

30-015-40754

Yates Petroleum

Eddy, NM (NAD-83)

Juniper BIP Federal Com

#12H

OH

Design: OH

Survey Report - Geographic

08 February, 2013



Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #12H
Project:	Eddy NM (NAD-83)	TVD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Site:	Juniper BIP Federal Com	MD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Project	Eddy NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Juniper BIP Federal Com					
Site Position:		Northing:	449,713.53 usft	Latitude:	32° 14' 9.236 N
From:	Map	Easting:	644,415.09 usft	Longitude:	103° 59' 59.844 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.18 °

Well	#12H					
Well Position	+N/-S	0.0 usft	Northing:	449,713.53 usft	Latitude:	32° 14' 9.236 N
	+E/-W	0.0 usft	Easting:	644,415.09 usft	Longitude:	103° 59' 59.844 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	2,995.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/22/2012	7.62	60.09	48,444

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	93.93	

Survey Program:		Date: 2/8/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	740.0	Survey #1 - MS Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot
875.0	13,368.0	Survey #2 - Crescent1 (OH)	MWD	MWD - Standard
13,434.6	13,434.6	Survey #3 - PTB (OH)	MWD	MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	449,713.53	644,415.09	32° 14' 9.236 N	103° 59' 59.844 W
100.0	0.31	205.52	100.0	-0.2	-0.1	449,713.29	644,414.97	32° 14' 9.233 N	103° 59' 59.845 W
200.0	0.75	178.79	200.0	-1.1	-0.2	449,712.39	644,414.87	32° 14' 9.224 N	103° 59' 59.846 W
300.0	0.78	183.56	300.0	-2.5	-0.2	449,711.06	644,414.84	32° 14' 9.211 N	103° 59' 59.847 W
400.0	0.46	169.56	400.0	-3.6	-0.2	449,709.98	644,414.87	32° 14' 9.200 N	103° 59' 59.847 W
500.0	0.46	182.55	500.0	-4.3	-0.2	449,709.19	644,414.93	32° 14' 9.193 N	103° 59' 59.846 W
600.0	0.60	189.68	600.0	-5.3	-0.3	449,708.27	644,414.82	32° 14' 9.184 N	103° 59' 59.847 W
700.0	0.53	186.12	700.0	-6.2	-0.4	449,707.29	644,414.68	32° 14' 9.174 N	103° 59' 59.849 W
740.0	0.46	187.88	740.0	-6.6	-0.4	449,706.95	644,414.64	32° 14' 9.170 N	103° 59' 59.849 W
Tie into Gyro @ 740' MD									

Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #12H
Project:	Eddy NM (NAD-83)	TVD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Site:	Juniper BIP Federal Com	MD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
875.0	0.40	220.40	875.0	-7.5	-0.8	449,706.06	644,414.26	32° 14' 9.162 N	103° 59' 59.854 W
1,065.0	0.40	247.90	1,065.0	-8.2	-1.9	449,705.30	644,413.22	32° 14' 9.154 N	103° 59' 59.866 W
1,255.0	0.70	262.30	1,254.9	-8.6	-3.6	449,704.90	644,411.45	32° 14' 9.150 N	103° 59' 59.887 W
1,437.0	1.10	267.70	1,436.9	-8.9	-6.5	449,704.68	644,408.61	32° 14' 9.148 N	103° 59' 59.920 W
1,627.0	1.20	268.40	1,626.9	-9.0	-10.3	449,704.55	644,404.80	32° 14' 9.147 N	103° 59' 59.964 W
1,818.0	0.90	301.00	1,817.9	-8.3	-13.6	449,705.26	644,401.51	32° 14' 9.154 N	104° 0' 0.002 W
2,008.0	0.10	325.20	2,007.8	-7.4	-15.0	449,706.17	644,400.14	32° 14' 9.163 N	104° 0' 0.018 W
2,199.0	1.80	112.90	2,198.8	-8.4	-12.3	449,705.14	644,402.80	32° 14' 9.153 N	103° 59' 59.987 W
2,294.0	1.10	102.60	2,293.8	-9.2	-10.0	449,704.36	644,405.07	32° 14' 9.145 N	103° 59' 59.961 W
2,389.0	1.80	101.50	2,388.8	-9.7	-7.7	449,703.86	644,407.42	32° 14' 9.140 N	103° 59' 59.934 W
2,484.0	1.90	88.30	2,483.7	-9.9	-4.6	449,703.61	644,410.46	32° 14' 9.138 N	103° 59' 59.898 W
2,579.0	1.40	99.20	2,578.7	-10.1	-1.9	449,703.47	644,413.18	32° 14' 9.136 N	103° 59' 59.867 W
2,674.0	1.00	113.60	2,673.6	-10.6	0.0	449,702.96	644,415.08	32° 14' 9.131 N	103° 59' 59.844 W
2,769.0	0.80	112.60	2,768.6	-11.2	1.4	449,702.37	644,416.45	32° 14' 9.125 N	103° 59' 59.828 W
2,822.0	0.70	120.90	2,821.6	-11.5	2.0	449,702.06	644,417.07	32° 14' 9.122 N	103° 59' 59.821 W
2,894.0	0.50	112.90	2,893.6	-11.8	2.7	449,701.71	644,417.74	32° 14' 9.119 N	103° 59' 59.813 W
2,972.0	1.40	129.30	2,971.6	-12.6	3.7	449,700.98	644,418.79	32° 14' 9.111 N	103° 59' 59.801 W
3,067.0	4.40	124.00	3,066.5	-15.3	7.6	449,698.20	644,422.71	32° 14' 9.084 N	103° 59' 59.756 W
3,162.0	7.70	123.10	3,160.9	-20.8	16.0	449,692.69	644,431.07	32° 14' 9.029 N	103° 59' 59.659 W
3,257.0	7.90	125.60	3,255.1	-28.1	26.6	449,685.41	644,441.71	32° 14' 8.957 N	103° 59' 59.535 W
3,352.0	8.80	123.60	3,349.1	-35.9	38.0	449,677.59	644,453.07	32° 14' 8.879 N	103° 59' 59.403 W
3,447.0	9.10	119.80	3,442.9	-43.7	50.6	449,669.84	644,465.64	32° 14' 8.802 N	103° 59' 59.257 W
3,542.0	8.30	119.60	3,536.8	-50.8	63.0	449,662.71	644,478.12	32° 14' 8.731 N	103° 59' 59.112 W
3,637.0	7.90	118.50	3,630.9	-57.3	74.7	449,656.21	644,489.82	32° 14' 8.666 N	103° 59' 58.976 W
3,731.0	7.20	117.00	3,724.0	-63.1	85.7	449,650.46	644,500.75	32° 14' 8.609 N	103° 59' 58.849 W
3,826.0	7.20	115.50	3,818.3	-68.3	96.3	449,645.19	644,511.42	32° 14' 8.556 N	103° 59' 58.725 W
3,921.0	7.70	118.90	3,912.5	-74.0	107.3	449,639.55	644,522.37	32° 14' 8.500 N	103° 59' 58.597 W
