



NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 31 2014

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Yates Petroleum Corp.

Eddy County, NM(NAD83)

Wolf AJA Federal Com

#21H

30 015 42239

OH

Design: OH

Survey Report - Geographic

05 August, 2014



Survey Report - Geographic

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #21H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL1 @ 3574.5usft
Site:	Wolf AJA Federal Com	MD Reference:	WELL1 @ 3574.5usft
Well:	#21H	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 Com		
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	#21H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 25' 54.743 N
		Longitude:	103° 44' 16.670 W
		Ground Level:	3,556.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	5/12/2014	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)
			7.32
			60.28
			48,432

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
			358.11

Survey Program	Date 8/5/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	16,745.0	MWD #1 (OH)	MWD
			MWD - Standard

Survey			
Measured	Inclination	Azimuth	Vertical
Depth	(°)	(°)	Depth
(usft)			(usft)
			+N/-S
			(usft)
			+E/-W
			(usft)
			Map
			Northing
			(usft)
			Map
			Easting
			(usft)
			Latitude
			Longitude
0.0	0.00	0.00	0.0
100.0	0.48	78.33	100.0
200.0	0.71	32.72	200.0
300.0	0.53	68.64	300.0
400.0	0.79	43.44	400.0
500.0	0.59	45.31	500.0
600.0	0.85	55.03	600.0
700.0	1.11	37.92	700.0
804.0	1.10	28.80	803.9
899.0	1.20	29.70	898.9
994.0	1.10	29.00	993.9
1,089.0	0.40	99.50	1,088.9
			10.6
			9.6
			521,358.39
			725,026.02
			32° 25' 54.743 N
			103° 44' 16.670 W
			521,358.48
			725,026.43
			32° 25' 54.744 N
			103° 44' 16.665 W
			521,359.08
			725,027.17
			32° 25' 54.750 N
			103° 44' 16.657 W
			521,359.77
			725,027.94
			32° 25' 54.757 N
			103° 44' 16.648 W
			521,360.44
			725,028.84
			32° 25' 54.763 N
			103° 44' 16.637 W
			521,361.30
			725,029.68
			32° 25' 54.772 N
			103° 44' 16.627 W
			521,362.09
			725,030.66
			32° 25' 54.780 N
			103° 44' 16.616 W
			521,363.28
			725,031.86
			32° 25' 54.791 N
			103° 44' 16.602 W
			521,364.95
			725,032.96
			32° 25' 54.808 N
			103° 44' 16.589 W
			521,366.61
			725,033.89
			32° 25' 54.824 N
			103° 44' 16.578 W
			521,368.27
			725,034.83
			32° 25' 54.841 N
			103° 44' 16.567 W
			521,369.02
			725,035.60
			32° 25' 54.848 N
			103° 44' 16.558 W



