



**REPORT  
of  
SUB-SURFACE  
DIRECTIONAL  
SURVEY**

ARGEE OIL COMPANY  
COMPANY

CANTINA WELL NO. 1  
WELL NAME

LEA COUNTY, NEW MEXICO  
LOCATION

<u>JOB NUMBER</u>	<u>TYPE OF SURVEY</u>	<u>DATE</u>
WT0385-S0221	MAGNETIC MULTI SHOT SURVEY	1-APR-85
WT0485-S0236	" "	7-APR-85
WT0485-S0246	" "	21-APR-85

**SURVEY BY**  
STEVE COVINGTON  
GARY DeSPAIN  
STEVE COVINGTON

**OFFICE**  
WEST TEXAS

ARGE OIL COMPANY

CANTINA WELL NO. 1

LEA COUNTY, NEW MEXICO BB2-190

MARCH 31, 1985

EASTMAN WHIPSTOCK, INC.

MAGNETIC MULTI SHOT SURVEY  
SURVEYOR: STEVE COVINGTON WT0385-S0221  
(0'-357')

MAGNETIC MULTI SHOT SURVEY  
SURVEYOR: GARY DESPAIN WT0485-S0236  
(357'-4554')

MAGNETIC MULTI-SHOT SURVEY  
SURVEYOR: STEVE COVINGTON WT0485-S0246  
(4554'-8619')



RADIUS OF CURVATURE METHOD

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		R E C T A N G U L A R C O O R D I N A T E S F E E T	D O G L E G S E V E R I T Y D G / 1 0 0 F T
				V E R T I C A L D E P T H F E E T	V E R T I C A L D E P T H F E E T		
0.	0 0	0	0.	0.00	0.00	0.00	0.00
85.	0 45	N 73 E	85.	85.00	0.16 N	0.53 E	0.88
183.	0 45	N 86 E	98.	182.99	0.40 N	1.79 E	0.17
281.	0 30	S 38 E	98.	280.98	0.02 S	2.73 E	0.64
342.	0 15	S 89 E	61.	341.98	0.19 S	3.07 E	0.65
357.	0 30	N 66 E	15.	356.98	0.17 S	3.17 E	1.95

HOLE DIRECTION MAY BE INFLUENCED BY MAGNETIC FIELD 357 MD. TO 4554 MD.

BECAUSE OF MISINFORMATION ON LOCATION OF THE WELL

419.	0 45	N 55 E	93.	418.98	0.16 N	3.76 E	0.45
481.	0 30	N 58 E	93.	471.97	0.16 N	4.32 E	0.41
575.	0 30	N 48 E	93.	574.97	1.68 N	4.95 E	0.15
606.	0 30	N 72 E	31.	605.97	1.20 N	5.17 E	0.83
699.	0 15	N 44 E	93.	698.97	1.52 N	5.68 E	0.33
792.	0 30	N 83 E	93.	791.97	1.79 N	6.22 E	0.37
885.	0 15	S 46 E	93.	884.96	1.60 N	6.78 E	0.42
978.	0 30	N 48 E	93.	977.96	1.59 N	7.33 E	0.58
1071.	0 30	N 60 W	93.	1070.96	2.28 N	7.26 E	0.87
1164.	0 15	S 69 E	93.	1163.96	2.65 N	7.43 E	0.80
1257.	0 30	N 53 W	93.	1256.95	3.02 N	7.64 E	0.80
1350.	0 15	N 45 E	93.	1349.95	3.56 N	7.60 E	0.63
1443.	0 15	N 65 E	93.	1442.95	3.79 N	7.93 E	0.09
1536.	0 15	N 76 E	93.	1535.95	3.92 N	8.31 E	0.05
1629.	0 15	N 62 E	93.	1628.95	4.07 N	8.69 E	0.07
1722.	0 15	N 8 W	93.	1721.95	4.41 N	8.87 E	0.31
1815.	0 15	N 13 W	93.	1814.95	4.81 N	8.79 E	0.02
1908.	0 30	S 32 E	93.	1907.95	4.97 N	9.19 E	0.80
2001.	0 30	S 57 E	93.	2000.94	4.40 N	9.75 E	0.23