4,016.0	7.90	124.50	4,006.6	-80.8	118.2	449,632.78	644,533.32	32° 14' 8.433 N	103° 59' 58.470 W
4,111.0	7.20	124.00	4,100.8	-87.8	128.5	449,625.75	644,543.64	32° 14' 8.363 N	103° 59' 58.350 W
4,207.0	7.90	126.10	4,196.0	-95.0	138.9	449,618.50	644,553.96	32° 14' 8.291 N	103° 59' 58.230 W
4,302.0	8.10	125.00	4,290.0	-102.7	149.6	449,610.81	644,564.71	32° 14' 8.215 N	103° 59' 58.106 W
4,397.0	7.60	124.70	4,384.1	-110.1	160.3	449,603.40	644,575.36	32° 14' 8.141 N	103° 59' 57.982 W
4,492.0	8.30	119.90	4,478.2	-117.1	171.4	449,596.40	644,586.47	32° 14' 8.071 N	103° 59' 57.853 W
4,587.0	7.70	121.30	4,572.3	-123.9	182.8	449,589.68	644,597.85	32° 14' 8.004 N	103° 59' 57.720 W
4,682.0	8.60	121.70	4,666.3	-130.9	194.2	449,582.64	644,609.33	32° 14' 7.934 N	103° 59' 57.587 W
4,777.0	8.30	122.00	4,760.3	-138.3	206.1	449,575.27	644,621.19	32° 14' 7.861 N	103° 59' 57.449 W
4,872.0	8.10	120.10	4,854.3	-145.2	217.7	449,568.28	644,632.80	32° 14' 7.792 N	103° 59' 57.314 W
4,967.0	7.70	119.90	4,948.4	-151.8	229.0	449,561.76	644,644.11	32° 14' 7.727 N	103° 59' 57.183 W
5,062.0	8.30	126.40	5,042.5	-159.0	240.1	449,554.51	644,655.14	32° 14' 7.655 N	103° 59' 57.055 W
5,157.0	7.60	130.10	5,136.6	-167.1	250.4	449,546.40	644,665.47	32° 14' 7.574 N	103° 59' 56.935 W
5,252.0	8.30	127.70	5,230.7	-175.4	260.6	449,538.16	644,675.70	32° 14' 7.492 N	103° 59' 56.816 W
5,347.0	7.60	123.80	5,324.8	-183.1	271.3	449,530.47	644,686.34	32° 14' 7.416 N	103° 59' 56.692 W
5,442.0	7.70	122.00	5,418.9	-189.9	281.9	449,523.60	644,696.96	32° 14' 7.347 N	103° 59' 56.569 W
5,537.0	8.40	124.30	5,513.0	-197.2	293.0	449,516.32	644,708.09	32° 14' 7.275 N	103° 59' 56.440 W
5,631.0	7.60	123.10	5,606.1	-204.5	303.9	449,509.06	644,718.97	32° 14' 7.203 N	103° 59' 56.313 W
5,726.0	7.90	127.30	5,700.2	-211.9	314.3	449,501.67	644,729.43	32° 14' 7.129 N	103° 59' 56.192 W
5,821.0	7.00	125.90	5,794.4	-219.2	324.2	449,494.32	644,739.31	32° 14' 7.056 N	103° 59' 56.077 W
5,916.0	8.30	122.80	5,888.6	-226.3	334.7	449,487.21	644,749.76	32° 14' 6.986 N	103° 59' 55.955 W
6,011.0	7.60	125.20	5,982.6	-233.7	345.6	449,479.87	644,760.66	32° 14' 6.913 N	103° 59' 55.829 W
6,106.0	8.60	122.60	6,076.7	-241.1	356.7	449,472.42	644,771.78	32° 14' 6.839 N	103° 59' 55.700 W
6,201.0	7.40	123.10	6,170.8	-248.3	367.8	449,465.26	644,782.89	32° 14' 6.767 N	103° 59' 55.571 W
6,296.0	8.40	121.00	6,264.9	-255.2	378.9	449,458.34	644,793.96	32° 14' 6.699 N	103° 59' 55.442 W
6,391.0	7.20	119.20	6,359.0	-261.7	390.0	449,451.86	644,805.11	32° 14' 6.634 N	103° 59' 55.312 W
6,486.0	8.40	120.50	6,453.1	-268.1	401.2	449,445.44	644,816.28	32° 14' 6.570 N	103° 59' 55.183 W
6,581.0	7.70	122.40	6,547.2	-275.0	412.5	449,438.50	644,827.63	32° 14' 6.501 N	103° 59' 55.051 W

Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #12H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Site:	Juniper BIP Federal Com	MD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,676.0	7.90	122.60	6,641.3	-282.0	423.4	449,431.58	644,838.51	32° 14' 6.432 N	103° 59' 54.924 W
6,771.0	7.40	127.70	6,735.5	-289.2	433.8	449,424.32	644,848.85	32° 14' 6.360 N	103° 59' 54.804 W
6,866.0	6.30	128.20	6,829.8	-296.2	442.7	449,417.35	644,857.79	32° 14' 6.291 N	103° 59' 54.700 W
6,961.0	6.20	122.40	6,924.2	-302.2	451.1	449,411.38	644,866.21	32° 14' 6.232 N	103° 59' 54.602 W
7,051.0	5.10	126.60	7,013.8	-307.1	458.4	449,406.39	644,873.53	32° 14' 6.182 N	103° 59' 54.517 W
7,146.0	7.00	128.70	7,108.2	-313.3	466.3	449,400.25	644,881.44	32° 14' 6.121 N	103° 59' 54.426 W
7,241.0	8.80	124.70	7,202.3	-321.0	476.8	449,392.50	644,891.93	32° 14' 6.044 N	103° 59' 54.304 W
7,336.0	9.50	122.00	7,296.1	-329.3	489.5	449,384.21	644,904.55	32° 14' 5.962 N	103° 59' 54.157 W
7,431.0	7.00	119.90	7,390.1	-336.4	501.1	449,377.16	644,916.22	32° 14' 5.892 N	103° 59' 54.021 W
7,526.0	6.90	114.50	7,484.4	-341.6	511.3	449,371.91	644,926.43	32° 14' 5.839 N	103° 59' 53.903 W
7,621.0	9.10	120.60	7,578.5	-347.8	523.0	449,365.72	644,938.09	32° 14' 5.778 N	103° 59' 53.767 W
7,716.0	9.10	121.50	7,672.3	-355.6	535.9	449,357.97	644,950.96	32° 14' 5.701 N	103° 59' 53.618 W
7,811.0	9.50	119.60	7,766.1	-363.4	549.1	449,350.17	644,964.19	32° 14' 5.623 N	103° 59' 53.464 W
7,906.0	9.90	119.20	7,859.7	-371.2	563.0	449,342.32	644,978.13	32° 14' 5.545 N	103° 59' 53.302 W
8,001.0	9.10	113.80	7,953.4	-378.2	577.0	449,335.30	644,992.14	32° 14' 5.475 N	103° 59' 53.139 W
8,094.5	9.69	107.00	8,045.6	-383.5	591.3	449,330.02	645,006.43	32° 14' 5.422 N	103° 59' 52.973 W
Cross into Lease - 8094.5' MD, 8045.6' TVD, 9.69° INC, 616.2' VS									
8,096.0	9.70	106.90	8,047.1	-383.6	591.6	449,329.94	645,006.67	32° 14' 5.421 N	103° 59' 52.970 W
8,191.0	11.30	98.10	8,140.5	-387.2	608.5	449,326.30	645,023.54	32° 14' 5.385 N	103° 59' 52.774 W
8,254.0	12.10	94.50	8,202.2	-388.6	621.1	449,324.92	645,036.24	32° 14' 5.371 N	103° 59' 52.626 W
8,289.0	12.10	95.70	8,236.5	-389.3	628.5	449,324.26	645,043.54	32° 14' 5.364 N	103° 59' 52.541 W
8,321.0	12.70	95.50	8,267.7	-389.9	635.3	449,323.59	645,050.38	32° 14' 5.357 N	103° 59' 52.461 W
8,353.0	15.70	94.30	8,298.7	-390.6	643.1	449,322.93	645,058.20	32° 14' 5.350 N	103° 59' 52.370 W
8,384.0	18.80	94.10	8,328.3	-391.3	652.3	449,322.26	645,067.37	32° 14' 5.344 N	103° 59' 52.284 W
8,416.0	22.50	93.40	8,358.3	-392.0	663.5	449,321.53	645,078.63	32° 14' 5.336 N	103° 59' 52.133 W
8,447.0	26.40	90.40	8,386.5	-392.4	676.4	449,321.13	645,091.45	32° 14' 5.332 N	103° 59' 51.983 W
8,479.0	29.70	87.10	8,414.7	-392.1	691.4	449,321.48	645,106.48	32° 14' 5.335 N	103° 59' 51.808 W
