



Company: Whiting Oil & Gas  
Site: Razor #33M  
Well: 2803  
Project: Weld County, Colorado (NAD 83)  
Rig: Pioneer 54



Azimuths to True North  
Magnetic North: 7.93°

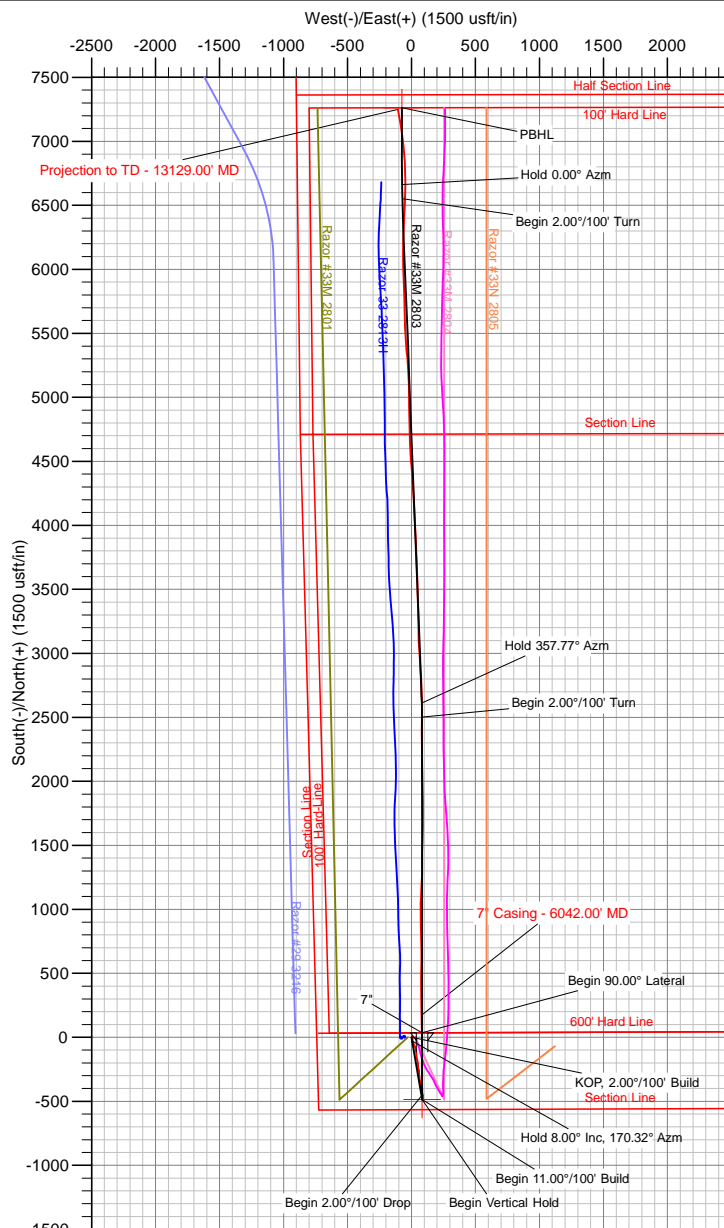
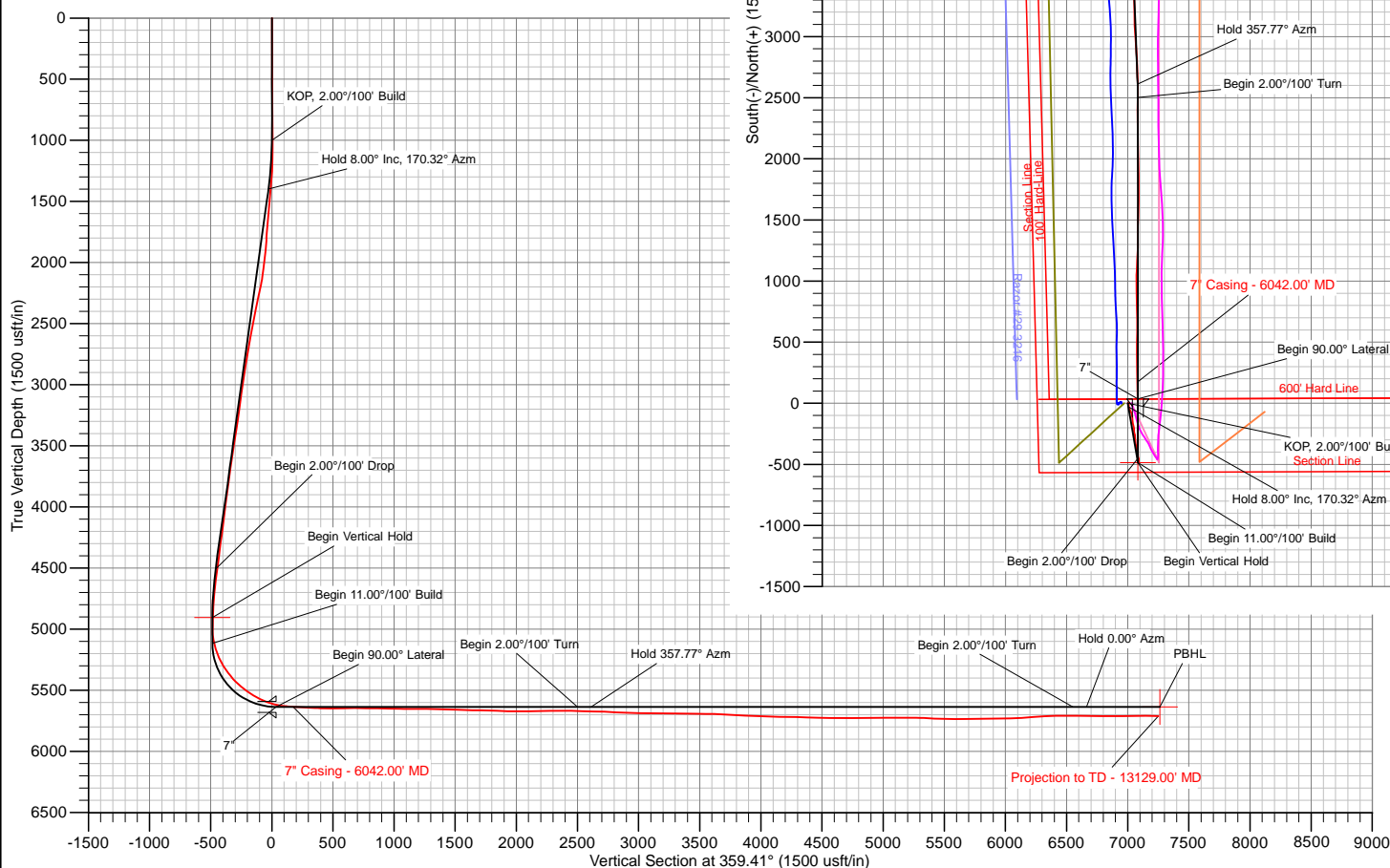
Magnetic Field  
Strength: 53053.7snT  
Dip Angle: 67.37°  
Date: 12/30/2014  
Model: WMM\_2010

