

Results of Directional Survey

API number:	30-025-41655		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	CARAVAN STATE UNIT # 7H

surface	ULSTR:	D	33	T	24S	R	33E
				50	FNL	420	FWL

BH Loc	ULSTR:	D	28	T	24S	R	33E
15975	MD	11068.0	TVD	233	FNL	387	FWL
5047 FSL							

Top Perf/OH	ULSTR:	D	33	T	24S	R	33E
11360	MD	11085.9	TVD	433	FSL	427	FWL

Bot Perf/OH	ULSTR:	D	28	T	24S	R	33E
15870	MD	11069.5	TVD	338	FNL	388	FWL
4942 FSL							

	MD	N/S	E/W	VD
	11331	453.70	8.00	11084
TOP PERFS/OH	11360	482.63	6.55	11085.86
	11373	495.60	5.90	11086.70
	15793	4914.60	-30.80	11070.60
BOT PERFS/OH	15870	4991.50	-31.67	11069.45
	15873	4994.50	-31.70	11069.40

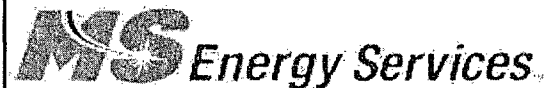
NEXT TO LAST	15918	5039.60	-32.30	11068.80
LAST READING	15975	5096.60	-33.20	11068.00
TD	15975	5096.60	-33.20	11068.00

Surface Location	50	FN	420	FW
Projected BHL	5047	FS	387	FW
Location of				
Top Perfs/OH	433	FS	427	FW
Bottom Perfs/OH	4942	FS	388	FW

SUMMARY of Subsurface Locations

Surface Location	D-33-24S-33E	50	FN	420	FW	Vert. Depth
Top Perfs/OH	D-33-24S-33E	433	FS	427	FW	11085.86
Bottom Perfs/OH	D-28-24S-33E	4942	FS	388	FW	11069.45
Projected TD	D-28-24S-33E	5047	FS	387	FW	11068.00

SEP 30 2014



Job Number: SVMO-140828
 Company: Yates Petroleum Corporation
 Lease/Well: Caravan State Unit 7H
 Location: Eddy County, NM
 Rig Name: Cactus #124
 RKB: 28'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.83°
 Grid: East To Grid North
 File name: S:\2014SU-1\YATES\MOICARAVA-117H.SVY
 Date/Time: 27-Jun-14 / 14:43
 Curve Name: Surface - 1400' M.D. (Rate Gyro)

MS SURVEY

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method
 Vertical Section Plane 359.64
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 1400' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
 Clayton Turner 6/27/14
 MS Energy Services Date

HOBBS OGD
 SEP 22 2014
 RECEIVED

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	.38	283.40	100.00	.08	-.32	.08	.33	283.40	.38
200.00	.40	281.07	200.00	.22	-.99	.23	1.01	282.60	.03
300.00	.62	253.28	299.99	.13	-1.85	.14	1.85	274.09	.32
400.00	.62	252.06	399.99	-.19	-2.88	-.17	2.89	266.22	.01
500.00	.69	252.15	499.98	-.54	-3.97	-.52	4.01	262.23	.07
600.00	.67	249.80	599.97	-.93	-5.09	-.90	5.17	259.67	.03
700.00	.87	253.10	699.96	-1.35	-6.37	-1.31	6.51	258.02	.20
800.00	.81	258.65	799.95	-1.71	-7.79	-1.66	7.97	257.61	.10
900.00	.69	266.69	899.95	-1.88	-9.08	-1.83	9.27	258.28	.16

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	.67	267.73	999.94	-1.94	-10.27	-1.88	10.45	259.29	.02
1100.00	.61	293.56	1099.93	-1.75	-11.34	-1.68	11.47	261.21	.29
1200.00	.64	316.11	1199.93	-1.14	-12.21	-1.06	12.27	264.68	.25
1300.00	.66	310.80	1299.92	-.36	-13.04	-.28	13.04	268.43	.06
Last Survey Depth Recorded									
1400.00	.56	313.81	1399.91	.36	-13.82	.44	13.83	271.48	.10

