

Results of Directional Survey

API number:	30-025-41055		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	ATOKA BANK BDJ STATE COM # 2H

surface	ULSTR:	B	17	T	24S	R	33E
				200	FNL	1780	FEL

BH Loc	ULSTR:	O	17	T	24S	R	33E
15742	MD	11159.4	TVD	318	FSL	1759	FEL
				4962	FNL		

Top Perf/OH	ULSTR:	B	17	T	24S	R	33E
11415	MD	11177.2	TVD	636	FNL	1769	FEL

Bot Perf/OH	ULSTR:	O	17	T	24S	R	33E
15675	MD	11159.3	TVD	385	FSL	1760	FEL
				4895	FNL		

	MD	N/S	E/W	VD
	11394	-415.40	10.80	11174.6
TOP PERFS/OH	11415	-436.20	10.80	11177.16
	11426	-447.10	10.80	11178.50
	15662	-4682.20	20.40	11159.30
BOT PERFS/OH	15675	-4695.20	20.46	11159.30
	15685	-4705.20	20.50	11159.30

NEXT TO LAST	15685	-4705.20	20.50	11159.30
LAST READING	15742	-4762.20	21.00	11159.40
TD	15742	-4762.20	21.00	11159.40

Surface Location	200	FN	1780	FE
Projected BHL	4962	FN	1759	FE
Location of				
Top Perfs/OH	636	FN	1769	FE
Bottom Perfs/OH	4895	FN	1760	FE

SUMMARY of Subsurface Locations

Surface Location	B-17-24S-33E	200	FN	1780	FE	Vert. Depth
Top Perfs/OH	B-17-24S-33E	636	FN	1769	FE	11177.16
Bottom Perfs/OH	O-17-24S-33E	4895	FN	1760	FE	11159.30
Projected TD	O-17-24S-33E	4962	FN	1759	FE	11159.40

JUN 02 2014

Yates Petroleum

Lea County, NM (NAD-83)
Atoka Bank BDJ State Com
#2H

Wellbore #1
Wellbore #1

Anticollision Report

13 February, 2014

HOBBS OCD

MAY 27 2014

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Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Reference Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Site Error:	2.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Houston R5000 Database
Reference Design:	Wellbore #1	Offset TVD Reference:	Offset Datum

Reference	Wellbore #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 20.00	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program	Date 2/13/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	1,250.0	Survey #1 - Gyros (Wellbore #1)	Good_gyro	Good Gyro
1,307.0	15,742.0	Survey #2 - Crescent MWD Surveys (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor
Atoka Bank BDJ State Com						
#3H - OH - OH		13,292.4	13,267.5	1,115.8	1,025.6	12.365 CC
#3H - OH - OH		15,742.0	15,702.6	1,134.3	964.8	6.692 ES, SF
Atoka Bank State Unit						
#1 - Wellbore #1 - Wellbore #1		15,213.6	11,099.2	188.1	88.9	1.895 CC, ES, SF
Holly State E-8174						
#1 - Wellbore #1 - Wellbore #1						Out of range

Offset Design												
Atoka Bank BDJ State Com - #3H - OH - OH												
Survey Program: 100-Good_gyro; 1508-MWD												
Reference	Offset	Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
12,053.0	11,186.0	12,041.9	11,176.5	28.2	28.2	-89.21	-1,074.1	1,128.5	1,123.2	1,066.9	56.33	19.941
12,147.0	11,185.6	12,136.0	11,176.7	29.2	29.3	-89.24	-1,168.2	1,128.6	1,123.7	1,065.2	58.48	19.215
12,242.0	11,185.2	12,232.5	11,174.9	30.4	30.5	-89.16	-1,264.7	1,128.3	1,124.0	1,063.1	60.84	18.475
12,337.0	11,185.0	12,327.0	11,173.0	31.6	31.7	-89.08	-1,359.2	1,128.3	1,124.8	1,061.6	63.25	17.785
12,432.0	11,185.1	12,421.1	11,172.5	32.8	32.9	-89.05	-1,453.3	1,128.0	1,125.3	1,059.6	65.70	17.128
12,526.0	11,184.8	12,509.2	11,171.4	34.1	34.1	-89.01	-1,541.4	1,128.3	1,126.9	1,058.7	68.17	16.531
12,622.0	11,185.2	12,603.6	11,170.6	35.5	35.4	-88.94	-1,635.7	1,128.7	1,126.8	1,056.0	70.78	15.920
12,716.0	11,185.8	12,692.5	11,169.1	36.8	36.6	-88.84	-1,724.6	1,129.5	1,125.1	1,051.7	73.38	15.332
12,811.0	11,185.1	12,786.4	11,168.2	38.2	37.9	-88.86	-1,818.5	1,130.5	1,123.4	1,047.3	76.11	14.759
12,906.0	11,183.7	12,877.8	11,166.4	39.6	39.3	-88.82	-1,909.9	1,131.7	1,121.4	1,042.6	78.80	14.231
13,001.0	11,182.9	12,973.6	11,164.6	40.9	40.7	-88.76	-2,005.7	1,133.2	1,119.8	1,038.2	81.53	13.734
13,096.0	11,182.7	13,072.1	11,163.0	42.3	42.1	-88.69	-2,104.1	1,134.2	1,117.9	1,033.5	84.33	13.256
13,191.0	11,182.8	13,163.7	11,161.9	43.7	43.5	-88.62	-2,195.7	1,135.5	1,116.5	1,029.4	87.10	12.819
13,286.0	11,182.6	13,261.7	11,161.0	45.1	45.0	-88.58	-2,293.7	1,136.6	1,115.8	1,025.8	90.05	12.391
13,292.4	11,182.5	13,267.5	11,160.9	45.2	45.0	-88.58	-2,299.5	1,136.6	1,115.8	1,025.6	90.24	12.365 CC
13,381.0	11,181.7	13,349.6	11,160.7	46.6	46.3	-88.61	-2,381.6	1,137.9	1,116.4	1,023.5	92.89	12.018
13,476.0	11,179.9	13,445.3	11,161.3	48.1	47.7	-88.71	-2,477.3	1,139.7	1,118.0	1,022.1	95.87	11.661
13,571.0	11,177.5	13,542.0	11,161.1	49.7	49.3	-88.82	-2,574.0	1,141.0	1,119.7	1,020.8	98.90	11.321
13,666.0	11,175.8	13,620.7	11,161.3	51.1	50.5	-88.93	-2,652.6	1,142.9	1,122.7	1,021.0	101.63	11.047

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Reference Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Site Error:	2.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Houston R5000 Database
Reference Design:	Wellbore #1	Offset TVD Reference:	Offset Datum

Offset Design Atoka Bank BDJ State Com - #3H - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 100-Good gyro, 1508-MWD												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
13,761.0	11,174.1	13,732.6	11,160.7	52.6	52.3	-88.97	-2,764.5	1,145.2	1,125.6	1,020.7	104.90	10.731	
13,857.0	11,172.1	13,831.3	11,160.1	54.2	53.9	-89.06	-2,863.2	1,146.7	1,128.6	1,020.6	108.01	10.449	
13,953.0	11,172.0	13,942.9	11,158.1	55.7	55.7	-89.00	-2,974.8	1,147.1	1,130.1	1,018.8	111.29	10.155	
14,048.0	11,173.8	14,046.8	11,155.9	57.2	57.3	-88.78	-3,078.6	1,146.6	1,130.5	1,016.1	114.47	9.876	
14,142.0	11,174.9	14,150.0	11,154.6	58.7	59.0	-88.66	-3,181.9	1,145.1	1,129.9	1,012.3	117.62	9.607	
14,238.0	11,174.6	14,246.9	11,154.7	60.2	60.5	-88.69	-3,278.7	1,143.4	1,128.6	1,007.9	120.71	9.349	
14,332.0	11,174.3	14,339.1	11,155.4	61.7	62.0	-88.74	-3,370.9	1,141.8	1,126.7	1,003.0	123.70	9.109	
14,428.0	11,173.3	14,420.9	11,156.3	63.3	63.3	-88.85	-3,452.8	1,140.8	1,124.7	998.1	126.57	8.886	
14,498.6	11,171.8	14,477.3	11,156.7	64.4	64.2	-88.93	-3,509.1	1,140.9	1,124.1	995.5	128.66	8.737	
14,523.0	11,171.3	14,497.8	11,156.9	64.9	64.6	-88.95	-3,529.6	1,141.2	1,124.2	994.8	129.41	8.687	
14,617.0	11,169.6	14,580.4	11,157.6	66.4	65.9	-89.07	-3,612.2	1,142.7	1,125.2	992.9	132.31	8.504	
14,712.0	11,168.6	14,681.4	11,156.9	67.9	67.6	-89.09	-3,713.2	1,144.8	1,126.5	991.0	135.52	8.312	
14,807.0	11,168.2	14,788.6	11,155.4	69.5	69.4	-89.04	-3,820.3	1,145.8	1,126.9	988.1	138.84	8.117	
14,902.0	11,167.3	14,887.2	11,152.8	71.0	71.0	-88.96	-3,918.9	1,146.4	1,127.3	985.3	142.02	7.937	
14,991.9	11,165.7	14,983.5	11,150.3	72.5	72.6	-88.91	-4,015.2	1,146.1	1,127.0	981.9	145.09	7.767	
14,997.0	11,165.7	14,988.3	11,150.2	72.6	72.7	-88.91	-4,020.0	1,146.1	1,127.0	981.7	145.25	7.759	
15,092.0	11,164.2	15,079.6	11,148.3	74.2	74.2	-88.88	-4,111.3	1,146.0	1,127.4	979.1	148.32	7.601	
15,187.0	11,163.0	15,170.2	11,149.0	75.8	75.7	-88.98	-4,201.8	1,146.2	1,128.1	976.7	151.40	7.451	
15,283.0	11,162.7	15,260.4	11,149.5	77.3	77.2	-89.03	-4,292.0	1,147.0	1,129.4	974.9	154.49	7.310	
15,378.0	11,162.0	15,349.7	11,149.2	78.9	78.7	-89.04	-4,381.4	1,147.9	1,130.2	972.7	157.56	7.173	
15,472.0	11,160.7	15,426.0	11,148.7	80.4	80.0	-89.07	-4,457.6	1,149.7	1,131.9	971.5	160.40	7.057	
15,567.0	11,159.7	15,539.2	11,148.0	82.0	81.9	-89.10	-4,570.8	1,152.1	1,133.0	969.2	163.86	6.915	
15,596.3	11,159.5	15,570.5	11,147.9	82.5	82.4	-89.11	-4,602.1	1,152.6	1,133.0	968.2	164.87	6.872	
15,662.0	11,159.3	15,632.5	11,147.8	83.6	83.4	-89.11	-4,664.1	1,153.3	1,133.2	966.2	167.00	6.786	
15,685.0	11,159.3	15,650.5	11,147.6	84.0	83.7	-89.11	-4,682.1	1,153.6	1,133.5	965.8	167.68	6.760	
15,742.0	11,159.4	15,702.6	11,146.8	84.9	84.6	-89.06	-4,734.2	1,154.9	1,134.3	964.8	169.52	6.692 ES, SF	

