

NM OIL CONSERVATION
ARTESIA DISTRICT

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30-015-39829

Yates Petroleum Corp.

Eddy County, NM(NAD83)

Wolf AJA Federal

#17H

OH

Design: OH

Standard Survey Report

27 September, 2014





TDS
Survey Report



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #17H
Project:	Eddy County, NM(NAD83)	TVD Reference:	KB @ 3683.5usft
Site:	Wolf AJA Federal	MD Reference:	KB @ 3683.5usft
Well:	#17H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM:5000.1 Single User Db

Project:	Eddy County, NM(NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Wolf AJA Federal			
Site Position:	Map	Northing:	521,358.39 usft	Latitude: 32° 25' 54.743 N
From:		Easting:	725,026.02 usft	Longitude: 103° 44' 16.670 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.32 °

Well:	#17H			
Well Position	+N-S	0.0 usft	Northing:	528,545.86 usft
	+E-W	0.0 usft	Easting:	729,320.80 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 3,665.0 usft

Wellbore:	OH				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/26/2014	7.28	60.29	48,415

Design:	OH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	284.83

Survey Program	Date: 9/27/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	900.0	Gyro #1 (OH)	MWD	MWD - Standard
1,009.0	11,865.0	MWD #1 (OH)	MWD	MWD - Standard

Survey	Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	100.0	0.17	249.50	100.0	-0.1	-0.1	0.1	0.17	0.17	0.00
	200.0	0.20	204.38	200.0	-0.3	-0.3	0.3	0.14	0.03	-45.12
	300.0	0.40	184.67	300.0	-0.8	-0.5	0.2	0.22	0.20	-19.71
	400.0	0.68	180.51	400.0	-1.7	-0.5	0.0	0.28	0.28	-4.16
	500.0	0.91	195.14	500.0	-3.1	-0.7	-0.1	0.30	0.23	14.63
	600.0	1.18	203.60	600.0	-4.8	-1.3	0.0	0.31	0.27	8.46
	700.0	1.42	204.01	699.9	-6.9	-2.2	0.4	0.24	0.24	0.41
	800.0	1.69	205.38	799.9	-9.3	-3.4	0.9	0.27	0.27	1.37
	900.0	1.45	207.57	899.9	-11.8	-4.6	1.4	0.25	-0.24	2.19



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)
1,009.0	1.10	212.80	1,008.8	-13.9	-5.8	2.0	0.34	-0.32	4.80
1,104.0	1.10	214.20	1,103.8	-15.4	-6.8	2.6	0.03	0.00	1.47
1,199.0	1.10	215.30	1,198.8	-16.9	-7.8	3.3	0.02	0.00	1.16
1,294.0	0.90	220.40	1,293.8	-18.2	-8.8	3.9	0.23	-0.21	5.37
1,388.0	0.40	350.50	1,387.8	-18.4	-9.4	4.3	1.27	-0.53	138.40
1,483.0	0.50	4.70	1,482.8	-17.7	-9.4	4.6	0.16	0.11	14.95
1,578.0	0.40	10.10	1,577.8	-17.0	-9.3	4.7	0.11	-0.11	5.68
1,673.0	0.40	8.50	1,672.8	-16.3	-9.2	4.7	0.01	0.00	-1.68
1,768.0	0.20	77.10	1,767.8	-15.9	-9.0	4.6	0.40	-0.21	72.21
1,863.0	0.30	62.40	1,862.8	-15.8	-8.6	4.3	0.12	0.11	-15.47
1,957.0	0.40	65.10	1,956.8	-15.5	-8.1	3.8	0.11	0.11	2.87
2,052.0	0.70	65.60	2,051.8	-15.2	-7.3	3.1	0.32	0.32	0.53
2,146.0	0.80	65.60	2,145.8	-14.7	-6.1	2.2	0.11	0.11	0.00
2,241.0	1.10	65.80	2,240.7	-14.0	-4.7	1.0	0.32	0.32	0.21
2,336.0	1.60	68.00	2,335.7	-13.1	-2.6	-0.8	0.53	0.53	2.32
2,431.0	1.60	38.10	2,430.7	-11.6	-0.6	-2.4	0.87	0.00	-31.47
2,526.0	2.10	23.40	2,525.6	-9.0	0.9	-3.2	0.72	0.53	-15.47
2,621.0	2.20	34.10	2,620.6	-5.8	2.6	-4.0	0.43	0.11	11.26
2,716.0	2.60	32.30	2,715.5	-2.5	4.8	-5.3	0.43	0.42	-1.89
2,811.0	2.80	24.50	2,810.4	1.4	6.9	-6.3	0.44	0.21	-8.21
2,906.0	2.50	23.80	2,905.3	5.4	8.7	-7.0	0.32	-0.32	-0.74
3,001.0	3.40	6.30	3,000.2	10.1	9.9	-6.9	1.33	0.95	-18.42
3,096.0	5.60	354.00	3,094.9	17.5	9.7	-4.9	2.52	2.32	-12.95
3,190.0	7.30	353.30	3,188.3	28.0	8.5	-1.0	1.81	1.81	-0.74
3,285.0	9.20	355.10	3,282.3	41.6	7.2	3.7	2.02	2.00	1.89
3,380.0	9.20	356.30	3,376.1	56.7	6.0	8.7	0.20	0.00	1.26
3,475.0	7.90	3.30	3,470.0	70.8	5.9	12.4	1.75	-1.37	7.37
3,570.0	8.00	5.90	3,564.1	83.9	7.0	14.8	0.39	0.11	2.74
3,665.0	7.80	5.40	3,658.2	96.9	8.2	16.8	0.22	-0.21	-0.53
3,760.0	8.00	359.40	3,752.3	109.9	8.8	19.7	0.89	0.21	-6.32
3,855.0	8.00	357.70	3,846.4	123.2	8.4	23.4	0.25	0.00	-1.79
3,950.0	8.10	358.20	3,940.4	136.5	8.0	27.2	0.13	0.11	0.53
4,045.0	8.40	2.90	4,034.4	150.1	8.1	30.6	0.78	0.32	4.95
4,140.0	7.60	357.30	4,128.5	163.3	8.2	33.9	1.17	-0.84	-5.89
4,236.0	7.40	358.60	4,223.7	175.8	7.7	37.5	0.27	-0.21	1.35
4,331.0	6.90	0.30	4,318.0	187.6	7.6	40.7	0.57	-0.53	1.79
4,425.0	6.50	0.60	4,411.3	198.6	7.7	43.4	0.43	-0.43	0.32
4,520.0	6.20	1.50	4,505.7	209.1	7.9	45.9	0.33	-0.32	0.95
4,734.0	7.90	0.30	4,718.1	235.4	8.2	52.3	0.80	0.79	-0.56
4,829.0	9.40	1.00	4,812.0	249.6	8.4	55.8	1.58	1.58	0.74
4,925.0	10.30	1.70	4,906.6	266.1	8.8	59.6	0.95	0.94	0.73
5,020.0	9.20	355.90	5,000.2	282.1	8.5	64.0	1.55	-1.16	-6.11
5,115.0	9.80	354.80	5,093.9	297.8	7.2	69.2	0.66	0.63	-1.16



