Station # RE-1

Company UGC

Time 11:40

Flow/Depth 12.7gpm

pH 8.83

Specific Conductivity 1000

Water Temperature 10°

Air Temperature 68°

Dissolved Oxygen 6

Type: Spring ✓ Stream___ Well___ Discharge___ NPDES___

Collection Point Above Crossing

Appearance of Water: Clear ✓ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes ✓ No___

Pump Reading___

Comments___

Field Monitor [signature]

When Sample or Measurements Not Taken:

Reason: ___

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

RECEIVED 2 2000 DIV. OF OIL, GAS AND MINING

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # RE-1 @ Forks

Date 10/9/00

Company LIEI

Time 1045

Flow/Depth 6 gpm

pH 8.55

Specific Conductivity 2270

Water Temperature 56.5 13.6°C

Air Temperature 65 18.3°C

Dissolved Oxygen /

Type: Spring___ Stream X Well___ Discharge___ NPDES___

Collection Point @ the fork

Appearance of Water: Clear X Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes X No___

Pump Reading

Comments

Field Monitor David Varner

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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ENTERED INTO DATABASE 10/11/00 KN

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # HC-1

Date 10/9/00

Company LIET

Time 11:30

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring ____ Stream ____ Well ____ Discharge ____ NPDES ____

Collection Point

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

Quality Sample Taken: Yes ____ No ____

Pump Reading

Comments

Field Monitor Dave Varner

When Sample of Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

RECEIVED
NOV 22 2000
DIV. OF OIL, GAS & MINING

ENTERED INTO DATABASE 10/11/00 MW

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # HC-1

Date 10/9/00

Company LLET

Time 11:30

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring____ Stream____ Well____ Discharge____ NPDES____

Collection Point

Appearance of Water: Clear___ Milky____ Cloudy____ Opaque____

Quality Sample Taken: Yes___ No____

Pump Reading

Comments

Field Monitor Dave Varner

When Sample of Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # 001

Date 10/9/00

Company UEI

Time 11:45

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring ____ Stream ____ Well ____ Discharge ____ NPDES ____

Collection Point

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

Quality Sample Taken: Yes ____ No ____

Pump Reading

Comments

Field Monitor Dave Vernon

When Sample of Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # 002

Date 10/9/00

Company UEI

Time 12:00

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring ____ Stream ____ Well ____ Discharge ____ NPDES ____

Collection Point

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

Quality Sample Taken: Yes ____ No ____

Pump Reading

Comments

Field Monitor Dave Vernon

When Sample of Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # B-1

Date 10/9/00

Company UEI

Time 12:15

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring____ Stream____ Well____ Discharge____ NPDES____

Collection Point

Appearance of Water: Clear___ Milky____ Cloudy____ Opaque____

Quality Sample Taken: Yes___ No____

Pump Reading

Comments

Field Monitor DV

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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Horse Canyon
C/007/013

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Station # RS-1
HC
Horse Canyon

Date 10/9/00

Company CIEI

Time 1105

Flow/Depth 5gpm

pH 7.5

Specific Conductivity 2100

Water Temperature 51.1°F 10.61 C°

Air Temperature 65°F 18.3°C

Dissolved Oxygen /

Type: Spring / Stream ___ Well ___ Discharge ___ NPDES ___

Collection Point @ pipe end

Appearance of Water: Clear / Milky ___ Cloudy ___ Opaque ___

Quality Sample Taken: Yes X No ___

Pump Reading ___

Comments ___

Field Monitor David Varner

When Sample of Measurements Not Taken:

Reason: ___

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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ENTERED INTO DATABASE 10/11/00 KN

C/007/013

Inter-Mountain Laboratories, Inc.

Phone (505) 326-4737 Fax (505) 325-4182
2506 West Main Street, Farmington, NM 87401

Client: Utah American Energy
Project: Horse Canyon
Sample ID: RS-1
Lab ID: 0300W04513
Matrix: Water
Condition: Cool/Intact

Date Received: 10/13/00
Date Reported: 11/08/00
Date Sampled: 10/09/00
Time Sampled: 1105

Parameter	Result	Units		Units	PQL	Method	Analysis Date	Analysis Time	Analysis Init.
General Parameters									
PH	8.3	s.u.			0.1	EPA 150.1	10/13/00	1500	WL
Acidity (CaCO3)	<1	mg/L			1	EPA 305.1	10/19/00	1300	KA
Electrical Conductivity	1,290	µmhos/cm			10	EPA 120.1	10/13/00	1500	WL
Alkalinity (CaCO3)	404	mg/L			1	EPA 310.1	10/19/00	1300	KA
Hardness (CaCO3)	411	mg/L			1	EPA 200.7	11/08/00	1522	WL
Solids - Settleable	<0.1	mL/L			0.1	EPA 160.5	10/09/00	1500	WL
Solids - Total Dissolved	820	mg/L			10	EPA 160.1	10/17/00	0850	KA
Solids - Total Suspended	<2	mg/L			2	EPA 160.2	10/17/00	1120	KA
Major Cations									
Calcium	39.9	mg/L	1.99	meq/L	0.2	EPA 200.7	11/08/00	1522	WL
Magnesium	75.6	mg/L	6.22	meq/L	0.2	EPA 200.7	11/08/00	1522	WL
Potassium	2.9	mg/L	0.08	meq/L	0.2	EPA 200.7	11/08/00	1522	WL
Sodium	194	mg/L	8.42	meq/L	0.2	EPA 200.7	11/08/00	1522	WL
Major Anions									
Bicarbonate (HCO3)	493	mg/L	8.08	meq/L	1	EPA 310.1	10/19/00	1300	KA
Carbonate (CO3)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	10/19/00	1300	KA
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	10/19/00	1300	KA
Chloride	79	mg/L	2.22	meq/L	1	EPA 300.0	10/27/00	1310	WL
Sulfate	272	mg/L	5.67	meq/L	5	EPA 300.0	10/27/00	1310	WL
Anion/Cation Balance QC Information									
Anion Sum			15.97	meq/L	0.01	SM 1030			
Cation Sum			16.71	meq/L	0.01	SM 1030			
Cation/Anion Balance			2.26	%	0.01	SM 1030			
Dissolved Metals									
Iron	<0.02	mg/L			0.02	EPA 200.7	11/08/00	1522	WL
Total Metals									
Iron	0.05	mg/L			0.02	EPA 200.7	10/25/00	1648	WL
Manganese	<0.01	mg/L			0.01	EPA 200.7	10/25/00	1648	WL

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes (MCAWW)" - EPA/600/4-79-020 - March, 1983.
EPA - "Methods for the Determination of Metals in Environmental Samples" - Supplement I - 600/R-94-111 - May, 1994.
SM - "Standard Methods for the Examination of Water and Wastewater", APHA-AWWA-WEF, 19th Edition, 1995.

Reviewed By:

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Hor Canyon
C/007/013

mig 7/3/01

E.I.S. Hydrology
Field Measurements Form

Date 11/27/2000

Station Fork - left - HC-12

HC-1

Company CAE

Time Org — 1240

Flow/Depth 1/6" Flow

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Murky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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msg 7/3/01

AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/24/00 Station # L-5-S

Company UAE

Time 14:17

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor Stacie Jupo/D-W

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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Msg 7/3/01

E.I.S. Hydrology
Field Measurements Form

G?

Date 07/24/00 Station # L-5-S

Company UAE

Time 14:17

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky ✓ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments

Field Monitor Stacie Jones / D. Hill

When Sample or Measurements Not Taken:

Reason: DRY

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see comments 2/12/13 msg 7/3/01 AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 02/24/00 Station # L-4-S

Company UAC

Time 14:30

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments

Field Monitor Stacie Lupo/D. Silva

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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7/3/01
9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/24/00 Station # L-3-S

Company UAE

Time 1415

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky✓ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No✓

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mcg 7/3/01

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading_____

Comments UTM: 12 553447E
4367100N

Field Monitor Stacii Lupo

When Sample or Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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E.I.S. Hydrology
Field Measurements Form

Date 07/24/00 Station # L-3-S

Company IMC

Date 07/24/00 Station # L-3-S

mcg 7/3/01.

Company UAE

Time 1415

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mg 7/3/01

AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/24/00 Station # L-2-S

Company UAE

Time 1335

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments Stacil Lupo / David

Field Monitor

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/24/00 Station # L-1-S

Company UAE

Time 12:10

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments Spring Spot/Dry

Field Monitor

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mg 7/3/01

E.I.S. Hydrology
Field Measurements Form

Date 07/24/00 Station # #B-1 (HC-2)

Company UTAH AMERICAN ENERGY

Time 1:15

Flow/Depth NO FLOW

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading

Comments UTM: 12 553447E
4367100N

Field Monitor [illegible]

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mrg 7/5/01

E.I.S. Hydrology
Field Measurements Form

Date 11/27/2000 Station # BS-1

Company UCE

Time 12:00

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments

Field Monitor

When Sample or Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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Orig 7/3/01

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 3/9/2000

Station # RF-1
Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:00

Flow/Depth Inaccessible

pH

Specific Conductivity

Water Temperature C

Dissolved Oxygen

Oil/Grease

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☒

Comments:

Field Monitor

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

mg 7/3/01

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 3/9/2000 Station # RS-1

Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:00

Flow/Depth inaccessible

pH_____

Specific Conductivity_____

Water Temperature_____ C

Dissolved Oxygen_____

Oil/Grease_____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point_____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☑

Comments:_____

Field Monitor [signature]

When Sample of Measurements Not Taken:

Reason:_____

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

7/3/01

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 3/9/00 Station # B-1

Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:15

Flow/Depth

pH

Specific Conductivity

Water Temperature C

Dissolved Oxygen

Oil/Grease

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☒

Comments:

Field Monitor

When Sample of Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 3/9/2000 Station # HC 1

Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:20

Flow/Depth _____

pH _____

Specific Conductivity _____

Water Temperature _____ C

Dissolved Oxygen _____

Oil/Grease _____

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point _____

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☒

Comments: _____

Field Monitor [signature]

When Sample of Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

AH 9/6/01 7/3/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # ★ HC-1

Company VAE

Time 16:05

Flow/Depth NO FLOW

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments VIM 556445 E
4369190 N

Field Monitor Stacii Lupo

When Sample or Measurements Not Taken:

Reason: NO FLOW - STANDING WATER

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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msg 7/3/01

E,I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # ★ HC-1

Company VAE

Time 16:05

Flow/Depth NO FLOW

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments UTM 556445 E
4369190 N

Field Monitor Stacii Lupo

When Sample or Measurements Not Taken:

Reason: NO FLOW - STANDING WATER

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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7/3/01
9/10/01

E.Y.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # ★ RS-2

Company UAE

Time 15:45

Flow/Depth NO FLOW

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No___

Pump Reading

Comments VTM [redacted]

Field Monitor Stacy Judd

When Sample or Measurements Not Taken:

Reason: STANDING [redacted] WATER

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mg 7/3/01
AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # ★ 002A

Company UAE

Time 16:15

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments

Field Monitor Shaw Spa

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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MINING

ORIG 7/3/01
Aff 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # * 001A

Company UAE

Time ~~[illegible]~~ 16:20

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky ✓ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments UTM 12: 554476 E
4367166 N

Field Monitor Stacie Snyder

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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orig 7/3/01
Add 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # L-7-G

Company VAE

Time 14:35

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments

Field Monitor [illegible]

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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MINING

7/3/01
AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # L-6-6

Company VAE

Time 11:28

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky✓ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No✓

Pump Reading

Comments

Field Monitor Stacie Lupo / [illegible]

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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7/3/01
9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # L-10-6

Company VAE

Time ~~1:45~~ - 13:45

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments Stacie Jupo / [illegible]

Field Monitor VTM: 12 561232 E
4359779 N

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mkg 7/3/01

AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # L-9-G

Company VAE

Time 2:10 - 14:10

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments Stacie Lupo / D. V.

Field Monitor VM 12 559774E
4363100N

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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mkg 7/3/01

AH 9/10/01

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # L-8-6

Company UAE

Time 15:20

Flow/Depth

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments

Field Monitor Stacie Lupo

When Sample or Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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DIV. OF OIL, GAS & MINING

mg 1/3/01

C/007/013

E.I.S. Hydrology
Field Measurements Form

Date 07/27/00 Station # ★ RF-1

Company UAE

Time ~~[illegible]~~ 15:55

Flow/Depth NO FLOW

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES___

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No ✓

Pump Reading

Comments UTM: 12 556797E
4368392N

Field Monitor [signature]

When Sample or Measurements Not Taken:

Reason: DRY — STANDING WATER

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

NOV 27 2000

RKG 7/3/01

C/007/013

E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 08/23/00

Station # Pond # 1
UTG040013-001
Flow, Field Parameters, UPDES per occurence

Company UtahAmerican Energy, Inc.

Time 11:45

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature C

Dissolved Oxygen

Oil/Grease

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☒

Comments:

Field Monitor Dave Varner

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

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E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Date 06/23/00

Station #Pond # 2
UTG040013-002
Flow, Field Parameters, UPDES per occurrence

Company UtahAmerican Energy, Inc.

Time 12:00

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature C

Dissolved Oxygen

Oil/Grease

Type: Spring ☐ Stream ☐ Well ☐ Discharge ☐ NPDES ☐

Collection Point

Appearance of Water: Clear ☐ Milky ☐ Cloudy ☐ Opaque ☐

Quality Sample Taken: Yes ☐ No ☐

Comments:

Field Monitor Dave Varner

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessible N/R = Not Required

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C/0007/013

E.I.S. Hydrology
Field Measurements Form

Date 7/14/00

Station Pond #2
UTG040013-002

Company UAE

Time 1530

Flow/Depth NOF DRY

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES X

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading

Comments Sed pond dry.

Field Monitor Kathe W + Dave V.

When Sample or Measurements Not Taken:

Reason: Dry

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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MINING

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TZ miles

E.I.S. Hydrology
Field Measurements Form

Date 7/14/00

Station # Bridge Pond #1
UTG040013-001

Company UAE

Time 1523

Flow/Depth NOF DRY

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring___ Stream___ Well___ Discharge___ NPDES X

Collection Point

Appearance of Water: Clear___ Milky___ Cloudy___ Opaque___

Quality Sample Taken: Yes___ No X

Pump Reading

Comments

Field Monitor Katie & Dave V

When Sample or Measurements Not Taken:

Reason: DRY

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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OIL, GAS & MINING

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E.I.S. HYDROLOGY
FIELD MEASUREMENTS FORM

Need # HC-2

Date 7/27/2000

Station # Lower Hare Creek

Company UAE

Time 12:10

Flow/Depth Dry

pH

Specific Conductivity

Water Temperature

Air Temperature

Dissolved Oxygen

Type: Spring____ Stream____ Well____ Discharge____ NPDES____

Collection Point

Appearance of Water: Clear___ Milky____ Cloudy____ Opaque____

Quality Sample Taken: Yes____ No____

Pump Reading

Comments

Field Monitor

When Sample of Measurements Not Taken:

Reason:

D = Dry F = Frozen N/A = Not Accessable N/R = Not Required

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Have extra copy for you.

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of
Permit Number	ACT/007/013	Report Date	13 October 1999
Mine Name	Horse Canyon		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	Impoundment Name	Sediment Pond #1 (Lower)	
	Impoundment Number	Pond #1	
	UPDES Permit Number	UTG0 40013-001A	
	MSHA ID Number	42-00100	

IMPOUNDMENT INSPECTION

Inspection Date	16 September 1999
Inspected By	R. Jay Marshall
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Quarterly

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No appearance of instability, structural weakness, or any other hazardous condition was observed at the time of inspection.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

Sediment Elevations:

60%	6173.7'	
100%	6174.4'	Unchanged
Existing	6173.7'	

3. Principle and emergency spillway elevations.

Principle	6178.6'
Emergency	6180.8'

4. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

Pond is dry and there is no evidence of recent discharge. No water samples were taken. Vegetation is abundant. No erosion problems evident on in-slopes or out-slopes at time of inspection. Phase I bond release has been achieved and Phase II applied for.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

The geometry of the impoundment has not changed. Pond was dry with no recent indication of any water being impounded. Reclamation is essentially complete. Once Phase II bond release is achieved, no further inspections will be required.

Qualification Statement

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: R. Jay Marshall **Date:** 13 OCT 99

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 3 of

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	XXXXX	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	XXXXX	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	XXXXX	

COMMENTS AND OTHER INFORMATION

NONE

Certification Statement:

REGISTERED PROFESSIONAL ENGINEER
#7933
R. JAY MARSHALL
STATE OF UTAH

[PE Cert. Stamp]

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: R. Jay Marshall Chief Engineer
(Full Name and Title)

Signature: R. Jay Marshall **Date:** 13 OCT 99

P.E. Number & State: 152606 2202 Utah

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 4 of
Permit Number	ACT/007/013	Report Date	13 October 1999
Mine Name	Horse Canyon		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	Impoundment Name	Sediment Pond #2 (Upper)	
	Impoundment Number	Pond #2	
	UPDES Permit Number	UTG0 40013-002A	
	MSHA ID Number	42-00100	

IMPOUNDMENT INSPECTION

Inspection Date	16 September 1999
Inspected By	R. Jay Marshall
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Quarterly

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No appearance of instability, structural weakness, or any other hazardous condition was observed at the time of inspection.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

Sediment Elevations:

60%	6233.1'
100%	6233.5'
Existing	6232.7'

3. Principle and emergency spillway elevations.

Principle	6234.9'
Emergency	6237.8'

4. Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

Pond is dry and there is no evidence of recent discharge. No water samples were taken. Vegetation is abundant. No erosion problems evident on in-slopes or out-slopes at time of inspection. Phase I bond release has been achieved and Phase II applied for.

5. Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

The geometry of the impoundment has not changed. The bottom of the pond was damp indicating that approximately 1" of water was recently impounded. Pond will again be dry in a couple of days. Reclamation is essentially complete. Once Phase II bond release is achieved, no further inspections will be required.

Qualification Statement

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: R. Jay Markell **Date:** 13 Oct 99

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 6 of

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	XXXXX	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	XXXXX	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	XXXXX	

COMMENTS AND OTHER INFORMATION

NONE

Certification Statement:

REGISTERED PROFESSIONAL ENGINEER
#7933
R. JAY MARSHALL
[PE Cert. Stamp]
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: R. Jay Marshall Chief Engineer
(Full Name and Title)

Signature: R. Jay Marshall **Date:** 13 OCT 99

P.E. Number & State: 152606 3202 Utah

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of
Permit Number	ACT/007/013	**Report Date**	13 January 2000
Mine Name	Horse Canyon		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	**Impoundment Name**	Sediment Pond #1 (Lower)	
	Impoundment Number	Pond #1	
	UPDES Permit Number	UTG0 40013-001A	
	MSHA ID Number	42-00100	

IMPOUNDMENT INSPECTION

Inspection Date	19 November 1999
Inspected By	R. Jay Marshall
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Quarterly

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No appearance of instability, structural weakness, or any other hazardous condition was observed at the time of inspection.

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OIL, GAS AND MINING

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

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60%	6173.7'	
100%	6174.4'	Unchanged
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Signature: R. Jay Marshall **Date:** 13 Jan 00

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 3 of

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?		
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?		
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?		

COMMENTS AND OTHER INFORMATION

Certification Statement:

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[PE Cert. Stamp]

By: _____
(Full Name and Title)

Signature: _____ **Date:** _____

P.E. Number & State: _____

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 4 of
Permit Number	ACT/007/013	**Report Date**	13 January 2000
Mine Name	Horse Canyon		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	**Impoundment Name**	Sediment Pond #2 (Upper)	
	Impoundment Number	Pond #2	
	UPDES Permit Number	UTG0 40013-002A	
	MSHA ID Number	42-00100	

IMPOUNDMENT INSPECTION

Inspection Date	19 November 1999
Inspected By	R. Jay Marshall
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Quarterly

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100%	6233.5'
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Qualification Statement

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Signature: R. Jay Mauldee **Date:** 13 Jan. 00

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 6 of

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?		
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?		
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?		

