STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF CAZA PETROLEUM, INC. FOR A NON-STANDARD SPACING AND PRORATION UNIT AND COMPULSORY POOLING, LEA COUNTY, NEW MEXICO. **Case No. 15,021**

AFFIDAVIT OF CARROLL HIRD

COUNTY OF HARRIS)
) ss.
STATE OF TEXAS)

Carroll Hird, being duly sworn upon his oath, deposes and states:

1. I am over the age of 18, and have personal knowledge of the matters stated herein.

2. I am a geologist for Caza Petroleum, Inc. ("Caza"), and I am familiar with the geological matters involved in this case

3. I have the following educational and employment experience: *Bachelor's degree in Geology; MBA; 39 years of continuous work as a geologist for major oil & gas and independent oil companies. My primary expertise lies within the Texas and Louisiana Gulf Coast, with current experience in the Permian Basin Region. I am a member of the AAPG and carry a DPA certification.*

4. The geological plats attached hereto as Attachment 1 show the following:

(a) Page 1 is a structure map of the Third Bone Spring zone. *It shows 20' subsea contour intervals on top of the Third Bone Spring, with the Caza North to South proposed location and horizontal well track. The Bone Spring Top is identified as TBSG on the Cross Section, Exhibit No. 6.*

(b) Page 2 is a structure map on the base of the Third Bone Spring zone. *It shows 20' subsea contour intervals on the Base of the Third Bone Spring, with the Caz, North to South proposed location and horizontal well track. See the Cross Section, Exhibit No. 6 for the correlation point.* In addition, nearby wells are identified on the map. There are a number of wells which have penetrated the Bone Spring, but there are no producing Bone Spring wells on this map.

(c) Page 3 is a structure map on the Red Hills Member of the Third Bone Spring zone, which is the primary target zone in Caza's well. *It shows a 25' contour interval for*

Oil Conservation Division
Case No. 15021
Exhibit No. 7

the top of the Red Hills Member which is also defined on cross section, Exhibit No. 6. The same North to South proposed surface location and horizontal track is also shown on this map.

(d) Page 4 is a gross isopach of the Third Bone Spring zone. *It shows a 20' contour, gross interval thickness between the top of the Bone Spring Formation, and its base as defined on the Cross Section. The computed footages are posted in blue numbers below the well sites.* It contains the line of an east-west cross section, which is page 6 of Attachment 1.

(e) Page 5 is a gross isopach map with net pay of the Third Bone Spring zone. I anticipate the entire horizontal portion of the wellbore will have next pay in excess of *115' feet. The net pay footages are posted in orange numbers above the well sites.*

(f) *Page 6 is a west-east cross section, as shown on the Red Hills structure map (3) and the gross thickness map (4) of the Bone Spring interval. The proposed vertical section of the Caza well is shown in a position between the closest 2 wells, in a mid-dip position. The pay should be continuous across the well unit.*

9. I conclude from the plats that the project area is justified from a geologic standpoint.

10. Each quarter-quarter section in the project area will contribute more or less equally to production.

11. Attachment 2 is the proposed horizontal well plan. The well will have approximately 23 completion stages and the fluid volumes will be approximately 4000 bbls per stage.

12. Caza desires a standup unit due *to Evidence that suggests North_South oriented horizontal completions are more productive. Also, this well is positioned along strike, with the possibility of being slightly "toe down".*

Carroll Hird

Carroll Hird

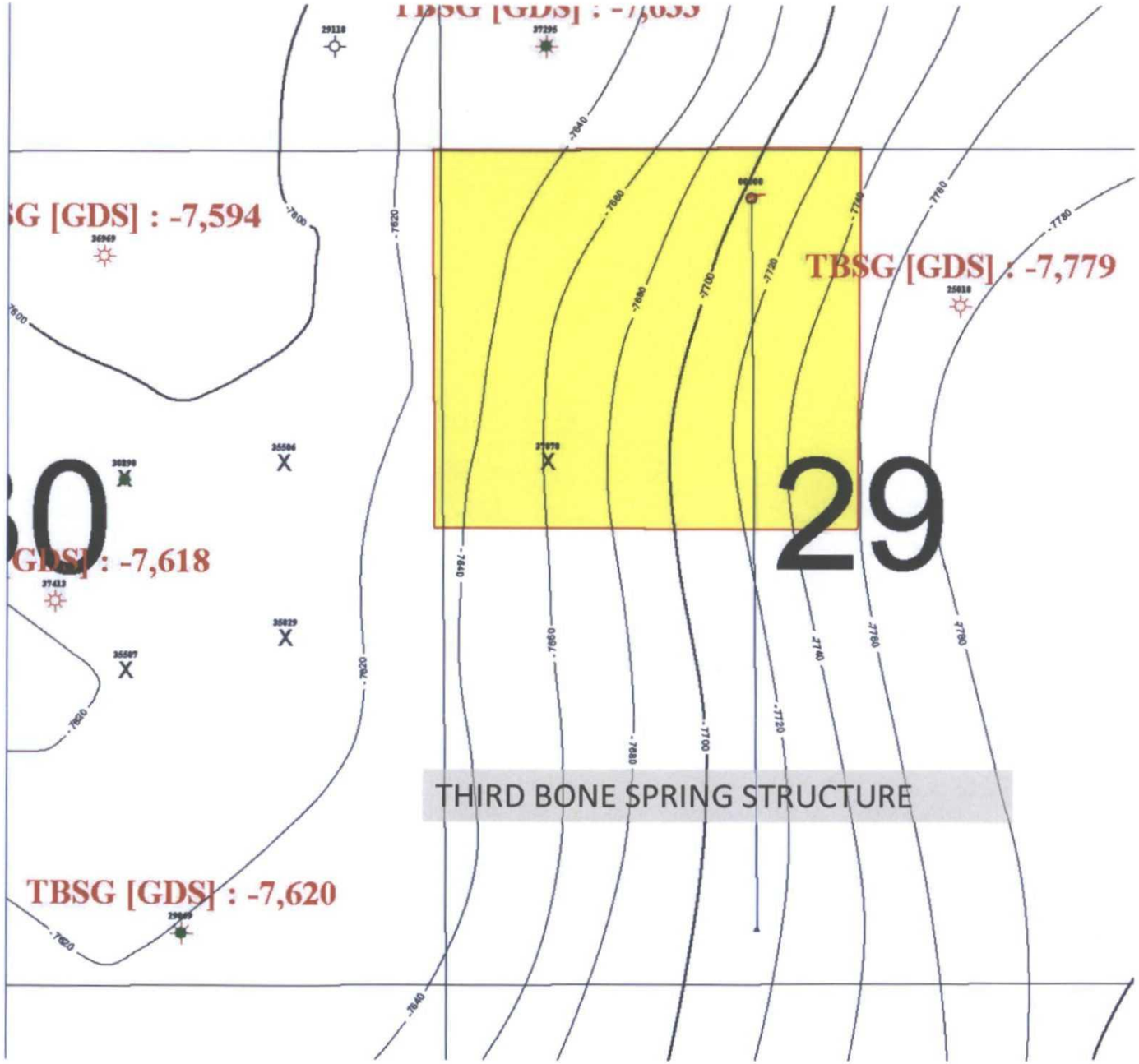
SUBSCRIBED AND SWORN TO before me this 9th day of July, 2013 by Carroll Hird.

