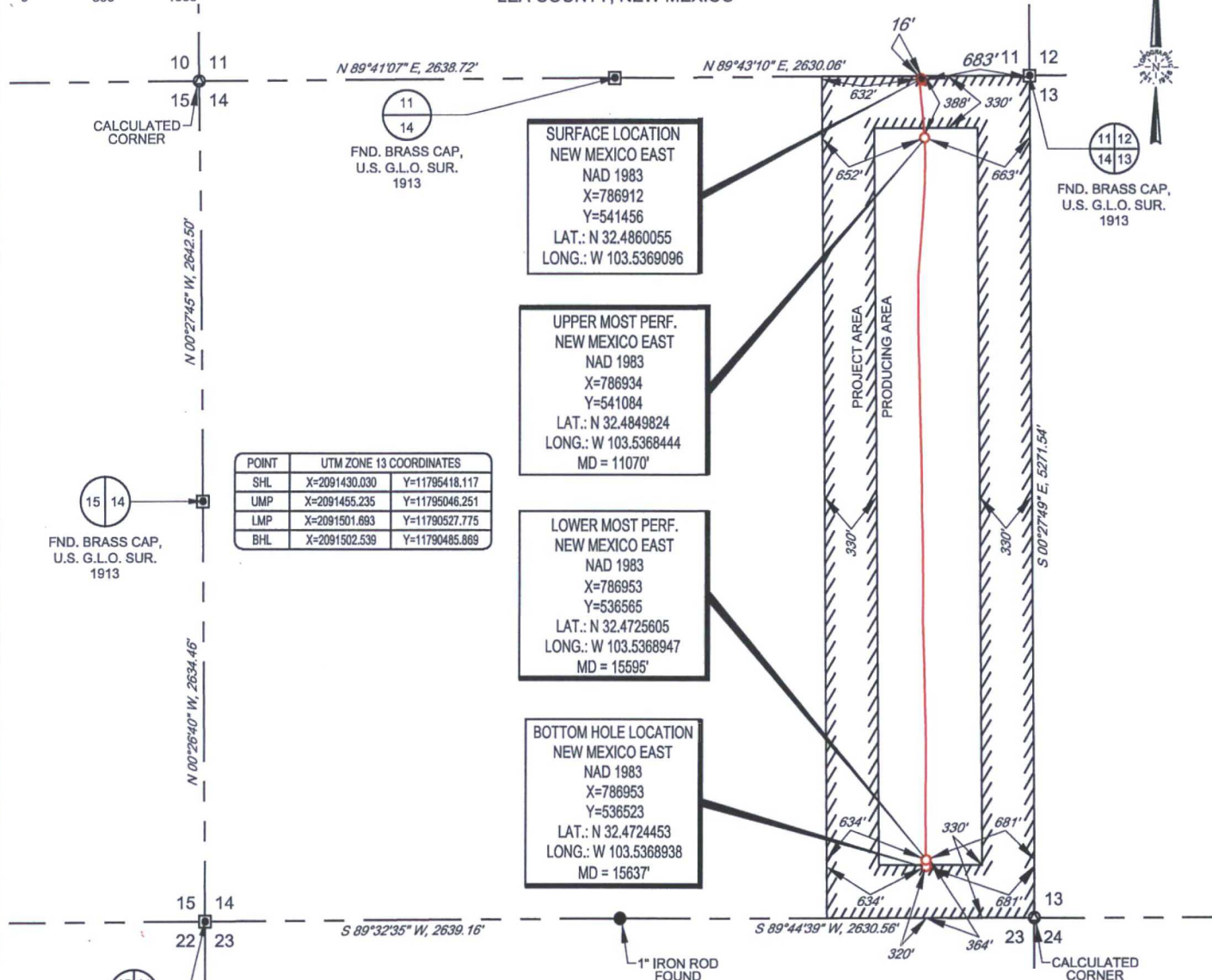


0' 500' 1000'



LEASE NAME & WELL NO.: _____ DATE BTB STATE COM #8H
 SECTION 14 TWP 21-S RGE 33-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 3795'
 DESCRIPTION 16' FNL & 683' FEL



