

Results of Directional Survey

API number:	30-025-41056		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	HEARTTHROB BSX # 1H

surface	ULSTR:	D	17	T 24S	R 33E
				200 FNL	660 FWL

BH Loc	ULSTR:	M	17	T 24S	R 33E
15815	MD	11115.9	TVD	218 FSL	688 FWL
				5062 FNL	

Top Perf/OH	ULSTR:	D	17	T 24S	R 33E
11462	MD	11143.3	TVD	711 FNL	675 FWL

Bot Perf/OH	ULSTR:	M	17	T 24S	R 33E
15695	MD	11118.1	TVD	338 FSL	690 FWL
				4942 FNL	

	MD	N/S	E/W	VD
	11451	-499.70	15.30	11143.4
TOP PERFS/OH	11462	-510.70	15.04	11143.26
	11514	-562.70	13.80	11142.60
	15681	-4728.40	30.50	11118.30
BOT PERFS/OH	15695	-4742.40	30.26	11118.10
	15716	-4763.40	29.90	11117.80

NEXT TO LAST	15754	-4801.40	29.20	11117.10
LAST READING	15815	-4862.40	27.90	11115.90
TD	15815	-4862.40	27.90	11115.90

Surface Location	200	FN	660	FW
Projected BHL	5062	FN	688	FW
Location of				
Top Perfs/OH	711	FN	675	FW
Bottom Perfs/OH	4942	FN	690	FW

SUMMARY of Subsurface Locations

Surface Location	D-17-24S-33E	200	FN	660	FW	Vert. Depth
Top Perfs/OH	D-17-24S-33E	711	FN	675	FW	11143.26
Bottom Perfs/OH	M-17-24S-33E	4942	FN	690	FW	11118.10
Projected TD	M-17-24S-33E	5062	FN	688	FW	11115.90

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Yates Petroleum

Lea County, NM (NAD-83)

Heartthrob BSX State

#1H

OH

Design: OH

Standard Survey Report

21 April, 2014

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Hearthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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	Hearthrob BSX State		
Site Position:		Northing:	446,154.41 usft
From:	Map	Easting:	769,083.10 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 27.873 N
		Longitude:	103° 35' 48.664 W
		Grid Convergence:	0.39 °

Well	#1H		
Well Position	+N/-S	0.0 usft	Northing: 446,147.87 usft
	+E/-W	0.0 usft	Easting: 767,883.28 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Ground Level:	3,575.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	3/4/2014	7.26
			Dip Angle
			(°)
			60.11
			Field Strength
			(nT)
			48,340

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.67

Survey Program	Date	4/21/2014		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	15,815.0	Survey #1 - Crescent MWD Survey (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	0.70	97.54	100.0	-0.1	0.6	0.1	0.70	0.70	0.00	
200.0	0.92	127.76	200.0	-0.7	1.8	0.7	0.47	0.22	30.22	
300.0	0.89	133.76	300.0	-1.7	3.0	1.7	0.10	-0.03	6.00	
400.0	0.62	127.11	400.0	-2.5	4.0	2.6	0.28	-0.27	-6.65	
500.0	0.67	106.25	500.0	-3.0	5.0	3.1	0.24	0.05	-20.86	
600.0	0.94	127.84	600.0	-3.7	6.2	3.7	0.40	0.27	21.59	
700.0	0.27	133.92	699.9	-4.4	7.1	4.4	0.67	-0.67	6.08	
800.0	0.03	297.39	799.9	-4.5	7.2	4.6	0.30	-0.24	163.47	
900.0	0.23	187.54	899.9	-4.7	7.2	4.7	0.24	0.20	-109.85	

Survey Report

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Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Heartthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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	0.18	335.53	999.9	-4.8	7.1	4.8	0.39	-0.05	147.99
1,100.0	0.33	291.64	1,099.9	-4.5	6.7	4.6	0.24	0.15	-43.89
1,200.0	0.24	311.73	1,199.9	-4.3	6.3	4.3	0.13	-0.09	20.09
1,325.0	0.10	230.00	1,324.9	-4.2	6.0	4.2	0.20	-0.11	-65.38
1,515.0	0.10	136.00	1,514.9	-4.4	6.0	4.4	0.08	0.00	-49.47
1,705.0	0.10	73.50	1,704.9	-4.5	6.3	4.5	0.05	0.00	-32.89
1,893.0	0.10	263.50	1,892.9	-4.4	6.3	4.5	0.11	0.00	-90.43
2,083.0	0.20	266.00	2,082.9	-4.5	5.8	4.5	0.05	0.05	1.32
2,273.0	0.10	3.70	2,272.9	-4.3	5.5	4.4	0.12	-0.05	51.42
2,463.0	0.20	343.70	2,462.9	-3.8	5.4	3.9	0.06	0.05	-10.53
2,652.0	0.20	315.40	2,651.9	-3.3	5.1	3.3	0.05	0.00	-14.97
2,842.0	0.10	177.10	2,841.9	-3.2	4.8	3.3	0.15	-0.05	-72.79
3,032.0	0.10	56.40	3,031.9	-3.3	5.0	3.3	0.09	0.00	-63.53
3,220.0	0.20	56.60	3,219.9	-3.0	5.4	3.1	0.05	0.05	0.11
3,409.0	0.40	78.20	3,408.9	-2.7	6.3	2.7	0.12	0.11	11.43
3,504.0	0.40	83.60	3,503.9	-2.6	7.0	2.6	0.04	0.00	5.68
3,600.0	0.30	286.10	3,599.9	-2.5	7.1	2.5	0.72	-0.10	-164.06
3,694.0	0.40	277.70	3,693.9	-2.4	6.5	2.4	0.12	0.11	-8.94
3,788.0	0.40	263.00	3,787.9	-2.4	5.8	2.4	0.11	0.00	-15.64
3,882.0	0.30	229.10	3,881.9	-2.6	5.3	2.6	0.24	-0.11	-36.06
3,977.0	0.50	218.70	3,976.9	-3.1	4.9	3.1	0.22	0.21	-10.95
4,071.0	0.60	216.40	4,070.9	-3.8	4.3	3.8	0.11	0.11	-2.45
4,166.0	0.70	197.10	4,165.9	-4.7	3.9	4.8	0.25	0.11	-20.32
4,261.0	0.80	188.50	4,260.9	-6.0	3.6	6.0	0.16	0.11	-9.05
4,356.0	1.10	177.90	4,355.9	-7.5	3.5	7.5	0.36	0.32	-11.16
4,451.0	1.30	170.50	4,450.9	-9.5	3.7	9.5	0.27	0.21	-7.79
4,545.0	1.00	182.30	4,544.9	-11.4	3.9	11.4	0.41	-0.32	12.55
4,640.0	0.80	169.20	4,639.8	-12.8	4.0	12.9	0.30	-0.21	-13.79
4,735.0	1.10	148.10	4,734.8	-14.3	4.6	14.3	0.48	0.32	-22.21
4,829.0	1.10	135.00	4,828.8	-15.7	5.7	15.7	0.27	0.00	-13.94
4,924.0	0.70	106.30	4,923.8	-16.5	6.9	16.5	0.62	-0.42	-30.21
5,019.0	0.50	103.90	5,018.8	-16.7	7.9	16.8	0.21	-0.21	-2.53
5,087.0	0.40	107.60	5,086.8	-16.9	8.4	16.9	0.15	-0.15	5.44
5,200.0	0.50	135.60	5,199.8	-17.4	9.1	17.4	0.21	0.09	24.78
5,390.0	0.50	154.40	5,389.8	-18.7	10.0	18.8	0.09	0.00	9.89
5,485.0	0.40	138.40	5,484.8	-19.3	10.4	19.4	0.17	-0.11	-16.84
5,673.0	0.40	146.80	5,672.8	-20.4	11.2	20.4	0.03	0.00	4.47
5,862.0	0.40	154.70	5,861.8	-21.5	11.9	21.6	0.03	0.00	4.18
5,957.0	0.40	15.30	5,956.8	-21.5	12.1	21.6	0.79	0.00	-146.74
6,052.0	0.40	16.30	6,051.8	-20.9	12.3	20.9	0.01	0.00	1.05
6,241.0	0.80	348.90	6,240.8	-18.9	12.2	19.0	0.25	0.21	-14.50
6,431.0	0.90	344.70	6,430.7	-16.2	11.6	16.3	0.06	0.05	-2.21
6,620.0	0.90	358.10	6,619.7	-13.3	11.1	13.3	0.11	0.00	7.09
6,810.0	0.70	338.30	6,809.7	-10.7	10.6	10.8	0.18	-0.11	-10.42