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Reference Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Site Error:	2.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Houston R5000 Database
Reference Design:	Wellbore #1	Offset TVD Reference:	Offset Datum

Offset Design Atoka Bank State Unit - #1 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 200-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
13,761.0	11,174.1	11,094.5	11,092.9	52.7	23.0	96.31	-4,232.8	-169.7	1,463.9	1,388.5	75.43	19.407		
13,857.0	11,172.1	11,093.6	11,091.9	54.2	23.0	88.44	-4,232.8	-169.6	1,368.6	1,291.4	77.22	17.723		
13,953.0	11,172.0	11,094.7	11,093.1	55.7	23.0	79.05	-4,232.8	-169.7	1,273.4	1,195.7	77.78	16.373		
14,048.0	11,173.8	11,097.9	11,096.2	57.2	23.0	74.92	-4,232.9	-169.8	1,179.5	1,101.1	78.39	15.046		
14,142.0	11,174.9	11,100.3	11,098.6	58.7	23.1	84.94	-4,232.9	-169.8	1,086.7	1,005.2	81.53	13.328		
14,238.0	11,174.6	11,101.0	11,099.4	60.3	23.1	86.56	-4,232.9	-169.9	992.2	909.0	83.20	11.925		
14,332.0	11,174.3	11,101.7	11,100.1	61.8	23.1	85.88	-4,232.9	-169.9	900.0	815.4	84.66	10.632		
14,428.0	11,173.3	11,101.6	11,100.0	63.3	23.1	90.23	-4,232.9	-169.9	806.5	720.2	86.36	9.339		
14,523.0	11,171.3	11,100.5	11,098.9	64.9	23.1	90.67	-4,232.9	-169.9	714.7	626.7	87.93	8.127		
14,617.0	11,169.6	11,099.8	11,098.2	66.4	23.1	88.45	-4,232.9	-169.8	624.6	535.2	89.46	6.983		
14,712.0	11,168.6	11,099.8	11,098.2	68.0	23.1	87.89	-4,232.9	-169.8	535.1	444.1	90.97	5.882		
14,807.0	11,168.2	11,100.4	11,098.7	69.5	23.1	86.83	-4,232.9	-169.9	447.6	355.1	92.46	4.841		
14,902.0	11,167.3	11,100.4	11,098.8	71.1	23.1	88.93	-4,232.9	-169.9	363.8	269.7	94.10	3.866		
14,997.0	11,165.7	11,099.8	11,098.1	72.6	23.1	88.45	-4,232.9	-169.8	287.0	191.4	95.65	3.001		
15,092.0	11,164.2	11,099.3	11,097.7	74.2	23.1	88.30	-4,232.9	-169.8	224.1	126.9	97.22	2.305		
15,187.0	11,163.0	11,099.2	11,097.5	75.8	23.1	88.10	-4,232.9	-169.8	190.0	91.2	98.78	1.923		
15,213.6	11,162.8	11,099.2	11,097.6	76.2	23.1	88.11	-4,232.9	-169.8	188.1	88.9	99.22	1.895 CC, ES, SF		
15,283.0	11,162.7	11,099.8	11,098.2	77.4	23.1	88.37	-4,232.9	-169.8	200.5	100.1	100.37	1.998		
15,378.0	11,162.0	11,100.1	11,098.5	78.9	23.1	87.83	-4,232.9	-169.8	250.2	148.3	101.92	2.455		
15,472.0	11,160.7	11,099.8	11,098.2	80.5	23.1	87.95	-4,232.9	-169.8	320.5	217.0	103.48	3.097		
15,567.0	11,159.7	11,099.8	11,098.2	82.0	23.1	88.24	-4,232.9	-169.8	401.6	296.6	105.06	3.823		
15,662.0	11,159.3	11,100.3	11,098.7	83.6	23.1	89.51	-4,232.9	-169.8	487.9	381.2	106.68	4.573		
15,685.0	11,159.3	11,100.5	11,098.9	84.0	23.1	89.82	-4,232.9	-169.9	509.2	402.1	107.07	4.756		
15,742.0	11,159.4	11,101.2	11,099.5	85.0	23.1	90.02	-4,232.9	-169.9	562.6	454.6	108.02	5.208		

Anticollision Report

Company: Yates Petroleum
Project: Lea County, NM (NAD-83)
Reference Site: Atoka Bank BDJ State Com
Site Error: 2.0 usft
Reference Well: #2H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Wellbore #1

Local Co-ordinate Reference: Well #2H
TVD Reference: RKB @ 3621.0usft (Cactus 124)
MD Reference: RKB @ 3621.0usft (Cactus 124)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: Houston R5000 Database
Offset TVD Reference: Offset Datum

Reference Depths are relative to RKB @ 3621.0usft (Cactus 124)

Offset Depths are relative to Offset Datum

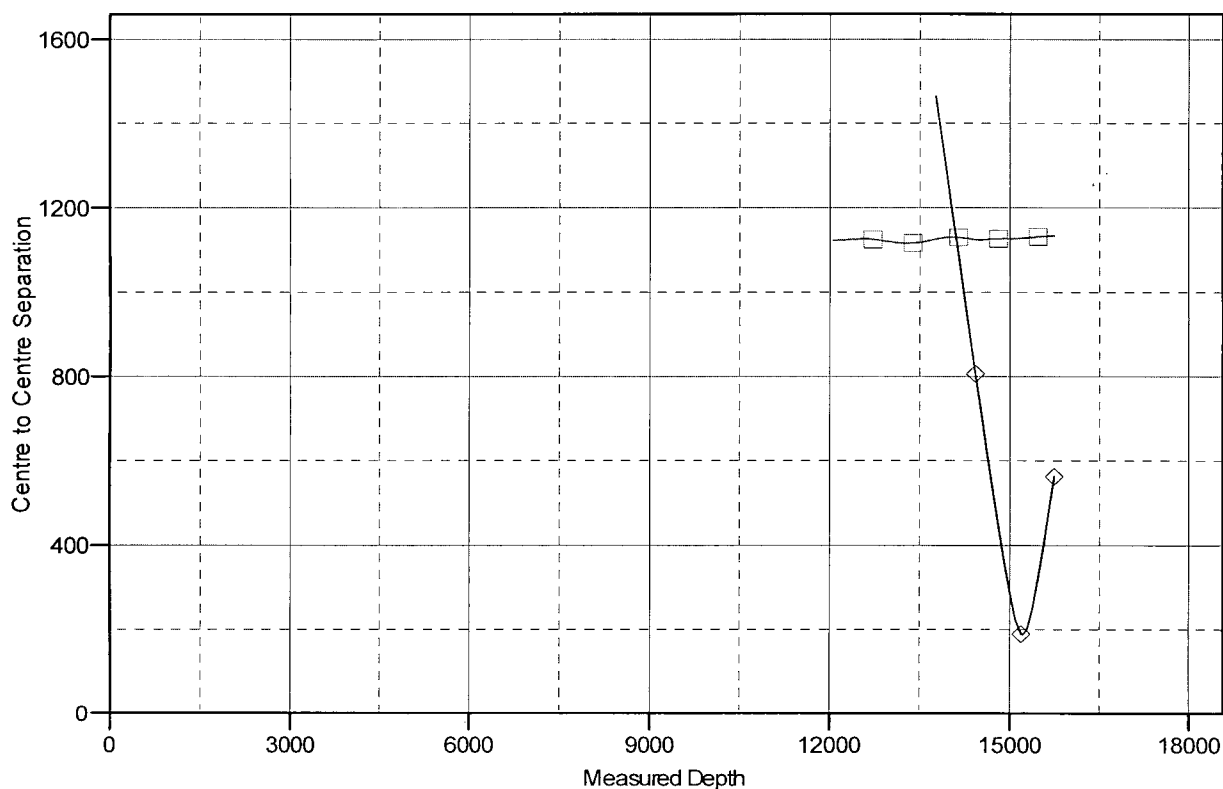
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #2H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.40°

Ladder Plot



LEGEND

—■— #3H, OH, OHV0

—◆— #1, Wellbore #1, Wellbore #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus-124)
Reference Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus-124)
Site Error:	2.0 usft	North Reference:	Grid
Reference Well:	#2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Houston R5000 Database
Reference Design:	Wellbore #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3621.0usft (Cactus 124)