Michael Blake Brown, P.S. No. 18329
AUGUST 22, 2017



 **TOPOGRAPHIC**
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

DATE BTB STATE COM #8H AS-COMPLETED		REVISION:		NOTES: 1. ORIGINAL DOCUMENT SIZE: 8.5" X 11" 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1983. 3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
DATE: 08/21/17				
FILE:AD_DATE_BTBT_STATE_COM_8H				
DRAWN BY: GLH				
SHEET : 1 OF 1				



Job Number: SVMO-141474
 Company: Yates Petroleum Corporation
 Lease/Well: Date BTB State Com 8H
 Location: Lea County, NM
 Rig Name: Nomac #22
 RKB: 21.5'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.78°
 Grid: East To Grid North
 File name: Y:\WINSER~1\2014SU~1\YATES\MO\DATEBT~1\8H.SVY
 Date/Time: 04-Nov-14 / 08:50
 Curve Name: Surface - 1900' M.D. (Rate Gyro)

HOBBS OCD
 SEP 13 2017
 RECEIVED

MS Survey

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 1100' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
Shawn Cooper 11/4/14
 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
200.00	.45	304.22	200.00	.44	-.65	.44	.79	304.22	.23
400.00	.03	70.17	400.00	.90	-1.25	.90	1.54	305.80	.23
600.00	.24	228.15	600.00	.64	-1.51	.64	1.64	292.92	.13
800.00	.14	223.65	799.99	.18	-1.99	.18	2.00	275.25	.05
1000.00	.40	221.44	999.99	-.52	-2.62	-.52	2.67	258.85	.13
1200.00	.25	205.32	1199.99	-1.43	-3.27	-1.43	3.57	246.33	.09
1400.00	.35	245.16	1399.99	-2.09	-4.01	-2.09	4.52	242.54	.11
1600.00	.04	176.90	1599.98	-2.41	-4.56	-2.41	5.16	242.14	.17
1800.00	.17	11.49	1799.98	-2.19	-4.50	-2.19	5.01	244.04	.10

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	
Last Survey Depth Recorded									
1900.00	.09	44.22	1899.98	-1.99	-4.42	-1.99	4.84	245.75	.11

Yates Petroleum

Lea County, NM (NAD-83)

Date BTB State Com

#8H

OH

Design: OH

Standard Survey Report

14 November, 2014

HOBBS OCD
SEP 13 2017
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Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.5')
Site:	Date BTB State Com	MD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.5')
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:	Date BTB State Com				
Site Position:		Northling:	541,458.90 usft	Latitude:	32° 29' 9.632 N
From:	Map	Eastling:	787,085.40 usft	Longitude:	103° 32' 10.845 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	#8H					
Well Position	+N/-S	0.0 usft	Northling:	541,458.20 usft	Latitude:	32° 29' 9.638 N
	+E/-W	0.0 usft	Easting:	786,915.70 usft	Longitude:	103° 32' 12.626 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,791.0 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/10/2014	7.21	80.38	48,468

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	179.54	

Survey Program		Date - 11/14/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	1,900.0	Survey #1 - Gyro (OH)	CB-GYRO-MS	Camera based gyro mullshot
1,932.0	15,577.0	Survey #2- Crescent MWD Surveys (OH)	MWD	MWD - Standard
15,637.2	15,637.2	Survey #3 - PTB (OH)	BLIND	Blind drilling, where no tool is applied

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
1.0	0.00	304.22	1.0	0.0	0.0	0.0	0.22	0.22	0.00
Cranberry #1H									
4.0	0.01	304.22	4.0	0.0	0.0	0.0	0.23	0.23	0.00
Date #4H									
4.1	0.01	304.22	4.1	0.0	0.0	0.0	0.23	0.23	0.00
Cranberry #5H									
200.0	0.45	304.22	200.0	0.4	-0.6	-0.4	0.23	0.23	0.00