HOBBS OCD

SEP 22 2014

RECEIVED

Yates Petroleum

Lea County, NM (NAD-83)

Caravan State Unit

#7H

OH

Design: OH

Standard Survey Report

03 July, 2014

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Site:	Caravan State Unit	MD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Well:	#7H	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	#7H					
Well Position	+N/-S	0.0 usft	Northing:	430,485.50 usft	Latitude:	32° 10' 52.554 N
	+E/-W	0.0 usft	Easting:	773,044.80 usft	Longitude:	103° 35' 3.818 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,494.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/20/2014	7.23	60.07	48,296

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	359.64	

Survey Program	Date	7/3/2014			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	1,400.0	Survey #1 - Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot	
1,528.0	15,975.0	Survey #2 - Crescent MWD Surveys (OH)	MWD	MWD - Standard	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.38	283.40	100.0	0.1	-0.3	0.1	0.38	0.38	0.00	
200.0	0.40	281.70	200.0	0.2	-1.0	0.2	0.02	0.02	-1.70	
300.0	0.62	253.28	300.0	0.1	-1.8	0.2	0.33	0.22	-28.42	
400.0	0.62	252.06	400.0	-0.2	-2.9	-0.2	0.01	0.00	-1.22	
500.0	0.69	252.15	500.0	-0.5	-4.0	-0.5	0.07	0.07	0.09	
600.0	0.67	249.80	600.0	-0.9	-5.1	-0.9	0.03	-0.02	-2.35	
700.0	0.87	253.10	700.0	-1.3	-6.4	-1.3	0.20	0.20	3.30	
800.0	0.81	258.65	800.0	-1.7	-7.8	-1.7	0.10	-0.06	5.55	
900.0	0.69	266.69	899.9	-1.9	-9.1	-1.8	0.16	-0.12	8.04	