My Commission Expires: 6-12-16

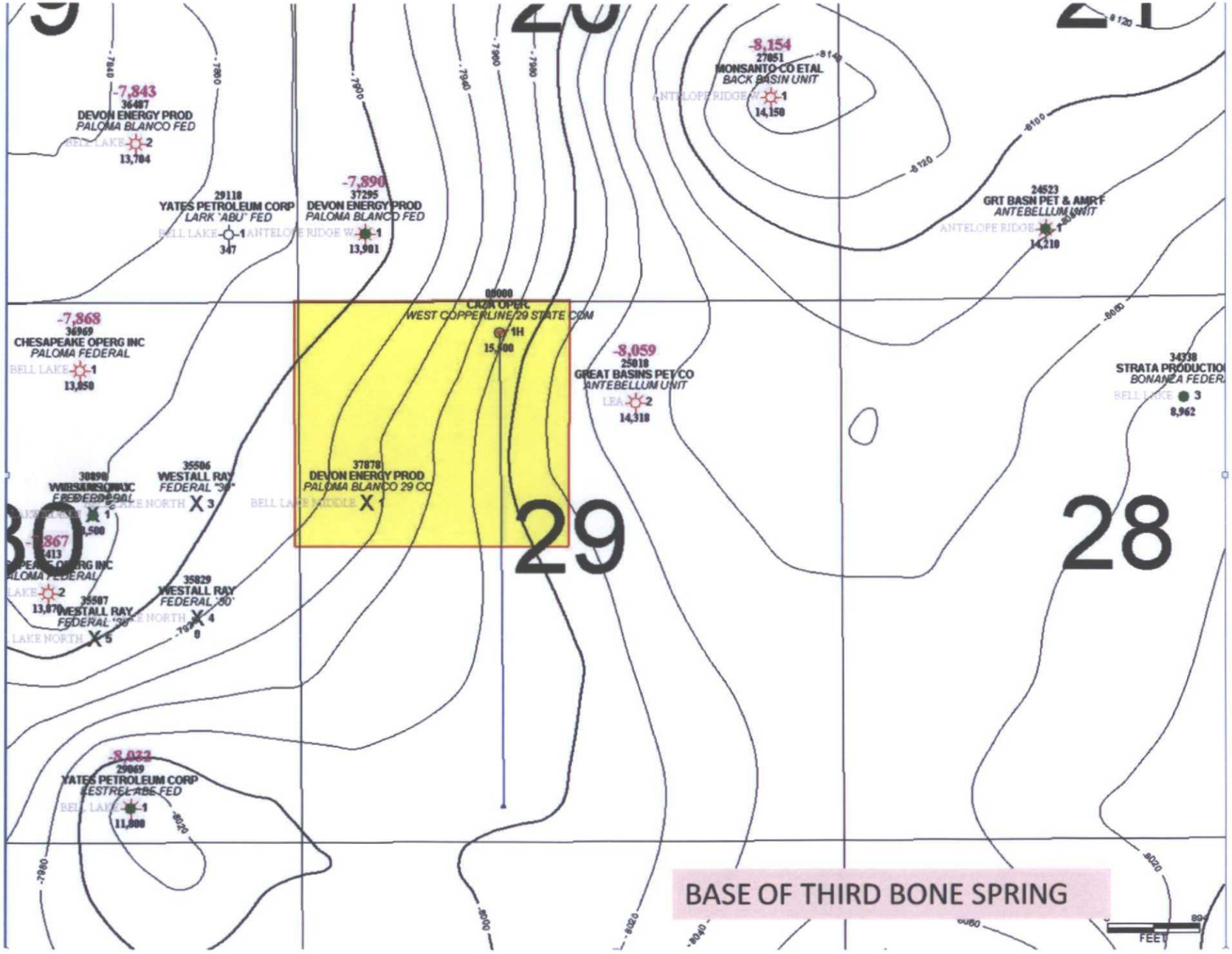
Tammy Holmstrom

Notary Public

TAMMY HOLMSTROM
My Commission Expires
June 12, 2016



Attachment 1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27051
MONSANTO CO ETAL
BACK BASIN UNIT
14,150
-7,843
36487
DEVON ENERGY PROD
PALOMA BLANCO FED
13,704
29118
YATES PETROLEUM CORP
LARK 'ABU' FED
347
-7,890
37295
DEVON ENERGY PROD
PALOMA BLANCO FED
13,981
24523
GRT BASN PET & AMRF
ANTEBELLUM UNIT
14,210
-7,868
36969
CHESAPEAKE OPERG INC
PALOMA FEDERAL
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CAZA OPER
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-8,059
25018
GREAT BASINS PET CO
ANTEBELLUM UNIT
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BONANZA FEDER
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8,962
35506
WESTALL RAY
FEDERAL "30"
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37878
DEVON ENERGY PROD
PALOMA BLANCO 29 CO
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35829
WESTALL RAY
FEDERAL "30"
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35587
