

3001539830



Yates Petroleum Corp.

Eddy County, NM(NAD83)

Wolf AJA Federal

#18H

OH

Design: OH

NM OIL CONSERVATION
ARTESIA DISTRICT

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Standard Survey Report

02 September, 2014





Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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

Well	#18H		
Well Position	+N/-S	0.0 usft	Northing: 528,515.90 usft
	+E/-W	0.0 usft	Easting: 729,320.80 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Ground Level:	3,664.0 usft
		Latitude:	32° 27' 5.328 N
		Longitude:	103° 43' 26.083 W

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	7/14/2014	7.29
			60.29
			48,427

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
			253.79

Survey Program	Date 9/2/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	794.0	GYRO #1 (OH)	MWD
940.0	11,826.0	MWD #1 (OH)	MWD
			Description
			MWD - Standard
			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	0.22	321.24	100.0	0.1	-0.1	0.1	0.22	0.22	0.00
	200.0	0.47	341.93	200.0	0.7	-0.4	0.2	0.28	0.25	20.69
	300.0	0.26	354.19	300.0	1.3	-0.5	0.1	0.22	-0.21	12.26
	400.0	0.12	284.26	400.0	1.6	-0.6	0.2	0.25	-0.14	-69.93
	500.0	0.28	195.83	500.0	1.3	-0.8	0.4	0.30	0.16	-88.43
	600.0	0.51	188.32	600.0	0.7	-0.9	0.7	0.24	0.23	-7.51
	700.0	0.74	191.74	700.0	-0.4	-1.1	1.2	0.23	0.23	3.42
	794.0	1.13	189.37	794.0	-1.9	-1.4	1.9	0.42	0.41	-2.52
	940.0	1.30	214.00	939.9	-4.7	-2.6	3.8	0.37	0.12	16.87



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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)
1,014.0	1.10	219.10	1,013.9	-6.0	-3.5	5.0	0.31	-0.27	6.89
1,108.0	1.10	222.30	1,107.9	-7.3	-4.7	6.5	0.07	0.00	3.40
1,203.0	1.00	236.70	1,202.9	-8.4	-6.0	8.1	0.30	-0.11	15.16
1,298.0	1.00	240.30	1,297.9	-9.3	-7.4	9.7	0.07	0.00	3.79
1,393.0	0.80	237.80	1,392.9	-10.1	-8.7	11.1	0.21	-0.21	-2.63
1,488.0	1.00	230.50	1,487.9	-11.0	-9.9	12.5	0.24	0.21	-7.68
1,583.0	0.90	224.90	1,582.8	-12.0	-11.0	13.9	0.14	-0.11	-5.89
1,678.0	0.70	227.70	1,677.8	-12.9	-12.0	15.1	0.21	-0.21	2.95
1,773.0	0.70	204.90	1,772.8	-13.8	-12.7	16.0	0.29	0.00	-24.00
1,868.0	0.60	206.80	1,867.8	-14.8	-13.1	16.7	0.11	-0.11	2.00
1,963.0	0.40	164.30	1,962.8	-15.6	-13.3	17.1	0.43	-0.21	-44.74
2,058.0	0.40	119.60	2,057.8	-16.1	-12.9	16.9	0.32	0.00	-47.05
2,152.0	0.70	74.60	2,151.8	-16.1	-12.0	16.1	0.54	0.32	-47.87
2,247.0	1.10	79.50	2,246.8	-15.8	-10.6	14.6	0.43	0.42	5.16
2,342.0	1.50	75.20	2,341.8	-15.3	-8.5	12.4	0.43	0.42	-4.53
2,437.0	1.50	67.00	2,436.7	-14.5	-6.1	9.9	0.23	0.00	-8.63
2,532.0	1.70	71.10	2,531.7	-13.5	-3.7	7.3	0.24	0.21	4.32
2,627.0	1.50	94.50	2,626.7	-13.2	-1.1	4.7	0.71	-0.21	24.63
2,722.0	1.80	98.80	2,721.6	-13.5	1.6	2.2	0.34	0.32	4.53
2,754.0	2.30	106.70	2,753.6	-13.8	2.7	1.2	1.79	1.56	24.69
2,785.0	2.60	119.60	2,784.6	-14.3	3.9	0.2	2.02	0.97	41.61
2,817.0	3.10	124.90	2,816.5	-15.1	5.3	-0.8	1.76	1.56	16.56
2,849.0	3.70	133.90	2,848.5	-16.3	6.7	-1.9	2.50	1.88	28.13
2,881.0	3.80	137.80	2,880.4	-17.8	8.2	-2.9	0.86	0.31	12.19
2,912.0	4.00	145.30	2,911.3	-19.5	9.5	-3.7	1.77	0.65	24.19
2,944.0	4.10	145.80	2,943.3	-21.4	10.8	-4.4	0.33	0.31	1.56
2,976.0	4.30	151.70	2,975.2	-23.4	12.0	-5.0	1.49	0.63	18.44
3,007.0	4.30	159.20	3,006.1	-25.5	12.9	-5.3	1.81	0.00	24.19
3,039.0	4.20	160.30	3,038.0	-27.7	13.8	-5.5	0.40	-0.31	3.44
3,070.0	4.10	161.00	3,068.9	-29.8	14.5	-5.6	0.36	-0.32	2.26
3,100.0	4.60	162.00	3,098.8	-32.0	15.2	-5.7	1.69	1.67	3.33
3,134.0	4.70	163.90	3,132.7	-34.6	16.0	-5.7	0.54	0.29	5.59
3,165.0	4.80	169.40	3,163.6	-37.1	16.6	-5.6	1.50	0.32	17.74
3,195.0	5.20	171.90	3,193.5	-39.7	17.1	-5.3	1.52	1.33	8.33
3,229.0	6.00	174.90	3,227.3	-43.0	17.4	-4.7	2.50	2.35	8.82
3,260.0	6.80	177.60	3,258.1	-46.4	17.6	-4.0	2.76	2.58	8.71
3,292.0	8.00	178.30	3,289.9	-50.5	17.8	-3.0	3.76	3.75	2.19
3,324.0	9.10	178.70	3,321.5	-55.3	17.9	-1.8	3.44	3.44	1.25
3,355.0	10.20	180.50	3,352.1	-60.5	17.9	-0.3	3.68	3.55	5.81
3,387.0	11.40	183.00	3,383.5	-66.5	17.8	1.5	4.02	3.75	7.81
3,419.0	11.90	185.70	3,414.9	-72.9	17.3	3.8	2.31	1.56	8.44
3,450.0	11.80	187.90	3,445.2	-79.2	16.5	6.3	1.49	-0.32	7.10
3,482.0	11.50	187.70	3,476.5	-85.6	15.6	8.9	0.95	-0.94	-0.63



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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)	
3,577.0	11.60	187.30	3,569.6	-104.5	13.2	16.5	0.13	0.11	-0.42	
3,672.0	11.30	187.50	3,662.7	-123.2	10.7	24.1	0.32	-0.32	0.21	
3,767.0	10.70	185.90	3,756.0	-141.2	8.6	31.2	0.71	-0.63	-1.68	
3,862.0	10.50	186.60	3,849.4	-158.6	6.7	37.8	0.25	-0.21	0.74	
3,957.0	10.40	188.20	3,942.8	-175.7	4.5	44.7	0.32	-0.11	1.68	
4,052.0	10.90	187.70	4,036.1	-193.1	2.1	51.9	0.54	0.53	-0.53	
4,147.0	10.10	184.00	4,129.6	-210.3	0.3	58.4	1.10	-0.84	-3.89	
4,242.0	10.20	186.50	4,223.1	-226.9	-1.3	64.6	0.48	0.11	2.63	
4,337.0	9.80	188.60	4,316.6	-243.3	-3.4	71.2	0.57	-0.42	2.21	
4,432.0	9.50	187.40	4,410.3	-259.1	-5.6	77.7	0.38	-0.32	-1.26	
4,527.0	9.10	188.70	4,504.0	-274.3	-7.8	84.0	0.48	-0.42	1.37	
4,712.0	10.00	185.20	4,686.5	-304.7	-11.5	96.1	0.58	0.49	-1.89	
4,806.0	11.40	186.10	4,778.8	-322.1	-13.2	102.6	1.50	1.49	0.96	
4,901.0	11.90	184.90	4,871.9	-341.2	-15.0	109.7	0.58	0.53	-1.26	
4,996.0	11.50	185.00	4,964.9	-360.4	-16.7	116.6	0.42	-0.42	0.11	
5,090.0	11.90	185.00	5,056.9	-379.4	-18.3	123.5	0.43	0.43	0.00	
5,185.0	12.30	184.50	5,149.8	-399.2	-20.0	130.6	0.44	0.42	-0.53	
5,274.0	12.00	183.80	5,236.8	-417.9	-21.3	137.2	0.38	-0.34	-0.79	
5,369.0	11.20	186.60	5,329.9	-436.9	-23.1	144.1	1.03	-0.84	2.95	
5,464.0	10.40	186.40	5,423.2	-454.6	-25.1	151.0	0.84	-0.84	-0.21	
5,559.0	10.40	186.40	5,516.7	-471.6	-27.0	157.6	0.00	0.00	0.00	
5,654.0	10.60	187.70	5,610.1	-488.8	-29.1	164.4	0.33	0.21	1.37	
5,749.0	10.20	186.30	5,703.5	-505.8	-31.2	171.2	0.50	-0.42	-1.47	
5,844.0	10.30	186.10	5,797.0	-522.6	-33.0	177.6	0.11	0.11	-0.21	
5,939.0	11.10	185.60	5,890.3	-540.2	-34.8	184.2	0.85	0.84	-0.53	
6,034.0	10.30	186.60	5,983.7	-557.7	-36.7	190.9	0.86	-0.84	1.05	
6,128.0	9.80	186.60	6,076.2	-574.0	-38.6	197.3	0.53	-0.53	0.00	
6,223.0	9.30	187.00	6,169.9	-589.7	-40.4	203.5	0.53	-0.53	0.42	
6,318.0	9.00	186.80	6,263.7	-604.7	-42.3	209.4	0.32	-0.32	-0.21	
6,412.0	9.30	188.20	6,356.5	-619.5	-44.2	215.4	0.40	0.32	1.49	
6,507.0	9.40	190.80	6,450.3	-634.7	-46.8	222.1	0.46	0.11	2.74	
6,614.0	9.50	191.00	6,555.8	-652.0	-50.1	230.1	0.10	0.09	0.19	
6,705.0	9.40	190.50	6,645.6	-666.6	-52.9	236.9	0.14	-0.11	-0.55	
6,767.0	11.40	197.30	6,706.6	-677.5	-55.6	242.5	3.78	3.23	10.97	
6,798.0	14.20	203.10	6,736.8	-683.9	-58.0	246.6	9.93	9.03	18.71	
6,830.0	17.60	205.80	6,767.6	-691.9	-61.7	252.4	10.87	10.63	8.44	
6,861.0	21.20	207.90	6,796.8	-701.0	-66.3	259.4	11.83	11.61	6.77	
6,892.0	24.50	210.30	6,825.4	-711.5	-72.2	268.0	11.06	10.65	7.74	
6,923.0	27.30	214.70	6,853.2	-722.9	-79.5	278.1	10.95	9.03	14.19	
6,954.0	30.40	219.30	6,880.4	-734.9	-88.5	290.1	12.29	10.00	14.84	
6,985.0	33.00	225.30	6,906.8	-746.9	-99.5	304.0	13.17	8.39	19.35	
7,016.0	34.20	229.50	6,932.6	-758.5	-112.1	319.4	8.44	3.87	13.55	
7,048.0	36.00	232.10	6,958.8	-770.1	-126.4	336.3	7.31	5.63	8.13	