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)
5,210.0	9.80	357.10	5,187.5	313.9	6.1	74.4	0.41	0.00	2.42
5,305.0	8.50	1.70	5,281.3	329.0	5.9	78.5	1.57	-1.37	4.84
5,400.0	8.20	0.60	5,375.3	342.8	6.2	81.8	0.36	-0.32	-1.16
5,495.0	7.60	359.90	5,469.4	355.8	6.2	85.0	0.64	-0.63	-0.74
5,590.0	8.30	3.80	5,563.5	368.9	6.7	88.0	0.93	0.74	4.11
5,684.0	8.40	4.10	5,656.5	382.6	7.6	90.5	0.12	0.11	0.32
5,779.0	8.40	357.60	5,750.5	396.4	7.8	93.9	1.00	0.00	-6.84
5,874.0	8.80	357.50	5,844.4	410.6	7.2	98.1	0.42	0.42	-0.11
5,969.0	9.00	356.90	5,938.3	425.3	6.5	102.6	0.23	0.21	-0.63
6,064.0	9.00	357.60	6,032.1	440.1	5.8	107.1	0.12	0.00	0.74
6,158.0	8.60	356.90	6,125.0	454.5	5.1	111.4	0.44	-0.43	-0.74
6,253.0	8.40	356.10	6,219.0	468.5	4.2	115.8	0.24	-0.21	-0.84
6,348.0	8.20	356.10	6,313.0	482.2	3.3	120.2	0.21	-0.21	0.00
6,443.0	7.90	355.70	6,407.0	495.5	2.4	124.5	0.32	-0.32	-0.42
6,552.0	7.70	356.40	6,515.0	510.2	1.3	129.3	0.20	-0.18	0.64
6,647.0	8.60	354.80	6,609.1	523.6	0.3	133.7	0.98	0.95	-1.68
6,728.0	11.40	337.10	6,688.8	537.1	-3.4	140.7	5.10	3.46	-21.85
6,759.0	14.70	327.10	6,719.0	543.2	-6.7	145.5	12.86	10.65	-32.26
6,790.0	17.90	320.20	6,748.8	550.2	-11.9	152.3	12.05	10.32	-22.26
6,821.0	21.30	315.80	6,778.0	557.9	-18.9	161.0	11.95	10.97	-14.19
6,852.0	24.80	313.30	6,806.5	566.3	-27.5	171.6	11.72	11.29	-8.06
6,883.0	28.00	311.10	6,834.3	575.6	-37.7	183.8	10.79	10.32	-7.10
6,914.0	30.40	309.80	6,861.3	585.4	-49.3	197.4	8.01	7.74	-4.19
6,944.0	33.20	309.70	6,886.8	595.5	-61.4	211.8	9.33	9.33	-0.33
6,975.0	35.60	310.50	6,912.4	606.8	-74.8	227.6	7.88	7.74	2.58
7,006.0	37.90	312.10	6,937.3	619.0	-88.7	244.2	8.04	7.42	5.16
7,037.0	40.00	313.00	6,961.4	632.2	-103.1	261.5	7.02	6.77	2.90
7,067.0	42.30	312.60	6,983.9	645.6	-117.6	278.9	7.72	7.67	-1.33
7,098.0	44.80	311.60	7,006.4	659.9	-133.4	297.9	8.36	8.06	-3.23
7,129.0	47.00	310.20	7,028.0	674.5	-150.2	317.9	7.80	7.10	-4.52
7,160.0	49.20	309.30	7,048.7	689.3	-168.0	338.8	7.42	7.10	-2.90
7,163.0	51.40	308.60	7,050.6	690.7	-169.8	340.9	75.50	73.33	-23.33
7,189.0	51.40	308.60	7,066.8	703.4	-185.7	359.5	0.00	0.00	0.00
7,220.0	54.30	307.50	7,085.5	718.6	-205.1	382.2	9.77	9.35	-3.55
7,251.0	56.90	308.10	7,103.1	734.3	-225.3	405.8	8.54	8.39	1.94
7,281.0	58.00	307.70	7,119.2	749.8	-245.3	429.0	3.84	3.67	-1.33
7,312.0	59.00	308.40	7,135.4	766.1	-266.1	453.3	3.76	3.23	2.26
7,343.0	59.50	308.80	7,151.2	782.7	-286.9	477.7	1.96	1.61	1.29
7,374.0	60.10	308.10	7,166.8	799.4	-307.9	502.2	2.75	1.94	-2.26
7,419.0	64.60	306.30	7,187.7	823.5	-339.6	539.1	10.61	10.00	-4.00
7,450.0	69.60	306.30	7,199.8	840.4	-362.6	565.7	16.13	16.13	0.00
7,482.0	75.30	307.50	7,209.4	858.7	-387.0	593.9	18.17	17.81	3.75
7,521.0	82.40	308.60	7,217.0	882.3	-417.1	629.1	18.41	18.21	2.82



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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7,552.0	88.10	308.40	7,219.5	901.5	-441.3	657.3	18.40	18.39	-0.65
7,584.0	90.00	309.70	7,220.1	921.6	-466.2	686.5	7.19	5.94	4.06
7,616.0	90.70	310.70	7,219.9	942.3	-490.6	715.4	3.81	2.19	3.13
7,709.0	90.70	309.00	7,218.7	1,001.9	-562.0	799.7	1.83	0.00	-1.83
7,803.0	91.90	304.60	7,216.6	1,058.2	-637.2	886.8	4.85	1.28	-4.68
7,896.0	92.20	302.60	7,213.3	1,109.6	-714.6	974.8	2.17	0.32	-2.15
7,990.0	90.60	300.20	7,211.0	1,158.5	-794.8	1,064.9	3.07	-1.70	-2.55
8,085.0	87.80	296.60	7,212.3	1,203.7	-878.4	1,157.2	4.80	-2.95	-3.79
8,180.0	87.40	291.20	7,216.3	1,242.2	-965.1	1,250.9	5.69	-0.42	-5.68
8,274.0	87.90	284.50	7,220.1	1,270.9	-1,054.5	1,344.6	7.14	0.53	-7.13
8,367.0	89.40	277.10	7,222.3	1,288.3	-1,145.7	1,437.3	8.12	1.61	-7.96
8,462.0	92.20	270.30	7,221.0	1,294.5	-1,240.4	1,530.4	7.74	2.95	-7.16
8,555.0	92.40	266.80	7,217.3	1,292.1	-1,333.3	1,619.6	3.77	0.22	-3.76
8,649.0	93.10	266.80	7,212.8	1,286.9	-1,427.1	1,708.9	0.74	0.74	0.00
8,744.0	93.30	267.50	7,207.5	1,282.2	-1,521.8	1,799.3	0.77	0.21	0.74
8,837.0	91.70	266.90	7,203.4	1,277.6	-1,614.6	1,887.8	1.84	-1.72	-0.65
8,931.0	92.00	266.90	7,200.4	1,272.5	-1,708.4	1,977.2	0.32	0.32	0.00
9,024.0	90.90	267.60	7,198.0	1,268.1	-1,801.3	2,065.8	1.40	-1.18	0.75
9,119.0	90.90	268.00	7,196.5	1,264.4	-1,896.2	2,156.7	0.42	0.00	0.42
9,213.0	91.30	269.20	7,194.7	1,262.1	-1,990.1	2,246.9	1.35	0.43	1.28
9,308.0	90.60	269.00	7,193.1	1,260.6	-2,085.1	2,338.3	0.77	-0.74	-0.21
9,402.0	90.60	270.10	7,192.2	1,259.9	-2,179.1	2,429.0	1.17	0.00	1.17
9,497.0	89.90	269.90	7,191.7	1,259.9	-2,274.1	2,520.8	0.77	-0.74	-0.21
9,592.0	90.00	270.50	7,191.8	1,260.2	-2,369.1	2,612.8	0.64	0.11	0.63
9,685.0	89.20	268.90	7,192.5	1,259.7	-2,462.1	2,702.5	1.92	-0.86	-1.72
9,779.0	89.30	268.50	7,193.7	1,257.6	-2,556.1	2,792.8	0.44	0.11	-0.43
9,873.0	89.40	268.50	7,194.8	1,255.2	-2,650.0	2,883.0	0.11	0.11	0.00
9,966.0	89.30	268.50	7,195.8	1,252.7	-2,743.0	2,972.3	0.11	-0.11	0.00
10,061.0	91.40	268.90	7,195.2	1,250.6	-2,838.0	3,063.5	2.25	2.21	0.42
10,156.0	91.30	268.70	7,193.0	1,248.6	-2,932.9	3,154.8	0.24	-0.11	-0.21
10,250.0	91.40	269.60	7,190.8	1,247.2	-3,026.9	3,245.3	0.96	0.11	0.96
10,345.0	91.70	270.50	7,188.2	1,247.3	-3,121.8	3,337.1	1.00	0.32	0.95
10,439.0	91.50	271.20	7,185.6	1,248.7	-3,215.8	3,428.3	0.77	-0.21	0.74
10,533.0	90.50	271.00	7,184.0	1,250.5	-3,309.8	3,519.6	1.08	-1.06	-0.21
10,628.0	90.20	268.30	7,183.4	1,249.9	-3,404.7	3,611.2	2.86	-0.32	-2.84
10,721.0	90.60	268.90	7,182.7	1,247.6	-3,497.7	3,700.5	0.78	0.43	0.65
10,815.0	90.40	270.50	7,181.9	1,247.1	-3,591.7	3,791.3	1.72	-0.21	1.70
10,910.0	89.90	267.50	7,181.7	1,245.5	-3,686.7	3,882.7	3.20	-0.53	-3.16
11,004.0	89.60	267.50	7,182.1	1,241.4	-3,780.6	3,972.4	0.32	-0.32	0.00
11,099.0	90.30	268.30	7,182.2	1,237.9	-3,875.5	4,063.3	1.12	0.74	0.84
11,193.0	90.00	268.20	7,181.9	1,235.0	-3,969.5	4,153.4	0.34	-0.32	-0.11
11,287.0	90.00	268.00	7,181.9	1,231.9	-4,063.4	4,243.4	0.21	0.00	-0.21
11,380.0	91.50	269.90	7,180.7	1,230.2	-4,156.4	4,332.8	2.60	1.61	2.04
11,474.0	92.20	271.00	7,177.7	1,230.9	-4,250.3	4,423.8	1.39	0.74	1.17



