

Results of Directional Survey

API number:	30-025-41602		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	CARAVAN STATE UNIT # 8H

surface	ULSTR:	D	33	T 24S	R 33E
				50 FNL	450 FWL

BH Loc	ULSTR:	M	33	T 24S	R 33E
15868	MD	11048.0	TVD	236 FSL	486 FWL
				5044 FNL	

Top Perf/OH	ULSTR:	D	33	T 24S	R 33E
11386	MD	11079.1	TVD	563 FNL	505 FWL

Bot Perf/OH	ULSTR:	M	33	T 24S	R 33E
15650	MD	11052.1	TVD	453 FSL	486 FWL
				4827 FNL	

	MD	N/S	E/W	VD
	11362	-489.20	55.60	11078.3
TOP PERFS/OH	11386	-513.20	55.45	11079.08
	11427	-554.20	55.20	11080.40
	15595	-4721.50	36.30	11052.70
BOT PERFS/OH	15650	-4776.50	36.13	11052.12
	15690	-4816.50	36.00	11051.70

NEXT TO LAST	15813	-4939.50	35.70	11049.20
LAST READING	✓ 15868	-4994.40	35.60	11048.00
TD	✓ 15868	-4994.40	35.60	11048.00

Surface Location	50	FN	450	FW
Projected BHL	5044	FN	486	FW
Location of				
Top Perfs/OH	563	FN	505	FW
Bottom Perfs/OH	4827	FN	486	FW

SUMMARY of Subsurface Locations

Surface Location	D-33-24S-33E	50	FN	450	FW	Vert. Depth
Top Perfs/OH	D-33-24S-33E	563	FN	505	FW	11079.08
Bottom Perfs/OH	M-33-24S-33E	4827	FN	486	FW	11052.12
Projected TD	M-33-24S-33E	5044	FN	486	FW	11048.00

SEP 20 2014



Job Number: SVM0-140687
 Company: Yates Petroleum Corporation
 Lease/Well: Caravan State Unit 8H
 Location: Lea County, NM
 Rig Name: Cactus #124
 RKB: 25'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.84°
 Grid: East To Grid North
 File name: S:\2014SU~1\YATES\MO\CARAVA~1\8H.SVY
 Date/Time: 27-May-14 / 15:34
 Curve Name: Surface - 1270' M.D. (Rate Gyro)

HOBBS OCD
 SEP 23 2014
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MS SURVEY

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 179.61
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 1270' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
 Travis Pack MS Energy Services
 5/27/14 Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.73	128.95	100.00	-.40	.50	.40	.64	128.95	.73
200.00	.81	122.04	199.99	-1.18	1.59	1.19	1.98	126.49	.12
300.00	.83	120.12	299.98	-1.91	2.82	1.93	3.40	124.21	.03
400.00	.74	117.04	399.97	-2.57	4.02	2.60	4.77	122.62	.10
500.00	.68	117.63	499.96	-3.14	5.12	3.17	6.00	121.53	.06
600.00	.60	129.59	599.95	-3.75	6.05	3.79	7.12	121.80	.16
700.00	.44	142.12	699.95	-4.39	6.69	4.43	8.00	123.26	.20
800.00	.24	173.20	799.95	-4.90	6.95	4.94	8.50	125.18	.27
900.00	.19	148.94	899.95	-5.25	7.06	5.29	8.79	126.63	.10

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.30	203.95	999.95	-5.63	7.04	5.68	9.01	128.65	.25
1100.00	.54	237.78	1099.94	-6.12	6.53	6.16	8.95	133.13	.34
1200.00	.64	249.72	1199.94	-6.56	5.61	6.60	8.63	139.48	.16
Last Survey Depth Recorded									
1270.00	.65	259.88	1269.94	-6.77	4.85	6.80	8.33	144.37	.16

HOBBS OCD
SEP 23 2014
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Yates Petroleum

Lea County, NM (NAD-83)

Caravan State Unit

#8H

OH

Design: OH

Standard Survey Report

10 June, 2014

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	WELL @ 3505.0usft (CACTUS #124 - KB=25')
Site:	Caravan State Unit	MD Reference:	WELL @ 3505.0usft (CACTUS #124 - KB=25')
Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Caravan State Unit			
Site Position:		Northing:	430,472.90 usft	Latitude:	32° 10' 52.428 N
From:	Map	Easting:	773,064.80 usft	Longitude:	103° 35' 3.586 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#8H					
Well Position	+N/-S	0.0 usft	Northing:	430,472.90 usft	Latitude:	32° 10' 52.428 N
	+E/-W	0.0 usft	Easting:	773,064.80 usft	Longitude:	103° 35' 3.586 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,480.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/17/2014	7.24	60.07	48,305

