



## **BHP Billiton Petroleum**

**Crockett County, Texas (NAD 83 TXC)**

**University 46**

**#1304H**

**OH - Job #32D0712949**

**Survey: MWD**

## **SDI Standard Survey Report**

**24 August, 2012**



<b>Company:</b>	BHP Billiton Petroleum	<b>Local Co-ordinate Reference:</b>	Well #1304H
<b>Project:</b>	Crockett County, Texas (NAD 83 TXC)	<b>TVD Reference:</b>	RF @ 2589.53usft (H&P #328)
<b>Site:</b>	University 46	<b>MD Reference:</b>	RF @ 2589.53usft (H&P #328)
<b>Well:</b>	#1304H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH - Job #32D0712949	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM-Regulatory

<b>Project</b>	Crockett County, Texas (NAD 83 TXC)		
<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>	Texas Central Zone		

<b>Site</b>	University 46		
<b>Site Position:</b>		<b>Northing:</b>	10,313,940.58 usft
<b>From:</b>	Map	<b>Easting:</b>	1,976,663.79 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16"
		<b>Latitude:</b>	30° 57' 31.962 N
		<b>Longitude:</b>	101° 21' 14.578 W
		<b>Grid Convergence:</b>	-0.53 °

<b>Well</b>	#1304H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	30° 57' 37.374 N
		<b>Longitude:</b>	101° 21' 6.815 W
		<b>Ground Level:</b>	2,565.53 usft

<b>Wellbore</b>	OH - Job #32D0712949				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	07/16/12	6.32	59.34	47,969

<b>Design</b>	Actual				
<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	1.06	

<b>Survey Program</b>	<b>Date</b>	08/20/12			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
100.00	924.00	Gyro (OH - Job #32D0712949)	Keeper	Keeper Standard Rate Gyro	
1,158.00	14,025.00	MWD (OH - Job #32D0712949)	MWD	MWD	

<b>Survey</b>							
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>True Vertical Depth</b>	<b>North/South (usft)</b>	<b>East/West (usft)</b>	<b>Closure Azimuth (°)</b>	<b>Closure Distance (usft)</b>
1,405.00	1.07	337.71	1,404.85	9.41	-14.43	303.11	17.22
1,455.00	1.06	34.80	1,454.84	10.22	-14.34	305.48	17.61
1,550.00	2.11	63.01	1,549.81	11.73	-12.28	313.70	16.98
1,644.00	2.73	71.45	1,643.72	13.23	-8.61	326.93	15.79
1,739.00	2.38	71.10	1,738.63	14.59	-4.60	342.49	15.30
1,927.00	1.94	65.91	1,926.50	17.15	1.99	6.63	17.27
2,116.00	2.11	64.33	2,115.38	19.97	8.05	21.96	21.53
2,305.00	1.94	59.23	2,304.26	23.11	13.94	31.09	26.99
2,494.00	2.02	68.02	2,493.15	25.99	19.77	37.26	32.66
2,682.00	1.78	63.98	2,681.04	28.52	25.47	41.77	38.23
2,871.00	1.41	60.81	2,869.97	30.94	30.14	44.25	43.19