Survey Report - Geographic

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #21H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL1 @ 3574.5usft
Site:	Wolf AJA Federal Com	MD Reference:	WELL1 @ 3574.5usft
Well:	#21H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,184.0	0.40	76.10	1,183.9	10.7	10.2	521,369.04	725,036.24	32° 25' 54.848 N	103° 44' 16.550 W
1,278.0	0.50	75.90	1,277.9	10.8	10.9	521,369.22	725,036.96	32° 25' 54.850 N	103° 44' 16.542 W
1,373.0	0.60	86.50	1,372.9	11.0	11.8	521,369.35	725,037.86	32° 25' 54.851 N	103° 44' 16.531 W
1,468.0	0.90	78.40	1,467.9	11.1	13.1	521,369.53	725,039.09	32° 25' 54.853 N	103° 44' 16.517 W
1,563.0	1.30	73.80	1,562.9	11.6	14.8	521,369.98	725,040.85	32° 25' 54.857 N	103° 44' 16.496 W
1,658.0	1.80	67.50	1,657.8	12.5	17.2	521,370.86	725,043.27	32° 25' 54.866 N	103° 44' 16.468 W
1,753.0	1.70	73.80	1,752.8	13.4	20.0	521,371.82	725,046.00	32° 25' 54.875 N	103° 44' 16.436 W
1,848.0	1.10	62.40	1,847.7	14.2	22.1	521,372.63	725,048.16	32° 25' 54.883 N	103° 44' 16.411 W
1,943.0	1.00	42.20	1,942.7	15.3	23.5	521,373.67	725,049.52	32° 25' 54.893 N	103° 44' 16.395 W
2,038.0	0.90	84.20	2,037.7	16.0	24.8	521,374.36	725,050.82	32° 25' 54.900 N	103° 44' 16.380 W
2,133.0	1.10	51.50	2,132.7	16.6	26.3	521,375.00	725,052.28	32° 25' 54.906 N	103° 44' 16.363 W
2,228.0	0.80	0.70	2,227.7	17.8	27.0	521,376.23	725,053.00	32° 25' 54.918 N	103° 44' 16.354 W
2,323.0	0.60	95.60	2,322.7	18.5	27.5	521,376.85	725,053.50	32° 25' 54.924 N	103° 44' 16.348 W
2,418.0	0.80	54.60	2,417.7	18.8	28.5	521,377.19	725,054.54	32° 25' 54.928 N	103° 44' 16.336 W
2,513.0	1.10	106.30	2,512.7	18.9	29.9	521,377.31	725,055.95	32° 25' 54.929 N	103° 44' 16.319 W
2,608.0	1.20	109.10	2,607.6	18.3	31.8	521,376.73	725,057.77	32° 25' 54.923 N	103° 44' 16.298 W
2,703.0	2.70	109.30	2,702.6	17.3	34.8	521,375.67	725,060.82	32° 25' 54.912 N	103° 44' 16.263 W
2,798.0	1.60	113.70	2,797.5	16.0	38.1	521,374.39	725,064.15	32° 25' 54.900 N	103° 44' 16.224 W
2,893.0	0.70	21.90	2,892.5	16.0	39.6	521,374.40	725,065.58	32° 25' 54.900 N	103° 44' 16.207 W
2,988.0	1.70	48.10	2,987.5	17.5	40.8	521,375.88	725,066.84	32° 25' 54.914 N	103° 44' 16.193 W
3,083.0	1.00	48.70	3,082.5	19.0	42.5	521,377.37	725,068.52	32° 25' 54.929 N	103° 44' 16.173 W
3,177.0	0.20	56.90	3,176.5	19.6	43.3	521,378.00	725,069.27	32° 25' 54.935 N	103° 44' 16.164 W
3,272.0	0.70	62.70	3,271.5	20.0	43.9	521,378.35	725,069.92	32° 25' 54.938 N	103° 44' 16.156 W
3,367.0	0.40	96.30	3,366.4	20.2	44.8	521,378.58	725,070.77	32° 25' 54.941 N	103° 44' 16.147 W
3,462.0	0.50	204.80	3,461.4	19.8	44.9	521,378.17	725,070.93	32° 25' 54.937 N	103° 44' 16.145 W
3,557.0	1.50	208.80	3,556.4	18.3	44.1	521,376.71	725,070.15	32° 25' 54.922 N	103° 44' 16.154 W