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	179.61	

Survey Program	Date 6/10/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	1,270.0	Survey #1 - Gyros (OH)	CB-GYRO-MS	Camera based gyro multishot	
1,334.0	15,868.0	Survey #2 - MWD (OH)	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.73	128.95	100.0	-0.4	0.5	0.4	0.73	0.73	0.00	
200.0	0.81	122.04	200.0	-1.2	1.6	1.2	0.12	0.08	-6.91	
300.0	0.83	120.12	300.0	-1.9	2.8	1.9	0.03	0.02	-1.92	
400.0	0.74	117.04	400.0	-2.6	4.0	2.6	0.10	-0.09	-3.08	
500.0	0.68	117.63	500.0	-3.1	5.1	3.2	0.06	-0.06	0.59	
600.0	0.60	129.59	600.0	-3.7	6.0	3.8	0.16	-0.08	11.96	
700.0	0.44	142.12	700.0	-4.4	6.7	4.4	0.20	-0.16	12.53	
800.0	0.24	173.20	799.9	-4.9	6.9	4.9	0.27	-0.20	31.08	
900.0	0.19	148.94	899.9	-5.2	7.1	5.3	0.10	-0.05	-24.26	

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Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	0.30	203.95	999.9	-5.6	7.0	5.7	0.25	0.11	55.01
1,100.0	0.54	237.78	1,099.9	-6.1	6.5	6.2	0.34	0.24	33.83
1,200.0	0.64	249.72	1,199.9	-6.6	5.6	6.6	0.16	0.10	11.94
1,270.0	0.65	259.88	1,269.9	-6.8	4.9	6.8	0.16	0.01	14.51
1,334.0	0.20	288.30	1,333.9	-6.8	4.4	6.8	0.76	-0.70	44.41
1,429.0	1.30	91.30	1,428.9	-6.8	5.3	6.8	1.57	1.16	171.58
1,522.0	3.30	86.60	1,521.8	-6.6	9.0	6.7	2.16	2.15	-5.05
1,617.0	4.00	82.70	1,616.7	-6.1	15.1	6.2	0.78	0.74	-4.11
1,712.0	3.10	93.30	1,711.5	-5.8	20.9	5.9	1.17	-0.95	11.16
1,807.0	2.90	94.70	1,806.3	-6.1	25.9	6.3	0.22	-0.21	1.47
1,995.0	2.30	90.20	1,994.1	-6.5	34.4	6.8	0.34	-0.32	-2.39
2,184.0	1.80	80.70	2,183.0	-6.1	41.1	6.3	0.32	-0.26	-5.03
2,373.0	1.10	93.10	2,372.0	-5.7	45.8	6.0	0.40	-0.37	6.56
2,562.0	0.40	354.40	2,561.0	-5.1	47.6	5.4	0.65	-0.37	-52.22
2,752.0	0.40	246.60	2,750.9	-4.7	46.9	5.0	0.34	0.00	-56.74
2,942.0	0.90	221.40	2,940.9	-6.1	45.3	6.4	0.30	0.26	-13.26
3,036.0	0.50	275.70	3,034.9	-6.6	44.4	6.9	0.78	-0.43	57.77
3,226.0	0.60	358.10	3,224.9	-5.5	43.6	5.8	0.38	0.05	43.37
3,415.0	0.40	175.50	3,413.9	-5.2	43.6	5.5	0.53	-0.11	93.86
3,604.0	0.60	186.30	3,602.9	-6.9	43.5	7.1	0.12	0.11	5.71
3,793.0	0.20	203.40	3,791.9	-8.1	43.3	8.4	0.22	-0.21	9.05
3,983.0	0.40	251.90	3,981.9	-8.6	42.5	8.9	0.16	0.11	25.53
4,172.0	0.20	332.60	4,170.9	-8.6	41.7	8.8	0.22	-0.11	42.70
4,267.0	0.40	24.90	4,265.9	-8.1	41.8	8.4	0.34	0.21	55.05
4,362.0	0.90	46.00	4,360.9	-7.3	42.5	7.6	0.57	0.53	22.21
4,457.0	0.80	63.70	4,455.9	-6.5	43.6	6.8	0.29	-0.11	18.63
4,552.0	0.80	57.20	4,550.9	-5.8	44.8	6.1	0.10	0.00	-6.84
4,646.0	0.80	83.20	4,644.9	-5.4	46.0	5.7	0.38	0.00	27.66
4,740.0	1.20	106.90	4,738.9	-5.6	47.6	5.9	0.60	0.43	25.21
4,835.0	1.50	117.80	4,833.8	-6.5	49.6	6.8	0.41	0.32	11.47
4,930.0	0.50	51.40	4,928.8	-6.8	51.0	7.1	1.45	-1.05	-69.89
5,025.0	0.50	16.20	5,023.8	-6.1	51.5	6.5	0.32	0.00	-37.05
5,211.0	0.30	81.40	5,209.8	-5.3	52.2	5.6	0.25	-0.11	35.05
5,401.0	0.30	66.90	5,399.8	-5.0	53.1	5.4	0.04	0.00	-7.63
5,589.0	0.40	34.90	5,587.8	-4.3	54.0	4.7	0.11	0.05	-17.02
5,778.0	0.40	11.90	5,776.8	-3.1	54.5	3.5	0.08	0.00	-12.17
5,967.0	0.50	1.10	5,965.8	-1.6	54.6	2.0	0.07	0.05	-5.71
6,159.0	0.40	349.40	6,157.8	-0.1	54.5	0.5	0.07	-0.05	-6.09
6,347.0	0.70	349.50	6,345.8	1.6	54.2	-1.3	0.16	0.16	0.05
6,535.0	0.60	356.90	6,533.8	3.8	53.9	-3.4	0.07	-0.05	3.94
6,725.0	0.70	356.70	6,723.8	5.9	53.8	-5.5	0.05	0.05	-0.11
6,914.0	0.60	348.20	6,912.7	8.0	53.5	-7.7	0.07	-0.05	-4.50
7,103.0	0.40	342.20	7,101.7	9.6	53.1	-9.3	0.11	-0.11	-3.17