TIME DATE

09:41:49 22-APR-85

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	R E C T A N G U L A R C O O R D I N A T E S FEET	DOGLEG SEVERITY DG/100FT
2094.	0 45	S 71 E	93.	2093.94	3.95 N 10.66 E	0.31
2188.	1 0	S 79 E	94.	2187.93	3.58 N 12.04 E	0.30
2281.	1 0	S 90 E	93.	2280.91	3.43 N 13.66 E	0.21
2374.	1 0	N 81 E	93.	2373.90	3.56 N 15.27 E	0.17
2467.	0 45	N 82 E	93.	2466.89	3.77 N 16.68 E	0.27
2560.	0 30	N 83 E	93.	2559.88	3.90 N 17.68 E	0.27
2653.	0 45	N 59 E	93.	2652.87	4.23 N 18.63 E	0.38
2746.	0 30	S 84 E	93.	2745.87	4.44 N 19.61 E	0.50
2839.	1 0	N 83 E	93.	2838.86	4.45 N 20.82 E	0.56
2932.	1 0	S 90 E	93.	2931.85	4.55 N 22.44 E	0.13
3025.	1 0	S 90 E	93.	3024.83	4.65 N 24.06 E	0.00
3118.	0 30	N 64 E	93.	3117.82	5.24 N 25.24 E	0.64
3211.	1 0	N 60 E	93.	3209.80	5.43 N 26.31 E	0.54
3304.	0 45	N 77 E	93.	3303.80	5.61 N 27.63 E	0.38
3397.	0 30	N 75 E	93.	3396.80	6.16 N 28.61 E	0.27
3490.	0 30	N 14 E	93.	3489.80	6.71 N 29.15 E	0.55
3583.	0 30	N 30 E	93.	3582.79	7.46 N 29.46 E	0.15
3677.	0 30	N 36 E	94.	3676.79	8.15 N 29.90 E	0.06
3770.	0 30	N 32 E	93.	3769.79	8.82 N 30.36 E	0.04
3863.	0 45	N 30 E	93.	3862.78	9.69 N 30.88 E	0.27
3956.	0 45	N 23 E	93.	3955.77	10.78 N 31.42 E	0.10
4049.	0 45	N 4 E	93.	4048.76	11.95 N 31.70 E	0.27
4142.	0 30	N 7 E	93.	4141.76	12.96 N 31.80 E	0.27
4235.	0 45	N 1 E	93.	4234.75	13.97 N 31.87 E	0.28
4328.	0 45	N 3 E	93.	4327.74	15.19 N 31.91 E	0.03
4421.	0 30	N 6 W	93.	4420.74	16.20 N 31.89 E	0.29
4514.	0 15	N 6 W	93.	4513.74	16.81 N 31.82 E	0.27
4554.	0 15	N 4 W	40.	4553.74	16.98 N 31.81 E	0.02
4644.	0 30	N 34 E	110.	4643.73	17.67 N 31.99 E	0.31
4757.	0 45	N 17 E	93.	4756.73	18.58 N 32.43 E	0.33