3,652.0	0.70	228.70	3,651.4	16.8	43.1	521,375.23	725,069.12	32° 25' 54.908 N	103° 44' 16.166 W
3,747.0	0.40	258.70	3,746.4	16.4	42.3	521,374.79	725,068.36	32° 25' 54.903 N	103° 44' 16.175 W
3,842.0	0.60	250.30	3,841.4	16.2	41.5	521,374.55	725,067.56	32° 25' 54.901 N	103° 44' 16.184 W
3,937.0	0.10	20.70	3,936.4	16.1	41.1	521,374.46	725,067.12	32° 25' 54.900 N	103° 44' 16.189 W
4,032.0	0.60	39.70	4,031.4	16.5	41.5	521,374.92	725,067.47	32° 25' 54.905 N	103° 44' 16.185 W
4,127.0	0.90	61.80	4,126.4	17.3	42.4	521,375.66	725,068.45	32° 25' 54.912 N	103° 44' 16.174 W
4,221.0	0.30	126.90	4,220.4	17.5	43.3	521,375.86	725,069.29	32° 25' 54.914 N	103° 44' 16.164 W
4,316.0	0.40	139.20	4,315.4	17.1	43.7	521,375.46	725,069.71	32° 25' 54.910 N	103° 44' 16.159 W
4,359.0	0.30	149.40	4,358.4	16.9	43.8	521,375.25	725,069.86	32° 25' 54.908 N	103° 44' 16.157 W
4,528.0	0.20	115.30	4,527.4	16.3	44.3	521,374.74	725,070.36	32° 25' 54.903 N	103° 44' 16.152 W
4,623.0	0.10	167.70	4,622.4	16.2	44.5	521,374.59	725,070.52	32° 25' 54.901 N	103° 44' 16.150 W
4,718.0	0.10	158.50	4,717.4	16.0	44.6	521,374.43	725,070.57	32° 25' 54.900 N	103° 44' 16.149 W
4,812.0	0.30	42.90	4,811.4	16.1	44.8	521,374.54	725,070.77	32° 25' 54.901 N	103° 44' 16.147 W
4,907.0	0.40	37.60	4,906.4	16.6	45.1	521,374.98	725,071.14	32° 25' 54.905 N	103° 44' 16.142 W
5,002.0	0.40	26.20	5,001.4	17.1	45.5	521,375.54	725,071.49	32° 25' 54.910 N	103° 44' 16.138 W
5,097.0	0.40	18.60	5,096.4	17.8	45.7	521,376.15	725,071.74	32° 25' 54.917 N	103° 44' 16.135 W
5,192.0	0.30	338.50	5,191.4	18.3	45.7	521,376.70	725,071.76	32° 25' 54.922 N	103° 44' 16.135 W
5,287.0	0.50	302.30	5,286.4	18.8	45.3	521,377.15	725,071.32	32° 25' 54.926 N	103° 44' 16.140 W
5,382.0	0.70	287.20	5,381.4	19.2	44.4	521,377.54	725,070.41	32° 25' 54.930 N	103° 44' 16.151 W
5,477.0	0.80	304.10	5,476.4	19.7	43.3	521,378.09	725,069.31	32° 25' 54.936 N	103° 44' 16.164 W
5,572.0	0.70	289.50	5,571.4	20.3	42.2	521,378.65	725,068.21	32° 25' 54.941 N	103° 44' 16.176 W
5,666.0	0.70	298.40	5,665.3	20.7	41.1	521,379.12	725,067.16	32° 25' 54.946 N	103° 44' 16.189 W
5,762.0	0.60	300.90	5,761.3	21.3	40.2	521,379.65	725,066.22	32° 25' 54.951 N	103° 44' 16.200 W
5,857.0	0.70	287.40	5,856.3	21.7	39.2	521,380.08	725,065.24	32° 25' 54.956 N	103° 44' 16.211 W
5,952.0	0.80	295.30	5,951.3	22.1	38.1	521,380.54	725,064.08	32° 25' 54.960 N	103° 44' 16.224 W
6,046.0	0.80	289.10	6,045.3	22.6	36.9	521,381.04	725,062.87	32° 25' 54.965 N	103° 44' 16.239 W
6,141.0	0.80	283.00	6,140.3	23.0	35.6	521,381.40	725,061.60	32° 25' 54.969 N	103° 44' 16.253 W
6,236.0	0.90	281.00	6,235.3	23.3	34.2	521,381.69	725,060.22	32° 25' 54.972 N	103° 44' 16.269 W
6,331.0	1.00	273.80	6,330.3	23.5	32.6	521,381.89	725,058.66	32° 25' 54.974 N	103° 44' 16.288 W