Survey Report

Company:	Yales Petroleum	Local Co-ordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.6)
Site:	Dale BTB State Com	MD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.6)
Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

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)
400.0	0.03	70.17	400.0	0.9	-1.2	-0.9	0.23	-0.21	62.98
600.0	0.24	228.15	600.0	0.6	-1.5	-0.7	0.13	0.11	78.99
800.0	0.14	223.65	800.0	0.2	-2.0	-0.2	0.05	-0.05	-2.25
1,000.0	0.40	221.44	1,000.0	-0.5	-2.6	0.5	0.13	0.13	-1.11
1,200.0	0.26	205.32	1,200.0	-1.4	-3.3	1.4	0.09	-0.08	-8.06
1,400.0	0.35	245.16	1,400.0	-2.1	-4.0	2.1	0.11	0.05	19.82
1,600.0	0.04	176.90	1,600.0	-2.4	-4.6	2.4	0.17	-0.16	-34.13
1,800.0	0.17	11.49	1,800.0	-2.2	-4.6	2.2	0.10	0.07	-82.71
1,900.0	0.09	44.22	1,900.0	-2.0	-4.4	2.0	0.11	-0.08	32.73
1,932.0	0.40	333.30	1,932.0	-1.9	-4.4	1.8	1.19	0.97	-221.63
2,087.0	0.90	123.70	2,087.0	-2.1	-3.7	2.0	0.82	0.32	97.03
2,181.0	1.10	113.20	2,181.0	-2.8	-2.2	2.8	0.29	0.21	-11.17
2,275.0	1.10	114.40	2,274.9	-3.6	-0.6	3.6	0.02	0.00	1.28
2,389.0	1.20	117.70	2,388.9	-4.4	1.1	4.4	0.13	0.11	3.51
2,463.0	1.50	120.40	2,462.9	-5.5	3.0	5.5	0.33	0.32	2.87
2,556.0	1.80	119.50	2,555.9	-6.8	5.4	6.8	0.32	0.32	-0.97
2,650.0	1.50	115.10	2,649.8	-8.1	7.8	8.1	0.35	-0.32	-4.68
2,743.0	1.20	115.30	2,742.8	-9.0	9.7	9.1	0.32	-0.32	0.22
2,837.0	1.50	120.20	2,836.8	-10.0	11.7	10.1	0.34	0.32	5.21
2,930.0	1.50	106.70	2,929.7	-11.0	13.9	11.1	0.32	0.00	-12.37
3,024.0	1.30	126.50	3,023.7	-12.1	15.9	12.2	0.51	-0.21	18.04
3,117.0	1.80	107.90	3,116.7	-13.1	18.2	13.3	0.76	0.54	-20.00
3,211.0	1.80	106.70	3,210.6	-14.1	21.0	14.2	0.03	0.00	0.85
3,304.0	1.80	114.40	3,303.6	-15.1	23.7	15.3	0.19	0.00	6.13
3,397.0	1.70	114.40	3,396.5	-16.3	26.3	16.5	0.11	-0.11	0.00
3,492.0	1.30	111.50	3,491.5	-17.3	28.6	17.5	0.43	-0.42	-3.05
3,587.0	1.20	98.70	3,586.5	-17.8	30.5	18.1	0.31	-0.11	-13.47
3,681.0	1.10	106.50	3,680.5	-18.2	32.4	18.5	0.20	-0.11	8.30
3,775.0	2.10	87.80	3,774.4	-18.4	35.0	18.7	1.19	1.06	-19.89
3,869.0	1.60	94.70	3,868.4	-18.5	38.0	18.8	0.58	-0.53	7.34
3,963.0	1.20	110.30	3,962.4	-18.9	40.2	19.2	0.58	-0.43	16.60
4,057.0	0.90	135.90	4,056.3	-19.8	41.7	20.1	0.58	-0.32	27.23
4,151.0	0.70	168.90	4,150.3	-20.9	42.3	21.2	0.52	-0.21	35.11
4,244.0	0.60	169.90	4,243.3	-21.9	42.5	22.3	0.11	-0.11	1.08
4,339.0	0.80	184.80	4,338.3	-23.1	42.5	23.4	0.28	0.21	15.68
4,432.0	0.60	197.40	4,431.3	-24.2	42.3	24.5	0.27	-0.22	13.55
4,526.0	0.60	194.00	4,525.3	-25.1	42.0	25.5	0.04	0.00	-3.82
4,619.0	0.50	196.90	4,618.3	-26.0	41.8	26.3	0.11	-0.11	3.12
4,713.0	0.80	195.30	4,712.3	-27.0	41.5	27.3	0.32	0.32	-1.70
4,790.0	0.90	203.50	4,789.3	-28.1	41.1	28.4	0.20	0.13	10.65
4,884.0	1.00	194.20	4,883.3	-29.6	40.8	29.9	0.35	0.11	-20.53
4,977.0	0.70	206.90	4,976.3	-30.9	40.5	31.2	0.48	-0.32	24.41
5,070.0	0.40	208.20	5,069.3	-31.7	40.1	32.0	0.32	-0.32	1.40
5,164.0	0.70	205.10	5,163.3	-32.5	39.7	32.8	0.32	0.32	-3.30