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Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,292.0	0.40	350.10	7,290.7	10.9	52.8	-10.5	0.03	0.00	4.18
7,482.0	0.40	297.60	7,480.7	11.9	52.1	-11.5	0.19	0.00	-27.63
7,672.0	0.50	267.50	7,670.7	12.1	50.7	-11.8	0.13	0.05	-15.84
7,861.0	0.60	324.00	7,859.7	12.9	49.3	-12.6	0.28	0.05	29.89
8,050.0	0.60	324.50	8,048.7	14.5	48.1	-14.2	0.00	0.00	0.26
8,240.0	0.50	293.40	8,238.7	15.6	46.8	-15.3	0.16	-0.05	-16.37
8,429.0	0.40	191.80	8,427.7	15.3	45.9	-15.0	0.37	-0.05	-53.76
8,619.0	0.40	183.70	8,617.7	14.0	45.7	-13.7	0.03	0.00	-4.26
8,808.0	0.40	211.30	8,806.7	12.8	45.3	-12.5	0.10	0.00	14.60
8,998.0	0.50	88.30	8,996.7	12.3	45.8	-11.9	0.42	0.05	-64.74
9,187.0	0.50	95.10	9,185.7	12.2	47.5	-11.9	0.03	0.00	3.60
9,377.0	0.40	95.40	9,375.7	12.1	49.0	-11.7	0.05	-0.05	0.16
9,567.0	0.60	243.50	9,565.7	11.6	48.7	-11.2	0.51	0.11	77.95
9,756.0	0.80	272.40	9,754.6	11.2	46.5	-10.9	0.21	0.11	15.29
9,848.0	1.50	257.50	9,846.6	10.9	44.7	-10.6	0.82	0.76	-16.20
10,038.0	1.20	342.40	10,036.6	12.3	41.7	-12.0	0.97	-0.16	44.68
10,227.0	0.70	77.60	10,225.6	14.4	42.2	-14.1	0.76	-0.26	50.37
10,322.0	0.50	74.60	10,320.6	14.7	43.2	-14.4	0.21	-0.21	-3.16
10,417.0	0.30	52.70	10,415.6	14.9	43.8	-14.6	0.26	-0.21	-23.05
10,533.0	0.60	243.80	10,531.6	14.8	43.5	-14.5	0.77	0.26	-145.60
10,592.0	1.60	196.20	10,590.6	13.9	43.0	-13.6	2.16	1.69	-80.68
KOP: 10592.0' MD, 10590.6' TVD									
10,639.0	6.90	178.80	10,637.4	10.5	42.8	-10.2	11.48	11.28	-37.02
10,687.0	13.10	178.40	10,684.7	2.1	43.1	-1.8	12.92	12.92	-0.83
10,734.0	17.20	179.50	10,730.0	-10.1	43.3	10.4	8.74	8.72	2.34
10,781.0	24.20	179.00	10,774.0	-26.7	43.5	27.0	14.90	14.89	-1.06
10,829.0	30.90	177.50	10,816.5	-48.9	44.2	49.2	14.03	13.96	-3.13
10,877.0	37.70	175.90	10,856.1	-75.9	45.8	76.2	14.29	14.17	-3.33
10,924.0	42.50	176.10	10,892.1	-106.1	47.9	106.4	10.22	10.21	0.43
10,972.0	46.80	177.20	10,926.2	-139.8	49.9	140.1	9.10	8.96	2.29
11,019.0	51.20	177.30	10,957.0	-175.2	51.6	175.5	9.36	9.36	0.21
11,066.0	55.40	177.90	10,985.1	-212.8	53.1	213.2	8.99	8.94	1.28
11,113.0	59.60	180.20	11,010.4	-252.5	53.8	252.8	9.84	8.94	4.89
11,145.0	63.28	180.27	11,025.7	-280.6	53.7	280.9	11.49	11.49	0.22
Cross 330' Hardline at 11145.0' MD, 63.28° INC, 180.27° AZ									
11,160.0	65.00	180.30	11,032.2	-294.0	53.6	294.4	11.49	11.49	0.21
11,207.0	69.90	179.90	11,050.2	-337.4	53.5	337.8	10.46	10.43	-0.85
11,255.0	76.30	178.80	11,064.2	-383.3	54.0	383.7	13.51	13.33	-2.29
11,302.0	82.50	178.30	11,072.8	-429.5	55.2	429.9	13.23	13.19	-1.06
11,332.0	84.90	179.90	11,076.1	-459.3	55.7	459.7	9.60	8.00	5.33
11,362.0	86.80	180.30	11,078.3	-489.2	55.6	489.6	6.47	6.33	1.33
11,427.0	89.50	180.50	11,080.4	-554.2	55.2	554.6	4.17	4.15	0.31
EOC: 11427.0' MD, 11080.4' TVD, 89.50° INC, 180.50° AZ, 554.6' VS									
11,522.0	90.50	181.30	11,080.4	-649.2	53.7	649.5	1.35	1.05	0.84