Survey Report - Geographic

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #21H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL1 @ 3574.5usft
Site:	Wolf AJA Federal Com	MD Reference:	WELL1 @ 3574.5usft
Well:	#21H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,426.0	1.10	280.70	6,425.3	23.7	30.9	521,382.12	725,056.94	32° 25' 54.976 N	103° 44' 16.308 W
6,521.0	1.20	280.50	6,520.2	24.1	29.0	521,382.47	725,055.06	32° 25' 54.980 N	103° 44' 16.330 W
6,616.0	1.20	250.80	6,615.2	23.9	27.1	521,382.32	725,053.14	32° 25' 54.979 N	103° 44' 16.352 W
6,710.0	1.10	241.30	6,709.2	23.2	25.4	521,381.56	725,051.42	32° 25' 54.971 N	103° 44' 16.372 W
6,805.0	1.00	237.40	6,804.2	22.3	23.9	521,380.68	725,049.93	32° 25' 54.963 N	103° 44' 16.390 W
6,900.0	1.10	224.60	6,899.2	21.2	22.6	521,379.58	725,048.59	32° 25' 54.952 N	103° 44' 16.405 W
6,995.0	0.70	219.00	6,994.2	20.1	21.6	521,378.48	725,047.58	32° 25' 54.941 N	103° 44' 16.417 W
7,090.0	0.70	228.30	7,089.2	19.3	20.8	521,377.65	725,046.78	32° 25' 54.933 N	103° 44' 16.426 W
7,185.0	0.50	229.00	7,184.2	18.6	20.0	521,376.99	725,046.04	32° 25' 54.926 N	103° 44' 16.435 W
7,280.0	0.60	227.80	7,279.1	18.0	19.3	521,376.38	725,045.35	32° 25' 54.920 N	103° 44' 16.443 W
7,390.0	0.60	222.90	7,389.1	17.2	18.5	521,375.57	725,044.54	32° 25' 54.912 N	103° 44' 16.453 W
7,483.0	0.50	235.50	7,482.1	16.6	17.9	521,374.99	725,043.87	32° 25' 54.907 N	103° 44' 16.461 W
7,507.0	0.60	230.90	7,506.1	16.5	17.7	521,374.85	725,043.69	32° 25' 54.905 N	103° 44' 16.463 W
7,532.0	0.60	226.00	7,531.1	16.3	17.5	521,374.67	725,043.49	32° 25' 54.903 N	103° 44' 16.465 W
7,563.0	1.10	339.10	7,562.1	16.4	17.3	521,374.84	725,043.27	32° 25' 54.905 N	103° 44' 16.468 W
7,595.0	4.30	355.80	7,594.1	17.9	17.1	521,376.32	725,043.07	32° 25' 54.920 N	103° 44' 16.470 W
7,627.0	7.70	0.00	7,625.9	21.3	17.0	521,379.66	725,042.98	32° 25' 54.953 N	103° 44' 16.471 W
7,659.0	10.80	4.00	7,657.5	26.4	17.2	521,384.80	725,043.19	32° 25' 55.004 N	103° 44' 16.468 W
7,691.0	13.70	7.70	7,688.8	33.2	17.9	521,391.55	725,043.91	32° 25' 55.070 N	103° 44' 16.459 W
7,723.0	17.10	7.20	7,719.6	41.6	19.0	521,399.97	725,045.01	32° 25' 55.154 N	103° 44' 16.446 W
7,755.0	20.30	6.10	7,749.9	51.8	20.2	521,410.16	725,046.19	32° 25' 55.254 N	103° 44' 16.431 W
7,787.0	22.70	4.90	7,779.7	63.4	21.3	521,421.84	725,047.30	32° 25' 55.370 N	103° 44' 16.418 W
7,818.0	25.10	2.80	7,808.0	76.0	22.1	521,434.36	725,048.14	32° 25' 55.494 N	103° 44' 16.407 W
7,851.0	28.80	1.70	7,837.4	90.9	22.7	521,449.31	725,048.71	32° 25' 55.642 N	103° 44' 16.399 W
7,882.0	32.40	1.00	7,864.1	106.7	23.1	521,465.08	725,049.08	32° 25' 55.798 N	103° 44' 16.394 W
7,912.0	35.30	1.20	7,889.0	123.4	23.4	521,481.79	725,049.40	32° 25' 55.963 N	103° 44' 16.389 W