TDS
Survey Report



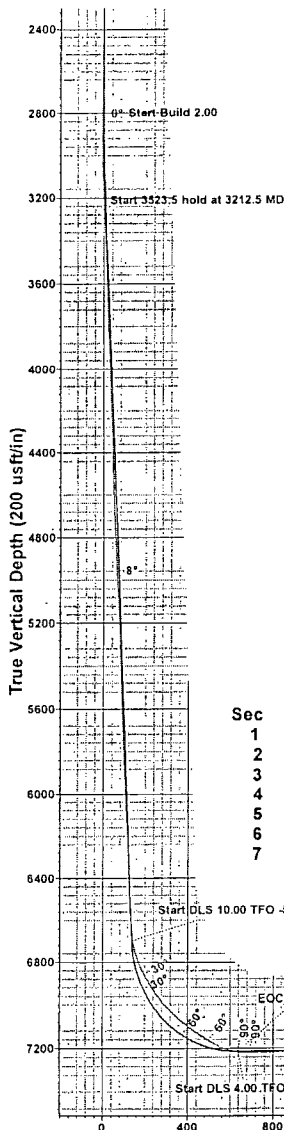
Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #17H
Project:	Eddy County, NM(NAD83)	TVD Reference:	KB @ 3683.5usft
Site:	Wolf AJA(Federal)	MD Reference:	KB @ 3683.5usft
Well:	#17H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)
11,569.0	92.30	270.60	7,173.9	1,232.3	-4,345.3	4,515.9	0.43	0.11	-0.42
11,663.0	92.20	271.70	7,170.2	1,234.1	-4,439.2	4,607.2	1.17	-0.11	1.17
11,758.0	92.20	272.00	7,166.6	1,237.2	-4,534.1	4,699.7	0.32	0.00	0.32
11,798.0	92.30	271.30	7,165.0	1,238.4	-4,574.0	4,738.6	1.77	0.25	-1.75
11,865.0	92.30	271.30	7,162.3	1,239.9	-4,640.9	4,803.7	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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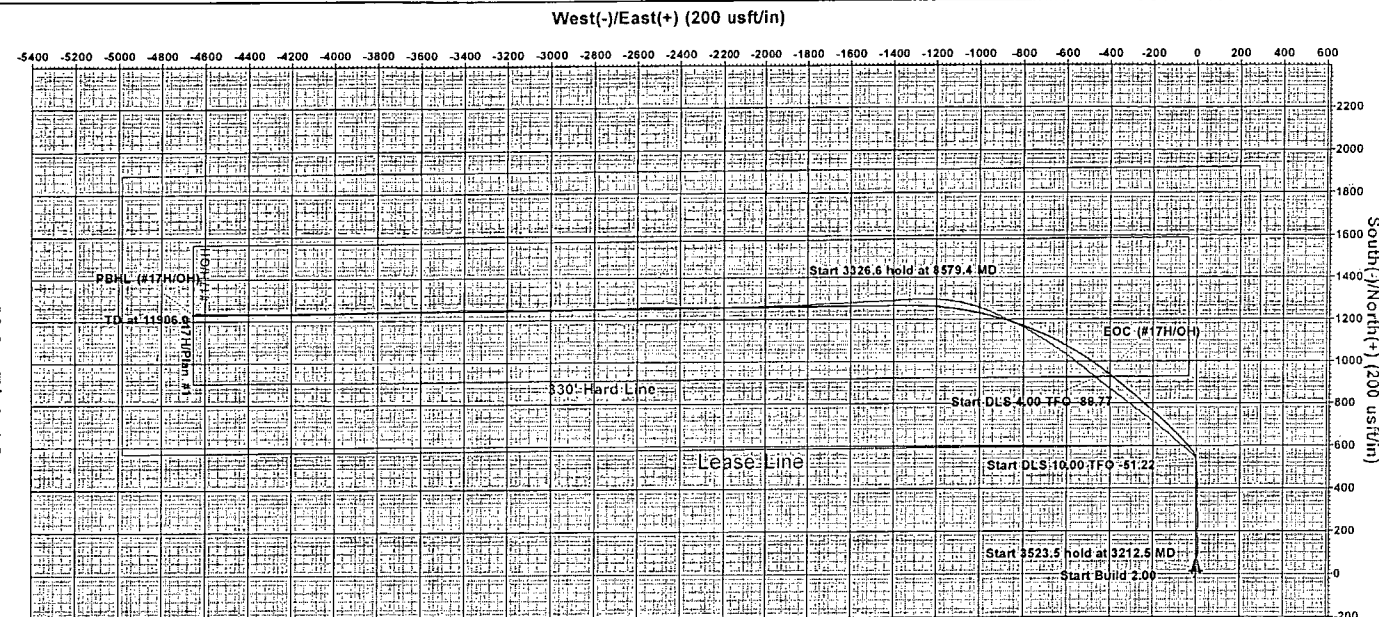


Project: Eddy County, NM(NAD83)
Site: Wolf AJA Federal
Well: #17H
Wellbore: OH
Plan: Plan #1 (#17H/OH)



Azimuths to Grid North
True North: -0.33°
Magnetic North: 6.95°

Magnetic Field
Strength: 48415.1snT
Dip Angle: 60.29°
Date: 8/26/2014
Model: IGRF2010



#17H

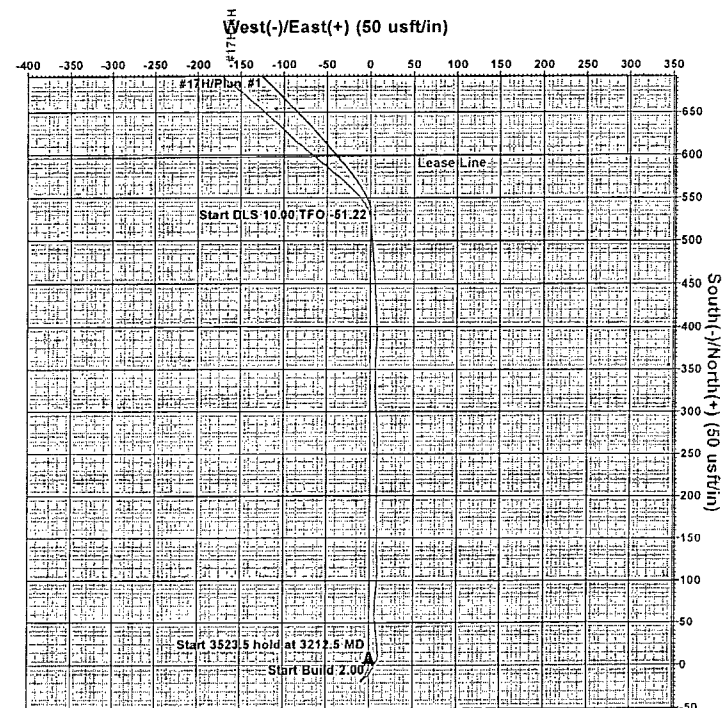
Ground Elevation:: 3665.0
RKB Elevation: KB @ 3683.5usft
Rig Name:

Northings	Easting	Latitude	Longitude
528545.86	729320.81	32° 27' 5.625 N	103° 43' 26.081 W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	2800.0	0.00	0.00	2800.0	0.0	0.0	0.00	0.00	0.0
3	3212.5	8.25	0.00	3211.1	29.6	0.0	2.00	0.00	7.6
4	6736.0	8.25	0.00	6698.1	535.2	0.0	0.00	0.00	137.0
5	7590.8	90.66	309.00	7216.0	944.4	-411.4	10.00	-51.22	639.5
6	8579.4	90.66	269.46	7204.2	1263.5	-1326.4	4.00	-89.77	1605.6
7	11906.0	90.66	269.46	7166.0	1231.9	-4652.6	0.00	0.00	4812.9

PBHL (#17H/OH)



Vertical Section at 284.83° (200 usf/in)

Terra Directional Services LLC
322 Spring Hill Drive, Suite A300. Spring, Tx 77386
Phone: 432-425-7532

PROJECT DETAILS: Eddy County, NM(NAD83)
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



NM OIL CONSERVATION

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Yates Petroleum Corp.