<b>Company:</b>	BHP Billiton Petroleum	<b>Local Co-ordinate Reference:</b>	Well #1304H
<b>Project:</b>	Crockett County, Texas (NAD 83 TXC)	<b>TVD Reference:</b>	RF @ 2589.53usft (H&P #328)
<b>Site:</b>	University 46	<b>MD Reference:</b>	RF @ 2589.53usft (H&P #328)
<b>Well:</b>	#1304H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH - Job #32D0712949	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
3,060.00	1.06	62.31	3,058.93	32.88	33.72	45.72	47.10	
3,249.00	0.79	58.53	3,247.90	34.38	36.37	46.62	50.05	
3,438.00	0.97	203.55	3,436.89	33.59	36.85	47.65	49.86	
3,626.00	2.46	359.03	3,624.85	36.17	36.14	44.98	51.13	
3,815.00	0.97	26.01	3,813.76	41.66	36.78	41.44	55.57	
4,004.00	1.50	18.98	4,002.71	45.44	38.28	40.12	59.41	
4,193.00	0.79	32.50	4,191.68	48.87	39.79	39.15	63.02	
4,381.00	0.53	294.34	4,379.67	50.33	39.69	38.26	64.09	
4,570.00	0.53	292.23	4,568.66	51.02	38.08	36.74	63.66	
4,764.00	0.44	13.16	4,762.65	52.08	37.42	35.70	64.13	
4,954.00	0.24	345.48	4,952.65	53.18	37.49	35.18	65.06	
5,142.00	0.53	313.48	5,140.65	54.16	36.76	34.17	65.45	
5,300.00	0.62	335.72	5,298.64	55.44	35.88	32.91	66.04	
5,331.00	1.76	7.88	5,329.63	56.06	35.87	32.62	66.56	
5,363.00	3.87	12.98	5,361.59	57.60	36.18	32.14	68.03	
5,394.00	5.98	8.76	5,392.48	60.22	36.67	31.34	70.50	
5,426.00	8.09	5.95	5,424.23	64.11	37.15	30.09	74.09	
5,457.00	9.76	5.25	5,454.86	68.89	37.62	28.64	78.49	
5,489.00	11.61	3.23	5,486.30	74.81	38.05	26.96	83.93	
5,520.00	13.19	2.08	5,516.58	81.46	38.35	25.21	90.04	
5,552.00	14.77	1.20	5,547.63	89.18	38.57	23.39	97.17	
5,583.00	15.92	2.00	5,577.52	97.38	38.80	21.72	104.83	
5,615.00	17.06	2.35	5,608.21	106.46	39.15	20.19	113.43	
5,646.00	18.64	2.26	5,637.71	115.96	39.53	18.82	122.51	
5,678.00	20.05	2.43	5,667.90	126.55	39.96	17.53	132.71	
5,709.00	21.28	2.35	5,696.91	137.48	40.42	16.38	143.30	
5,741.00	22.77	2.87	5,726.57	149.46	40.97	15.33	154.98	
5,772.00	24.27	4.37	5,755.00	161.81	41.75	14.47	167.11	
5,804.00	25.59	4.19	5,784.02	175.26	42.76	13.71	180.40	
5,835.00	27.00	2.96	5,811.81	188.96	43.61	13.00	193.93	
5,867.00	27.35	0.41	5,840.28	203.57	44.04	12.21	208.28	
5,898.00	27.17	359.00	5,867.83	217.77	43.97	11.41	222.16	
5,931.00	27.70	358.30	5,897.12	232.97	43.61	10.60	237.01	
5,962.00	29.28	357.90	5,924.37	247.75	43.12	9.87	251.47	
5,992.00	31.57	357.90	5,950.23	262.93	42.56	9.19	266.35	
6,024.00	35.46	357.70	5,976.91	280.58	41.88	8.49	283.69	
6,055.00	40.80	358.90	6,001.28	299.70	41.33	7.85	302.54	
6,087.00	44.05	359.60	6,024.90	321.29	41.05	7.28	323.90	
6,118.00	46.60	0.33	6,046.70	343.33	41.04	6.82	345.77	
6,150.00	48.63	0.59	6,068.27	366.96	41.23	6.41	369.27	
6,181.00	50.74	1.64	6,088.32	390.60	41.69	6.09	392.81	
6,213.00	54.17	1.91	6,107.82	415.95	42.48	5.83	418.11	
6,244.00	57.16	1.91	6,125.30	441.53	43.33	5.60	443.65	
6,276.00	59.97	2.08	6,141.99	468.82	44.28	5.40	470.90	