Offset Depths are relative to Offset Datum

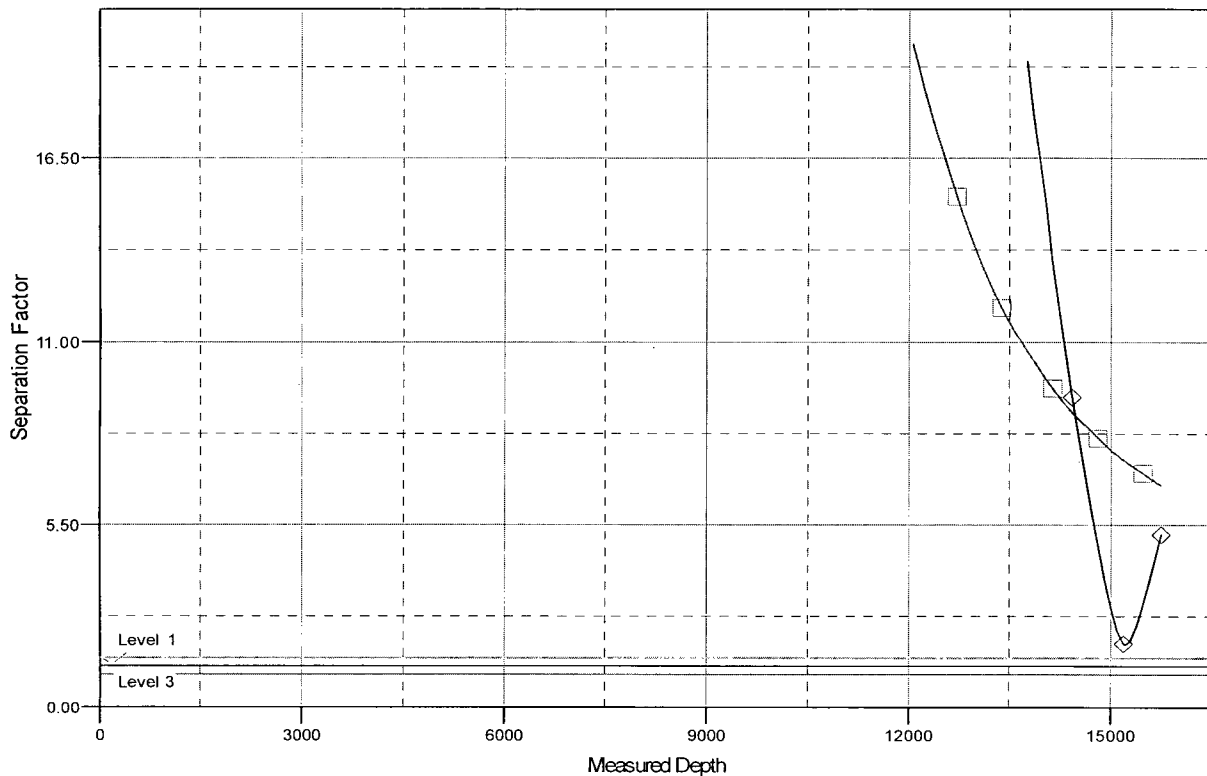
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: #2H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.40°

Separation Factor Plot



LEGEND

□ #3H, OH, OHV0

◆ #1, Wellbore #1, Wellbore #1 V0

HOBBS OCD

MAY 27 2014

RECEIVED

Yates Petroleum

Lea County, NM (NAD-83)
Atoka Bank BDJ State Com
#2H

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

13 February, 2014

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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	Atoka Bank BDJ State Com				
Site Position:		Northing:	446,170.06 usft	Latitude:	32° 13' 27.839 N
From:	Map	Easting:	771,850.92 usft	Longitude:	103° 35' 16.443 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#2H				
Well Position	+N/-S	0.0 usft	Northing:	446,163.59 usft	Latitude: 32° 13' 27.852 N
	+E/-W	0.0 usft	Easting:	770,731.07 usft	Longitude: 103° 35' 29.480 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	0.0 usft	Ground Level: 3,596.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	1/6/2014	7.28	60.12	48,357

Design	Wellbore #1				
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	179.67	

Survey Program	Date	2/13/2014			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	1,250.0	Survey #1 - Gyros (Wellbore #1)	Good_gyro	Good Gyro	
1,307.0	15,742.0	Survey #2 - Crescent MWD Surveys (Well	MWD	MWD - Standard	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude	
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting			
(usft)			(usft)			(usft)	(usft)			
0.0	0.00	0.00	0.0	0.0	0.0	446,163.59	770,731.07	32° 13' 27.852 N	103° 35' 29.480 W	
100.0	0.25	223.84	100.0	-0.2	-0.2	446,163.44	770,730.92	32° 13' 27.850 N	103° 35' 29.482 W	
200.0	0.25	59.83	200.0	-0.2	-0.1	446,163.39	770,730.96	32° 13' 27.850 N	103° 35' 29.481 W	
300.0	0.25	219.81	300.0	-0.3	-0.1	446,163.33	770,731.01	32° 13' 27.849 N	103° 35' 29.481 W	
400.0	0.25	5.81	400.0	-0.2	-0.2	446,163.38	770,730.89	32° 13' 27.850 N	103° 35' 29.482 W	
500.0	0.25	283.80	500.0	0.1	-0.4	446,163.65	770,730.70	32° 13' 27.852 N	103° 35' 29.484 W	
600.0	0.50	43.79	600.0	0.4	-0.3	446,164.02	770,730.79	32° 13' 27.856 N	103° 35' 29.483 W	
700.0	0.25	353.78	700.0	1.0	0.0	446,164.55	770,731.07	32° 13' 27.861 N	103° 35' 29.480 W	
800.0	0.25	304.77	800.0	1.3	-0.2	446,164.89	770,730.86	32° 13' 27.865 N	103° 35' 29.482 W	
900.0	0.25	246.77	900.0	1.3	-0.6	446,164.93	770,730.49	32° 13' 27.865 N	103° 35' 29.486 W	
1,000.0	0.25	265.76	1,000.0	1.2	-1.0	446,164.82	770,730.07	32° 13' 27.864 N	103° 35' 29.491 W	