WESTALL RAY
FEDERAL "30"
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-8,033
29069
YATES PETROLEUM CORP
KESTREL ABE FED
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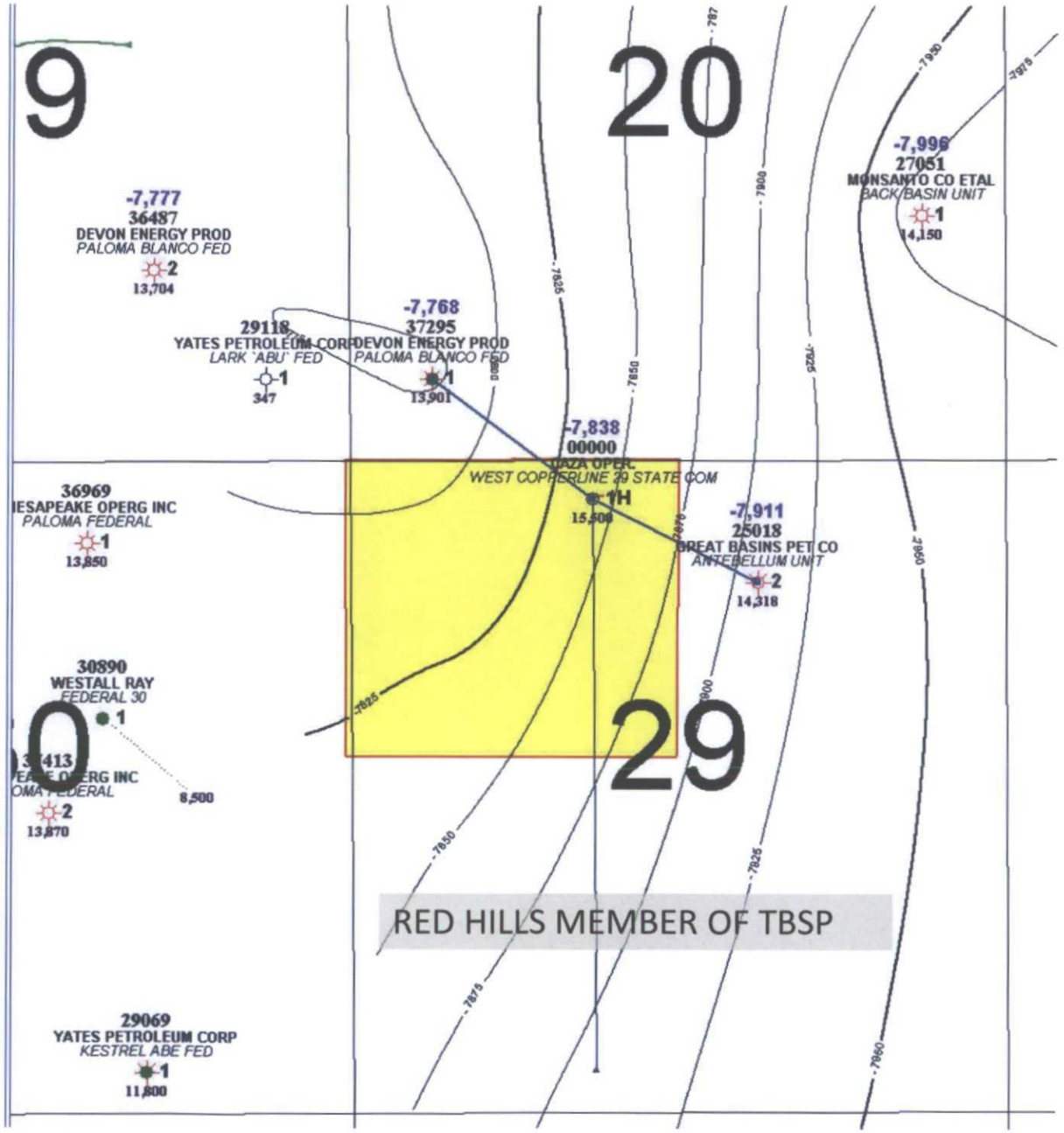
28
BASE OF THIRD BONE SPRING
FEET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36487
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37295
DEVON ENERGY PROD
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YATES PETROLEUM CORP
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WEST COPPERLINE 29 STATE COM
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MONSANTO CO ETAL
BACK BASIN UNIT
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GREAT BASINS PET CO
ANTEBELLUM UNIT
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CHESAPEAKE OPERG INC
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WESTALL RAY
FEDERAL 30
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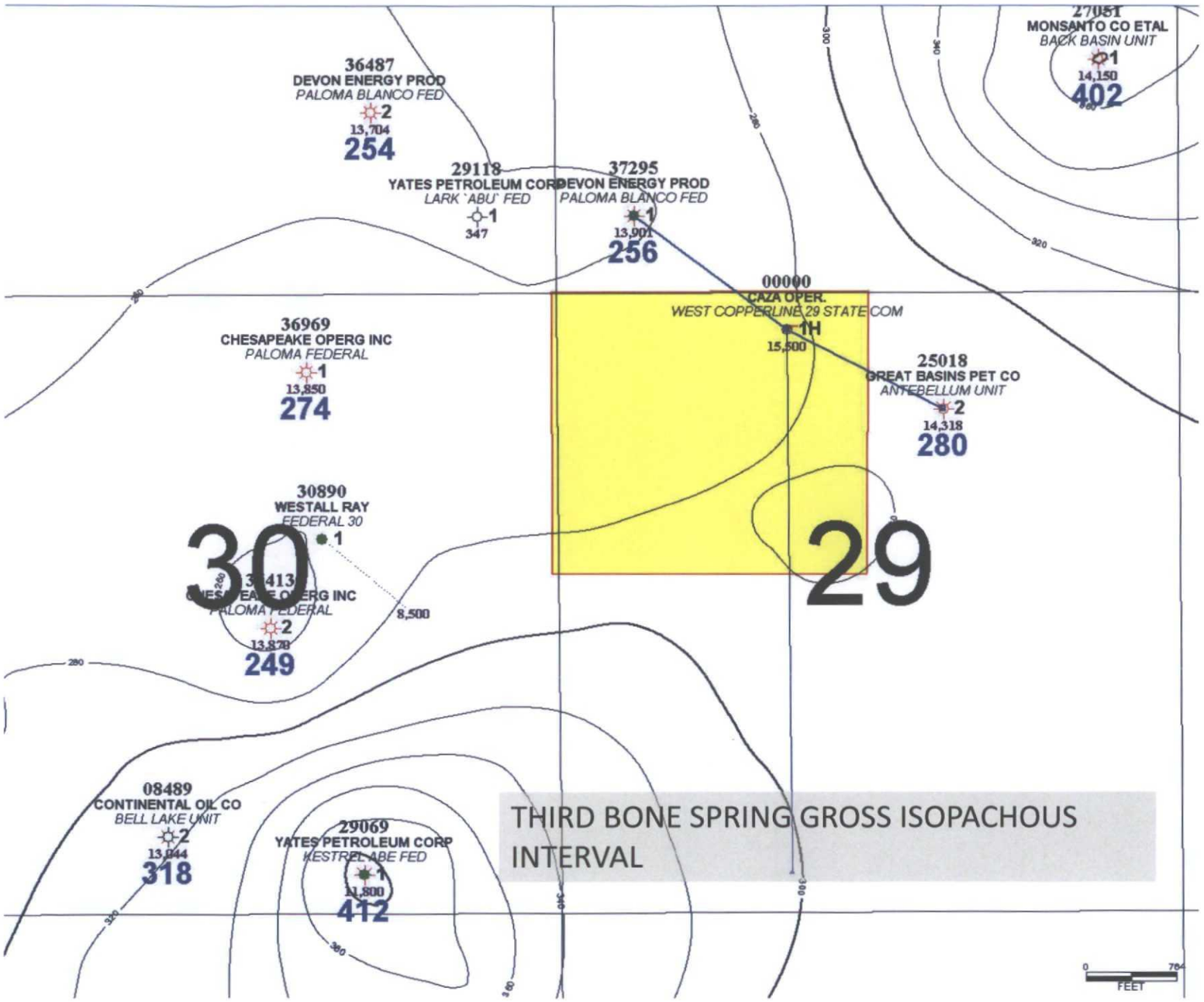
2
13,870
29069
YATES PETROLEUM CORP
KESTREL ABE FED
1
11,800
RED HILLS MEMBER OF TBSP