COMMENTS AND OTHER INFORMATION

Certification Statement:

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

[PE Cert. Stamp]

By: _____
(Full Name and Title)

Signature: _____ **Date:** _____

P.E. Number & State: _____

COMMERCIAL TESTING & ENGINEERING CO.

3-1-00 DT

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

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 986
PRICE UT 84501
JAY MARSHALL

Updated to DB 4/13/2000 KN

Sample identification by

RS-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 1240 hr.

FIELD MEASUREMENTS

pH	7.87
DO	4
Flow	11 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20854

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	555	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	455	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	14.7	----	meq/l		---------	11-29-1999 1000	RJ
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	0.3	0.1	mg/l		EPA 212.3	11-16-1999 0700	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.2	11-15-1999 0903	SC
Calcium, Dissolved	45	1	mg/l		EPA 215.1	11-12-1999 1255	SC
Cations	14.5	----	meq/l		---------	11-29-1999 1000	RJ
Chloride	15	2	mg/l		EPA 300.0	11-16-1999 0814	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	0.07	0.05	mg/l		EPA 300.0	11-09-1999 1715	RJ
Hardness, Total	384	----	mg/l	as $CaCO_3$	SM2340-B	11-29-1999 1000	RJ
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	11-12-1999 0825	SC
Iron, Total	<0.1	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	66	1	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 1-17	# of pages ▸ 6
To JAY MARSHALL	From LALIZA	
Co./Dept.	Co.	
Phone #	Phone #	
(435) 613-0393	Fax #	

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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SINCE 1908
SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020
HUNTINGTON, UT 84529
TEL: (435) 653-2311
FAX: (435) 653-2436

3-1-00

January 17, 2000

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

Sample identification by

RS-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 1240 hr.

FIELD MEASUREMENTS

pH	7.87
DO	4
Flow	11 GPM
Conductivity	65
Turbidity	CLEAR
Temperature	9.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20854

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	0.22	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	1	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	157	2	mg/l	EPA 273.1	11-12-1999 1220	SC
Solids, Total Dissolved	844	10	mg/l	EPA 160.1	11-15-1999 0715	RJ
Sulfate	249	2	mg/l	EPA 300.0	11-23-1999 1035	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	-0.6	----	%		11-29-1999 1000	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

QC + updated to dbase 4/14/2000 KW

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

RECEIVED
JAN 24 2000
DIVISION OF
OIL, GAS AND MINING

Station # RS-1

Sample Date 11-9-99

Sample Time 1240

Type: Spring ✓ Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 11 GPM

Water Temperature (C) 9°C

pH 7.87

Specific Conductivity 65

Dissolved Oxygen 4

Comments: EVERYTHING NORMAL - NO LIVESTOCK RECENTLY

Sampled by: L. P. CLARK

Laboratory CT&E HUNTINGTON

Date Shipped 11-9-99

Sample ID# RS-1

Date Results Received _____

Electronic Water Data Report By Individual Sample

19990924	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
FLD	Lab Code			SPRING	Site Type
Field Readings Only				Redden Spring	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
	Received / Analyzed / By / Reported / Comments						
1	**FIELD WATER TEMPERATURE**	20		**10.00000**	Deg. C		
	/ / / / / /						
2	**PH (FIELD)**	20		**7.73000**	pH units		
	/ / / / / /						
4	**SP. CONDUCTIVITY (FIELD)**	20		**700.00000**	umhos/cm		
	/ / / / / /						
11	**FLOW**	20		**11.00000**	GPM		
	/ / / / / /						

added to Lab data
4/14/2000 KV

Electronic Water Data Report By Individual Sample

59-20612	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
CTE	Lab Code			SPRING	Site Type
Commercial Testing & Engineering				Redden Spring	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		EPA 206.2
	09/24/1999 10/04/1999 9:48 MK	10/14/1999					
33	DISSOLVED BARIUM	4	<	1.00000	ug/l		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		45.00000	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		63.00000	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		1.00000	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		568.00000	mg/l		EPA 310.1
	09/24/1999 09/27/1999 15:00 KP	10/14/1999					
52	CARBONATE AS CO3	4	<	5.00000	mg/l		EPA 310.1
	09/24/1999 09/27/1999 15:00 KP	10/14/1999					
53	CHLORIDE	4	<	1.00000	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 15:09 RJ	10/14/1999					
56	NITRATE AS N	4		0.21000	mg/l	0.030000	EPA 300.0
	09/24/1999 06/24/1999 15:09 RJ	10/14/1999					

Electronic Water Data Report By Individual Sample

59-20612	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	10:50	Time Sampled	HORSE CANYON	Mine Name
4	Site Id	CLARK	Sampler Name	RS-1	Site Name
CTE	Lab Code			SPRING	Site Type
Commercial Testing & Engineering				Redden Spring	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 15:09 RJ	10/14/1999					
58	ORTHO. PHOSPHATE	4	<	0.05000	mg/l	0.050000	EPA 300.0
	09/24/1999 06/24/1999 15:09 RJ	10/14/1999					
60	SULFATE	4		247.00000	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		465.00000	mg/l		EPA 310.1
	09/24/1999 09/27/1999 15:00 KP	10/14/1999					
63	TOTAL HARDNESS AS CACO3	4		372.00000	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		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		14.10000	meq/l		
	09/24/1999 10/04/1999 9:00 RJ	10/14/1999					
[illegible]	TOTAL ANIONS	4		14.50000	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 # RS-1

Sample Date 6-22-99

Sample Time 0920

Type: Spring X Stream _____ UPDES _____

Sample Collection Point PIPE DISCHARGE FROM SPRING

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

Flow/Depth (gpm) 10 GPM

Water Temperature (C) 10°C

pH 7.95

Specific Conductivity 850

Dissolved Oxygen 5-

Comments: EVERYTHING NORMAL - NO EVIDENCE OF LIVESTOCK

Sampled by: L.P. CLARK

Laboratory CTEE, HUNTINGTON

Date Shipped 6-22-99

Sample ID# RS-1

Date Results Received _____

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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

RS-1

Rec'd 1100 hr.
Sampled 0920 hr.

FIELD MEASUREMENTS

pH	7.95
DO	5
Flow	10 GPM
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

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

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20054

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	145	1	mg/l	EPA 273.1	07-01-1999 1308	SC
Solids, Total Dissolved	805	10	mg/l	EPA 160.1	06-24-1999 1400	KP
Sulfate	249	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	0.02	0.01	mg/l	EPA 289.1	07-02-1999 0906	SC
Cation/Anion Balance	-2.4	----	%		07-07-1999 0930	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

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2-29-00 DJT

July 8, 1999

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

Sample identification by

RS-1

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

Rec'd 1100 hr.
Sampled 0920 hr.

FIELD MEASUREMENTS

pH	7.95
DO	5
Flow	10 GPM
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20054

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	566	5	mg/l	as HCO_3	EPA 310.1	06-30-1999 0800	KP
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	EPA 310.1	06-30-1999 0800	KP
Alkalinity, Total	464	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	14.9	----	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	45	1	mg/l		EPA 215.1	07-01-1999 1455	SC
Cations	14.2	----	meq/l		---------	07-07-1999 0930	RJ
Chloride	14	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	0.14	0.05	mg/l		EPA 300.0	06-24-1999 0930	MK
Hardness, Total	392	----	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	<0.1	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	68	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.

R G Cormier

Huntington Laboratory

MEMBER ACIL

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~~INTERMOUNTAIN POWER AGENCY~~

HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1

Sample Date 3-25-99

Sample Time 1105

Type: Spring X Stream _____ UPDES _____

Sample Collection Point _____

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

Flow/Depth (gpm) 10 GPM

Water Temperature (C) 9°C

pH 7.84

Specific Conductivity 355

Dissolved Oxygen 5

Comments: APPEARED NORMAL, NO LIVESTOCK USE AS YET

Sampled by: L. P. CLARK

Laboratory CTEE, HUNTINGTON Date Shipped 3-25-99

Sample ID# RS-1 Date Results Received _____

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4-5-00 DT

April 29, 1999

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

Sample identification by

RS-1

Kind of sample reported to us Water

Rec'd 1340 hr.
Sampled 1105 hr.

Sample taken at

FIELD MEASUREMENTS

pH	7.84
DO	5
Flow	10 GPM
Conductivity	355
Turbidity	CLEAR
Temperature	9.0°C

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19759

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	555	5	mg/l	as HCO_3	SM2320-B	04-06-1999 1000 KP
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	04-06-1999 1000 KP
Alkalinity, Total	455	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	15.3	----	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	14.5	----	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	0.16	0.01	mg/l		SM4500-F-C	03-26-1999 1813 SC
Hardness, Total	389	----	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	66	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 Cournier

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

RS-1

Kind of sample reported to us Water

Rec'd 1340 hr.
Sampled 1105 hr.

Sample taken at

FIELD MEASUREMENTS

pH	7.84
DO	5
Flow	10 GPM
Conductivity	355
Turbidity	CLEAR
Temperature	9.0°C

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-19759

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	0.5	0.1	mg/l as N	EPA 353.3	03-26-1999 1813	SC
Nitrogen, Nitrite	<0.03	0.01	mg/l as N	EPA 354.1	03-26-1999 1813	SC
Phosphorous, Ortho-PO_4	<0.05	0.01	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	153	2	mg/l	EPA 273.1	04-06-1999 1030	MK
Solids, Total Dissolved	828	10	mg/l	EPA 160.1	03-25-1999 1400	KP
Sulfate	272	1	mg/l	EPA 300.0	03-26-1999 1813	SC
Sulfide	<1.0	0.1	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	-2.6	----	%		04-20-1999 1100	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

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INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

AB 4-1-98

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-X2 REDDEN SPRING TIS

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

Sample Time " " " " " " " "

Type: Spring _____ Stream _____ UPDES _____

Sample Collection Point _____

Appearance of Water: Clear ____ Slightly Cloudy_____ Cloudy___ Opaque____

Flow/Depth (gpm) _____

Water Temperature (C) _____

pH _____

Specific Conductivity _____

Dissolved Oxygen _____

Comments: _____

_____

Sampled by: _____

Laboratory _____ Date Shipped_____

Sample ID# _____ Date Results Received _____

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NP 12-16-97

October 30, 1997

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

Sample identification by
LADWP

ID:RS-2

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

Rec'd 0820 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS

pH	7.56
DO	5
Flow	12 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	9°C

Dissolved metals filtered at lab!

Analysis report no. 59-17825

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	518	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	425	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	27.2	----	meq/l		---------	10-08-1997 0900 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	0.3	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	103	1	mg/l		EPA 215.1	10-07-1997 0030 MK
Cations	24.6	----	meq/l		---------	10-08-1997 0900 RJ
Chloride	29	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	747	----	mg/l	as $CaCO_3$	SM2340-B	10-08-1997 0900 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	119	2	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.

Huntington Laboratory

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12-10-97

October 30, 1997

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

Sample identification by
LADWP

ID:RS-2

Kind of sample reported to us Water

Rec'd 0820 hr.
Sampled 1450 hr.

FIELD MEASUREMENTS

pH	7.56
DO	5
Flow	12 GPM
Conductivity	750
Turbidity	CLEAR
Temperature	9°C

Sample taken at

Sample taken by Leo Clark

Date sampled September 28, 1997

Date received September 29, 1997

Dissolved metals filtered at lab!

Analysis report no. 59-17825

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	<0.1	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
Phosphorous, Ortho-PO_4	0.02	0.01	mg/l as P	SM4500-P-E	09-30-1997 0730 JC
Potassium, Dissolved	7	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	217	2	mg/l	EPA 273.1	10-07-1997 0000 MK
Solids, Total Dissolved	1570	10	mg/l	EPA 160.1	09-29-1997 0700 JC
Sulfate	859	250	mg/l	EPA 375.4	10-07-1997 1210 SC
Sulfide	<1.0	0.1	mg/l	EPA 376.1	10-03-1997 1115 RJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	10-06-1997 0630 MK
Cation/Anion Balance	5.1	----	%		10-08-1997 0900 RJ

Respectfully submitted,
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MB 8-22-97

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # RS-1 RS-2 Redden Spring

Sample Date 6-26-97

Sample Time 1010

Type: Spring X Stream _____ UPDES _____

Sample Collection Point _____

Appearance of Water: Clear X Slightly Cloudy____ Cloudy___ Opaque____

Flow/Depth (gpm) 12 GPM

Water Temperature (C) 10°C

pH 6.30

Specific Conductivity 850

Dissolved Oxygen 5

Comments: AREA AROUND SPRING DISCHARGE HEAVILY DISTURBED BY CATTLE - HAVE NEVER PREVIOUSLY OBSERVED DAMAGE TO THIS EXTENT

Sampled by: Leo R. Clark

Laboratory CTEE, HUNTINGTON Date Shipped 6-26-97

Sample ID# _____ Date Results Received _____

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August 6, 1997

NB 8-22-97

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

Sample identification by
LADWP

ID: RS-~~1~~2

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1010 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	6.3
DO	5
Flow	12 gpm
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17412

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	549	5	mg/l	as HCO_3	SM2320-B	07-08-1997 0800	SC
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	07-08-1997 0800	SC
Alkalinity, Total	450	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	15.8	----	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	0.2	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	44	1	mg/l		EPA 215.1	08-05-1997 1200	MK
Cations	13.7	----	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	0.37	0.01	mg/l		SM4500-F-C	07-24-1997 0800	RJ
Hardness, Total	361	----	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	61	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,
COMMERCIAL TESTING & ENGINEERING CO.

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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: RS-~~1~~ 2

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 1010 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	6.3
DO	5
Flow	12 gpm
Conductivity	850
Turbidity	Clear
Temperature	10.0°C

NOTE: DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17412

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	0.3	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	06-27-1997 0730 RJ
Potassium, Dissolved	1	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	149	2	mg/l	EPA 273.1	08-05-1997 1130 MK
Solids, Total Dissolved	870	10	mg/l	EPA 160.1	07-02-1997 0700 JC
Sulfate	303	250	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	-7.0	----	%		08-05-1997 1530 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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April 30, 1997

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

Sample identification by
LADWP

ID: RS-12
Rec'd 1500 hr.
Sampled 1640 hr.

FIELD MEASUREMENTS

pH	7.70
DO	5
Flow	10 GPM
Conductivity	450
Turbidity	Clear
Temperature	10.0°C

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

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

Analysis report no. 59-17080

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	542	5	mg/l	as HCO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Total	444	5	mg/l	as $CaCO_3$	EPA 310.1	04-01-1997 1100 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-04-1997 1245 MK
Anions	14.7	----	meq/l		---------	04-08-1997 0815 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	0.3	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	44	1	mg/l		EPA 215.1	04-04-1997 1130 MK
Cations	14.4	----	meq/l		---------	04-08-1997 0815 RJ
Chloride	17	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	0.52	0.01	mg/l		SM4500-F-C	04-24-1997 1130 RJ
Hardness, Total	382	----	mg/l	as $CaCO_3$	SM2340-B	04-08-1997 0815 RJ
Iron, Total	<0.1	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	66	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 Scott

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: RS-~~1~~2
Rec'd 1500 hr.
Sampled 1640 hr.

FIELD MEASUREMENTS	
pH	7.70
DO	5
Flow	10 GPM
Conductivity	450
Turbidity	Clear
Temperature	10.0°C

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

Analysis report no. 59-17080

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	04-07-1997 0800	SW
Nitrogen, Nitrate-Nitrite	0.2	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	0.02	0.01	mg/l as P	SM4500-P-E	03-31-1997 0830	JC
Potassium, Dissolved	1	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	156	2	mg/l	EPA 273.1	04-04-1997 1045	MK
Solids, Total Dissolved	820	10	mg/l	EPA 160.1	04-03-1997 0700	JC
Sulfate	257	50	mg/l	EPA 375.4	04-02-1997 0700	SW
Sulfide	<1.0	1.0	mg/l	EPA 376.1	04-02-1997 1015	RJ
Zinc, Dissolved	0.04	0.01	mg/l	EPA 289.1	04-04-1997 0745	MK
Cation/Anion Balance	0.9	----	%		04-08-1997 0815	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory RJ

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DC Cm 5128

September 30, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

~~ID:RS-1~~ (RS-2)

Sample taken at

Temperature 16.0°C
Flow 10 gpm
Rec'd 1330 hr.
Sampled 1015 hr.

Sample taken by Leo Clark

Date sampled August 29, 1996

Date received August 29, 1996

FIELD MEASUREMENTS
pH 7.13
Conductivity 620
DO 5

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16437

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	508	5	mg/l	as HCO_3	SM2320-B	09-10-1996 1230	SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	09-10-1996 1230	SW
Alkalinity, Total	416	5	mg/l	as $CaCO_3$	EPA 310.1	09-10-1996 1230	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-19-1996 1330	MK
Anions	29.4	----	meq/l		---------	09-27-1996 1200	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	09-10-1996 0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-19-1996 1400	MK
Boron, Dissolved	0.5	0.1	mg/l		EPA 212.3	09-11-1996 0715	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	09-19-1996 0830	MK
Calcium, Dissolved	119	1	mg/l		EPA 215.1	09-19-1996 1200	MK
Cations	29.9	----	meq/l		---------	09-27-1996 1200	JJ
Chloride	43	1	mg/l		SM4500-Cl-B	09-23-1996 1330	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-19-1996 1345	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-19-1996 0730	MK
Fluoride	0.21	0.01	mg/l		SM4500-F-C	09-05-1996 0700	SW
Hardness, Total	968	----	mg/l	as $CaCO_3$	SM2340-B	09-27-1996 1200	JJ
Iron, Total	0.1	0.1	mg/l		EPA 236.1	09-19-1996 0930	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-19-1996 0930	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-19-1996 0845	MK
Magnesium, Dissolved	163	5	mg/l		EPA 242.1	09-19-1996 1230	MK
Manganese, Dissolved	0.1	0.1	mg/l		EPA 243.1	09-19-1996 1000	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-04-1996 0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-19-1996 1415	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-19-1996 0800	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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September 30, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

ID:RS-1

Sample taken at

Temperature 16.0°C
Flow 10 gpm
Rec'd 1330 hr.
Sampled 1015 hr.

Sample taken by Leo Clark

FIELD MEASUREMENTS
pH 7.13
Conductivity 620
DO 5

Date sampled August 29, 1996

Date received August 29, 1996

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16437

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	09-19-1996 0800 SW
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	09-26-1996 0930 JJ
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	08-30-1996 0630 JC
Phosphorous, Ortho-PO_4	<0.01	0.01	mg/l as P	SM4500-P-E	08-30-1996 0900 JC
Potassium, Dissolved	9	1	mg/l	EPA 258.1	09-19-1996 1030 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	09-10-1996 1130 MK
Sodium, Dissolved	237	5	mg/l	EPA 273.1	09-19-1996 1100 MK
Solids, Total Dissolved	1929	10	mg/l	EPA 160.1	09-03-1996 0700 JC
Sulfate	953	100	mg/l	EPA 375.4	09-16-1996 1230 SW
Sulfide	<0.1	0.1	mg/l	EPA 376.1	09-05-1996 1245 JJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	09-19-1996 0745 MK
Cation/Anion Balance	0.9	----	%		09-27-1996 1200 JJ

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Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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SH 4/8

September 12, 1996

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

DC CMW 5/28

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1 (RS-2)
Temperature 10.0°C
Flow 11 GPM
Rec'd 1525 hr.
Sampled 1240 hr.