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11,616.0	90.10	181.70	11,079.9	-743.1	51.2	743.5	0.60	-0.43	0.43
11,711.0	90.90	182.40	11,079.0	-838.1	47.8	838.4	1.12	0.84	0.74
11,806.0	90.50	181.00	11,077.9	-933.0	45.0	933.3	1.53	-0.42	-1.47
11,901.0	90.70	180.70	11,076.9	-1,028.0	43.6	1,028.3	0.38	0.21	-0.32
11,995.0	90.10	181.20	11,076.2	-1,122.0	42.0	1,122.3	0.83	-0.64	0.53
12,090.0	90.10	180.20	11,076.1	-1,217.0	40.9	1,217.2	1.05	0.00	-1.05
12,184.0	91.30	180.20	11,074.9	-1,311.0	40.5	1,311.2	1.28	1.28	0.00
12,279.0	90.60	180.70	11,073.3	-1,406.0	39.8	1,406.2	0.91	-0.74	0.53
12,374.0	90.10	180.20	11,072.8	-1,501.0	39.1	1,501.2	0.74	-0.53	-0.53
12,468.0	90.70	179.60	11,072.1	-1,595.0	39.2	1,595.2	0.90	0.64	-0.64
12,563.0	89.80	179.80	11,071.7	-1,689.9	39.7	1,690.2	0.97	-0.95	0.21
12,657.0	91.10	179.90	11,071.0	-1,783.9	40.0	1,784.2	1.39	1.38	0.11
12,751.0	90.80	179.50	11,069.4	-1,877.9	40.5	1,878.2	0.53	-0.32	-0.43
12,844.0	90.60	179.60	11,068.3	-1,970.9	41.2	1,971.2	0.24	-0.22	0.11
12,939.0	90.40	179.30	11,067.4	-2,065.9	42.1	2,066.1	0.38	-0.21	-0.32
13,034.0	89.90	179.30	11,067.2	-2,160.9	43.3	2,161.1	0.53	-0.53	0.00
13,129.0	91.10	179.60	11,066.4	-2,255.9	44.2	2,256.1	1.30	1.26	0.32
13,224.0	91.20	179.50	11,064.4	-2,350.9	44.9	2,351.1	0.15	0.11	-0.11
13,317.0	91.20	179.40	11,062.5	-2,443.8	45.8	2,444.1	0.11	0.00	-0.11
13,413.0	91.00	179.10	11,060.7	-2,539.8	47.1	2,540.1	0.38	-0.21	-0.31
13,507.0	90.00	180.20	11,059.8	-2,633.8	47.6	2,634.1	1.58	-1.06	1.17
13,602.0	90.20	180.40	11,059.7	-2,728.8	47.1	2,729.1	0.30	0.21	0.21
13,696.0	89.80	179.90	11,059.7	-2,822.8	46.9	2,823.1	0.68	-0.43	-0.53
13,791.0	90.50	179.80	11,059.4	-2,917.8	47.1	2,918.1	0.74	0.74	-0.11
13,886.0	90.20	180.00	11,058.8	-3,012.8	47.3	3,013.1	0.38	-0.32	0.21
13,981.0	89.80	180.20	11,058.8	-3,107.8	47.1	3,108.1	0.47	-0.42	0.21
14,075.0	90.90	180.90	11,058.3	-3,201.8	46.2	3,202.0	1.39	1.17	0.74
14,170.0	90.70	181.00	11,056.9	-3,296.8	44.7	3,297.0	0.24	-0.21	0.11
14,265.0	90.50	181.10	11,055.9	-3,391.8	42.9	3,392.0	0.24	-0.21	0.11
14,360.0	90.00	181.00	11,055.5	-3,486.7	41.2	3,486.9	0.54	-0.53	-0.11
14,455.0	90.70	181.00	11,054.9	-3,581.7	39.5	3,581.9	0.74	0.74	0.00
14,552.0	90.70	181.60	11,053.8	-3,678.7	37.3	3,678.9	0.62	0.00	0.62
14,647.0	91.40	180.60	11,052.0	-3,773.7	35.5	3,773.8	1.28	0.74	-1.05
14,742.0	91.60	180.40	11,049.5	-3,868.6	34.7	3,868.8	0.30	0.21	-0.21
14,836.0	91.40	180.50	11,047.1	-3,962.6	33.9	3,962.7	0.24	-0.21	0.11
14,931.0	90.00	180.00	11,045.9	-4,057.6	33.5	4,057.7	1.56	-1.47	-0.53
15,026.0	90.20	179.70	11,045.7	-4,152.6	33.8	4,152.7	0.38	0.21	-0.32
15,121.0	88.70	179.00	11,046.7	-4,247.6	34.8	4,247.7	1.74	-1.58	-0.74
15,216.0	89.20	179.40	11,048.4	-4,342.5	36.2	4,342.7	0.67	0.53	0.42
15,311.0	88.70	179.90	11,050.1	-4,437.5	36.8	4,437.7	0.74	-0.53	0.53
15,406.0	89.80	180.20	11,051.4	-4,532.5	36.7	4,532.6	1.20	1.16	0.32
15,500.0	89.20	180.00	11,052.2	-4,626.5	36.5	4,626.6	0.67	-0.64	-0.21
15,595.0	90.20	180.20	11,052.7	-4,721.5	36.3	4,721.6	1.07	1.05	0.21