Eastman  
Whipstock  
APPROXIMATE COMPANY

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		R E C T A N G U L A R C O O R D I N A T E S F E E T	DOGLEG SEVERITY DG/100FT
				VERTICAL DEPTH FEET			
4850.	0 30	N 24 W	93.	4849.72		19.57 N 32.37 E	0.53
4944.	0 15	N 36 W	94.	4943.72		20.10 N 32.06 E	0.28
5037.	0 45	N 54 W	93.	5036.72		20.67 N 31.49 E	0.56
5130.	0 30	N 51 W	93.	5129.71		21.29 N 30.68 E	0.27
5223.	0 45	N 17 W	93.	5222.71		22.12 N 30.12 E	0.47
5317.	0 45	N 46 W	94.	5316.70		23.16 N 29.49 E	0.40
5410.	0 30	N 42 W	93.	5409.69		23.89 N 28.78 E	0.27
5503.	1 0	N 42 W	93.	5502.69		24.79 N 27.97 E	0.54
5597.	1 15	N 30 W	94.	5596.67		26.28 N 26.89 E	0.36
5690.	1 15	N 41 W	93.	5689.65		27.93 N 25.71 E	0.26
5783.	0 45	N 16 W	93.	5782.63		24.94 E	0.70
5877.	0 30	N 56 W	94.	5876.63		24.35 E	0.52
5970.	1 0	N 26 W	93.	5969.63		23.56 E	0.67
6063.	0 30	N 32 W	93.	6062.63		22.80 E	0.64
6157.	1 15	N 39 W	94.	6156.60	COMPANY	21.78 E	0.82
6250.	0 30	N 20 E	93.	6249.58		21.56 E	1.16
6343.	0 45	N 11 E	93.	6342.58		21.83 E	0.29
6437.	1 0	N 26 E	94.	6436.57		22.28 E	0.36
6530.	0 15	N 2 E	93.	6529.56		22.53 E	0.84
6623.	1 0	N 30 E	93.	6622.56		22.80 E	0.85
6717.	1 15	N 19 E	94.	6716.54		23.57 E	0.35
6810.	1 0	N 1 W	93.	6809.52		23.85 E	0.50
6903.	1 0	N 33 E	93.	6902.51		24.29 E	0.63
6997.	1 30	N 24 E	94.	6996.48		25.27 E	0.57
7090.	1 0	N 31 E	93.	7089.46		26.21 E	0.56
7183.	0 45	N 24 E	93.	7182.45		26.86 E	0.29
7277.	0 45	N 40 E	94.	7276.44		27.51 E	0.22
7370.	1 0	N 5 E	93.	7369.43		28.05 E	0.62
7463.	0 30	N 14 E	93.	7462.42		28.25 E	0.55
7556.	1 0	N 1 E	93.	7555.41		28.41 E	0.56

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		R E C T A N G U L A R C O O R D I N A T E S FEET	DOGLEG SEVERITY DG/100FT
				VERTICAL DEPTH FEET			
7650.	1 30	N 23 W	94.	7649.39		55.22 N 28.02 E	0.76
7743.	1 45	N 22 E	93.	7742.35		57.79 N 27.99 E	1.36
7836.	2 0	N 12 E	93.	7835.30		60.70 N 28.83 E	0.44
7930.	2 30	N 3 W	94.	7929.23		64.36 N 29.17 E	0.62
8023.	2 15	N 11 W	93.	8022.15		68.18 N 28.70 E	0.45
8116.	2 0	N 36 W	93.	8115.09		71.32 N 27.34 E	1.02
8210.	2 0	N 34 W	94.	8209.03		74.01 N 25.46 E	0.07
8303.	2 30	N 34 W	93.	8301.96		77.03 N 23.42 E	0.54
8396.	1 15	N 39 W	93.	8394.91		79.48 N 21.61 E	1.35
8490.	1 45	N 45 W	94.	8488.87		81.31 N 19.96 E	0.56
8583.	2 0	N 47 W	93.	8581.82		83.33 N 17.77 E	0.28
8619.	1 45	N 46 W	94.	8617.80		84.33 N 16.92 E	0.70
8635 IS A PROJECTION BASED ON MAGNETIC MULTI-SHOT SURVEY							
8635.	1 45	N 46 W	16.	8633.80		84.57 N 16.57 E	0.00