Eddy County, NM(NAD83)

Wolf AJA Federal

#17H

OH

Design: OH

Survey Report - Geographic

27 September, 2014





TDS
Survey Report - Geographic



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #17H
Project:	Eddy County, NM(NAD83)	TVD Reference:	KB @ 3683.5usft
Site:	Wolf AJA Federal	MD Reference:	KB @ 3683.5usft
Well:	#17H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM5000.1 Single User Db

Project:	Eddy County, NM(NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Wolf AJA Federal		
Site Position:		Northing:	521,358.39 usft
From:	Map	Easting:	725,026.02 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 25' 54.743 N
		Longitude:	103° 44' 16.670 W
		Grid Convergence:	0.32 °

Well:	#17H		
Well Position	+N/-S	0.0 usft	Northing: 528,545.86 usft
	+E/-W	0.0 usft	Easting: 729,320.80 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 27' 5.625 N
		Longitude:	103° 43' 26.081 W
		Ground Level:	3,665.0 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	8/26/2014	(°)
			7.28
			Dip Angle
			(°)
			60.29
			Field Strength
			(nT)
			48,415

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
			(°)
			284.83

Survey Program	Date: 9/27/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	900.0	Gyro #1 (OH)	MWD
1,009.0	11,865.0	MWD #1 (OH)	MWD
			Description
			MWD - Standard
			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	528,545.86	729,320.80	32° 27' 5.625 N	103° 43' 26.081 W	
100.0	0.17	249.50	100.0	-0.1	-0.1	528,545.81	729,320.66	32° 27' 5.624 N	103° 43' 26.083 W	
200.0	0.20	204.38	200.0	-0.3	-0.3	528,545.60	729,320.45	32° 27' 5.622 N	103° 43' 26.085 W	
300.0	0.40	184.67	300.0	-0.8	-0.5	528,545.09	729,320.35	32° 27' 5.617 N	103° 43' 26.086 W	
400.0	0.68	180.51	400.0	-1.7	-0.5	528,544.15	729,320.32	32° 27' 5.608 N	103° 43' 26.087 W	
500.0	0.91	195.14	500.0	-3.1	-0.7	528,542.79	729,320.11	32° 27' 5.594 N	103° 43' 26.089 W	
600.0	1.18	203.60	600.0	-4.8	-1.3	528,541.08	729,319.49	32° 27' 5.578 N	103° 43' 26.097 W	
700.0	1.42	204.01	699.9	-6.9	-2.2	528,539.00	729,318.57	32° 27' 5.557 N	103° 43' 26.108 W	
800.0	1.69	205.38	799.9	-9.3	-3.4	528,536.54	729,317.43	32° 27' 5.533 N	103° 43' 26.121 W	
900.0	1.45	207.57	899.9	-11.8	-4.6	528,534.08	729,316.22	32° 27' 5.509 N	103° 43' 26.135 W	
1,009.0	1.10	212.80	1,008.8	-13.9	-5.8	528,531.98	729,315.01	32° 27' 5.488 N	103° 43' 26.150 W	



TDS
Survey Report - Geographic



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #17H
Project:	Eddy County NM(NAD83)	TVD Reference:	KB @ 3683.5usft
Site:	Wolf AJA Federal	MD Reference:	KB @ 3683.5usft
Well:	#17H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,104.0	1.10	214.20	1,103.8	-15.4	-6.8	528,530.46	729,314.01	32° 27' 5.473 N	103° 43' 26.161 W
1,199.0	1.10	215.30	1,198.8	-16.9	-7.8	528,528.96	729,312.97	32° 27' 5.458 N	103° 43' 26.174 W
1,294.0	0.90	220.40	1,293.8	-18.2	-8.8	528,527.65	729,311.96	32° 27' 5.445 N	103° 43' 26.186 W
1,388.0	0.40	350.50	1,387.8	-18.4	-9.4	528,527.41	729,311.42	32° 27' 5.443 N	103° 43' 26.192 W
1,483.0	0.50	4.70	1,482.8	-17.7	-9.4	528,528.15	729,311.40	32° 27' 5.450 N	103° 43' 26.192 W
1,578.0	0.40	10.10	1,577.8	-17.0	-9.3	528,528.89	729,311.49	32° 27' 5.457 N	103° 43' 26.191 W
1,673.0	0.40	8.50	1,672.8	-16.3	-9.2	528,529.55	729,311.60	32° 27' 5.464 N	103° 43' 26.190 W
1,768.0	0.20	77.10	1,767.8	-15.9	-9.0	528,529.91	729,311.81	32° 27' 5.468 N	103° 43' 26.187 W
1,863.0	0.30	62.40	1,862.8	-15.8	-8.6	528,530.06	729,312.19	32° 27' 5.469 N	103° 43' 26.183 W
1,957.0	0.40	65.10	1,956.8	-15.5	-8.1	528,530.32	729,312.71	32° 27' 5.471 N	103° 43' 26.177 W
2,052.0	0.70	65.60	2,051.8	-15.2	-7.3	528,530.70	729,313.54	32° 27' 5.475 N	103° 43' 26.167 W
2,146.0	0.80	65.60	2,145.8	-14.7	-6.1	528,531.20	729,314.66	32° 27' 5.480 N	103° 43' 26.154 W
2,241.0	1.10	65.80	2,240.7	-14.0	-4.7	528,531.85	729,316.09	32° 27' 5.486 N	103° 43' 26.137 W
2,336.0	1.60	68.00	2,335.7	-13.1	-2.6	528,532.72	729,318.16	32° 27' 5.495 N	103° 43' 26.113 W
2,431.0	1.60	38.10	2,430.7	-11.6	-0.6	528,534.26	729,320.20	32° 27' 5.510 N	103° 43' 26.089 W
2,526.0	2.10	23.40	2,525.6	-9.0	0.9	528,536.90	729,321.71	32° 27' 5.536 N	103° 43' 26.071 W
2,621.0	2.20	34.10	2,620.6	-5.8	2.6	528,540.01	729,323.43	32° 27' 5.567 N	103° 43' 26.051 W
2,716.0	2.60	32.30	2,715.5	-2.5	4.8	528,543.34	729,325.60	32° 27' 5.600 N	103° 43' 26.025 W
2,811.0	2.80	24.50	2,810.4	1.4	6.9	528,547.28	729,327.71	32° 27' 5.638 N	103° 43' 26.000 W
2,906.0	2.50	23.80	2,905.3	5.4	8.7	528,551.28	729,329.51	32° 27' 5.678 N	103° 43' 25.979 W
3,001.0	3.40	6.30	3,000.2	10.1	9.9	528,555.98	729,330.66	32° 27' 5.724 N	103° 43' 25.965 W
3,096.0	5.60	354.00	3,094.9	17.5	9.7	528,563.39	729,330.48	32° 27' 5.798 N	103° 43' 25.967 W
3,190.0	7.30	353.30	3,188.3	28.0	8.5	528,573.88	729,329.31	32° 27' 5.902 N	103° 43' 25.980 W
3,285.0	9.20	355.10	3,282.3	41.6	7.2	528,587.44	729,327.95	32° 27' 6.036 N	103° 43' 25.995 W
3,380.0	9.20	356.30	3,376.1	56.7	6.0	528,602.59	729,326.82	32° 27' 6.186 N	103° 43' 26.007 W
3,475.0	7.90	3.30	3,470.0	70.8	5.9	528,616.69	729,326.70	32° 27' 6.325 N	103° 43' 26.008 W
3,570.0	8.00	5.90	3,564.1	83.9	7.0	528,629.78	729,327.76	32° 27' 6.455 N	103° 43' 25.994 W
3,665.0	7.80	5.40	3,658.2	96.9	8.2	528,642.77	729,329.04	32° 27' 6.583 N	103° 43' 25.979 W
3,760.0	8.00	359.40	3,752.3	109.9	8.8	528,655.80	729,329.58	32° 27' 6.712 N	103° 43' 25.971 W
3,855.0	8.00	357.70	3,846.4	123.2	8.4	528,669.02	729,329.25	32° 27' 6.843 N	103° 43' 25.974 W
3,950.0	8.10	358.20	3,940.4	136.5	8.0	528,682.31	729,328.77	32° 27' 6.975 N	103° 43' 25.979 W
4,045.0	8.40	2.90	4,034.4	150.1	8.1	528,695.93	729,328.91	32° 27' 7.109 N	103° 43' 25.977 W
4,140.0	7.60	357.30	4,128.5	163.3	8.2	528,709.14	729,328.97	32° 27' 7.240 N	103° 43' 25.975 W
4,236.0	7.40	358.60	4,223.7	175.8	7.7	528,721.66	729,328.52	32° 27' 7.364 N	103° 43' 25.979 W
4,331.0	6.90	0.30	4,318.0	187.6	7.6	528,733.48	729,328.40	32° 27' 7.481 N	103° 43' 25.980 W
4,425.0	6.50	0.60	4,411.3	198.6	7.7	528,744.45	729,328.48	32° 27' 7.589 N	103° 43' 25.978 W
4,520.0	6.20	1.50	4,505.7	209.1	7.9	528,754.95	729,328.67	32° 27' 7.693 N	103° 43' 25.975 W
4,734.0	7.90	0.30	4,718.1	235.4	8.2	528,781.21	729,329.05	32° 27' 7.953 N	103° 43' 25.969 W
4,829.0	9.40	1.00	4,812.0	249.6	8.4	528,795.50	729,329.22	32° 27' 8.095 N	103° 43' 25.966 W
4,925.0	10.30	1.70	4,906.6	266.1	8.8	528,811.92	729,329.61	32° 27' 8.257 N	103° 43' 25.961 W
5,020.0	9.20	355.90	5,000.2	282.1	8.5	528,827.98	729,329.32	32° 27' 8.416 N	103° 43' 25.963 W
5,115.0	9.80	354.80	5,093.9	297.8	7.2	528,843.61	729,328.05	32° 27' 8.571 N	103° 43' 25.977 W
5,210.0	9.80	357.10	5,187.5	313.9	6.1	528,859.74	729,326.90	32° 27' 8.730 N	103° 43' 25.989 W
5,305.0	8.50	1.70	5,281.3	329.0	5.9	528,874.83	729,326.70	32° 27' 8.880 N	103° 43' 25.990 W
5,400.0	8.20	0.60	5,375.3	342.8	6.2	528,888.62	729,326.98	32° 27' 9.016 N	103° 43' 25.986 W
5,495.0	7.60	359.90	5,469.4	355.8	6.2	528,901.68	729,327.04	32° 27' 9.145 N	103° 43' 25.985 W
5,590.0	8.30	3.80	5,563.5	368.9	6.7	528,914.80	729,327.49	32° 27' 9.275 N	103° 43' 25.979 W
5,684.0	8.40	4.10	5,656.5	382.6	7.6	528,928.42	729,328.43	32° 27' 9.410 N	103° 43' 25.967 W
5,779.0	8.40	357.60	5,750.5	396.4	7.8	528,942.28	729,328.63	32° 27' 9.547 N	103° 43' 25.963 W
5,874.0	8.80	357.50	5,844.4	410.6	7.2	528,956.47	729,328.02	32° 27' 9.687 N	103° 43' 25.970 W
5,969.0	9.00	356.90	5,938.3	425.3	6.5	528,971.15	729,327.31	32° 27' 9.833 N	103° 43' 25.977 W
6,064.0	9.00	357.60	6,032.1	440.1	5.8	528,985.99	729,326.59	32° 27' 9.980 N	103° 43' 25.984 W
6,158.0	8.60	356.90	6,125.0	454.5	5.1	529,000.36	729,325.90	32° 27' 10.122 N	103° 43' 25.991 W
6,253.0	8.40	356.10	6,219.0	468.5	4.2	529,014.37	729,325.05	32° 27' 10.261 N	103° 43' 26.000 W
6,348.0	8.20	356.10	6,313.0	482.2	3.3	529,028.05	729,324.12	32° 27' 10.396 N	103° 43' 26.010 W