Survey Report

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Site:	Heartthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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)
6,999.0	0.60	338.70	6,998.7	-8.7	9.9	8.8	0.05	-0.05	0.21
7,189.0	0.40	342.80	7,188.7	-7.1	9.3	7.2	0.11	-0.11	2.16
7,379.0	0.60	314.70	7,378.7	-5.8	8.4	5.9	0.16	0.11	-14.79
7,569.0	1.00	301.10	7,568.6	-4.3	6.3	4.3	0.23	0.21	-7.16
7,664.0	1.10	335.20	7,663.6	-3.0	5.2	3.0	0.66	0.11	35.89
7,852.0	0.70	329.00	7,851.6	-0.4	3.8	0.4	0.22	-0.21	-3.30
8,043.0	0.70	313.60	8,042.6	1.4	2.4	-1.4	0.10	0.00	-8.06
8,232.0	1.30	341.70	8,231.6	4.3	0.9	-4.3	0.40	0.32	14.87
8,422.0	1.10	326.70	8,421.5	7.8	-0.8	-7.8	0.20	-0.11	-7.89
8,611.0	1.10	300.40	8,610.5	10.3	-3.4	-10.3	0.26	0.00	-13.92
8,800.0	1.10	295.10	8,799.5	12.0	-6.6	-12.0	0.05	0.00	-2.80
8,895.0	1.50	332.20	8,894.4	13.4	-8.0	-13.5	0.96	0.42	39.05
8,989.0	0.60	32.40	8,988.4	14.9	-8.3	-15.0	1.39	-0.96	64.04
9,178.0	0.70	20.90	9,177.4	16.9	-7.3	-16.9	0.09	0.05	-6.08
9,273.0	0.80	29.40	9,272.4	18.0	-6.8	-18.0	0.16	0.11	8.95
9,463.0	0.60	62.30	9,462.4	19.6	-5.3	-19.6	0.23	-0.11	17.32
9,653.0	0.70	74.80	9,652.4	20.4	-3.3	-20.4	0.09	0.05	6.58
9,843.0	0.60	24.20	9,842.4	21.6	-1.7	-21.6	0.30	-0.05	-26.63
10,032.0	1.50	289.40	10,031.3	23.3	-3.7	-23.3	0.88	0.48	-50.16
10,221.0	0.50	215.60	10,220.3	23.4	-6.5	-23.5	0.76	-0.53	-39.05
10,410.0	0.40	187.10	10,409.3	22.1	-7.1	-22.2	0.13	-0.05	-15.08
10,599.0	1.40	206.00	10,598.3	19.4	-8.1	-19.4	0.54	0.53	10.00
10,663.0	2.40	193.00	10,662.2	17.4	-8.8	-17.4	1.69	1.56	-20.31
KOP: 10663.0' MD, 10662.2' TVD									
10,695.0	6.10	174.70	10,694.2	15.0	-8.8	-15.1	12.17	11.56	-57.19
10,727.0	10.10	169.70	10,725.8	10.6	-8.1	-10.6	12.68	12.50	-15.63
10,758.0	12.90	168.70	10,756.2	4.5	-7.0	-4.6	9.05	9.03	-3.23
10,790.0	16.00	166.20	10,787.2	-3.3	-5.2	3.2	9.88	9.69	-7.81
10,821.0	19.20	167.60	10,816.7	-12.4	-3.1	12.4	10.41	10.32	4.52
10,853.0	23.20	166.70	10,846.6	-23.7	-0.5	23.7	12.54	12.50	-2.81
10,884.0	27.30	166.20	10,874.6	-36.5	2.6	36.5	13.24	13.23	-1.61
10,916.0	31.00	167.80	10,902.5	-51.7	6.1	51.8	11.82	11.56	5.00
10,948.0	34.60	169.70	10,929.4	-68.7	9.5	68.8	11.70	11.25	5.94
10,979.0	38.30	171.40	10,954.4	-86.9	12.5	87.0	12.37	11.94	5.48
11,011.0	41.90	172.70	10,978.8	-107.3	15.3	107.4	11.55	11.25	4.06
11,042.0	45.20	175.00	11,001.3	-128.5	17.6	128.6	11.81	10.65	7.42
11,045.0	45.47	175.07	11,003.4	-130.7	17.8	130.8	9.18	9.03	2.35
Cross 330' Hardline at 11045.0' MD, 45.47° INC, 175.07° AZ									
11,073.0	48.00	175.70	11,022.6	-151.0	19.4	151.1	9.18	9.03	2.25
11,105.0	51.20	177.50	11,043.3	-175.3	20.8	175.4	10.88	10.00	5.63
11,137.0	56.00	179.00	11,062.3	-201.0	21.6	201.2	15.47	15.00	4.69
11,168.0	60.60	179.20	11,078.6	-227.4	22.0	227.5	14.85	14.84	0.65
11,200.0	66.00	179.00	11,093.0	-256.0	22.5	256.1	16.88	16.88	-0.63