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Site:	Caravan State Unit	MD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Well:	#7H	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	0.67	267.73	999.9	-1.9	-10.3	-1.9	0.02	-0.02	1.04
1,100.0	0.61	293.56	1,099.9	-1.7	-11.3	-1.7	0.29	-0.06	25.83
1,200.0	0.64	316.11	1,199.9	-1.1	-12.2	-1.1	0.25	0.03	22.55
1,300.0	0.66	310.80	1,299.9	-0.4	-13.0	-0.3	0.06	0.02	-5.31
1,400.0	0.56	313.81	1,399.9	0.4	-13.8	0.5	0.10	-0.10	3.01
1,528.0	0.40	299.90	1,527.9	1.0	-14.7	1.1	0.15	-0.13	-10.87
1,718.0	0.20	295.10	1,717.9	1.5	-15.5	1.6	0.11	-0.11	-2.53
1,908.0	0.20	285.60	1,907.9	1.7	-16.2	1.8	0.02	0.00	-5.00
2,097.0	0.30	230.70	2,096.9	1.5	-16.9	1.6	0.13	0.05	-29.05
2,287.0	0.10	216.40	2,286.9	1.0	-17.3	1.2	0.11	-0.11	-7.53
2,476.0	0.20	251.20	2,475.9	0.8	-17.8	0.9	0.07	0.05	18.41
2,666.0	0.30	246.30	2,665.9	0.5	-18.5	0.6	0.05	0.05	-2.58
2,856.0	0.40	243.30	2,855.9	0.0	-19.6	0.1	0.05	0.05	-1.58
3,045.0	0.20	199.90	3,044.9	-0.6	-20.3	-0.5	0.15	-0.11	-22.96
3,233.0	0.40	216.40	3,232.9	-1.4	-20.8	-1.3	0.11	0.11	8.78
3,424.0	0.70	192.30	3,423.9	-3.1	-21.4	-3.0	0.20	0.16	-12.62
3,614.0	0.50	61.50	3,613.9	-3.9	-20.9	-3.7	0.58	-0.11	-68.84
3,708.0	0.70	32.70	3,707.9	-3.2	-20.3	-3.0	0.38	0.21	-30.64
3,803.0	0.60	34.60	3,802.9	-2.3	-19.7	-2.2	0.11	-0.11	2.00
3,898.0	0.50	29.90	3,897.9	-1.5	-19.2	-1.4	0.12	-0.11	-4.95
3,992.0	0.50	13.10	3,991.9	-0.8	-18.9	-0.6	0.16	0.00	-17.87
4,087.0	0.60	15.10	4,086.9	0.1	-18.7	0.2	0.11	0.11	2.11
4,182.0	0.70	17.00	4,181.8	1.2	-18.4	1.3	0.11	0.11	2.00
4,277.0	0.60	16.30	4,276.8	2.2	-18.0	2.3	0.11	-0.11	-0.74
4,371.0	0.60	27.40	4,370.8	3.1	-17.7	3.2	0.12	0.00	11.81
4,466.0	0.50	74.10	4,465.8	3.7	-17.1	3.8	0.47	-0.11	49.16
4,561.0	0.50	73.50	4,560.8	3.9	-16.3	4.0	0.01	0.00	-0.63
4,656.0	0.40	80.20	4,655.8	4.1	-15.5	4.2	0.12	-0.11	7.05
4,751.0	0.40	108.10	4,750.8	4.0	-14.9	4.1	0.20	0.00	29.37
4,846.0	0.40	138.30	4,845.8	3.7	-14.4	3.8	0.22	0.00	31.79
4,940.0	0.30	173.00	4,939.8	3.2	-14.1	3.3	0.24	-0.11	36.91
5,046.0	0.40	176.50	5,045.8	2.5	-14.1	2.6	0.10	0.09	3.30
5,213.0	0.40	129.60	5,212.8	1.6	-13.6	1.7	0.19	0.00	-28.08
5,402.0	0.40	166.70	5,401.8	0.5	-12.9	0.6	0.13	0.00	19.63
5,592.0	0.40	163.80	5,591.8	-0.8	-12.6	-0.7	0.01	0.00	-1.53
5,781.0	0.40	154.90	5,780.8	-2.0	-12.1	-1.9	0.03	0.00	-4.71
5,970.0	0.20	56.80	5,969.8	-2.4	-11.6	-2.3	0.25	-0.11	-51.90
6,159.0	0.00	237.30	6,158.8	-2.2	-11.3	-2.2	0.11	-0.11	0.00
6,348.0	0.30	317.30	6,347.8	-1.9	-11.6	-1.8	0.16	0.16	0.00
6,538.0	0.40	347.50	6,537.8	-0.9	-12.1	-0.8	0.11	0.05	15.89
6,728.0	0.40	342.00	6,727.8	0.4	-12.4	0.5	0.02	0.00	-2.89
6,918.0	0.30	199.30	6,917.8	0.6	-12.8	0.7	0.35	-0.05	-75.11
7,108.0	0.60	216.90	7,107.8	-0.7	-13.6	-0.6	0.17	0.16	9.26