FIELD MEASUREMENTS

pH	6.91
Conductivity	85
DO	4

Kind of sample reported to us Water

Sample taken at

Sample taken by L.P. Clark

Date sampled July 25, 1996

Date received July 25, 1996

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-16323

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	488	5	mg/l	as HCO_3	SM2320-B	08-19-1996 0900	SW
Alkalinity, Carbonate	27	5	mg/l	as CO_3	SM2320-B	08-19-1996 0900	SW
Alkalinity, Total	445	5	mg/l	as $CaCO_3$	EPA 310.1	08-19-1996 0900	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	08-15-1996 1345	MK
Anions	14.5	----	meq/l		---------	09-11-1996 1700	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	09-10-1996 0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	08-15-1996 1430	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	09-11-1996 0715	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	08-15-1996 0845	MK
Calcium, Dissolved	46	1	mg/l		EPA 215.1	08-15-1996 1230	MK
Cations	14.2	----	meq/l		---------	09-11-1996 1700	JJ
Chloride	18	1	mg/l		SM4500-Cl-B	07-29-1996 1200	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	08-15-1996 1400	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	08-15-1996 0730	MK
Fluoride	0.14	0.01	mg/l		SM4500-F-C	08-05-1996 1200	SW
Hardness, Total	378	----	mg/l	as $CaCO_3$	SM2340-B	09-11-1996 1700	JJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	08-15-1996 1000	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	08-15-1996 1000	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	08-15-1996 0900	MK
Magnesium, Dissolved	64	1	mg/l		EPA 242.1	08-15-1996 1245	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	08-15-1996 1030	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	08-06-1996 0800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	08-15-1996 1445	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	08-15-1996 0830	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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CH 4/8

September 12, 1996

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 L.P. Clark

Date sampled July 25, 1996

Date received July 25, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1
Temperature 10.0°C
Flow 11 GPM
Rec'd 1525 hr.
Sampled 1240 hr.

FIELD MEASUREMENTS	
pH	6.91
Conductivity	85
DO	4

NOTE: Dissolved metals filtered at lab

Analysis report no. 59-16323

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	08-08-1996 1210	SW
Nitrogen, Nitrate-Nitrite	1.5	0.5	mg/l as N	EPA 353.3	08-02-1996 0700	MK
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	07-26-1996 0830	MK
Phosphorous, Ortho-PO_4	0.03	0.01	mg/l as P	SM4500-P-E	07-26-1996 1245	MK
Potassium, Dissolved	2	1	mg/l	EPA 258.1	08-15-1996 1100	MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	09-10-1996 1130	MK
Sodium, Dissolved	151	1	mg/l	EPA 273.1	08-15-1996 1130	MK
Solids, Total Dissolved	841	10	mg/l	EPA 160.1	07-29-1996 0700	JC
Sulfate	245	10	mg/l	EPA 375.4	08-01-1996 1415	SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	07-31-1996 1600	JJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	08-15-1996 0800	MK
Cation/Anion Balance	-1.1	----	%		09-11-1996 1700	JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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Cott 4/16

July 31, 1996

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

QC CM 5/28

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1 ~~[illegible]~~ (RS-2)
Temperature 14.0°C
Flow 12 GPM
Rec'd 1700 hr.
Sampled 1305 hr.
FIELD MEASUREMENTS
pH 6.82
DO 4

NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Leo Clark

Date sampled June 27, 1996

Date received June 27, 1996

Analysis report no. 59-16215

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	526	5	mg/l	as HCO_3	SM2320-B	07-02-1996 1000 SW
Alkalinity, Carbonate	9	5	mg/l	as CO_3	SM2320-B	07-02-1996 1000 SW
Alkalinity, Total	446	5	mg/l	as $CaCO_3$	EPA 310.1	07-02-1996 1000 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	07-16-1996 1415 MK
Anions	15.0	----	meq/l		---------	07-31-1996 0930 JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	07-12-1996 0800 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	07-16-1996 1500 MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	07-08-1996 0700 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	07-16-1996 0900 MK
Calcium, Dissolved	45	1	mg/l		EPA 215.1	07-16-1996 1245 MK
Cations	14.7	----	meq/l		---------	07-31-1996 0930 JJ
Chloride	18	1	mg/l		SM4500-Cl-B	07-03-1996 0930 SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	07-16-1996 1430 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	07-16-1996 0730 MK
Fluoride	0.12	0.01	mg/l		SM4500-F-C	07-12-1996 0830 SW
Hardness, Total	392	----	mg/l	as $CaCO_3$	SM2340-B	07-31-1996 0731 JJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	07-16-1996 1015 MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	07-16-1996 1015 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	07-16-1996 0915 MK
Magnesium, Dissolved	68	1	mg/l		EPA 242.1	07-16-1996 1330 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	07-16-1996 1045 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	07-02-1996 1000 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	07-16-1996 1515 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	07-16-1996 0830 MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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GH 4/8

August 1, 1996

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 June 27, 1996

Date received June 27, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

RS-1
Temperature 14.0°C
Flow 12 GPM
Rec'd 1700 hr.
Sampled 1305 hr.

FIELD MEASUREMENTS

pH	6.82
DO	4

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-16215

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	0.6	0.5	mg/l as N	EPA 350.3	07-22-1996 1225	SW
Nitrogen, Nitrate-Nitrite	0.1	0.1	mg/l as N	EPA 353.3	07-16-1996 1100	BR
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	06-28-1996 0855	JJ
Oil & Grease	<4	4	mg/l	SM5520-B	07-11-1996 0800	JC
Phosphorous, Ortho-PO_4	0.01	0.01	mg/l as P	SM4500-P-E	06-28-1996 0930	JJ
Potassium, Dissolved	1	1	mg/l	EPA 258.1	07-16-1996 1115	MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	07-13-1996 0730	MK
Sodium, Dissolved	157	2	mg/l	EPA 273.1	07-16-1996 1130	MK
Solids, Total Dissolved	825	10	mg/l	EPA 160.1	07-01-1996 0700	JC
Sulfate	267	17	mg/l	EPA 375.4	07-16-1996 1230	SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	06-28-1996 1030	BR
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	07-16-1996 0800	MK
Cation/Anion Balance	-1.0	----	%		07-31-1996 0930	JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

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10-96 NB

April 22, 1996

IPA-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 Paul Clark

Date sampled March 27, 1996

Date received March 27, 1996

Sample identification by
IPA-EARTHFAX ENGINEERING

RS-1 Redden Spring 173187-1
Temperature 8.7°C
Flow 14 GPM
Rec'd 1600 hr.
Sampled 1245 hr.

FIELD MEASUREMENTS
pH 8.00
Conductivity 1005
DO 13

D.O. not entered - questionable value

NOTE: Dissolved metals filtered at Lab.

Lab # & code: 59158809

Analysis report no. 59-15880

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	504	2	mg/l	as HCO_3	SM2320-B	04-02-1996 0800 SW
Alkalinity, Carbonate	21	2	mg/l	as CO_3	SM2320-B	04-02-1996 0800 SW
Alkalinity, Total	448	2	mg/l	as $CaCO_3$	EPA 310.1	04-02-1996 0800 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-05-1996 0845 MK
Anions	13.7	----	meq/l		---------	04-11-1996 1600 BR
Arsenic, Dissolved	<0.004	0.004	mg/l		EPA 206.2	03-30-1996 0815 MK
Barium, Dissolved	<0.6	0.6	mg/l		EPA 208.1	04-05-1996 1015 MK
Boron, Dissolved	0.32	0.03	mg/l		EPA 212.3	03-29-1996 0715 MK
Cadmium, Dissolved	<0.004	0.004	mg/l		EPA 213.1	04-08-1996 1345 MK
Calcium, Dissolved	47	0.2	mg/l		EPA 215.1	04-05-1996 1130 MK
Cations	14.9	----	meq/l		---------	04-11-1996 1600 BR
Chloride	19.0	0.4	mg/l		SM4500-Cl-B	04-01-1996 1300 SW
Chromium, Dissolved	<0.02	0.02	mg/l		EPA 218.1	04-05-1996 0930 MK
Copper, Dissolved	<0.03	0.03	mg/l		EPA 220.1	04-08-1996 1130 MK
Fluoride	0.040	0.005	mg/l		SM4500-F-C	04-16-1996 0630 SW
Hardness, Total	395	----	mg/l	as $CaCO_3$	SM2340-B	04-11-1996 1600 BR
Iron, Total	<0.03	0.03	mg/l		EPA 236.1	04-03-1996 0800 MK
Lead, Dissolved	<0.08	0.08	mg/l		EPA 239.1	04-08-1996 1400 MK
Magnesium, Dissolved	68	1.2	mg/l		EPA 242.1	04-05-1996 1230 MK
Manganese, Dissolved	<0.04	0.04	mg/l		EPA 243.1	04-08-1996 0815 MK
Mercury, Dissolved	<0.18	0.18	ug/l		EPA 245.1	04-17-1996 0715 MK
Molybdenum, Dissolved	<0.07	0.07	mg/l		EPA 246.1	04-05-1996 1045 MK
Nickel, Dissolved	<0.04	0.04	mg/l		EPA 249.1	04-08-1996 1330 MK
Nitrogen, Ammonia	<0.2	0.2	mg/l	as N	EPA 350.3	04-08-1996 1330 SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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April 22, 1996

IPA-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 Paul Clark

Date sampled March 27, 1996

Date received March 27, 1996

Sample identification by
IPA-EARTHFAX ENGINEERING

RS-1 Redden Spring
Temperature 8.7°C
Flow 14 GPM
Rec'd 1600 hr.
Sampled 1245 hr.

FIELD MEASUREMENTS

pH	8.00
Conductivity	1005
DO	1.3

D.O. Not entered - questionable value

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15880

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Nitrate-Nitrite	0.26	0.06	mg/l as N	EPA 353.3	04-09-1996 0700	JC
Nitrogen, Nitrite	<0.002	0.002	mg/l as N	EPA 354.1	03-29-1996 0730	JC
Phosphorous, Ortho-PO_4	0.008	0.003	mg/l as P	SM4500-P-E	03-28-1996 0800	JC
Potassium, Dissolved	1.3	0.6	mg/l	EPA 258.1	04-08-1996 0900	MK
Selenium, Dissolved	<0.003	0.003	mg/l	EPA 270.2	04-01-1996 1030	MK
Sodium, Dissolved	161	1.2	mg/l	EPA 273.1	04-08-1996 0930	MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	03-28-1996 0600	SW
Solids, Total Dissolved	784	9	mg/l	EPA 160.1	03-29-1996 0930	JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	03-30-1996 0700	JC
Sulfate	202.0	20	mg/l	EPA 375.4	04-11-1996 0700	SW
Sulfide	<0.06	0.06	mg/l	EPA 376.1	04-03-1996 1030	BR
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	04-08-1996 1230	MK
Cation/Anion Balance	4.1	----	%		04-11-1996 1600	BR

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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January 7, 1996

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

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled December 10, 1995

Date received December 11, 1995

Sample identification by
IPA

RS-2
Temperature 9.3°c
Flow 12 GPM
Rec'd 0805 hr.
Sampled 1635 hr.

FIELD MEASUREMENTS
pH 8.40
Conductivity 1087
DO 8.3

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15702

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	540	5	mg/l	as HCO_3	SM2320-B	12-13-1995 1400	BR
Alkalinity, Carbonate	10	5	mg/l	as CO_3	SM2320-B	12-13-1995 1400	BR
Alkalinity, Total	455	5	mg/l	as $CaCO_3$	EPA 310.1	12-13-1995 1400	BR
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	12-14-1995 1330	MK
Anions	14.2	----	meq/l		---------	---------- -----	--
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	12-12-1995 0915	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	12-14-1995 1430	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	12-11-1995 0900	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	12-14-1995 1030	MK
Calcium, Dissolved	44	1	mg/l		EPA 215.1	12-14-1995 1145	MK
Cations	14.9	----	meq/l		---------	---------- -----	--
Chloride	18	1	mg/l		SM4500-Cl-B	12-21-1995 0930	BR
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	12-14-1995 1345	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	12-14-1995 0915	MK
Fluoride	0.2	0.1	mg/l		SM4500-F-C	12-29-1995 0830	SW
Hardness, Total	365	10	mg/l	as $CaCO_3$	SM2340-B	12-14-1995 1145	MK
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	12-14-1995 0745	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	12-14-1995 1045	MK
Magnesium, Dissolved	62	1	mg/l		EPA 242.1	12-14-1995 1200	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	12-14-1995 0800	MK
Mercury, Dissolved	<0.001	0.001	mg/l		EPA 245.1	01-03-1996 0800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	12-14-1995 1445	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	12-14-1995 1015	MK
Nitrogen, Ammonia	<0.5	0.5	mg/l	as N	EPA 350.3	12-15-1995 0900	SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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

January 7, 1996

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

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled December 10, 1995

Date received December 11, 1995

Sample identification by
IPA

RS-2
Temperature 9.3°c
Flow 12 GPM
Rec'd 0805 hr.
Sampled 1635 hr.

FIELD MEASUREMENTS

pH	8.40
Conductivity	1087
DO	8.3

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15702

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Nitrate-Nitrite	0.1	0.1	mg/l as N	EPA 353.3	12-19-1995 1100 BR
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	12-11-1995 1230 JC
Phosphorous, Ortho-PO_4	0.02	0.01	mg/l as P	SM4500-P-E	12-11-1995 0915 JC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	12-14-1995 0830 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	12-12-1995 1145 MK
Sodium, Dissolved	174	1	mg/l	EPA 273.1	12-12-1995 1415 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	12-11-1995 0845 MK
Solids, Total Dissolved	860	10	mg/l	EPA 160.1	12-12-1995 0730 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	12-12-1995 1030 JC
Sulfate	217	1	mg/l	EPA 375.4	12-28-1995 0700 SW
Sulfide	<1	1	mg/l	EPA 376.1	12-15-1995 0700 BR
Zinc, Dissolved	0.02	0.01	mg/l	EPA 289.1	12-14-1995 0930 MK
Cation/Anion Balance	2.3	----	%		

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)

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

GH 11/16
QC CM 5/28

November 14, 1995

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

Sample identification by
IPA

RS-2

Kind of sample reported to us Water

Temperature 9.4°C
Flow 12 GPM
Rec'd 0930 hr.
Sampled 1530 hr.

Sample taken at

Sample taken by Karl Houskeeper

FIELD MEASUREMENTS
pH 8.31
Conductivity 1092
DO 7.3

Date sampled November 5, 1995

Date received November 6, 1995

Note: Dissolved metals filtered at lab.

Analysis report no. 59-15625

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	515	5	mg/l	as HCO_3	SM2320-B	11-08-1995	1300	SW
Alkalinity, Carbonate	10	5	mg/l	as CO_3	SM2320-B	11-08-1995	1300	SW
Alkalinity, Total	435	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	14.8	----	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	46	1	mg/l		EPA 215.1	11-10-1995	0800	MK
Cations	16.8	----	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	391	10	mg/l	as $CaCO_3$	SM2340-B	11-10-1995	0800	MK
Iron, Total	<0.1	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	67	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.

Larry Sloan R

Manager, Huntington Laboratory

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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

RS-2

Kind of sample reported to us Water

Temperature 9.4°C
Flow 12 GPM
Rec'd 0930 hr.
Sampled 1530 hr.

Sample taken at

Sample taken by Karl Houskeeper

FIELD MEASUREMENTS
pH 8.31
Conductivity 1092
DO 7.3

Date sampled November 5, 1995

Date received November 6, 1995

Note: Dissolved metals filtered at lab.

Analysis report no. 59-15625

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Nitrate-Nitrite	0.2	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	0.02	0.01	mg/l as P	SM4500-P-E	11-06-1995 1200 JC
Potassium, Dissolved	1	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	207	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	860	10	mg/l	EPA 160.1	11-06-1995 0745 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	11-07-1995 0730 JC
Sulfate	265	1	mg/l	EPA 375.4	11-13-1995 0800 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	6.4	----	%		

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

QC cm 5/28

Sample identification by
IPA

RS-2
Temperature 9.2°C
Flow 12 GPM
Rec'd 0835 hr.
Sampled 1845 hr.
FIELD MEASUREMENTS
pH 8.16
Conductivity 1095
DO 6.3
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. 59-15516

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	540	5	mg/l as HCO_3	SM2320-B	10-16-1995	1300	SW
Alkalinity, Carbonate	5	5	mg/l as CO_3	SM2320-B	10-16-1995	1300	SW
Alkalinity, Total	450	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	14.0	----	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	44	1	mg/l	EPA 215.1	10-24-1995	1100	MK
Cations	14.2	----	meq/l	---------	----------	-----	--
Chloride	16	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	365	10	mg/l as $CaCO_3$	SM2340-B	10-24-1995	1100	MK
Iron, Total	<0.1	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	62	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

COMMERCIAL TESTING & ENGINEERING CO.
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Sept 4/6

October 30, 1995

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

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

Sample identification by
IPA

RS-2
Temperature 9.2°C
Flow 12 GPM
Rec'd 0835 hr.
Sampled 1845 hr.

FIELD MEASUREMENTS

pH	8.16
Conductivity	1095
DO	6.3

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15516

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	<0.01	0.01	mg/l as P	SM4500-P-E	10-06-1995 0700 JC
Potassium, Dissolved	1	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	158	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	850	10	mg/l	EPA 160.1	10-09-1995 0830 JC
Solids, Total Suspended	5	5	mg/l	EPA 160.2	10-09-1995 0730 JC
Sulfate	220	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	0.4	----	%		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

IPA
HORSE CANYON MINE
ACT/007/013

1997 WATER MONITORING DATA

SAMPLE LOCATION: RS - 2 (Redden Spring)

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)	*	*	10			12			12			
pH	standard			7.7			6.3			7.56			
Temp	o C			10			10			9			
Conductivity	umhos/cm			450			850			750			
Dissolved Oxygen	ppm			5			5			5			
Aluminum	mg/l			<1			<1			<1			
Arsenic	mg/l			<0.01			<0.01			<0.01			
Barium	mg/l			<0.1			<0.1			<1			
Bicarbonate	mg/l			542			549			518			
Boron	mg/l			0.3			0.2			0.3			
Cadmium	mg/l			<0.01			<0.01			<0.01			
Calcium	mg/l			44			44			103			
Carbonate	mg/l			<5			<5			<5			
Chloride	mg/l			17			17			29			
Chromium	mg/l			<0.1			<0.1			<0.1			
Copper	mg/l			<0.1			<0.1			<0.1			
Fluoride	mg/l			0.52			0.37			<0.10			
Hardness	mg/l			382			361			747			
Iron Total	mg/l			<0.1			<0.1			<0.1			
Lead	mg/l			<0.1			<0.1			<0.1			
Magnesium	mg/l			66			61			119			
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			<0.5			<0.5			<0.5			
Nitrate	mg/l			0.2			0.3			<0.1			
Nitrite	mg/l			<0.01			<0.01			<0.01			
Phosphate	mg/l			0.02			0.04			0.02			
Potassium	mg/l			1			1			7			
Selenium	mg/l			<0.01			<0.01			<0.01			
Sodium	mg/l			156			149			217			
Sulfate	mg/l			257			303			849			
Sulfide	mg/l			<1.0			<1.0			<1.0			
TDS	mg/l			820			870			1570			
Zinc	mg/l			0.04			0.02			0.01			