7,944.0	37.70	1.00	7,914.8	142.4	23.8	521,500.81	725,049.77	32° 25' 56.151 N	103° 44' 16.384 W
7,974.0	40.00	0.30	7,938.1	161.2	24.0	521,519.63	725,049.98	32° 25' 56.337 N	103° 44' 16.380 W
8,006.0	43.40	359.80	7,962.0	182.5	24.0	521,540.91	725,049.99	32° 25' 56.548 N	103° 44' 16.378 W
8,038.0	47.70	359.80	7,984.4	205.4	23.9	521,563.75	725,049.91	32° 25' 56.774 N	103° 44' 16.378 W
8,069.0	51.60	359.60	8,004.5	229.0	23.8	521,587.37	725,049.79	32° 25' 57.008 N	103° 44' 16.378 W
8,101.0	54.70	0.00	8,023.7	254.6	23.7	521,612.98	725,049.70	32° 25' 57.261 N	103° 44' 16.377 W
8,133.0	57.10	359.60	8,041.6	281.1	23.6	521,639.47	725,049.61	32° 25' 57.523 N	103° 44' 16.377 W
8,165.0	59.00	358.90	8,058.5	308.2	23.2	521,666.62	725,049.25	32° 25' 57.792 N	103° 44' 16.379 W
8,196.0	60.20	357.90	8,074.2	335.0	22.5	521,693.35	725,048.50	32° 25' 58.056 N	103° 44' 16.386 W
8,228.0	62.70	356.60	8,089.5	363.0	21.1	521,721.42	725,047.15	32° 25' 58.334 N	103° 44' 16.400 W
8,258.0	66.00	355.90	8,102.5	390.0	19.4	521,748.40	725,045.38	32° 25' 58.601 N	103° 44' 16.419 W
8,290.0	71.10	355.80	8,114.2	419.7	17.2	521,778.10	725,043.22	32° 25' 58.895 N	103° 44' 16.442 W
8,322.0	73.60	356.30	8,123.9	450.1	15.1	521,808.52	725,041.12	32° 25' 59.197 N	103° 44' 16.464 W
8,354.0	75.30	356.80	8,132.5	480.9	13.3	521,839.29	725,039.27	32° 25' 59.501 N	103° 44' 16.484 W
8,385.0	78.10	357.20	8,139.6	511.0	11.7	521,869.41	725,037.69	32° 25' 59.799 N	103° 44' 16.501 W
8,417.0	81.60	357.90	8,145.2	542.5	10.3	521,900.88	725,036.35	32° 26' 0.111 N	103° 44' 16.514 W
8,439.0	83.40	358.40	8,148.1	564.3	9.6	521,922.68	725,035.64	32° 26' 0.326 N	103° 44' 16.521 W
8,471.0	85.20	358.40	8,151.3	596.1	8.7	521,954.50	725,034.75	32° 26' 0.641 N	103° 44' 16.529 W
8,502.0	86.60	357.30	8,153.5	627.0	7.6	521,985.40	725,033.59	32° 26' 0.947 N	103° 44' 16.541 W
8,533.0	87.00	357.20	8,155.2	657.9	6.1	522,016.32	725,032.11	32° 26' 1.253 N	103° 44' 16.556 W
8,565.0	87.40	356.30	8,156.8	689.8	4.3	522,048.23	725,030.30	32° 26' 1.569 N	103° 44' 16.575 W
8,597.0	88.70	355.20	8,157.9	721.7	1.9	522,080.12	725,027.93	32° 26' 1.885 N	103° 44' 16.601 W
8,628.0	90.50	354.50	8,158.1	752.6	-0.9	522,110.99	725,025.14	32° 26' 2.190 N	103° 44' 16.631 W
8,723.0	93.00	356.80	8,155.2	847.3	-8.1	522,205.66	725,017.94	32° 26' 3.128 N	103° 44' 16.709 W
8,818.0	92.20	357.20	8,150.9	942.0	-13.0	522,300.43	725,012.97	32° 26' 4.066 N	103° 44' 16.761 W
8,913.0	91.90	356.80	8,147.5	1,036.8	-18.0	522,395.24	725,008.01	32° 26' 5.004 N	103° 44' 16.813 W
9,009.0	91.80	357.20	8,144.4	1,132.7	-23.0	522,491.06	725,002.98	32° 26' 5.953 N	103° 44' 16.865 W
9,104.0	89.90	358.00	8,143.0	1,227.6	-27.0	522,585.96	724,999.01	32° 26' 6.892 N	103° 44' 16.905 W
9,198.0	89.50	358.20	8,143.5	1,321.5	-30.1	522,679.91	724,995.89	32° 26' 7.822 N	103° 44' 16.936 W