US State Plane 1983  
Colorado Northern Zone

Created By: TNM  
Date: 12:50, January 08 2015  
Plan: Design #1

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	KOP, 2.00°/100' Build
1400.00	8.00	170.32	1398.70	-27.48	4.69	-27.53	27.88	Hold 8.00° Inc, 170.32° Azm
4537.97	8.00	170.32	4506.13	-457.99	78.11	-458.77	464.60	Begin 2.00°/100' Drop
4937.97	0.00	0.00	4904.83	-485.47	82.80	-486.29	492.48	Begin Vertical Hold
5148.27	0.00	0.00	5115.13	-485.47	82.80	-486.29	492.48	Begin 11.00°/100' Build
5966.45	90.00	0.00	5636.00	35.40	82.80	34.55	1013.35	Begin 90.00° Lateral
8432.03	90.00	0.00	5636.00	2500.98	82.80	2500.00	3478.93	Begin 2.00°/100' Turn
8543.30	90.00	357.77	5636.00	2612.22	80.64	2611.26	3590.20	Hold 357.77° Azm
12485.29	90.00	357.77	5636.00	6551.25	-72.43	6551.64	7532.20	Begin 2.00°/100' Turn
12596.56	90.00	360.00	5636.00	6662.49	-74.59	6662.90	7643.47	Hold 0.00° Azm
13196.56	90.00	0.00	5636.00	7262.49	-74.59	7262.87	8243.47	PBHL