TDS
Survey Report - Geographic



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #17H
Project:	Eddy County, NM(NAD83)	TVD Reference:	KB @ 3683.5usft
Site:	Wolf AJA Federal	MD Reference:	KB @ 3683.5usft
Well:	#17H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
6,443.0	7.90	355.70	6,407.0	495.5	2.4	529,041.32	729,323.17	32° 27' 10.527 N	103° 43' 26.021 W	
6,552.0	7.70	356.40	6,515.0	510.2	1.3	529,056.08	729,322.15	32° 27' 10.673 N	103° 43' 26.031 W	
6,647.0	8.60	354.80	6,609.1	523.6	0.3	529,069.51	729,321.10	32° 27' 10.806 N	103° 43' 26.043 W	
6,728.0	11.40	337.10	6,688.8	537.1	-3.4	529,082.92	729,317.44	32° 27' 10.939 N	103° 43' 26.085 W	
6,759.0	14.70	327.10	6,719.0	543.2	-6.7	529,089.05	729,314.11	32° 27' 11.000 N	103° 43' 26.123 W	
6,790.0	17.90	320.20	6,748.8	550.2	-11.9	529,096.01	729,308.92	32° 27' 11.069 N	103° 43' 26.183 W	
6,821.0	21.30	315.80	6,778.0	557.9	-18.9	529,103.71	729,301.94	32° 27' 11.146 N	103° 43' 26.264 W	
6,852.0	24.80	313.30	6,806.5	566.3	-27.5	529,112.21	729,293.28	32° 27' 11.230 N	103° 43' 26.365 W	
6,883.0	28.00	311.10	6,834.3	575.6	-37.7	529,121.45	729,283.06	32° 27' 11.323 N	103° 43' 26.483 W	
6,914.0	30.40	309.80	6,861.3	585.4	-49.3	529,131.26	729,271.55	32° 27' 11.420 N	103° 43' 26.617 W	
6,944.0	33.20	309.70	6,886.8	595.5	-61.4	529,141.37	729,259.40	32° 27' 11.521 N	103° 43' 26.758 W	
6,975.0	35.60	310.50	6,912.4	606.8	-74.8	529,152.65	729,246.01	32° 27' 11.633 N	103° 43' 26.914 W	
7,006.0	37.90	312.10	6,937.3	619.0	-88.7	529,164.89	729,232.08	32° 27' 11.755 N	103° 43' 27.075 W	
7,037.0	40.00	313.00	6,961.4	632.2	-103.1	529,178.07	729,217.72	32° 27' 11.887 N	103° 43' 27.242 W	
7,067.0	42.30	312.60	6,983.9	645.6	-117.6	529,191.48	729,203.24	32° 27' 12.020 N	103° 43' 27.410 W	
7,098.0	44.80	311.60	7,006.4	659.9	-133.4	529,205.80	729,187.39	32° 27' 12.163 N	103° 43' 27.594 W	
7,129.0	47.00	310.20	7,028.0	674.5	-150.2	529,220.37	729,170.56	32° 27' 12.308 N	103° 43' 27.790 W	
7,160.0	49.20	309.30	7,048.7	689.3	-168.0	529,235.12	729,152.82	32° 27' 12.455 N	103° 43' 27.996 W	
7,163.0	51.40	308.60	7,050.6	690.7	-169.8	529,236.57	729,151.03	32° 27' 12.469 N	103° 43' 28.016 W	
7,189.0	51.40	308.60	7,066.8	703.4	-185.7	529,249.25	729,135.15	32° 27' 12.595 N	103° 43' 28.201 W	
7,220.0	54.30	307.50	7,085.5	718.6	-205.1	529,264.47	729,115.69	32° 27' 12.747 N	103° 43' 28.422 W	
7,251.0	56.90	308.10	7,103.1	734.3	-225.3	529,280.15	729,095.48	32° 27' 12.903 N	103° 43' 28.662 W	
7,281.0	58.00	307.70	7,119.2	749.8	-245.3	529,295.68	729,075.53	32° 27' 13.058 N	103° 43' 28.894 W	
7,312.0	59.00	308.40	7,135.4	766.1	-266.1	529,311.97	729,054.71	32° 27' 13.221 N	103° 43' 29.135 W	
7,343.0	59.50	308.80	7,151.2	782.7	-286.9	529,328.59	729,033.89	32° 27' 13.386 N	103° 43' 29.377 W	
7,374.0	60.10	308.10	7,166.8	799.4	-307.9	529,345.25	729,012.91	32° 27' 13.552 N	103° 43' 29.621 W	
7,419.0	64.60	306.30	7,187.7	823.5	-339.6	529,369.34	728,981.16	32° 27' 13.792 N	103° 43' 29.990 W	
7,450.0	69.60	306.30	7,199.8	840.4	-362.6	529,386.24	728,958.16	32° 27' 13.961 N	103° 43' 30.257 W	
7,482.0	75.30	307.50	7,209.4	858.7	-387.0	529,404.55	728,933.77	32° 27' 14.144 N	103° 43' 30.541 W	
7,521.0	82.40	308.60	7,217.0	882.3	-417.1	529,428.12	728,903.66	32° 27' 14.379 N	103° 43' 30.891 W	
7,552.0	88.10	308.40	7,219.5	901.5	-441.3	529,447.35	728,879.49	32° 27' 14.570 N	103° 43' 31.171 W	
7,584.0	90.00	309.70	7,220.1	921.6	-466.2	529,467.50	728,854.65	32° 27' 14.771 N	103° 43' 31.460 W	
7,616.0	90.70	310.70	7,219.9	942.3	-490.6	529,488.16	728,830.21	32° 27' 14.977 N	103° 43' 31.744 W	
7,709.0	90.70	309.00	7,218.7	1,001.9	-562.0	529,547.74	728,758.82	32° 27' 15.570 N	103° 43' 32.573 W	
7,803.0	91.90	304.60	7,216.6	1,058.2	-637.2	529,604.02	728,683.59	32° 27' 16.131 N	103° 43' 33.447 W	
7,896.0	92.20	302.60	7,213.3	1,109.6	-714.6	529,655.45	728,606.18	32° 27' 16.645 N	103° 43' 34.347 W	
7,990.0	90.60	300.20	7,211.0	1,158.5	-794.8	529,704.41	728,525.98	32° 27' 17.134 N	103° 43' 35.280 W	
8,085.0	87.80	296.60	7,212.3	1,203.7	-878.4	529,749.58	728,442.44	32° 27' 17.585 N	103° 43' 36.252 W	
8,180.0	87.40	291.20	7,216.3	1,242.2	-965.1	529,788.02	728,355.70	32° 27' 17.971 N	103° 43' 37.262 W	
8,274.0	87.90	284.50	7,220.1	1,270.9	-1,054.5	529,816.79	728,266.35	32° 27' 18.260 N	103° 43' 38.303 W	
8,367.0	89.40	277.10	7,222.3	1,288.3	-1,145.7	529,834.20	728,175.09	32° 27' 18.438 N	103° 43' 39.367 W	
8,462.0	92.20	270.30	7,221.0	1,294.5	-1,240.4	529,840.32	728,080.36	32° 27' 18.504 N	103° 43' 40.472 W	
8,555.0	92.40	266.80	7,217.3	1,292.1	-1,333.3	529,837.97	727,987.48	32° 27' 18.486 N	103° 43' 41.556 W	
8,649.0	93.10	266.80	7,212.8	1,286.9	-1,427.1	529,832.73	727,893.73	32° 27' 18.439 N	103° 43' 42.650 W	
8,744.0	93.30	267.50	7,207.5	1,282.2	-1,521.8	529,828.02	727,799.00	32° 27' 18.398 N	103° 43' 43.756 W	
8,837.0	91.70	266.90	7,203.4	1,277.6	-1,614.6	529,823.48	727,706.20	32° 27' 18.358 N	103° 43' 44.840 W	
8,931.0	92.00	266.90	7,200.4	1,272.5	-1,708.4	529,818.40	727,612.39	32° 27' 18.313 N	103° 43' 45.935 W	
9,024.0	90.90	267.60	7,198.0	1,268.1	-1,801.3	529,813.94	727,519.53	32° 27' 18.274 N	103° 43' 47.019 W	
9,119.0	90.90	268.00	7,196.5	1,264.4	-1,896.2	529,810.29	727,424.61	32° 27' 18.243 N	103° 43' 48.127 W	
9,213.0	91.30	269.20	7,194.7	1,262.1	-1,990.1	529,807.99	727,330.66	32° 27' 18.226 N	103° 43' 49.223 W	
9,308.0	90.60	269.00	7,193.1	1,260.6	-2,085.1	529,806.50	727,235.68	32° 27' 18.216 N	103° 43' 50.332 W	
9,402.0	90.60	270.10	7,192.2	1,259.9	-2,179.1	529,805.76	727,141.69	32° 27' 18.214 N	103° 43' 51.429 W	
9,497.0	89.90	269.90	7,191.7	1,259.9	-2,274.1	529,805.76	727,046.69	32° 27' 18.219 N	103° 43' 52.538 W	
9,592.0	90.00	270.50	7,191.8	1,260.2	-2,369.1	529,806.09	726,951.69	32° 27' 18.228 N	103° 43' 53.646 W	
9,685.0	89.20	268.90	7,192.5	1,259.7	-2,462.1	529,805.61	726,858.70	32° 27' 18.228 N	103° 43' 54.732 W	