FINAL CLOSURE - DIRECTION: N 11 DEGS 5 MINS E

DISTANCE: 86.18 FEET

ARGEER OIL COMPANY  
CANTINA WELL NO. 1  
LEA COUNTY, NEW MEXICO

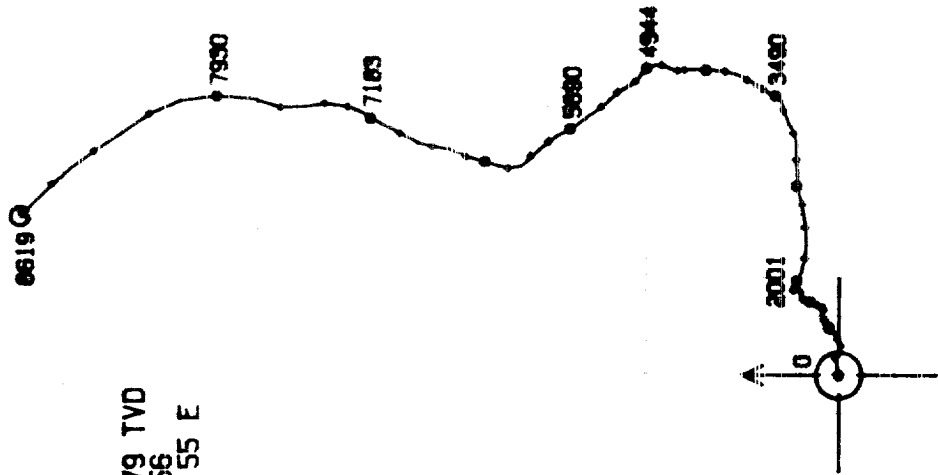
BD2-190

EASTMAN WHIPSTOCK, INC.

# HORIZONTAL PROJECTION

SCALE 1 IN. = 20 FEET  
DEPTH INDICATOR: MD

FINAL STATION:  
DEPTH 8635 MD. 8633.79 TVD  
NORTH 84.57 EAST 16.56  
CLOSURE 86.17 N 11 4 55 E





P.O. Box 6341/Midland, Texas 79711-0341/(915) 563-0511

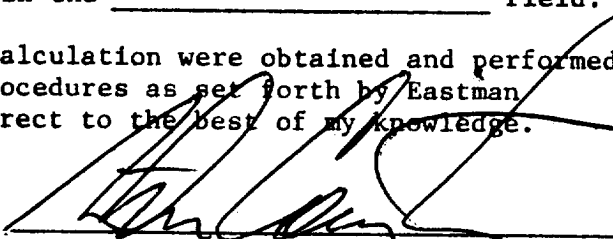
SURVEY CERTIFICATION SHEET

STATE OF TEXAS  
COUNTY OF MIDLAND

I, STEVE COVINGTON, in the employ of Eastman Whipstock, Inc., did on the days of MARCH 31, 19 85 thru APRIL 1, 19 85 conduct or supervise the taking of a MAGNETIC MULTI-SHOT survey by the method of magnetic orientation from a depth of 0 feet to 357 feet, with recordings of inclination and direction being obtained at approximate intervals of 98 feet.

This survey was conducted at the request of ARGEEO OIL COMPANY for their CANTINA #1, LEA County, State of NEW MEXICO, in the \_\_\_\_\_ field.

This data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.


  
\_\_\_\_\_  
Directional Supervisor/Surveyor

The data for this survey has been examined by me and confirms to principles and procedures set forth by Eastman Whipstock, Inc.

  
\_\_\_\_\_  
Tim Stephens

Before me, the undersigned authority, on this day personally appeared STEVE COVINGTON, known to me to be the person whose name is subscribed to this instrument, who after being by me duly sworn on oath, states that he has knowledge of all the facts stated above and that this information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 23<sup>RD</sup> day of APRIL, 19 85.

  
\_\_\_\_\_  
Notary Public in and for the  
County of Midland, Texas



ROY L. STENKE  
Notary Public, State of Texas  
My Commission Expires July 9, 1985





(915) 563-0511

P.O. Box 6341/Terminal Station/Midland, TX 79711-0341

# SURVEY CERTIFICATION SHEET

STATE OF TEXAS  
COUNTY OF MIDLAND

I, Gary DeSpain, in the employ of Eastman Whipstock, Inc., did on the days of April 7, 1985 thru April 7, 1985 conduct or supervise the taking of a Magnetic Multi Shot survey by the method of magnetic orientation from a depth of 357 feet to 4554 feet, with recordings of inclination and direction being obtained at approximate intervals of 93 feet.

This survey was conducted at the request of Argee Oil Company for their Cantina Well No. 1, Lea County, State of New Mexico, in the \_\_\_\_\_ field.