8,511.0	33.60	85.80	8,442.0	-391.0	708.1	449,322.53	645,123.24	32° 14' 5.344 N	103° 59' 51.613 W
8,542.0	37.80	86.00	8,467.1	-389.7	726.2	449,323.82	645,141.28	32° 14' 5.357 N	103° 59' 51.403 W
8,574.0	41.50	86.50	8,491.8	-388.4	746.6	449,325.15	645,161.65	32° 14' 5.369 N	103° 59' 51.166 W
8,606.0	44.90	88.10	8,515.1	-387.4	768.4	449,326.18	645,183.53	32° 14' 5.379 N	103° 59' 50.911 W
8,637.0	48.40	89.20	8,536.4	-386.8	791.0	449,326.70	645,206.06	32° 14' 5.383 N	103° 59' 50.649 W
8,669.0	51.90	89.50	8,556.9	-386.6	815.5	449,326.98	645,230.62	32° 14' 5.385 N	103° 59' 50.363 W
8,701.0	54.90	90.20	8,575.9	-386.5	841.2	449,327.04	645,256.31	32° 14' 5.385 N	103° 59' 50.064 W
8,732.0	57.40	90.90	8,593.2	-386.7	867.0	449,326.79	645,282.05	32° 14' 5.382 N	103° 59' 49.764 W
8,764.0	59.60	91.10	8,609.9	-387.2	894.2	449,326.32	645,309.33	32° 14' 5.376 N	103° 59' 49.446 W
8,795.4	62.25	91.49	8,625.2	-387.8	921.7	449,325.69	645,336.76	32° 14' 5.369 N	103° 59' 49.127 W
Cross into 330' Lease - 8795.4' MD, 8625.2' TVD, 62.25° INC, 946.1' VS									
8,796.0	62.30	91.50	8,625.5	-387.9	922.2	449,325.68	645,337.29	32° 14' 5.369 N	103° 59' 49.121 W
8,827.0	66.50	91.10	8,638.9	-388.5	950.1	449,325.05	645,365.23	32° 14' 5.362 N	103° 59' 48.795 W
8,859.0	69.70	90.60	8,650.8	-388.9	979.8	449,324.61	645,394.92	32° 14' 5.357 N	103° 59' 48.450 W
8,891.0	73.00	90.60	8,661.0	-389.2	1,010.1	449,324.29	645,425.23	32° 14' 5.353 N	103° 59' 48.097 W
8,922.0	75.80	90.80	8,669.4	-389.6	1,040.0	449,323.93	645,455.08	32° 14' 5.348 N	103° 59' 47.749 W
8,954.0	78.80	91.30	8,676.4	-390.2	1,071.2	449,323.35	645,486.29	32° 14' 5.341 N	103° 59' 47.386 W
8,986.0	81.60	91.50	8,681.8	-391.0	1,102.7	449,322.58	645,517.81	32° 14' 5.333 N	103° 59' 47.019 W
9,017.0	85.90	90.40	8,685.2	-391.5	1,133.5	449,322.07	645,548.62	32° 14' 5.327 N	103° 59' 46.660 W
9,048.0	87.30	89.90	8,687.1	-391.5	1,164.5	449,321.99	645,579.56	32° 14' 5.325 N	103° 59' 46.300 W
9,080.0	87.10	90.20	8,688.6	-391.6	1,196.4	449,321.96	645,611.52	32° 14' 5.324 N	103° 59' 45.928 W
9,175.0	88.00	90.40	8,692.7	-392.1	1,291.3	449,321.47	645,706.43	32° 14' 5.316 N	103° 59' 44.823 W
9,270.0	87.40	90.20	8,696.5	-392.6	1,386.3	449,320.97	645,801.36	32° 14' 5.308 N	103° 59' 43.718 W
9,365.0	87.10	90.10	8,701.0	-392.8	1,481.2	449,320.72	645,896.25	32° 14' 5.303 N	103° 59' 42.613 W
9,460.0	88.00	89.90	8,705.1	-392.8	1,576.1	449,320.72	645,991.16	32° 14' 5.300 N	103° 59' 41.508 W
9,555.0	89.00	91.50	8,707.6	-394.0	1,671.0	449,319.56	646,086.11	32° 14' 5.285 N	103° 59' 40.403 W
9,649.0	88.50	91.50	8,709.6	-396.4	1,765.0	449,317.10	646,180.06	32° 14' 5.258 N	103° 59' 39.309 W
9,744.0	88.30	91.50	8,712.3	-398.9	1,859.9	449,314.61	646,274.99	32° 14' 5.230 N	103° 59' 38.204 W

Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #12H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Site:	Juniper,BIP,Federal Com	MD Reference:	WELL @ 3020.0usft (Union #223 - 25' KB)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston/R5000 Database

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,839.0	88.30	90.40	8,715.1	-400.5	1,954.8	449,313.04	646,369.93	32° 14' 5.212 N	103° 59' 37.098 W
9,934.0	88.30	89.40	8,717.9	-400.3	2,049.8	449,313.21	646,464.89	32° 14' 5.210 N	103° 59' 35.993 W
10,029.0	88.70	89.00	8,720.4	-399.0	2,144.8	449,314.53	646,559.85	32° 14' 5.221 N	103° 59' 34.887 W
10,124.0	90.10	89.70	8,721.4	-397.9	2,239.7	449,315.61	646,654.83	32° 14' 5.228 N	103° 59' 33.781 W
10,219.0	89.90	90.40	8,721.4	-398.0	2,334.7	449,315.53	646,749.83	32° 14' 5.224 N	103° 59' 32.675 W
10,314.0	88.00	90.40	8,723.2	-398.7	2,429.7	449,314.86	646,844.81	32° 14' 5.215 N	103° 59' 31.569 W
10,409.0	88.20	90.80	8,726.3	-399.7	2,524.7	449,313.87	646,939.75	32° 14' 5.202 N	103° 59' 30.464 W
10,504.0	88.50	90.40	8,729.0	-400.7	2,619.6	449,312.88	647,034.71	32° 14' 5.189 N	103° 59' 29.358 W
10,599.0	88.50	89.00	8,731.5	-400.2	2,714.6	449,313.37	647,129.67	32° 14' 5.191 N	103° 59' 28.253 W
10,693.0	88.50	89.90	8,734.0	-399.3	2,808.5	449,314.27	647,223.63	32° 14' 5.197 N	103° 59' 27.159 W
10,788.0	88.30	90.10	8,736.6	-399.3	2,903.5	449,314.27	647,318.60	32° 14' 5.194 N	103° 59' 26.053 W
10,883.0	88.30	89.90	8,739.5	-399.3	2,998.5	449,314.27	647,413.56	32° 14' 5.191 N	103° 59' 24.947 W
10,978.0	88.30	89.20	8,742.3	-398.5	3,093.4	449,315.02	647,508.51	32° 14' 5.196 N	103° 59' 23.842 W
11,073.0	87.60	88.50	8,745.7	-396.6	3,188.3	449,316.93	647,603.43	32° 14' 5.211 N	103° 59' 22.737 W
11,168.0	88.70	89.20	8,748.7	-394.7	3,283.3	449,318.83	647,698.36	32° 14' 5.227 N	103° 59' 21.631 W
11,263.0	88.70	89.90	8,750.9	-394.0	3,378.2	449,319.58	647,793.33	32° 14' 5.232 N	103° 59' 20.526 W
11,358.0	88.00	89.40	8,753.6	-393.4	3,473.2	449,320.16	647,888.29	32° 14' 5.234 N	103° 59' 19.420 W
11,453.0	88.50	89.20	8,756.5	-392.2	3,568.1	449,321.32	647,983.24	32° 14' 5.243 N	103° 59' 18.314 W
11,548.0	89.20	89.00	8,758.4	-390.7	3,663.1	449,322.81	648,078.20	32° 14' 5.255 N	103° 59' 17.209 W
11,643.0	89.00	89.20	8,759.9	-389.2	3,758.1	449,324.30	648,173.18	32° 14' 5.266 N	103° 59' 16.103 W
11,738.0	88.90	89.40	8,761.7	-388.1	3,853.1	449,325.46	648,268.16	32° 14' 5.275 N	103° 59' 14.997 W
11,833.0	88.30	89.20	8,764.0	-386.9	3,948.0	449,326.62	648,363.12	32° 14' 5.283 N	103° 59' 13.891 W
11,928.0	89.00	88.80	8,766.2	-385.3	4,043.0	449,328.28	648,458.08	32° 14' 5.297 N	103° 59' 12.786 W
12,023.0	89.40	90.40	8,767.6	-384.6	4,138.0	449,328.94	648,553.07	32° 14' 5.300 N	103° 59' 11.680 W
12,118.0	89.20	90.20	8,768.7	-385.1	4,233.0	449,328.44	648,648.06	32° 14' 5.292 N	103° 59' 10.574 W
12,213.0	88.70	89.70	8,770.5	-385.0	4,328.0	449,328.53	648,743.04	32° 14' 5.290 N	103° 59' 9.468 W
12,308.0	89.00	90.80	8,772.4	-385.4	4,422.9	449,328.11	648,838.02	32° 14' 5.283 N	103° 59' 8.362 W
12,403.0	89.70	90.20	8,773.4	-386.2	4,517.9	449,327.28	648,933.01	32° 14' 5.272 N	103° 59' 7.256 W
12,497.0	89.40	89.90	8,774.2	-386.3	4,611.9	449,327.20	649,027.01	32° 14' 5.268 N	103° 59' 6.162 W
12,592.0	90.30	90.90	8,774.4	-387.0	4,706.9	449,326.54	649,122.00	32° 14' 5.258 N	103° 59' 5.056 W
12,687.0	89.90	90.80	8,774.3	-388.4	4,801.9	449,325.13	649,216.99	32° 14' 5.241 N	103° 59' 3.950 W
12,782.0	89.00	89.90	8,775.2	-389.0	4,896.9	449,324.55	649,311.98	32° 14' 5.232 N	103° 59' 2.844 W
12,877.0	88.90	88.10	8,776.9	-387.3	4,991.9	449,326.21	649,406.95	32° 14' 5.246 N	103° 59' 1.738 W
12,972.0	88.90	87.90	8,778.7	-384.0	5,086.8	449,329.52	649,501.87	32° 14' 5.275 N	103° 59' 0.633 W
13,067.0	89.40	87.90	8,780.2	-380.5	5,181.7	449,333.00	649,596.80	32° 14' 5.307 N	103° 58' 59.527 W
13,162.0	89.40	88.30	8,781.1	-377.4	5,276.6	449,336.15	649,691.74	32° 14' 5.335 N	103° 58' 58.422 W
13,257.0	89.40	88.50	8,782.1	-374.7	5,371.6	449,338.80	649,786.70	32° 14' 5.358 N	103° 58' 57.316 W
13,352.0	90.30	89.40	8,782.4	-373.0	5,466.6	449,340.55	649,881.68	32° 14' 5.372 N	103° 58' 56.210 W
13,368.0	90.10	89.50	8,782.3	-372.8	5,482.6	449,340.70	649,897.68	32° 14' 5.373 N	103° 58' 56.024 W
13,434.6	90.10	89.50	8,782.2	-372.3	5,549.2	449,341.28	649,964.28	32° 14' 5.377 N	103° 58' 55.249 W