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7,079.0	37.80	233.00	6,983.6	-781.4	-141.2	353.7	6.06	5.81	2.90
7,109.0	40.40	232.30	7,006.8	-792.9	-156.2	371.3	8.79	8.67	-2.33
7,140.0	43.40	230.20	7,029.9	-805.8	-172.3	390.4	10.68	9.68	-6.77
7,171.0	45.10	228.50	7,052.1	-819.9	-188.7	410.1	6.69	5.48	-5.48
7,201.0	47.60	226.70	7,072.8	-834.6	-204.8	429.6	9.40	8.33	-6.00
7,232.0	51.30	226.00	7,093.0	-850.8	-221.8	450.5	12.06	11.94	-2.26
7,264.0	55.30	226.90	7,112.1	-868.5	-240.4	473.3	12.70	12.50	2.81
7,295.0	57.90	227.80	7,129.2	-886.0	-259.4	496.5	8.73	8.39	2.90
7,323.0	60.10	227.80	7,143.6	-902.2	-277.2	518.0	7.86	7.86	0.00
7,357.0	63.70	227.60	7,159.6	-922.3	-299.4	545.0	10.60	10.59	-0.59
7,389.0	67.20	228.30	7,172.9	-941.8	-321.0	571.1	11.12	10.94	2.19
7,420.0	71.00	229.70	7,183.9	-960.8	-342.8	597.4	12.96	12.26	4.52
7,452.0	74.50	231.10	7,193.4	-980.3	-366.4	625.5	11.71	10.94	4.38
7,492.0	77.30	232.10	7,203.2	-1,004.4	-396.8	661.4	7.41	7.00	2.50
7,524.0	80.20	232.30	7,209.4	-1,023.6	-421.6	690.6	9.08	9.06	0.63
7,555.0	83.10	232.10	7,213.9	-1,042.4	-445.8	719.1	9.38	9.35	-0.65
7,577.1	85.10	232.03	7,216.2	-1,056.0	-463.2	739.6	9.04	9.03	-0.32
EOC									
7,586.0	85.90	232.00	7,216.9	-1,061.4	-470.2	747.8	9.04	9.03	-0.32
7,617.0	87.80	232.00	7,218.6	-1,080.4	-494.5	776.5	6.13	6.13	0.00
7,648.0	90.10	231.40	7,219.2	-1,099.7	-518.9	805.2	7.67	7.42	-1.94
7,657.3	90.67	231.40	7,219.1	-1,105.5	-526.1	813.8	6.13	6.13	0.00
EOC (Actual)									
7,679.0	92.00	231.40	7,218.6	-1,119.0	-543.1	833.9	6.13	6.13	0.00
7,710.0	93.90	232.50	7,217.0	-1,138.1	-567.5	862.6	7.08	6.13	3.55
7,742.0	94.90	233.70	7,214.5	-1,157.2	-593.0	892.5	4.87	3.13	3.75
7,773.0	95.20	235.10	7,211.8	-1,175.2	-618.1	921.6	4.60	0.97	4.52
7,803.0	94.50	237.20	7,209.3	-1,191.9	-642.9	950.1	7.35	-2.33	7.00
7,835.0	92.80	239.90	7,207.2	-1,208.5	-670.1	980.9	9.96	-5.31	8.44
7,867.0	91.40	242.50	7,206.1	-1,223.9	-698.2	1,012.1	9.22	-4.38	8.13
7,899.0	90.80	244.60	7,205.5	-1,238.2	-726.8	1,043.6	6.82	-1.88	6.56
7,930.0	91.80	247.10	7,204.8	-1,250.8	-755.1	1,074.3	8.68	3.23	8.06
7,962.0	92.70	249.00	7,203.5	-1,262.8	-784.7	1,106.1	6.57	2.81	5.94
7,993.0	92.80	251.10	7,202.0	-1,273.4	-813.9	1,137.0	6.77	0.32	6.77
8,025.0	91.60	252.70	7,200.8	-1,283.3	-844.2	1,168.9	6.25	-3.75	5.00
8,055.0	90.70	253.90	7,200.2	-1,291.9	-873.0	1,198.9	5.00	-3.00	4.00
8,086.0	89.40	255.00	7,200.1	-1,300.2	-902.8	1,229.9	5.49	-4.19	3.55
8,114.0	88.80	256.60	7,200.6	-1,307.1	-930.0	1,257.9	6.10	-2.14	5.71
8,145.0	88.40	257.50	7,201.3	-1,314.0	-960.2	1,288.8	3.18	-1.29	2.90
8,176.0	88.20	257.80	7,202.3	-1,320.7	-990.4	1,319.7	1.16	-0.65	0.97
8,207.0	89.00	258.70	7,203.0	-1,327.0	-1,020.8	1,350.6	3.88	2.58	2.90
8,238.0	88.80	258.70	7,203.6	-1,333.0	-1,051.2	1,381.5	0.65	-0.65	0.00
8,269.0	89.40	259.00	7,204.1	-1,339.0	-1,081.6	1,412.4	2.16	1.94	0.97
8,301.0	89.90	260.30	7,204.3	-1,344.8	-1,113.1	1,444.2	4.35	1.56	4.06



Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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)
8,332.0	90.00	261.50	7,204.3	-1,349.7	-1,143.7	1,475.0	3.88	0.32	3.87
8,363.0	90.90	263.40	7,204.1	-1,353.8	-1,174.4	1,505.6	6.78	2.90	6.13
8,457.0	91.10	266.10	7,202.4	-1,362.4	-1,268.0	1,597.9	2.88	0.21	2.87
8,549.0	90.00	266.10	7,201.6	-1,368.6	-1,359.8	1,687.8	1.20	-1.20	0.00
8,644.0	90.00	268.00	7,201.6	-1,373.5	-1,454.6	1,780.2	2.00	0.00	2.00
8,739.0	90.90	269.20	7,200.8	-1,375.8	-1,549.6	1,872.1	1.58	0.95	1.26
8,834.0	91.40	270.80	7,198.9	-1,375.8	-1,644.6	1,963.3	1.76	0.53	1.68
8,928.0	90.70	271.70	7,197.2	-1,373.8	-1,738.5	2,052.9	1.21	-0.74	0.96
9,023.0	89.90	272.00	7,196.7	-1,370.7	-1,833.5	2,143.3	0.90	-0.84	0.32
9,117.0	89.60	270.50	7,197.1	-1,368.7	-1,927.5	2,232.9	1.63	-0.32	-1.60
9,212.0	89.30	269.90	7,198.0	-1,368.3	-2,022.5	2,324.0	0.71	-0.32	-0.63
9,307.0	90.00	269.10	7,198.6	-1,369.2	-2,117.5	2,415.5	1.12	0.74	-0.84
9,402.0	90.50	268.00	7,198.2	-1,371.6	-2,212.4	2,507.4	1.27	0.53	-1.16
9,497.0	89.80	267.70	7,197.9	-1,375.1	-2,307.4	2,599.5	0.80	-0.74	-0.32
9,591.0	90.60	269.10	7,197.6	-1,377.8	-2,401.3	2,690.5	1.72	0.85	1.49
9,685.0	90.00	269.60	7,197.1	-1,378.8	-2,495.3	2,781.0	0.83	-0.64	0.53
9,780.0	90.90	269.10	7,196.4	-1,379.9	-2,590.3	2,872.5	1.08	0.95	-0.53
9,874.0	91.90	267.30	7,194.1	-1,382.9	-2,684.2	2,963.5	2.19	1.06	-1.91
9,969.0	92.00	267.50	7,190.8	-1,387.2	-2,779.1	3,055.8	0.24	0.11	0.21
10,063.0	91.30	267.00	7,188.1	-1,391.7	-2,872.9	3,147.2	0.92	-0.74	-0.53
10,158.0	91.30	268.70	7,186.0	-1,395.2	-2,967.8	3,239.3	1.79	0.00	1.79
10,252.0	90.60	269.20	7,184.4	-1,397.0	-3,061.8	3,330.0	0.92	-0.74	0.53
10,347.0	90.50	269.60	7,183.5	-1,397.9	-3,156.8	3,421.5	0.43	-0.11	0.42
10,438.0	91.50	269.40	7,181.9	-1,398.7	-3,247.8	3,509.1	1.12	1.10	-0.22
10,531.0	92.10	271.00	7,179.0	-1,398.4	-3,340.7	3,598.3	1.84	0.65	1.72
10,625.0	93.20	271.50	7,174.6	-1,396.4	-3,434.6	3,687.9	1.29	1.17	0.53
10,720.0	92.20	272.00	7,170.2	-1,393.5	-3,529.4	3,778.1	1.18	-1.05	0.53
10,815.0	92.10	272.00	7,166.6	-1,390.2	-3,624.3	3,868.3	0.11	-0.11	0.00
10,909.0	91.10	271.70	7,164.0	-1,387.1	-3,718.2	3,957.6	1.11	-1.06	-0.32
11,001.0	89.30	271.70	7,163.7	-1,384.4	-3,810.2	4,045.2	1.96	-1.96	0.00
11,093.0	88.70	271.50	7,165.3	-1,381.8	-3,902.1	4,132.7	0.69	-0.65	-0.22
11,189.0	89.90	272.00	7,166.4	-1,378.9	-3,998.1	4,224.1	1.35	1.25	0.52
11,284.0	88.90	271.50	7,167.4	-1,376.0	-4,093.0	4,314.4	1.18	-1.05	-0.53
11,379.0	89.60	271.00	7,168.7	-1,373.9	-4,188.0	4,405.0	0.91	0.74	-0.53
11,473.0	90.60	271.50	7,168.5	-1,371.9	-4,282.0	4,494.7	1.19	1.06	0.53
11,568.0	90.00	269.40	7,168.0	-1,371.1	-4,377.0	4,585.7	2.30	-0.63	-2.21
11,661.0	90.90	269.80	7,167.3	-1,371.8	-4,470.0	4,675.2	1.06	0.97	0.43
11,761.0	91.70	269.90	7,165.0	-1,372.0	-4,569.9	4,771.3	0.81	0.80	0.10
11,826.0	91.70	269.90	7,163.1	-1,372.1	-4,634.9	4,833.7	0.00	0.00	0.00
EOL (Actual) - PBHL(W#18H) - TD									