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<b>Site:</b>	University 46	<b>MVD Reference:</b>	RF @ 2589.53usft (H&P #328)
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<b>Wellbore:</b>	OH - Job #32D0712949	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
6,307.00	62.52	2.08	6,156.90	495.97	45.27	5.22	498.04	
6,339.00	64.37	2.08	6,171.21	524.58	46.31	5.04	526.62	
6,370.00	66.21	1.64	6,184.17	552.72	47.22	4.88	554.74	
6,402.00	68.41	1.64	6,196.51	582.23	48.07	4.72	584.21	
6,433.00	71.14	1.75	6,207.23	611.31	48.93	4.58	613.26	
6,464.00	73.95	1.91	6,216.52	640.86	49.87	4.45	642.80	
6,496.00	76.59	2.52	6,224.66	671.78	51.07	4.35	673.72	
6,528.00	77.56	2.35	6,231.82	702.94	52.39	4.26	704.89	
6,559.00	78.61	2.00	6,238.22	733.25	53.54	4.18	735.21	
6,591.00	79.76	1.91	6,244.22	764.67	54.62	4.09	766.61	
6,622.00	80.55	0.85	6,249.52	795.20	55.35	3.98	797.12	
6,654.00	83.45	0.33	6,253.97	826.88	55.68	3.85	828.76	
6,685.00	85.82	0.24	6,256.87	857.74	55.83	3.72	859.56	
6,780.00	87.23	359.32	6,262.63	952.57	55.47	3.33	954.18	
6,874.00	88.37	359.01	6,266.24	1,046.48	54.10	2.96	1,047.88	
6,969.00	89.25	359.36	6,268.21	1,141.45	52.75	2.65	1,142.67	
7,063.00	90.66	359.80	6,268.29	1,235.45	52.06	2.41	1,236.54	
7,158.00	90.04	358.39	6,267.71	1,330.43	50.56	2.18	1,331.39	
7,252.00	90.84	357.69	6,266.98	1,424.37	47.34	1.90	1,425.16	
7,346.00	90.84	359.62	6,265.61	1,518.33	45.14	1.70	1,519.00	
7,441.00	89.25	358.39	6,265.53	1,613.31	43.49	1.54	1,613.90	
7,535.00	87.93	0.50	6,267.84	1,707.27	42.57	1.43	1,707.80	
7,630.00	88.46	2.26	6,270.84	1,802.19	44.86	1.43	1,802.75	
7,725.00	89.25	2.17	6,272.74	1,897.10	48.53	1.47	1,897.72	
7,819.00	90.40	2.61	6,273.02	1,991.02	52.45	1.51	1,991.71	
7,914.00	90.50	2.05	6,272.28	2,085.94	56.31	1.55	2,086.70	
8,008.00	89.16	359.71	6,272.56	2,179.92	57.76	1.52	2,180.68	
8,102.00	88.02	357.34	6,274.87	2,273.85	55.34	1.39	2,274.52	
8,197.00	89.52	0.85	6,276.91	2,368.80	53.84	1.30	2,369.41	
8,291.00	89.43	359.62	6,277.77	2,462.79	54.23	1.26	2,463.39	
8,386.00	89.25	1.03	6,278.86	2,557.78	54.77	1.23	2,558.37	
8,480.00	89.34	359.45	6,280.02	2,651.77	55.16	1.19	2,652.34	
8,575.00	89.96	0.85	6,280.60	2,746.77	55.41	1.16	2,747.32	
8,669.00	89.52	3.67	6,281.03	2,840.68	59.11	1.19	2,841.30	
8,764.00	88.90	1.03	6,282.34	2,935.58	63.01	1.23	2,936.26	
8,858.00	89.16	359.71	6,283.93	3,029.57	63.62	1.20	3,030.23	
8,953.00	89.69	1.29	6,284.88	3,124.55	64.44	1.18	3,125.22	
9,048.00	88.81	358.57	6,286.13	3,219.54	64.33	1.14	3,220.18	
9,142.00	89.87	0.50	6,287.21	3,313.52	63.57	1.10	3,314.13	
9,237.00	90.31	1.47	6,287.06	3,408.51	65.20	1.10	3,409.13	
9,331.00	91.54	6.04	6,285.54	3,502.27	71.35	1.17	3,502.99	
9,426.00	91.89	5.25	6,282.70	3,596.76	80.69	1.29	3,597.67	
9,520.00	92.42	4.46	6,279.16	3,690.36	88.64	1.38	3,691.42	
9,615.00	92.77	3.40	6,274.86	3,785.03	95.15	1.44	3,786.23	
9,709.00	94.00	3.14	6,269.31	3,878.72	100.50	1.48	3,880.02	

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<b>Site:</b>	University 46	<b>MD Reference:</b>	RF @ 2589.53usft (H&P #328)
<b>Well:</b>	#1304H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH - Job #32D0712949	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM-Regulatory