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	WELL @ 3505.0usft (CACTUS #124 - KB=25')
Site:	Caravan State Unit	MD Reference:	WELL @ 3505.0usft (CACTUS #124 - KB=25')
Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,690.0	91.00	180.20	11,051.7	-4,816.5	36.0	4,816.6	0.84	0.84	0.00
15,768.0	91.20	180.10	11,050.2	-4,894.5	35.8	4,894.6	0.29	0.26	-0.13
15,768.4	91.20	180.10	11,050.2	-4,894.9	35.8	4,895.0	0.00	0.00	0.00
Cross 330' Hardline at 15768.4' MD, 91.20° INC, 180.10° AZ									
15,813.0	91.30	180.10	11,049.2	-4,939.5	35.7	4,939.6	0.22	0.22	0.00
Final MWD Survey: 15813.0' MD, 11049.2' TVD, -4939.5' +N/-S, 35.7' +E/-W									
15,868.0	91.30	180.10	11,048.0	-4,994.4	35.6	4,994.6	0.00	0.00	0.00
BHL: 15868.0' MD, 11048.0' TVD, 91.30° INC, 180.10° AZ, -4994.4' +N/-S, 35.6' +E/-W, 4994.6' VS -TD: 15868.0' MD, 11048.0' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,592.0	10,590.6	13.9	43.0	KOP: 10592.0' MD, 10590.6' TVD
11,145.0	11,025.7	-280.6	53.7	Cross 330' Hardline at 11145.0' MD, 63.28° INC, 180.27° AZ
11,427.0	11,080.4	-554.2	55.2	EOC: 11427.0' MD, 11080.4' TVD, 89.50° INC, 180.50° AZ, 554.6' VS
15,768.4	11,050.2	-4,894.9	35.8	Cross 330' Hardline at 15768.4' MD, 91.20° INC, 180.10° AZ
15,813.0	11,049.2	-4,939.5	35.7	Final MWD Survey: 15813.0' MD, 11049.2' TVD, -4939.5' +N/-S, 35.7' +E/-W
15,868.0	11,048.0	-4,994.4	35.6	BHL: 15868.0' MD, 11048.0' TVD, 91.30° INC, 180.10° AZ, -4994.4' +N/-S, 35.6
15,868.0	11,048.0	-4,994.4	35.6	TD: 15868.0' MD, 11048.0' TVD