Survey Report



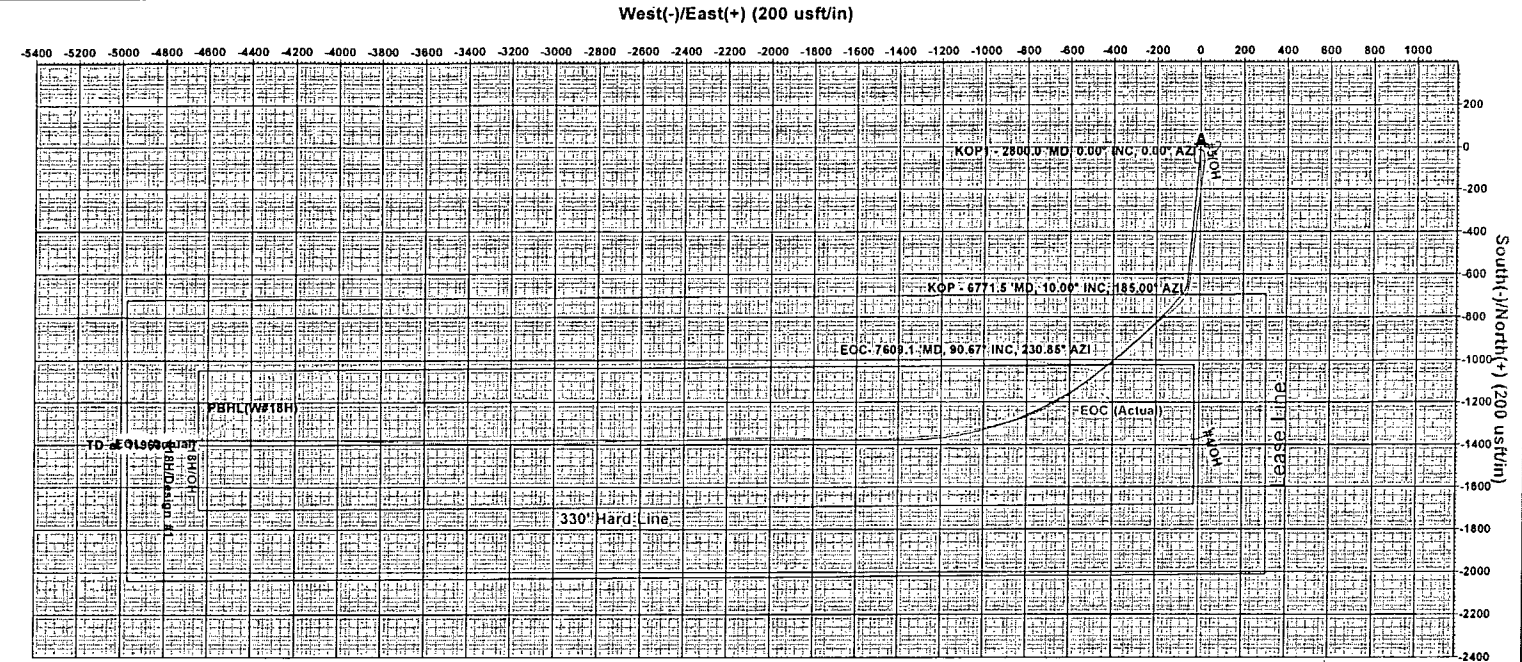
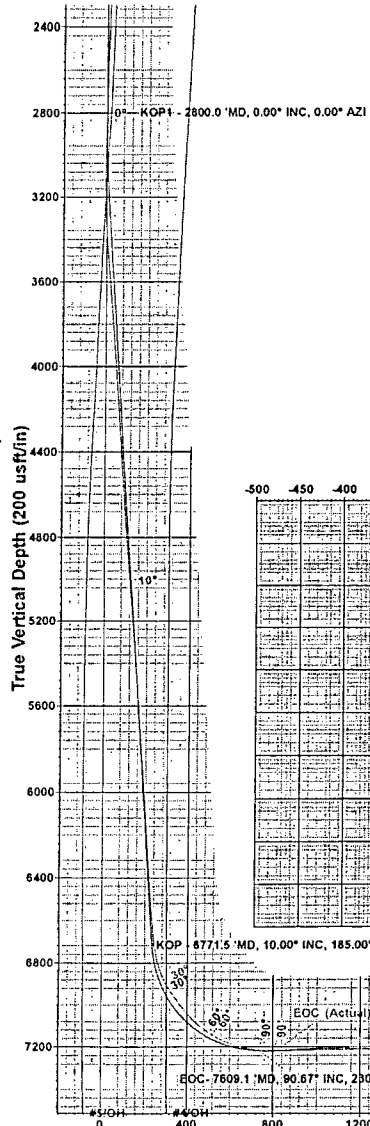
Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,657.3	7,219.1	-1,105.5	-526.1	EOC (Actual)
11,826.0	7,163.1	-1,372.1	-4,634.9	EOL (Actual)

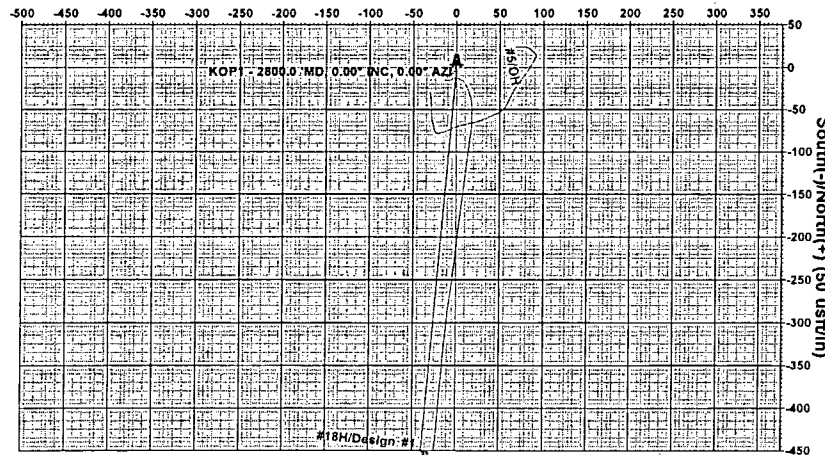
Checked By: _____	Approved By: _____	Date: _____
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Project: Eddy County, NM(NAD83)
Site: Wolf AJA Federal
Well: #18H
Wellbore: OH
Plan: Design #1 (#18H/OH)



West(-)/East(+) (50 usft/in)



Vertical Section at 253.79° (200 usft/in)

#18H

Ground Elevation:: 3664.0

RKB Elevation: WELL @ 3682.5usft (Original Well Elev)

Rig Name: Original Well Elev

Longitude 628515.90 Northing 729320.80 Easting 32° 27' 5.328 N Latitude 103° 43' 26.083 W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	2800.0	0.00	0.00	2800.0	0.0	0.0	0.00	0.00	0.0
3	3300.0	10.00	185.00	3297.5	-43.4	-3.8	2.00	185.00	15.7
4	6771.5	10.00	185.00	6716.2	-643.9	-56.3	0.00	0.00	233.9
5	7609.1	90.67	230.85	7216.0	-1057.0	-462.4	10.00	46.20	739.1
6	8587.7	90.67	270.00	7204.1	-1378.5	-1366.5	4.00	89.77	1697.0
7	11863.1	90.67	270.00	7166.0	-1378.7	-4641.7	0.00	0.00	4842.0
8	11963.1	90.67	270.00	7164.8	-1378.7	-4741.7	0.00	0.00	4938.1

PBHL(W#18H)



Azimuths to Grid North
True North: -0.33°
Magnetic North: 6.97°

Magnetic Field
Strength: 48426.8nT
Dip Angle: 60.29°
Date: 7/14/2014
Model: IGRF2010

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



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

3001539830



Yates Petroleum Corp.

Eddy County, NM(NAD83)

Wolf AJA Federal

#18H

OH

Design: OH

NM OIL CONSERVATION
ARTESIA DISTRICT

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Standard Survey Report

02 September, 2014





Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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	Latitude:	32° 25' 54.743 N
From:	Map	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	#18H					
Well Position	+N/-S	0.0 usft	Northing:	528,515.90 usft	Latitude:	32° 27' 5.328 N
	+E/-W	0.0 usft	Easting:	729,320.80 usft	Longitude:	103° 43' 26.083 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,664.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/14/2014	7.29	60.29	48,427

Design		OH			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S usft (usft)	+E/-W usft (usft)	Direction (°)	
	0.0	0.0	0.0		253.79

Survey Program		Date	9/2/2014	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	794.0	GYRO #1 (OH)	MWD	MWD - Standard
940.0	11,826.0	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	0.22	321.24	100.0	0.1	-0.1	0.1	0.22	0.22	0.00	
200.0	0.47	341.93	200.0	0.7	-0.4	0.2	0.28	0.25	20.69	
300.0	0.26	354.19	300.0	1.3	-0.5	0.1	0.22	-0.21	12.26	
400.0	0.12	284.26	400.0	1.6	-0.6	0.2	0.25	-0.14	-69.93	
500.0	0.28	195.83	500.0	1.3	-0.8	0.4	0.30	0.16	-88.43	
600.0	0.51	188.32	600.0	0.7	-0.9	0.7	0.24	0.23	-7.51	
700.0	0.74	191.74	700.0	-0.4	-1.1	1.2	0.23	0.23	3.42	
794.0	1.13	189.37	794.0	-1.9	-1.4	1.9	0.42	0.41	-2.52	
940.0	1.30	214.00	939.9	-4.7	-2.6	3.8	0.37	0.12	16.87	



Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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)	
1,014.0	1.10	219.10	1,013.9	-6.0	-3.5	5.0	0.31	-0.27	6.89	
1,108.0	1.10	222.30	1,107.9	-7.3	-4.7	6.5	0.07	0.00	3.40	
1,203.0	1.00	236.70	1,202.9	-8.4	-6.0	8.1	0.30	-0.11	15.16	
1,298.0	1.00	240.30	1,297.9	-9.3	-7.4	9.7	0.07	0.00	3.79	
1,393.0	0.80	237.80	1,392.9	-10.1	-8.7	11.1	0.21	-0.21	-2.63	
1,488.0	1.00	230.50	1,487.9	-11.0	-9.9	12.5	0.24	0.21	-7.68	
1,583.0	0.90	224.90	1,582.8	-12.0	-11.0	13.9	0.14	-0.11	-5.89	
1,678.0	0.70	227.70	1,677.8	-12.9	-12.0	15.1	0.21	-0.21	2.95	
1,773.0	0.70	204.90	1,772.8	-13.8	-12.7	16.0	0.29	0.00	-24.00	
1,868.0	0.60	206.80	1,867.8	-14.8	-13.1	16.7	0.11	-0.11	2.00	
1,963.0	0.40	164.30	1,962.8	-15.6	-13.3	17.1	0.43	-0.21	-44.74	
2,058.0	0.40	119.60	2,057.8	-16.1	-12.9	16.9	0.32	0.00	-47.05	
2,152.0	0.70	74.60	2,151.8	-16.1	-12.0	16.1	0.54	0.32	-47.87	
2,247.0	1.10	79.50	2,246.8	-15.8	-10.6	14.6	0.43	0.42	5.16	
2,342.0	1.50	75.20	2,341.8	-15.3	-8.5	12.4	0.43	0.42	-4.53	
2,437.0	1.50	67.00	2,436.7	-14.5	-6.1	9.9	0.23	0.00	-8.63	
2,532.0	1.70	71.10	2,531.7	-13.5	-3.7	7.3	0.24	0.21	4.32	
2,627.0	1.50	94.50	2,626.7	-13.2	-1.1	4.7	0.71	-0.21	24.63	
2,722.0	1.80	98.80	2,721.6	-13.5	1.6	2.2	0.34	0.32	4.53	
2,754.0	2.30	106.70	2,753.6	-13.8	2.7	1.2	1.79	1.56	24.69	
2,785.0	2.60	119.60	2,784.6	-14.3	3.9	0.2	2.02	0.97	41.61	
2,817.0	3.10	124.90	2,816.5	-15.1	5.3	-0.8	1.76	1.56	16.56	
2,849.0	3.70	133.90	2,848.5	-16.3	6.7	-1.9	2.50	1.88	28.13	
2,881.0	3.80	137.80	2,880.4	-17.8	8.2	-2.9	0.86	0.31	12.19	
2,912.0	4.00	145.30	2,911.3	-19.5	9.5	-3.7	1.77	0.65	24.19	
2,944.0	4.10	145.80	2,943.3	-21.4	10.8	-4.4	0.33	0.31	1.56	
2,976.0	4.30	151.70	2,975.2	-23.4	12.0	-5.0	1.49	0.63	18.44	
3,007.0	4.30	159.20	3,006.1	-25.5	12.9	-5.3	1.81	0.00	24.19	
3,039.0	4.20	160.30	3,038.0	-27.7	13.8	-5.5	0.40	-0.31	3.44	
3,070.0	4.10	161.00	3,068.9	-29.8	14.5	-5.6	0.36	-0.32	2.26	
3,100.0	4.60	162.00	3,098.8	-32.0	15.2	-5.7	1.69	1.67	3.33	
3,134.0	4.70	163.90	3,132.7	-34.6	16.0	-5.7	0.54	0.29	5.59	
3,165.0	4.80	169.40	3,163.6	-37.1	16.6	-5.6	1.50	0.32	17.74	
3,195.0	5.20	171.90	3,193.5	-39.7	17.1	-5.3	1.52	1.33	8.33	
3,229.0	6.00	174.90	3,227.3	-43.0	17.4	-4.7	2.50	2.35	8.82	
3,260.0	6.80	177.60	3,258.1	-46.4	17.6	-4.0	2.76	2.58	8.71	
3,292.0	8.00	178.30	3,289.9	-50.5	17.8	-3.0	3.76	3.75	2.19	
3,324.0	9.10	178.70	3,321.5	-55.3	17.9	-1.8	3.44	3.44	1.25	
3,355.0	10.20	180.50	3,352.1	-60.5	17.9	-0.3	3.68	3.55	5.81	
3,387.0	11.40	183.00	3,383.5	-66.5	17.8	1.5	4.02	3.75	7.81	
3,419.0	11.90	185.70	3,414.9	-72.9	17.3	3.8	2.31	1.56	8.44	
3,450.0	11.80	187.90	3,445.2	-79.2	16.5	6.3	1.49	-0.32	7.10	
3,482.0	11.50	187.70	3,476.5	-85.6	15.6	8.9	0.95	-0.94	-0.63	



Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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)
3,577.0	11.60	187.30	3,569.6	-104.5	13.2	16.5	0.13	0.11	-0.42
3,672.0	11.30	187.50	3,662.7	-123.2	10.7	24.1	0.32	-0.32	0.21
3,767.0	10.70	185.90	3,756.0	-141.2	8.6	31.2	0.71	-0.63	-1.68
3,862.0	10.50	186.60	3,849.4	-158.6	6.7	37.8	0.25	-0.21	0.74
3,957.0	10.40	188.20	3,942.8	-175.7	4.5	44.7	0.32	-0.11	1.68
4,052.0	10.90	187.70	4,036.1	-193.1	2.1	51.9	0.54	0.53	-0.53
4,147.0	10.10	184.00	4,129.6	-210.3	0.3	58.4	1.10	-0.84	-3.89
4,242.0	10.20	186.50	4,223.1	-226.9	-1.3	64.6	0.48	0.11	2.63
4,337.0	9.80	188.60	4,316.6	-243.3	-3.4	71.2	0.57	-0.42	2.21
4,432.0	9.50	187.40	4,410.3	-259.1	-5.6	77.7	0.38	-0.32	-1.26
4,527.0	9.10	188.70	4,504.0	-274.3	-7.8	84.0	0.48	-0.42	1.37
4,712.0	10.00	185.20	4,686.5	-304.7	-11.5	96.1	0.58	0.49	-1.89
4,806.0	11.40	186.10	4,778.8	-322.1	-13.2	102.6	1.50	1.49	0.96
4,901.0	11.90	184.90	4,871.9	-341.2	-15.0	109.7	0.58	0.53	-1.26
4,996.0	11.50	185.00	4,964.9	-360.4	-16.7	116.6	0.42	-0.42	0.11
5,090.0	11.90	185.00	5,056.9	-379.4	-18.3	123.5	0.43	0.43	0.00
5,185.0	12.30	184.50	5,149.8	-399.2	-20.0	130.6	0.44	0.42	-0.53
5,274.0	12.00	183.80	5,236.8	-417.9	-21.3	137.2	0.38	-0.34	-0.79
5,369.0	11.20	186.60	5,329.9	-436.9	-23.1	144.1	1.03	-0.84	2.95
5,464.0	10.40	186.40	5,423.2	-454.6	-25.1	151.0	0.84	-0.84	-0.21
5,559.0	10.40	186.40	5,516.7	-471.6	-27.0	157.6	0.00	0.00	0.00
5,654.0	10.60	187.70	5,610.1	-488.8	-29.1	164.4	0.33	0.21	1.37
5,749.0	10.20	186.30	5,703.5	-505.8	-31.2	171.2	0.50	-0.42	-1.47
5,844.0	10.30	186.10	5,797.0	-522.6	-33.0	177.6	0.11	0.11	-0.21
5,939.0	11.10	185.60	5,890.3	-540.2	-34.8	184.2	0.85	0.84	-0.53
6,034.0	10.30	186.60	5,983.7	-557.7	-36.7	190.9	0.86	-0.84	1.05
6,128.0	9.80	186.60	6,076.2	-574.0	-38.6	197.3	0.53	-0.53	0.00
6,223.0	9.30	187.00	6,169.9	-589.7	-40.4	203.5	0.53	-0.53	0.42
6,318.0	9.00	186.80	6,263.7	-604.7	-42.3	209.4	0.32	-0.32	-0.21
6,412.0	9.30	188.20	6,356.5	-619.5	-44.2	215.4	0.40	0.32	1.49
6,507.0	9.40	190.80	6,450.3	-634.7	-46.8	222.1	0.46	0.11	2.74
6,614.0	9.50	191.00	6,555.8	-652.0	-50.1	230.1	0.10	0.09	0.19
6,705.0	9.40	190.50	6,645.6	-666.6	-52.9	236.9	0.14	-0.11	-0.55
6,767.0	11.40	197.30	6,706.6	-677.5	-55.6	242.5	3.78	3.23	10.97
6,798.0	14.20	203.10	6,736.8	-683.9	-58.0	246.6	9.93	9.03	18.71
6,830.0	17.60	205.80	6,767.6	-691.9	-61.7	252.4	10.87	10.63	8.44
6,861.0	21.20	207.90	6,796.8	-701.0	-66.3	259.4	11.83	11.61	6.77
6,892.0	24.50	210.30	6,825.4	-711.5	-72.2	268.0	11.06	10.65	7.74
6,923.0	27.30	214.70	6,853.2	-722.9	-79.5	278.1	10.95	9.03	14.19
6,954.0	30.40	219.30	6,880.4	-734.9	-88.5	290.1	12.29	10.00	14.84
6,985.0	33.00	225.30	6,906.8	-746.9	-99.5	304.0	13.17	8.39	19.35
7,016.0	34.20	229.50	6,932.6	-758.5	-112.1	319.4	8.44	3.87	13.55
7,048.0	36.00	232.10	6,958.8	-770.1	-126.4	336.3	7.31	5.63	8.13



Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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)
7,079.0	37.80	233.00	6,983.6	-781.4	-141.2	353.7	6.06	5.81	2.90
7,109.0	40.40	232.30	7,006.8	-792.9	-156.2	371.3	8.79	8.67	-2.33
7,140.0	43.40	230.20	7,029.9	-805.8	-172.3	390.4	10.68	9.68	-6.77
7,171.0	45.10	228.50	7,052.1	-819.9	-188.7	410.1	6.69	5.48	-5.48
7,201.0	47.60	226.70	7,072.8	-834.6	-204.8	429.6	9.40	8.33	-6.00
7,232.0	51.30	226.00	7,093.0	-850.8	-221.8	450.5	12.06	11.94	-2.26
7,264.0	55.30	226.90	7,112.1	-868.5	-240.4	473.3	12.70	12.50	2.81
7,295.0	57.90	227.80	7,129.2	-886.0	-259.4	496.5	8.73	8.39	2.90
7,323.0	60.10	227.80	7,143.6	-902.2	-277.2	518.0	7.86	7.86	0.00
7,357.0	63.70	227.60	7,159.6	-922.3	-299.4	545.0	10.60	10.59	-0.59
7,389.0	67.20	228.30	7,172.9	-941.8	-321.0	571.1	11.12	10.94	2.19
7,420.0	71.00	229.70	7,183.9	-960.8	-342.8	597.4	12.96	12.26	4.52
7,452.0	74.50	231.10	7,193.4	-980.3	-366.4	625.5	11.71	10.94	4.38
7,492.0	77.30	232.10	7,203.2	-1,004.4	-396.8	661.4	7.41	7.00	2.50
7,524.0	80.20	232.30	7,209.4	-1,023.6	-421.6	690.6	9.08	9.06	0.63
7,555.0	83.10	232.10	7,213.9	-1,042.4	-445.8	719.1	9.38	9.35	-0.65
7,577.1	85.10	232.03	7,216.2	-1,056.0	-463.2	739.6	9.04	9.03	-0.32
EOC									
7,586.0	85.90	232.00	7,216.9	-1,061.4	-470.2	747.8	9.04	9.03	-0.32
7,617.0	87.80	232.00	7,218.6	-1,080.4	-494.5	776.5	6.13	6.13	0.00
7,648.0	90.10	231.40	7,219.2	-1,099.7	-518.9	805.2	7.67	7.42	-1.94
7,657.3	90.67	231.40	7,219.1	-1,105.5	-526.1	813.8	6.13	6.13	0.00
EOC (Actual)									
7,679.0	92.00	231.40	7,218.6	-1,119.0	-543.1	833.9	6.13	6.13	0.00
7,710.0	93.90	232.50	7,217.0	-1,138.1	-567.5	862.6	7.08	6.13	3.55
7,742.0	94.90	233.70	7,214.5	-1,157.2	-593.0	892.5	4.87	3.13	3.75
7,773.0	95.20	235.10	7,211.8	-1,175.2	-618.1	921.6	4.60	0.97	4.52
7,803.0	94.50	237.20	7,209.3	-1,191.9	-642.9	950.1	7.35	-2.33	7.00
7,835.0	92.80	239.90	7,207.2	-1,208.5	-670.1	980.9	9.96	-5.31	8.44
7,867.0	91.40	242.50	7,206.1	-1,223.9	-698.2	1,012.1	9.22	-4.38	8.13
7,899.0	90.80	244.60	7,205.5	-1,238.2	-726.8	1,043.6	6.82	-1.88	6.56
7,930.0	91.80	247.10	7,204.8	-1,250.8	-755.1	1,074.3	8.68	3.23	8.06
7,962.0	92.70	249.00	7,203.5	-1,262.8	-784.7	1,106.1	6.57	2.81	5.94
7,993.0	92.80	251.10	7,202.0	-1,273.4	-813.9	1,137.0	6.77	0.32	6.77
8,025.0	91.60	252.70	7,200.8	-1,283.3	-844.2	1,168.9	6.25	-3.75	5.00
8,055.0	90.70	253.90	7,200.2	-1,291.9	-873.0	1,198.9	5.00	-3.00	4.00
8,086.0	89.40	255.00	7,200.1	-1,300.2	-902.8	1,229.9	5.49	-4.19	3.55
8,114.0	88.80	256.60	7,200.6	-1,307.1	-930.0	1,257.9	6.10	-2.14	5.71
8,145.0	88.40	257.50	7,201.3	-1,314.0	-960.2	1,288.8	3.18	-1.29	2.90
8,176.0	88.20	257.80	7,202.3	-1,320.7	-990.4	1,319.7	1.16	-0.65	0.97
8,207.0	89.00	258.70	7,203.0	-1,327.0	-1,020.8	1,350.6	3.88	2.58	2.90
8,238.0	88.80	258.70	7,203.6	-1,333.0	-1,051.2	1,381.5	0.65	-0.65	0.00
8,269.0	89.40	259.00	7,204.1	-1,339.0	-1,081.6	1,412.4	2.16	1.94	0.97
8,301.0	89.90	260.30	7,204.3	-1,344.8	-1,113.1	1,444.2	4.35	1.56	4.06



Survey Report



Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County: NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

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)
8,332.0	90.00	261.50	7,204.3	-1,349.7	-1,143.7	1,475.0	3.88	0.32	3.87
8,363.0	90.90	263.40	7,204.1	-1,353.8	-1,174.4	1,505.6	6.78	2.90	6.13
8,457.0	91.10	266.10	7,202.4	-1,362.4	-1,268.0	1,597.9	2.88	0.21	2.87
8,549.0	90.00	266.10	7,201.6	-1,368.6	-1,359.8	1,687.8	1.20	-1.20	0.00
8,644.0	90.00	268.00	7,201.6	-1,373.5	-1,454.6	1,780.2	2.00	0.00	2.00
8,739.0	90.90	269.20	7,200.8	-1,375.8	-1,549.6	1,872.1	1.58	0.95	1.26
8,834.0	91.40	270.80	7,198.9	-1,375.8	-1,644.6	1,963.3	1.76	0.53	1.68
8,928.0	90.70	271.70	7,197.2	-1,373.8	-1,738.5	2,052.9	1.21	-0.74	0.96
9,023.0	89.90	272.00	7,196.7	-1,370.7	-1,833.5	2,143.3	0.90	-0.84	0.32
9,117.0	89.60	270.50	7,197.1	-1,368.7	-1,927.5	2,232.9	1.63	-0.32	-1.60
9,212.0	89.30	269.90	7,198.0	-1,368.3	-2,022.5	2,324.0	0.71	-0.32	-0.63
9,307.0	90.00	269.10	7,198.6	-1,369.2	-2,117.5	2,415.5	1.12	0.74	-0.84
9,402.0	90.50	268.00	7,198.2	-1,371.6	-2,212.4	2,507.4	1.27	0.53	-1.16
9,497.0	89.80	267.70	7,197.9	-1,375.1	-2,307.4	2,599.5	0.80	-0.74	-0.32
9,591.0	90.60	269.10	7,197.6	-1,377.8	-2,401.3	2,690.5	1.72	0.85	1.49
9,685.0	90.00	269.60	7,197.1	-1,378.8	-2,495.3	2,781.0	0.83	-0.64	0.53
9,780.0	90.90	269.10	7,196.4	-1,379.9	-2,590.3	2,872.5	1.08	0.95	-0.53
9,874.0	91.90	267.30	7,194.1	-1,382.9	-2,684.2	2,963.5	2.19	1.06	-1.91
9,969.0	92.00	267.50	7,190.8	-1,387.2	-2,779.1	3,055.8	0.24	0.11	0.21
10,063.0	91.30	267.00	7,188.1	-1,391.7	-2,872.9	3,147.2	0.92	-0.74	-0.53
10,158.0	91.30	268.70	7,186.0	-1,395.2	-2,967.8	3,239.3	1.79	0.00	1.79
10,252.0	90.60	269.20	7,184.4	-1,397.0	-3,061.8	3,330.0	0.92	-0.74	0.53
10,347.0	90.50	269.60	7,183.5	-1,397.9	-3,156.8	3,421.5	0.43	-0.11	0.42
10,438.0	91.50	269.40	7,181.9	-1,398.7	-3,247.8	3,509.1	1.12	1.10	-0.22
10,531.0	92.10	271.00	7,179.0	-1,398.4	-3,340.7	3,598.3	1.84	0.65	1.72
10,625.0	93.20	271.50	7,174.6	-1,396.4	-3,434.6	3,687.9	1.29	1.17	0.53
10,720.0	92.20	272.00	7,170.2	-1,393.5	-3,529.4	3,778.1	1.18	-1.05	0.53
10,815.0	92.10	272.00	7,166.6	-1,390.2	-3,624.3	3,868.3	0.11	-0.11	0.00
10,909.0	91.10	271.70	7,164.0	-1,387.1	-3,718.2	3,957.6	1.11	-1.06	-0.32
11,001.0	89.30	271.70	7,163.7	-1,384.4	-3,810.2	4,045.2	1.96	-1.96	0.00
11,093.0	88.70	271.50	7,165.3	-1,381.8	-3,902.1	4,132.7	0.69	-0.65	-0.22
11,189.0	89.90	272.00	7,166.4	-1,378.9	-3,998.1	4,224.1	1.35	1.25	0.52
11,284.0	88.90	271.50	7,167.4	-1,376.0	-4,093.0	4,314.4	1.18	-1.05	-0.53
11,379.0	89.60	271.00	7,168.7	-1,373.9	-4,188.0	4,405.0	0.91	0.74	-0.53
11,473.0	90.60	271.50	7,168.5	-1,371.9	-4,282.0	4,494.7	1.19	1.06	0.53
11,568.0	90.00	269.40	7,168.0	-1,371.1	-4,377.0	4,585.7	2.30	-0.63	-2.21
11,661.0	90.90	269.80	7,167.3	-1,371.8	-4,470.0	4,675.2	1.06	0.97	0.43
11,761.0	91.70	269.90	7,165.0	-1,372.0	-4,569.9	4,771.3	0.81	0.80	0.10
11,826.0	91.70	269.90	7,163.1	-1,372.1	-4,634.9	4,833.7	0.00	0.00	0.00