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Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com.	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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
1,100.0	0.25	272.75	1,100.0	1.2	-1.4	446,164.82	770,729.63	32° 13' 27.864 N	103° 35' 29.496 W
1,200.0	0.50	238.74	1,200.0	1.0	-2.0	446,164.60	770,729.04	32° 13' 27.862 N	103° 35' 29.503 W
1,250.0	0.25	203.73	1,250.0	0.8	-2.3	446,164.39	770,728.81	32° 13' 27.860 N	103° 35' 29.506 W
1,307.0	0.40	240.10	1,307.0	0.6	-2.5	446,164.18	770,728.59	32° 13' 27.858 N	103° 35' 29.509 W
1,496.0	0.20	241.40	1,496.0	0.1	-3.3	446,163.69	770,727.73	32° 13' 27.853 N	103° 35' 29.519 W
1,684.0	0.20	288.70	1,684.0	0.0	-3.9	446,163.64	770,727.13	32° 13' 27.852 N	103° 35' 29.526 W
1,874.0	0.30	276.30	1,874.0	0.2	-4.8	446,163.80	770,726.32	32° 13' 27.854 N	103° 35' 29.535 W
2,064.0	0.30	320.00	2,064.0	0.6	-5.6	446,164.24	770,725.50	32° 13' 27.858 N	103° 35' 29.545 W
2,254.0	0.40	41.50	2,254.0	1.5	-5.4	446,165.11	770,725.62	32° 13' 27.867 N	103° 35' 29.543 W
2,443.0	0.20	84.30	2,443.0	2.0	-4.7	446,165.64	770,726.39	32° 13' 27.872 N	103° 35' 29.534 W
2,632.0	0.20	3.00	2,632.0	2.4	-4.3	446,166.00	770,726.74	32° 13' 27.876 N	103° 35' 29.530 W
2,821.0	0.30	5.40	2,821.0	3.2	-4.3	446,166.82	770,726.80	32° 13' 27.884 N	103° 35' 29.529 W
3,010.0	0.40	10.00	3,010.0	4.4	-4.1	446,167.97	770,726.96	32° 13' 27.895 N	103° 35' 29.527 W
3,200.0	0.40	12.10	3,200.0	5.7	-3.9	446,169.27	770,727.21	32° 13' 27.908 N	103° 35' 29.524 W
3,390.0	0.20	25.30	3,390.0	6.6	-3.6	446,170.22	770,727.50	32° 13' 27.918 N	103° 35' 29.521 W
3,578.0	0.20	14.20	3,578.0	7.2	-3.4	446,170.83	770,727.72	32° 13' 27.924 N	103° 35' 29.518 W
3,768.0	0.20	335.00	3,768.0	7.9	-3.4	446,171.45	770,727.66	32° 13' 27.930 N	103° 35' 29.519 W
3,958.0	0.20	295.30	3,958.0	8.3	-3.9	446,171.90	770,727.22	32° 13' 27.934 N	103° 35' 29.524 W
4,145.0	0.20	301.60	4,145.0	8.6	-4.4	446,172.21	770,726.64	32° 13' 27.937 N	103° 35' 29.531 W
4,335.0	0.10	330.10	4,335.0	8.9	-4.8	446,172.52	770,726.28	32° 13' 27.940 N	103° 35' 29.535 W
4,525.0	0.90	118.50	4,524.9	8.4	-3.6	446,171.95	770,727.51	32° 13' 27.935 N	103° 35' 29.521 W
4,619.0	0.40	107.80	4,618.9	7.9	-2.6	446,171.50	770,728.47	32° 13' 27.930 N	103° 35' 29.509 W
4,714.0	0.60	113.50	4,713.9	7.6	-1.8	446,171.20	770,729.24	32° 13' 27.927 N	103° 35' 29.500 W
4,809.0	1.10	120.80	4,808.9	6.9	-0.6	446,170.54	770,730.48	32° 13' 27.920 N	103° 35' 29.486 W
4,903.0	0.30	47.10	4,902.9	6.6	0.4	446,170.24	770,731.44	32° 13' 27.917 N	103° 35' 29.475 W
4,997.0	0.40	146.40	4,996.9	6.5	0.7	446,170.14	770,731.80	32° 13' 27.916 N	103° 35' 29.471 W
5,091.0	0.40	136.70	5,090.9	6.0	1.1	446,169.62	770,732.20	32° 13' 27.911 N	103° 35' 29.466 W
5,161.0	0.40	140.50	5,160.9	5.7	1.5	446,169.26	770,732.53	32° 13' 27.908 N	103° 35' 29.462 W
5,281.0	0.40	137.80	5,280.9	5.0	2.0	446,168.63	770,733.07	32° 13' 27.901 N	103° 35' 29.456 W
5,470.0	0.20	243.50	5,469.9	4.4	2.2	446,167.99	770,733.22	32° 13' 27.895 N	103° 35' 29.454 W
5,660.0	0.30	121.30	5,659.9	4.0	2.3	446,167.58	770,733.35	32° 13' 27.891 N	103° 35' 29.453 W
5,849.0	0.40	102.60	5,848.9	3.6	3.3	446,167.18	770,734.42	32° 13' 27.887 N	103° 35' 29.441 W
6,037.0	0.30	73.00	6,036.9	3.6	4.5	446,167.18	770,735.53	32° 13' 27.887 N	103° 35' 29.428 W
6,227.0	0.30	47.40	6,226.9	4.1	5.3	446,167.66	770,736.37	32° 13' 27.892 N	103° 35' 29.418 W
6,417.0	0.30	10.40	6,416.9	4.9	5.8	446,168.49	770,736.83	32° 13' 27.900 N	103° 35' 29.412 W
6,604.0	0.40	6.20	6,603.9	6.0	5.9	446,169.62	770,736.99	32° 13' 27.911 N	103° 35' 29.410 W
6,792.0	0.30	340.10	6,791.9	7.1	5.8	446,170.74	770,736.89	32° 13' 27.922 N	103° 35' 29.411 W
6,983.0	0.40	48.10	6,982.9	8.1	6.1	446,171.65	770,737.21	32° 13' 27.931 N	103° 35' 29.408 W
7,171.0	0.20	49.20	7,170.9	8.7	6.9	446,172.30	770,737.95	32° 13' 27.937 N	103° 35' 29.399 W
7,361.0	0.40	152.50	7,360.9	8.3	7.4	446,171.93	770,738.51	32° 13' 27.934 N	103° 35' 29.393 W
7,550.0	0.70	167.20	7,549.9	6.6	8.0	446,170.22	770,739.07	32° 13' 27.917 N	103° 35' 29.386 W
7,740.0	0.40	179.00	7,739.9	4.8	8.3	446,168.43	770,739.34	32° 13' 27.899 N	103° 35' 29.383 W
7,835.0	0.50	170.00	7,834.9	4.1	8.3	446,167.69	770,739.42	32° 13' 27.892 N	103° 35' 29.382 W
7,929.0	0.40	183.60	7,928.9	3.4	8.4	446,166.96	770,739.47	32° 13' 27.884 N	103° 35' 29.382 W
8,023.0	0.30	205.30	8,022.9	2.8	8.3	446,166.41	770,739.34	32° 13' 27.879 N	103° 35' 29.383 W
8,118.0	0.60	317.60	8,117.9	3.0	7.8	446,166.55	770,738.90	32° 13' 27.880 N	103° 35' 29.388 W
8,213.0	0.50	324.40	8,212.9	3.7	7.3	446,167.25	770,738.32	32° 13' 27.887 N	103° 35' 29.395 W
8,308.0	0.40	310.80	8,307.8	4.2	6.8	446,167.81	770,737.83	32° 13' 27.893 N	103° 35' 29.401 W
8,403.0	0.40	292.90	8,402.8	4.6	6.2	446,168.15	770,737.27	32° 13' 27.896 N	103° 35' 29.407 W
8,498.0	0.90	330.60	8,497.8	5.3	5.5	446,168.93	770,736.60	32° 13' 27.904 N	103° 35' 29.415 W
8,592.0	0.80	320.70	8,591.8	6.5	4.8	446,170.08	770,735.82	32° 13' 27.916 N	103° 35' 29.424 W
8,781.0	0.50	292.80	8,780.8	7.8	3.2	446,171.42	770,734.23	32° 13' 27.929 N	103° 35' 29.442 W
8,876.0	0.60	319.30	8,875.8	8.4	2.4	446,171.96	770,733.52	32° 13' 27.934 N	103° 35' 29.451 W
8,970.0	0.50	316.40	8,969.8	9.0	1.8	446,172.63	770,732.92	32° 13' 27.941 N	103° 35' 29.458 W
9,157.0	0.60	320.60	9,156.8	10.4	0.7	446,173.98	770,731.73	32° 13' 27.954 N	103° 35' 29.471 W

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Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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
9,347.0	0.80	9.30	9,346.8	12.5	0.2	446,176.06	770,731.32	32° 13' 27.975 N	103° 35' 29.476 W
9,439.0	1.00	19.70	9,438.8	13.9	0.6	446,177.45	770,731.69	32° 13' 27.989 N	103° 35' 29.471 W
9,532.0	0.30	64.30	9,531.8	14.7	1.1	446,178.31	770,732.18	32° 13' 27.997 N	103° 35' 29.466 W
9,627.0	1.20	273.00	9,626.8	14.9	0.3	446,178.47	770,731.41	32° 13' 27.999 N	103° 35' 29.475 W
9,722.0	0.40	61.70	9,721.8	15.1	-0.4	446,178.68	770,730.71	32° 13' 28.001 N	103° 35' 29.483 W
9,817.0	0.60	78.10	9,816.8	15.4	0.4	446,178.94	770,731.49	32° 13' 28.004 N	103° 35' 29.474 W
9,911.0	0.70	75.00	9,910.8	15.6	1.5	446,179.19	770,732.53	32° 13' 28.006 N	103° 35' 29.462 W
10,006.0	0.50	336.40	10,005.7	16.1	1.9	446,179.72	770,732.92	32° 13' 28.011 N	103° 35' 29.457 W
10,100.0	0.90	316.90	10,099.7	17.0	1.2	446,180.64	770,732.25	32° 13' 28.020 N	103° 35' 29.465 W
10,195.0	1.10	297.30	10,194.7	18.0	-0.1	446,181.60	770,730.93	32° 13' 28.030 N	103° 35' 29.480 W
10,290.0	0.40	285.70	10,289.7	18.5	-1.3	446,182.11	770,729.80	32° 13' 28.035 N	103° 35' 29.493 W
10,384.0	0.30	270.20	10,383.7	18.6	-1.8	446,182.20	770,729.24	32° 13' 28.036 N	103° 35' 29.500 W
10,480.0	0.30	278.00	10,479.7	18.6	-2.3	446,182.24	770,728.74	32° 13' 28.036 N	103° 35' 29.505 W
10,574.0	0.60	209.80	10,573.7	18.2	-2.8	446,181.84	770,728.25	32° 13' 28.032 N	103° 35' 29.511 W
10,645.0	0.50	204.70	10,644.7	17.6	-3.1	446,181.24	770,727.94	32° 13' 28.027 N	103° 35' 29.515 W
10,702.0	1.90	191.40	10,701.7	16.5	-3.4	446,180.09	770,727.65	32° 13' 28.015 N	103° 35' 29.518 W
KOP: 10702.0' MD, 10701.7' TVD									
10,733.0	5.20	181.00	10,732.6	14.6	-3.5	446,178.18	770,727.52	32° 13' 27.996 N	103° 35' 29.520 W
10,765.0	9.30	178.00	10,764.4	10.5	-3.5	446,174.14	770,727.59	32° 13' 27.956 N	103° 35' 29.519 W
10,797.0	12.10	174.00	10,795.8	4.6	-3.0	446,168.22	770,728.03	32° 13' 27.898 N	103° 35' 29.515 W
10,828.0	16.30	171.40	10,825.9	-2.9	-2.1	446,160.68	770,729.02	32° 13' 27.823 N	103° 35' 29.504 W
10,860.0	21.00	168.80	10,856.2	-13.0	-0.3	446,150.61	770,730.81	32° 13' 27.723 N	103° 35' 29.484 W
10,892.0	26.20	167.30	10,885.5	-25.5	2.4	446,138.09	770,733.47	32° 13' 27.599 N	103° 35' 29.454 W
10,923.0	30.90	170.70	10,912.7	-40.0	5.2	446,123.55	770,736.27	32° 13' 27.455 N	103° 35' 29.423 W
10,954.0	33.90	172.80	10,938.9	-56.5	7.6	446,107.11	770,738.64	32° 13' 27.292 N	103° 35' 29.396 W
10,986.0	38.30	176.10	10,964.7	-75.2	9.4	446,088.35	770,740.43	32° 13' 27.107 N	103° 35' 29.377 W
11,017.0	43.10	177.70	10,988.2	-95.4	10.4	446,068.18	770,741.51	32° 13' 26.907 N	103° 35' 29.366 W
11,049.0	46.90	177.90	11,010.8	-118.0	11.3	446,045.57	770,742.38	32° 13' 26.683 N	103° 35' 29.358 W
11,066.0	48.33	177.95	11,022.3	-130.6	11.8	446,033.02	770,742.83	32° 13' 26.559 N	103° 35' 29.353 W
Cross into 330' Lease at 11066.0' MD, 48.33° INC, 177.95° AZ									
11,081.0	49.60	178.00	11,032.2	-141.9	12.2	446,021.71	770,743.23	32° 13' 26.447 N	103° 35' 29.350 W
11,113.0	51.40	178.40	11,052.5	-166.6	12.9	445,997.03	770,744.00	32° 13' 26.203 N	103° 35' 29.343 W
11,144.0	52.80	180.30	11,071.6	-191.0	13.2	445,972.58	770,744.28	32° 13' 25.961 N	103° 35' 29.341 W
11,176.0	55.00	181.60	11,090.4	-216.9	12.8	445,946.73	770,743.85	32° 13' 25.705 N	103° 35' 29.348 W
11,208.0	56.80	183.10	11,108.3	-243.3	11.7	445,920.25	770,742.76	32° 13' 25.443 N	103° 35' 29.363 W
11,240.0	60.50	182.30	11,125.0	-270.6	10.4	445,892.96	770,741.47	32° 13' 25.173 N	103° 35' 29.380 W
11,272.0	64.60	180.60	11,139.7	-299.0	9.7	445,864.58	770,740.76	32° 13' 24.892 N	103° 35' 29.391 W
11,304.0	68.60	179.50	11,152.4	-328.4	9.7	445,835.22	770,740.74	32° 13' 24.602 N	103° 35' 29.394 W
11,335.0	73.70	178.60	11,162.5	-357.7	10.2	445,805.90	770,741.23	32° 13' 24.312 N	103° 35' 29.390 W
11,363.0	78.10	179.50	11,169.3	-384.8	10.6	445,778.75	770,741.68	32° 13' 24.043 N	103° 35' 29.387 W
11,394.0	82.10	179.60	11,174.6	-415.4	10.8	445,748.22	770,741.92	32° 13' 23.741 N	103° 35' 29.387 W
11,426.0	83.90	180.40	11,178.5	-447.1	10.8	445,716.46	770,741.92	32° 13' 23.426 N	103° 35' 29.389 W
11,458.0	86.20	181.10	11,181.3	-479.0	10.4	445,684.58	770,741.50	32° 13' 23.111 N	103° 35' 29.397 W
11,489.0	88.00	181.90	11,182.8	-510.0	9.6	445,653.63	770,740.69	32° 13' 22.805 N	103° 35' 29.409 W
EOC: 11489.0' MD, 11182.8' TVD, 88.00° INC, 181.90° AZ, 510.0' VS									
11,584.0	90.00	179.80	11,184.5	-604.9	8.2	445,558.67	770,739.28	32° 13' 21.865 N	103° 35' 29.433 W
11,679.0	87.90	179.10	11,186.2	-699.9	9.1	445,463.70	770,740.19	32° 13' 20.925 N	103° 35' 29.430 W
11,774.0	89.80	180.50	11,188.1	-794.9	9.5	445,368.72	770,740.52	32° 13' 19.986 N	103° 35' 29.434 W
11,864.0	90.00	181.00	11,188.3	-884.9	8.3	445,278.73	770,739.35	32° 13' 19.095 N	103° 35' 29.455 W
11,958.0	91.10	181.10	11,187.4	-978.8	6.6	445,184.75	770,737.62	32° 13' 18.165 N	103° 35' 29.482 W
12,053.0	90.60	180.30	11,186.0	-1,073.8	5.4	445,089.77	770,736.46	32° 13' 17.226 N	103° 35' 29.503 W
12,147.0	89.90	180.10	11,185.6	-1,167.8	5.1	444,995.77	770,736.13	32° 13' 16.296 N	103° 35' 29.515 W
12,242.0	90.50	180.60	11,185.2	-1,262.8	4.5	444,900.78	770,735.55	32° 13' 15.356 N	103° 35' 29.529 W
12,337.0	89.80	180.40	11,185.0	-1,357.8	3.7	444,805.78	770,734.73	32° 13' 14.416 N	103° 35' 29.546 W
12,432.0	90.10	180.50	11,185.1	-1,452.8	2.9	444,710.78	770,733.98	32° 13' 13.476 N	103° 35' 29.563 W