Survey Report

Company:	Yates Petroleum	Local Coordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3812.5usft (Nomao 22 - KB=21.5)
Site:	Date-BTB State Com	MD Reference:	RKB @ 3812.5usft (Nomao 22 - KB=21.5)
Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

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)
5,257.0	0.70	205.30	5,258.2	-33.5	39.2	33.8	0.00	0.00	0.22
5,351.0	0.80	228.60	5,350.2	-34.4	38.8	34.7	0.30	-0.11	24.78
5,445.0	0.40	201.90	5,444.2	-35.0	38.1	35.3	0.32	-0.21	-28.40
5,538.0	0.70	224.60	5,537.2	-35.7	37.5	36.0	0.39	0.32	24.41
5,602.0	0.90	262.80	5,601.2	-36.0	36.8	36.3	0.87	0.31	59.89
5,759.0	0.70	273.60	5,758.2	-36.1	34.6	36.4	0.16	-0.13	6.88
5,948.0	1.10	272.00	5,947.2	-36.0	31.6	36.3	0.21	0.21	-0.85
6,136.0	1.40	257.40	6,135.1	-36.4	27.6	36.7	0.23	0.16	-7.77
6,323.0	1.10	261.00	6,322.1	-37.2	23.6	37.4	0.17	-0.16	1.93
6,509.0	1.10	244.40	6,508.1	-36.3	20.2	38.4	0.17	0.00	-8.92
6,697.0	1.40	273.60	6,696.0	-36.9	16.3	39.0	0.37	0.16	15.53
6,883.0	1.10	301.40	6,882.0	-37.8	12.5	37.9	0.36	-0.16	14.95
7,069.0	1.20	300.30	7,067.9	-35.9	9.3	36.0	0.08	0.05	-0.59
7,257.0	1.20	304.40	7,255.9	-33.8	6.0	33.9	0.05	0.00	2.18
7,445.0	0.70	263.90	7,443.9	-32.8	3.2	32.8	0.43	-0.27	-21.54
7,631.0	1.20	264.70	7,629.9	-33.1	0.1	33.1	0.27	0.27	0.43
7,819.0	1.10	293.10	7,817.8	-32.6	-3.5	32.6	0.30	-0.05	15.11
8,008.0	0.70	255.30	8,006.8	-32.2	-6.3	32.1	0.37	-0.21	-20.00
8,195.0	0.20	32.30	8,193.8	-32.2	-7.2	32.1	0.46	-0.27	73.26
8,381.0	0.90	323.90	8,379.8	-30.7	-7.9	30.7	0.46	0.38	-36.77
8,568.0	1.40	283.50	8,566.7	-29.0	-11.0	28.9	0.49	0.27	-21.60
8,756.0	0.50	118.10	8,754.7	-28.8	-12.5	28.7	1.01	-0.48	-89.04
8,919.0	0.50	280.10	8,917.7	-29.3	-12.5	29.2	0.58	0.00	88.34
9,106.0	0.70	245.50	9,104.7	-29.9	-14.4	29.8	0.13	0.11	-7.81
9,293.0	1.60	108.70	9,291.7	-31.2	-13.0	31.1	1.16	0.48	-73.16
9,481.0	0.20	95.50	9,479.7	-32.1	-10.1	32.0	0.75	-0.74	-7.02
9,668.0	1.80	155.00	9,666.6	-34.8	-8.6	34.7	0.91	0.86	31.82
9,856.0	1.80	132.80	9,854.6	-36.5	-5.2	39.4	0.37	0.00	-11.81
10,043.0	0.50	17.30	10,041.5	-40.7	-2.8	40.6	1.10	-0.70	-61.76
10,229.0	1.10	333.90	10,227.5	-38.3	-3.3	38.3	0.44	0.32	-23.33
10,393.0	0.70	325.60	10,391.5	-36.1	-4.6	36.0	0.26	-0.24	-5.06
10,405.0	0.90	336.70	10,403.5	-35.9	-4.6	35.9	2.10	1.67	92.50
10,436.0	0.40	0.50	10,434.5	-35.6	-4.7	35.5	1.80	-1.61	76.77
10,443.0	0.19	174.44	10,441.5	-35.6	-4.7	35.5	8.44	-2.98	2,404.86
KOP: 10443.0' MD, 10441.5' TVD									
10,468.0	2.30	178.20	10,466.5	-36.1	-4.7	36.1	8.44	8.43	15.04
10,500.0	5.60	180.80	10,496.4	-38.3	-4.7	38.3	10.33	10.31	8.13
10,531.0	9.00	181.20	10,529.1	-42.2	-4.8	42.2	10.97	10.97	1.29
10,561.0	12.30	178.90	10,558.6	-47.8	-4.8	47.7	11.09	11.00	-7.67
10,592.0	15.70	176.40	10,589.7	-55.3	-4.5	55.2	11.14	10.97	-8.08
10,623.0	19.40	174.50	10,618.2	-64.6	-3.7	64.6	12.08	11.94	-8.13
10,655.0	23.00	174.10	10,648.1	-76.1	-2.5	76.1	11.26	11.25	-1.25
10,686.0	26.70	173.80	10,676.2	-89.1	-1.2	89.0	11.94	11.94	-0.97