IPA
HORSE CANYON MINE
ACT/007/013

1996 WATER MONITORING DATA

SAMPLE LOCATION: RS - 2 (Redden Spring)

already entered in system

* 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)	*	*	14	10	12	12						
pH	standard			8	8.11	7.53	6.82						
Temp	o C			8.7	9	9	14						
Conductivity	umhos/cm			1005	850	900	NR						
Dissolved Oxygen	ppm			13	4	8	4						
Aluminum	mg/l			<1	<1	3	<1						
Arsenic	mg/l			<0.004	<0.004	<0.004	<0.01						
Barium	mg/l			<0.6	<0.6	<0.6	1						
Bicarbonate	mg/l			504	537	525	526						
Boron	mg/l			0.32	0.31	0.33	0.3						
Cadmium	mg/l			<0.004	<0.004	<0.004	<0.01						
Calcium	mg/l			47	46	46	45						
Carbonate	mg/l			21	<2	10	9						
Chloride	mg/l			19	14	18	18						
Chromium	mg/l			<0.02	<0.02	<0.02	<0.1						
Copper	mg/l			<0.03	<0.03	<0.03	<0.1						
Fluoride	mg/l			0.04	0.2	0.168	0.12						
Hardness	mg/l			395	383	383	392						
Iron Total	mg/l			<0.03	<0.03	<0.03	<0.1						
Lead	mg/l			<0.08	<0.08	<0.08	<0.1						
Magnesium	mg/l			68	65	65	68						
Manganese	mg/l			<0.04	<0.04	<0.04	<0.1						
Mercury	mg/l			<0.18	<0.18	<0.18	<0.2						
Molybdenum	mg/l			<0.07	<0.07	<0.07	<0.1						
Nickel	mg/l			<0.04	<0.04	<0.04	<0.1						
Ammonia	mg/l			<0.2	<0.2	<0.2	0.6						
Nitrate	mg/l			0.26	0.29	0.3	0.1						
Nitrite	mg/l			<0.002	<0.002	<0.002	<0.01						
Phosphate	mg/l			0.008	0.005	0.005	NR						
Potassium	mg/l			1.3	1.2	1.4	1						
Selenium	mg/l			<0.003	0.004	0.016	<0.01						
Sodium	mg/l			161	163	160	157						
Sulfate	mg/l			202	269	236	267						
Sulfide	mg/l			<0.06	<0.06	<0.06	NR						
TDS	mg/l			784	820	838	825						
Zinc	mg/l			0.02	0.07	0.03	0.02						

NR: Not Reported

SH 4/8

IPA
HORSE CANYON MINE
ACT/007/013

1995 WATER MONITORING DATA

SH 4/8

SAMPLE LOCATION: RS - 2 (Redden Spring)

* 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)	*	*	*	*	12	12	12	12	12	12	12	12
pH	standard					8.07	8.23	8.3	8.05	8.22	8.16	8.31	8.4
Temp	o C					9.9	10	10	12.1	11.8	9.2	9.4	9.3
Conductivity	umhos/cm					1250	1230	1233	1130	1145	1095	1092	1087
Dissolved Oxygen	ppm					15.8	12.1	12.5	10.7	9.9	6.3	7.3	8.3
Aluminum	mg/l					<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	mg/l					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarbonate	mg/l					525	485	540	525	525	540	515	540
Boron	mg/l					0.2	0.3	0.2	0.1	0.2	0.3	0.3	0.3
Cadmium	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Calcium	mg/l					48	42	45	41	43	44	46	44
Carbonate	mg/l					15	30	<5.0	<5.0	<5.0	5	10	10
Chloride	mg/l					18	18	19	19	18	16	18	18
Chromium	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoride	mg/l					0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2
Hardness	mg/l					400	360	370	354	371	365	391	365
Iron Total	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium	mg/l					69	62	63	61	64	62	67	62
Manganese	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	mg/l					<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Molybdenum	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ammonia	mg/l					1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate	mg/l					0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.1
Nitrite	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphate	mg/l					0.02	<0.01	0.01	<0.01	<0.01	<0.01	0.02	0.02
Potassium	mg/l					1	1	1	1	<1.0	1	1	1
Selenium	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	mg/l					158	162	159	164	171	158	207	174
Sulfate	mg/l					240	260	220	237	268	220	265	217
Sulfide	mg/l					<1	<1	<1	<1	<1	<1	<1	<1
TDS	mg/l					810	840	820	800	840	850	860	860
Zinc	mg/l					<0.01	0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.02

IPA
HORSE CANYON MINE
ACT/007/013

1994 WATER MONITORING DATA

CH 4/8
already entered in system

S[illegible] LOCATION: RS - 2 (Redden Spring) * 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)	*	*	12	12	12	12	12	12	12	12	12	*
pH	standard			8.02	7.57	7.8	8.19	8.06	8.05	8.09	8.2	8.07	
Temp	o F			46.8	55.3	49.2	54.5	50.54	51.26	50.36	49.1	44.78	
Conductivity	umhos/cm			980	1080	1070	1080	1130	1130	1120	1090	1190	
Dissolved Oxygen	ppm			9.8 ~~98~~	13.8	14	8.3	5.2	7.5	10.5	5.2	7.1	
Aluminum	mg/l			<2	<2	<2	<2	<2	<2	<2	<2	<2	
Arsenic	mg/l			0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Barium	mg/l			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	
Bicarbonate	mg/l			547	563	566	554	526	558	525	525	500	
Boron	mg/l			0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	
Cadmium	mg/l			0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.20	
Calcium	mg/l			46	45	43	45	47	45	47	37	43	
Carbonate	mg/l			3	1	<1	<1	<1	<1	<1	<1	<1	
Chloride	mg/l			14	16	17	12	16	13	16	19	18	
Chromium	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Copper	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Fl[illegible]ide	mg/l			0.2	<0.2	<0.2	0.2	0.2	0.2	0.2	0.2	0.2	
H[illegible]ss	mg/l			366	384	367	364	389	376	390	340	380	
Ir[illegible]total	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Lead	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Magnesium	mg/l			61	66	63	61	66	64	66	60	65	
Manganese	mg/l			<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	
Mercury	mg/l			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Molybdenum	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nickel	mg/l			<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
Ammonia	mg/l			0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
Nitrate	mg/l			0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	
Nitrite	mg/l			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Phosphate	mg/l			<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.02	0.02	0.02	
Potassium	mg/l			<2	<2	<2	<2	<5	<5	<5	<5	<5	
Selenium	mg/l			0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Sodium	mg/l			150	159	138	159	151	142	186	176	150	
Sulfate	mg/l			230	260	250	220	210	210	270	270	190	
Sulfide	mg/l			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TDS	mg/l			780	800	800	770	810	810	808	802	810	
Zinc	mg/l			<0.03	0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	

IPA
HORSE CANYON MINE
ACT/007/013

1993 WATER MONITORING DATA

JAN 31 1994
DIVISION OF
OIL, GAS & MINING

CM 0129

SAMPLE LOCATION: RS - 2 (Redden Spring) * 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)	*	*	*	12	10	12	12	12	12	15	20	*
pH	standard				7.8	7.88	8.45	8.47	7.97	8.42	7.58	7.68	
Temp	o F				52.2	52.2	54.2	54.3	53.3	53.3	50	46.6	
Conductivity	umhos/cm (field)				1230	1170	1160	1167	1130	1160	1120	1210	
Dissolved Oxygen	ppm				6.1	11	12	6.9	11.6	10.4	16	7.3	
Aluminum	mg/l				<1	<1.00	<1.00	<1.00	0	0	<1	<2	
Arsenic	mg/l				<0.003	0.004	0.003	0.007	<0.002	0.002	<0.010	<0.010	
Barium	mg/l				<0.2	<0.2	<0.2	<0.20	0	0	<1.0	<0.5	
Bicarbonate	mg/l				547	505	474	522	513	518	562	549	
Boron	mg/l				0.18	0.33	0.28	0.16	0.07	0.13	0.22	0.2	
Cadmium	mg/l				<0.0001	0	<0.0002	<0.0002	<0.0005	0.005	<0.0200	<0.0200	
Calcium	mg/l				39.6	35.2	50.1	56.7	44	40	48	47	
Carbonate	mg/l				<1	<1	0	0	0	0	<1	<1	
Chloride	mg/l				6.4	7.6	31.8	15.9	23.7	23.1	20	19	
Chromium	mg/l				<0.0003	0	0.0002	0.0018	<0.0	0	<0.1	<0.1	
Copper	mg/l				<0.03	<0.030	<0.030	<0.030	<0.01	<0.01	<0.05	<0.20	
Flouride	mg/l				0.2	0.24	0.19	0.17	0.31	0.31	0.26	0.28	
Hardness	mg/l				351	338	374	436	****	355.2	412	402	
Iron total	mg/l				0.21	0.14	<0.05	<0.05	0.14	0.03	<0.05	<0.20	
Lead	mg/l				<0.003	0	0.0003	<0.0003	<0.050	<0.050	<0.400	<0.200	
Magnesium	mg/l				61.2	60.8	60.4	71.5	68	62	71	69	
Manganese	mg/l				0.02	0	<0.03	<0.03	0.01	0.01	<0.03	<0.10	
Mercury	mg/l				<0.003	0	<0.0002	<0.0002	<0.0004	0.0007	<0.0002	<0.0010	
Molybdenum	mg/l				<0.20	<0.20	<0.20	0.3	<0.0	<0.1	<0.2	<1.0	
Nickel	mg/l				0.04	<0.08	<0.08	0.14	0.25	0.01	<1.00	<0.30	
Ammonia	mg/l				0.08	<0.08	<0.08	<0.08	0.15	0.13	<0.08	<0.40	
Nitrate	mg/l				0.44	0.33	0.27	0	0.23	0.27	0.31	0.4	
Nitrite	mg/l				<0.02	0.02	0	0	<0.02	0	0.01	0.01	
Phosphate	mg/l				0.16	0.01	0.02	0	****	0.02	0.01	0	
Potassium	mg/l				2.8	1	19	0.2	1.2	1	<10.0	<2.0	
Selenium	mg/l				0.007	0.007	<0.004	<0.004	0.007	0.007	<0.010	<0.010	
Sodium	mg/l				160.8	141.7	158.4	165.7	160	140	164	154	
Sulfate	mg/l				150	200	230	240	320	220	180	230	
Sulfide	mg/l				4	3	4	<0.90	<0.9	<0.9	<0.9	<1.0	
TDS	mg/l				788	797	828	761	808	830	817	760	
Zinc	mg/l				0.04	<0.03	<0.03	0.03	0.01	<0.01	<0.03	<0.03	

RECEIVED
JAN 13 1993
DIVISION OF
OIL GAS & MINING

CW 5/29

IPA
HORSE CANYON MINE
ACT/007/013

1992 WATER MONITORING DATA

SAMPLE LOCATION: RS - 2 (Redden Spring)

M INACCESSIBLE

Parameter	Units	Jan 92	Feb 92	Mar 92	Apr 92	May 92	June 92	July 92	Aug 92	Sept 92	Oct 92	Nov 92	Dec 92
Flow	(gpm)	M	M	M	10	8.57	10	10	10	10	10	10	M
pH	standard				7.86	7.8	7.92	9.11	8.24	8.02	8.6	8.14	
Temp	o C				10	11.33	11.5	11.39	11.33	10.89	8.22	7.94	
Conductivity	umhos/cm				2300	595	1016	1420	1209	1110	1170	1180	
Dissolved Oxygen	ppm				7.5	5.4	6.5	6.1	6.3	7.4	9.5	6.7	
Aluminum	mg/l				0	0.35	0	0	0	0	0	0	
Arsenic	mg/l				0	0	0	0	0	0	0	0	
Barium	mg/l				0	0	0	0	0	0	0	0	
Bicarbonate	mg/l				486	546	536	607	557	541	409	394	
Boron	mg/l				0.16	0.15	0.27	0.28	0.26	0.16	0.21	0.27	
Cadmium	mg/l				0	0	0	0	0	0	0	0	
Calcium	mg/l				50.6	48	48.9	47	38.6	37.7	97.8	52	
Carbonate	mg/l				0	0	0	0	0	0	0	0	
Chloride	mg/l				50	15	20	20	25	30	20	20	
Chromium	mg/l				0	0	0	0	0	0	0	0	
Copper	mg/l				0	0.012	0	0	0	0	0	0	
Fluoride	mg/l				0.21	0.35	0.22	0.23	0.23	0.28	0.02	0.15	
Hardness	mg/l				387	352	395	395	378	503	518	278	
Iron Total	mg/l				0	0	0.14	0	0.04	0	0.09	0	
Lead	mg/l				0	0	0	0	0	0	0	0	
Magnesium	mg/l				63.2	56.42	66.3	67.4	68.3	99.4	66.5	35.9	
Manganese	mg/l				0	0	0	0	0	0	0	0.03	
Mercury	mg/l				0	0	0	0	0	0.003	0	0	
Molybdenum	mg/l				0	0	0	0	0	0	0	0	
Nickel	mg/l				0.02	0	0.02	0.02	0	0	0	0	
Ammonia	mg/l				0.98	0.12	0.53	0.03	0.04	0	0.02	0	
Nitrate	mg/l				0.01	0.19	0.27	0.19	0.43	0.49	0.3	0.05	
Nitrite	mg/l				0.03	0	0	0	0.07	0	0	0	
Phosphate	mg/l				0	0.01	0	0.01	0	0	0	0	
Potassium	mg/l				0	6.53	1.03	0	0	1.5	7.18	0.42	
Selenium	mg/l				0	0.005	0	0	0	0	0	0	
Sodium	mg/l				179.5	213.1	163.1	170.4	140.4	106.6	23.75	159.2	
Sulfate	mg/l				260	270	240	220	160	240	190	250	
Sulfide	mg/l				0	4.4	4.2	6.8	6	6.6	1.2	3.8	
TDS	mg/l				785	802	794	776	770	792	824	765	
Zinc	mg/l				0	0.03	0.15	0.07	0	0	0	0.05	

CM 5/29

IPA
HORSE CANYON MINE
ACT/007/013

1991 WATER MONITORING DATA

? HUGE

PLE LOCATION: RS - 2 (Redden Spring) * 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)	*	*	12	12	12	12	12	12	12	8	*	*
pH	standard			8.05	8.28	8.33	8.03	7.1	8.1	8.3	7.1		
Temp	o C			10	7	12	13	15	10	9	16		
Conductivity	umhos/cm			2400	2400	3500	2200	2400	2300	2400	2600		
Dissolved Oxygen	ppm			5	801	7.1	9.1	8.4	5.5	8.4	10.6		
Aluminum	mg/l			<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1		
Arsenic	mg/l			<.01	<.01	<.01	<.01	<.01	<.05	<.01	<.01		
Barium	mg/l			<.01	<.01	0.028	<.01	0.021	<.01	0.02	0.033		
Bicarbonate	mg/l			541	516	467	500	534	552	558	540		
Boron	mg/l			0.12	0.12	0.138	0.18	0.124	0.12	0.13	0.14		
Cadmium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Calcium	mg/l			36.9	22.6	37.5	34.9	32.5	36.5	40.2	41.4		
Carbonate	mg/l			7.1	14.3	0	18.5	22.8	9.5	0	4.7		
Chloride	mg/l			21	17.3	17.1	20	16.8	16	17.3	18		
Chromium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Copper	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Fluoride	mg/l			0.24	0.22	0.36	0.34	0.34	0.26	0.29	0.4		
Hardness	mg/l			392	388	391	398	399	398	393	396		
Iron Total	mg/l			0.045	0.015	0.222	0.045	0.06	0.08	0.353	0.305		
Lead	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Magnesium	mg/l			78.9	65.8	70.8	88.4	70.5	65.9	68.3	62.8		
Manganese	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Mercury	mg/l			<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002		
Molybdenum	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Nickel	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Ammonia	mg/l			<.2	<.2	3.68	<.2	<.2	0.029	0.38	1.23		
Nitrate	mg/l			<.01	0.651	0.36	0.36	0.42	0.29	0.31	0.48		
Nitrite	mg/l			0.008	0.006	<.005	0.015	0.005	<.005	<.005	<.005		
Phosphate	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01		
Potassium	mg/l			1.4	1.8	1.6	1.4	1.2	1.6	2.7	2.2		
Selenium	mg/l			<.002	<.002	0.006	<.002	0.023	0.079	0.003	<.005		
Sodium	mg/l			144	224	148	133	222	178	167	147		
Sulfate	mg/l			274	257	254	247	247	249	247	238		
Sulfide	mg/l			<.1	<.1	<.5	<.1	<.5	<.5	<.5	<.5		
TDS	mg/l			827	859	817	902	842	850	1169	884		
Zinc	mg/l			<.01	<.01	0.018	<.01	0.011	<.01	0.017	0.023		

IPA
HORSE CANYON MINE
ACT/007/013

1990 WATER MONITORING DATA

SAMPLE LOCATION: RS - 2 (Redden Spring) * 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)	*	*	*	12	12	12	12	12	12			
pH	standard				7.69	7.13	7.47	8.51	8.08	7.81			
Temp	o C				11	11	12	13	15	13			
Conductivity	umhos/cm				2500	2100	2800	2800	2500	2400			
Dissolved Oxygen	ppm				4.8	6.9	4.8	8.3	5.4	6.9			
Aluminum	mg/l				<.1	<.1	<.1	<.1	<.1	<.1			
Arsenic	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Barium	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Bicarbonate	mg/l				509	567	547	572	505	554			
Boron	mg/l				0.26	<.1	<.1	0.28	0.33	0.26			
Cadmium	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Calcium	mg/l				30.1	35.4	25.2	46.5	3.2	35.2			
Carbonate	mg/l				0	0	0	1.2	0	12.4			
Chloride	mg/l				28.6	16.8	16.2	18	24	16.4			
Chromium	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Copper	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Flouride	mg/l				0.3	0.28	0.32	<.1	<.1	0.25			
Hardness	mg/l				397	394	408	387	394	398			
Iron Total	mg/l				0.032	0.082	0.108	0.06	0.115	0.15			
Lead	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Magnesium	mg/l				78.9	79.2	86.9	82.4	56.7	70.8			
Manganese	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Mercury	mg/l				<.0002	<.0002	<.0002	<.0002	<.0002	<.0002			
Molybdenum	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Nickel	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Ammonia	mg/l				0.71	1.07	0.33	0.74	0.24	0.6			
Nitrate	mg/l				0.332	0.46	0.07	0.43	0.38	0.42			
Nitrite	mg/l				<.005	<.005	<.005	<.005	<.005	<.01			
Phosphate	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			
Potassium	mg/l				2	2	2.9	1.6	2.4	1.6			
Selenium	mg/l				<.002	<.002	<.002	<.002	<.002	<.002			
Sodium	mg/l				129	149	152	143	164	152			
Sulfate	mg/l				188	286	272	180	237	261			
Sulfide	mg/l				<.1	<.1	<.1	<.1	<.1	<.1			
TDS	mg/l				867	838	869	818	872	838			
Zinc	mg/l				<.01	<.01	<.01	<.01	<.01	<.01			

KAISER COAL CORPORATION
HORSE CANYON MINE
ACT/007/013

1989 WATER MONITORING DATA

Cm
5/29

SAMPLE LOCATION: RS - 2 (Redden Spring)

* 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)	*	*	12	20	20	20	20	20	20	20	20	*
pH	standard			8.36	8.15	7.37	7.74	7.8	7.86	8.01	8.12	8.16	
Temp	o C			8	9	8	8	10	10	10	9	8	
Conductivity	umhos/cm			2200	2400	2700	2500	2400	2300	2400	2500	2400	
Dissolved Oxygen	ppm			4.2	5	6.4	6.4	7.1	8.1	8.1	8.2	8.1	
Aluminum	mg/l			<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	
Arsenic	mg/l			<.01	<.01	<.01	<.01	<.01	<.1	<.01	0.012	<.01	
Barium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Bicarbonate	mg/l			338	564	503	581	553	533	540	539	656	
Boron	mg/l			0.31	0.22	0.18	0.113	0.21	0.12	0.23	0.4	0.208	
Cadmium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Calcium	mg/l			43.4	44.8	118	42.3	41	30.2	42.1	31	29.4	
Carbonate	mg/l			78	0.5	3	0	0	0	0	0	0	
Chloride	mg/l			19.7	23.7	26	20.1	23.5	20.9	19.9	22.9	24.2	
Chromium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Copper	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Flouride	mg/l			0.44	0.42	0.44	0.4	0.36	0.498	0.52	0.23	0.34	
Hardness	mg/l			448	393	310	424	374	424	383	383	392	
Iron Total	mg/l			0.033	0.065	4.21	0.06	0.085	0.035	0.042	0.06	0.02	
Lead	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Magnesium	mg/l			102	0.8	58.6	83	79	50.2	70.2	64	76.8	
Manganese	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	0.02	
Mercury	mg/l			<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	
Molybdenum	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Nickel	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Ammonia	mg/l			0.16	<.2	0.22	0.88	<.2	<.2	0.88	<.2	0.69	
Nitrate	mg/l			0.38	3.46	0.89	0.691	<.02	0.36	0.761	0.86	0.338	
Nitrite	mg/l			0.02	<.01	<.005	<.01	<.005	<.005	0.02	<.005	<.005	
Phosphate	mg/l			<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	
Potassium	mg/l			9.2	0.8	12.4	1.6	5.6	1.3	1.5	2.1	2.3	
Selenium	mg/l			<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002	
Sodium	mg/l			140	170	408	154	186	159	157	157	162	
Sulfate	mg/l			291	258	675	267	268	78.6	251	202	177	
Sulfide	mg/l			<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	
TDS	mg/l			879	845	1380	1020	774	848	861	855	456	
Zinc	mg/l			<.01	0.12	<.01	0.011	<.01	<.01	<.01	0.14	<.01	