Survey Report - Geographic

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD:83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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
12,526.0	90.20	181.10	11,184.8	-1,546.8	1.6	444,616.79	770,732.67	32° 13' 12.546 N	103° 35' 29.586 W
12,622.0	89.40	178.20	11,185.2	-1,642.8	2.2	444,520.81	770,733.25	32° 13' 11.596 N	103° 35' 29.586 W
12,716.0	89.80	178.70	11,185.8	-1,736.7	4.7	444,426.84	770,735.80	32° 13' 10.666 N	103° 35' 29.564 W
12,811.0	91.10	178.00	11,185.1	-1,831.7	7.5	444,331.89	770,738.53	32° 13' 9.726 N	103° 35' 29.540 W
12,906.0	90.60	178.10	11,183.7	-1,926.6	10.7	444,236.95	770,741.76	32° 13' 8.786 N	103° 35' 29.510 W
13,001.0	90.30	178.20	11,182.9	-2,021.6	13.8	444,142.01	770,744.83	32° 13' 7.847 N	103° 35' 29.482 W
13,096.0	90.00	178.20	11,182.7	-2,116.5	16.7	444,047.05	770,747.81	32° 13' 6.907 N	103° 35' 29.455 W
13,191.0	89.80	178.60	11,182.8	-2,211.5	19.4	443,952.09	770,750.47	32° 13' 5.967 N	103° 35' 29.432 W
13,286.0	90.50	179.30	11,182.6	-2,306.5	21.1	443,857.11	770,752.21	32° 13' 5.027 N	103° 35' 29.419 W
13,381.0	90.60	179.70	11,181.7	-2,401.5	22.0	443,762.12	770,753.04	32° 13' 4.087 N	103° 35' 29.417 W
13,476.0	91.50	180.10	11,179.9	-2,496.5	22.1	443,667.13	770,753.20	32° 13' 3.147 N	103° 35' 29.423 W
13,571.0	91.50	180.50	11,177.5	-2,591.4	21.6	443,572.17	770,752.70	32° 13' 2.207 N	103° 35' 29.436 W
13,666.0	90.50	180.40	11,175.8	-2,686.4	20.9	443,477.19	770,751.96	32° 13' 1.268 N	103° 35' 29.453 W
13,761.0	91.60	180.90	11,174.1	-2,781.4	19.8	443,382.21	770,750.88	32° 13' 0.328 N	103° 35' 29.473 W
13,857.0	90.70	180.80	11,172.1	-2,877.4	18.4	443,286.24	770,749.46	32° 12' 59.378 N	103° 35' 29.497 W
13,953.0	89.40	180.70	11,172.0	-2,973.3	17.1	443,190.25	770,748.20	32° 12' 58.429 N	103° 35' 29.519 W
14,048.0	88.50	180.20	11,173.8	-3,068.3	16.4	443,095.27	770,747.45	32° 12' 57.489 N	103° 35' 29.536 W
14,142.0	90.10	180.60	11,174.9	-3,162.3	15.7	443,001.29	770,746.80	32° 12' 56.559 N	103° 35' 29.551 W
14,238.0	90.30	180.00	11,174.6	-3,258.3	15.2	442,905.29	770,746.30	32° 12' 55.609 N	103° 35' 29.564 W
14,332.0	90.10	179.70	11,174.3	-3,352.3	15.5	442,811.29	770,746.54	32° 12' 54.679 N	103° 35' 29.569 W
14,428.0	91.10	179.30	11,173.3	-3,448.3	16.3	442,715.30	770,747.38	32° 12' 53.729 N	103° 35' 29.567 W
14,523.0	91.30	179.60	11,171.3	-3,543.3	17.2	442,620.32	770,748.29	32° 12' 52.789 N	103° 35' 29.564 W
14,617.0	90.70	179.60	11,169.6	-3,637.3	17.9	442,526.34	770,748.95	32° 12' 51.859 N	103° 35' 29.564 W
14,712.0	90.50	179.50	11,168.6	-3,732.2	18.6	442,431.35	770,749.69	32° 12' 50.919 N	103° 35' 29.563 W
14,807.0	90.00	180.00	11,168.2	-3,827.2	19.0	442,336.35	770,750.11	32° 12' 49.979 N	103° 35' 29.566 W
14,902.0	91.10	179.70	11,167.3	-3,922.2	19.3	442,241.36	770,750.36	32° 12' 49.039 N	103° 35' 29.570 W
14,997.0	90.90	180.20	11,165.7	-4,017.2	19.4	442,146.37	770,750.44	32° 12' 48.099 N	103° 35' 29.577 W
15,092.0	90.90	180.40	11,164.2	-4,112.2	18.9	442,051.39	770,749.94	32° 12' 47.159 N	103° 35' 29.591 W
15,187.0	90.50	180.30	11,163.0	-4,207.2	18.3	441,956.40	770,749.36	32° 12' 46.219 N	103° 35' 29.605 W
15,283.0	89.90	180.20	11,162.7	-4,303.2	17.9	441,860.40	770,748.94	32° 12' 45.269 N	103° 35' 29.618 W
15,378.0	90.90	179.70	11,162.0	-4,398.2	18.0	441,765.40	770,749.03	32° 12' 44.329 N	103° 35' 29.624 W
15,472.0	90.70	179.70	11,160.7	-4,492.2	18.4	441,671.41	770,749.52	32° 12' 43.399 N	103° 35' 29.626 W
15,567.0	90.50	179.20	11,159.7	-4,587.2	19.4	441,576.42	770,750.43	32° 12' 42.459 N	103° 35' 29.623 W
15,662.0	90.00	179.60	11,159.3	-4,682.2	20.4	441,481.43	770,751.42	32° 12' 41.519 N	103° 35' 29.619 W
15,685.0	89.90	179.50	11,159.3	-4,705.2	20.5	441,458.43	770,751.61	32° 12' 41.292 N	103° 35' 29.619 W
15,742.0	89.90	179.50	11,159.4	-4,762.2	21.0	441,401.43	770,752.10	32° 12' 40.728 N	103° 35' 29.618 W
BHL: 15742.0' MD, 11159.4' TVD, 89.90° INC, 179.50° AZ, -4762.2' +N/-S, 21.0' +E/-W, 4762.2' VS									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,702.0	10,701.7	16.5	-3.4	KOP: 10702.0' MD, 10701.7' TVD
11,066.0	11,022.3	-130.6	11.8	Cross into 330' Lease at 11066.0' MD, 48.33° INC, 177.95° AZ
11,489.0	11,182.8	-510.0	9.6	EOC: 11489.0' MD, 11182.8' TVD, 88.00° INC, 181.90° AZ, 510.0' VS
15,742.0	11,159.4	-4,762.2	21.0	BHL: 15742.0' MD, 11159.4' TVD, 89.90° INC, 179.50° AZ, -4762.2' +N/-S, 21.0