36487
DEVON ENERGY PROD
PALOMA BLANCO FED
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29118
YATES PETROLEUM CORP
LARK `ABU` FED
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DEVON ENERGY PROD
PALOMA BLANCO FED
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MONSANTO CO ETAL
BACK BASIN UNIT
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CAZA OPER.
WEST COPPERLINE 29 STATE COM
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CHESAPEAKE OPERG INC
PALOMA FEDERAL
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GREAT BASINS PET CO
ANTEBELLUM UNIT
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WESTALL RAY
FEDERAL 30
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08489
CONTINENTAL OIL CO
BELL LAKE UNIT
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29069
YATES PETROLEUM CORP
KESTREL ABE FED
1
11,800
412
THIRD BONE SPRING GROSS ISOPACHOUS INTERVAL
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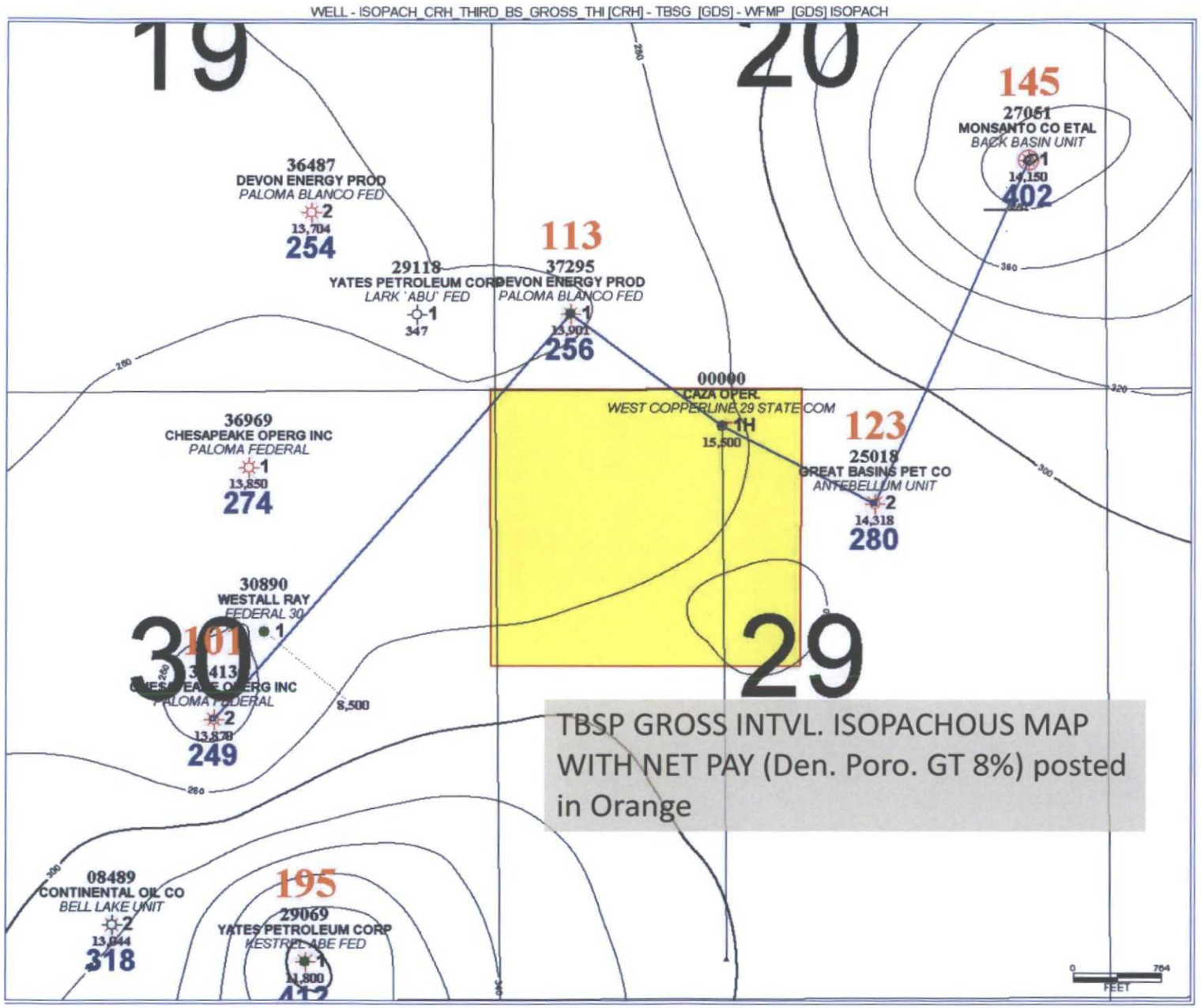
WELL - ISOPACH_CRH_THIRD_BS_GROSS_THI [CRH] - TBSG [GDS] - WFMP [GDS] ISOPACH
19
20
30
29
145
27051
MONSANTO CO ETAL
BACK BASIN UNIT
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36487
DEVON ENERGY PROD
PALOMA BLANCO FED
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YATES PETROLEUM CORP
LARK `ABU` FED
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DEVON ENERGY PROD
PALOMA BLANCO FED
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CAZA OPER.
WEST COPPERLINE 29 STATE COM
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GREAT BASINS PET CO
ANTEBELLUM UNIT
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CHESAPEAKE OPERG INC
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WESTALL RAY
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CONTINENTAL OIL CO
BELL LAKE UNIT
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29069
YATES PETROLEUM CORP
KESTREL ABE FED
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11,800
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300
320
360
380
0
764
FEET
TBSP GROSS INTVL. ISOPACHOUS MAP WITH NET PAY (Den. Poro. GT 8%) posted in Orange