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Site:	Caravan State Unit	MD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Well:	#7H	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)
7,202.0	0.80	224.40	7,201.8	-1.5	-14.3	-1.5	0.23	0.21	7.98
7,297.0	0.60	138.10	7,296.8	-2.4	-14.5	-2.3	1.02	-0.21	-90.84
7,392.0	0.30	171.90	7,391.8	-3.0	-14.1	-2.9	0.41	-0.32	35.58
7,487.0	0.40	160.60	7,486.8	-3.6	-13.9	-3.5	0.13	0.11	-11.89
7,581.0	0.30	155.20	7,580.8	-4.1	-13.7	-4.0	0.11	-0.11	-5.74
7,675.0	0.30	72.30	7,674.8	-4.2	-13.4	-4.2	0.42	0.00	-88.19
7,770.0	0.70	45.90	7,769.8	-3.8	-12.7	-3.7	0.48	0.42	-27.79
7,864.0	0.00	243.30	7,863.8	-3.4	-12.3	-3.3	0.74	-0.74	0.00
7,959.0	0.10	125.60	7,958.8	-3.4	-12.3	-3.3	0.11	0.11	0.00
8,054.0	0.20	96.10	8,053.8	-3.5	-12.0	-3.4	0.13	0.11	-31.05
8,148.0	0.30	145.30	8,147.8	-3.7	-11.7	-3.6	0.24	0.11	52.34
8,243.0	0.50	107.00	8,242.8	-4.0	-11.2	-4.0	0.34	0.21	-40.32
8,338.0	0.70	98.10	8,337.7	-4.2	-10.2	-4.2	0.23	0.21	-9.37
8,432.0	0.80	105.70	8,431.7	-4.5	-9.0	-4.4	0.15	0.11	8.09
8,527.0	0.60	117.20	8,526.7	-4.9	-7.9	-4.8	0.26	-0.21	12.11
8,622.0	0.70	111.30	8,621.7	-5.3	-7.0	-5.3	0.13	0.11	-6.21
8,716.0	0.60	128.60	8,715.7	-5.8	-6.0	-5.8	0.23	-0.11	18.40
8,811.0	0.70	125.00	8,810.7	-6.5	-5.2	-6.5	0.11	0.11	-3.79
8,906.0	0.70	136.50	8,905.7	-7.2	-4.3	-7.2	0.15	0.00	12.11
9,001.0	0.60	149.60	9,000.7	-8.1	-3.6	-8.1	0.19	-0.11	13.79
9,095.0	0.70	152.20	9,094.7	-9.0	-3.1	-9.0	0.11	0.11	2.77
9,190.0	0.30	170.70	9,189.7	-9.8	-2.8	-9.8	0.45	-0.42	19.47
9,285.0	0.40	206.20	9,284.7	-10.3	-2.9	-10.3	0.25	0.11	37.37
9,380.0	0.50	138.60	9,379.7	-10.9	-2.8	-10.9	0.53	0.11	-71.16
9,474.0	0.30	129.00	9,473.7	-11.4	-2.3	-11.4	0.22	-0.21	-10.21
9,569.0	1.10	280.30	9,568.7	-11.4	-3.0	-11.4	1.44	0.84	159.26
9,660.0	0.70	283.40	9,659.7	-11.1	-4.4	-11.1	0.44	-0.44	3.41
9,754.0	0.20	352.80	9,753.7	-10.8	-5.0	-10.8	0.70	-0.53	73.83
9,849.0	0.70	338.60	9,848.7	-10.1	-5.2	-10.1	0.54	0.53	-14.95
9,942.0	1.10	232.40	9,941.7	-10.1	-6.2	-10.1	1.57	0.43	-114.19
10,037.0	0.90	175.30	10,036.6	-11.4	-6.8	-11.4	1.02	-0.21	-60.11
10,132.0	0.50	48.10	10,131.6	-11.9	-6.5	-11.8	1.33	-0.42	-133.89
10,226.0	0.20	154.30	10,225.6	-11.8	-6.1	-11.7	0.63	-0.32	112.98
10,322.0	0.30	145.20	10,321.6	-12.1	-5.9	-12.1	0.11	0.10	-9.48
10,416.0	0.50	111.70	10,415.6	-12.5	-5.3	-12.4	0.32	0.21	-35.64
10,511.0	0.70	98.20	10,510.6	-12.7	-4.4	-12.7	0.26	0.21	-14.21
10,600.0	1.80	16.30	10,599.6	-11.4	-3.4	-11.4	2.06	1.24	-92.02
KOP: 10600.0' MD, 10599.6' TVD									
10,638.0	7.30	5.20	10,637.5	-8.5	-3.1	-8.4	14.59	14.47	-29.21
10,685.0	14.00	6.80	10,683.6	0.2	-2.1	0.2	14.27	14.26	3.40
10,732.0	20.00	7.80	10,728.6	13.8	-0.4	13.8	12.78	12.77	2.13
10,772.0	24.51	8.24	10,765.6	28.8	1.8	28.8	11.28	11.28	1.10
Cross Lease Line at 10772.0' MD, 24.51° INC									
10,779.0	25.30	8.30	10,771.9	31.7	2.2	31.7	11.28	11.28	0.88

