

KIMBROUGH ENGINEERING COMPANY

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Mr. Steve Haden	Scott Kimbrough
COMPANY:	DATE:
NMOCD	10/18/2000
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
505 - 334 - 6170	25
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
505 - 334 - 6178	00-125
RE:	YOUR REFERENCE NUMBER:
L-Bar Ranch #1	

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Attached are water and gas analysis for the subject well per our conversation today. I have also am sending you, by mail, today the CBL's on this well. Please give me a call when you receive these.

WATER ANALYSIS**Sample: Caprock, DST #1 L-Bar Ranch #1 3/82-3204****Date: 12/20/99****SAN ANDRES LMST.**

pH	6.70
SPECIFIC GRAVITY	1.015
RESISTIVITY	0.26 ohm-m
TEMPERATURE	74 °F

CALCIUM	320.8 mg/L
MAGNESIUM	24.34 mg/L
CHLORIDE	8875 mg/L
CARBONATE	- nil -
BICARBONATE	1659.2 mg/L
SULFATE	> 800 mg/L
IRON	0.0
POTASSIUM	% _____ PPM _____

REMARKS AND RECOMMENDATIONS

WATER ANALYSIS**Sample: Caprock, DST #2 L-Bar Ranch #1** *2074' - 3020'***Date: 12/20/99***AGUA ZARCA*

pH	6.34
SPECIFIC GRAVITY	1.035
RESISTIVITY	0.08 ohm-m
TEMPERATURE	74 °F

CALCIUM	601.5 mg/L
MAGNESIUM	267.74 mg/L
CHLORIDE	2485 mg/L
CARBONATE	- nil -
BICARBONATE	1390.8 mg/L
SULFATE	> 800 mg/L
IRON	100.0 mg/L
POTASSIUM	% _____ PPM _____

REMARKS AND RECOMMENDATIONS

WATER ANALYSIS

Sample: Caprock, L-Bar Ranch #1 perfs 1282 - 1320 @ 9:00 AM

Date: 12/20/99

ELTRADA S.S.

pH	6.70
SPECIFIC GRAVITY	1.075
RESISTIVITY	0.04 ohm-m
TEMPERATURE	74 °F
CALCIUM	1002.5 mg/L
MAGNESIUM	705.8 mg/L
CHLORIDE	6532 mg/L
CARBONATE	- nil -
BICARBONATE	972.2 mg/L
SULFATE	> 800 mg/L
IRON	10.0 mg/L
POTASSIUM	% _____ PPM _____

REMARKS AND RECOMMENDATIONS

WATER ANALYSIS**Sample: Caprock, L-Bar Ranch #1 perfs 1282 - 1320 @ 9:15 AM****Date: 12/20/99*****ENTRADA 35,***

pH	6.84
SPECIFIC GRAVITY	1.075
RESISTIVITY	0.04 ohm-cm
TEMPERATURE	74 °F

CALCIUM	1042 mg/L
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MAGNESIUM	632.8 mg/L
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CHLORIDE	5396 mg/L
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CARBONATE	- nil -
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BICARBONATE	951.6 mg/L
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SULFATE	> 800 mg/L
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IRON	—
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POTASSIUM	% _____	PPM _____
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REMARKS AND RECOMMENDATIONS

Schlumberger

LAB REPORT

Company ----- Cap Rock Date -- 12/09/99
 Field -- L-Bar Ranch #1 Well Name ----- After Acid 1PM
 Formation ----- 12_3_99 Depth - 3641-46
 Type Sample -- 3674-82;3692-96 Sample Number 6
 Sampled By --- YESO
 County State --

pH	6.95	SPECIFIC GRAVITY	1.02
TEMPERATURE	72	RESISTIVITY	0.28313

DISSOLVED SOLIDS

CATIONS

SODIUM NA (CALC.)	mg/l -- 4194.986	me/l -- 182.398
CALCIUM CA	mg/l -- 802.000	me/l -- 40.028
MAGNESIUM MG	mg/l -- 705.860	me/l -- 58.050

ANIONS

CHLORIDE CL	mg/l -- 7455.000	me/l -- 210.231
SULFATE SO4	mg/l -- 800.000	me/l -- 16.656
CARBONATE CO3	mg/l --	me/l --
BICARBONATE HCO3	mg/l -- 3269.600	me/l -- 53.589