EOL (Actual) - PBHL(W#18H) - TD



Survey Report



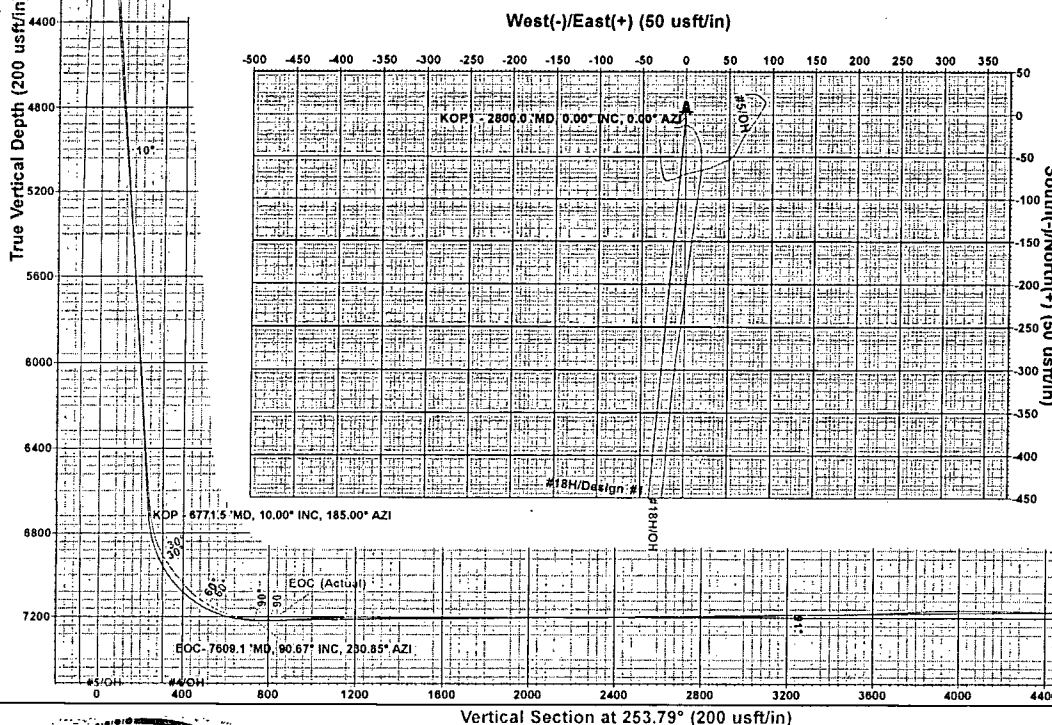
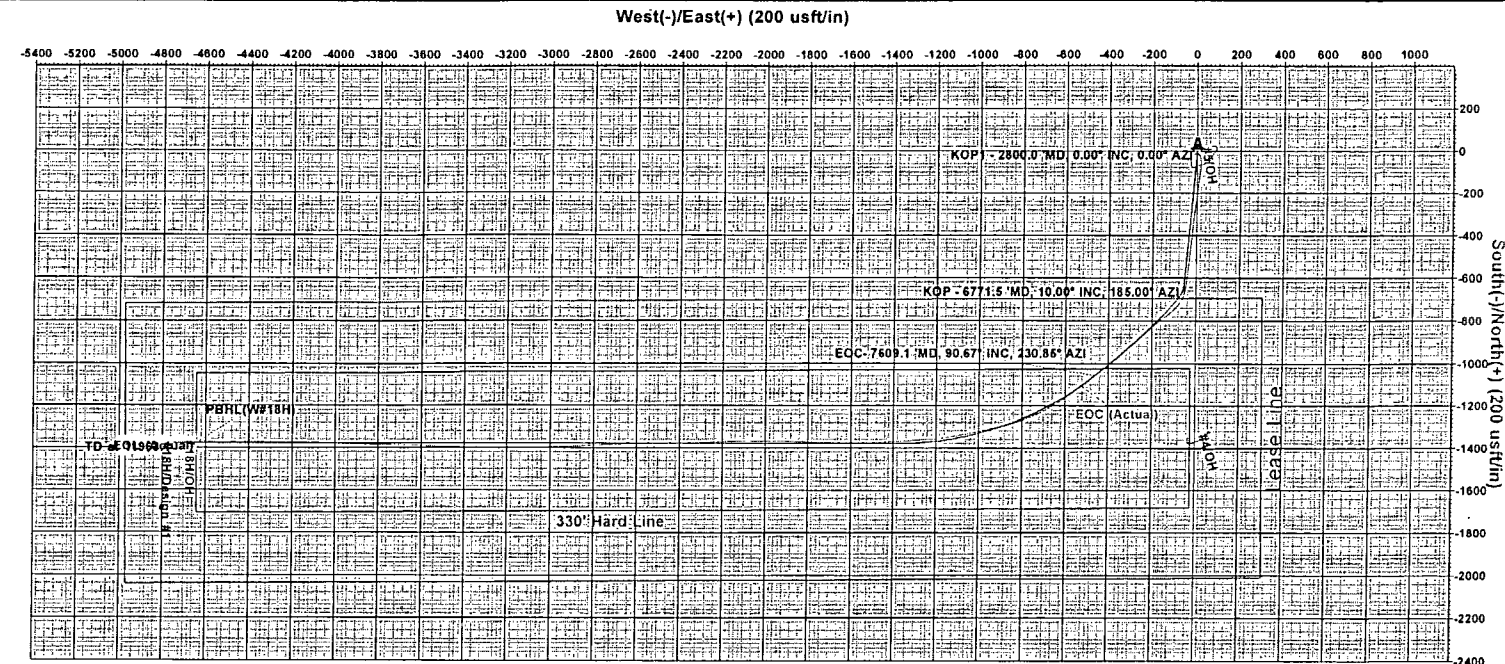
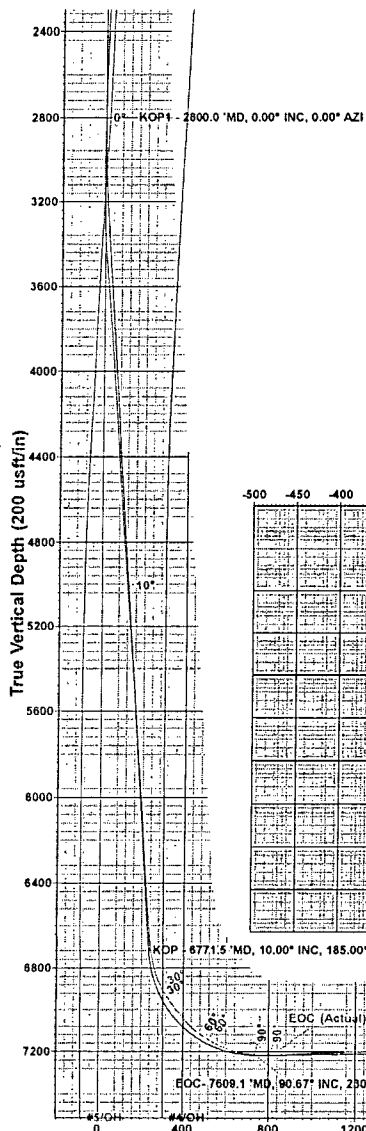
Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #18H
Project:	Eddy County NM(NAD83)	TVD Reference:	WELL @ 3682.5usft (Original Well Elev)
Site:	Wolf AJA Federal	MD Reference:	WELL @ 3682.5usft (Original Well Elev)
Well:	#18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassEDM

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,657.3	7,219.1	-1,105.5	-526.1	EOC (Actual)
11,826.0	7,163.1	-1,372.1	-4,634.9	EOL (Actual)

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County, NM(NAD83)
Site: Wolf AJA Federal
Well: #18H
Wellbore: OH
Plan: Design #1 (#18H/OH)



#18H

Ground Elevation:: 3664.0—

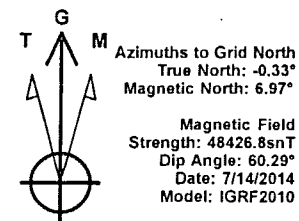
RKB Elevation: WELL @ 3682.5usft (Original Well Elev)

Rig Name: Original Well Elev

Longitude	Northing	Easting	Latitude	
528515.90		729320.80	32° 27' 5.328 N	103° 43' 26.083 W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2800.0	0.00	0.00	2800.0	0.0	0.0	0.00	0.00	0.0	
3	3300.0	10.00	185.00	3297.5	-43.4	-3.8	2.00	185.00	15.7	
4	6771.5	10.00	185.00	6716.2	-643.9	-56.3	0.00	0.00	233.9	
5	7609.1	90.67	230.85	7216.0	-1057.0	-462.4	10.00	46.20	739.1	
6	8587.7	90.67	270.00	7204.1	-1378.5	-1366.5	4.00	89.77	1697.0	
7	11863.1	90.67	270.00	7166.0	-1378.7	-4641.7	0.00	0.00	4842.0	PBHL(W#18H)
8	11963.1	90.67	270.00	7164.8	-1378.7	-4741.7	0.00	0.00	4938.1	



Vertical Section at 253.79° (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



Job Number: SVMO-141113
 Company: Yates Petroleum Corporation
 Lease/Well: Wolf AJA Fed 18H
 Location: Eddy County, NM
 Rig Name: McVay #10
 RKB: 18'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.99°
 Grid: East To Grid North
 File name: S:\2014SU-1\YATES\MOIWOLFAJ-1\18H.SVY
 Date/Time: 18-Aug-14 / 15:47
 Curve Name: Surface - 794" M.D. (Rate Gyro)

MS SURVEY

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 253.79

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 794" MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.

Joseph Brock
 MS Energy Services

8/18/14
 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	.22	321.24	100.00	.15	-.12	.07	.19	321.24	.22
200.00	.47	341.93	200.00	.69	-.37	.16	.78	331.93	.28
300.00	.26	354.19	300.00	1.30	-.52	.13	1.40	338.36	.22
400.00	.12	284.26	400.00	1.56	-.64	.18	1.68	337.58	.25
500.00	.28	195.83	499.99	1.35	-.81	.40	1.57	328.97	.30
600.00	.51	188.32	599.99	.67	-.94	.72	1.16	305.51	.24
700.00	.74	191.74	699.99	-.40	-1.14	1.20	1.21	250.58	.23
Last Survey Depth Recorded									
794.00	1.13	189.37	793.97	-1.91	-1.41	1.89	2.37	216.47	.42



Customer Name: Yates Petroleum Corp
 Well Name: Wolf AJA Fed Com# 1
 API Number: 30-015-39830
 County / Parish: Eddy Co, NM

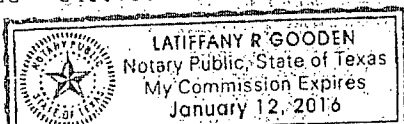
M.W.D. Operator: R. Martin
 Directional Driller: J. Muller
 Total Magnetic Correction: 6.97
 Job #: NM-462

Vertical Section: 253.79

Tie In Survey(s) Provided By:

Multi Shot Survey

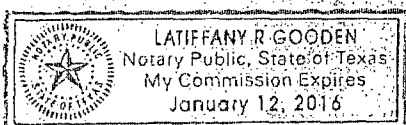
	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie In										
0	794.00	1.13	189.37	793.97	1.89	-1.91	-1.41	2.37	216.47	0.42
1	940.00	1.30	214.00	939.94	3.78	-4.70	-2.57	5.36	208.66	0.37
2	1014.00	1.10	219.10	1013.92	5.01	-5.95	-3.49	6.90	210.38	0.31
3	1108.00	1.10	222.30	1107.90	6.52	-7.32	-4.66	8.68	212.51	0.07
4	1203.00	1.00	236.70	1202.89	8.09	-8.45	-5.97	10.34	215.25	0.30
5	1298.00	1.00	240.30	1297.87	9.69	-9.31	-7.38	11.89	218.41	0.07
6	1393.00	0.80	237.80	1392.86	11.13	-10.08	-8.67	13.29	220.69	0.21
7	1488.00	1.00	230.50	1487.85	12.53	-10.96	-9.87	14.75	222.00	0.24
8	1583.00	0.90	224.90	1582.84	13.95	-12.01	-11.03	16.31	222.56	0.14
9	1678.00	0.70	227.70	1677.83	15.12	-12.93	-11.99	17.63	222.83	0.21
10	1773.00	0.70	204.90	1772.82	16.02	-13.85	-12.66	18.77	222.43	0.29
11	1868.00	0.60	206.80	1867.82	16.75	-14.82	-13.13	19.80	221.54	0.11
12	1963.00	0.40	164.30	1962.81	17.09	-15.58	-13.26	20.46	220.40	0.43
13	2058.00	0.40	119.60	2057.81	16.86	-16.07	-12.89	20.60	218.73	0.32
14	2152.00	0.70	74.60	2151.81	16.06	-16.08	-12.05	20.09	216.85	0.54
15	2247.00	1.10	79.50	2246.79	14.57	-15.76	-10.59	18.99	213.91	0.43
16	2342.00	1.50	75.20	2341.77	12.42	-15.27	-8.49	17.47	209.08	0.43
17	2437.00	1.50	67.00	2436.74	9.94	-14.47	-6.15	15.72	203.02	0.23
18	2532.00	1.70	71.10	2531.70	7.30	-13.53	-3.67	14.02	195.17	0.24
19	2627.00	1.50	94.50	2626.66	4.73	-13.17	-1.10	13.21	184.76	0.71
20	2722.00	1.80	98.80	2721.62	2.21	-13.49	1.62	13.59	173.16	0.34
21	2754.00	2.30	106.70	2753.60	1.22	-13.75	2.73	14.02	168.77	1.79
22	2785.00	2.60	119.60	2784.58	0.21	-14.28	3.94	14.81	164.59	2.02
23	2817.00	3.10	124.90	2816.54	-0.84	-15.13	5.28	16.03	160.77	1.76
24	2849.00	3.70	133.90	2848.48	-1.90	-16.35	6.73	17.68	157.62	2.50
25	2881.00	3.80	137.80	2880.41	-2.88	-17.85	8.19	19.64	155.36	0.86
26	2912.00	4.00	145.30	2911.34	-3.67	-19.50	9.49	21.69	154.04	1.77
27	2944.00	4.10	145.80	2943.26	-4.38	-21.36	10.77	23.92	153.24	0.33
28	2976.00	4.30	151.70	2975.17	-4.99	-23.36	11.98	26.26	152.85	1.49
29	3007.00	4.30	159.20	3006.09	-5.32	-25.47	12.95	28.57	153.06	1.81
30	3039.00	4.20	160.30	3038.00	-5.49	-27.70	13.77	30.93	153.57	0.40
31	3070.00	4.10	161.00	3068.92	-5.61	-29.81	14.51	33.16	154.05	0.36
32	3100.00	4.60	162.00	3098.83	-5.70	-31.97	15.23	35.42	154.53	1.69
33	3134.00	4.70	163.90	3132.72	-5.74	-34.61	16.04	38.14	155.13	0.54
34	3165.00	4.80	169.40	3163.61	-5.61	-37.10	16.63	40.66	155.86	1.50
35	3195.00	5.20	171.90	3193.50	-5.30	-39.68	17.05	43.19	156.74	1.52
36	3229.00	6.00	174.90	3227.34	-4.74	-42.98	17.43	46.38	157.93	2.50
37	3260.00	6.80	177.60	3258.14	-3.99	-46.42	17.65	49.67	159.18	2.76
38	3292.00	8.00	178.30	3289.88	-2.98	-50.54	17.79	53.58	160.60	3.76
39	3324.00	9.10	178.70	3321.52	-1.77	-55.30	17.92	58.13	162.05	3.44
40	3355.00	10.20	180.50	3352.08	-0.35	-60.50	17.95	63.10	163.47	3.68
41	3387.00	11.40	183.00	3383.51	1.51	-66.49	17.76	68.82	165.04	4.02
42	3419.00	11.90	185.70	3414.85	3.78	-72.93	17.27	74.94	166.68	2.31
43	3450.00	11.80	187.90	3445.18	6.27	-79.25	16.51	80.95	168.23	1.49



44	3482.00	11.50	187.70	3476.53	8.90	-85.65	15.64	87.07	169.65	0.95
45	3577.00	11.60	187.30	3569.61	16.54	-104.51	15.15	105.33	172.83	0.13
46	3672.00	11.30	187.50	3662.72	24.10	-123.21	10.73	123.68	175.03	0.32
47	3767.00	10.70	185.90	3755.97	31.16	-141.21	8.60	141.47	176.51	0.71
48	3862.00	10.50	186.60	3849.35	37.83	-158.58	6.70	158.72	177.58	0.25
49	3957.00	10.40	188.20	3942.78	44.73	-175.67	4.48	175.73	178.54	0.32
50	4052.00	10.90	187.70	4036.14	51.92	-193.06	2.06	193.07	179.39	0.54
51	4147.00	10.10	184.00	4129.55	58.44	-210.27	0.27	210.27	179.93	1.10
52	4242.00	10.20	186.50	4223.06	64.56	-226.93	1.26	226.94	180.32	0.48
53	4337.00	9.80	188.60	4316.62	71.20	-243.29	-3.42	243.31	180.81	0.57
54	4432.00	9.50	187.40	4410.28	77.73	-259.05	-5.64	259.12	181.25	0.38
55	4527.00	9.10	188.70	4504.03	84.04	-274.26	-7.79	274.37	181.63	0.48
56	4712.00	10.00	185.20	4686.46	96.06	-304.71	-11.45	304.93	182.15	0.58
57	4806.00	11.40	186.10	4778.83	102.57	-322.08	-13.18	322.35	182.34	1.50
58	4901.00	11.90	184.90	4871.87	109.66	-341.17	-15.02	341.50	182.52	0.58
59	4996.00	11.50	185.00	4964.90	116.61	-360.37	-16.68	360.75	182.65	0.42
60	5091.00	11.90	185.00	5057.92	123.58	-379.56	-18.36	380.00	182.77	0.42
61	5185.00	12.30	184.50	5149.83	130.63	-399.20	-19.99	399.70	182.87	0.44
62	5274.00	12.00	183.80	5236.84	137.15	-417.88	-21.34	418.42	182.92	0.38
63	5369.00	11.20	186.60	5329.90	144.11	-436.90	-23.06	437.51	183.02	1.03
64	5464.00	10.40	186.40	5423.22	150.98	-454.58	-25.08	455.27	183.16	0.84
65	5559.00	10.40	186.40	5516.66	157.57	-471.63	-26.99	472.40	183.27	0.00
66	5654.00	10.60	187.70	5610.06	164.41	-488.81	-29.11	489.67	183.41	0.33
67	5749.00	10.20	186.30	5703.50	171.17	-505.83	-31.21	506.79	183.53	0.50
68	5844.00	10.30	186.10	5796.99	177.62	-522.63	-33.03	523.67	183.62	0.11
69	5939.00	11.10	185.60	5890.34	184.24	-540.18	-34.83	541.30	183.69	0.85
70	6034.00	10.30	186.60	5983.68	190.93	-557.72	-36.70	558.92	183.76	0.86
71	6128.00	9.80	186.60	6076.24	197.29	-574.01	-38.58	575.31	183.85	0.53
72	6223.00	9.30	187.00	6169.92	203.45	-589.66	-40.45	591.05	183.92	0.53
73	6318.00	9.00	186.80	6263.71	209.38	-604.66	-42.26	606.13	184.00	0.32
74	6412.00	9.30	188.20	6356.52	215.39	-619.48	-44.22	621.05	184.08	0.40
75	6507.00	9.40	190.80	6450.26	222.09	-634.70	-46.76	636.42	184.21	0.46
76	6614.00	9.50	191.00	6555.80	230.09	-651.95	-50.09	653.87	184.39	0.10
77	6705.00	9.40	190.50	6645.57	236.87	-666.63	-52.87	668.72	184.53	0.14
78	6767.00	11.40	197.30	6706.55	242.53	-677.46	-55.62	679.73	184.69	3.70
79	6798.00	14.20	203.10	6736.78	246.63	-683.88	-58.02	686.34	184.85	9.93
80	6830.00	17.60	205.80	6767.55	252.35	-691.85	-61.67	694.59	185.09	10.87
81	6861.00	21.20	207.90	6796.79	259.39	-701.02	-66.33	704.16	185.41	11.83
82	6892.00	24.50	210.30	6825.35	267.96	-711.53	-72.20	715.18	185.79	11.06
83	6923.00	27.30	214.70	6853.24	278.14	-722.93	-79.49	727.29	186.28	10.95
84	6954.00	30.40	219.30	6880.39	290.13	-734.85	-88.51	740.16	186.87	12.29
85	6985.00	33.00	225.30	6906.77	304.02	-746.86	-99.48	753.46	187.59	13.17
86	7016.00	34.20	229.50	6932.59	319.36	-758.46	-112.11	766.70	188.41	8.44
87	7048.00	36.00	232.10	6958.77	336.32	-770.08	-126.37	780.38	189.32	7.31
88	7079.00	37.80	233.00	6983.56	353.67	-781.39	-141.15	794.04	190.24	6.06
89	7109.00	40.40	232.30	7006.84	371.32	-792.87	-156.19	808.11	191.14	8.79
90	7140.00	43.40	230.20	7029.91	390.43	-805.84	-172.32	824.06	192.07	10.68
91	7171.00	45.10	228.50	7052.12	410.12	-819.93	-189.73	841.37	192.96	6.69
92	7201.00	47.60	226.70	7072.83	429.59	-834.57	-204.75	859.32	193.78	9.40
93	7232.00	51.30	226.00	7092.98	450.49	-850.83	-221.79	879.26	194.61	12.06
94	7264.00	55.30	226.90	7112.10	473.28	-868.50	-240.39	901.15	195.47	12.70
95	7295.00	57.90	227.80	7129.16	496.45	-886.03	-259.42	923.23	196.32	8.73
96	7323.00	60.10	227.80	7143.58	518.02	-902.15	-277.20	943.78	197.08	7.86
97	7357.00	63.70	227.60	7159.59	544.95	-922.83	-299.38	969.70	197.98	10.60
98	7389.00	67.20	228.30	7172.89	571.15	-941.82	-320.99	995.02	198.82	11.42
99	7420.00	71.00	229.70	7183.94	597.43	-960.81	-342.84	1020.15	199.64	12.96
100	7452.00	74.50	231.10	7193.43	625.48	-980.29	-366.39	1046.52	200.49	11.71
101	7492.00	77.30	232.10	7203.17	661.40	-1004.38	-396.79	1079.92	201.56	11.41