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Site:	Caravan State Unit	MD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Well:	#7H	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)
10,827.0	30.30	8.20	10,814.4	53.8	5.4	53.8	10.42	10.42	-0.21
10,875.0	35.20	7.80	10,854.7	79.6	9.0	79.5	10.22	10.21	-0.83
10,922.0	38.10	5.00	10,892.4	107.4	12.1	107.3	7.12	6.17	-5.96
10,969.0	41.90	2.20	10,928.4	137.6	14.0	137.5	8.94	8.09	-5.96
11,016.0	46.80	0.90	10,962.0	170.4	14.8	170.3	10.60	10.43	-2.77
11,063.0	52.50	359.20	10,992.5	206.2	14.9	206.1	12.44	12.13	-3.62
11,110.0	58.00	358.00	11,019.2	244.8	13.9	244.7	11.89	11.70	-2.55
11,157.0	64.40	358.70	11,041.9	285.9	12.7	285.9	13.68	13.62	1.49
11,189.0	69.50	358.90	11,054.4	315.4	12.1	315.3	15.95	15.94	0.63
11,235.0	75.08	359.00	11,068.4	359.2	11.3	359.1	12.13	12.13	0.21
Cross 330' Hardline at 11235.0' MD, 75.08° INC									
11,236.0	75.20	359.00	11,068.6	360.1	11.3	360.1	12.13	12.13	0.21
11,268.0	79.30	358.20	11,075.7	391.3	10.5	391.3	13.04	12.81	-2.50
11,299.0	82.80	357.70	11,080.5	421.9	9.4	421.9	11.40	11.29	-1.61
11,331.0	84.80	357.20	11,084.0	453.7	8.0	453.6	6.44	6.25	-1.56
11,373.0	87.70	356.90	11,086.7	495.6	5.9	495.5	6.94	6.90	-0.71
11,426.0	92.30	356.50	11,086.7	548.5	2.8	548.4	8.71	8.68	-0.75
EOC: 11426.0' MD, 11086.7' TVD, 92.30° INC, 356.50° AZ, 548.4' VS									
11,521.0	91.60	357.20	11,083.5	643.3	-2.4	643.3	1.04	-0.74	0.74
11,614.0	89.00	357.60	11,083.0	736.1	-6.6	736.2	2.83	-2.80	0.43
11,710.0	90.40	357.80	11,083.5	832.1	-10.5	832.1	1.47	1.46	0.21
11,804.0	89.40	358.10	11,083.7	926.0	-13.8	926.1	1.11	-1.06	0.32
11,900.0	89.40	359.20	11,084.7	1,022.0	-16.1	1,022.1	1.15	0.00	1.15
11,995.0	90.20	0.20	11,085.0	1,117.0	-16.6	1,117.0	1.35	0.84	1.05
12,090.0	90.00	0.10	11,084.8	1,212.0	-16.4	1,212.0	0.24	-0.21	-0.11
12,185.0	90.20	359.70	11,084.7	1,307.0	-16.5	1,307.0	0.47	0.21	-0.42
12,281.0	90.50	0.40	11,084.1	1,403.0	-16.4	1,403.0	0.79	0.31	0.73
12,376.0	90.30	0.30	11,083.4	1,498.0	-15.9	1,498.0	0.24	-0.21	-0.11
12,471.0	90.90	0.00	11,082.4	1,593.0	-15.6	1,593.0	0.71	0.63	-0.32
12,566.0	90.20	1.00	11,081.5	1,687.9	-14.8	1,688.0	1.28	-0.74	1.05
12,661.0	89.70	0.40	11,081.6	1,782.9	-13.6	1,783.0	0.82	-0.53	-0.63
12,756.0	89.90	0.40	11,081.9	1,877.9	-13.0	1,878.0	0.21	0.21	0.00
12,851.0	90.40	0.60	11,081.7	1,972.9	-12.1	1,973.0	0.57	0.53	0.21
12,945.0	89.10	0.20	11,082.1	2,066.9	-11.5	2,067.0	1.45	-1.38	-0.43
13,040.0	89.90	0.40	11,082.9	2,161.9	-11.0	2,161.9	0.87	0.84	0.21
13,135.0	89.40	359.30	11,083.5	2,256.9	-11.2	2,256.9	1.27	-0.53	-1.16
13,230.0	90.20	359.70	11,083.8	2,351.9	-12.1	2,351.9	0.94	0.84	0.42
13,324.0	89.40	359.20	11,084.2	2,445.9	-13.0	2,445.9	1.00	-0.85	-0.53
13,419.0	89.60	359.40	11,085.0	2,540.9	-14.1	2,540.9	0.30	0.21	0.21
13,513.0	90.50	359.10	11,084.9	2,634.9	-15.3	2,634.9	1.01	0.96	-0.32
13,609.0	90.90	359.10	11,083.7	2,730.9	-16.9	2,730.9	0.42	0.42	0.00
13,704.0	90.40	358.90	11,082.7	2,825.8	-18.5	2,825.9	0.57	-0.53	-0.21
13,800.0	90.30	358.20	11,082.1	2,921.8	-20.9	2,921.9	0.74	-0.10	-0.73