This data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.

Gary DeSpain  
Directional Supervisor/Surveyor

The data for this survey has been examined by me and confirms to principles and procedures set forth by Eastman Whipstock, Inc.

Tim Stephens

Before me, the undersigned authority, on this day personally appeared Gary DeSpain, known to me to be the person whose name is subscribed to this instrument, who after being by me duly sworn on oath, states that he has knowledge of all the facts stated above and that this information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 23<sup>RD</sup> day of April, 1985

Roy L. Stenke  
Notary Public in and for the  
County of Midland, Texas



ROY L. STENKE  
Notary Public, State of Texas  
My Commission Expires July 8, 1988



(915) 563-0511

P.O. Box 6341/Terminal Station/Midland, TX 79711-0341

### SURVEY CERTIFICATION SHEET

STATE OF TEXAS  
COUNTY OF MIDLAND

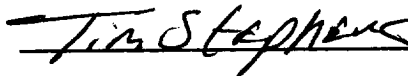
I, STEVE COVINGTON, in the employ of Eastman Whipstock, Inc., did on the days of APRIL 21, 1985 thru APRIL 21, 1985 conduct or supervise the taking of a MAGNETIC MULTI SHOT survey by the method of magnetic orientation from a depth of 4554 feet to 8619 feet, with recordings of inclination and direction being obtained at approximate intervals of 93 feet.

This survey was conducted at the request of ARGEEO OIL COMPANY for their CANTINA #1, LEA County, State of NEW MEXICO, in the \_\_\_\_\_ field.

This data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.


  
Directional Supervisor/Surveyor

The data for this survey has been examined by me and confirms to principles and procedures set forth by Eastman Whipstock, Inc.



Before me, the undersigned authority, on this day personally appeared STEVE COVINGTON, known to me to be the person whose name is subscribed to this instrument, who after being by me duly sworn on oath, states that he has knowledge of all the facts stated above and that this information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 23RD day of APRIL, 1985.

  
Notary Public in and for the  
County of Midland, Texas



ROY L. STENKE  
Notary Public, State of Texas  
My Commission Expires July 8, 1985