QC CH 11/8 cm 5129

SURFACE WATER QUALITY MONITORING

GENEVA COAL MINE

RS-2

Sample Date:	4-27-83	11-18-83
Aluminum, Al mg/l	.15	<.001
Ammonia, NH3 mg/l	2.64	<.01
Arsenic, As mg/l	.003	<.001
Barium, Ba mg/l	.040	.038
Bicarbonate, HNO3 mg/l	512.40	522.16
Boron, B mg/l	.11	.16
Cadmium, Cd mg/l	<.001	<.001
Calcium,Ca mg/l	48.00	52.00
Carbonate, CO3 mg/l	24.00	<.01
Chloride, Cl mg/l	23.60	24.00
Chromium, Cr mg/l	.003	<.001
Conductivity, umhos/cm	1,400	1,280
Copper, Cu mg/l	.01	<.001
Flouride, F mg/l	.20	.23
Iron, Fe (total) mg/l	.180	.010
Lead, Pb mg/l	.006	.020
Magnesium, Mg mg/l	74.40	76.80
Manganese, Mn mg/l	.003	0.10
Mercury, Hg mg/l	<.0002	<.0002
Molybdenum, Mo mg/l	<.01	.017
Nickel, Ni mg/l	.01	.02
Nitrate, NO3-N mg/l	.53	.46
Nitrite, NO2-N mg/l	.03	<.01
Phosphate, PO4 mg/l	.10	.24
Potassium, K mg/l	8.80	1.7
Selenium, Se mg/l	.003	<.001
Sodium, Na mg/l	190	143.00
Sulfate, SO4 mg/l	355	280
Sulfide, S mg/l	.80	1.14
Suspended Solids mg/l	61.0	1.0
Total Dissolved Solids mg/l	966	890
Zinc, Zn mg/l	.015	.020
pH Units	7.90	7.60

SURFACE WATER QUALITY DATA

GENEVA COAL MINE

CM 5129

Sampling Date:	2-12-81	3-11-81	4-22-81	5-13-81	6-24-81	7-8-81
RS-2						
Flow (gpm)	NA	NA	NA	20	NA	34
Acidity as $CaCO_3$ mg/l	<.1	<.1	2.50	4.00	<.01	4.00
Alkalinity as $CaCO_3$ mg/l	500.00	434.00	418.00	450.00	424.00	424.00
Dissolved Iron mg/l	.032	.060	NA	.390	.010	<.001
Iron as Fe (Total) mg/l	.040	.190	.160	.440	.400	.010
Manganese as Mn (Tot) mg/l	<.001	.050	.010	.050	.010	.010
Suspended Solids mg/l	NA	NA	NA	9.0	113	14.0
Total Dissolved Solids mg/l	900	900	1,000	900	900	950
pH Units	8.10	7.80	8.00	8.20	8.10	7.80

Sampling Date:	8-12-81	9-9-81	10-14-81	11-10-81	12-9-81	3-9-82
RS-2						
Flow (gpm)	24	25	30	30	24	NA
Acidity as $CaCO_3$ mg/l	4.00	<.01	<.01	<.01	<.01	
Alkalinity as $CaCO_3$ mg/l	416.00	430.00	79.00	486.00	338.00	
Dissolved Iron mg/l	<.001	.018	.020	NA	.015	
Iron as Fe (Total) mg/l	.070	.420	.450	.465	.460	
Manganese as Mn (Tot) mg/l	.010	.009	.015	.025	.017	
Suspended Solids mg/l	5.0	8.0	6.1	NA	2.0	
Total Dissolved Solids mg/l	900	950	950	900	900	
pH Units	8.10	8.10	8.3	8.10	8.30	

Sampling Date:	4-13-82	5-17-82	6-8-82	7-12-82	8-11-81	9-15-82
RS-2						
Flow (gpm)	20	30	30	25	NA	25
Acidity as $CaCO_3$ mg/l	<.01	6.00	18.00	5.00	<.01	<.01
Alkalinity as $CaCO_3$ mg/l	494.00	520.20	411.00	500.00	536.00	318.30
Dissolved Iron mg/l	NA	NA	.010	.030	.060	.045
Iron as Fe (Total) mg/l	<.001	.060	.010	.030	.150	.056
Manganese as Mn (Tot) mg/l	.010	.005	.002	.005	.015	.010
Suspended Solids mg/l	7.0	7.0	11.0	<1.0	5.0	11.0
Total Dissolved Solids mg/l	1,050	886	900	950	862	946
pH Units	7.80	7.80	7.60	7.60	8.20	8.10

NA - Not Available

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GENERAL OFFICE: 1918 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 - TEL: 630-953-8900 FAX: 630-953-8906
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P.O. BOX 1020
HUNTINGTON, UT 84528
TEL: (435) 652-2811
FAX: (435) 652-2828

January 17, 2000

UTAH AMERICAN ENERGY CORP.
P.O. BOX 986
PRICE UT 84501
ATT: MARSHALL

Sample identification by

HC-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 1130 hr.

FIELD MEASUREMENTS	
pH	8.16
DO	5
Flow	7 GPM
Conductivity	80
Turbidity	CLEAR
Temperature	11.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20856

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	0.10	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	2	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	162	2	mg/l		EPA 273.1	11-12-1999 1220	SC
Solids, Total Dissolved	839	10	mg/l		EPA 160.1	11-15-1999 0715	RJ
Sulfate	226	2	mg/l		EPA 300.0	11-22-1999 1035	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	11.7	----	%			12-16-1999 0945	MK

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OIL, GAS AND MINING

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R J Cormier

Huntington Laboratory

MEMBER ACIL

UtahAmerican Energy Inc.
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

RECEIVED
JAN 24 2000
DIVISION OF
OIL, GAS AND MINING

Station # HC-1

Sample Date 11-9-99

Sample Time 1130

Type: Spring ____ Stream X UPDES ____

Sample Collection Point ON STREAM AT APPROXIMATE CARBON/EMERY COUNTY LINE

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

Flow/Depth (gpm) 7 GPM

Water Temperature (C) 11°C

pH 8.16

Specific Conductivity 80

Dissolved Oxygen 5+

Comments: CLEAR FLOW, NO OBSERVED LIVESTOCK DISTURBANCE

Sampled by: L.P. CLARK

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

Sample ID# HC-1 Date Results Received ____

COMMERCIAL TESTING & ENGINEERING CO.

2-29-00 DJ

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HUNTINGTON, UT 84528
TEL: (435) 653-2311
FAX: (435) 653-2436

January 17, 2000

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

Sample identification by

HC-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 1130 hr.

FIELD MEASUREMENTS

pH	8.16
DO	5
Flow	7 GPM
Conductivity	80
Turbidity	CLEAR
Temperature	11.0°C

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20856

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	0.10	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	2	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	162	2	mg/l	EPA 273.1	11-12-1999 1220 SC
Solids, Total Dissolved	839	10	mg/l	EPA 160.1	11-15-1999 0715 RJ
Sulfate	226	2	mg/l	EPA 300.0	11-22-1999 1035 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	11.7	----	%		12-16-1999 0945 MK

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JAN 24 2000
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OIL, GAS AND MINING

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	9:45	Time Sampled	HORSE CANYON	Mine Name
1	Site Id	CLARK	Sampler Name	HC-1	Site Name
FLD	Lab Code			STREAM	Site Type
Field Readings Only				L FK Horse Cyn Wash AB mine	Site Description

	Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
1	FIELD WATER TEMPERATURE	20		14.00000	Deg. C		
2	PH (FIELD)	20		8.13000	pH units		
3	DISSOLVED OXYGEN (FIELD)	20		4.00000	mg/l		
4	SP. CONDUCTIVITY (FIELD)	20		920.00000	umhos/cm		
11	FLOW	20		7.00000	GPM		

	Received	Analyzed	By	Reported	Comments
1	/ /	/ /		/ /	
2	/ /	/ /		/ /	
3	/ /	/ /		/ /	
4	/ /	/ /		/ /	
11	/ /	/ /		/ /	

added to lab data
4/14/2000 KW

Electronic Water Data Report By Individual Sample

59-20613	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	9:45	Time Sampled	HORSE CANYON	Mine Name
1	Site Id	CLARK	Sampler Name	HC-1	Site Name
CTE	Lab Code			STREAM	Site Type
Commercial Testing & Engineering				L FK Horse Cyn Wash AB mine	Site Description

Parameter	Type	EI	Value	Units	Min.Det.Limit	Method
Received / Analyzed / By / Reported / Comments						
24 SULFIDE	20	<	1.00000	mg/l	1.000000	EPA 376.1
08/24/1999 09/29/1999 10:00 KP 10/14/1999						
31 AMMONIA AS N	20	<	0.50000	mg/l	0.500000	EPA 350.3
08/24/1999 10/05/1999 12:00 SC 10/14/1999						
32 DISSOLVED ARSENIC	20	<	0.01000	ug/l	0.010000	EPA 206.2
08/24/1999 10/04/1999 9:48 MK 10/14/1999						
33 DISSOLVED BARIUM	20	<	1.00000	ug/l	1.000000	EPA 208.1
08/24/1999 09/30/1999 13:49 SC 10/14/1999						
34 DISSOLVED BORON	20		0.40000	ug/l	0.100000	EPA 212.3
08/24/1999 10/06/1999 6:00 MK 10/14/1999						
35 DISSOLVED CADMIUM	20	<	0.10000	ug/l	0.010000	EPA 213.1
08/24/1999 09/30/1999 8:54 SC 10/14/1999						
36 DISSOLVED CALCIUM	20		106.00000	mg/l	1.000000	EPA 215.1
08/24/1999 09/29/1999 13:49 SC 10/14/1999						
37 DISSOLVED CHROMIUM	20	<	0.10000	ug/l	0.100000	EPA 218.1
08/24/1999 09/30/1999 13:24 SC 10/14/1999						
39 DISSOLVED COPPER	20	<	0.10000	ug/l	0.100000	EPA 220.1
08/24/1999 09/30/1999 8:05 SC 10/14/1999						
DISSOLVED IRON	20	<	0.10000	ug/l	0.100000	EPA 236.1
08/24/1999 09/29/1999 7:49 SC 10/14/1999						
41 DISSOLVED LEAD	20	<	0.10000	ug/l	0.100000	EPA 239.1
08/24/1999 09/30/1999 12:08 SC 10/14/1999						
42 DISSOLVED MAGNESIUM	20		131.00000	mg/l	2.000000	EPA 242.1
08/24/1999 09/30/1999 14:43 SC 10/14/1999						
43 DISSOLVED MANGANESE	20	<	0.10000	ug/l	0.100000	EPA 243.1
08/24/1999 09/29/1999 10:10 SC 10/14/1999						
44 DISSOLVED NICKEL	20	<	0.10000	ug/l	0.100000	EPA 249.1
08/24/1999 09/30/1999 8:44 SC 10/14/1999						
45 DISSOLVED POTASSIUM	20		7.00000	mg/l	1.000000	EPA 258.1
08/24/1999 09/29/1999 11:07 SC 10/14/1999						
46 DISSOLVED SELENIUM	20	<	0.01000	ug/l	0.010000	EPA 270.2
08/24/1999 10/04/1999 12:18 MK 10/14/1999						
48 DISSOLVED SODIUM	20		204.00000	mg/l	2.000000	EPA 273.1
08/24/1999 09/29/1999 12:24 SC 10/14/1999						
49 DISSOLVED ZINC	20	<	0.01000	ug/l	0.010000	EPA 289.1
08/24/1999 09/30/1999 8:33 SC 10/14/1999						
50 BICARBONATE AS HCO3	20		529.00000	mg/l	5.000000	EPA 310.1
08/24/1999 09/27/1999 15:00 KP 10/14/1999						
52 CARBONATE AS CO3	20	<	5.00000	mg/l	5.000000	EPA 310.1
08/24/1999 09/27/1999 15:00 KP 10/14/1999						
53 CHLORIDE	20		28.00000	mg/l	10.000000	EPA 300.0
08/24/1999 09/28/1999 3:59 RJ 10/14/1999						
FLUORIDE	20		0.05000	mg/l	0.050000	EPA 300.0
08/24/1999 06/24/1999 15:21 RJ 10/14/1999						
56 NITRATE AS N	20	<	0.03000	mg/l	0.030000	EPA 300.0
08/24/1999 06/24/1999 15:21 RJ 10/14/1999						

Electronic Water Data Report By Individual Sample

59-20613	Lab Id Sheet#	09/24/1999	Date Sampled	007013	Permit Number
9	Mine Id	9:45	Time Sampled	HORSE CANYON	Mine Name
1	Site Id	CLARK	Sampler Name	HC-1	Site Name
CTE	Lab Code			STREAM	Site Type
Commercial Testing & Engineering				L 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	20	<	0.03000	mg/l	0.030000	EPA 300.0
	08/24/1999 06/24/1999 15:21 RJ	10/14/1999					
58	ORTHO. PHOSPHATE	20	<	0.05000	mg/l	0.050000	EPA 300.0
	08/24/1999 06/24/1999 15:21 RJ	10/14/1999					
60	SULFATE	20		890.00000	mg/l	10.000000	EPA 300.0
	08/24/1999 09/28/1999 3:59 RJ	10/14/1999					
62	TOTAL ALKALINITY AS CACO3	20		433.00000	mg/l	5.000000	EPA 310.1
	08/24/1999 09/27/1999 15:00 KP	10/14/1999					
63	TOTAL HARDNESS AS CACO3	20		804.00000	mg/l		SM2340-B
	08/24/1999 10/04/1999 9:00 RJ	10/14/1999					
68	TOTAL DISSOLVED SOLIDS, @ 180 C	20		1671.00000	mg/l	10.000000	EPA 160.1
	08/24/1999 09/28/1999 12:00 KP	10/14/1999					
113	DISSOLVED ALUMINUM	20	<	1.00000	ug/l	1.000000	EPA 202.1
	08/24/1999 09/30/1999 13:05 SC	10/14/1999					
129	DISSOLVED MOLYBDENUM	20	<	0.10000	ug/l	0.100000	EPA 246.1
	08/24/1999 09/30/1999 14:20 SC	10/14/1999					
133	TOTAL CATIONS	20		25.10000	meq/l		
	08/24/1999 10/04/1999 9:00 RJ	10/14/1999					
	TOTAL ANIONS	20		28.00000	meq/l		
	08/24/1999 10/04/1999 9:00 RJ	10/14/1999					
145	TOTAL IRON	20	<	0.10000	mg/l	0.100000	EPA 236.1
	08/24/1999 09/29/1999 7:49 SC	10/14/1999					
223	DISSOLVED MERCURY	20	<	0.20000	ug/l	0.200000	EPA 245.1
	08/24/1999 09/29/1999 6:30 MK	10/14/1999					

UEI
~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1

Sample Date 6-22-99

Sample Time 0820

Type: Spring ____ Stream X UPDES ____

Sample Collection Point ON STREAM AT APPROX. CARBON, EMERY CO LINE

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

Flow/Depth (gpm) .35 GPM

Water Temperature (C) 13°C

pH 8.62

Specific Conductivity 1180

Dissolved Oxygen 5

Comments: EVIDENCE OF INCREASED FLOW, SILT DEPOSITED ON GRAVEL APPROX 1 FT EACH SIDE OF NORMAL FLOW

Sampled by: L. P. CLARK

Laboratory CTEF HUNTINGTON Date Shipped 6-22-99

Sample ID# HC-1 Date Results Received ____

COMMERCIAL TESTING & ENGINEERING CO. 2-29-00 DJ
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TEL: (435) 653-2311
FAX: (435) 653-2436

July 8, 1999

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

Sample identification by

HC-1

Rec'd 1100 hr.
Sampled 0820 hr.

FIELD MEASUREMENTS

pH	8.62
DO	5
Flow	35 GPM
Conductivity	1180
Turbidity	Murky
Temperature	13.0°C

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

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20053

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	547	5	mg/l	as HCO_3	EPA 310.1	06-30-1999 0800 KP
Alkalinity, Carbonate	<5	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	22.9	----	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	0.4	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	75	1	mg/l		EPA 215.1	07-01-1999 1455 SC
Cations	22.3	----	meq/l		---------	07-07-1999 0930 RJ
Chloride	19	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	0.17	0.05	mg/l		EPA 300.0	06-24-1999 0930 MK
Hardness, Total	690	----	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	0.4	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	122	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.

R J Comic

Huntington Laboratory

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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

HC-1

Kind of sample reported to us Water

Rec'd 1100 hr.
Sampled 0820 hr.

FIELD MEASUREMENTS

pH	8.62
DO	5
Flow	35 GPM
Conductivity	1180
Turbidity	Murky
Temperature	13.0°C

Sample taken at

Sample taken by Leo Clark

Date sampled June 22, 1999

Date received June 22, 1999

DISSOLVED METALS FILTERED AT LAB.

Analysis report no. 59-20053

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	0.13	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	5	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	192	1	mg/l	EPA 273.1	07-01-1999 1308 SC
Solids, Total Dissolved	1343	10	mg/l	EPA 160.1	06-24-1999 1400 KP
Sulfate	644	5	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	-1.4	----	%		07-07-1999 0930 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

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UEI
~~INTERMOUNTAIN POWER AGENCY~~
HORSE CANYON MINE

entered into database 4/18/2000 KJ

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1

Sample Date 3-25-99

Sample Time 1010

Type: Spring _____ Stream X UPDES _____

Sample Collection Point STREAM @ APPROX CARBON-EMERY CO. LINE

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

Flow/Depth (gpm) 15 GPM

Water Temperature (C) 8°C

pH 8.18

Specific Conductivity 970

Dissolved Oxygen 5

Comments: NORMAL APPEARANCE @ STREAM - NO HIGH FLOW EVIDENT

Sampled by: L.P. CLARK

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

Sample ID# HC-1 Date Results Received _____

4-13-2000

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April 29, 1999

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

Sample identification by

HC-1

Kind of sample reported to us Water

Rec'd 1340 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS

pH	8.18
DO	5
Flow	15 GPM
Conductivity	970
Turbidity	CLEAR
Temperature	8.0°C

Sample taken at

Sample taken by Leo Clark

Date sampled March 25, 1999

Date received March 25, 1999

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

Analysis report no. 59-19760

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	472	5	mg/l	as HCO_3	SM2320-B	04-06-1999 1000	KP
Alkalinity, Carbonate	8	5	mg/l	as CO_3	SM2320-B	04-06-1999 1000	KP
Alkalinity, Total	400	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	21.8	----	meq/l		---------	04-21-1999 1400	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	0.4	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	98	1	mg/l		EPA 215.1	04-06-1999 1115	MK
Cations	23.1	----	meq/l		---------	04-21-1999 1400	RJ
Chloride	29	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	0.11	0.01	mg/l		SM4500-F-C	03-26-1999 1813	SC
Hardness, Total	731	----	mg/l	as $CaCO_3$	SM2340-B	04-21-1999 1400	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	118	2	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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4-14-2000

KW

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April 29, 1999

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

Sample identification by

HC-1

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

Rec'd 1340 hr.
Sampled 1010 hr.