TDS
Survey Report - Geographic



Company:	Yates Petroleum Corp	Local Co-ordinate Reference:	Well #17H
Project:	Eddy County, NM(NAD83)	TVD Reference:	KB @ 3683.5usft
Site:	Wolf AJA Federal	MD Reference:	KB @ 3683.5usft
Well:	#17H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,779.0	89.30	268.50	7,193.7	1,257.6	-2,556.1	529,803.48	726,764.73	32° 27' 18.213 N	103° 43' 55.828 W
9,873.0	89.40	268.50	7,194.8	1,255.2	-2,650.0	529,801.02	726,670.77	32° 27' 18.193 N	103° 43' 56.925 W
9,966.0	89.30	268.50	7,195.8	1,252.7	-2,743.0	529,798.58	726,577.81	32° 27' 18.175 N	103° 43' 58.010 W
10,061.0	91.40	268.90	7,195.2	1,250.6	-2,838.0	529,796.43	726,482.84	32° 27' 18.158 N	103° 43' 59.119 W
10,156.0	91.30	268.70	7,193.0	1,248.6	-2,932.9	529,794.44	726,387.89	32° 27' 18.144 N	103° 44' 0.227 W
10,250.0	91.40	269.60	7,190.8	1,247.2	-3,026.9	529,793.04	726,293.93	32° 27' 18.135 N	103° 44' 1.324 W
10,345.0	91.70	270.50	7,188.2	1,247.3	-3,121.8	529,793.13	726,198.96	32° 27' 18.142 N	103° 44' 2.432 W
10,439.0	91.50	271.20	7,185.6	1,248.7	-3,215.8	529,794.52	726,105.01	32° 27' 18.161 N	103° 44' 3.529 W
10,533.0	90.50	271.00	7,184.0	1,250.5	-3,309.8	529,796.32	726,011.04	32° 27' 18.184 N	103° 44' 4.625 W
10,628.0	90.20	268.30	7,183.4	1,249.9	-3,404.7	529,795.74	725,916.06	32° 27' 18.183 N	103° 44' 5.734 W
10,721.0	90.60	268.90	7,182.7	1,247.6	-3,497.7	529,793.47	725,823.09	32° 27' 18.166 N	103° 44' 6.819 W
10,815.0	90.40	270.50	7,181.9	1,247.1	-3,591.7	529,792.98	725,729.09	32° 27' 18.166 N	103° 44' 7.916 W
10,910.0	89.90	267.50	7,181.7	1,245.5	-3,686.7	529,791.32	725,634.12	32° 27' 18.155 N	103° 44' 9.024 W
11,004.0	89.60	267.50	7,182.1	1,241.4	-3,780.6	529,787.22	725,540.21	32° 27' 18.120 N	103° 44' 10.121 W
11,099.0	90.30	268.30	7,182.2	1,237.9	-3,875.5	529,783.74	725,445.28	32° 27' 18.090 N	103° 44' 11.229 W
11,193.0	90.00	268.20	7,181.9	1,235.0	-3,969.5	529,780.87	725,351.32	32° 27' 18.067 N	103° 44' 12.326 W
11,287.0	90.00	268.00	7,181.9	1,231.9	-4,063.4	529,777.75	725,257.37	32° 27' 18.042 N	103° 44' 13.422 W
11,380.0	91.50	269.90	7,180.7	1,230.2	-4,156.4	529,776.05	725,164.40	32° 27' 18.030 N	103° 44' 14.507 W
11,474.0	92.20	271.00	7,177.7	1,230.9	-4,250.3	529,776.79	725,070.46	32° 27' 18.042 N	103° 44' 15.604 W
11,569.0	92.30	270.60	7,173.9	1,232.3	-4,345.3	529,778.11	724,975.54	32° 27' 18.061 N	103° 44' 16.711 W
11,663.0	92.20	271.70	7,170.2	1,234.1	-4,439.2	529,780.00	724,881.63	32° 27' 18.085 N	103° 44' 17.807 W
11,758.0	92.20	272.00	7,166.6	1,237.2	-4,534.1	529,783.06	724,786.75	32° 27' 18.120 N	103° 44' 18.914 W
11,798.0	92.30	271.30	7,165.0	1,238.4	-4,574.0	529,784.21	724,746.80	32° 27' 18.134 N	103° 44' 19.381 W
11,865.0	92.30	271.30	7,162.3	1,239.9	-4,640.9	529,785.73	724,679.87	32° 27' 18.152 N	103° 44' 20.162 W

Checked By: _____ Approved By: _____ Date: _____

11/10/14



NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 19 2015

RECEIVED

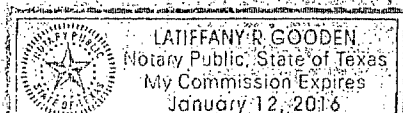
Customer Name: Yates Petroleum Corp
Well Name: Wolf AJA Fed com 17
API Number: 30-018-39829
County / Parish: Eddy County NM

M.W.D. Operator: Rusty Martin
Directional Driller: Jason Muller
Total Magnetic Correction: 6.96
Job #: NM-470

Vertical Section: 284.83

Tie In Survey(s) Provided By:

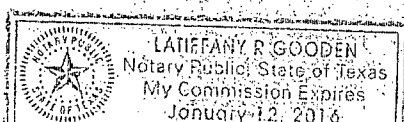
	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	900.00	1.45	207.57	899.87	1.42	-11.77	-4.59	12.64	201.28	0.25
1	1009.00	1.10	212.80	1008.84	2.05	-13.87	-5.80	15.03	202.67	0.34
2	1104.00	1.10	214.20	1103.83	2.64	-15.39	-6.80	16.83	203.84	0.03
3	1199.00	1.10	215.30	1198.81	3.26	-16.89	-7.84	18.62	204.90	0.02
4	1294.00	0.90	220.40	1293.79	3.90	-18.20	-8.85	20.24	205.93	0.23
5	1388.00	0.40	350.50	1387.79	4.35	-18.44	-9.38	20.69	206.97	1.27
6	1483.00	0.50	4.70	1482.79	4.56	-17.70	-9.40	20.05	207.98	0.16
7	1578.00	0.40	10.10	1577.78	4.66	-16.96	-9.31	19.35	208.77	0.11
8	1673.00	0.40	8.50	1672.78	4.73	-16.31	-9.21	18.73	209.44	0.01
9	1768.00	0.20	77.10	1767.78	4.61	-15.94	-9.00	18.31	209.43	0.40
10	1863.00	0.30	62.42	1862.78	4.28	-15.79	-8.61	17.99	208.61	0.12
11	1957.00	0.40	65.10	1956.78	3.85	-15.54	-8.10	17.52	207.52	0.11
12	2052.00	0.70	65.60	2051.77	3.15	-15.16	-7.27	16.81	205.62	0.32
13	2146.00	0.80	65.60	2145.77	2.19	-14.65	-6.15	15.89	202.76	0.11
14	2241.00	1.10	65.80	2240.75	0.97	-14.00	-4.71	14.77	198.60	0.32
15	2336.00	1.60	68.00	2335.73	-0.80	-13.13	-2.65	13.40	191.41	0.53
16	2431.00	1.60	38.10	2430.69	-2.38	-11.59	-0.60	11.61	182.97	0.87
17	2526.00	2.10	23.40	2525.64	-3.17	-8.95	0.91	9.00	174.21	0.72
18	2621.00	2.20	34.10	2620.57	-4.03	-5.84	2.62	6.40	155.84	0.43
19	2716.00	2.60	32.30	2715.49	-5.28	-2.51	4.79	5.41	117.65	0.43
20	2811.00	2.80	24.50	2810.39	-6.31	1.42	6.91	7.05	78.38	0.44
21	2906.00	2.50	23.80	2905.28	-7.03	5.43	8.71	10.26	58.06	0.32
22	3001.00	3.40	6.30	3000.16	-6.93	10.12	9.85	14.13	44.22	1.33
23	3096.00	5.60	354.00	3094.86	-4.87	17.53	9.68	20.03	28.89	2.52
24	3190.00	7.30	353.30	3188.26	-1.04	28.03	8.50	29.29	16.87	1.81
25	3285.00	9.20	355.10	3282.28	3.74	41.59	7.15	42.20	9.75	2.02
26	3380.00	9.20	356.30	3376.05	8.71	56.74	6.01	57.05	6.05	0.20
27	3475.00	7.90	3.30	3470.00	12.43	70.83	5.89	71.08	4.76	1.75
28	3570.00	8.00	5.90	3564.09	14.76	83.93	6.95	84.21	4.73	0.39
29	3665.00	7.80	5.40	3658.19	16.85	96.92	8.24	97.27	4.86	0.22
30	3760.00	8.00	359.40	3752.29	19.66	109.95	8.77	110.30	4.56	0.89
31	3855.00	8.00	357.70	3846.36	23.37	123.16	8.44	123.45	3.92	0.25
32	3950.00	8.10	358.20	3940.42	27.23	136.46	7.96	136.69	3.34	0.13
33	4045.00	8.40	2.90	4034.44	30.58	150.08	8.10	150.30	3.09	0.78
34	4140.00	7.60	357.30	4128.52	33.91	163.28	8.16	163.49	2.86	1.17
35	4236.00	7.40	358.60	4223.70	37.55	175.81	7.71	175.97	2.51	0.27
36	4331.00	6.90	0.30	4317.96	40.69	187.63	7.59	187.78	2.32	0.57
37	4425.00	6.50	0.60	4411.32	43.41	198.59	7.67	198.74	2.21	0.43
38	4520.00	6.120	1.50	4505.73	45.92	209.10	7.87	209.25	2.15	0.33
39	4734.00	7.90	0.30	4718.11	52.27	235.36	8.24	235.50	2.01	0.80
40	4829.00	9.40	1.00	4812.02	55.76	249.65	8.41	249.79	1.93	1.58
41	4925.00	10.30	1.70	4906.61	59.59	266.06	8.81	266.21	1.90	0.95



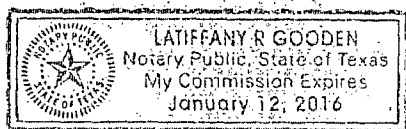
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42	5020.00	9.20	355.90	5000.24	63.98	282.13	8.51	282.26	1.73	1.55
43	5115.00	9.80	354.80	5093.93	69.21	297.76	7.24	297.84	1.39	0.66
44	5210.00	9.80	357.10	5187.55	74.44	313.88	6.10	313.94	1.11	0.41
45	5305.00	8.50	1.70	5281.34	78.50	328.98	5.90	329.03	1.03	1.57
46	5400.00	8.20	0.60	5375.33	81.76	342.77	6.18	342.82	1.03	0.36
47	5495.00	7.60	359.90	5469.43	85.05	355.82	6.24	355.88	1.00	0.64
48	5590.00	8.30	3.80	5563.52	87.98	368.95	6.68	369.01	1.04	0.93
49	5684.00	8.40	4.10	5656.52	90.55	382.57	7.62	382.64	1.14	0.12
50	5779.00	8.40	357.60	5750.50	93.90	396.42	7.83	396.50	1.13	1.00
51	5874.00	8.80	357.45	5844.43	98.13	410.61	7.21	410.68	1.01	0.42
52	5969.00	9.00	356.90	5938.29	102.58	425.29	6.49	425.34	0.87	0.23
53	6064.00	9.00	357.60	6032.12	107.07	440.14	5.77	440.18	0.75	0.12
54	6158.00	8.60	356.90	6125.01	111.41	454.50	5.09	454.53	0.64	0.44
55	6253.00	8.40	356.10	6218.97	115.83	468.52	4.23	468.54	0.52	0.24
56	6348.00	8.20	356.10	6312.98	120.23	482.20	3.30	482.21	0.39	0.21
57	6443.00	7.90	355.70	6407.04	124.55	495.47	2.35	495.47	0.27	0.32
58	6532.00	7.70	356.40	6515.03	129.31	510.23	1.33	510.23	0.15	0.20
59	6647.00	8.60	354.80	6609.07	133.76	523.65	0.28	523.65	0.03	0.98
60	6728.00	11.40	337.10	6688.85	140.73	537.06	-3.38	537.07	359.64	5.10
61	6759.00	14.70	327.10	6719.05	145.52	543.19	-6.71	543.23	359.29	12.86
62	6790.00	17.90	320.20	6748.80	152.32	550.15	-11.90	550.28	358.76	12.05
63	6821.00	21.30	315.80	6778.00	161.03	557.85	-18.68	558.17	358.06	11.95
64	6852.00	24.80	313.30	6806.53	171.58	566.35	-27.54	567.02	357.22	11.72
65	6883.00	28.00	311.10	6834.29	183.82	575.60	-37.76	576.83	356.25	10.79
66	6914.00	30.40	309.80	6861.35	197.46	585.40	-49.27	587.47	355.19	8.01
67	6944.00	33.20	309.70	6886.84	211.80	595.51	-61.42	598.67	354.11	9.33
68	6975.00	35.60	310.50	6912.42	227.63	606.79	-74.81	611.39	352.97	7.88
69	7006.00	37.90	312.10	6937.26	244.23	619.04	-88.74	625.37	351.84	8.04
70	7037.00	40.00	313.00	6961.36	261.48	632.22	-103.09	640.57	350.74	7.02
71	7067.00	42.30	312.60	6983.95	278.91	645.63	-117.58	656.25	349.68	7.72
72	7098.00	44.80	311.60	7006.42	297.90	659.94	-133.43	673.30	348.57	8.36
73	7129.00	47.00	310.20	7027.99	317.89	674.51	-150.26	691.05	347.44	7.80
74	7160.00	49.20	309.30	7048.69	338.82	689.27	-168.00	709.44	346.30	7.42
75	7189.00	51.40	308.60	7067.22	359.18	703.29	-185.35	727.30	345.24	7.81
76	7220.00	54.30	307.50	7085.94	381.89	718.51	-204.81	747.13	344.09	9.77
77	7251.00	56.90	308.10	7103.45	405.44	734.19	-225.01	767.90	342.96	8.54
78	7281.00	58.00	307.70	7119.59	428.70	749.72	-244.97	788.73	341.91	3.84
79	7312.00	59.00	308.40	7135.79	452.99	766.01	-265.78	810.81	340.86	3.76
80	7343.00	59.50	308.80	7151.64	477.37	782.64	-286.60	833.46	339.89	1.96
81	7374.00	60.10	308.10	7167.23	501.92	799.30	-307.59	856.44	338.95	2.75
82	7419.00	64.60	306.30	7188.11	538.78	823.38	-339.33	890.56	337.60	10.61
83	7450.00	69.60	306.30	7200.17	565.34	840.28	-362.34	915.07	336.67	16.13
84	7482.00	75.30	307.50	7209.81	593.60	858.59	-386.73	941.67	335.75	18.17
85	7521.00	82.40	308.60	7217.35	628.74	882.17	-416.84	975.69	334.71	18.41
86	7552.00	88.10	308.40	7219.92	657.03	901.39	-441.00	1003.49	333.93	18.40
87	7584.00	90.00	309.70	7220.45	686.20	921.55	-465.85	1032.60	333.18	7.19
88	7616.00	90.70	310.70	7220.25	715.12	942.20	-490.29	1062.13	332.51	3.81
89	7709.00	90.70	309.00	7219.12	799.38	1001.78	-561.68	1148.50	330.72	1.83
90	7803.00	91.90	304.60	7216.98	886.51	1058.06	-636.91	1234.97	328.95	4.85
91	7896.00	92.20	302.60	7213.66	974.50	1109.49	-714.32	1319.56	327.23	2.17
92	7990.00	90.60	300.20	7211.36	1064.56	1158.45	-794.52	1404.73	325.56	3.07
93	8085.00	87.80	296.60	7212.69	1156.87	1203.62	-878.05	1489.86	323.89	4.80
94	8180.00	87.40	291.20	7216.67	1250.57	1242.06	-964.80	1572.75	322.16	5.69
95	8274.00	87.90	284.50	7220.53	1344.31	1270.83	-1054.15	1651.13	320.32	7.14
96	8367.00	89.40	277.10	7222.72	1436.98	1288.24	-1145.41	1723.81	318.36	8.12
97	8462.00	92.20	270.30	7221.39	1530.12	1294.37	-1240.14	1792.57	316.23	7.74