Checked By: _____ Approved By: _____ Date: _____



WELL DETAILS: #8H

Ground Elevation:: 3480.0
RKB Elevation: WELL @ 3505.0usft (CACTUS #124 - KB=25')
Rig Name: CACTUS #124 - KB=25'

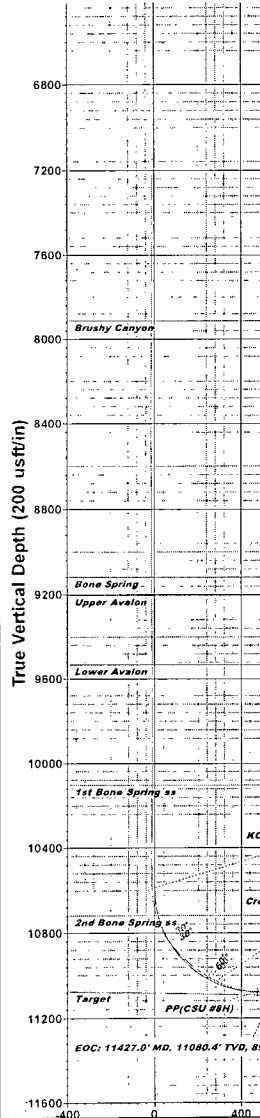
Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Caravan State Unit
Well: #8H
Wellbore: OH
Plan: Plan #3 (#8H/OH)

Surface Hole Location
Northing 430472.90 Easting 773064.80 Latitude 32° 10' 52.428 N Longitude 103° 35' 3.586 W



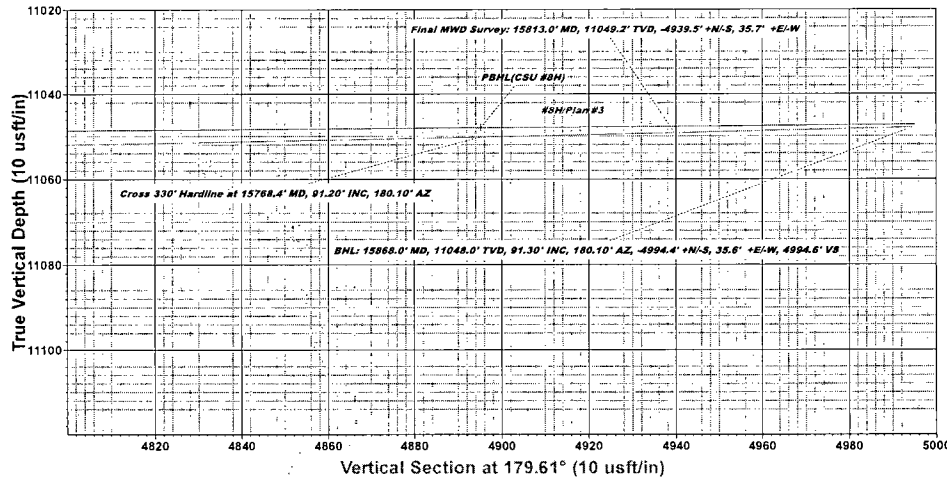
Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.84°
Magnetic Field
Strength: 48304.7snT
Dip Angle: 60.07°
Date: 4/17/2014
Model: IGRF2010