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #7H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Site:	Caravan State Unit	MD Reference:	RKB @ 3519.0usft (Cactus #124 KB=25')
Well:	#7H	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)	
13,894.0	90.40	359.00	11,081.5	3,015.8	-23.2	3,015.9	0.86	0.11	0.85	
13,990.0	89.90	359.50	11,081.3	3,111.8	-24.5	3,111.9	0.74	-0.52	0.52	
14,085.0	90.20	0.00	11,081.2	3,206.8	-24.9	3,206.9	0.61	0.32	0.53	
14,181.0	90.30	0.10	11,080.7	3,302.8	-24.8	3,302.9	0.15	0.10	0.10	
14,276.0	90.50	0.10	11,080.1	3,397.8	-24.7	3,397.9	0.21	0.21	0.00	
14,372.0	90.60	359.80	11,079.2	3,493.8	-24.7	3,493.8	0.33	0.10	-0.31	
14,467.0	90.50	359.00	11,078.3	3,588.7	-25.7	3,588.8	0.85	-0.11	-0.84	
14,562.0	90.80	359.30	11,077.2	3,683.7	-27.1	3,683.8	0.45	0.32	0.32	
14,656.0	90.30	359.20	11,076.3	3,777.7	-28.4	3,777.8	0.54	-0.53	-0.11	
14,751.0	89.90	0.80	11,076.1	3,872.7	-28.4	3,872.8	1.74	-0.42	1.68	
14,846.0	90.10	0.40	11,076.1	3,967.7	-27.4	3,967.8	0.47	0.21	-0.42	
14,940.0	90.60	0.20	11,075.5	4,061.7	-26.9	4,061.8	0.57	0.53	-0.21	
15,035.0	90.80	0.20	11,074.4	4,156.7	-26.6	4,156.8	0.21	0.21	0.00	
15,130.0	91.00	0.20	11,072.9	4,251.7	-26.2	4,251.8	0.21	0.21	0.00	
15,225.0	89.80	0.10	11,072.2	4,346.7	-26.0	4,346.8	1.27	-1.26	-0.11	
15,320.0	89.80	359.70	11,072.5	4,441.7	-26.1	4,441.8	0.42	0.00	-0.42	
15,414.0	90.10	359.40	11,072.6	4,535.7	-26.9	4,535.8	0.45	0.32	-0.32	
15,509.0	90.10	359.40	11,072.5	4,630.7	-27.9	4,630.8	0.00	0.00	0.00	
15,604.0	90.20	359.40	11,072.2	4,725.7	-28.9	4,725.8	0.11	0.11	0.00	
15,698.0	90.50	359.50	11,071.6	4,819.7	-29.8	4,819.8	0.34	0.32	0.11	
15,793.0	90.80	359.30	11,070.6	4,914.6	-30.8	4,914.7	0.38	0.32	-0.21	
15,873.0	90.80	359.30	11,069.4	4,994.6	-31.7	4,994.7	0.00	0.00	0.00	
Cross 330' Hardline at 15873.0' MD, 90.80° INC, 359.30° AZ										
15,888.0	90.80	359.30	11,069.2	5,009.6	-31.9	5,009.7	0.00	0.00	0.00	
15,918.0	90.80	359.10	11,068.8	5,039.6	-32.3	5,039.7	0.67	0.00	-0.67	
Final MWD Survey: 15918.0' MD, 11068.8' TVD, 5039.6' +N/-S, -32.3' +E/-W										
15,975.0	90.80	359.10	11,068.0	5,096.6	-33.2	5,096.7	0.00	0.00	0.00	
BHL: 15975.0' MD, 11068.0' TVD, 90.80° INC, 359.10° AZ, 5096.6' +N/-S, -33.2' +E/-W, 5096.7' VS - TD: 15975.0' MD, 11068.0' TVD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,600.0	10,599.6	-11.4	-3.4	KOP: 10600.0' MD, 10599.6' TVD	
10,772.0	10,765.6	28.8	1.8	Cross Lease Line at 10772.0' MD, 24.51° INC	
11,235.0	11,068.4	359.2	11.3	Cross 330' Hardline at 11235.0' MD, 75.08° INC	
11,426.0	11,086.7	548.5	2.8	EOC: 11426.0' MD, 11086.7' TVD, 92.30° INC, 356.50° AZ, 548.4' VS	
15,873.0	11,069.4	4,994.6	-31.7	Cross 330' Hardline at 15873.0' MD, 90.80° INC, 359.30° AZ	
15,918.0	11,068.8	5,039.6	-32.3	Final MWD Survey: 15918.0' MD, 11068.8' TVD, 5039.6' +N/-S, -32.3' +E/-W	
15,975.0	11,068.0	5,096.6	-33.2	BHL: 15975.0' MD, 11068.0' TVD, 90.80° INC, 359.10° AZ, 5096.6' +N/-S, -33.2	
15,975.0	11,068.0	5,096.6	-33.2	TD: 15975.0' MD, 11068.0' TVD	