98	8555.00	92.40	266.80	7217.66	1619.31	1292.01	-1333.02	1856.41	314.11	3.77
99	8649.00	93.10	266.80	7213.15	1708.59	1286.77	-1426.76	1921.31	312.05	0.74
100	8744.00	93.30	267.50	7207.85	1798.96	1282.06	-1521.50	1989.63	310.12	0.77
101	8837.00	91.70	266.90	7203.79	1887.50	1277.52	-1614.29	2058.64	308.36	1.84
102	8931.00	92.00	266.90	7200.75	1976.89	1272.44	-1708.11	2129.96	306.68	0.32
103	9024.00	90.90	267.60	7198.40	2065.52	1267.98	-1800.97	2202.56	305.15	1.40
104	9119.00	90.90	268.00	7196.91	2156.34	1264.33	-1895.89	2278.80	303.70	0.42
105	9213.00	91.30	269.20	7195.10	2246.58	1262.03	-1989.84	2356.31	302.38	1.35
106	9308.00	90.60	269.00	7193.53	2338.01	1260.54	-2084.81	2436.27	301.16	0.77
107	9402.00	90.60	270.10	7192.54	2428.68	1259.80	-2178.80	2516.80	300.04	1.17
108	9497.00	89.90	269.90	7192.13	2520.51	1259.80	-2273.80	2599.48	298.99	0.77
109	9592.00	90.00	270.50	7192.21	2612.43	1260.14	-2368.80	2683.13	298.01	0.64
110	9685.00	89.20	268.90	7192.86	2702.20	1259.65	-2461.79	2765.35	297.10	1.92
111	9779.00	89.30	268.50	7194.09	2792.49	1257.52	-2555.76	2848.38	296.20	0.44
112	9873.00	89.40	268.50	7195.16	2882.69	1255.06	-2649.72	2931.93	295.34	0.11
113	9966.00	89.30	268.50	7196.21	2971.94	1252.62	-2742.69	3015.19	294.55	0.11
114	10061.00	91.40	268.90	7195.63	3063.19	1250.47	-2837.65	3100.96	293.78	2.25
115	10156.00	91.30	268.70	7193.40	3154.47	1248.48	-2932.61	3187.30	293.06	0.24
116	10250.00	91.40	269.60	7191.18	3244.95	1247.08	-3026.57	3273.43	292.39	0.96
117	10345.00	91.70	270.50	7188.61	3336.77	1247.17	-3121.53	3361.46	291.78	1.00
118	10439.00	91.50	271.20	7185.99	3427.95	1248.56	-3215.49	3449.38	291.22	0.77
119	10533.00	90.50	271.00	7184.35	3519.25	1250.36	-3309.45	3537.78	290.70	1.08
120	10628.00	90.20	268.30	7183.77	3610.92	1249.78	-3404.44	3626.59	290.16	2.86
121	10721.00	90.60	268.90	7183.12	3700.21	1247.51	-3497.41	3713.24	289.63	0.78
122	10815.00	90.40	270.50	7182.30	3790.95	1247.02	-3591.40	3801.74	289.15	1.72
123	10910.00	89.90	267.50	7182.05	3882.33	1245.36	-3686.38	3891.05	288.67	3.20
124	11004.00	89.60	267.50	7182.46	3972.07	1241.26	-3780.29	3978.86	288.18	0.32
125	11099.00	90.30	268.30	7182.54	4062.95	1237.78	-3875.22	4068.10	287.71	1.12
126	11193.00	90.00	268.20	7182.29	4153.04	1234.91	-3969.18	4156.85	287.28	0.34
127	11287.00	90.00	268.00	7182.29	4243.06	1231.79	-4063.12	4245.74	286.87	0.21
128	11380.00	91.50	269.90	7181.08	4332.50	1230.09	-4156.09	4334.31	286.49	2.60
129	11474.00	92.20	271.00	7178.04	4423.50	1230.83	-4250.04	4424.68	286.15	1.39
130	11569.00	92.30	270.60	7174.31	4515.60	1232.15	-4344.96	4516.29	285.83	0.43
131	11663.00	92.20	271.70	7170.62	4606.86	1234.04	-4438.86	4607.21	285.54	1.17
132	11758.00	92.20	272.00	7166.97	4699.36	1237.10	-4533.75	4699.50	285.26	0.32
133	11798.00	92.30	271.50	7165.40	4738.29	1238.32	-4573.70	4738.37	285.15	1.27



FEB 19 2015



Job Number: SVMO-141239
Company: Yates Petroleum Corporation
Lease/Well: Wolf, AJA Federal 17H
Location: Eddy County, NM
Rig Name: McVay #10
RKB: 18.5'
G.L. or M.S.L.: GL

State/Country: New Mexico/USA
Declination: 6.98°
Grid: East To Grid North
File name: S:\2014SU-1\YATES\MOWOLF-AJ-1\17H.SVY
Date/Time: 15-Sep-14 / 10:06
Curve Name: Surface - 1083' M.D. (Rate Gyro)

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 1083' MD is, to the best of
our knowledge, a true and accurate account of the
well bore.

Harley Patterson 9/15/14
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 Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.17	249.50	100.00	-.05	-.14	-.05	.15	249.50	.17
200.00	.20	204.38	200.00	-.26	-.35	-.26	.44	233.09	.14
300.00	.40	184.67	300.00	-.77	-.45	-.77	.89	210.33	.22
400.00	.68	180.51	399.99	-1.71	-.48	-1.71	1.78	195.80	.28
500.00	.91	195.14	499.98	-3.07	-.70	-3.07	3.15	192.78	.30
600.00	1.18	203.60	599.97	-4.78	-1.32	-4.78	4.96	195.39	.31
700.00	1.42	204.01	699.94	-6.86	-2.23	-6.86	7.21	198.04	.24
800.00	1.69	205.38	799.90	-9.32	-3.37	-9.32	9.91	199.87	.27
900.00	1.45	207.57	899.87	-11.77	-4.59	-11.77	12.64	201.28	.25

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	
1000.00	1.07	204.61	999.84	-13.74	-5.56	-13.74	14.83	202.03	.39
Last Survey Depth Recorded									
1083.00	.99	208.64	1082.83	-15.08	-6.23	-15.08	16.31	202.44	.13