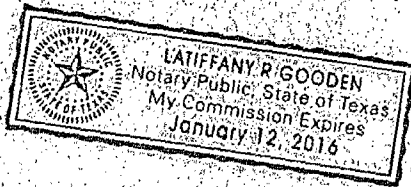


102	7524.00	80.20	232.30	7209.42	690.58	-1023.62	-421.59	1407.03	202.38	9.08
103	7555.00	83.10	232.10	7213.92	719.10	-1042.41	-445.82	1433.75	203.16	9.38
104	7586.00	85.90	232.00	7216.89	747.75	-1061.39	-470.15	1460.85	203.89	9.04
105	7617.00	87.80	232.00	7218.59	776.49	-1080.44	-494.54	1488.24	204.59	6.13
106	7648.00	90.10	231.40	7219.16	805.21	-1099.65	-518.86	1515.92	205.26	7.67
107	7679.00	92.00	231.40	7218.59	833.87	-1118.99	-543.08	1543.81	205.89	6.13
108	7710.00	93.90	232.50	7217.00	862.60	-1138.07	-567.46	1571.70	206.50	7.08
109	7742.00	94.90	233.70	7214.54	892.45	-1157.22	-592.98	1600.30	207.13	4.87
110	7773.00	95.20	235.10	7211.81	921.58	-1175.20	-618.08	1627.83	207.74	4.60
111	7803.00	94.50	237.20	7209.28	950.06	-1191.85	-642.91	1654.19	208.34	7.35
112	7835.00	92.80	239.90	7207.24	980.87	-1208.51	-670.15	1681.88	209.01	9.96
113	7867.00	91.40	242.50	7206.07	1012.08	-1223.91	-698.17	1709.04	209.70	9.22
114	7899.00	90.80	244.60	7205.45	1043.56	-1238.16	-726.81	1735.72	210.41	6.82
115	7930.00	91.80	247.10	7204.75	1074.25	-1250.84	-755.09	1761.08	211.12	8.68
116	7962.00	92.70	249.00	7203.49	1106.07	-1262.79	-784.74	1786.76	211.86	6.57
117	7993.00	92.80	251.10	7202.00	1136.96	-1273.36	-813.85	1811.22	212.58	6.77
118	8025.00	91.60	252.70	7200.78	1168.92	-1283.29	-844.24	1836.09	213.34	6.25
119	8055.00	90.70	253.90	7200.17	1198.91	-1291.91	-872.97	1859.20	214.05	5.00
120	8086.00	89.40	255.00	7200.15	1229.91	-1300.22	-902.83	1882.93	214.77	5.49
121	8114.00	88.80	256.60	7200.59	1257.89	-1307.09	-929.97	1904.16	215.43	6.10
122	8145.00	88.40	257.50	7201.34	1288.83	-1314.03	-960.18	1927.46	216.16	3.18
123	8176.00	88.20	257.80	7202.26	1319.74	-1320.66	-990.45	1950.79	216.87	1.16
124	8207.00	89.00	258.70	7203.02	1350.64	-1326.97	-1020.79	1974.17	217.57	3.88
125	8238.00	88.80	258.70	7203.62	1381.52	-1333.04	-1051.18	1997.64	218.26	0.65
126	8269.00	89.40	259.00	7204.10	1412.40	-1339.04	-1081.59	2021.30	218.93	2.16
127	8301.00	89.90	260.30	7204.30	1444.23	-1344.79	-1113.07	2045.67	219.61	4.35
128	8332.00	90.00	261.50	7204.33	1474.99	-1349.69	-1143.68	2069.08	220.28	3.88
129	8363.00	90.90	263.40	7204.08	1505.63	-1353.76	-1174.41	2092.18	220.94	6.78
130	8457.00	91.10	266.10	7202.44	1597.89	-1362.36	-1267.99	2186.13	222.95	2.88
131	8549.00	90.00	266.10	7201.56	1687.77	-1368.62	-1359.77	2192.27	224.81	1.20
132	8644.00	90.00	268.00	7201.56	1780.24	-1373.51	-1454.64	2200.62	226.64	2.00
133	8739.00	90.90	269.20	7200.81	1872.08	-1375.83	-1549.61	2207.24	228.40	1.58
134	8834.00	91.40	270.80	7198.91	1963.28	-1375.83	-1644.58	2214.19	230.08	1.76
135	8928.00	90.70	271.70	7197.18	2052.93	-1373.78	-1738.54	2215.81	231.68	1.21
136	9023.00	89.90	272.00	7196.69	2143.25	-1370.71	-1833.49	2289.22	233.22	0.90
137	9117.00	89.60	270.50	7197.10	2232.91	-1368.66	-1927.47	2363.97	234.62	1.63
138	9212.00	89.30	269.90	7198.01	2324.04	-1368.33	-2022.46	2441.86	235.92	0.71
139	9307.00	90.00	269.10	7198.59	2415.49	-1369.16	-2117.45	2521.55	237.11	1.12
140	9402.00	90.50	268.00	7198.17	2507.35	-1371.56	-2212.42	2603.07	238.20	1.27
141	9497.00	89.80	267.70	7197.92	2599.50	-1375.13	-2307.35	2686.05	239.21	0.80
142	9591.00	90.60	269.10	7197.60	2690.46	-1377.75	-2401.31	2768.48	240.16	1.72
143	9685.00	90.00	269.60	7197.10	2781.01	-1378.82	-2495.30	2850.91	241.08	0.83
144	9780.00	90.90	269.10	7196.36	2872.53	-1379.89	-2590.29	2934.92	241.96	1.08
145	9874.00	91.90	267.30	7194.06	2963.54	-1382.85	-2684.21	3019.48	242.74	2.19
146	9969.00	92.00	267.50	7190.83	3055.82	-1387.15	-2779.06	3106.02	243.47	0.24
147	10063.00	91.30	267.00	7188.12	3147.20	-1391.66	-2872.91	3192.23	244.15	0.92
148	10158.00	91.30	268.70	7185.97	3239.32	-1395.22	-2967.82	3279.42	244.82	1.79
149	10252.00	90.60	269.20	7184.41	3330.04	-1396.95	-3061.79	3365.41	245.48	0.92
150	10347.00	90.50	269.60	7183.50	3421.53	-1397.94	-3156.78	3452.46	246.11	0.43
151	10438.00	91.50	269.40	7181.91	3509.12	-1398.73	-3247.76	3536.16	246.70	1.12
152	10531.00	92.10	271.00	7178.99	3598.28	-1398.41	-3340.71	3621.59	247.29	1.84
153	10625.00	93.20	271.50	7174.64	3687.85	-1396.36	-3434.59	3707.59	247.88	1.29
154	10720.00	92.20	272.00	7170.17	3778.12	-1393.46	-3529.44	3794.56	248.46	1.18
155	10815.00	92.10	272.00	7166.60	3868.30	-1390.15	-3624.81	3881.77	249.02	0.11
156	10909.00	91.10	271.70	7163.98	3957.63	-1387.12	-3718.22	3968.54	249.54	1.11
157	11001.00	89.30	271.70	7163.66	4045.17	-1384.39	-3810.18	4053.89	250.03	1.96
158	11093.00	88.70	271.50	7165.26	4132.75	-1381.82	-3902.13	4139.57	250.50	0.69
159	11189.00	89.90	272.00	7166.43	4224.06	-1378.89	-3998.07	4229.18	250.97	1.35



160	11284.00	88.90	271.50	7167.43	4314.42	-1375.99	-4093.02	4318.12	251.42	1.18
161	11379.00	89.60	271.00	7168.67	4405.04	-1373.92	-4187.99	4407.60	251.84	0.91
162	11473.00	90.60	271.50	7168.51	4494.71	-1371.86	-4281.97	4496.36	252.24	1.19
163	11568.00	90.00	269.40	7168.01	4585.71	-1371.12	-4376.96	4586.69	252.61	2.30
164	11661.00	90.90	269.80	7167.28	4675.19	-1371.77	-4469.95	4675.70	252.94	1.06
165	11761.00	91.70	269.90	7165.01	4771.26	-1372.03	-4569.92	4771.44	253.29	0.81
PTB	11826.00	91.70	269.90	7163.08	4833.68	-1372.14	-4634.90	4833.74	253.51	0.00

09/24/14



A large, stylized handwritten signature in black ink, located below the notary seal.

**McVAY DRILLING COMPANY**

P.O. Box 2450
Hobbs, New Mexico 88241
(575) 397-3311
FAX: 39-DRILL

Well Name and Num: Wolf AJA Fed Com 18H
Location: Sec 25, T21S, R31E
Operator: Yates
Drilling Contractor: McVay Drilling Company

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 19 2015
RECEIVED

The undersigned certifies that he is an authorized representative of the drilling contractor who drilled the above described well and that he has conducted deviation tests and obtained the following results:

<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>
0.32	200	9.30	6223	91.70	11826
0.24	350	9.50	6614		
0.32	500	27.30	6923		
0.89	650	43.40	7140		
1.41	900	74.50	7452		
1.00	1203	92.00	7715		
0.70	1678	89.40	8086		
0.40	2058	89.90	8301		
1.50	2477	90.00	8644		
4.10	2944	90.70	8928		
9.10	3324	89.30	9212		
11.60	3577	91.90	9874		
10.90	4052	91.30	10158		
9.10	4551	90.50	10347		
11.40	4806	93.10	10531		
11.20	5369	91.10	10914		
10.40	5559	89.60	11379		

By: *[Signature]*

Subscribed and sworn to before me this 8th day of September, 2014

[Signature]
Notary Public, Lea County, New Mexico