# **Whiting Oil & Gas**

**Weld County, Colorado (NAD 83)**

**Razor #33M**

**2803**

**Wellbore #1**

**Survey: Sperry MWD**

## **Standard Survey Report**

**08 January, 2015**



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well 2803
<b>Project:</b>	Weld County, Colorado (NAD 83)	<b>TVD Reference:</b>	WELL @ 4746.00usft (Pioneer 54) Correct KB
<b>Site:</b>	Razor #33M	<b>MD Reference:</b>	WELL @ 4746.00usft (Pioneer 54) 4747.5'
<b>Well:</b>	2803	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Conroe Server Database

<b>Project</b>	Weld County, Colorado (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Well</b>	2803			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,534,461.43 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	3,449,503.64 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	usft
			<b>Latitude:</b>	40° 47' 21.070 N
			<b>Longitude:</b>	103° 52' 35.880 W
			<b>Ground Level:</b>	4,729.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	WMM_2010	12/30/14	7.93	67.37	53,054

<b>Design</b>	Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	359.41	

<b>Survey Program</b>	<b>Date</b>	01/08/15			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
515.00	13,129.00	Sperry MWD (Wellbore #1)	MWD+IFR1+MS+sag	Fixed:v2:crustal dec & 3-axis correction + sag	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
515.00	0.76	37.89	514.98	2.70	2.10	2.67	0.15	0.15	0.00	
976.00	0.80	44.58	975.94	7.40	6.23	7.34	0.02	0.01	1.45	
1,069.00	0.84	126.67	1,068.94	7.46	7.24	7.38	1.16	0.04	88.27	
1,161.00	1.71	159.45	1,160.91	5.77	8.26	5.68	1.20	0.95	35.63	
1,253.00	3.36	176.62	1,252.82	1.79	8.90	1.70	1.95	1.79	18.66	
1,343.00	4.96	181.62	1,342.58	-4.73	8.95	-4.82	1.82	1.78	5.56	
1,436.00	5.12	182.35	1,435.22	-12.90	8.66	-12.99	0.19	0.17	0.78	
1,529.00	4.99	179.53	1,527.86	-21.09	8.53	-21.17	0.30	-0.14	-3.03	
1,540.00	4.91	179.98	1,538.82	-22.04	8.53	-22.12	0.81	-0.73	4.09	
1,636.00	4.66	177.01	1,634.48	-30.04	8.73	-30.13	0.37	-0.26	-3.09	
1,729.00	6.05	163.62	1,727.08	-38.51	10.31	-38.62	2.00	1.49	-14.40	
1,822.00	2.23	146.12	1,819.82	-44.72	12.71	-44.85	4.28	-4.11	-18.82	
1,913.00	7.60	157.95	1,910.46	-51.77	15.95	-51.94	5.97	5.90	13.00	
2,006.00	7.07	149.05	2,002.70	-62.38	21.21	-62.60	1.35	-0.57	-9.57	



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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Conroe Server Database

## Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,098.00	8.74	155.83	2,093.82	-73.62	26.98	-73.89	2.08	1.82	7.37
2,190.00	11.77	165.44	2,184.35	-89.08	32.20	-89.41	3.77	3.29	10.45
2,283.00	11.74	176.54	2,275.41	-107.71	35.16	-108.06	2.43	-0.03	11.94
2,373.00	11.45	172.64	2,363.58	-125.71	36.86	-126.08	0.93	-0.32	-4.33
2,466.00	11.42	172.84	2,454.73	-144.00	39.19	-144.39	0.05	-0.03	0.22
2,559.00	11.14	170.87	2,545.93	-162.00	41.76	-162.42	0.51	-0.30	-2.12
2,651.00	10.59	167.99	2,636.28	-179.05	44.93	-179.50	0.84	-0.60	-3.13
2,744.00	9.70	166.70	2,727.83	-195.03	48.51	-195.52	0.99	-0.96	-1.39
2,836.00	9.38	179.78	2,818.57	-210.07	50.32	-210.58	2.38	-0.35	14.22
2,929.00	8.73	177.92	2,910.41	-224.70	50.61	-225.21	0.77	-0.70	-2.00
3,021.00	7.91	166.76	3,001.45	-237.84	52.31	-238.37	1.96	-0.89	-12.13
3,114.00	7.53	160.37	3,093.60	-249.81	55.82	-250.37	1.01	-0.41	-6.87
3,206.00	8.44	177.36	3,184.72	-262.24	58.16	-262.82	2.74	0.99	18.47
3,299.00	8.50	176.36	3,276.71	-275.91	58.91	-276.51	0.17	0.06	-1.08
3,392.00	8.48	175.67	3,368.69	-289.61	59.86	-290.21	0.11	-0.02	-0.74
3,484.00	8.65	174.58	3,459.66	-303.26	61.03	-303.87	0.26	0.18	-1.18
3,576.00	9.01	173.74	3,550.57	-317.31	62.47	-317.94	0.42	0.39	-0.91
3,668.00	8.91	168.31	3,641.45	-331.45	64.70	-332.10	0.93	-0.11	-5.90
3,760.00	8.65	166.96	3,732.37	-345.17	67.70	-345.84	0.36	-0.28	-1.47
3,852.00	7.64	173.96	3,823.45	-357.99	69.91	-358.69	1.54	-1.10	7.61
3,944.00	6.94	173.63	3,914.70	-369.59	71.17	-370.31	0.76	-0.76	-0.36
4,036.00	6.32	173.82	4,006.09	-380.15	72.33	-380.88	0.67	-0.67	0.21
4,129.00	7.59	166.12	4,098.40	-391.20	74.35	-391.95	1.69	1.37	-8.28
4,221.00	8.44	170.74	4,189.51	-403.77	76.90	-404.54	1.16	0.92	5.02
4,313.00	7.37	169.22	4,280.63	-416.23	79.09	-417.02	1.18	-1.16	-1.65
4,406.00	6.81	166.95	4,372.92	-427.46	81.45	-428.27	0.67	-0.60	-2.44
4,498.00	8.09	171.75	4,464.14	-439.18	83.61	-440.02	1.55	1.39	5.22
4,590.00	7.47	169.15	4,555.29	-451.46	85.66	-452.32	0.77	-0.67	-2.83
4,683.00	6.96	166.37	4,647.56	-462.87	88.13	-463.75	0.66	-0.55	-2.99
4,776.00	5.20	180.69	4,740.04	-472.56	89.41	-473.46	2.48	-1.89	15.40
4,867.00	1.89	182.85	4,830.85	-478.19	89.28	-479.08	3.64	-3.64	2.37
4,961.00	1.74	179.05	4,924.80	-481.16	89.23	-482.06	0.20	-0.16	-4.04
5,054.00	0.41	353.34	5,017.79	-482.24	89.21	-483.14	2.31	-1.43	187.41
5,085.00	4.97	352.16	5,048.75	-480.80	89.02	-481.69	14.71	14.71	-3.81
5,116.00	9.20	353.48	5,079.50	-477.01	88.55	-477.89	13.65	13.65	4.26
5,146.00	11.74	353.03	5,109.00	-471.60	87.91	-472.48	8.47	8.47	-1.50
5,177.00	14.62	351.01	5,139.18	-464.60	86.92	-465.47	9.41	9.29	-6.52
5,208.00	17.90	351.48	5,168.94	-456.02	85.60	-456.88	10.59	10.58	1.52
5,239.00	20.95	352.64	5,198.17	-445.81	84.18	-446.65	9.92	9.84	3.74
5,270.00	24.70	353.71	5,226.74	-433.87	82.76	-434.70	12.17	12.10	3.45
5,301.00	26.33	358.23	5,254.72	-420.56	81.84	-421.38	8.19	5.26	14.58
5,331.00	28.89	0.71	5,281.30	-406.66	81.72	-407.48	9.35	8.53	8.27
5,362.00	31.83	2.07	5,308.05	-391.00	82.11	-391.82	9.74	9.48	4.39
5,393.00	34.52	2.80	5,333.99	-374.05	82.84	-374.89	8.77	8.68	2.35



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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Conroe Server Database

**Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,424.00	37.14	1.47	5,359.12	-355.92	83.51	-356.76	8.82	8.45	-4.29
5,455.00	39.81	358.58	5,383.39	-336.64	83.50	-337.48	10.38	8.61	-9.32
5,486.00	42.11	357.54	5,406.80	-316.33	82.81	-317.17	7.74	7.42	-3.35
5,516.00	44.30	358.01	5,428.67	-295.81	82.01	-296.64	7.38	7.30	1.57
5,547.00	47.40	359.10	5,450.26	-273.58	81.46	-274.40	10.31	10.00	3.52
5,578.00	50.28	359.60	5,470.66	-250.24	81.19	-251.07	9.37	9.29	1.61
5,609.00	52.70	0.39	5,489.96	-225.99	81.20	-226.81	8.06	7.81	2.55
5,640.00	55.24	0.89	5,508.19	-200.92	81.48	-201.75	8.30	8.19	1.61
5,671.00	57.80	0.77	5,525.29	-175.07	81.85	-175.90	8.26	8.26	-0.39
5,702.00	59.80	0.42	5,541.35	-148.56	82.13	-149.40	6.52	6.45	-1.13
5,733.00	60.59	0.00	5,556.76	-121.66	82.22	-122.50	2.81	2.55	-1.35
5,763.00	63.15	0.43	5,570.90	-95.20	82.32	-96.05	8.63	8.53	1.43
5,794.00	65.98	359.75	5,584.21	-67.21	82.37	-68.06	9.34	9.13	-2.19
5,825.00	68.52	359.16	5,596.20	-38.63	82.09	-39.47	8.38	8.19	-1.90
5,856.00	71.93	358.83	5,606.69	-9.47	81.58	-10.30	11.05	11.00	-1.06
5,886.00	75.62	358.40	5,615.07	19.33	80.88	18.49	12.38	12.30	-1.43
5,917.00	80.00	358.79	5,621.61	49.61	80.14	48.78	14.18	14.13	1.26
5,947.00	82.18	359.13	5,626.26	79.24	79.60	78.42	7.35	7.27	1.13
5,978.00	83.95	0.48	5,630.00	110.01	79.50	109.19	7.16	5.71	4.35
5,998.00	85.38	0.55	5,631.86	129.93	79.68	129.10	7.16	7.15	0.35
6,042.00	86.24	359.68	5,635.07	173.81	79.77	172.98	2.78	1.96	-1.98
<b>7" Casing - 6042.00' MD</b>									
6,081.00	87.01	358.91	5,637.37	212.74	79.29	211.91	2.78	1.96	-1.97
6,175.00	86.46	357.76	5,642.72	306.54	76.56	305.74	1.35	-0.59	-1.22
6,268.00	88.88	359.88	5,646.50	399.43	74.65	398.64	3.46	2.60	2.28
6,361.00	89.29	0.83	5,647.99	492.42	75.23	491.62	1.11	0.44	1.02
6,454.00	91.70	1.53	5,647.19	585.39	77.14	584.56	2.70	2.59	0.75
6,547.00	89.79	359.08	5,645.98	678.37	77.63	677.53	3.34	-2.05	-2.63
6,640.00	89.69	357.87	5,646.40	771.33	75.16	770.52	1.31	-0.11	-1.30
6,732.00	89.20	359.32	5,647.29	863.30	72.90	862.50	1.66	-0.53	1.58
6,825.00	88.34	358.99	5,649.29	956.26	71.53	955.48	0.99	-0.92	-0.35
6,919.00	88.73	1.50	5,651.69	1,050.22	71.93	1,049.43	2.70	0.41	2.67
7,012.00	90.37	3.72	5,652.42	1,143.12	76.17	1,142.27	2.97	1.76	2.39
7,105.00	89.63	1.20	5,652.42	1,236.02	80.16	1,235.13	2.82	-0.80	-2.71
7,198.00	89.08	0.79	5,653.47	1,329.00	81.78	1,328.09	0.74	-0.59	-0.44
7,291.00	87.72	359.82	5,656.06	1,421.96	82.27	1,421.04	1.80	-1.46	-1.04
7,384.00	88.92	2.20	5,658.79	1,514.90	83.91	1,513.95	2.87	1.29	2.56
7,478.00	87.75	1.89	5,661.52	1,608.80	87.26	1,607.81	1.29	-1.24	-0.33
7,571.00	89.35	0.58	5,663.88	1,701.74	89.27	1,700.73	2.22	1.72	-1.41
7,664.00	88.40	359.67	5,665.70	1,794.72	89.47	1,793.70	1.41	-1.02	-0.98
7,758.00	87.19	358.57	5,669.32	1,888.64	88.03	1,887.63	1.74	-1.29	-1.17
7,850.00	89.15	357.18	5,672.26	1,980.52	84.62	1,979.54	2.61	2.13	-1.51
7,943.00	91.71	359.44	5,671.56	2,073.46	81.87	2,072.51	3.67	2.75	2.43