TDS (CALC.) 17227.45

POTASSIUM K IRON FE (TOTAL) -- 0

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - Cap Rock Date - - 12/09/99
 Field - - L-Bar Ranch #1 Well Name - - - - 2:30PM
 Formation - - - - 12 2 98 Depth - 3641-46
 Type Sample - - 3674-82;3692-96 Sample Number 5
 Sampled By - - - VESO
 County State - -

pH	7.31	SPECIFIC GRAVITY	1.015
TEMPERATURE	72	RESISTIVITY	0.36571

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)	mg/l - - 4244.891	me/l - - 184.572
CALCIUM CA	mg/l - - 280.700	me/l - - 14.010
MAGNESIUM MG	mg/l - - 219.060	me/l - - 18.015

ANIONS

CHLORIDE CL	mg/l - - 4970.000	me/l - - 140.154
SULFATE SO4	mg/l - - 800.000	me/l - - 16.656
CARBONATE CO3	mg/l - -	me/l - -
BICARBONATE HCO3	mg/l - - 3647.800	me/l - - 59.787

TDS (CALC.) 14162.55

POTASSIUM K IRON FE (TOTAL) - - 0

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - Cap Rock

Date - - 12/09/99

Field - - L-Bar Ranch #1

Well Name - - - - Swab Test

Formation - - - - 11_29_99

Depth - 3644-3792

YES TO TOP OF

Type Sample - - Swab Test

Sample Number

2

MRSITA BLANCA

Sampled By - - -

County

State - -

pH 6.78

SPECIFIC GRAVITY

1.015

TEMPERATURE 72

RESISTIVITY

0.40111

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)

mg/l - - 5244.505

me/l - - 228.031

CALCIUM CA

mg/l - - 320.800

me/l - - 16.011

MAGNESIUM MG

mg/l - - 170.380

me/l - - 14.012

ANIONS

CHLORIDE CL

mg/l - - 8745.000

me/l - - 190.209

SULFATE SO4

mg/l - - 800.000

me/l - - 16.656

CARBONATE CO3

mg/l - -

me/l - -

BICARBONATE HCO3

mg/l - - 3123.200

me/l - - 51.189

TDS (CALC.) 16403.88

POTASSIUM K

IRON FE (TOTAL) - -

7

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - - Cap Rock Date - - 12/09/99

Field - - L-Bar Ranch #1 Well Name - - - - 1PM

Formation - - - - 12_1_99 Depth - 3780-90

Type Sample - - Final Sample Sample Number 4

Sampled By - - -

County State - -

pH 7.06 SPECIFIC GRAVITY 1.015

TEMPERATURE 72 RESISTIVITY 0.33032

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.) mg/l - - 3874.349 me/l - - 159.781

CALCIUM CA mg/l - - 360.900 me/l - - 18.013

MAGNESIUM MG mg/l - - 219.060 me/l - - 16.015

ANIONS

CHLORIDE CL mg/l - - 4815.000 me/l - - 130.143

SULFATE SO4 mg/l - - 800.000 me/l - - 16.656

CARBONATE CO3 mg/l - - me/l - -

BICARBONATE HCO3 mg/l - - 2989.000 me/l - - 48.990

TDS (CALC.) 12658.31

POTASSIUM K IRON FE (TOTAL) - - 0

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - - Cap Rock Date - - 12/09/99
 Field - - L-Bar Ranch #1 Well Name - - - -
 Formation - - - - 11_30_99 Depth - 3780-92 TOP OF MESITA BLAND
 Type Sample - - Sample Number - - 3
 Sampled By - - -
 County Sandoval State - -

pH	7.03	SPECIFIC GRAVITY	1.015
TEMPERATURE	72	RESISTIVITY	0.36571

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)	mg/l - - 4558.380	me/l - - 198.198
CALCIUM CA	mg/l - - 360.900	me/l - - 18.013
MAGNESIUM MG	mg/l - - 146.040	me/l - - 12.010

ANIONS

CHLORIDE CL	mg/l - - 5680.000	me/l - - 160.176
SULFATE SO4	mg/l - - 800.000	me/l - - 16.856
CARBONATE CO3	mg/l - -	me/l - -
BICARBONATE HCO3	mg/l - - 3135.400	me/l - - 51.389

TDS (CALC.) 14680.72

POTASSIUM K IRON FE (TOTAL) - - 0

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - Cap Rock Date - - 12/09/99