BHL - 13434.6' MD, 8782.2' TVD, 90.10° INC, 89.50° AZI, -372.3' N, 5549.2' E, 5561.7' VS

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Comment
740.0	740.0	-6.6	-0.4	Tie into Gyro @ 740' MD
8,094.5	8,045.6	-383.5	591.3	Cross into Lease - 8094.5' MD, 8045.6' TVD, 9.69° INC, 616.2' VS
8,795.4	8,625.2	-387.8	921.7	Cross into 330' Lease - 8795.4' MD, 8625.2' TVD, 62.25° INC, 946.1' VS
13,434.6	8,782.2	-372.3	5,549.2	BHL - 13434.6' MD, 8782.2' TVD, 90.10° INC, 89.50° AZI, -372.3' N, 5549.2' E,

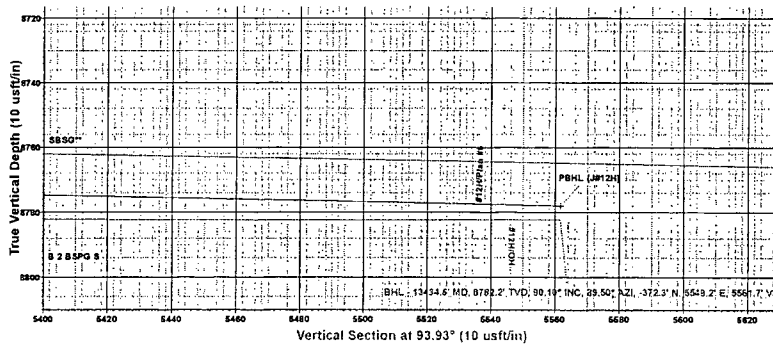
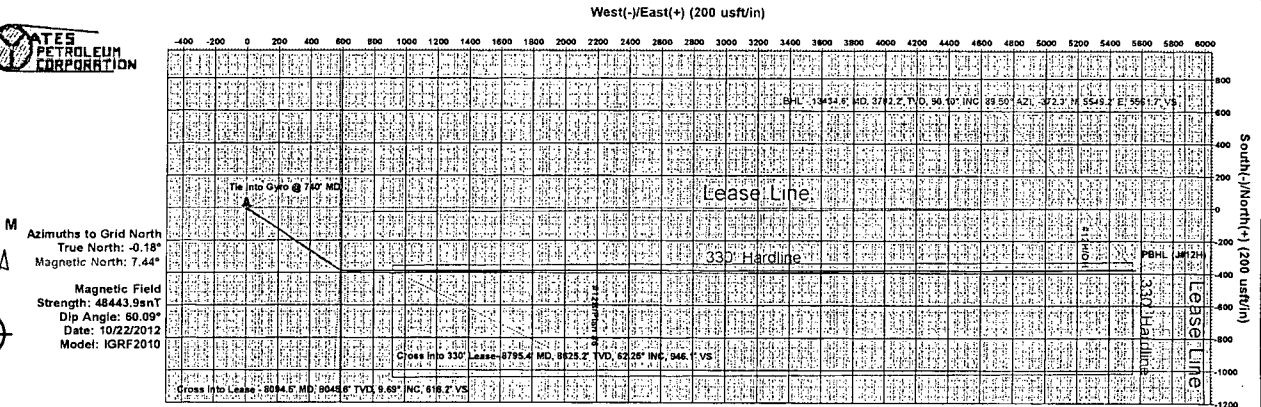
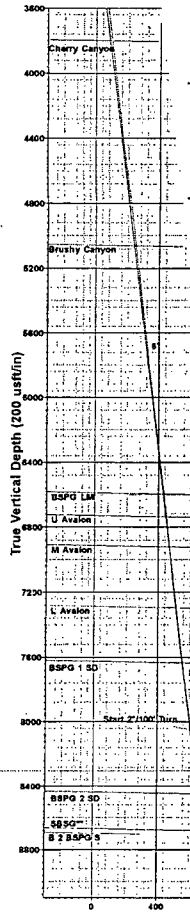
Survey Report - Geographic



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #12H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3020.0usft (Union #223 -25' KB)
Site:	Juniper BIP Federal Com	MD Reference:	WELL @ 3020.0usft (Union #223 -25' KB)
Well:	#12H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