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.5')
Site:	Date BTB State Com	MD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.5')
Well:	#8H	North Reference:	Grid:
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

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)
10,717.0	30.80	174.10	10,703.4	-103.9	0.4	103.9	13.23	13.23	0.97
10,748.0	35.00	174.50	10,729.4	-120.6	2.1	120.6	13.57	13.55	1.29
10,779.0	38.70	174.70	10,754.2	-139.1	3.8	139.2	11.94	11.94	0.65
10,810.0	42.20	175.00	10,777.8	-159.2	5.6	159.2	11.31	11.29	0.97
10,841.0	44.50	175.00	10,800.3	-180.4	7.5	180.4	7.42	7.42	0.00
10,872.0	47.50	174.80	10,821.8	-202.6	9.5	202.6	9.69	9.68	-0.65
10,903.0	51.60	174.80	10,842.0	-226.1	11.8	226.1	13.23	13.23	0.00
10,934.0	55.40	175.00	10,860.4	-250.9	13.8	251.0	12.27	12.28	0.65
10,965.0	58.60	175.20	10,877.3	-278.8	16.0	276.9	10.34	10.32	0.65
10,997.0	63.00	175.50	10,892.9	-304.6	18.3	304.7	13.77	13.75	0.94
11,028.0	67.20	176.20	10,905.9	-332.8	20.3	332.8	13.70	13.55	2.26
11,059.0	70.20	176.20	10,917.2	-361.5	22.2	361.6	9.88	9.68	0.00
11,090.0	73.70	176.80	10,926.8	-390.8	24.0	391.1	11.44	11.29	1.94
11,121.0	77.80	177.60	10,934.4	-420.9	25.5	421.1	13.46	13.23	2.58
11,152.0	80.20	178.30	10,940.3	-451.3	26.6	451.5	8.05	7.74	2.26
11,181.0	81.80	179.00	10,944.9	-479.9	27.3	480.1	6.01	5.52	2.41
11,212.0	83.40	179.90	10,948.9	-510.7	27.6	510.9	5.91	5.16	2.90
11,274.0	86.60	180.60	10,954.3	-572.4	27.3	572.6	5.28	5.16	1.13
11,361.0	88.85	182.47	10,957.7	-659.3	25.0	659.5	3.36	2.58	2.15
EOC: 11361.0' MD, 10957.7' TVD, 88.85° INC, 182.47° AZ, 659.5' VS									
11,367.0	89.00	182.60	10,957.8	-665.3	24.7	665.5	3.36	2.58	2.15
11,460.0	90.80	183.30	10,958.0	-758.2	19.9	758.3	2.08	1.94	0.75