Field - - L-Bar Ranch #1 Well Name - - - -

Formation - - - - 11 22 89 Depth - 4332-4454 *ABO*

Type Sample - - Solids Sample Sample Number 1

Sampled By - - -

County - - - - State - -

pH 7.47 SPECIFIC GRAVITY 1.015

TEMPERATURE 72 RESISTIVITY 0.35392

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.) mg/l - - 3284.328 me/l - - 142.803

CALCIUM CA mg/l - - 761.900 me/l - - 38.026

MAGNESIUM MG mg/l - - 24.340 me/l - - 2.002

ANIONS

CHLORIDE CL mg/l - - 5680.000 me/l - - 180.176

SULFATE SO4 mg/l - - 800.000 me/l - - 16.856

CARBONATE CO3 mg/l - - me/l - -

BICARBONATE HCO3 mg/l - - 366.000 me/l - - 5.999

TDS (CALC.) 10916.57

POTASSIUM K IRON FE (TOTAL) - - 0

REMARKS & RECOMMENDATIONS

Schlumberger

LAB REPORT

Company ----- Cap Rock Date -- 11/24/99
 Field -- L Bar #1 Well Name ----- Perfs 5174-82, TOP PERM
 Formation ----- 5074-77,5038-42 Depth --
 Type Sample -- BASE OF PERM. Sample Number Wildcat
 Sampled By ---
 County Savdaval State -- NM

pH	7.05	SPECIFIC GRAVITY	1.035
TEMPERATURE	T2	RESISTIVITY	0.08258

DISSOLVED SOLIDS

CATIONS

SODIUM NA (CALC.)	mg/l -- 13806.353	me/l -- 600.300
CALCIUM CA	mg/l -- 360.900	me/l -- 18.013
MAGNESIUM MG	mg/l -- 778.880	me/l -- 64.055

ANIONS

CHLORIDE CL	mg/l -- 23075.000	me/l -- 650.715
SULFATE SO4	mg/l -- 800.000	me/l -- 18.658
CARBONATE CO3	mg/l --	me/l --
BICARBONATE HCO3	mg/l -- 915.000	me/l -- 14.997

TDS (CALC.) 39736.13

POTASSIUM K

IRON FE (TOTAL) -- 0

REMARKS & RECOMMENDATIONS

Schlumberger

LAB REPORT

Company ----- Cape Rock

Date -- 11/16/99

Field --

Well Name ----- L-BAR DD.1

Formation ----- Penn.

Depth - 5336'-42" AND 5983'-90"

PENN.

PENN (SANDIA FM)

Type Sample --

Sample Number A-2

Sampled By ---

COMPOSITE SAMPLE TAKEN FROM

TOP OF LAST CEMENTED ANN

County

State -- N. Mex.

pH 6.28

SPECIFIC GRAVITY

1.02

TEMPERATURE 63

RESISTIVITY

0.27

RESISTIVITY

0.28213 @ 60F

DISSOLVED SOLIDS

CATIONS

SODIUM NA (CALC.)

mg/l -- 3862.457

me/l -- 159.244

CALCIUM CA

mg/l -- 2125.300

me/l -- 106.074

MAGNESIUM MG

mg/l -- 754.540

me/l -- 82.053

ANIONS

CHLORIDE CL

mg/l -- 10295.000

me/l -- 290.319

SULFATE SO4

mg/l -- 800.000

me/l -- 18.656

CARBONATE CO3

mg/l --

me/l --

BICARBONATE HCO3

mg/l -- 1244.400

me/l -- 20.396

TDS (CALC.)

18681.7

POTASSIUM K

IRON FE (TOTAL) --

100

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**Company ----- **Cape Rock**

Date -- 11/16/99

Field --

Well Name ---- **L-BAR NO.1**Formation ---- **Penn.**Depth - **5386'-42" MD 5983'-90'**