Checked By: _____	Approved By: _____	Date: _____
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Yates Petroleum
Project: Lea County, NM (NAD-83)
Site: Atoka Bank BDJ State Com
Well: #2H
Wellbore: Wellbore #1
Plan: Plan #1 (#2H/Wellbore #1)

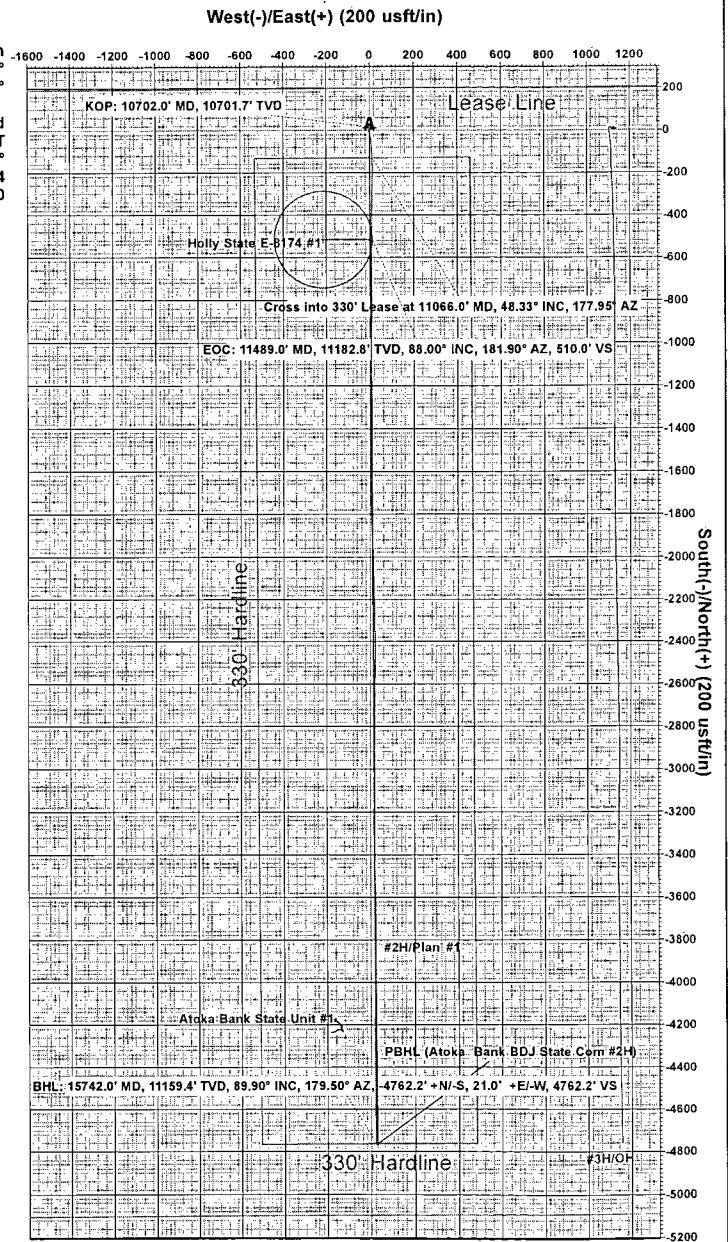
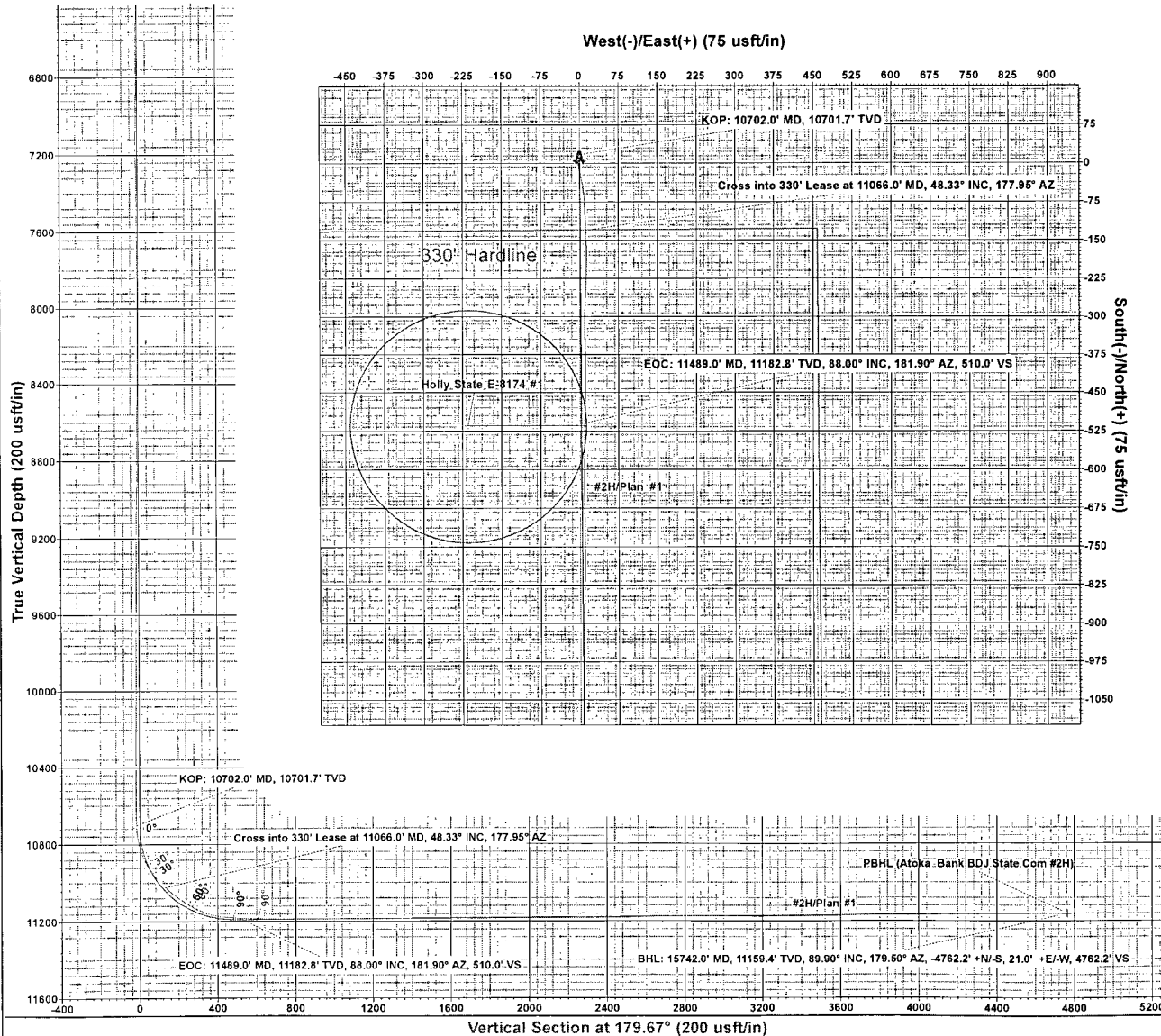
WELL DETAILS: #2H

Ground Elevation:: 3596.0
RKB Elevation: RKB @ 3621.0usft (Cactus 124)
Rig Name: Cactus 124

North	East	Lat	Long
446163.59	770731.07	32° 13' 27.852 N	103° 35' 29.480 W



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.88°
Magnetic Field
Strength: 48356.8nT
Dip Angle: 60.12°
Date: 1/6/2014
Model: IGRF2010



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 (#2H/Wellbore #1)
Created By: Adrian Castro Date: 8:06, February 13 2014

Yates Petroleum

Lea County, NM (NAD-83)
Atoka Bank BDJ State Com
#2H

Wellbore #1

Design: Wellbore #1

Standard Survey Report

13 February, 2014

HOBBS OCD

MAY 27 2014

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Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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	Atoka Bank BDJ State Com		
Site Position:		Northing:	446,170.06 usft
From:	Map	Easting:	771,850.92 usft
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 27.839 N
		Longitude:	103° 35' 16.443 W
		Grid Convergence:	0.40 °

Well	#2H		
Well Position	+N/-S	0.0 usft	Northing: 446,163.59 usft
	+E/-W	0.0 usft	Easting: 770,731.07 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 13' 27.852 N
		Longitude:	103° 35' 29.480 W
		Ground Level:	3,596.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	1/6/2014	7.28
			Dip Angle (°)
			60.12
			Field Strength (nT)
			48,357

Design	Wellbore #1		
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 2/13/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	1,250.0	Survey #1 - Gyros (Wellbore #1)	Good_gyro
1,307.0	15,742.0	Survey #2 - Crescent MWD Surveys (Well	MWD
			Description
			Good Gyro
			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	0.25	223.84	100.0	-0.2	-0.2	0.2	0.25	0.25	0.00
200.0	0.25	59.83	200.0	-0.2	-0.1	0.2	0.50	0.00	-164.01
300.0	0.25	219.81	300.0	-0.3	-0.1	0.3	0.49	0.00	159.98
400.0	0.25	5.81	400.0	-0.2	-0.2	0.2	0.48	0.00	146.00
500.0	0.25	283.80	500.0	0.1	-0.4	-0.1	0.33	0.00	-82.01
600.0	0.50	43.79	600.0	0.4	-0.3	-0.4	0.66	0.25	119.99
700.0	0.25	353.78	700.0	1.0	0.0	-1.0	0.39	-0.25	-50.01
800.0	0.25	304.77	800.0	1.3	-0.2	-1.3	0.21	0.00	-49.01
900.0	0.25	246.77	900.0	1.3	-0.6	-1.3	0.24	0.00	-58.00