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**Survey**

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8,036.00	90.89	359.80	5,669.45	2,166.44	81.26	2,165.48	0.96	-0.88	0.39
8,130.00	91.11	358.84	5,667.81	2,260.41	80.14	2,259.47	1.05	0.23	-1.02
8,221.00	89.08	1.42	5,667.66	2,351.40	80.35	2,350.45	3.61	-2.23	2.84
8,313.00	88.80	0.78	5,669.36	2,443.37	82.11	2,442.39	0.76	-0.30	-0.70
8,406.00	88.84	359.83	5,671.27	2,536.35	82.61	2,535.36	1.02	0.04	-1.02
8,499.00	88.61	358.43	5,673.34	2,629.31	81.20	2,628.33	1.53	-0.25	-1.51
8,591.00	88.25	357.82	5,675.86	2,721.23	78.19	2,720.28	0.77	-0.39	-0.66
8,683.00	87.64	357.18	5,679.16	2,813.08	74.18	2,812.16	0.96	-0.66	-0.70
8,775.00	87.10	356.31	5,683.38	2,904.83	68.96	2,903.97	1.11	-0.59	-0.95
8,868.00	87.72	355.99	5,687.59	2,997.53	62.72	2,996.72	0.75	0.67	-0.34
8,960.00	90.06	357.01	5,689.37	3,089.33	57.11	3,088.58	2.77	2.54	1.11
9,052.00	89.91	359.51	5,689.39	3,181.28	54.31	3,180.55	2.72	-0.16	2.72
9,145.00	89.78	359.14	5,689.64	3,274.27	53.22	3,273.55	0.42	-0.14	-0.40
9,237.00	89.35	358.22	5,690.34	3,366.24	51.10	3,365.54	1.10	-0.47	-1.00
9,329.00	88.71	357.60	5,691.90	3,458.17	47.75	3,457.49	0.97	-0.70	-0.67
9,420.00	90.31	359.88	5,692.68	3,549.14	45.74	3,548.48	3.06	1.76	2.51
9,512.00	87.35	358.51	5,694.56	3,641.09	44.45	3,640.44	3.55	-3.22	-1.49
9,605.00	87.04	357.22	5,699.11	3,733.92	40.99	3,733.30	1.42	-0.33	-1.39
9,697.00	86.39	356.00	5,704.38	3,825.60	35.56	3,825.03	1.50	-0.71	-1.33
9,790.00	87.93	357.74	5,708.99	3,918.34	30.49	3,917.82	2.50	1.66	1.87
9,882.00	87.63	356.28	5,712.55	4,010.15	25.70	4,009.67	1.62	-0.33	-1.59
9,975.00	88.70	358.98	5,715.53	4,103.01	21.85	4,102.57	3.12	1.15	2.90
10,068.00	89.04	356.99	5,717.37	4,195.93	18.58	4,195.52	2.17	0.37	-2.14
10,160.00	88.53	355.58	5,719.32	4,287.71	12.63	4,287.35	1.63	-0.55	-1.53
10,253.00	88.05	355.06	5,722.09	4,380.36	5.04	4,380.08	0.76	-0.52	-0.56
10,346.00	88.06	355.77	5,725.25	4,473.01	-2.39	4,472.80	0.76	0.01	0.76
10,438.00	90.00	357.04	5,726.81	4,564.81	-8.16	4,564.65	2.52	2.11	1.38
10,530.00	88.62	358.14	5,727.91	4,656.72	-12.02	4,656.59	1.92	-1.50	1.20
10,623.00	92.40	357.93	5,727.09	4,749.64	-15.21	4,749.55	4.07	4.06	-0.23
10,715.00	88.64	359.12	5,726.25	4,841.59	-17.58	4,841.51	4.29	-4.09	1.29
10,806.00	90.74	0.23	5,726.74	4,932.58	-18.10	4,932.50	2.61	2.31	1.22
10,898.00	90.81	358.97	5,725.50	5,024.57	-18.74	5,024.49	1.37	0.08	-1.37
10,991.00	90.46	357.79	5,724.47	5,117.52	-21.37	5,117.47	1.32	-0.38	-1.27
11,083.00	89.94	357.04	5,724.15	5,209.43	-25.52	5,209.41	0.99	-0.57	-0.82
11,175.00	88.34	354.69	5,725.53	5,301.17	-32.15	5,301.22	3.09	-1.74	-2.55
11,268.00	86.27	355.57	5,729.90	5,393.72	-40.04	5,393.85	2.42	-2.23	0.95
11,360.00	88.43	355.63	5,734.15	5,485.35	-47.09	5,485.54	2.35	2.35	0.07
11,452.00	89.57	358.58	5,735.76	5,577.21	-51.73	5,577.44	3.44	1.24	3.21
11,545.00	90.99	359.16	5,735.31	5,670.18	-53.56	5,670.44	1.65	1.53	0.62
11,637.00	91.03	358.37	5,733.68	5,762.15	-55.55	5,762.41	0.86	0.04	-0.86
11,730.00	90.77	357.59	5,732.22	5,855.08	-58.82	5,855.37	0.88	-0.28	-0.84
11,822.00	90.65	357.86	5,731.08	5,947.00	-62.48	5,947.33	0.32	-0.13	0.29
11,914.00	90.83	358.22	5,729.89	6,038.94	-65.62	6,039.29	0.44	0.20	0.39
12,007.00	93.95	1.54	5,726.02	6,131.83	-65.82	6,132.18	4.90	3.35	3.57