WEST COPPERLINE PROSPECT_STRAT. SECTION HUNG ON BASE OF THIRD BONE SPRING_ HORIZONTAL WELL #1H WELL PATH PLAN

DEVON
PALOMA
30025372950000

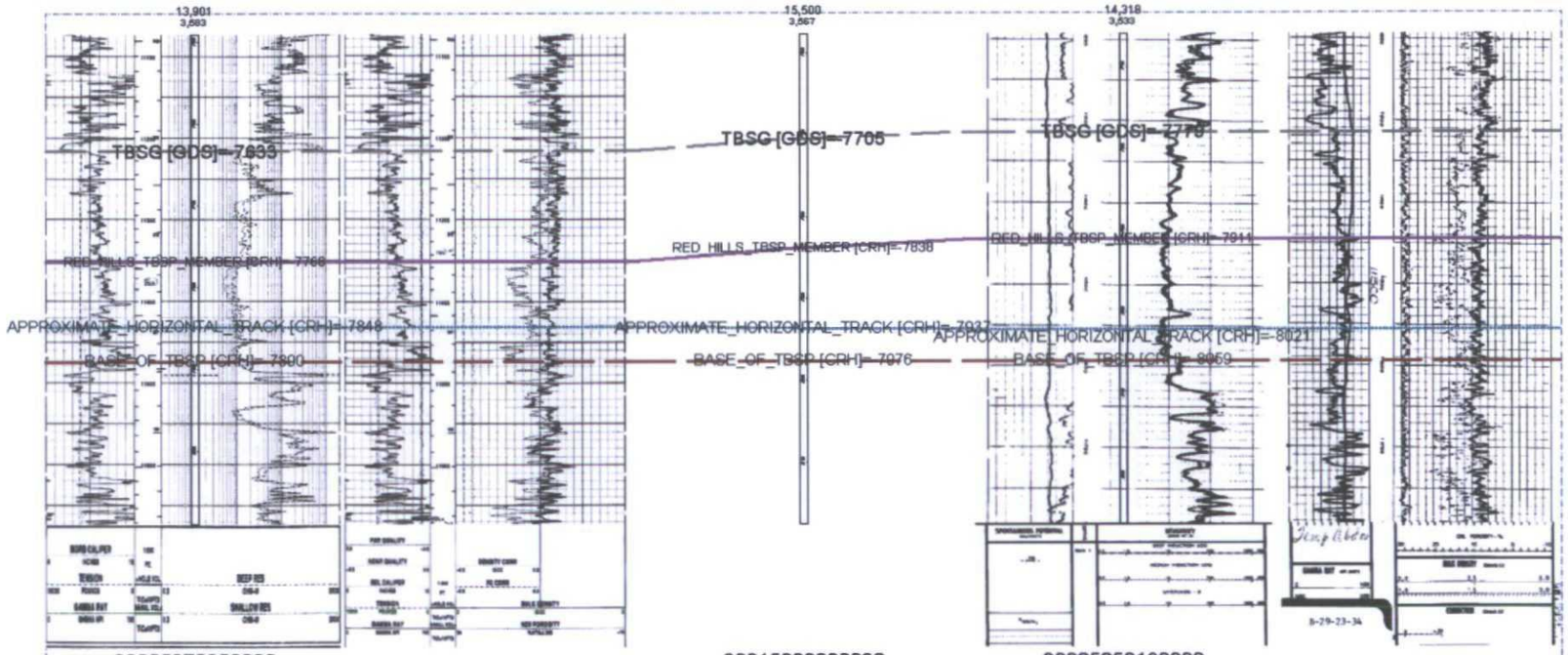
1 <5,740FT>

CAZA
WEST
30015000000032

1H <4,142FT>

GREAT
ANTEBELLUM
30025250180000

2



30025372950000
3,583
DEVON
PALOMA
1
13,901
ProdFM : 403ATOK
1,952,872
31,186
40,290
ANTELOPE RIDGE W
WELL SPUD_DATE : 7/15/2005
WELL COMP_DATE : 11/10/2005

30015000000032
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CAZA
WEST
1H
15,500
ProdFM : BONE SPRING

30025250180000
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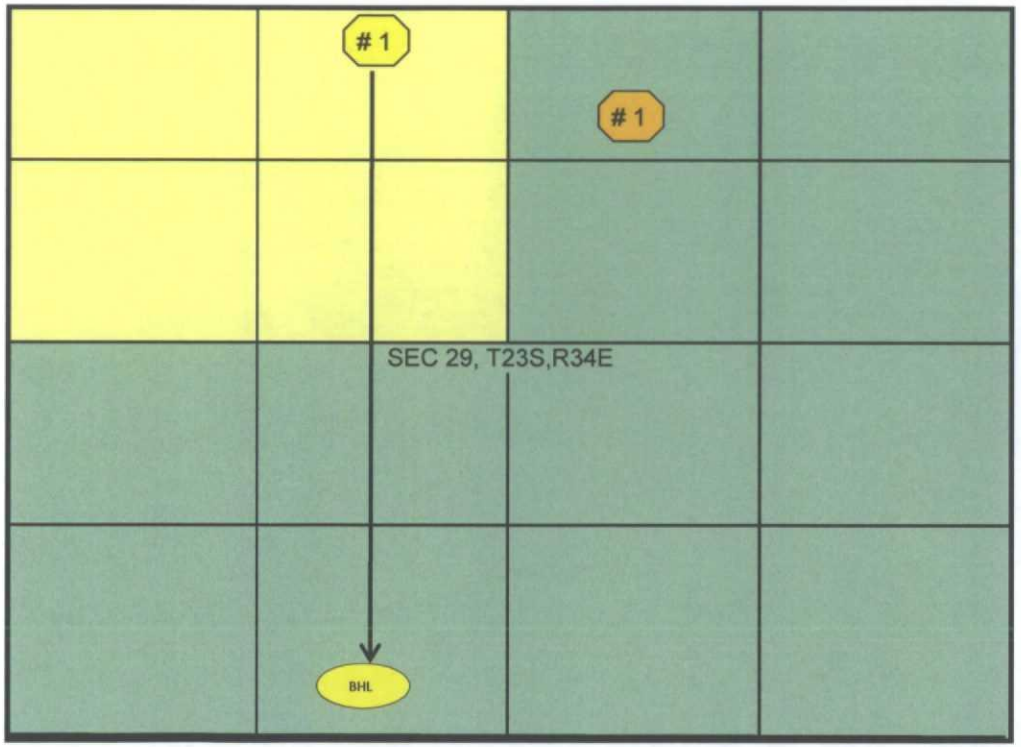
GREAT
ANTEBELLUM
2
14,318
ProdFM : 402MRRW
263
751
0
LEA
WELL SPUD_DATE : 5/12/1975
WELL COMP_DATE : 4/12/1976