FIELD MEASUREMENTS

pH	8.18
DO	5
Flow	15 GPM
Conductivity	970
Turbidity	CLEAR
Temperature	8.0°C

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

Analysis report no. 59-19760

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	<0.1	0.1	mg/l as N	EPA 353.3	03-26-1999 1813	SC
Nitrogen, Nitrite	<0.03	0.01	mg/l as N	EPA 354.1	03-26-1999 1813	SC
Phosphorous, Ortho-PO_4	<0.05	0.01	mg/l as P	SM4500-P-E	03-26-1999 1813	SC
Potassium, Dissolved	5	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	192	2	mg/l	EPA 273.1	04-06-1999 1030	MK
Solids, Total Dissolved	1434	10	mg/l	EPA 160.1	03-25-1999 1400	KP
Sulfate	636	1	mg/l	EPA 300.0	04-20-1999 1400	SC
Sulfide	3.9	0.1	mg/l	EPA 376.1	04-01-1999 1100	KP
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	04-07-1999 0930	MK
Cation/Anion Balance	2.8	----	%		04-21-1999 1400	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

RJ Cormier

Huntington Laboratory

MEMBER ACIL

INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

WATER MONITORING FORM

MB 4-1-98

PERMIT # ACT/007/013

Station # HC-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. CARBON-EMERY COUNTY LINE - ENDOREAU

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

REPORTED BY:

Sampled by: L. PAUL CLARK

Laboratory _____ Date Shipped N/A

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

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MB 12-10-97

November 4, 1997

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

Sample identification by
LADWP

ID:HC-1

Kind of sample reported to us Water

Rec'd 0820 hr.
Sampled 1325 hr.

FIELD MEASUREMENTS

pH	7.32
DO	4
Flow	12 GPM
Conductivity	1000
Turbidity	CLEAR
Temperature	19°C

Sample taken at

Sample taken by Leo Clark

Date sampled September 28, 1997

Date received September 29, 1997

Note:Dissolved metals filtered at lab!

Analysis report no. 59-17823

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	530	5	mg/l	as HCO_3	SM2320-B	09-30-1997 1200	SC
Alkalinity, Carbonate	10	5	mg/l	as CO_3	SM2320-B	09-30-1997 1200	SC
Alkalinity, Total	451	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	15.7	----	meq/l		---------	10-08-1997 0900	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	0.2	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	35	1	mg/l		EPA 215.1	10-07-1997 0030	MK
Cations	14.1	----	meq/l		---------	10-08-1997 0900	RJ
Chloride	18	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	343	----	mg/l	as $CaCO_3$	SM2340-B	10-08-1997 0900	RJ
Iron, Total	2.1	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	62	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.

Huntington Laboratory

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MB 12-16-97

November 4, 1997

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

Sample identification by LADWP

ID:HC-1

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

Rec'd 0820 hr.
Sampled 1325 hr.

FIELD MEASUREMENTS

pH	7.32
DO	4
Flow	12 GPM
Conductivity	1000
Turbidity	CLEAR
Temperature	19°C

Note:Dissolved metals filtered at lab!

Analysis report no. 59-17823

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	0.1	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	2	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	165	2	mg/l	EPA 273.1	10-07-1997 0000	MK
Solids, Total Dissolved	870	10	mg/l	EPA 160.1	09-29-1997 0700	JC
Sulfate	298	125	mg/l	EPA 375.4	10-07-1997 1210	SC
Sulfide	5.4	0.1	mg/l	EPA 376.1	10-03-1997 1115	RJ
Zinc, Dissolved	0.01	0.01	mg/l	EPA 289.1	10-06-1997 0630	MK
Cation/Anion Balance	-5.7	----	%		10-08-1997 0900	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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INTERMOUNTAIN POWER AGENCY
HORSE CANYON MINE

NB 8-22-97

WATER MONITORING FORM

PERMIT # ACT/007/013

Station # HC-1

Sample Date 6-26-97

Sample Time 0910

Type: Spring _____ Stream X UPDES _____

Sample Collection Point APPROX. CARBON - EMERY CO. LINE - END OF ROAD

Appearance of Water: Clear X Slightly Cloudy____ Cloudy___ Opaque___

Flow/Depth (gpm) 20 GPM

Water Temperature (C) 17°C

pH 7.60

Specific Conductivity 850

Dissolved Oxygen 5

Comments: STREAM BED RECENTLY HEAVILY DISTURBED BY CATTLE MOVEMENT TO RANGE CREEK

Sampled by: Leo R. Clark

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

Sample ID# _____ Date Results Received _____

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MB 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: HC-1

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 0910 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	7.60
DO	5
Flow	20 gpm
Conductivity	850
Turbidity	Clear
Temperature	17.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17413

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst	
Alkalinity, Bicarbonate	521	5	mg/l	as HCO_3	SM2320-B	07-08-1997 0800	SC
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	07-08-1997 0800	SC
Alkalinity, Total	430	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	24.3	----	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	0.3	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	77	1	mg/l		EPA 215.1	08-05-1997 1200	MK
Cations	23.0	----	meq/l		---------	08-05-1997 1530	RJ
Chloride	24	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	0.28	0.01	mg/l		SM4500-F-C	07-24-1997 0800	RJ
Hardness, Total	678	----	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	118	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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August 6, 1997

mb 8-22-97

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

Sample identification by
LADWP

ID: HC-1

Kind of sample reported to us Water

Rec'd 1215 hr.
Sampled 0910 hr.

Sample taken at

Sample taken by Leo Clark

Date sampled June 26, 1997

Date received June 26, 1997

FIELD MEASUREMENTS

pH	7.60
DO	5
Flow	20 gpm
Conductivity	850
Turbidity	Clear
Temperature	17.0°C

NOTE:DISSOLVED METALS FILTERED AT LAB!

Analysis report no. 59-17413

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	0.03	0.01	mg/l as P	SM4500-P-E	06-25-1997 0730 RJ
Potassium, Dissolved	5	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	215	2	mg/l	EPA 273.1	08-05-1997 1130 MK
Solids, Total Dissolved	1470	10	mg/l	EPA 160.1	07-02-1997 0700 JC
Sulfate	724	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	0.03	0.01	mg/l	EPA 289.1	08-05-1997 0815 MK
Cation/Anion Balance	-2.7	----	%		08-05-1997 1530 RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

AMERICAN COUNCIL OF INDEPENDENT LABORATORIES, INC.

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April 30, 1997

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

Sample identification by
LADWP

ID: HC-1
Rec'd 1500 hr.
Sampled 1600 hr.

FIELD MEASUREMENTS

pH	7.59
DO	5
Flow	30 GPM
Conductivity	275
Turbidity	Murky
Temperature	11.0°C

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

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

Analysis report no. 59-17081

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	448	5	mg/l	as HCO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	04-01-1997 1100 SW
Alkalinity, Total	367	5	mg/l	as $CaCO_3$	EPA 310.1	04-01-1997 1100 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	04-04-1997 1245 MK
Anions	20.4	----	meq/l		---------	04-08-1997 0815 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	0.3	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	80	1	mg/l		EPA 215.1	04-04-1997 1130 MK
Cations	20.6	----	meq/l		---------	04-08-1997 0815 RJ
Chloride	22	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	0.54	0.01	mg/l		SM4500-F-C	04-24-1997 1130 RJ
Hardness, Total	624	----	mg/l	as $CaCO_3$	SM2340-B	04-08-1997 0815 RJ
Iron, Total	0.7	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	103	5	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

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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: HC-1
Rec'd 1500 hr.
Sampled 1600 hr.

FIELD MEASUREMENTS

pH	7.59
DO	5
Flow	30 GPM
Conductivity	275
Turbidity	Murky
Temperature	11.0°C

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

Analysis report no. 59-17081

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	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	0.02	0.01	mg/l as P	SM4500-P-E	03-31-1997 0830	JC
Potassium, Dissolved	5	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	184	5	mg/l	EPA 273.1	04-04-1997 1045	MK
Solids, Total Dissolved	1310	10	mg/l	EPA 160.1	04-03-1997 0700	JC
Sulfate	596	250	mg/l	EPA 375.4	04-02-1997 0700	SW
Sulfide	<1.0	1.0	mg/l	EPA 376.1	04-02-1997 1015	RJ
Zinc, Dissolved	0.03	0.01	mg/l	EPA 289.1	04-04-1997 0745	MK
Cation/Anion Balance	0.6	----	%		04-08-1997 0815	RJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Stout

Huntington Laboratory

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QC 6/17

September 27, 1996

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

Sample identification by
LADWP

CM 5/29

Kind of sample reported to us Water

ID:HC-1

Sample taken at

Temperature 24.0°C
Flow 1.3 gpm
Rec'd 1330 hr.
Sampled 1055 hr.

Sample taken by Leo Clark

FIELD MEASUREMENTS
pH 7.63
Conductivity 1870
DO 4

Date sampled August 29, 1996

Date received August 29, 1996

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16436

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	542	5	mg/l	as HCO_3	SM2320-B	09-10-1996	1230	SW
Alkalinity, Carbonate	<5	5	mg/l	as CO_3	SM2320-B	09-10-1996	1230	SW
Alkalinity, Total	445	5	mg/l	as $CaCO_3$	EPA 310.1	09-10-1996	1230	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	09-19-1996	1330	MK
Anions	14.8	----	meq/l		---------	09-25-1996	1230	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	09-10-1996	0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	09-19-1996	1400	MK
Boron, Dissolved	0.3	0.1	mg/l		EPA 212.3	09-11-1996	0715	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	09-19-1996	0830	MK
Calcium, Dissolved	45	1	mg/l		EPA 215.1	09-19-1996	1200	MK
Cations	14.1	----	meq/l		---------	09-25-1996	1230	JJ
Chloride	18	1	mg/l		SM4500-Cl-B	09-12-1996	0700	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	09-19-1996	1345	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	09-19-1996	0730	MK
Fluoride	0.17	0.01	mg/l		SM4500-F-C	09-05-1996	0700	SW
Hardness, Total	376	----	mg/l	as $CaCO_3$	SM2340-B	09-25-1996	1230	JJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	09-19-1996	0930	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	09-19-1996	0930	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	09-19-1996	0845	MK
Magnesium, Dissolved	64	1	mg/l		EPA 242.1	09-19-1996	1230	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	09-19-1996	1000	MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	09-04-1996	0630	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	09-19-1996	1415	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	09-19-1996	0800	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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September 27, 1996

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

Sample identification by
LADWP

Kind of sample reported to us Water

ID:HC-1

Sample taken at

Temperature 24.0°C
Flow 1.3 gpm
Rec'd 1330 hr.
Sampled 1055 hr.

Sample taken by Leo Clark

FIELD MEASUREMENTS
pH 7.63
Conductivity 1870
DO 4

Date sampled August 29, 1996

Date received August 29, 1996

NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16436

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	09-19-1996 0800 SW
Nitrogen, Nitrate-Nitrite	0.2	0.1	mg/l as N	EPA 353.3	09-24-1996 0830 JJ
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	08-30-1996 0630 JC
Phosphorous, Ortho-PO_4	<0.01	0.01	mg/l as P	SM4500-P-E	08-30-1996 0900 JC
Potassium, Dissolved	1	1	mg/l	EPA 258.1	09-19-1996 1030 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	09-10-1996 1130 MK
Sodium, Dissolved	150	5	mg/l	EPA 273.1	09-19-1996 1100 MK
Solids, Total Dissolved	841	10	mg/l	EPA 160.1	09-03-1996 0700 JC
Sulfate	259	10	mg/l	EPA 375.4	09-16-1996 1230 SW
Sulfide	<0.1	0.1	mg/l	EPA 376.1	09-05-1996 1245 JJ
Zinc, Dissolved	0.03	0.01	mg/l	EPA 289.1	09-19-1996 0745 MK
Cation/Anion Balance	-2.5	----	%		09-25-1996 1230 JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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OC CH 10/1/96

September 12, 1996

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

WM 5/29

Kind of sample reported to us Water

Sample taken at

Sample taken by L.P. Clark

Date sampled July 25, 1996

Date received July 25, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

HC-1
Temperature NA
Flow 2 GPM
Rec'd 1525 hr.
Sampled 1330 hr.

FIELD MEASUREMENTS

pH	7.69
Conductivity	1800
DO	3

NOTE: PO_4, NH_3 & NO_3-NO_2 preserved at lab!
NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16322

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	446	5	mg/l	as HCO_3	SM2320-B	08-19-1996	0900	SW
Alkalinity, Carbonate	20	5	mg/l	as CO_3	SM2320-B	08-19-1996	0900	SW
Alkalinity, Total	398	5	mg/l	as $CaCO_3$	EPA 310.1	08-19-1996	0900	SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	08-15-1996	1345	MK
Anions	10.9	----	meq/l		---------	08-16-1996	1330	JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	09-10-1996	0800	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	08-15-1996	1430	MK
Boron, Dissolved	0.5	0.1	mg/l		EPA 212.3	09-11-1996	0715	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	08-15-1996	0845	MK
Calcium, Dissolved	109	1	mg/l		EPA 215.1	08-15-1996	1230	MK
Cations	10.9	----	meq/l		---------	08-16-1996	1330	JJ
Chloride	43	1	mg/l		SM4500-Cl-B	07-29-1996	1200	SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	08-15-1996	1400	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	08-15-1996	0730	MK
Fluoride	0.18	0.01	ag/l		SM4500-F-C	08-05-1996	1200	SW
Hardness, Total	478	----	mg/l	as $CaCO_3$	SM2340-B	08-16-1996	1330	JJ
Iron, Total	0.2	0.1	mg/l		EPA 236.1	08-15-1996	1000	MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	08-15-1996	1000	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	08-15-1996	0900	MK
Magnesium, Dissolved	144	1	mg/l		EPA 242.1	08-15-1996	1245	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	08-15-1996	1030	MK
Mercury, Dissolved	0.2	0.2	ug/l		EPA 245.1	08-06-1996	0800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	08-15-1996	1445	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	08-15-1996	0830	MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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QC 5th 9/12

September 12, 1996

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 L.P. Clark

Date sampled July 25, 1996

Date received July 25, 1996

CM 5/29

Sample identification by
LADWP-EARTHFAX ENGINEERING

HC-1
Temperature NA
Flow 2 GPM
Rec'd 1525 hr.
Sampled 1330 hr.

FIELD MEASUREMENTS

pH	7.69
Conductivity	1800
DO	3

NOTE: PO_4, NH_3 & NO_3-NO_2 preserved at lab!
NOTE: Dissolved metals filtered at lab!

Analysis report no. 59-16322

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	08-08-1996 1210	SW
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	08-02-1996 0700	MK
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	07-26-1996 0830	MK
Phosphorous, Ortho-PO_4	0.03	0.01	mg/l as P	SM4500-P-E	07-26-1996 1245	MK
Potassium, Dissolved	9	1	mg/l	EPA 258.1	08-15-1996 1100	MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	09-10-1996 1130	MK
Sodium, Dissolved	231	1	mg/l	EPA 273.1	08-15-1996 1130	MK
Solids, Total Dissolved	1924	10	mg/l	EPA 160.1	07-29-1996 0700	JC
Sulfate	837	100	mg/l	EPA 375.4	08-01-1996 1415	SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	07-31-1996 1600	JJ
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	08-15-1996 0800	MK
Cation/Anion Balance	0.0	----	%		08-16-1996 1330	JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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July 31, 1996

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 June 27, 1996

Date received June 27, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

HC-1
Temperature 17.0°C
Flow 7 GPM
Rec'd 1700 hr.
Sampled 1215 hr.

FIELD MEASUREMENTS

pH	7.79
DO	5

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-16214

Parameter	Result	MRL	Units		Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	410	5	mg/l	as HCO_3	SM2320-B	07-02-1996 1000 SW
Alkalinity, Carbonate	33	5	mg/l	as CO_3	SM2320-B	07-02-1996 1000 SW
Alkalinity, Total	391	5	mg/l	as $CaCO_3$	EPA 310.1	07-02-1996 1000 SW
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	07-10-1996 1400 MK
Anions	22.9	----	meq/l		---------	07-31-1996 0830 JJ
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	07-12-1996 0800 MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	07-10-1996 1500 MK
Boron, Dissolved	0.5	0.1	mg/l		EPA 212.3	07-08-1996 0700 MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	07-10-1996 0900 MK
Calcium, Dissolved	104	1	mg/l		EPA 215.1	07-10-1996 1300 MK
Cations	25.4	----	meq/l		---------	07-31-1996 0830 JJ
Chloride	34	1	mg/l		SM4500-Cl-B	07-03-1996 0930 SW
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	07-10-1996 1430 MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	07-10-1996 0745 MK
Fluoride	0.14	0.01	mg/l		SM4500-F-C	07-12-1996 0830 SW
Hardness, Total	812	----	mg/l	as $CaCO_3$	SM2340-B	07-31-1996 0830 JJ
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	07-10-1996 1045 MK
Iron, Dissolved	<0.1	0.1	mg/l		EPA 236.1	07-10-1996 1045 MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	07-10-1996 0945 MK
Magnesium, Dissolved	134	2	mg/l		EPA 242.1	07-10-1996 1315 MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	07-10-1996 1115 MK
Mercury, Dissolved	<0.2	0.2	ug/l		EPA 245.1	07-02-1996 1000 MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	07-10-1996 1515 MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	07-10-1996 0830 MK

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
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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August 1, 1996

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 June 27, 1996

Date received June 27, 1996

Sample identification by
LADWP-EARTHFAX ENGINEERING

HC-1
Temperature 17.0°C
Flow 7 GPM
Rec'd 1700 hr.
Sampled 1215 hr.

FIELD MEASUREMENTS

pH	7.79
DO	5

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-16214

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Ammonia	<0.5	0.5	mg/l as N	EPA 350.3	07-22-1996 1225 SW
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	07-16-1996 1100 BR
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	06-28-1996 0855 JJ
Oil & Grease	<4	4	mg/l	SM5520-B	07-11-1996 0800 JC
Phosphorous, Ortho-PO_4	0.01	0.01	mg/l as P	SM4500-P-E	06-28-1996 0930 JJ
Potassium, Dissolved	7	1	mg/l	EPA 258.1	07-10-1996 1145 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	07-13-1996 0730 MK
Sodium, Dissolved	209	5	mg/l	EPA 273.1	07-10-1996 1200 MK
Solids, Total Dissolved	1692	10	mg/l	EPA 160.1	07-01-1996 0700 JC
Sulfate	676	100	mg/l	EPA 375.4	07-16-1996 1230 SW
Sulfide	<1.0	0.1	mg/l	EPA 376.1	06-28-1996 1030 BR
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	07-10-1996 0815 MK
Cation/Anion Balance	5.3	----	%		07-31-1996 0830 JJ

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Larry Stout
Huntington Laboratory

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April 22, 1996

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

QC Cur 5/29

Sample identification by
IPA-EARTHFAX ENGINEERING

HC-1 173184-3
Temperature 10.4°C
Flow 24 GPM
Rec'd 1600 hr.
Sampled 1200 hr.
FIELD MEASUREMENTS
pH 8.26
Conductivity 1490
DO 10
NOTE: Dissolved metals filtered at Lab.