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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	0.25	265.76	1,000.0	1.2	-1.0	-1.2	0.08	0.00	18.99
1,100.0	0.25	272.75	1,100.0	1.2	-1.4	-1.2	0.03	0.00	6.99
1,200.0	0.50	238.74	1,200.0	1.0	-2.0	-1.0	0.32	0.25	-34.01
1,250.0	0.25	203.73	1,250.0	0.8	-2.3	-0.8	0.66	-0.50	-70.02
1,307.0	0.40	240.10	1,307.0	0.6	-2.5	-0.6	0.43	0.26	63.81
1,496.0	0.20	241.40	1,496.0	0.1	-3.3	-0.1	0.11	-0.11	0.69
1,684.0	0.20	288.70	1,684.0	0.0	-3.9	-0.1	0.09	0.00	25.16
1,874.0	0.30	276.30	1,874.0	0.2	-4.8	-0.2	0.06	0.05	-6.53
2,064.0	0.30	320.00	2,064.0	0.6	-5.6	-0.7	0.12	0.00	23.00
2,254.0	0.40	41.50	2,254.0	1.5	-5.4	-1.6	0.24	0.05	42.89
2,443.0	0.20	84.30	2,443.0	2.0	-4.7	-2.1	0.15	-0.11	22.65
2,632.0	0.20	3.00	2,632.0	2.4	-4.3	-2.4	0.14	0.00	-43.02
2,821.0	0.30	5.40	2,821.0	3.2	-4.3	-3.3	0.05	0.05	1.27
3,010.0	0.40	10.00	3,010.0	4.4	-4.1	-4.4	0.05	0.05	2.43
3,200.0	0.40	12.10	3,200.0	5.7	-3.9	-5.7	0.01	0.00	1.11
3,390.0	0.20	25.30	3,390.0	6.6	-3.6	-6.6	0.11	-0.11	6.95
3,578.0	0.20	14.20	3,578.0	7.2	-3.4	-7.3	0.02	0.00	-5.90
3,768.0	0.20	335.00	3,768.0	7.9	-3.4	-7.9	0.07	0.00	-20.63
3,958.0	0.20	295.30	3,958.0	8.3	-3.9	-8.3	0.07	0.00	-20.89
4,145.0	0.20	301.60	4,145.0	8.6	-4.4	-8.6	0.01	0.00	3.37
4,335.0	0.10	330.10	4,335.0	8.9	-4.8	-9.0	0.06	-0.05	15.00
4,525.0	0.90	118.50	4,524.9	8.4	-3.6	-8.4	0.52	0.42	78.11
4,619.0	0.40	107.80	4,618.9	7.9	-2.6	-7.9	0.55	-0.53	-11.38
4,714.0	0.60	113.50	4,713.9	7.6	-1.8	-7.6	0.22	0.21	6.00
4,809.0	1.10	120.80	4,808.9	6.9	-0.6	-6.9	0.54	0.53	7.68
4,903.0	0.30	47.10	4,902.9	6.6	0.4	-6.6	1.12	-0.85	-78.40
4,997.0	0.40	146.40	4,996.9	6.5	0.7	-6.5	0.57	0.11	105.64
5,091.0	0.40	136.70	5,090.9	6.0	1.1	-6.0	0.07	0.00	-10.32
5,161.0	0.40	140.50	5,160.9	5.7	1.5	-5.7	0.04	0.00	5.43
5,281.0	0.40	137.80	5,280.9	5.0	2.0	-5.0	0.02	0.00	-2.25
5,470.0	0.20	243.50	5,469.9	4.4	2.2	-4.4	0.26	-0.11	55.93
5,660.0	0.30	121.30	5,659.9	4.0	2.3	-4.0	0.23	0.05	-64.32
5,849.0	0.40	102.60	5,848.9	3.6	3.3	-3.6	0.08	0.05	-9.89
6,037.0	0.30	73.00	6,036.9	3.6	4.5	-3.6	0.11	-0.05	-15.74
6,227.0	0.30	47.40	6,226.9	4.1	5.3	-4.0	0.07	0.00	-13.47
6,417.0	0.30	10.40	6,416.9	4.9	5.8	-4.9	0.10	0.00	-19.47
6,604.0	0.40	6.20	6,603.9	6.0	5.9	-6.0	0.06	0.05	-2.25
6,792.0	0.30	340.10	6,791.9	7.1	5.8	-7.1	0.10	-0.05	-13.88
6,983.0	0.40	48.10	6,982.9	8.1	6.1	-8.0	0.21	0.05	35.60
7,171.0	0.20	49.20	7,170.9	8.7	6.9	-8.7	0.11	-0.11	0.59
7,361.0	0.40	152.50	7,360.9	8.3	7.4	-8.3	0.26	0.11	54.37
7,550.0	0.70	167.20	7,549.9	6.6	8.0	-6.6	0.17	0.16	7.78
7,740.0	0.40	179.00	7,739.9	4.8	8.3	-4.8	0.17	-0.16	6.21

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
7,835.0	0.50	170.00	7,834.9	4.1	8.3	-4.0	0.13	0.11	-9.47
7,929.0	0.40	183.60	7,928.9	3.4	8.4	-3.3	0.15	-0.11	14.47
8,023.0	0.30	205.30	8,022.9	2.8	8.3	-2.8	0.17	-0.11	23.09
8,118.0	0.60	317.60	8,117.9	3.0	7.8	-2.9	0.81	0.32	118.21
8,213.0	0.50	324.40	8,212.9	3.7	7.3	-3.6	0.13	-0.11	7.16
8,308.0	0.40	310.80	8,307.8	4.2	6.8	-4.2	0.15	-0.11	-14.32
8,403.0	0.40	292.90	8,402.8	4.6	6.2	-4.5	0.13	0.00	-18.84
8,498.0	0.90	330.60	8,497.8	5.3	5.5	-5.3	0.67	0.53	39.68
8,592.0	0.80	320.70	8,591.8	6.5	4.8	-6.5	0.19	-0.11	-10.53
8,781.0	0.50	292.80	8,780.8	7.8	3.2	-7.8	0.23	-0.16	-14.76
8,876.0	0.60	319.30	8,875.8	8.4	2.4	-8.4	0.28	0.11	27.89
8,970.0	0.50	316.40	8,969.8	9.0	1.8	-9.0	0.11	-0.11	-3.09
9,157.0	0.60	320.60	9,156.8	10.4	0.7	-10.4	0.06	0.05	2.25
9,347.0	0.80	9.30	9,346.8	12.5	0.2	-12.5	0.32	0.11	25.63
9,439.0	1.00	19.70	9,438.8	13.9	0.6	-13.8	0.28	0.22	11.30
9,532.0	0.30	64.30	9,531.8	14.7	1.1	-14.7	0.88	-0.75	47.96
9,627.0	1.20	273.00	9,626.8	14.9	0.3	-14.9	1.55	0.95	-159.26
9,722.0	0.40	61.70	9,721.8	15.1	-0.4	-15.1	1.64	-0.84	156.53
9,817.0	0.60	78.10	9,816.8	15.4	0.4	-15.3	0.26	0.21	17.26
9,911.0	0.70	75.00	9,910.8	15.6	1.5	-15.6	0.11	0.11	-3.30
10,006.0	0.50	336.40	10,005.7	16.1	1.9	-16.1	0.97	-0.21	-103.79
10,100.0	0.90	316.90	10,099.7	17.0	1.2	-17.0	0.49	0.43	-20.74
10,195.0	1.10	297.30	10,194.7	18.0	-0.1	-18.0	0.41	0.21	-20.63
10,290.0	0.40	285.70	10,289.7	18.5	-1.3	-18.5	0.75	-0.74	-12.21
10,384.0	0.30	270.20	10,383.7	18.6	-1.8	-18.6	0.15	-0.11	-16.49
10,480.0	0.30	278.00	10,479.7	18.6	-2.3	-18.7	0.04	0.00	8.13
10,574.0	0.60	209.80	10,573.7	18.2	-2.8	-18.3	0.60	0.32	-72.55
10,645.0	0.50	204.70	10,644.7	17.6	-3.1	-17.7	0.16	-0.14	-7.18
10,702.0	1.90	191.40	10,701.7	16.5	-3.4	-16.5	2.49	2.46	-23.33
KOP: 10702.0' MD, 10701.7' TVD									
10,733.0	5.20	181.00	10,732.6	14.6	-3.5	-14.6	10.80	10.65	-33.55
10,765.0	9.30	178.00	10,764.4	10.5	-3.5	-10.6	12.86	12.81	-9.38
10,797.0	12.10	174.00	10,795.8	4.6	-3.0	-4.6	9.05	8.75	-12.50
10,828.0	16.30	171.40	10,825.9	-2.9	-2.1	2.9	13.70	13.55	-8.39
10,860.0	21.00	168.80	10,856.2	-13.0	-0.3	13.0	14.91	14.69	-8.13
10,892.0	26.20	167.30	10,885.5	-25.5	2.4	25.5	16.36	16.25	-4.69
10,923.0	30.90	170.70	10,912.7	-40.0	5.2	40.1	16.04	15.16	10.97
10,954.0	33.90	172.80	10,938.9	-56.5	7.6	56.5	10.33	9.68	6.77
10,986.0	38.30	176.10	10,964.7	-75.2	9.4	75.3	15.03	13.75	10.31
11,017.0	43.10	177.70	10,988.2	-95.4	10.4	95.5	15.84	15.48	5.16
11,049.0	46.90	177.90	11,010.8	-118.0	11.3	118.1	11.88	11.88	0.63
11,066.0	48.33	177.95	11,022.3	-130.6	11.8	130.6	8.44	8.44	0.32
Cross into 330' Lease at 11066.0' MD, 48.33° INC, 177.95° AZ									
11,081.0	49.60	178.00	11,032.2	-141.9	12.2	141.9	8.44	8.44	0.31