West Copperline 29 State #1H 3rd Bones Springs Horizontal

Sec 29, T-23-S, R-34-E, Lea County, New Mexico



Attachment 2

Well Name	Surface Location	Depth and Strata	Target TD	Bottom Hole Location	
W.Copperline 29 St # 1H	330 FNL & 1980 FWL	TD = 11,480 3rd Bone Sprgs Hrz	15880 MD	330 FSL & 1980 FWL	± 11,480 T
Antelbellum Unit #2	990 FNL & 1980 FEL	TD= 10860-9532'. B. Sprgs Vert	14,318 Penn	Same	

West Copperline 29 State # 1H
Caza Operating, LLC
Lea County, New Mexico

LONG's METHOD OF SURVEY COMPUTATION

OBLIQUE CIRCULAR ARC INTERPOLATION

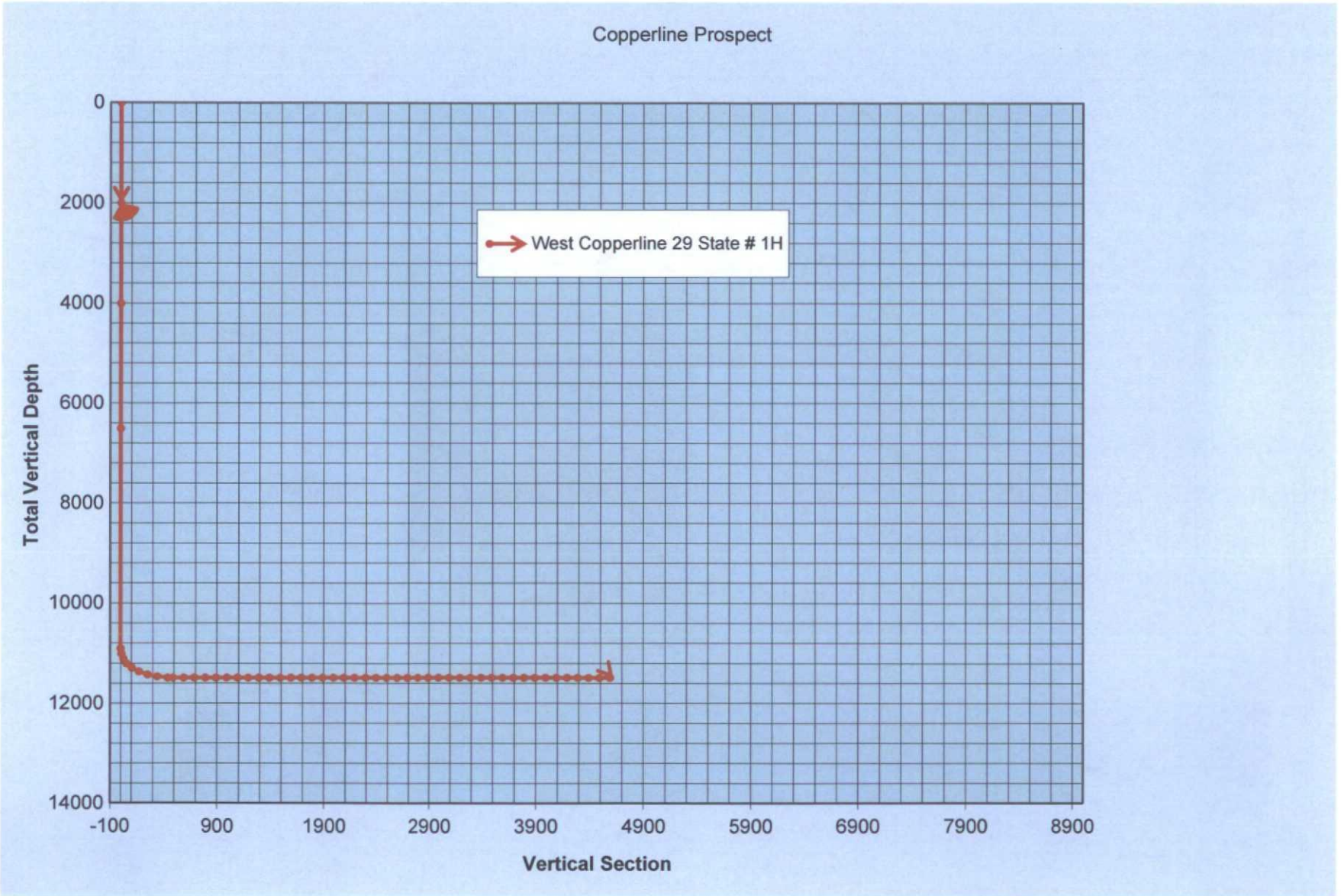
6000	MD OF INTERPOLATION DEPTH,(feet)
#N/A	TVD COORDINATE OF THE DEPTH (feet)
#N/A	N/S COORDINATE OF DEPTH (feet)
#N/A	E/W COORDINATE OF DEPTH (feet)