Survey Report

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
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11,231.0	69.60	180.40	11,104.7	-284.7	22.6	284.8	12.34	11.61	4.52
11,263.0	72.00	182.50	11,115.2	-314.9	21.9	315.0	9.73	7.50	6.56
11,294.0	74.90	182.90	11,124.0	-344.6	20.5	344.7	9.44	9.35	1.29
11,326.0	78.00	182.40	11,131.5	-375.6	19.0	375.7	9.81	9.69	-1.56
11,357.0	81.40	182.40	11,137.1	-406.1	17.7	406.2	10.97	10.97	0.00
11,389.0	84.60	181.90	11,141.0	-437.8	16.5	437.9	10.12	10.00	-1.56
11,420.0	88.20	181.00	11,142.9	-468.8	15.8	468.8	11.97	11.61	-2.90
11,451.0	90.20	180.80	11,143.4	-499.7	15.3	499.8	6.48	6.45	-0.65
EOC: 11451.0' MD, 11143.4' TVD, 90.20° INC, 180.80° AZ, 499.8' VS									
11,514.0	91.10	181.90	11,142.6	-562.7	13.8	562.8	2.26	1.43	1.75
11,610.0	90.70	182.70	11,141.1	-658.6	9.9	658.7	0.93	-0.42	0.83
11,704.0	91.40	183.40	11,139.4	-752.5	4.9	752.5	1.05	0.74	0.74
11,799.0	89.60	183.40	11,138.6	-847.3	-0.7	847.3	1.89	-1.89	0.00
11,893.0	89.00	181.80	11,139.7	-941.2	-5.0	941.2	1.82	-0.64	-1.70
11,989.0	89.00	179.90	11,141.4	-1,037.2	-6.4	1,037.1	1.98	0.00	-1.98
12,083.0	90.00	180.60	11,142.2	-1,131.2	-6.8	1,131.1	1.30	1.06	0.74
12,178.0	90.40	179.00	11,141.9	-1,226.2	-6.5	1,226.1	1.74	0.42	-1.68
12,273.0	90.90	179.10	11,140.8	-1,321.1	-4.9	1,321.1	0.54	0.53	0.11
12,367.0	89.90	179.00	11,140.2	-1,415.1	-3.3	1,415.1	1.07	-1.06	-0.11
12,462.0	90.70	179.10	11,139.7	-1,510.1	-1.7	1,510.1	0.85	0.84	0.11
12,557.0	89.30	178.90	11,139.7	-1,605.1	-0.1	1,605.1	1.49	-1.47	-0.21
12,652.0	90.00	179.00	11,140.2	-1,700.1	1.6	1,700.1	0.74	0.74	0.11
12,747.0	89.90	179.40	11,140.3	-1,795.1	3.0	1,795.0	0.43	-0.11	0.42
12,841.0	90.00	180.10	11,140.4	-1,889.1	3.4	1,889.0	0.75	0.11	0.74
12,936.0	90.00	180.20	11,140.4	-1,984.1	3.1	1,984.0	0.11	0.00	0.11
13,031.0	90.50	178.70	11,140.0	-2,079.1	4.0	2,079.0	1.66	0.53	-1.58
13,126.0	90.60	179.00	11,139.1	-2,174.0	6.0	2,174.0	0.33	0.11	0.32
13,222.0	90.70	179.10	11,138.0	-2,270.0	7.5	2,270.0	0.15	0.10	0.10
13,317.0	90.30	178.20	11,137.2	-2,365.0	9.8	2,365.0	1.04	-0.42	-0.95
13,412.0	90.20	178.80	11,136.8	-2,459.9	12.3	2,460.0	0.64	-0.11	0.63
13,506.0	89.80	179.30	11,136.8	-2,553.9	13.8	2,554.0	0.68	-0.43	0.53
13,601.0	90.20	179.40	11,136.8	-2,648.9	14.9	2,649.0	0.43	0.42	0.11
13,695.0	90.70	179.50	11,136.0	-2,742.9	15.8	2,743.0	0.54	0.53	0.11
13,789.0	91.00	179.90	11,134.6	-2,836.9	16.3	2,836.9	0.53	0.32	0.43
13,884.0	90.20	179.30	11,133.6	-2,931.9	17.0	2,931.9	1.05	-0.84	-0.63
13,979.0	90.20	179.90	11,133.3	-3,026.9	17.6	3,026.9	0.63	0.00	0.63
14,073.0	90.00	180.40	11,133.1	-3,120.9	17.4	3,120.9	0.57	-0.21	0.53
14,168.0	91.00	180.80	11,132.3	-3,215.9	16.4	3,215.9	1.13	1.05	0.42
14,262.0	91.10	179.70	11,130.6	-3,309.9	16.0	3,309.9	1.17	0.11	-1.17
14,356.0	90.70	180.00	11,129.1	-3,403.8	16.2	3,403.9	0.53	-0.43	0.32
14,451.0	90.30	180.90	11,128.3	-3,498.8	15.5	3,498.9	1.04	-0.42	0.95
14,545.0	91.40	179.00	11,126.9	-3,592.8	15.6	3,592.9	2.34	1.17	-2.02
14,640.0	90.70	177.90	11,125.1	-3,687.8	18.1	3,687.8	1.37	-0.74	-1.16
14,735.0	90.70	178.40	11,124.0	-3,782.7	21.2	3,782.8	0.53	0.00	0.53

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Heartthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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)
14,830.0	91.00	178.70	11,122.6	-3,877.7	23.6	3,877.7	0.45	0.32	0.32
14,924.0	89.30	178.30	11,122.3	-3,971.6	26.1	3,971.7	1.86	-1.81	-0.43
15,019.0	89.80	177.70	11,123.1	-4,066.6	29.4	4,066.7	0.82	0.53	-0.63
15,114.0	90.60	178.30	11,122.7	-4,161.5	32.7	4,161.6	1.05	0.84	0.63
15,208.0	90.30	178.80	11,122.0	-4,255.5	35.1	4,255.6	0.62	-0.32	0.53
15,303.0	90.20	180.00	11,121.6	-4,350.5	36.1	4,350.6	1.27	-0.11	1.26
15,398.0	90.30	180.90	11,121.2	-4,445.5	35.3	4,445.6	0.95	0.11	0.95
15,493.0	91.10	181.20	11,120.0	-4,540.4	33.6	4,540.6	0.90	0.84	0.32
15,588.0	90.20	180.80	11,118.9	-4,635.4	31.9	4,635.5	1.04	-0.95	-0.42
15,681.0	90.60	180.90	11,118.3	-4,728.4	30.5	4,728.5	0.44	0.43	0.11
15,716.0	90.89	181.04	11,117.8	-4,763.4	29.9	4,763.5	0.92	0.82	0.41
Cross 330; Hardline: 15716.0' MD, 11117.8' TVD									
15,754.0	91.20	181.20	11,117.1	-4,801.4	29.2	4,801.5	0.92	0.82	0.41
Final MWD Survey: 15754.0' MD, 11117.1' TVD, -4801.4' +N/-S, 29.2' +E/-W									
15,815.0	91.20	181.20	11,115.9	-4,862.4	27.9	4,862.4	0.00	0.00	0.00
TD: 15815.0' MD, 11115.9' TVD - BHL: 15815.0' MD, 11115.9' TVD, 91.20° INC, 181.20° AZ, -4862.4' +N/-S, 27.9' +E/-W, 4862.4' VS									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,663.0	10,662.2	17.4	-8.8	KOP: 10663.0' MD, 10662.2' TVD
11,045.0	11,003.4	-130.7	17.8	Cross 330' Hardline at 11045.0' MD, 45.47° INC, 175.07° AZ
11,451.0	11,143.4	-499.7	15.3	EOC: 11451.0' MD, 11143.4' TVD, 90.20° INC, 180.80° AZ, 499.8' VS
15,716.0	11,117.8	-4,763.4	29.9	Cross 330; Hardline: 15716.0' MD, 11117.8' TVD
15,754.0	11,117.1	-4,801.4	29.2	Final MWD Survey: 15754.0' MD, 11117.1' TVD, -4801.4' +N/-S, 29.2' +E/-W
15,815.0	11,115.9	-4,862.4	27.9	TD: 15815.0' MD, 11115.9' TVD
15,815.0	11,115.9	-4,862.4	27.9	BHL: 15815.0' MD, 11115.9' TVD, 91.20° INC, 181.20° AZ, -4862.4' +N/-S, 27.9'