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
11,113.0	51.40	178.40	11,052.5	-166.6	12.9	166.6	5.71	5.63	1.25
11,144.0	52.80	180.30	11,071.6	-191.0	13.2	191.1	6.62	4.52	6.13
11,176.0	55.00	181.60	11,090.4	-216.9	12.8	216.9	7.62	6.88	4.06
11,208.0	56.80	183.10	11,108.3	-243.3	11.7	243.4	6.83	5.63	4.69
11,240.0	60.50	182.30	11,125.0	-270.6	10.4	270.7	11.76	11.56	-2.50
11,272.0	64.60	180.60	11,139.7	-299.0	9.7	299.1	13.65	12.81	-5.31
11,304.0	68.60	179.50	11,152.4	-328.4	9.7	328.4	12.89	12.50	-3.44
11,335.0	73.70	178.60	11,162.5	-357.7	10.2	357.8	16.68	16.45	-2.90
11,363.0	78.10	179.50	11,169.3	-384.8	10.6	384.9	16.02	15.71	3.21
11,394.0	82.10	179.60	11,174.6	-415.4	10.8	415.4	12.91	12.90	0.32
11,426.0	83.90	180.40	11,178.5	-447.1	10.8	447.2	6.15	5.63	2.50
11,458.0	86.20	181.10	11,181.3	-479.0	10.4	479.1	7.51	7.19	2.19
11,489.0	88.00	181.90	11,182.8	-510.0	9.6	510.0	6.35	5.81	2.58
EOC: 11489.0' MD, 11182.8' TVD, 88.00° INC, 181.90° AZ, 510.0' VS									
11,584.0	90.00	179.80	11,184.5	-604.9	8.2	605.0	3.05	2.11	-2.21
11,679.0	87.90	179.10	11,186.2	-699.9	9.1	699.9	2.33	-2.21	-0.74
11,774.0	89.80	180.50	11,188.1	-794.9	9.5	794.9	2.48	2.00	1.47
11,864.0	90.00	181.00	11,188.3	-884.9	8.3	884.9	0.60	0.22	0.56
11,958.0	91.10	181.10	11,187.4	-978.8	6.6	978.9	1.18	1.17	0.11
12,053.0	90.60	180.30	11,186.0	-1,073.8	5.4	1,073.8	0.99	-0.53	-0.84
12,147.0	89.90	180.10	11,185.6	-1,167.8	5.1	1,167.8	0.77	-0.74	-0.21
12,242.0	90.50	180.60	11,185.2	-1,262.8	4.5	1,262.8	0.82	0.63	0.53
12,337.0	89.80	180.40	11,185.0	-1,357.8	3.7	1,357.8	0.77	-0.74	-0.21
12,432.0	90.10	180.50	11,185.1	-1,452.8	2.9	1,452.8	0.33	0.32	0.11
12,526.0	90.20	181.10	11,184.8	-1,546.8	1.6	1,546.8	0.65	0.11	0.64
12,622.0	89.40	178.20	11,185.2	-1,642.8	2.2	1,642.8	3.13	-0.83	-3.02
12,716.0	89.80	178.70	11,185.8	-1,736.7	4.7	1,736.7	0.68	0.43	0.53
12,811.0	91.10	178.00	11,185.1	-1,831.7	7.5	1,831.7	1.55	1.37	-0.74
12,906.0	90.60	178.10	11,183.7	-1,926.6	10.7	1,926.7	0.54	-0.53	0.11
13,001.0	90.30	178.20	11,182.9	-2,021.6	13.8	2,021.6	0.33	-0.32	0.11
13,096.0	90.00	178.20	11,182.7	-2,116.5	16.7	2,116.6	0.32	-0.32	0.00
13,191.0	89.80	178.60	11,182.8	-2,211.5	19.4	2,211.6	0.47	-0.21	0.42
13,286.0	90.50	179.30	11,182.6	-2,306.5	21.1	2,306.6	1.04	0.74	0.74
13,381.0	90.60	179.70	11,181.7	-2,401.5	22.0	2,401.6	0.43	0.11	0.42
13,476.0	91.50	180.10	11,179.9	-2,496.5	22.1	2,496.5	1.04	0.95	0.42
13,571.0	91.50	180.50	11,177.5	-2,591.4	21.6	2,591.5	0.42	0.00	0.42
13,666.0	90.50	180.40	11,175.8	-2,686.4	20.9	2,686.5	1.06	-1.05	-0.11
13,761.0	91.60	180.90	11,174.1	-2,781.4	19.8	2,781.4	1.27	1.16	0.53
13,857.0	90.70	180.80	11,172.1	-2,877.4	18.4	2,877.4	0.94	-0.94	-0.10
13,953.0	89.40	180.70	11,172.0	-2,973.3	17.1	2,973.4	1.36	-1.35	-0.10
14,048.0	88.50	180.20	11,173.8	-3,068.3	16.4	3,068.4	1.08	-0.95	-0.53
14,142.0	90.10	180.60	11,174.9	-3,162.3	15.7	3,162.3	1.75	1.70	0.43
14,238.0	90.30	180.00	11,174.6	-3,258.3	15.2	3,258.3	0.66	0.21	-0.63

Survey Report

Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	RKB @ 3621.0usft (Cactus 124)
Site:	Atoka Bank BDJ State Com	MD Reference:	RKB @ 3621.0usft (Cactus 124)
Well:	#2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
14,332.0	90.10	179.70	11,174.3	-3,352.3	15.5	3,352.3	0.38	-0.21	-0.32
14,428.0	91.10	179.30	11,173.3	-3,448.3	16.3	3,448.3	1.12	1.04	-0.42
14,523.0	91.30	179.60	11,171.3	-3,543.3	17.2	3,543.3	0.38	0.21	0.32
14,617.0	90.70	179.60	11,169.6	-3,637.3	17.9	3,637.3	0.64	-0.64	0.00
14,712.0	90.50	179.50	11,168.6	-3,732.2	18.6	3,732.3	0.24	-0.21	-0.11
14,807.0	90.00	180.00	11,168.2	-3,827.2	19.0	3,827.3	0.74	-0.53	0.53
14,902.0	91.10	179.70	11,167.3	-3,922.2	19.3	3,922.3	1.20	1.16	-0.32
14,997.0	90.90	180.20	11,165.7	-4,017.2	19.4	4,017.3	0.57	-0.21	0.53
15,092.0	90.90	180.40	11,164.2	-4,112.2	18.9	4,112.2	0.21	0.00	0.21
15,187.0	90.50	180.30	11,163.0	-4,207.2	18.3	4,207.2	0.43	-0.42	-0.11
15,283.0	89.90	180.20	11,162.7	-4,303.2	17.9	4,303.2	0.63	-0.63	-0.10
15,378.0	90.90	179.70	11,162.0	-4,398.2	18.0	4,398.2	1.18	1.05	-0.53
15,472.0	90.70	179.70	11,160.7	-4,492.2	18.4	4,492.2	0.21	-0.21	0.00
15,567.0	90.50	179.20	11,159.7	-4,587.2	19.4	4,587.2	0.57	-0.21	-0.53
15,662.0	90.00	179.60	11,159.3	-4,682.2	20.4	4,682.2	0.67	-0.53	0.42
15,685.0	89.90	179.50	11,159.3	-4,705.2	20.5	4,705.2	0.61	-0.43	-0.43
15,742.0	89.90	179.50	11,159.4	-4,762.2	21.0	4,762.2	0.00	0.00	0.00
BHL: 15742.0' MD, 11159.4' TVD, 89.90° INC, 179.50° AZ, -4762.2' +N/-S, 21.0' +E/-W, 4762.2' VS									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,702.0	10,701.7	16.5	-3.4	KOP: 10702.0' MD, 10701.7' TVD
11,066.0	11,022.3	-130.6	11.8	Cross into 330' Lease at 11066.0' MD, 48.33° INC, 177.95° AZ
11,489.0	11,182.8	-510.0	9.6	EOC: 11489.0' MD, 11182.8' TVD, 88.00° INC, 181.90° AZ, 510.0' VS
15,742.0	11,159.4	-4,762.2	21.0	BHL: 15742.0' MD, 11159.4' TVD, 89.90° INC, 179.50° AZ, -4762.2' +N/-S, 21.0

Checked By: _____ Approved By: _____ Date: _____



Job Number: SVMO-140116
 Company: Yates Petroleum Corporation
 Lease/Well: Atoka Bank BOJ State Com 2H
 Location: Lea County, NM
 Rig Name: Cactus #124
 RKB: 27'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.88°
 Grid: East To Grid North
 File name: S:\2014SU~1\YATES\MO\ATOKAB~2\H.SVY
 Date/Time: 31-Jan-14 / 16:46
 Curve Name: Surface - 1250' M.D. (Gyroscopic)

HOBBS OCD
 MAY 27 2014
 RECEIVED

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 1,250' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
 Gary Sparks 2/3/14
 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	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	.25	223.84	100.00	-.16	-.15	.16	.22	223.84	.25
200.00	.25	59.83	200.00	-.21	-.11	.20	.23	208.99	.50
300.00	.25	219.81	300.00	-.26	-.06	.26	.27	193.81	.49
400.00	.25	5.81	400.00	-.21	-.18	.21	.28	220.48	.48
500.00	.25	283.80	500.00	.06	-.37	-.06	.38	278.49	.33
600.00	.50	43.79	600.00	.42	-.28	-.42	.51	326.29	.66
700.00	.25	353.78	699.99	.95	.00	-.95	.95	359.78	.39
800.00	.25	304.77	799.99	1.30	-.21	-1.30	1.31	350.94	.21
900.00	.25	246.77	899.99	1.33	-.59	-1.34	1.46	336.28	.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	.25	265.76	999.99	1.23	-1.00	-1.24	1.59	320.81	.08
1100.00	.25	272.75	1099.99	1.23	-1.44	-1.23	1.89	310.42	.03
1200.00	.50	238.74	1199.99	1.01	-2.03	-1.02	2.27	296.45	.32
Last Survey Depth Recorded									
1250.00	.25	203.73	1249.99	.80	-2.26	-.81	2.40	289.42	.66