Kind of sample reported to us Water

Sample taken at

Sample taken by Paul Clark

Date sampled March 27, 1996

Date received March 27, 1996

Lab# 5915882 g

Analysis report no. 59-15882

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	407	2	mg/l as HCO_3	SM2320-B	04-02-1996 0800 SW
Alkalinity, Carbonate	24	2	mg/l as CO_3	SM2320-B	04-02-1996 0800 SW
Alkalinity, Total	373	2	mg/l as $CaCO_3$	EPA 310.1	04-02-1996 0800 SW
Aluminum, Dissolved	<1	1	mg/l	EPA 202.1	04-05-1996 0845 MK
Anions	23.6	----	meq/l	---------	04-11-1996 1600 BR
Arsenic, Dissolved	<0.004	0.004	mg/l	EPA 206.2	03-30-1996 0815 MK
Barium, Dissolved	0.7	0.6	mg/l	EPA 208.1	04-05-1996 1015 MK
Boron, Dissolved	0.38	0.03	mg/l	EPA 212.3	03-29-1996 0715 MK
Cadmium, Dissolved	<0.004	0.004	mg/l	EPA 213.1	04-08-1996 1345 MK
Calcium, Dissolved	94	0.2	mg/l	EPA 215.1	04-05-1996 1130 MK
Cations	22.9	----	meq/l	---------	04-11-1996 1600 BR
Chloride	29.0	0.4	mg/l	SM4500-Cl-B	04-01-1996 1300 SW
Chromium, Dissolved	<0.02	0.02	mg/l	EPA 218.1	04-05-1996 0930 MK
Copper, Dissolved	<0.03	0.03	mg/l	EPA 220.1	04-08-1996 1130 MK
Fluoride	0.020	0.005	mg/l	SM4500-F-C	04-16-1996 0630 SW
Hardness, Total	725	----	mg/l as $CaCO_3$	SM2340-B	04-11-1996 1600 BR
Iron, Total	<0.03	0.03	mg/l	EPA 236.1	04-03-1996 0800 MK
Lead, Dissolved	<0.08	0.08	mg/l	EPA 239.1	04-08-1996 1400 MK
Magnesium, Dissolved	119	2.4	mg/l	EPA 242.1	04-05-1996 1230 MK
Manganese, Dissolved	<0.04	0.04	mg/l	EPA 243.1	04-08-1996 0815 MK
Mercury, Dissolved	<0.18	0.18	ug/l	EPA 245.1	04-08-1996 0900 MK
Molybdenum, Dissolved	<0.07	0.07	mg/l	EPA 246.1	04-05-1996 1045 MK
Nickel, Dissolved	<0.04	0.04	mg/l	EPA 249.1	04-08-1996 1330 MK
Nitrogen, Ammonia	<0.2	0.2	mg/l as N	EPA 350.3	04-08-1996 1600 SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Larry Scott for
Huntington Laboratory

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April 22, 1996

IPA-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 Paul Clark

Date sampled March 27, 1996

Date received March 27, 1996

Sample identification by
IPA-EARTHFAX ENGINEERING

HC-1
Temperature 10.4°C
Flow 24 GPM
Rec'd 1600 hr.
Sampled 1200 hr.

FIELD MEASUREMENTS

pH	8.26
Conductivity	1490
DO	10

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15882

Parameter	Result	MRL	Units	Method	Analyzed Date/Time/Analyst	
Nitrogen, Nitrate-Nitrite	<0.06	0.06	mg/l as N	EPA 353.3	04-10-1996 0700	JC
Nitrogen, Nitrite	<0.002	0.002	mg/l as N	EPA 354.1	03-29-1996 0730	JC
Phosphorous, Ortho-PO_4	<0.003	0.003	mg/l as P	SM4500-P-E	03-28-1996 0800	JC
Potassium, Dissolved	5.2	0.6	mg/l	EPA 258.1	04-08-1996 0900	MK
Selenium, Dissolved	<0.003	0.003	mg/l	EPA 270.2	04-01-1996 1030	MK
Sodium, Dissolved	193	1.2	mg/l	EPA 273.1	04-08-1996 0930	MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	03-28-1996 0600	SW
Solids, Total Dissolved	1450	9	mg/l	EPA 160.1	03-29-1996 0930	JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	03-30-1996 0700	JC
Sulfate	732.0	20	mg/l	EPA 375.4	04-11-1996 0700	SW
Sulfide	<0.06	0.06	mg/l	EPA 376.1	04-03-1996 1030	BR
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	04-08-1996 1230	MK
Cation/Anion Balance	-1.5	----	%		04-11-1996 1600	BR

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

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January 7, 1996

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

CM 5129
OC 6/13

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled December 10, 1995

Date received December 11, 1995

Sample identification by
IPA

HC-1
Temperature 6.8°c
Flow 25 GPM
Rec'd 0805 hr.
Sampled 1615 hr.

FIELD MEASUREMENTS

pH	8.26
Conductivity	1570
DO	8.6

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15703

Parameter	Result	MDL	Units		Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	465	5	mg/l	as HCO_3	SM2320-B	12-13-1995	1400	BR
Alkalinity, Carbonate	10	5	mg/l	as CO_3	SM2320-B	12-13-1995	1400	BR
Alkalinity, Total	400	5	mg/l	as $CaCO_3$	EPA 310.1	12-13-1995	1400	BR
Aluminum, Dissolved	<1	1	mg/l		EPA 202.1	12-14-1995	1330	MK
Anions	26.3	----	meq/l		---------	----------	-----	--
Arsenic, Dissolved	<0.01	0.01	mg/l		EPA 206.2	12-12-1995	0915	MK
Barium, Dissolved	<1	1	mg/l		EPA 208.1	12-14-1995	1430	MK
Boron, Dissolved	0.4	0.1	mg/l		EPA 212.3	12-11-1995	0900	MK
Cadmium, Dissolved	<0.01	0.01	mg/l		EPA 213.1	12-14-1995	1030	MK
Calcium, Dissolved	103	1	mg/l		EPA 215.1	12-14-1995	1145	MK
Cations	25.6	----	meq/l		---------	----------	-----	--
Chloride	32	1	mg/l		SM4500-Cl-B	12-21-1995	0930	BR
Chromium, Dissolved	<0.1	0.1	mg/l		EPA 218.1	12-14-1995	1345	MK
Copper, Dissolved	<0.1	0.1	mg/l		EPA 220.1	12-14-1995	0915	MK
Fluoride	0.2	0.1	mg/l		SM4500-F-C	12-29-1995	0830	SW
Hardness, Total	780	10	mg/l	as $CaCO_3$	SM2340-B	12-14-1995	1145	MK
Iron, Total	<0.1	0.1	mg/l		EPA 236.1	12-14-1995	0745	MK
Lead, Dissolved	<0.1	0.1	mg/l		EPA 239.1	12-14-1995	1045	MK
Magnesium, Dissolved	127	1	mg/l		EPA 242.1	12-14-1995	1200	MK
Manganese, Dissolved	<0.1	0.1	mg/l		EPA 243.1	12-14-1995	0800	MK
Mercury, Dissolved	<0.001	0.001	mg/l		EPA 245.1	01-03-1996	0800	MK
Molybdenum, Dissolved	<0.1	0.1	mg/l		EPA 246.1	12-14-1995	1445	MK
Nickel, Dissolved	<0.1	0.1	mg/l		EPA 249.1	12-14-1995	1015	MK
Nitrogen, Ammonia	<0.5	0.5	mg/l	as N	EPA 350.3	12-15-1995	0900	SW

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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January 7, 1996

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

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled December 10, 1995

Date received December 11, 1995

Sample identification by
IPA

HC-1
Temperature 6.8°c
Flow 25 GPM
Rec'd 0805 hr.
Sampled 1615 hr.

FIELD MEASUREMENTS

pH	8.26
Conductivity	1570
DO	8.6

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15703

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Nitrate-Nitrite	<0.1	0.1	mg/l as N	EPA 353.3	12-19-1995 1100 BR
Nitrogen, Nitrite	<0.01	0.01	mg/l as N	EPA 354.1	12-11-1995 1230 JC
Phosphorous, Ortho-PO_4	0.02	0.01	mg/l as P	SM4500-P-E	12-11-1995 0915 JC
Potassium, Dissolved	5	1	mg/l	EPA 258.1	12-14-1995 0830 MK
Selenium, Dissolved	<0.01	0.01	mg/l	EPA 270.2	12-12-1995 1145 MK
Sodium, Dissolved	229	1	mg/l	EPA 273.1	12-12-1995 1415 MK
Solids, Settleable	<0.5	0.5	ml/l	EPA 160.5	12-11-1995 0845 MK
Solids, Total Dissolved	1540	10	mg/l	EPA 160.1	12-12-1995 0730 JC
Solids, Total Suspended	10	5	mg/l	EPA 160.2	12-12-1995 1030 JC
Sulfate	839	1	mg/l	EPA 375.4	12-28-1995 0700 SW
Sulfide	<1	1	mg/l	EPA 376.1	12-15-1995 0700 BR
Zinc, Dissolved	<0.01	0.01	mg/l	EPA 289.1	12-14-1995 0930 MK
Cation/Anion Balance	-1.5	----	%		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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November 14, 1995

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

OC Oct 6/13

CM 5/29

Sample identification by
IPA

HC-1

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled November 5, 1995

Date received November 6, 1995

Temperature 8.9°C
Flow 25 GPM
Rec'd 0930 hr.
Sampled 1505 hr.

FIELD MEASUREMENTS

pH	8.52
Conductivity	1650
DO	7.5

Note: Dissolved metals filtered at lab.

Analysis report no. 59-15624

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst		
Alkalinity, Bicarbonate	445	5	mg/l as HCO_3	SM2320-B	11-08-1995	1300	SW
Alkalinity, Carbonate	10	5	mg/l as CO_3	SM2320-B	11-08-1995	1300	SW
Alkalinity, Total	385	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	24.4	----	meq/l	---------	----------	-----	--
Arsenic, Dissolved	0.03	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	0.4	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	99	1	mg/l	EPA 215.1	11-10-1995	0800	MK
Cations	26.3	----	meq/l	---------	----------	-----	--
Chloride	31	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	770	10	mg/l as $CaCO_3$	SM2340-B	11-10-1995	0800	MK
Iron, Total	0.1	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	127	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.

Larry Stout

Manager, Huntington Laboratory

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November 14, 1995

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

Sample identification by
IPA

HC-1

Kind of sample reported to us Water

Sample taken at

Sample taken by Karl Houskeeper

Date sampled November 5, 1995

Date received November 6, 1995

Temperature 8.9°C
Flow 25 GPM
Rec'd 0930 hr.
Sampled 1505 hr.

FIELD MEASUREMENTS

pH	8.52
Conductivity	1650
DO	7.5

Note: Dissolved metals filtered at lab.

Analysis report no. 59-15624

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	0.01	0.01	mg/l as P	SM4500-P-E	11-06-1995 1030 JC
Potassium, Dissolved	6	1	mg/l	EPA 258.1	11-09-1995 0815 MK
Selenium, Dissolved	0.03	0.01	mg/l	EPA 270.2	11-10-1995 1100 MK
Sodium, Dissolved	251	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	1520	10	mg/l	EPA 160.1	11-06-1995 0745 JC
Solids, Total Suspended	<5	5	mg/l	EPA 160.2	11-07-1995 0730 JC
Sulfate	766	1	mg/l	EPA 375.4	11-13-1995 0800 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	3.7	----	%		

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
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

OC 10/6/13

October 30, 1995

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

CM 5/29

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

Sample identification by
IPA

HC-1
Temperature NA
Flow 37.2 GPM
Rec'd 0835 hr.
Sampled 1815 hr.

FIELD MEASUREMENTS

pH	8.35
Conductivity	1710
DO	6.2

NOTE: Dissolved metals filtered at Lab.

Analysis report no. 59-15517

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Alkalinity, Bicarbonate	485	5	mg/l as HCO_3	SM2320-B	10-16-1995 1300 SW
Alkalinity, Carbonate	10	5	mg/l as CO_3	SM2320-B	10-16-1995 1300 SW
Alkalinity, Total	420	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	25.1	----	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	0.4	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	108	1	mg/l	EPA 215.1	10-24-1995 1100 MK
Cations	26.1	----	meq/l	---------	---------- ----- --
Chloride	32	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	800	10	mg/l as $CaCO_3$	SM2340-B	10-24-1995 1100 MK
Iron, Total	<0.1	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	129	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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OC Oct 26/13

October 30, 1995

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

Sample identification by
IPA

CM 5/29

HC-1
Temperature NA
Flow 37.2 GPM
Rec'd 0835 hr.
Sampled 1815 hr.

FIELD MEASUREMENTS

pH	8.35
Conductivity	1710
DO	6.2

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. 59-15517

Parameter	Result	MDL	Units	Method	Analyzed Date/Time/Analyst
Nitrogen, Nitrate-Nitrite	<0.1	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	<0.01	0.01	mg/l as P	SM4500-P-E	10-06-1995 0700 JC
Potassium, Dissolved	6	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	232	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	1570	10	mg/l	EPA 160.1	10-09-1995 0830 JC
Solids, Total Suspended	10	5	mg/l	EPA 160.2	10-09-1995 0730 JC
Sulfate	764	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	2.0	----	%		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

IPA
HORSE CANYON MINE
ACT/007/013

1997 WATER MONITORING DATA

SAMPLE LOCATION: HC - 1 (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)			30			20			12			
pH	standard			7.59			7.6			7.32			
Temp	o C			11			17			19			
Conductivity	umhos/cm			275			850			1000			
Dissolved Oxygen	ppm			5			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			448			521			530			
Boron	mg/l			0.3			0.3			0.2			
Cadmium	mg/l			<0.001			<0.01			<0.01			
Calcium	mg/l			80			77			35			
Carbonate	mg/l			<5			<5			10			
Chloride	mg/l			22			24			18			
Chromium	mg/l			<0.01			<0.1			<0.1			
Copper	mg/l			<0.1			<0.1			<0.1			
Fluoride	mg/l			0.54			0.28			0.10			
Hardness	mg/l			624			678			343			
Iron Total	mg/l			0.7			<0.1			2.1			
Lead	mg/l			<0.1			<0.1			<0.1			
Magnesium	mg/l			103			118			62			
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			<0.5			<0.5			<0.5			
Nitrate	mg/l			<0.1			<0.1			0.1			
Nitrite	mg/l			<0.01			<0.01			<0.01			
Phosphate	mg/l			<0.02			0.03			0.02			
Potassium	mg/l			5			5			2			
Selenium	mg/l			<0.01			<0.01			<0.01			
Sodium	mg/l			184			215			165			
Sulfate	mg/l			596			724			298			
Sulfide	mg/l			<0.1			<0.1			5.4			
TDS	mg/l			1310			1470			870			
Zinc	mg/l			<0.03			0.03			0.01			

IPA
HORSE CANYON MINE
ACT/007/013

1996 WATER MONITORING DATA

SAMPLE LOCATION: HC - 1 (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)	*	*	24	12.2	15	7						
pH	standard			8.26	8.4	8.33	7.79						
Temp	o C			10.4	17.7	21.0	17.0						
Conductivity	umhos/cm			1490	1370	1300	NR						
Dissolved Oxygen	ppm			10	2	6	5						
Aluminum	mg/l			<1	4	<1	<1						
Arsenic	mg/l			<0.004	<0.004	<0.004	<0.01						
Barium	mg/l			0.7	<0.6	<0.6	<0.1						
Bicarbonate	mg/l			407	403	415	410						
Boron	mg/l			0.38	0.42	0.47	0.5						
Cadmium	mg/l			<0.004	<0.004	<0.004	<0.01						
Calcium	mg/l			94	104	106	104						
Carbonate	mg/l			24	23	30	33						
Chloride	mg/l			29	32	32	34						
Chromium	mg/l			<0.02	<0.02	<0.02	<0.01						
Copper	mg/l			<0.03	<0.03	<0.03	<0.1						
Fluoride	mg/l			0.02	0.11	0.195	0.14						
Hardness	mg/l			725	798	797	812						
Iron Total	mg/l			<0.03	0.05	<0.03	<0.1						
Lead	mg/l			<0.08	<0.08	<0.08	<0.1						
Magnesium	mg/l			119	129	129	134						
Manganese	mg/l			<0.04	<0.04	<0.04	<0.1						
Mercury	mg/l			<0.18	<0.18	<0.18	<0.2						
Molybdenum	mg/l			<0.07	<0.07	<0.07	<0.1						
Nickel	mg/l			<0.04	<0.04	<0.04	<0.1						
Ammonia	mg/l			<0.2	<0.2	<0.2	<0.5						
Nitrate	mg/l			<0.06	<0.06	<0.06	<0.1						
Nitrite	mg/l			<0.002	0.06	0.003	<0.1						
Phosphate	mg/l			<0.003	0.0003	<0.003	NR						
Potassium	mg/l			5.2	6.5	6.8	7						
Selenium	mg/l			<0.003	<0.003	<0.003	<0.01						
Sodium	mg/l			193	206	217	209						
Sulfate	mg/l			732	819	650	676						
Sulfide	mg/l			<0.06	<0.06	<0.06	NR						
TDS	mg/l			1450	1577	1622	1692						
Zinc	mg/l			<0.01	0.29	0.03	<0.01						

NR: Not Reported

IPA
HORSE CANYON MINE
ACT/007/013

1995 WATER MONITORING DATA

LE LOCATION: HC - 1 (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)	*	*	*	*	40	155	93	19	9	37.2	25	25
pH	standard					8.7	8.13	8.25	8.37	8.45	8.35	8.52	8.26
Temp	o C					12.8	13	16	20.4	19.3	10.4	8.9	6.8
Conductivity	umhos/cm					1950	1975	1962	1910	1870	1710	1650	1570
Dissolved Oxygen	ppm					13.2	11.2	11	7.9	7.5	6.2	7.5	8.6
Aluminum	mg/l					<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
Arsenic	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.03
Barium	mg/l					<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarbonate	mg/l					450	430	485	485	485	485	445	465
Boron	mg/l					0.2	0.4	0.2	0.3	0.3	0.4	0.4	0.4
Cadmium	mg/l					0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Calcium	mg/l					96	70	81	86	92	108	99	103
Carbonate	mg/l					25	50	30	14	10	10	10	10
Chloride	mg/l					25	24	25	26	28	32	31	32
Chromium	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
F ride	mg/l					0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2
H ness	mg/l					730	670	660	713	736	800	770	780
Iron Total	mg/l					<0.1	<0.1	<0.1	0.1	3	<0.1	0.1	<0.1
Lead	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Magnesium	mg/l					119	121	111	121	123	129	127	127
Manganese	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Mercury	mg/l					<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Molybdenum	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/l					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ammonia	mg/l					1	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate	mg/l					0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphate	mg/l					0.02	<0.01	0.01	<0.01	0.01	0.01	0.01	0.02
Potassium	mg/l					6	5	5	7	6	6	6	5
Selenium	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01
Sodium	mg/l					199	205	215	318	235	232	251	229
Sulfate	mg/l					680	700	690	688	803	764	766	839
Sulfide	mg/l					<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
TDS	mg/l					1390	1420	1380	1450	1510	1570	1520	1540
Zinc	mg/l					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

IPA
HORSE CANYON MINE
ACT/007/013

1994 WATER MONITORING DATA

S[illegible] LOCATION: HC - 1 (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
							EST.	EST.					
Flow	(gpm)	*	*	233	19	19	19	8	5	5	10	0	*
pH	standard			8.37	8.08	8.18	8.09	8.54	8.07	8.52	8.86		
Temp	o F			40	53.5	60.4	68.3	67.64	67.82	60.44	52.52		
Conductivity	umhos/cm			1680	1810	1790	2020	2060	2260	2050	1950		
Dissolved Oxygen	ppm			7.7	13.7	12.5	8.2	6.9	8.6	9	7.3		
Aluminum	mg/l			<2	<2	<2	<2	<2	<2	<2	<2		
Arsenic	mg/l			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Barium	mg/l			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Bicarbonate	mg/l			456	499	481	481	522	521	521	460		
Boron	mg/l			0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3		
Cadmium	mg/l			0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Calcium	mg/l			107	104	96	104	124	118	140	95		
Carbonate	mg/l			6	3	<1	<1	<1	<1	<1	<1		
Chloride	mg/l			26	3	27	20	40	34	32	31		
Chromium	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
Copper	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
Fl[illegible]ide	mg/l			<0.2	<0.2	<0.2	0.2	0.2	0.3	0.2	0.2		
H[illegible]ss	mg/l			700	766	738	779	886	851	910	770		
Ir[illegible]otal	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	0.4	0.4	0.4		
Lead	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
Magnesium	mg/l			105	123	121	126	140	135	136	130		
Manganese	mg/l			0.1	<0.1	<0.1	<0.1	<0.2	<0.2	0.4	<0.2		
Mercury	mg/l			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Molybdenum	mg/l			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
Nickel	mg/l			<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		
Ammonia	mg/l			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4		
Nitrate	mg/l			<0.1	0.8	<0.1	0.1	0.1	0.1	<0.1	<0.1		
Nitrite	mg/l			456	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01		
Phosphate	mg/l			<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.02	0.04		
Potassium	mg/l			4	6	6	8	15	8	9	7		
Selenium	mg/l			<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Sodium	mg/l			190	198	196	212	224	217	74	219		
Sulfate	mg/l			800	800	900	900	1000	900	800	1100		
Sulfide	mg/l			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
TDS	mg/l			1370	1540	1470	1530	1730	1740	1685	1622		
Zinc	mg/l			<0.03	0.03	0.03	<0.03	<0.03	<0.03	<0.03	0.01		