Checked By: _____ Approved By: _____ Date: _____

HOBBS OCD

JUN 20 2014

RECEIVED

Yates Petroleum

Lea County, NM (NAD-83)

Heartthrob BSX State

#1H

OH

Design: OH

Survey Report - Geographic

21 April, 2014

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Hearthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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	Hearthrob BSX State		
Site Position:		Northing:	446,154.41 usft
From:	Map	Easting:	769,083.10 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 27.873 N
		Longitude:	103° 35' 48.664 W
		Grid Convergence:	0.39 °

Well	#1H		
Well Position	+N/-S	0.0 usft	Northing: 446,147.87 usft
	+E/-W	0.0 usft	Easting: 767,883.28 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 13' 27.889 N
		Longitude:	103° 36' 2.632 W
		Ground Level:	3,575.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	3/4/2014	(°)
			7.26
			Dip Angle
			(°)
			60.11
			Field Strength
			(nT)
			48,340

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.67

Survey Program	Date	4/21/2014		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	15,815.0	Survey #1 - Crescent MWD Survey (OH)	MWD	MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map			
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude	
(usft)			(usft)			(usft)	(usft)			
0.0	0.00	0.00	0.0	0.0	0.0	446,147.87	767,883.28	32° 13' 27.889 N	103° 36' 2.632 W	
100.0	0.70	97.54	100.0	-0.1	0.6	446,147.79	767,883.88	32° 13' 27.889 N	103° 36' 2.625 W	
200.0	0.92	127.76	200.0	-0.7	1.8	446,147.22	767,885.12	32° 13' 27.883 N	103° 36' 2.610 W	
300.0	0.89	133.76	300.0	-1.7	3.0	446,146.19	767,886.32	32° 13' 27.873 N	103° 36' 2.596 W	
400.0	0.62	127.11	400.0	-2.5	4.0	446,145.33	767,887.31	32° 13' 27.864 N	103° 36' 2.585 W	
500.0	0.67	106.25	500.0	-3.0	5.0	446,144.84	767,888.30	32° 13' 27.859 N	103° 36' 2.573 W	
600.0	0.94	127.84	600.0	-3.7	6.2	446,144.17	767,889.51	32° 13' 27.852 N	103° 36' 2.559 W	
700.0	0.27	133.92	699.9	-4.4	7.1	446,143.50	767,890.33	32° 13' 27.846 N	103° 36' 2.550 W	
800.0	0.03	297.39	799.9	-4.5	7.2	446,143.35	767,890.48	32° 13' 27.844 N	103° 36' 2.548 W	
900.0	0.23	187.54	899.9	-4.7	7.2	446,143.16	767,890.43	32° 13' 27.842 N	103° 36' 2.549 W	
1,000.0	0.18	335.53	999.9	-4.8	7.1	446,143.11	767,890.34	32° 13' 27.842 N	103° 36' 2.550 W	
1,100.0	0.33	291.64	1,099.9	-4.5	6.7	446,143.36	767,890.00	32° 13' 27.844 N	103° 36' 2.554 W	