11,554.0	90.40	183.40	10,957.0	-852.0	14.4	852.1	0.44	-0.43	0.11
11,648.0	89.70	184.10	10,958.9	-945.8	8.3	945.8	1.05	-0.74	0.74
11,741.0	90.80	183.80	10,956.5	-1,038.6	1.9	1,038.6	1.23	1.18	-0.32
11,835.0	90.10	184.50	10,955.8	-1,132.3	-4.9	1,132.3	1.05	-0.74	0.74
11,929.0	89.00	182.90	10,955.8	-1,226.1	-11.0	1,226.0	1.72	-0.21	-1.70
12,022.0	89.40	181.50	10,956.4	-1,319.1	-14.6	1,318.9	1.60	-0.54	-1.51
12,116.0	89.20	180.10	10,957.5	-1,413.0	-15.9	1,412.9	1.50	-0.21	-1.49
12,209.0	89.00	178.70	10,959.0	-1,506.0	-14.9	1,505.9	1.52	-0.22	-1.51
12,302.0	89.00	178.70	10,960.6	-1,599.0	-12.8	1,598.8	0.00	0.00	0.00
12,396.0	89.40	178.00	10,961.9	-1,692.9	-10.1	1,692.8	0.86	0.43	-0.74
12,489.0	88.90	178.20	10,963.3	-1,785.9	-7.0	1,785.8	0.58	-0.54	0.22
12,582.0	89.70	179.00	10,964.4	-1,878.8	-4.7	1,878.7	1.22	0.86	0.86
12,676.0	89.00	179.60	10,965.5	-1,972.8	-3.6	1,972.7	0.98	-0.74	0.64
12,769.0	89.40	178.30	10,966.8	-2,065.8	-1.9	2,065.7	1.46	0.43	-1.40
12,863.0	90.30	178.00	10,967.0	-2,159.7	1.1	2,159.7	1.01	0.96	-0.32
12,956.0	89.70	178.70	10,967.0	-2,252.7	3.8	2,252.7	0.99	-0.65	0.75
13,050.0	90.40	178.90	10,967.0	-2,346.7	5.8	2,346.7	0.77	0.74	0.21
13,143.0	89.60	178.90	10,967.0	-2,439.7	7.6	2,439.7	0.86	-0.86	0.00
13,237.0	89.40	179.20	10,967.8	-2,533.7	9.1	2,533.6	0.38	-0.21	0.32
13,331.0	89.40	179.00	10,968.8	-2,627.6	10.6	2,627.6	0.21	0.00	-0.21
13,424.0	90.40	178.90	10,968.9	-2,720.6	12.3	2,720.6	1.08	1.08	-0.11
13,517.0	90.10	178.70	10,968.5	-2,813.6	14.3	2,813.6	0.39	-0.32	-0.22

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #8H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.5)
Site:	Date BTB State Com	MD Reference:	RKB @ 3812.5usft (Nomac 22 - KB=21.5)
Well:	#8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