West(-)/East(+) (200 usft/in)



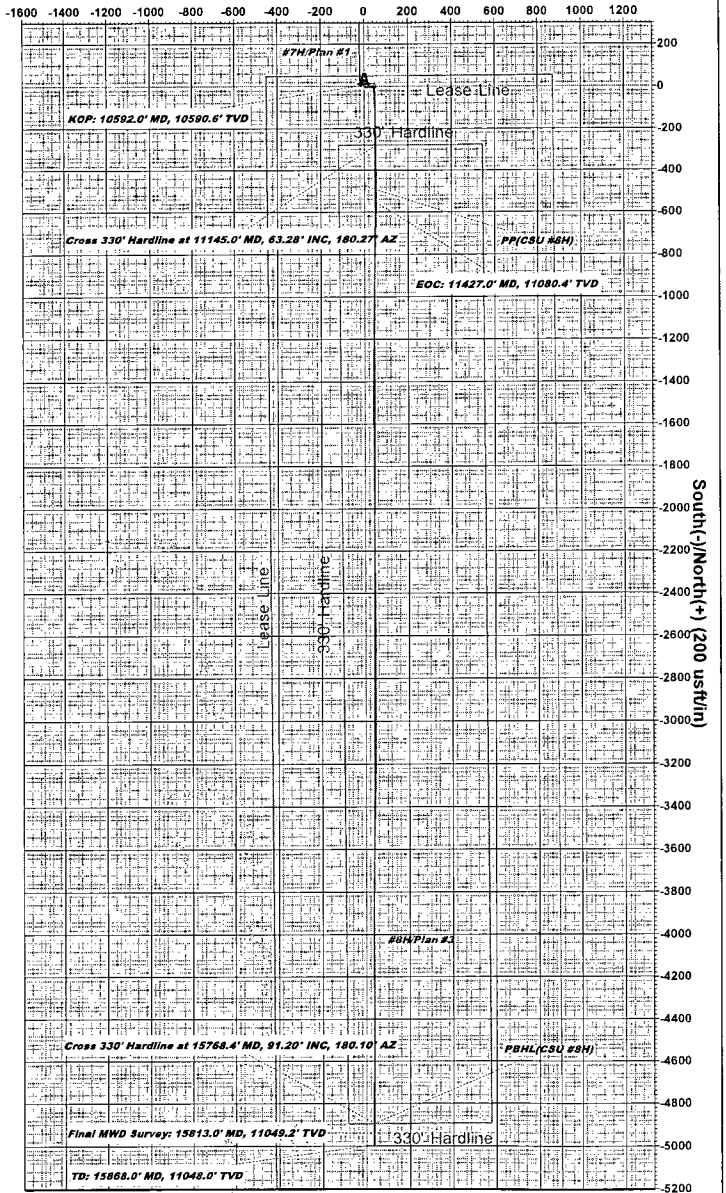
Section Details

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	1350.0	0.00	0.00	1350.0	0.0	0.0	0.00	0.00	0.0
3	1550.0	3.00	90.00	1549.9	0.0	5.2	1.50	90.00	0.0
4	2305.0	3.00	90.00	2303.9	0.0	44.7	0.00	0.00	0.3
5	2505.0	0.00	0.00	2503.8	0.0	50.0	1.50	180.00	0.3
6	10601.8	0.00	0.00	10600.6	0.0	50.0	0.00	0.00	0.3
7	11355.1	90.39	180.19	11078.0	-480.7	48.4	12.00	180.19	481.0
8	15769.5	90.39	180.19	11048.0	-4895.0	33.6	0.00	0.00	4895.1
9	15869.5	90.39	180.19	11047.3	-4995.0	33.3	0.00	0.00	4995.1



Vertical Section at 179.61° (10 usft/in)

Vertical Section at 179.61° (200 usft/in)



PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



Crescent Directional Drilling
7715 West Industrial Ave. Midland, Tx 79706
Phone: 432-618-1135

Plan: Plan #3 (#8H/OH)
Created By: Adrian Castro Date: 7:26, June 10 2014