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD=83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Heartthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,200.0	0.24	311.73	1,199.9	-4.3	6.3	446,143.60	767,889.58	32° 13' 27.847 N	103° 36' 2.559 W
1,325.0	0.10	230.00	1,324.9	-4.2	6.0	446,143.71	767,889.30	32° 13' 27.848 N	103° 36' 2.562 W
1,515.0	0.10	136.00	1,514.9	-4.4	6.0	446,143.48	767,889.29	32° 13' 27.846 N	103° 36' 2.562 W
1,705.0	0.10	73.50	1,704.9	-4.5	6.3	446,143.41	767,889.56	32° 13' 27.845 N	103° 36' 2.559 W
1,893.0	0.10	263.50	1,892.9	-4.4	6.3	446,143.44	767,889.56	32° 13' 27.845 N	103° 36' 2.559 W
2,083.0	0.20	266.00	2,082.9	-4.5	5.8	446,143.39	767,889.06	32° 13' 27.845 N	103° 36' 2.565 W
2,273.0	0.10	3.70	2,272.9	-4.3	5.5	446,143.54	767,888.74	32° 13' 27.846 N	103° 36' 2.568 W
2,463.0	0.20	343.70	2,462.9	-3.8	5.4	446,144.02	767,888.66	32° 13' 27.851 N	103° 36' 2.569 W
2,652.0	0.20	315.40	2,651.9	-3.3	5.1	446,144.57	767,888.33	32° 13' 27.857 N	103° 36' 2.573 W
2,842.0	0.10	177.10	2,841.9	-3.2	4.8	446,144.64	767,888.11	32° 13' 27.857 N	103° 36' 2.576 W
3,032.0	0.10	56.40	3,031.9	-3.3	5.0	446,144.57	767,888.26	32° 13' 27.856 N	103° 36' 2.574 W
3,220.0	0.20	56.60	3,219.9	-3.0	5.4	446,144.84	767,888.67	32° 13' 27.859 N	103° 36' 2.569 W
3,409.0	0.40	78.20	3,408.9	-2.7	6.3	446,145.16	767,889.59	32° 13' 27.862 N	103° 36' 2.558 W
3,504.0	0.40	83.60	3,503.9	-2.6	7.0	446,145.26	767,890.24	32° 13' 27.863 N	103° 36' 2.551 W
3,600.0	0.30	286.10	3,599.9	-2.5	7.1	446,145.37	767,890.33	32° 13' 27.864 N	103° 36' 2.550 W
3,694.0	0.40	277.70	3,693.9	-2.4	6.5	446,145.48	767,889.77	32° 13' 27.865 N	103° 36' 2.556 W
3,788.0	0.40	263.00	3,787.9	-2.4	5.8	446,145.49	767,889.12	32° 13' 27.865 N	103° 36' 2.564 W
3,882.0	0.30	229.10	3,881.9	-2.6	5.3	446,145.28	767,888.61	32° 13' 27.864 N	103° 36' 2.570 W
3,977.0	0.50	218.70	3,976.9	-3.1	4.9	446,144.80	767,888.16	32° 13' 27.859 N	103° 36' 2.575 W
4,071.0	0.60	216.40	4,070.9	-3.8	4.3	446,144.08	767,887.61	32° 13' 27.852 N	103° 36' 2.582 W
4,166.0	0.70	197.10	4,165.9	-4.7	3.9	446,143.13	767,887.15	32° 13' 27.842 N	103° 36' 2.587 W
4,261.0	0.80	188.50	4,260.9	-6.0	3.6	446,141.92	767,886.88	32° 13' 27.830 N	103° 36' 2.590 W
4,356.0	1.10	177.90	4,355.9	-7.5	3.5	446,140.35	767,886.82	32° 13' 27.815 N	103° 36' 2.591 W
4,451.0	1.30	170.50	4,450.9	-9.5	3.7	446,138.37	767,887.03	32° 13' 27.795 N	103° 36' 2.589 W
4,545.0	1.00	182.30	4,544.9	-11.4	3.9	446,136.50	767,887.17	32° 13' 27.777 N	103° 36' 2.587 W
4,640.0	0.80	169.20	4,639.8	-12.8	4.0	446,135.02	767,887.26	32° 13' 27.762 N	103° 36' 2.586 W
4,735.0	1.10	148.10	4,734.8	-14.3	4.6	446,133.60	767,887.87	32° 13' 27.748 N	103° 36' 2.579 W
4,829.0	1.10	135.00	4,828.8	-15.7	5.7	446,132.19	767,888.98	32° 13' 27.734 N	103° 36' 2.567 W
4,924.0	0.70	106.30	4,923.8	-16.5	6.9	446,131.39	767,890.18	32° 13' 27.726 N	103° 36' 2.553 W
5,019.0	0.50	103.90	5,018.8	-16.7	7.9	446,131.12	767,891.14	32° 13' 27.723 N	103° 36' 2.541 W
5,087.0	0.40	107.60	5,086.8	-16.9	8.4	446,130.98	767,891.66	32° 13' 27.722 N	103° 36' 2.536 W
5,200.0	0.50	135.60	5,199.8	-17.4	9.1	446,130.51	767,892.38	32° 13' 27.717 N	103° 36' 2.527 W
5,390.0	0.50	154.40	5,389.8	-18.7	10.0	446,129.17	767,893.32	32° 13' 27.704 N	103° 36' 2.516 W
5,485.0	0.40	138.40	5,484.8	-19.3	10.4	446,128.55	767,893.72	32° 13' 27.698 N	103° 36' 2.512 W
5,673.0	0.40	146.80	5,672.8	-20.4	11.2	446,127.51	767,894.51	32° 13' 27.687 N	103° 36' 2.503 W
5,862.0	0.40	154.70	5,861.8	-21.5	11.9	446,126.36	767,895.15	32° 13' 27.676 N	103° 36' 2.495 W
5,957.0	0.40	15.30	5,956.8	-21.5	12.1	446,126.38	767,895.38	32° 13' 27.676 N	103° 36' 2.492 W
6,052.0	0.40	16.30	6,051.8	-20.9	12.3	446,127.02	767,895.56	32° 13' 27.682 N	103° 36' 2.490 W
6,241.0	0.80	348.90	6,240.8	-18.9	12.2	446,128.95	767,895.49	32° 13' 27.701 N	103° 36' 2.491 W
6,431.0	0.90	344.70	6,430.7	-16.2	11.6	446,131.69	767,894.85	32° 13' 27.729 N	103° 36' 2.498 W
6,620.0	0.90	358.10	6,619.7	-13.3	11.1	446,134.60	767,894.40	32° 13' 27.757 N	103° 36' 2.503 W
6,810.0	0.70	338.30	6,809.7	-10.7	10.6	446,137.17	767,893.93	32° 13' 27.783 N	103° 36' 2.509 W
6,999.0	0.60	338.70	6,998.7	-8.7	9.9	446,139.17	767,893.14	32° 13' 27.803 N	103° 36' 2.518 W
7,189.0	0.40	342.80	7,188.7	-7.1	9.3	446,140.73	767,892.58	32° 13' 27.818 N	103° 36' 2.524 W
7,379.0	0.60	314.70	7,378.7	-5.8	8.4	446,142.06	767,891.68	32° 13' 27.831 N	103° 36' 2.534 W
7,569.0	1.00	301.10	7,568.6	-4.3	6.3	446,143.62	767,889.55	32° 13' 27.847 N	103° 36' 2.559 W
7,664.0	1.10	335.20	7,663.6	-3.0	5.2	446,144.87	767,888.46	32° 13' 27.859 N	103° 36' 2.572 W
7,852.0	0.70	329.00	7,851.6	-0.4	3.8	446,147.49	767,887.11	32° 13' 27.886 N	103° 36' 2.587 W
8,043.0	0.70	313.60	8,042.6	1.4	2.4	446,149.30	767,885.67	32° 13' 27.903 N	103° 36' 2.604 W
8,232.0	1.30	341.70	8,231.6	4.3	0.9	446,152.13	767,884.16	32° 13' 27.932 N	103° 36' 2.621 W
8,422.0	1.10	326.70	8,421.5	7.8	-0.8	446,155.70	767,882.48	32° 13' 27.967 N	103° 36' 2.640 W
8,611.0	1.10	300.40	8,610.5	10.3	-3.4	446,158.14	767,879.92	32° 13' 27.991 N	103° 36' 2.670 W
8,800.0	1.10	295.10	8,799.5	12.0	-6.6	446,159.82	767,876.71	32° 13' 28.008 N	103° 36' 2.707 W
8,895.0	1.50	332.20	8,894.4	13.4	-8.0	446,161.31	767,875.30	32° 13' 28.023 N	103° 36' 2.723 W
8,989.0	0.60	32.40	8,988.4	14.9	-8.3	446,162.81	767,874.99	32° 13' 28.038 N	103° 36' 2.727 W