Checked By: _____ Approved By: _____ Date: _____



Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Caravan State Unit
Well: #7H
Wellbore: OH
Plan: Plan #1 (#7H/OH)

WELL DETAILS: #7H

Ground Elevation:: 3494.0
RKB Elevation: RKB @ 3519.0usft (Cactus #124 KB=25')
Rig Name: Cactus #124 KB=25'

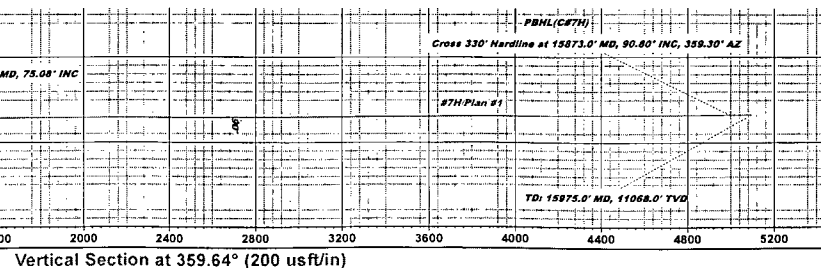
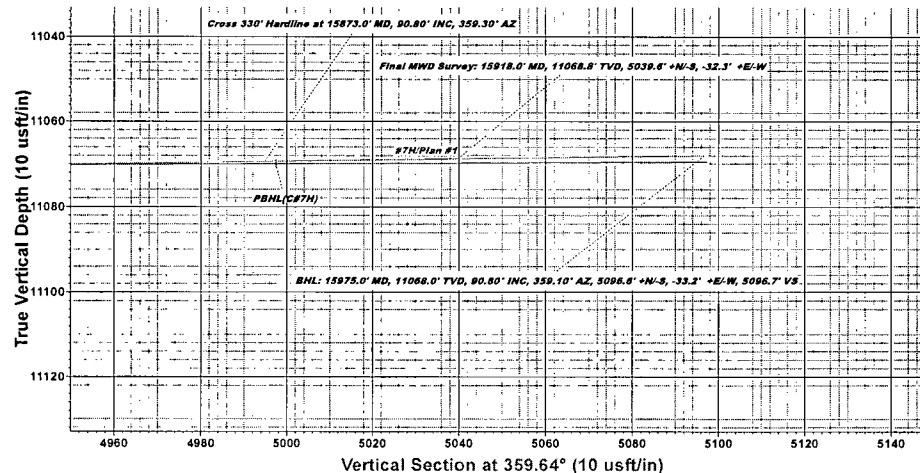
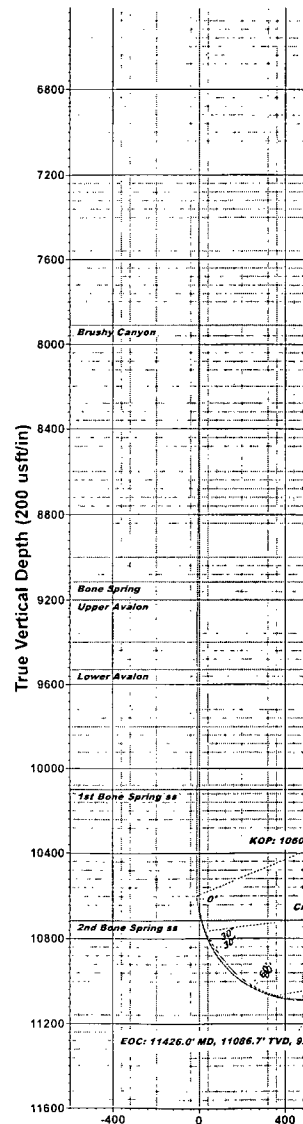
Surface Hole Location
Northing Easting Latitude Longitude
430485.50 773044.80 32° 10' 52.554 N 103° 35' 3.818 W