Survey Report - Geographic

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #21H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL1 @ 3574.5usft
Site:	Wolf AJA Federal Com	MD Reference:	WELL1 @ 3574.5usft
Well:	#21H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,293.0	91.50	358.60	8,142.7	1,416.5	-32.8	522,774.86	724,993.24	32° 26' 8.761 N	103° 44' 16.960 W
9,388.0	90.90	358.90	8,140.7	1,511.4	-34.9	522,869.82	724,991.17	32° 26' 9.701 N	103° 44' 16.978 W
9,483.0	90.70	359.10	8,139.3	1,606.4	-36.5	522,964.79	724,989.51	32° 26' 10.641 N	103° 44' 16.992 W
9,577.0	90.40	359.60	8,138.4	1,700.4	-37.6	523,058.78	724,988.44	32° 26' 11.571 N	103° 44' 16.998 W
9,672.0	92.10	0.00	8,136.4	1,795.4	-37.9	523,153.76	724,988.11	32° 26' 12.511 N	103° 44' 16.996 W
9,768.0	90.20	359.40	8,134.4	1,891.3	-38.4	523,249.73	724,987.61	32° 26' 13.461 N	103° 44' 16.995 W
9,864.0	89.20	358.60	8,134.9	1,987.3	-40.1	523,345.71	724,985.93	32° 26' 14.410 N	103° 44' 17.009 W
9,959.0	87.50	357.70	8,137.7	2,082.2	-43.1	523,440.62	724,982.87	32° 26' 15.350 N	103° 44' 17.038 W
10,051.0	87.40	356.30	8,141.8	2,174.0	-48.0	523,532.40	724,978.06	32° 26' 16.258 N	103° 44' 17.088 W
10,147.0	88.20	355.20	8,145.5	2,269.7	-55.1	523,628.06	724,970.95	32° 26' 17.205 N	103° 44' 17.165 W
10,242.0	91.60	355.80	8,145.6	2,364.4	-62.5	523,722.76	724,963.50	32° 26' 18.143 N	103° 44' 17.246 W
10,335.0	92.00	355.80	8,142.7	2,457.1	-69.3	523,815.46	724,956.69	32° 26' 19.060 N	103° 44' 17.319 W
10,431.0	92.20	355.90	8,139.2	2,552.8	-76.3	523,911.14	724,949.74	32° 26' 20.007 N	103° 44' 17.394 W
10,524.0	91.50	357.70	8,136.2	2,645.6	-81.5	524,003.95	724,944.56	32° 26' 20.926 N	103° 44' 17.449 W
10,618.0	90.40	357.70	8,134.6	2,739.5	-85.2	524,097.86	724,940.78	32° 26' 21.856 N	103° 44' 17.486 W
10,714.0	90.70	357.00	8,133.7	2,835.4	-89.7	524,193.75	724,936.35	32° 26' 22.805 N	103° 44' 17.532 W
10,807.0	91.50	357.30	8,131.9	2,928.2	-94.3	524,286.62	724,931.72	32° 26' 23.724 N	103° 44' 17.580 W
10,901.0	91.00	359.40	8,129.9	3,022.2	-97.0	524,380.55	724,929.02	32° 26' 24.653 N	103° 44' 17.605 W
10,980.0	90.50	359.60	8,128.8	3,101.1	-97.7	524,459.54	724,928.33	32° 26' 25.435 N	103° 44' 17.608 W
11,074.0	91.40	359.30	8,127.3	3,195.1	-98.6	524,553.52	724,927.43	32° 26' 26.365 N	103° 44' 17.613 W
11,169.0	92.20	358.90	8,124.3	3,290.1	-100.1	524,648.46	724,925.93	32° 26' 27.305 N	103° 44' 17.624 W
11,261.0	91.90	358.90	8,121.0	3,382.0	-101.8	524,740.39	724,924.17	32° 26' 28.214 N	103° 44' 17.639 W
11,353.0	89.10	357.50	8,120.2	3,473.9	-104.7	524,832.32	724,921.28	32° 26' 29.124 N	103° 44' 17.666 W
11,446.0	89.70	357.30	8,121.2	3,566.8	-109.0	524,925.22	724,917.06	32° 26' 30.044 N	103° 44' 17.709 W
11,539.0	90.70	358.20	8,120.8	3,659.8	-112.6	525,018.15	724,913.41	32° 26' 30.964 N	103° 44' 17.746 W
11,632.0	89.30	358.60	8,120.8	3,752.7	-115.2	525,111.11	724,910.81	32° 26' 31.884 N	103° 44' 17.770 W