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Heartthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,178.0	0.70	20.90	9,177.4	16.9	-7.3	446,164.73	767,875.94	32° 13' 28.057 N	103° 36' 2.716 W
9,273.0	0.80	29.40	9,272.4	18.0	-6.8	446,165.85	767,876.47	32° 13' 28.068 N	103° 36' 2.710 W
9,463.0	0.60	62.30	9,462.4	19.6	-5.3	446,167.47	767,878.00	32° 13' 28.084 N	103° 36' 2.692 W
9,653.0	0.70	74.80	9,652.4	20.4	-3.3	446,168.23	767,880.00	32° 13' 28.091 N	103° 36' 2.668 W
9,843.0	0.60	24.20	9,842.4	21.6	-1.7	446,169.44	767,881.53	32° 13' 28.103 N	103° 36' 2.650 W
10,032.0	1.50	289.40	10,031.3	23.3	-3.7	446,171.17	767,879.60	32° 13' 28.120 N	103° 36' 2.673 W
10,221.0	0.50	215.60	10,220.3	23.4	-6.5	446,171.32	767,876.79	32° 13' 28.122 N	103° 36' 2.705 W
10,410.0	0.40	187.10	10,409.3	22.1	-7.1	446,169.99	767,876.23	32° 13' 28.109 N	103° 36' 2.712 W
10,599.0	1.40	206.00	10,598.3	19.4	-8.1	446,167.26	767,875.13	32° 13' 28.082 N	103° 36' 2.725 W
10,663.0	2.40	193.00	10,662.2	17.4	-8.8	446,165.26	767,874.49	32° 13' 28.062 N	103° 36' 2.733 W
KOP: 10663.0' MD, 10662.2' TVD									
10,695.0	6.10	174.70	10,694.2	15.0	-8.8	446,162.91	767,874.50	32° 13' 28.039 N	103° 36' 2.733 W
10,727.0	10.10	169.70	10,725.8	10.6	-8.1	446,158.45	767,875.15	32° 13' 27.995 N	103° 36' 2.725 W
10,758.0	12.90	168.70	10,756.2	4.5	-7.0	446,152.39	767,876.32	32° 13' 27.935 N	103° 36' 2.712 W
10,790.0	16.00	166.20	10,787.2	-3.3	-5.2	446,144.60	767,878.07	32° 13' 27.857 N	103° 36' 2.693 W
10,821.0	19.20	167.60	10,816.7	-12.4	-3.1	446,135.47	767,880.18	32° 13' 27.767 N	103° 36' 2.669 W
10,853.0	23.20	166.70	10,846.6	-23.7	-0.5	446,124.19	767,882.77	32° 13' 27.655 N	103° 36' 2.640 W
10,884.0	27.30	166.20	10,874.6	-36.5	2.6	446,111.34	767,885.87	32° 13' 27.528 N	103° 36' 2.604 W
10,916.0	31.00	167.80	10,902.5	-51.7	6.1	446,096.15	767,889.36	32° 13' 27.377 N	103° 36' 2.565 W
10,948.0	34.60	169.70	10,929.4	-68.7	9.5	446,079.15	767,892.73	32° 13' 27.209 N	103° 36' 2.527 W
10,979.0	38.30	171.40	10,954.4	-86.9	12.5	446,060.99	767,895.74	32° 13' 27.029 N	103° 36' 2.494 W
11,011.0	41.90	172.70	10,978.8	-107.3	15.3	446,040.58	767,898.58	32° 13' 26.827 N	103° 36' 2.462 W
11,042.0	45.20	175.00	11,001.3	-128.5	17.6	446,019.34	767,900.86	32° 13' 26.617 N	103° 36' 2.437 W
11,045.0	45.47	175.07	11,003.4	-130.7	17.8	446,017.22	767,901.04	32° 13' 26.595 N	103° 36' 2.435 W
Cross 330' Hardline at 11045.0' MD, 45.47° INC, 175.07° AZ									
11,073.0	48.00	175.70	11,022.6	-151.0	19.4	445,996.90	767,902.68	32° 13' 26.394 N	103° 36' 2.418 W
11,105.0	51.20	177.50	11,043.3	-175.3	20.8	445,972.58	767,904.11	32° 13' 26.153 N	103° 36' 2.403 W
11,137.0	56.00	179.00	11,062.3	-201.0	21.6	445,946.84	767,904.89	32° 13' 25.899 N	103° 36' 2.396 W
11,168.0	60.60	179.20	11,078.6	-227.4	22.0	445,920.47	767,905.30	32° 13' 25.638 N	103° 36' 2.393 W
11,200.0	66.00	179.00	11,093.0	-256.0	22.5	445,891.90	767,905.75	32° 13' 25.355 N	103° 36' 2.390 W
11,231.0	69.60	180.40	11,104.7	-284.7	22.6	445,863.20	767,905.90	32° 13' 25.071 N	103° 36' 2.391 W
11,263.0	72.00	182.50	11,115.2	-314.9	21.9	445,833.00	767,905.13	32° 13' 24.772 N	103° 36' 2.402 W
11,294.0	74.90	182.90	11,124.0	-344.6	20.5	445,803.32	767,903.73	32° 13' 24.479 N	103° 36' 2.421 W
11,326.0	78.00	182.40	11,131.5	-375.6	19.0	445,772.25	767,902.29	32° 13' 24.171 N	103° 36' 2.440 W
11,357.0	81.40	182.40	11,137.1	-406.1	17.7	445,741.78	767,901.02	32° 13' 23.870 N	103° 36' 2.457 W
11,389.0	84.60	181.90	11,141.0	-437.8	16.5	445,710.04	767,899.82	32° 13' 23.556 N	103° 36' 2.474 W
11,420.0	88.20	181.00	11,142.9	-468.8	15.8	445,679.12	767,899.04	32° 13' 23.250 N	103° 36' 2.485 W
11,451.0	90.20	180.80	11,143.4	-499.7	15.3	445,648.13	767,898.56	32° 13' 22.943 N	103° 36' 2.494 W
EOC: 11451.0' MD, 11143.4' TVD, 90.20° INC, 180.80° AZ, 499.8' VS									
11,514.0	91.10	181.90	11,142.6	-562.7	13.8	445,585.15	767,897.07	32° 13' 22.320 N	103° 36' 2.516 W
11,610.0	90.70	182.70	11,141.1	-658.6	9.9	445,489.24	767,893.22	32° 13' 21.372 N	103° 36' 2.568 W
11,704.0	91.40	183.40	11,139.4	-752.5	4.9	445,395.39	767,888.22	32° 13' 20.443 N	103° 36' 2.634 W
11,799.0	89.60	183.40	11,138.6	-847.3	-0.7	445,300.57	767,882.58	32° 13' 19.505 N	103° 36' 2.707 W
11,893.0	89.00	181.80	11,139.7	-941.2	-5.0	445,206.67	767,878.32	32° 13' 18.576 N	103° 36' 2.764 W
11,989.0	89.00	179.90	11,141.4	-1,037.2	-6.4	445,110.70	767,876.90	32° 13' 17.627 N	103° 36' 2.788 W
12,083.0	90.00	180.60	11,142.2	-1,131.2	-6.8	445,016.71	767,876.49	32° 13' 16.697 N	103° 36' 2.801 W
12,178.0	90.40	179.00	11,141.9	-1,226.2	-6.5	444,921.71	767,876.82	32° 13' 15.757 N	103° 36' 2.804 W
12,273.0	90.90	179.10	11,140.8	-1,321.1	-4.9	444,826.73	767,878.39	32° 13' 14.817 N	103° 36' 2.793 W
12,367.0	89.90	179.00	11,140.2	-1,415.1	-3.3	444,732.75	767,879.95	32° 13' 13.887 N	103° 36' 2.783 W
12,462.0	90.70	179.10	11,139.7	-1,510.1	-1.7	444,637.76	767,881.53	32° 13' 12.947 N	103° 36' 2.772 W
12,557.0	89.30	178.90	11,139.7	-1,605.1	-0.1	444,542.78	767,883.19	32° 13' 12.007 N	103° 36' 2.760 W
12,652.0	90.00	179.00	11,140.2	-1,700.1	1.6	444,447.80	767,884.93	32° 13' 11.067 N	103° 36' 2.747 W
12,747.0	89.90	179.40	11,140.3	-1,795.1	3.0	444,352.81	767,886.25	32° 13' 10.127 N	103° 36' 2.740 W
12,841.0	90.00	180.10	11,140.4	-1,889.1	3.4	444,258.81	767,886.66	32° 13' 9.197 N	103° 36' 2.742 W
12,936.0	90.00	180.20	11,140.4	-1,984.1	3.1	444,163.81	767,886.41	32° 13' 8.257 N	103° 36' 2.753 W