Type Sample --

Sample Number **A-1** **DECU (SANDIA)**

Sampled By ---

**COMPOSITE SAMPLE TAKEN IN MIDDLE
OF SURFACE RUN**

County

State -- **N.MEX.****pH 6.35****SPECIFIC GRAVITY****1.02****TEMPERATURE 66****RESISTIVITY****0.18****RESISTIVITY****0.19617 @ 60F****DISSOLVED SOLIDS****CATIONS****SODIUM NA (CALC.)****mg/l -- 3862.213****me/l -- 172.277****CALCIUM CA****mg/l -- 3007.500****me/l -- 150.104****MAGNESIUM MG****mg/l -- 486.800****me/l -- 40.034****ANIONS****CHLORIDE CL****mg/l -- 11716.000****me/l -- 330.363****SULFATE SO4****mg/l -- 800.000****me/l -- 16.656****CARBONATE CO3****mg/l --****me/l --****BICARBONATE HCO3****mg/l -- 930.400****me/l -- 15.397****TDS (CALC.)****20910.91****POTASSIUM K****IRON FE (TOTAL) --****250****REMARKS & RECOMMENDATIONS**

Schlumberger

LAB REPORT

Company ----- Cap Rock Date -- 11/18/99
 Field -- Well Name ----- Bar #1
 Formation ----- PENN. Depth - 5336'-42'
 Type Sample -- Sample Number B-3
 Sampled By --
 County Sandoval State -- NM

pH	6.40	SPECIFIC GRAVITY	1.01
TEMPERATURE	74	RESISTIVITY	0.44758

DISSOLVED SOLIDS

CATIONS

SODIUM NA (CALC.)	mg/l -- 3192.006	me/l -- 138.788
CALCIUM CA	mg/l -- 761.900	me/l -- 38.026
MAGNESIUM MG	mg/l -- 194.720	me/l -- 16.014

ANIONS

CHLORIDE CL	mg/l -- 5880.000	me/l -- 160.176
SULFATE SO4	mg/l -- 800.000	me/l -- 16.656
CARBONATE CO3	mg/l --	me/l --
BICARBONATE HCO3	mg/l -- 976.000	me/l -- 15.987

TDS (CALC.) 11804.63

POTASSIUM K IRON FE (TOTAL) -- 0

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - Cape Rock Date - - 11/16/99
 Field - - Well Name - - - - L-13A12 L20.1
 Formation - - - - Penn (SANDIA Fm) Depth - 5983'-90'
 Type Sample - - Sample Number B-2
 Sampled By - - TAKEN FROM TOP OF INST
 County State - - N. MEX
 State - -

pH	5.57	SPECIFIC GRAVITY	1.02
TEMPERATURE	70	RESISTIVITY	0.25
		RESISTIVITY	0.28744 @ 60F

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)	mg/l - - 4196.448	me/l - - 182.462
CALCIUM CA	mg/l - - 2005.000	me/l - - 100.070
MAGNESIUM MG	mg/l - - 705.880	me/l - - 58.050

ANIONS

CHLORIDE CL	mg/l - - 10650.000	me/l - - 300.330
SULFATE SO4	mg/l - - 800.000	me/l - - 16.656
CARBONATE CO3	mg/l - -	me/l - -
BICARBONATE HCO3	mg/l - - 1439.600	me/l - - 23.595

TDS (CALC.) 19796.91

POTASSIUM K

IRON FE (TOTAL) - - 450

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company ----- Cape Rock Date -- 11/16/99
 Field -- Well Name ---- L-BAR NO. 1
 Formation ---- Penn (sand in Fm) Depth - 5983' - 90'
 Type Sample -- Sample Number B-1
 Sampled By --- TAKED FROM BOTTOM OF LAST
 County SWAB (RUL)
 State -- N.M.

pH	5.18	SPECIFIC GRAVITY	1.015
TEMPERATURE	74	RESISTIVITY	0.22
		RESISTIVITY	0.26613 @ 60F

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)	mg/l -- 3878.728	me/l -- 166.547
CALCIUM CA	mg/l -- 2285.700	me/l -- 114.079
MAGNESIUM MG	mg/l -- 452.460	me/l -- 38.033

ANIONS

CHLORIDE CL	mg/l -- 9940.000	me/l -- 280.308
SULFATE SO4	mg/l -- 800.000	me/l -- 16.856
CARBONATE CO3	mg/l --	me/l --
BICARBONATE HCO3	mg/l -- 1451.800	me/l -- 23.795