RECEIVED
JAN 31 1994
DIVISION OF
OIL, GAS & MINING

CM
5/29

IPA
HORSE CANYON MINE
ACT/007/013

1993 WATER MONITORING DATA

SAMPLE LOCATION: MC - 1 (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)	*	*	*	78	654	100	47	19	8	3	25	*
pH	standard				7.9	8.49	8.68	8.75	8.15	8.01	7.91	8.34	
Temp	o F				57.6	53.8	55.8	56.2	65.5	59.1	57.5	38.3	
Conductivity	umhos/cm				1880	1860	1810	1801	1850	2040	1980	1830	
Dissolved Oxygen	ppm				5.5	5.9	6.4	4.8	7.3	6.5	12.1	5.7	
Aluminum	mg/l				3.88	6	3	<1.00	0	0	<1	<2	
Arsenic	mg/l				<0.003	<0.003	0.003	0.005	<0.002	0.002	<0.010	<0.010	
Barium	mg/l				<0.2	<0.2	<0.2	<0.20	0.1	0.1	<1.0	<0.5	
Bicarbonate	mg/l				558	520	506	428	462	500	525	473	
Boron	mg/l				0.23	0.38	0.34	0.31	0.12	0.15	0.32	0.3	
Cadmium	mg/l				<0.0001	0	<0.0002	<0.0002	<0.0050	<0.0050	<0.0200	<0.0200	
Calcium	mg/l				127.2	78.8	107.4	97.5	100	100	140	106	
Carbonate	mg/l				<1	<1	0	0	0	0	<1	<1	
Chloride	mg/l				7.5	25	24.5	5.7	33	41.9	54	29	
Chromium	mg/l				<0.0003	0	0.0027	0.0056	<0.0	<0.0	<0.1	<0.1	
Copper	mg/l				0.02	0.05	<0.030	<0.030	<0.01	<0.01	<0.05	<0.20	
Flouride	mg/l				0.21	0.24	0.18	0.17	0.32	0.31	0.25	0.27	
Hardness	mg/l				873	693	757	756	862.2	743.9	988	821	
Iron Total	mg/l				3	7.3	3.42	0.13	0.07	0.19	0.61	<0.20	
Lead	mg/l				<0.003	0	<0.003	<0.003	<0.050	<0.050	<0.400	<0.200	
Magnesium	mg/l				134.9	120.4	118.7	124.5	140	120	155	135	
Manganese	mg/l				0.19	0.16	0.2	<0.03	0.04	0.58	0.66	0.2	
Mercury	mg/l				<0.003	0	<0.0002	<0.0002	<0.0004	0.0005	<0.0002	<0.0010	
Molybdenum	mg/l				<0.2	<0.2	<0.2	0.3	<0.1	<0.1	<0.2	<1.0	
Nickel	mg/l				0.02	<0.08	<0.08	0.1	0.02	0.03	<1.00	<0.30	
Ammonia	mg/l				0.08	<0.08	<0.08	<0.08	<0.08	0.13	<0.08	<0.40	
Nitrate	mg/l				0.99	0.23	0.03	0	0.03	1.46	0.1	0.2	
Nitrite	mg/l				0.01	0.03	0	0	0	0	0.01	0.01	
Phosphate	mg/l				0.07	0.01	0.03	0	0.02	0.02	0.01	0.009	
Potassium	mg/l				6.5	5.8	24	5.6	7.2	6	11	6	
Selenium	mg/l				0.006	<0.004	<0.004	<0.004	<0.002	<0.002	<0.010	<0.010	
Sodium	mg/l				229	190.9	209	224	220	180	255	181	
Sulfate	mg/l				900	500	700	700	900	860	1100	700	
Sulfide	mg/l				4	2.6	2.6	<0.90	<0.9	<0.9	<0.9	<1.0	
TDS	mg/l				1475	1445	1383	1457	1527	1830	1729	1430	
Zinc	mg/l				0.02	0.04	<0.03	0.03	<0.01	<0.01	<0.03	<0.03	

CM 5130

RECEIVED
JAN 13 1993
DIVISION OF
OIL GAS & MINING

IPA
HORSE CANYON MINE
ACT/007/013

1992 WATER MONITORING DATA

SAMPLE LOCATION: HC - 1 (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)	*	*	*	25	25	31	37.25	9.31	1.07	1.93	1.15	*
pH	standard				8.4	8.4	7.95	8.29	8.31	8.35	8	8.33	
Temp	o C				11	21.38	15.4	11.89	18.5	14.22	13.55	8.5	
Conductivity	umhos/cm				3600	1960	2005	1890	1868	1180	2005	1620	
Dissolved Oxygen	ppm				8.5	5	4.3	6.2	5.7	5.9	10.4	6.7	
Aluminum	mg/l				0	0.24	0	0	0	0	0.24	0	
Arsenic	mg/l				0	0	0	0	0	0	0	0	
Barium	mg/l				0	0	0	0	0	0	0	0	
Bicarbonate	mg/l				437	490	462	378	507	541	502	365	
Boron	mg/l				0.22	0.25	0.36	0.28	0.31	0.29	0.26	0.24	
Cadmium	mg/l				0	0	0	0	0	0	0	0	
Calcium	mg/l				132.6	118.5	133.6	137.4	91.5	236	266.8	175.9	
Carbonate	mg/l				0	0	0	0	0	0	0	0	
Chloride	mg/l				30	40	30	40	30	30	31.54	35	
Chromium	mg/l				0	0	0	0	0	0	0	0	
Copper	mg/l				0	0.006	0	0	0	0	0	0.126	
Flouride	mg/l				0.16	0.34	0.21	0.21	0.24	0.27	0.02	0.15	
Hardness	mg/l				858	790	953	829	754	1386	1244	973	
Iron Total	mg/l				0	0.02	0.16	0.11	0.03	0.25	0.18	0.04	
Lead	mg/l				0	0.026	0	0	0	0	0	0	
Magnesium	mg/l				127.9	119.9	150.4	117.9	127.6	181.4	140.2	129.7	
Manganese	mg/l				0	0	0	0.14	0.26	0.37	0.17	0.1	
Mercury	mg/l				0	0	0	0	0	0	0	0	
Molybdenum	mg/l				0	0	0	0	0	0	0	0	
Nickel	mg/l				0.02	0	0.02	0.06	0	0	0	0	
Ammonia	mg/l				0.45	0.02	0.54	0.02	0.02	0	0.02	0	
Nitrate	mg/l				0.04	0.13	0.27	0.1	0.09	0.11	0	0.03	
Nitrite	mg/l				0.06	0	0	0	0.01	0	0	0	
Phosphate	mg/l				0	0	0	0.01	0	0	0	0	
Potassium	mg/l				5.97	7.44	7.41	8.95	4.36	12.83	14.66	6.09	
Selenium	mg/l				0	0	0	0	0	0	0	0	
Sodium	mg/l				214.1	245	227.5	207.1	209.5	179.9	146.8	212.4	
Sulfate	mg/l				900	800	900	800	800	1000	1100	1200	
Sulfide	mg/l				0	4	3.8	7.6	3	6	2	2.8	
TDS	mg/l				1406	1565	1508	1526	1580	1635	1771	1474	
Zinc	mg/l				0	0.03	0.12	0.05	0	0	0.61	0.03	

RECEIVED
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DIVISION OF
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IPA
HORSE CANYON MINE
ACT/007/013

1991 WATER MONITORING DATA

CWI 5130

SAMPLE LOCATION: HC - 1 (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)	*	*	*	40	13.68	18.63	7.73	4	35	48	*	34
pH	standard				8.46	8.29	8.03	8.78	8	8.11	7.36		7.98
Temp	o C				3	12	15	19	12	10	15		6
Conductivity	umhos/cm				3500	2100	3500	4500	4200	3800	4200		4200
Dissolved Oxygen	ppm				10.9	7.1	8.4	8.4	4.3	8.3	7.5		5.5
Aluminum	mg/l				<.1	<.1	<.1	<.1	<.1	<.1	<.1		<.1
Arsenic	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Barium	mg/l				<.01	0.064	<.01	0.055	0.024	0.24	0.117		0.037
Bicarbonate	mg/l				429	380	450	512	509	478	516		475
Boron	mg/l				0.19	0.352	0.14	0.137	0.17	0.16	0.2		0.071
Cadmium	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Calcium	mg/l				78.2	79.9	79.1	85.5	76.6	170	2.3		140
Carbonate	mg/l				14.3	10	17.3	0	8.3	0	125		9.4
Chloride	mg/l				25	26.2	27.3	39.2	35.7	41	38.9		34.2
Chromium	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Copper	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Flouride	mg/l				0.47	0.58	0.58	0.57	0.52	0.62	0.66		0.58
Hardness	mg/l				779	786	820	974	966	975	991		942
Iron Total	mg/l				0.105	0.237	0.195	0.8	0.055	0.098	0.12		0.073
Lead	mg/l				<.01	0.06	<.01	<.01	<.01	<.01	<.01		<.01
Magnesium	mg/l				116	118	123	151	155	132	132		151
Manganese	mg/l				<.01	0.042	<.01	0.17	<.01	0.095	0.108		0.094
Mercury	mg/l				<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002		<.0002
Molybdenum	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Nickel	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Ammonia	mg/l				<.2	0.22	<.2	0.77	0.26	3.67	0.45		1.21
Nitrate	mg/l				0.424	0.029	<.01	0.12	<.01	<.01	0.098		<.02
Nitrite	mg/l				0.006	<.005	0.025	0.014	0.007	0.005	<.005		<.005
Phosphate	mg/l				<.01	<.01	<.01	<.01	<.01	<.01	<.01		<.01
Potassium	mg/l				6	6.8	7.2	8	10.8	13.9	11.4		7.9
Selenium	mg/l				<.002	<.002	<.002	<.002	0.049	0.003	<.005		<.002
Sodium	mg/l				264	242	286	300	315	269	200		193
Sulfate	mg/l				747	791	774	902	932	942	929		811
Sulfide	mg/l				<.1	<.5	<.1	2.2	<.5	<.5	<.5		<.5
TDS	mg/l				1524	1558	1618	1859	1884	1808	1882		1780
Zinc	mg/l				<.01	0.224	<.01	0.018	<.01	0.026	<.01		<.01

IPA
HORSE CANYON MINE
ACT/007/013

1990 WATER MONITORING DATA

CUM 5130

SAMPLE LOCATION: HC - 1 (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)	*	*	*	130	149	5	0	0	0			
pH	standard				7.92	8.1	7.89						
Temp	o C				12	11	20						
Conductivity	umhos/cm				3100	3000	3900						
Dissolved Oxygen	ppm				6.5	6.4	4						
Aluminum	mg/l				<.1	<.1	<.1						
Arsenic	mg/l				<.01	<.01	<.01						
Barium	mg/l				<.01	<.01	<.01						
Bicarbonate	mg/l				394	455	484						
Boron	mg/l				0.18	<.1	<.1						
Cadmium	mg/l				<.01	<.01	<.01						
Calcium	mg/l				73.3	70.8	54.9						
Carbonate	mg/l				18.1	0	0						
Chloride	mg/l				29.7	34.2	28.9						
Chromium	mg/l				<.01	<.01	<.01						
Copper	mg/l				<.01	<.01	<0.020						
Flouride	mg/l				0.54	0.56	0.62						
Hardness	mg/l				792	826	815						
Iron Total	mg/l				0.072	0.13	0.1						
Lead	mg/l				<.01	<.01	<.01						
Magnesium	mg/l				158	163	150						
Manganese	mg/l				<.01	<.01	0.027						
Mercury	mg/l				<.0002	<.0002	<.0002						
Molybdenum	mg/l				<.01	<.01	<.01						
Nickel	mg/l				<.01	<.01	<.01						
Ammonia	mg/l				1.03	1.43	0.44						
Nitrate	mg/l				0.051	<.01	0.07						
Nitrite	mg/l				<.005	<.005	<.005						
Phosphate	mg/l				<.01	<.01	<.01						
Potassium	mg/l				8.5	8.4	8.4						
Selenium	mg/l				<.002	<.002	<.002						
Sodium	mg/l				194	211	206						
Sulfate	mg/l				823	850	793						
Sulfide	mg/l				<.1	<.1	<.1						
TDS	mg/l				1580	1650	1670						
Zinc	mg/l				<.01	<.01	<.01						

KAISER COAL CORPORATION
HORSE CANYON MINE
ACT/007/013

1989 WATER MONITORING DATA

CM 5130

SAMPLE LOCATION: HC - 1 (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)	*	*	3	3	6	9	<1	<1	0	0	0	0
pH	standard			8.33	8.48	7.88	7.78	8.02	8.1				
Temp	o C			10	13	12	10	18	20				
Conductivity	umhos/cm			3700	3900	3600	3800	3800	3800				
Dissolved Oxygen	ppm			4.3	4.8	5.2	6.3	6.6	7.4				
Aluminum	mg/l			<.1	<.1	<.1	<.1	<.1	<.1				
Arsenic	mg/l			<.01	<.01	<.01	<.01	<.01	<.1				
Barium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Bicarbonate	mg/l			424	491	537	499	514	456				
Boron	mg/l			0.22	0.4	0.22	0.157	0.18	0.26				
Cadmium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Calcium	mg/l			41.1	83.9	41.1	80.7	74.1	59.2				
Carbonate	mg/l			19	9.5	12.3	0	0	0				
Chloride	mg/l			29.3	33.1	13	43	34.1	41.3				
Chromium	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Copper	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Flouride	mg/l			0.32	0.66	0.14	0.86	0.68	1.01				
Hardness	mg/l			766	697	271	872	834	863				
Iron Total	mg/l			0.182	0.17	0.02	0.055	0.07	0.102				
Lead	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Magnesium	mg/l			102	112	38.4	33	53.1	133				
Manganese	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Mercury	mg/l			<.0002	<.0002	<.0002	<.0002	<.0002	<.0002				
Molybdenum	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Nickel	mg/l			<.01	<.01	<.01	<.01	<.01	<.01				
Ammonia	mg/l			0.18	<.1	0.28	<.2	<.2	<.2				
Nitrate	mg/l			0.257	<.1	1.24	<.01	<.02	0.14				
Nitrite	mg/l			0.028	<.01	<.005	<.01	0.0065	<.005				
Phosphate	mg/l			<.01	<.01	<.01	<.01	<.01	0.01				
Potassium	mg/l			8.1	6.1	5.5	8	2.6	7.8				
Selenium	mg/l			<.002	<.002	<.002	<.002	<.002	<.002				
Sodium	mg/l			202	224	197	202	184	218				
Sulfate	mg/l			560	724	232	281	294	817				
Sulfide	mg/l			<.1	<.1	<.1	<.1	<.1	<.1				
TDS	mg/l			1400	1420	824	800	1635	1760				
Zinc	mg/l			<.01	<.01	0.012	0.012	<.01	<.01				

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CM 6/15

SURFACE WATER QUALITY MONITORING

GENEVA COAL MINE

HC-1

Sample Date:	4-27-83	11-18-83
Aluminum, Al mg/l	.06	No flow
Ammonia, NH3 mg/l	.16	
Arsenic, As mg/l	.005	
Barium, Ba mg/l	.200	
Bicarbonate, HNO3 mg/l	512.40	
Boron, B mg/l	.11	
Cadmium, Cd mg/l	<.001	
Calcium,Ca mg/l	48.00	
Carbonate, CO3 mg/l	28.80	
Chloride, Cl mg/l	19.70	
Chromium, Cr mg/l	<.001	
Conductivity, umhos/cm	1,775	
Copper, Cu mg/l	.01	
Flouride, F mg/l	.25	
Iron, Fe (total) mg/l	49.300	
Lead, Pb mg/l	<.001	
Magnesium, Mg mg/l	105.60	
Manganese, Mn mg/l	1.450	
Mercury, Hg mg/l	<.0002	
Molybdenum, Mo mg/l	<.01	
Nickel, Ni mg/l	.01	
Nitrate, NO3-N mg/l	.22	
Nitrite, NO2-N mg/l	.03	
Phosphate, PO4 mg/l	1.04	
Potassium, K mg/l	8.20	
Selenium, Se mg/l	.003	
Sodium, Na mg/l	204	
Sulfate, SO4 mg/l	500	
Sulfide, S mg/l	1.20	
Suspended Solids mg/l	2,152	
Total Dissolved Solids mg/l	1,188	
Zinc, Zn mg/l	.015	
pH Units	8.10	

SURFACE WATER QUALITY DATA

GENEVA COAL MINE

Sampling Date:	2-12-81	3-17-81	4-22-81	5-13-81	6-24-81	7-8-81
HC-1						
Flow (gpm)	NA	NA	NA	25	NA	40
Acidity as $CaCO_3$ mg/l		<.1	<.01	10.00	<.01	<.01
Alkalinity as $CaCO_3$ mg/l		370.00	416.00	360.00	408.00	420.00
Dissolved Iron mg/l		.030	.010	.140	.010	.070
Iron as Fe (Total) mg/l		.060	.230	.270	.120	.080
Manganese as Mn (Tot) mg/l		.030	.020	.040	.050	.050
Suspended Solids mg/l		1.0	23.0	12.0	44.0	11.0
Total Dissolved Solids mg/l		1,400	1,450	1,300	1,450	1,400
pH Units		7.70	8.10	8.00	8.10	8.20

Sampling Date:	8-12-81	9-9-81	10-14-81	11-10-81	12-9-81	3-9-82
HC-1						
Flow (gpm)	3	No Flow	35	25	17	Frozen
Acidity as $CaCO_3$ mg/l	<.01		<.01	<.01	<.01	
Alkalinity as $CaCO_3$ mg/l	416.00		985.00	452.00	360.00	
Dissolved Iron mg/l	.090		.130	.019	.013	
Iron as Fe (Total) mg/l	.140		.265	.155	.150	
Manganese as Mn (Tot) mg/l	.120		.130	.030	.025	
Suspended Solids mg/l	5.0		6.6	16.0	11.0	
Total Dissolved Solids mg/l	1,400		1,500	1,500	1,325	
pH Units	8.30		8.20	8.10	8.10	

Sampling Date:	4-13-82	5-17-82	6-8-82	7-12-82	8-11-82	9-15-82
HC-1						
Flow (gpm)	12	60	65	45	NA	No Flow
Acidity as $CaCO_3$ mg/l	<.01	4.00	2.00	<.01	<.01	
Alkalinity as $CaCO_3$ mg/l	252.00	517.50	412.00	339.50	523.00	
Dissolved Iron mg/l	NA	NA	.040	.040	.040	
Iron as Fe (Total) mg/l	.030	2.250	.070	.040	.044	
Manganese as Mn (Tot) mg/l	.010	.100	.010	.010	.055	
Suspended Solids mg/l	4.0	106	9.0	2.0	2.0	
Total Dissolved Solids mg/l	1,566	1,372	1,375	1,425	1,502	
pH Units	7.8	7.9	8.00	8.00	8.10	

NA - Not Available