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Site:	Heartthrob BSX State	MD Reference:	RKB @ 3600.0usft (Cactus 124 KB=25')
Well:	#1H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,031.0	90.50	178.70	11,140.0	-2,079.1	4.0	444,068.82	767,887.33	32° 13' 7.316 N	103° 36' 2.750 W	
13,126.0	90.60	179.00	11,139.1	-2,174.0	6.0	443,973.84	767,889.23	32° 13' 6.377 N	103° 36' 2.735 W	
13,222.0	90.70	179.10	11,138.0	-2,270.0	7.5	443,877.86	767,890.82	32° 13' 5.427 N	103° 36' 2.724 W	
13,317.0	90.30	178.20	11,137.2	-2,365.0	9.8	443,782.89	767,893.06	32° 13' 4.487 N	103° 36' 2.706 W	
13,412.0	90.20	178.80	11,136.8	-2,459.9	12.3	443,687.93	767,895.55	32° 13' 3.547 N	103° 36' 2.684 W	
13,506.0	89.80	179.30	11,136.8	-2,553.9	13.8	443,593.94	767,897.11	32° 13' 2.617 N	103° 36' 2.673 W	
13,601.0	90.20	179.40	11,136.8	-2,648.9	14.9	443,498.95	767,898.18	32° 13' 1.677 N	103° 36' 2.668 W	
13,695.0	90.70	179.50	11,136.0	-2,742.9	15.8	443,404.95	767,899.09	32° 13' 0.747 N	103° 36' 2.665 W	
13,789.0	91.00	179.90	11,134.6	-2,836.9	16.3	443,310.97	767,899.58	32° 12' 59.816 N	103° 36' 2.667 W	
13,884.0	90.20	179.30	11,133.6	-2,931.9	17.0	443,215.98	767,900.24	32° 12' 58.876 N	103° 36' 2.667 W	
13,979.0	90.20	179.90	11,133.3	-3,026.9	17.6	443,120.98	767,900.91	32° 12' 57.936 N	103° 36' 2.667 W	
14,073.0	90.00	180.40	11,133.1	-3,120.9	17.4	443,026.98	767,900.66	32° 12' 57.006 N	103° 36' 2.677 W	
14,168.0	91.00	180.80	11,132.3	-3,215.9	16.4	442,931.99	767,899.66	32° 12' 56.066 N	103° 36' 2.696 W	
14,262.0	91.10	179.70	11,130.6	-3,309.9	16.0	442,838.01	767,899.25	32° 12' 55.136 N	103° 36' 2.708 W	
14,356.0	90.70	180.00	11,129.1	-3,403.8	16.2	442,744.02	767,899.50	32° 12' 54.206 N	103° 36' 2.713 W	
14,451.0	90.30	180.90	11,128.3	-3,498.8	15.5	442,649.03	767,898.75	32° 12' 53.266 N	103° 36' 2.729 W	
14,545.0	91.40	179.00	11,126.9	-3,592.8	15.6	442,555.04	767,898.84	32° 12' 52.336 N	103° 36' 2.736 W	
14,640.0	90.70	177.90	11,125.1	-3,687.8	18.1	442,460.10	767,901.41	32° 12' 51.397 N	103° 36' 2.713 W	
14,735.0	90.70	178.40	11,124.0	-3,782.7	21.2	442,365.15	767,904.47	32° 12' 50.457 N	103° 36' 2.685 W	
14,830.0	91.00	178.70	11,122.6	-3,877.7	23.6	442,270.19	767,906.88	32° 12' 49.517 N	103° 36' 2.665 W	
14,924.0	89.30	178.30	11,122.3	-3,971.6	26.1	442,176.23	767,909.34	32° 12' 48.587 N	103° 36' 2.644 W	
15,019.0	89.80	177.70	11,123.1	-4,066.6	29.4	442,081.29	767,912.65	32° 12' 47.648 N	103° 36' 2.612 W	
15,114.0	90.60	178.30	11,122.7	-4,161.5	32.7	441,986.35	767,915.97	32° 12' 46.708 N	103° 36' 2.581 W	
15,208.0	90.30	178.80	11,122.0	-4,255.5	35.1	441,892.39	767,918.35	32° 12' 45.778 N	103° 36' 2.561 W	
15,303.0	90.20	180.00	11,121.6	-4,350.5	36.1	441,797.39	767,919.34	32° 12' 44.838 N	103° 36' 2.557 W	
15,398.0	90.30	180.90	11,121.2	-4,445.5	35.3	441,702.40	767,918.59	32° 12' 43.898 N	103° 36' 2.573 W	
15,493.0	91.10	181.20	11,120.0	-4,540.4	33.6	441,607.42	767,916.85	32° 12' 42.958 N	103° 36' 2.601 W	
15,588.0	90.20	180.80	11,118.9	-4,635.4	31.9	441,512.44	767,915.20	32° 12' 42.019 N	103° 36' 2.628 W	
15,681.0	90.60	180.90	11,118.3	-4,728.4	30.5	441,419.46	767,913.82	32° 12' 41.099 N	103° 36' 2.651 W	
15,716.0	90.89	181.04	11,117.8	-4,763.4	29.9	441,384.46	767,913.22	32° 12' 40.752 N	103° 36' 2.661 W	
Cross 330; Hardline: 15716.0' MD, 11117.8' TVD										
15,754.0	91.20	181.20	11,117.1	-4,801.4	29.2	441,346.48	767,912.48	32° 12' 40.376 N	103° 36' 2.673 W	
Final MWD Survey: 15754.0' MD, 11117.1' TVD, -4801.4' +N/-S, 29.2' +E/-W										
15,815.0	91.20	181.20	11,115.9	-4,862.4	27.9	441,285.51	767,911.20	32° 12' 39.773 N	103° 36' 2.693 W	
TD: 15815.0' MD, 11115.9' TVD - BHL: 15815.0' MD, 11115.9' TVD, 91.20° INC, 181.20° AZ, -4862.4' +N/-S, 27.9' +E/-W, 4862.4' VS										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,663.0	10,662.2	17.4	-8.8	KOP: 10663.0' MD, 10662.2' TVD	
11,045.0	11,003.4	-130.7	17.8	Cross 330' Hardline at 11045.0' MD, 45.47° INC, 175.07° AZ	
11,451.0	11,143.4	-499.7	15.3	EOC: 11451.0' MD, 11143.4' TVD, 90.20° INC, 180.80° AZ, 499.8' VS	
15,716.0	11,117.8	-4,763.4	29.9	Cross 330; Hardline: 15716.0' MD, 11117.8' TVD	
15,754.0	11,117.1	-4,801.4	29.2	Final MWD Survey: 15754.0' MD, 11117.1' TVD, -4801.4' +N/-S, 29.2' +E/-W	
15,815.0	11,115.9	-4,862.4	27.9	TD: 15815.0' MD, 11115.9' TVD	
15,815.0	11,115.9	-4,862.4	27.9	BHL: 15815.0' MD, 11115.9' TVD, 91.20° INC, 181.20° AZ, -4862.4' +N/-S, 27.9'	

Checked By: _____ Approved By: _____ Date: _____



Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Heartthrob BSX State
Well: #1H
Wellbore: OH
Plan: Plan #2 (#1H/OH)

WELL DETAILS: #1H

Ground Elevation:: 3575.0
RKB Elevation: RKB @ 3600.0usft (Cactus 124 KB=25')
Rig Name: Cactus 124 KB=25'