11,724.0	90.30	358.60	8,121.2	3,844.7	-117.4	525,203.08	724,908.57	32° 26' 32.794 N	103° 44' 17.791 W
11,817.0	88.10	357.70	8,122.5	3,937.6	-120.5	525,296.02	724,905.56	32° 26' 33.713 N	103° 44' 17.819 W
11,910.0	88.40	357.20	8,125.3	4,030.5	-124.6	525,388.88	724,901.43	32° 26' 34.633 N	103° 44' 17.862 W
12,002.0	89.20	359.20	8,127.2	4,122.4	-127.5	525,480.81	724,898.54	32° 26' 35.542 N	103° 44' 17.889 W
12,092.0	89.50	358.90	8,128.3	4,212.4	-129.0	525,570.79	724,897.05	32° 26' 36.433 N	103° 44' 17.901 W
12,186.0	90.00	358.20	8,128.7	4,306.4	-131.3	525,664.76	724,894.67	32° 26' 37.363 N	103° 44' 17.923 W
12,279.0	90.40	357.90	8,128.3	4,399.3	-134.5	525,757.71	724,891.50	32° 26' 38.283 N	103° 44' 17.954 W
12,374.0	91.50	357.30	8,126.8	4,494.2	-138.5	525,852.61	724,887.53	32° 26' 39.222 N	103° 44' 17.994 W
12,467.0	92.70	357.30	8,123.4	4,587.0	-142.9	525,945.44	724,883.15	32° 26' 40.141 N	103° 44' 18.039 W
12,558.0	93.00	356.60	8,118.8	4,677.8	-147.7	526,036.20	724,878.31	32° 26' 41.039 N	103° 44' 18.089 W
12,652.0	91.50	356.60	8,115.1	4,771.6	-153.3	526,129.96	724,872.74	32° 26' 41.967 N	103° 44' 18.148 W
12,745.0	91.90	358.20	8,112.4	4,864.4	-157.5	526,222.82	724,868.53	32° 26' 42.886 N	103° 44' 18.191 W
12,839.0	91.00	359.40	8,110.0	4,958.4	-159.5	526,316.76	724,866.56	32° 26' 43.816 N	103° 44' 18.208 W
12,933.0	91.60	358.90	8,107.9	5,052.3	-160.9	526,410.73	724,865.16	32° 26' 44.746 N	103° 44' 18.218 W
13,027.0	92.90	358.60	8,104.2	5,146.2	-162.9	526,504.63	724,863.12	32° 26' 45.675 N	103° 44' 18.236 W
13,120.0	90.80	358.70	8,101.2	5,239.2	-165.1	526,597.55	724,860.93	32° 26' 46.595 N	103° 44' 18.256 W
13,214.0	90.90	357.30	8,099.8	5,333.1	-168.4	526,691.48	724,857.65	32° 26' 47.525 N	103° 44' 18.288 W
13,309.0	93.30	357.00	8,096.3	5,427.9	-173.1	526,786.29	724,852.93	32° 26' 48.463 N	103° 44' 18.337 W
13,404.0	92.70	357.20	8,091.3	5,522.7	-177.9	526,881.04	724,848.13	32° 26' 49.401 N	103° 44' 18.387 W
13,498.0	88.60	358.70	8,090.3	5,616.6	-181.3	526,974.95	724,844.77	32° 26' 50.330 N	103° 44' 18.420 W
13,593.0	90.70	358.00	8,090.8	5,711.5	-184.0	527,069.91	724,842.03	32° 26' 51.270 N	103° 44' 18.446 W
13,688.0	91.50	359.60	8,089.0	5,806.5	-186.0	527,164.86	724,840.04	32° 26' 52.210 N	103° 44' 18.463 W
13,783.0	90.00	0.10	8,087.8	5,901.5	-186.2	527,259.85	724,839.79	32° 26' 53.150 N	103° 44' 18.459 W
13,878.0	87.80	359.40	8,089.6	5,996.4	-186.6	527,354.83	724,839.38	32° 26' 54.089 N	103° 44' 18.458 W
13,993.0	90.30	358.40	8,091.5	6,111.4	-188.8	527,469.78	724,837.17	32° 26' 55.227 N	103° 44' 18.476 W
14,087.0	90.70	358.60	8,090.7	6,205.4	-191.3	527,563.74	724,834.71	32° 26' 56.157 N	103° 44' 18.499 W
14,181.0	89.40	357.70	8,090.6	6,299.3	-194.3	527,657.69	724,831.68	32° 26' 57.087 N	103° 44' 18.528 W
14,274.0	89.00	356.80	8,091.9	6,392.2	-198.8	527,750.57	724,827.21	32° 26' 58.006 N	103° 44' 18.574 W
14,369.0	90.00	357.50	8,092.7	6,487.1	-203.5	527,845.45	724,822.49	32° 26' 58.945 N	103° 44' 18.623 W