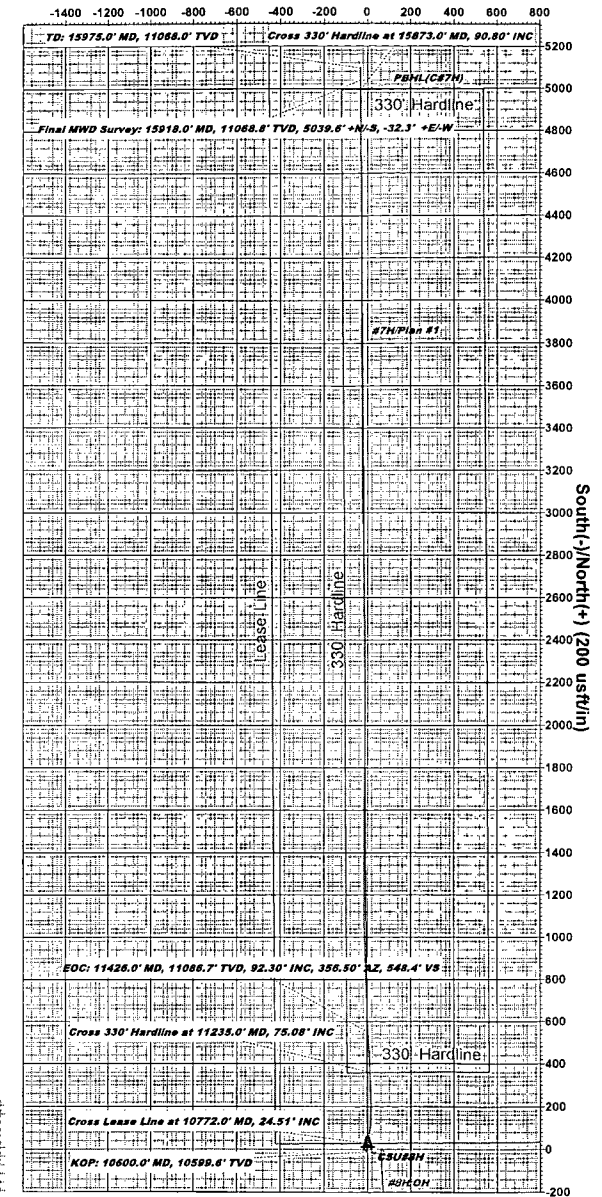
Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.83°
Magnetic Field
Strength: 48295.6snT
Dip Angle: 60.07°
Date: 5/20/2014
Model: IGRF2010

Section Details

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	10612.5	0.00	0.00	10612.5	0.0	0.0	0.00	0.00	0.0
3	11364.6	90.25	359.64	11090.0	479.6	-3.0	12.00	359.64	479.6
4	15882.5	90.25	359.64	11070.0	4997.3	-31.7	0.00	0.00	4997.4
5	15982.5	90.25	359.64	11069.6	5097.3	-32.3	0.00	0.00	5097.4



West(-)/East(+) (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 #1 (#7H/OH)
Created By: Adrian Castro Date: 8:24, July 03 2014