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well 2803
<b>Project:</b>	Weld County, Colorado (NAD 83)	<b>TVD Reference:</b>	WELL @ 4746.00usft (Pioneer 54) Correct KB
<b>Site:</b>	Razor #33M	<b>MD Reference:</b>	WELL @ 4746.00usft (Pioneer 54) 4747.5'
<b>Well:</b>	2803	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Conroe Server Database

#### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,099.00	95.00	0.64	5,718.84	6,223.53	-64.07	6,223.86	1.50	1.14	-0.98
12,192.00	93.14	2.13	5,712.24	6,316.26	-61.83	6,316.56	2.56	-2.00	1.60
12,285.00	91.45	3.66	5,708.51	6,409.06	-57.14	6,409.31	2.45	-1.82	1.65
12,377.00	89.63	2.71	5,707.65	6,500.91	-52.03	6,501.10	2.23	-1.98	-1.03
12,469.00	89.35	1.33	5,708.46	6,592.85	-48.78	6,593.00	1.53	-0.30	-1.50
12,562.00	88.92	359.66	5,709.87	6,685.83	-47.98	6,685.97	1.85	-0.46	-1.80
12,655.00	89.32	358.03	5,711.30	6,778.80	-49.86	6,778.95	1.80	0.43	-1.75
12,747.00	89.97	355.87	5,711.87	6,870.66	-54.75	6,870.86	2.45	0.71	-2.35
12,840.00	91.36	354.14	5,710.79	6,963.30	-62.85	6,963.57	2.39	1.49	-1.86
12,932.00	90.71	352.19	5,709.13	7,054.62	-73.79	7,055.01	2.23	-0.71	-2.12
13,023.00	89.57	350.26	5,708.90	7,144.55	-87.67	7,145.07	2.46	-1.25	-2.12
13,085.00	88.92	349.37	5,709.72	7,205.57	-98.64	7,206.20	1.78	-1.05	-1.44
13,129.00	88.92	349.37	5,710.55	7,248.80	-106.75	7,249.52	0.00	0.00	0.00
Projection to TD - 13129.00' MD									

#### Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,042.00	5,635.07	173.81	79.77	7" Casing - 6042.00' MD
13,129.00	5,710.55	7,248.80	-106.75	Projection to TD - 13129.00' MD