TDS (CALC.) 18818.69

POTASSIUM K

IRON FE (TOTAL) -- 100

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company ----- **Cap Rock** Date -- 01/03/00
 Field -- **L-Bar Ranch #1** Well Name -----
 Formation ----- **AQUA ZARCA** Depth - **2974' - 3020'**
 Type Sample -- Sample Number **DST #2**
 Sampled By ---
 County State --

pH	8.34	SPECIFIC GRAVITY	1.035
TEMPERATURE	74	RESISTIVITY	0.09677

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)	mg/l -- 1322.181	mg/l -- 57.488
CALCIUM CA	mg/l -- 501.500	mg/l -- 30.021
MAGNESIUM MG	mg/l -- 257.740	mg/l -- 22.019

ANIONS

CHLORIDE CL	mg/l -- 2485.000	mg/l -- 70.077
SULFATE SO4	mg/l -- 800.000	mg/l -- 16.656
CARBONATE CO3	mg/l --	mg/l --
BICARBONATE HCO3	mg/l -- 1390.800	mg/l -- 22.785

TDS (CALC.) 6867.221**POTASSIUM K****IRON FE (TOTAL) -- 100****REMARKS & RECOMMENDATIONS**



LAB REPORT

Company ----- Cap Rock Date -- 01/03/00
 Field -- L-Bar Ranch #1 Well Name ---- perfz 1282-1320
 Formation ---- ENTRADA Depth - 9_15_am
 Type Sample -- Sample Number
 Sampled By ---
 County State --

pH	6.84	SPECIFIC GRAVITY	1.075
TEMPERATURE	74	RESISTIVITY	0.04839

DISSOLVED SOLIDS

CATIONS

SODIUM NA (CALC.)	mg/l -- 1847.723	me/l -- 80.239
CALCIUM CA	mg/l -- 1042.600	me/l -- 52.036
MAGNESIUM MG	mg/l -- 632.840	me/l -- 32.045

ANIONS

CHLORIDE CL	mg/l -- 5396.000	me/l -- 152.187
SULFATE SO4	mg/l -- 800.000	me/l -- 16.656
CARBONATE CO3	mg/l --	me/l --
BICARBONATE HCO3	mg/l -- 661.600	me/l -- 16.687

TDS (CALC.) 10670.76

POTASSIUM K

IRON FE (TOTAL) -- 0

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**Company ----- *Cap Rock*

Date -- 01/03/00

Field -- *L-Bar Ranch #1*Well Name ---- *perfs 1282-1320*Formation ---- *ELYRADA*Depth - *9_00_am*

Type Sample --

Sample Number

Sampled By ---

County

State --

pH 6.70

SPECIFIC GRAVITY

1.075

TEMPERATURE 74

RESISTIVITY

0.04839

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)

mg/l -- 2500.238

me/l -- 106.710

CALCIUM CA

mg/l -- 1002.500

me/l -- 50.035

MAGNESIUM MG

mg/l -- 705.860

me/l -- 58.060

ANIONS

CHLORIDE CL

mg/l -- 6532.000

me/l -- 184.202

SULFATE SO4

mg/l -- 800.000

me/l -- 16.656

CARBONATE CO3

mg/l --

me/l --

BICARBONATE HCO3

mg/l -- 972.340

me/l -- 15.937

TDS (CALC.) 12512.94

POTASSIUM K

IRON FE (TOTAL) -- 10

REMARKS & RECOMMENDATIONS

Schlumberger**LAB REPORT**

Company - - - - - **Cap Rock** Date - - 01/03/00
 Field - - **L-Bar Ranch #1** Well Name - - - - -
 Formation - - - - - **SAVANDRA** Depth - **3182'-3204'**
 Type Sample - - Sample Number **DST #1**
 Sampled By - - -
 County State - -

pH	8.70	SPECIFIC GRAVITY	1.015
TEMPERATURE	74	RESISTIVITY	0.31452

DISSOLVED SOLIDS**CATIONS**

SODIUM NA (CALC.)	mg/l - - 6350.332	me/l - - 276.112
CALCIUM CA	mg/l - - 320.800	me/l - - 16.011
MAGNESIUM MG	mg/l - - 24.340	me/l - - 2.002

ANIONS

CHLORIDE CL	mg/l - - 9875.000	me/l - - 250.275
SULFATE SO4	mg/l - - 900.000	me/l - - 16.658
CARBONATE CO3	mg/l - -	me/l - -
BICARBONATE HCO3	mg/l - - 1859.200	me/l - - 27.194

TDS (CALC.) 18029.67

POTASSIUM K

IRON FE (TOTAL) - - 0

REMARKS & RECOMMENDATIONS