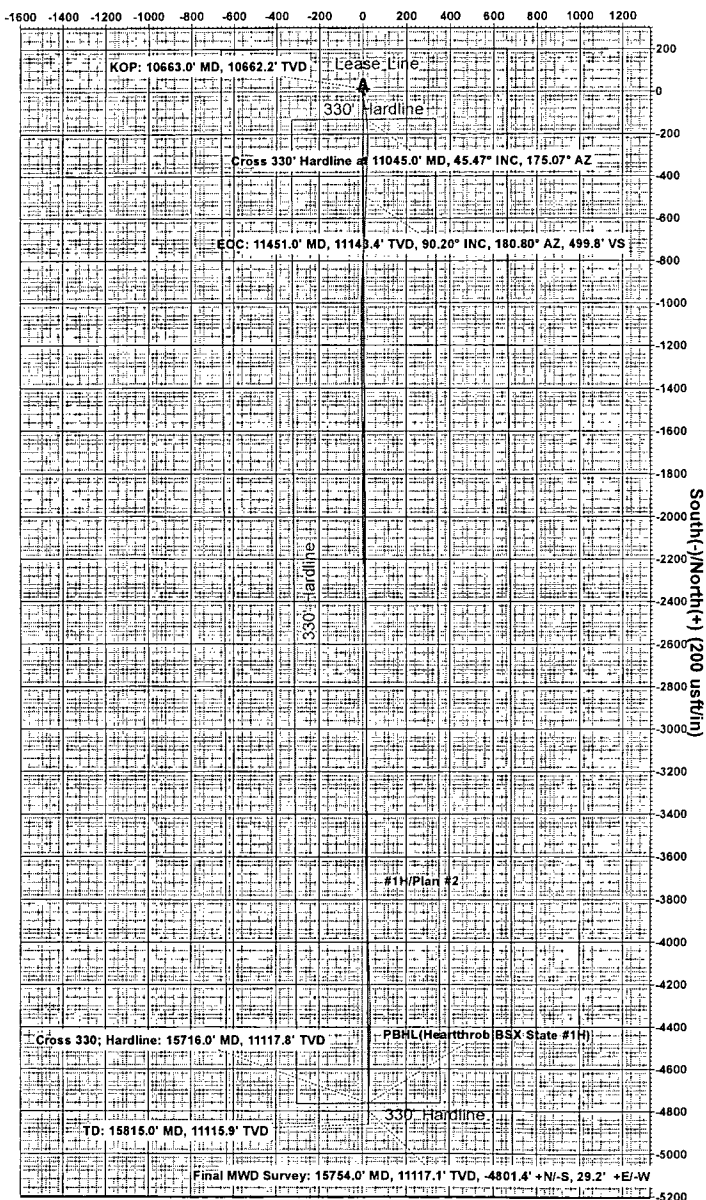
Surface Hole Location
Northing 446147.87 Easting 767883.28 Latitude 32° 13' 27.889 N Longitude 103° 36' 2.632 W



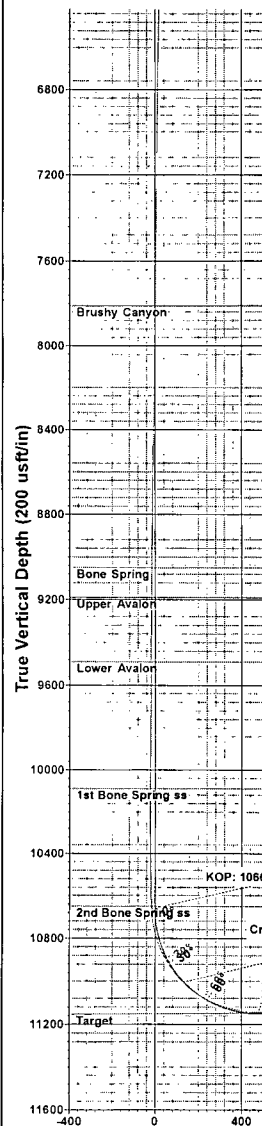
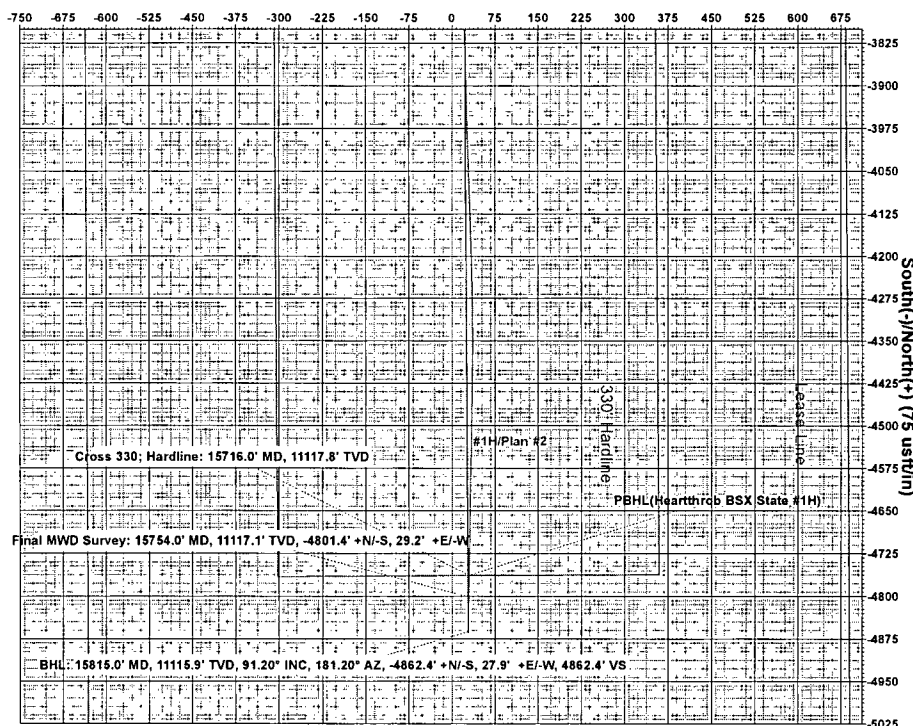
Azimuths to Grid North
True North: -0.39°
Magnetic North: 6.87°

Magnetic Field
Strength: 48340.3snT
Dip Angle: 60.11°
Date: 3/4/2014
Model: IGRF2010

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



West(-)/East(+) (75 usft/in)



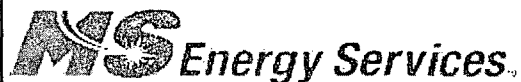
Vertical Section at 179.67° (200 usft/in)

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

Plan: Plan #2 (#1H/OH)
Created By: Adrian Castro Date: 7:57, April 21 2014

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





Job Number: SVM0-140423
 Company: Yates Petroleum Corporation
 Lease/Well: Heartthrob BSX State 1H
 Location: Lea County, NM
 Rig Name: Cactus #124
 RKB: 25'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.87°
 Grid: East To Grid North
 File name: Y:\WINSER~1\2014SU~1\YATES\MO\HEARTT~1\1H.SVY
 Date/Time: 04-Apr-14 / 14:37
 Curve Name: Surface - 1200' M.D. (Rate Gyro)

HOBBS OCD
 JUN 20 2014
 RECEIVED

MS Survey

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 179.67
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 1200 MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
Hercan Reed 4/4/14
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.70	97.54	100.00	-.08	.61	.08	.61	97.54	.70
200.00	.92	127.76	199.99	-.65	1.85	.66	1.96	109.45	.47
300.00	.89	133.76	299.98	-1.68	3.04	1.70	3.47	118.92	.10
400.00	.62	127.11	399.97	-2.54	4.03	2.57	4.77	122.24	.28
500.00	.67	106.25	499.96	-3.03	5.03	3.06	5.87	121.12	.24
600.00	.94	127.84	599.95	-3.70	6.24	3.74	7.25	120.69	.40
700.00	.27	133.92	699.94	-4.37	7.05	4.41	8.30	121.77	.67
800.00	.03	297.39	799.94	-4.52	7.20	4.56	8.50	122.12	.30
900.00	.23	187.54	899.94	-4.71	7.15	4.75	8.56	123.35	.24

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	.18	335.53	999.94	-4.76	7.06	4.80	8.51	124.01	.39
1100.00	.33	291.64	1099.94	-4.51	6.73	4.55	8.10	123.86	.24
Last Survey Depth Recorded									
1200.00	.24	311.73	1199.94	-4.27	6.30	4.30	7.61	124.10	.13