Survey Report - Geographic

Company:	Yates Petroleum Corp.	Local Co-ordinate Reference:	Well #21H
Project:	Eddy County, NM(NAD83)	TVD Reference:	WELL1 @ 3574.5usft
Site:	Wolf AJA Federal Com	MD Reference:	WELL1 @ 3574.5usft
Well:	#21H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,464.0	88.80	357.70	8,093.7	6,582.0	-207.5	527,940.36	724,818.51	32° 26' 59.885 N	103° 44' 18.663 W
14,559.0	87.80	357.50	8,096.5	6,676.8	-211.5	528,035.24	724,814.54	32° 27' 0.824 N	103° 44' 18.704 W
14,654.0	89.70	358.70	8,098.6	6,771.8	-214.6	528,130.15	724,811.39	32° 27' 1.763 N	103° 44' 18.734 W
14,748.0	89.30	359.10	8,099.4	6,865.7	-216.4	528,224.13	724,809.58	32° 27' 2.693 N	103° 44' 18.749 W
14,843.0	90.00	358.60	8,100.0	6,960.7	-218.3	528,319.11	724,807.68	32° 27' 3.633 N	103° 44' 18.765 W
14,937.0	89.90	358.40	8,100.1	7,054.7	-220.8	528,413.08	724,805.22	32° 27' 4.563 N	103° 44' 18.788 W
15,030.0	91.40	358.60	8,099.0	7,147.6	-223.2	528,506.04	724,802.78	32° 27' 5.483 N	103° 44' 18.810 W
15,125.0	91.50	358.60	8,096.6	7,242.6	-225.6	528,600.98	724,800.46	32° 27' 6.422 N	103° 44' 18.831 W
15,219.0	90.10	357.30	8,095.3	7,336.5	-228.9	528,694.91	724,797.10	32° 27' 7.352 N	103° 44' 18.864 W
15,315.0	90.20	357.90	8,095.1	7,432.4	-232.9	528,790.82	724,793.08	32° 27' 8.301 N	103° 44' 18.905 W
15,410.0	90.50	357.20	8,094.5	7,527.3	-237.0	528,885.73	724,789.02	32° 27' 9.241 N	103° 44' 18.946 W
15,505.0	90.70	357.30	8,093.5	7,622.2	-241.6	528,980.62	724,784.46	32° 27' 10.180 N	103° 44' 18.993 W
15,600.0	90.40	357.20	8,092.6	7,717.1	-246.1	529,075.50	724,779.90	32° 27' 11.119 N	103° 44' 19.040 W
15,695.0	90.00	356.80	8,092.3	7,812.0	-251.1	529,170.37	724,774.93	32° 27' 12.058 N	103° 44' 19.092 W
15,790.0	91.00	357.00	8,091.4	7,906.8	-256.2	529,265.23	724,769.79	32° 27' 12.997 N	103° 44' 19.146 W
15,885.0	91.90	357.50	8,089.0	8,001.7	-260.8	529,360.09	724,765.24	32° 27' 13.936 N	103° 44' 19.193 W
15,979.0	91.40	358.00	8,086.3	8,095.6	-264.5	529,453.97	724,761.55	32° 27' 14.865 N	103° 44' 19.230 W
16,073.0	89.90	357.70	8,085.3	8,189.5	-268.0	529,547.90	724,758.02	32° 27' 15.795 N	103° 44' 19.265 W
16,168.0	90.60	357.50	8,084.8	8,284.4	-272.0	529,642.81	724,754.04	32° 27' 16.734 N	103° 44' 19.305 W
16,263.0	91.20	357.50	8,083.3	8,379.3	-276.1	529,737.71	724,749.90	32° 27' 17.673 N	103° 44' 19.347 W
16,357.0	89.10	357.00	8,083.1	8,473.2	-280.6	529,831.60	724,745.39	32° 27' 18.603 N	103° 44' 19.394 W
16,452.0	89.80	358.20	8,084.0	8,568.1	-284.6	529,926.51	724,741.41	32° 27' 19.542 N	103° 44' 19.434 W
16,547.0	92.70	358.90	8,081.9	8,663.1	-287.0	530,021.44	724,739.01	32° 27' 20.482 N	103° 44' 19.456 W
16,633.8	92.70	358.72	8,077.8	8,749.8	-288.8	530,108.16	724,737.21	32° 27' 21.340 N	103° 44' 19.471 W
PBHL(WFC#21)									
16,642.0	92.70	358.70	8,077.5	8,757.9	-289.0	530,116.32	724,737.02	32° 27' 21.421 N	103° 44' 19.473 W
16,689.0	91.80	358.40	8,075.6	8,804.9	-290.2	530,163.27	724,735.83	32° 27' 21.885 N	103° 44' 19.484 W
16,745.0	91.80	358.40	8,073.9	8,860.8	-291.7	530,219.22	724,734.27	32° 27' 22.439 N	103° 44' 19.498 W

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL(WFC#21)	0.00	0.00	8,076.0	8,749.7	-289.4	530,108.06	724,736.63	32° 27' 21.339 N	103° 44' 19.478 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 1.9usft at 16633.8usft MD (8077.8 TVD, 8749.8 N, -288.8 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____