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)
13,610.0	89.90	179.20	10,968.5	-2,906.6	16.0	2,906.6	0.58	-0.22	0.54
13,704.0	89.40	179.40	10,969.1	-3,000.6	17.1	3,000.6	0.57	-0.53	0.21
13,797.0	89.60	180.10	10,969.9	-3,093.6	17.5	3,093.6	0.78	0.22	0.75
13,890.0	89.70	179.40	10,970.5	-3,186.6	17.9	3,186.6	0.76	0.11	-0.75
13,984.0	90.30	180.30	10,970.5	-3,280.6	18.2	3,280.6	1.15	0.84	0.96
14,079.0	89.40	179.20	10,970.7	-3,375.6	18.6	3,375.6	1.50	-0.95	-1.16
14,174.0	89.40	178.00	10,971.7	-3,470.5	20.9	3,470.6	1.26	0.00	-1.26
14,269.0	88.30	177.60	10,973.6	-3,565.4	24.6	3,565.5	1.23	-1.16	-0.42
14,363.0	89.20	177.80	10,975.7	-3,659.3	28.3	3,659.4	0.98	0.86	0.21
14,456.0	89.20	178.70	10,977.0	-3,752.3	31.2	3,752.4	0.97	0.00	0.97
14,549.0	90.10	178.70	10,977.5	-3,845.3	33.3	3,845.4	0.97	0.97	0.00
14,642.0	89.40	178.50	10,977.9	-3,938.2	35.5	3,938.4	0.76	-0.75	-0.22
14,736.0	90.30	178.90	10,978.2	-4,032.2	37.7	4,032.4	1.05	0.96	0.43
14,829.0	89.40	179.20	10,978.4	-4,125.2	39.2	4,125.4	1.02	-0.97	0.32
14,923.0	89.20	179.90	10,979.8	-4,219.2	40.0	4,219.4	0.77	-0.21	0.74
15,017.0	89.60	180.10	10,980.6	-4,313.2	40.0	4,313.4	0.48	0.43	0.21
15,110.0	90.10	180.80	10,980.8	-4,406.2	39.2	4,406.3	0.82	0.54	0.75
15,204.0	89.90	180.30	10,980.8	-4,500.2	38.3	4,500.3	0.57	-0.21	-0.53
15,297.0	90.10	179.70	10,980.8	-4,593.2	38.3	4,593.3	0.68	0.22	-0.65
15,390.0	89.80	179.40	10,980.8	-4,686.2	39.1	4,686.3	0.39	-0.22	-0.32
15,483.0	89.90	179.60	10,981.0	-4,779.2	39.8	4,779.3	0.22	0.00	0.22
15,577.0	90.40	179.20	10,980.7	-4,873.1	40.9	4,873.3	0.68	0.53	-0.43
Final MWD Survey: 15577.0' MD, 10980.7' TVD, -4873.1' +N/-S, 40.9' +E/-W									
15,637.1	90.40	179.20	10,980.3	-4,933.2	41.7	4,933.4	0.00	0.00	0.00
PBHL(DBSC#8H)									
15,637.2	90.40	179.20	10,980.3	-4,933.3	41.7	4,933.5	0.00	0.00	0.00
BHL: 15637.2' MD, 10980.3' TVD, 90.40° INC, 179.20° AZ, -4933.3' +N/-S, 41.7' +E/-W, 4933.5' VS									

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
10,443.0	10,441.5	-35.6	-4.7	KOP: 10443.0' MD, 10441.5' TVD
11,361.0	10,957.7	-659.3	25.0	EOC: 11361.0' MD, 10957.7' TVD, 88.85° INC, 182.47° AZ, 859.5' VS
15,577.0	10,980.7	-4,873.1	40.9	Final MWD Survey: 15577.0' MD, 10980.7' TVD, -4873.1' +N/-S, 40.9' +E/-W
15,637.2	10,980.3	-4,933.3	41.7	BHL: 15637.2' MD, 10980.3' TVD, 90.40° INC, 179.20° AZ, -4933.3' +N/-S, 41.7

Checked By: _____ Approved By: _____ Date: _____