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-85

All distances must be from the outer boundaries of the Section

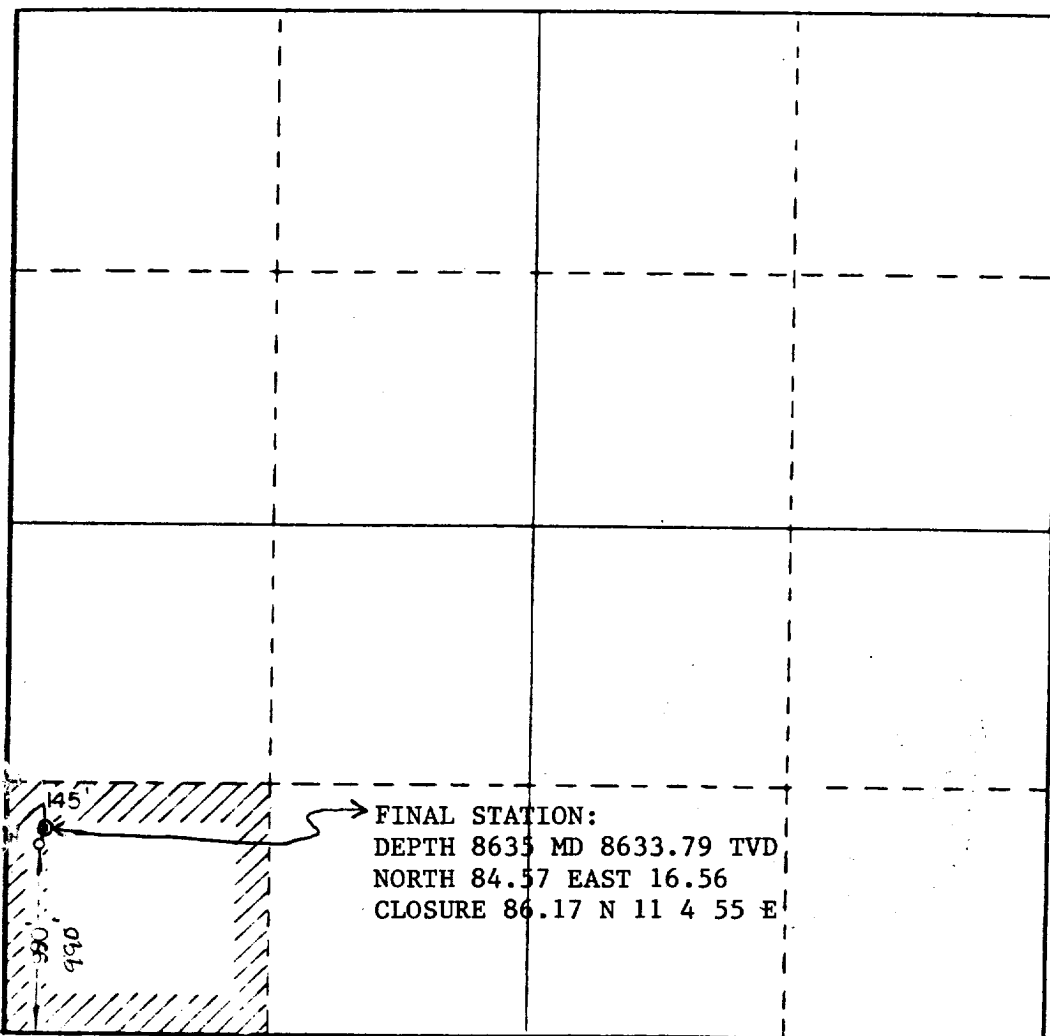
HARBEN - DAVIS			Lease CANTINA		Well No. 1
First Letter <b>M</b>	Section <b>22</b>	Township <b>16 SOUTH</b>	Range <b>38 EAST</b>	County <b>LEA</b>	
Actual Footage Location of Well: <div style="display: flex; justify-content: space-between;"> <span>990 feet from the <b>SOUTH</b> line and</span> <span>145 feet from the <b>WEST</b> line</span> </div>					
Ground Level Elev. <b>3713.1</b>	Producing Formation <b>ABO</b>	Pool <b>WILDCAT</b>		Dedicated Acreage:  Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes    ☐ No    If answer is "yes," type of consolidation Force-pooling

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



**CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: *[Handwritten Signature]*

Position  
**AGENT**

Company  
**HARBEN - DAVIS**

Date  
**MARCH 26, 1985**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
**MARCH 26, 1985**

Registered Professional Engineer  
and/or Land Surveyor

Signature: *[Handwritten Signature]*

Certificate No. **JOHN W. WEST, 676**  
**RONALD J. EIDSON, 3239**

330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600 6930 7260 7590 7920 8250 8580 8910 9240 9570 9900



**Petroleum Information**

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COUNTY	LEA	FIELD	Garrett	STATE	NM		
OPR	HARBEN-DAVIS			API	30-025-29188		
NO	1	LEASE	Cantina	MAP			
	Sec 22, T16S, R38E			CO-ORD	7-3-11 NM		
	990 FSL, 100 FWL of Sec			SPD	3-31-85		
	12 mi SE/Lovington			CMP	6-15-85		
CSC	13 3/8-375-225 sx 8 5/8-4580-1600 sx 5 1/2-8780-1050 sx			WELL CLASS: INIT D FIN D LSE. CODE			
				FORMATION	DATUM	FORMATION	DATUM
	TD 8780 (ABO)			PBD			

DRY & ABANDONED

CONTR	Moranco #10	OPR ELEV	3713 GR	SUBS	17
-------	-------------	----------	---------	------	----