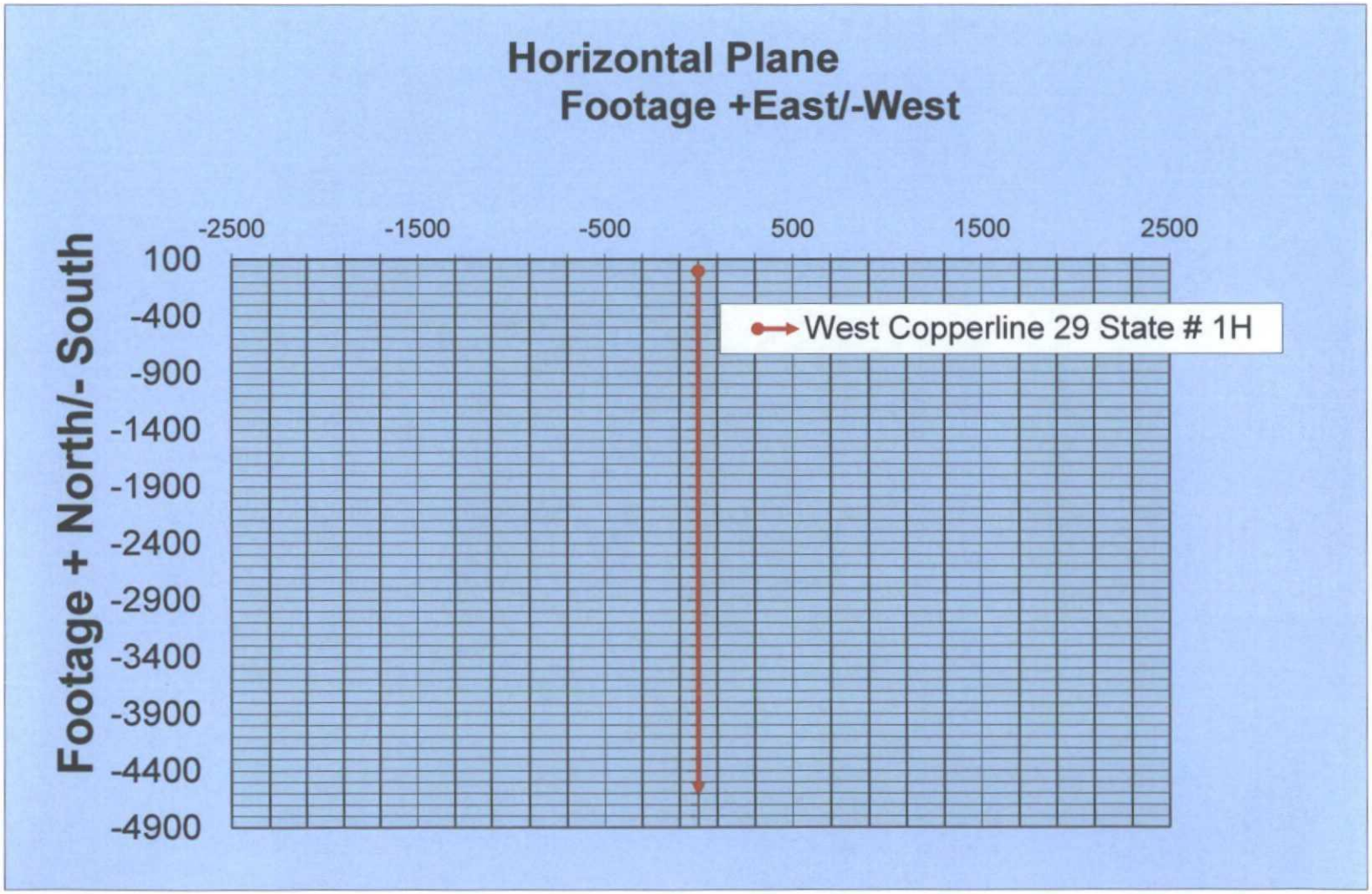
DISTANCE TABLE

STATION A	STATION B	
400.00	600.00	
300.00	400.00	
100.00	300.00	
3 D DISTANCE BETWEEN STATION A AND STATION B	300.00	ft
	Calculator =	

TABLE OF SURVEY STATIONS

STA #	ΔMD ft	INCL deg	AZIM deg	MD ft	TVD ft	N+/S- ft	E+/W- ft	DLS deg/100FT
1	TIE POINT =>	0	0	10904.00	10904.00	0.00	0.00	-
2	100	8	180	11004.00	11003.68	-6.97	0.00	8.00
3	100	12	180	11104.00	11102.14	-24.33	0.00	4.00
4	100	24	180	11204.00	11197.07	-55.18	0.00	12.00
5	100	36	180	11304.00	11283.51	-105.09	0.00	12.00
6	100	48	180	11404.00	11357.69	-171.88	0.00	12.00
7	100	60	180	11504.00	11416.36	-252.63	0.00	12.00
8	100	72	180	11604.00	11456.96	-343.82	0.00	12.00
9	100	84	180	11704.00	11477.71	-441.45	0.00	12.00
10	50	90	180	11754.00	11480.33	-491.36	0.00	12.00
11	100	90	180	11854.00	11480.33	-591.36	0.00	0.00
12	100	90	180	11954.00	11480.33	-691.36	0.00	0.00
13	100	90	180	12054.00	11480.33	-791.36	0.00	0.00
14	100	90	180	12154.00	11480.33	-891.36	0.00	0.00
15	100	90	180	12254.00	11480.33	-991.36	0.00	0.00
16	100	90	180	12354.00	11480.33	-1091.36	0.00	0.00
17	100	90	180	12454.00	11480.33	-1191.36	0.00	0.00
18	100	90	180	12554.00	11480.33	-1291.36	0.00	0.00
19	100	90	180	12654.00	11480.33	-1391.36	0.00	0.00
20	100	90	180	12754.00	11480.33	-1491.36	0.00	0.00
21	100	90	180	12854.00	11480.33	-1591.36	0.00	0.00
22	100	90	180	12954.00	11480.33	-1691.36	0.00	0.00
23	100	90	180	13054.00	11480.33	-1791.36	0.00	0.00
24	100	90	180	13154.00	11480.33	-1891.36	0.00	0.00
25	100	90	180	13254.00	11480.33	-1991.36	0.00	0.00
26	100	90	180	13354.00	11480.33	-2091.36	0.00	0.00
27	100	90	180	13454.00	11480.33	-2191.36	0.00	0.00
28	100	90	180	13554.00	11480.33	-2291.36	0.00	0.00
29	100	90	180	13654.00	11480.33	-2391.36	0.00	0.00
30	100	90	180	13754.00	11480.33	-2491.36	0.00	0.00
31	100	90	180	13854.00	11480.33	-2591.36	0.00	0.00
32	100	90	180	13954.00	11480.33	-2691.36	0.00	0.00
33	100	90	180	14054.00	11480.33	-2791.36	0.00	0.00
34	100	90	180	14154.00	11480.33	-2891.36	0.00	0.00
35	100	90	180	14254.00	11480.33	-2991.36	0.00	0.00
36	100	90	180	14354.00	11480.33	-3091.36	0.00	0.00
37	100	90	180	14454.00	11480.33	-3191.36	0.00	0.00
38	100	90	180	14554.00	11480.33	-3291.36	0.00	0.00
39	100	90	180	14654.00	11480.33	-3391.36	0.00	0.00
40	100	90	180	14754.00	11480.33	-3491.36	0.00	0.00
41	100	90	180	14854.00	11480.33	-3591.36	0.00	0.00
42	100	90	180	14954.00	11480.33	-3691.36	0.00	0.00
43	100	90	180	15054.00	11480.33	-3791.36	0.00	0.00
44	100	90	180	15154.00	11480.33	-3891.36	0.00	0.00
45	100	90	180	15254.00	11480.33	-3991.36	0.00	0.00
46	100	90	180	15354.00	11480.33	-4091.36	0.00	0.00
47	100	90	180	15454.00	11480.33	-4191.36	0.00	0.00
48	100	90	180	15554.00	11480.33	-4291.36	0.00	0.00
49	100	90	180	15654.00	11480.33	-4391.36	0.00	0.00
50	100	90	180	15754.00	11480.33	-4491.36	0.00	0.00
51	100	90	180	15854.00	11480.33	-4591.36	0.00	0.00
52	28	90	180	15882.00	11480.33	-4619.36	0.00	0.00