Yates Petroleum
Project: Eddy, NM (NAD-83)
Site: Juniper BIP Federal Com
Well: #12H
Wellbore: OH
Plan: Plan #6 (#12H/OH)



Section Details

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2900.0	0.00	0.00	2900.0	0.0	0.0	0.00	0.00	0.0	
3	3300.0	8.00	123.00	3298.7	-15.2	23.4	2.00	123.00	24.4	
4	8098.2	8.00	123.00	8050.2	-378.9	583.4	0.00	0.00	608.0	
5	8325.2	8.00	89.93	8275.1	-387.5	612.5	2.00	-106.38	637.6	
6	8998.7	88.82	89.93	8686.0	-386.9	1075.5	12.00	0.00	1099.5	
7	13472.8	88.82	89.93	8778.0	-381.3	5548.6	0.00	0.00	5561.7	PBHL (J#12H)

BHL - 13472.8' MD, 3782.2' TVD, 90.10° INC, 39.50° AZI, -372.3° N, 5548.2° E, 5561.7° VS

WELL DETAILS: #12H

Ground Elevation: 2995.0
RKB Elevation: WELL @ 3020.0usft (Union #223 - 25' KB)
Rig Name: Union #223 - 25' KB

Surface Hole Location

Northing	Easting	Latitude	Longitude
449713.53	644415.09	32° 14' 9.236 N	103° 59' 59.844 W

DESIGN TARGET DETAILS

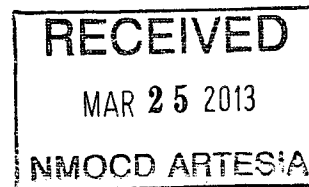
Name	TVD	+N-S	+E-W	Northing	Easting
PP (J#12H)	8686.0	-404.9	920.2	449308.61	645335.25
PBHL (J#12H)	8778.0	-381.3	5548.6	449332.22	649963.71

PROJECT DETAILS: Eddy, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



Crescent Directional Drilling
7715 West Industrial Ave, Midland, Tx 79706
Phone: 432-618-1135

Plan: Plan #6 (#12H/OH)
Created By: Matt Higgins Date: 11/19, February 08 2013



Drilling Contractor: Union Drilling, Inc.

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

[illegible]

Drilling Contractor: Union Drilling, Inc.

By: Jim Mayfield
Jim Mayfield

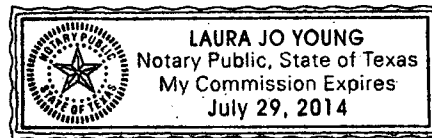
Title: Division Manager

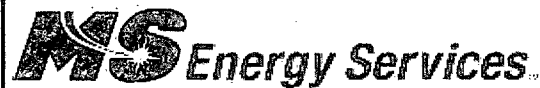
Subscribed and sworn to before me this 18th Day of February, 2013.

Laura Jo Young
Notary Public

My Commission Expires: July 29, 2014

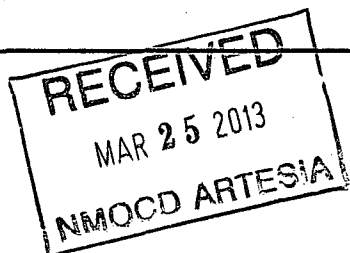
COUNTY OF TAYLOR)
STATE OF TEXAS)





Job Number: SVMO-130052
 Company: Yates Petroleum Corporation
 Lease/Well: JUNIPER BIP FEDERAL COM 12H
 Location: Eddy County, NM
 Rig Name: Sidewinder #223
 RKB: 25'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.44°
 Grid: East To Grid North
 File name: F:\SURVEY\2013SU-1\YATES\MO\JUNIPER~1\12H.SVY
 Date/Time: 30-Jan-13 / 11:36
 Curve Name: Surface - 740' M.D. (Rate Gyro)



WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 93.93
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.31	205.52	100.00	-.24	-.12	-.10	.27	205.52	.31
200.00	.75	178.79	200.00	-1.14	-.22	-.14	1.16	190.86	.49
300.00	.78	183.56	299.99	-2.48	-.25	-.08	2.49	185.71	.07
400.00	.46	169.56	399.98	-3.55	-.22	.03	3.56	183.50	.35
500.00	.46	182.55	499.98	-4.35	-.16	.14	4.35	182.14	.10
600.00	.60	189.68	599.97	-5.26	-.27	.09	5.27	182.92	.15
700.00	.53	186.12	699.97	-6.24	-.41	.02	6.25	183.72	.08
Last Survey Depth Recorded									
740.00	.46	187.88	739.97	-6.58	-.45	.00	6.60	183.89	.18