4-2-85 F.R. 3-25-85  
 4-11-85 PD 8600 RT (Abo B Reef)  
 Drlg 1780  
 Drlg 5642  
 DST (San Andres) 5250-5500, op 1 hr 30 mins,  
 rec 306 FT SOCW (Sample chamber rec .02 CFT  
 GAS + 1800 CC OCW) 30 min IFP 192-192, 1 hr  
 ISIP 2369, 1 hr FFP 256-256, 2 hr FSIP  
 2890, HP 2411-2411  
 DST (San Andres) 5510-5642, op 1 hr 45 mins,  
 rec 690 FT GAS + 20 FT OIL + 70 FT WTR (Sample  
 chamber rec 100 CC OIL + 1600 CC WTR, (chl  
 14,000 ppm), 30 min IFP 41-21, 1 hr ISIP  
 1502, 1 hr 15 min FFP 21-41, 2 hr 15 min  
 FSIP 1049, HP 2397-2377, BHT 116 deg  
 4-17-85 Drlg 7975

7-3-11 NM

LEA  
HARBEN-DAVIS

Garrett  
1 Cantina  
Sec 22, T16S, R38E

NM  
Page #2

4-23-85

TD 8780; RDRT  
DST (Blinebry) 7020-8030, op 1 hr 30 mins,  
rec 260 FT GAS + 5 FT OIL + 35 FT OCM  
(Sample chamber rec .226 CFT GAS + 150 CC  
OIL + 450 CC OCM (chl 3000 ppm), 30 min  
IFP 200-125, 1 hr ISIP 417, 1 hr FFP 229-  
138, 2 hr FSIP 454, HP 3670-3653  
DST (Abo) 8364-8420, op 1 hr 30 mins, rec  
5 FT SG&OCM (Sample chamber rec 1400 CC  
SOG&CM) 30 min IFP 143-102, 1 hr ISIP 143,  
1 hr FFP 82-82, 2 hr FSIP 205, HP 3900-3920

7-3-11 NM

4-23-85

Continued  
DST (Abo) 8420-8635, op 1 hr 30 mins, rec  
2 FT OIL + 93 FT SO&GCM + 365 FT SGCM (Sample  
chamber rec 1800 CC SO&GCM(chl 6000 ppm),  
30 min IFP 166-187, 1 hr ISIP 2941, 1 hr  
FFP 311-290, 2 hr FSIP 2921, HP 3992-3971  
No Cores  
DST (Abo) 8614-8780, op 1 hr 30 mins, rec 25'  
MCW + 375 FT WTR w/TR OIL (Sample chamber  
rec .3 CFT GAS + 1600 CC WTR (chl 11,000 ppm),  
30 min IFP 102-184, 1 hr ISIP 3257, 1 hr FFP  
246-307, 2 hr FSIP 3217, HP 4040-4040, BHT  
130 deg  
TD 8780; WOCT

5-8-85

7-3-11 NM

LEA  
HARBEN-DAVIS

Garrett  
1 Cantina  
Sec 22, T16S, R38E

NM  
Page #3.

7-15-85

TD 8780; Dry & Abandoned  
Perf (Abo) 8520-8644 w/20 shots  
Acid (8520-8644) 3000 gals (20%)  
Perf (Abo) 8358-8405 w/11 shots  
Acid (8358-8405) 2000 gals (15%)  
Perf (Drinkard) 7846-8008 w/28 shots  
Acid (7846-8008) 3000 gals (20%)  
Perf (San Andres) 5557-5609 w/15 shots  
Acid (5557-5609) 2000 gals (15%)  
Perf (San Andres) 5281-5457 w/27 shots  
Acid (5281-5457) 4000 gals (15%)  
Frac (5281-5457) 20,000 gals (2% KCL) +  
74,000# sd 7-3-11 NM

7-15-85

Continued  
CIBP @ 5200  
Cut & pulled 5 1/2 csg @ 4022  
LOG TOPS: Rustler 2085, Salt 2230, Yates  
3155, Seven Rivers 3340, Queen 4035,  
Grayburg 4558, San Andres 4936, Glorieta  
6258, Paddock 6440, Blinbry 7095, Tubb  
7666, Drinkard 7836, Abo 8303  
LOGS RUN: DLL, GRL, CNL, CDL, BHC, ACSL  
COMPLETION ISSUED

7-20-85

7-3-11 NM  
IC 30-025-70159-85