Copperline Prospect
West Copperline 29 State # 1H
Total Vertical Depth
0
2000
4000
6000
8000
10000
12000
14000
-100
900
1900
2900
3900
4900
5900
6900
7900
8900
Vertical Section


Horizontal Plane
Footage +East/-West
Footage + North/- South
-2500
-1500
-500
500
1500
2500
100
-400
-900
-1400
-1900
-2400
-2900
-3400
-3900
-4400
-4900
West Copperline 29 State # 1H

HALLIBURTON

Caza Oil&Gas, Inc.

W.Copperline 29 State# 1H
Lea County, New Mexico
6-Jul-13

Company Rep.
Sales Rep.
Office

Richard Wright
Lynn Talley
432-682-4305

Stage #	Installation	Depth (ft)	Length (ft)	Jts.	Description	OD (in)	ID (in)	Max Rate Thru Baffle (bpm)	Distance from Sleeve-Sleeve (ft)
					9 5/8" 40# J-55 & HCK LTC @ 5,000 ft	9.625	8.835		
		151.81	11833.12	285	5 1/2" 20# P-110 8rd. LTC Casing	5.500	4.778		
					8 3/4" Open Hole (5,000 ft - x,xxx ft)		8.750		
23		11984.93	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 4.580")	6.500	4.400	100	167.43
		11988.63	163.73	4	5 1/2" 20# P-110 8rd. LTC Casing				
22		12152.36	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 4.370")	6.500	4.198	100	167.36
		12156.06	163.66	4	5 1/2" 20# P-110 8rd. LTC Casing				
21		12319.72	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 4.168")	6.500	4.005	100	169.38
		12323.42	165.68	4	5 1/2" 20# P-110 8rd. LTC Casing				
20		12489.10	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.975")	6.500	3.882	100	165.29
		12492.80	161.59	4	5 1/2" 20# P-110 8rd. LTC Casing				
19		12654.39	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.650")	6.500	3.556	100	172.09
		12658.09	168.39	4	5 1/2" 20# P-110 8rd. LTC Casing				
18		12826.48	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.531")	6.500	3.439	100	162.34
		12830.18	158.64	4	5 1/2" 20# P-110 8rd. LTC Casing				
17		12988.82	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.414")	6.500	3.326	100	172.33
		12992.52	168.63	4	5 1/2" 20# P-110 8rd. LTC Casing				
16		13161.15	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.301")	6.500	3.226	100	170.84
		13164.85	167.14	4	5 1/2" 20# P-110 8rd. LTC Casing				
15		13331.99	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.201")	6.500	3.129	100	170.13
		13335.69	166.43	4	5 1/2" 20# P-110 8rd. LTC Casing				
14		13502.12	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.104")	6.500	3.034	100	169.28
		13505.82	165.58	4	5 1/2" 20# P-110 8rd. LTC Casing				
13		13671.40	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 3.009")	6.500	2.950	100	174.10
		13675.10	170.40	4	5 1/2" 20# P-110 8rd. LTC Casing				
12		13845.50	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.925")	6.500	2.867	100	169.41
		13849.20	165.71	4	5 1/2" 20# P-110 8rd. LTC Casing				
11		14014.91	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.842")	6.500	2.786	100	169.96
		14018.61	166.26	4	5 1/2" 20# P-110 8rd. LTC Casing				
10		14184.87	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.761")	6.500	2.706	100	169.22
		14188.57	165.52	4	5 1/2" 20# P-110 8rd. LTC Casing				
9		14354.09	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.681")	6.500	2.628	100	169.83
		14357.79	166.13	4	5 1/2" 20# P-110 8rd. LTC Casing				
8		14523.92	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.603")	6.500	2.552	98	172.22
		14527.62	168.52	4	5 1/2" 20# P-110 8rd. LTC Casing				
7		14696.14	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.527")	6.500	2.477	93	170.71
		14699.84	167.01	4	5 1/2" 20# P-110 8rd. LTC Casing				
6		14866.85	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.452")	6.500	2.404	88	172.28
		14870.55	168.58	4	5 1/2" 20# P-110 8rd. LTC Casing				
5		15039.13	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.379")	6.500	2.332	82	171.62
		15042.83	167.92	4	5 1/2" 20# P-110 8rd. LTC Casing				
4		15210.75	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.307")	6.500	2.261	77	170.99
		15214.45	167.29	4	5 1/2" 20# P-110 8rd. LTC Casing				
3		15381.74	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.236")	6.500	2.192	73	170.81
		15385.44	167.11	4	5 1/2" 20# P-110 8rd. LTC Casing				
2		15552.55	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.167")	6.500	2.124	68	171.28
		15556.25	167.58	4	5 1/2" 20# P-110 8rd. LTC Casing				RSS-MDTD
1		15723.83	3.70		5 1/2" RapidStage Sleeve 8rd. LTC (Ball = 2.099")	6.500	2.058	64	158.17
		15727.53	39.92	1	5 1/2" 20# P-110 8rd. LTC Casing				
		15767.45	1.20		5 1/2" x 1.375" 8rd. LTC Landing Collar	6.050	1.375		
		15768.65	38.59	1	5 1/2" 20# P-110 8rd. LTC Casing				
		15807.24	1.70		5 1/2" 8rd. LTC Super Seal II Float Collar	6.050			
		15808.94	38.56	1	5 1/2" 20# P-110 8rd. LTC Casing				
		15847.50	2.50		5 1/2" 8rd. LTC Super Seal II Float Shoe	6.050			
		15850.00			Bottom of Float Shoe				
		MDTD	15882.00						