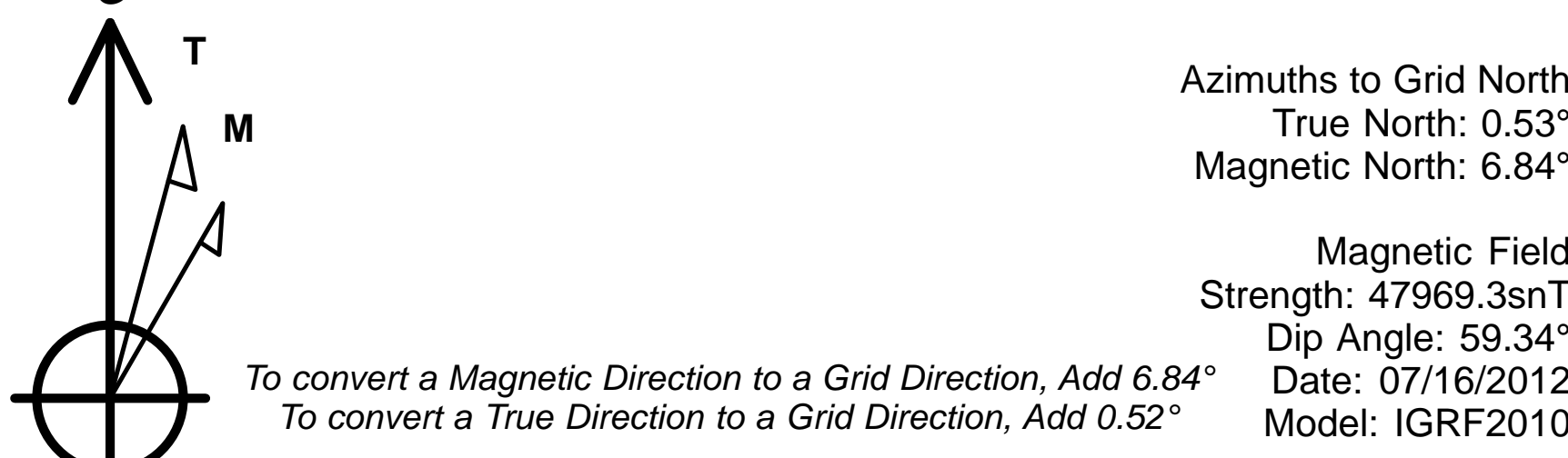
Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
9,804.00	92.24	2.87	6,264.14	3,973.44	105.47	1.52	3,974.84
9,898.00	90.40	3.31	6,261.98	4,067.28	110.54	1.56	4,068.78
9,992.00	91.10	3.05	6,260.75	4,161.12	115.75	1.59	4,162.73
10,087.00	87.85	2.70	6,261.62	4,255.99	120.52	1.62	4,257.69
10,182.00	87.58	2.00	6,265.40	4,350.83	124.41	1.64	4,352.61
10,276.00	88.72	1.64	6,268.44	4,444.73	127.39	1.64	4,446.56
10,371.00	90.48	2.08	6,269.10	4,539.67	130.48	1.65	4,541.55
10,465.00	88.29	0.50	6,270.11	4,633.64	132.59	1.64	4,635.53
10,560.00	88.72	0.76	6,272.59	4,728.60	133.64	1.62	4,730.49
10,655.00	88.55	0.68	6,274.85	4,823.56	134.83	1.60	4,825.45
10,749.00	87.76	1.56	6,277.88	4,917.50	136.67	1.59	4,919.39
10,844.00	87.67	0.85	6,281.67	5,012.40	138.66	1.58	5,014.32
10,939.00	87.67	359.36	6,285.53	5,107.32	138.84	1.56	5,109.20
11,033.00	89.52	1.12	6,287.83	5,201.28	139.23	1.53	5,203.14
11,128.00	87.41	1.47	6,290.38	5,296.22	141.38	1.53	5,298.10
11,222.00	88.90	2.52	6,293.41	5,390.11	144.65	1.54	5,392.05
11,317.00	87.93	3.49	6,296.03	5,484.94	149.62	1.56	5,486.98
11,412.00	87.49	1.91	6,299.83	5,579.75	154.10	1.58	5,581.88
11,507.00	89.78	4.46	6,302.09	5,674.57	159.37	1.61	5,676.80
11,601.00	88.11	3.67	6,303.82	5,768.31	166.04	1.65	5,770.70
11,696.00	84.86	3.26	6,309.65	5,862.94	171.77	1.68	5,865.46
11,790.00	84.86	2.79	6,318.07	5,956.44	176.71	1.70	5,959.06
11,885.00	84.59	2.00	6,326.80	6,050.95	180.66	1.71	6,053.65
11,979.00	84.94	1.73	6,335.38	6,144.51	183.71	1.71	6,147.25
12,027.00	86.44	359.62	6,338.99	6,192.36	184.27	1.70	6,195.11
12,169.00	86.00	358.48	6,348.35	6,334.03	181.92	1.65	6,336.65
12,263.00	88.37	358.39	6,352.96	6,427.88	179.36	1.60	6,430.38
12,358.00	88.72	357.43	6,355.38	6,522.78	175.89	1.54	6,525.15
12,453.00	89.60	357.51	6,356.77	6,617.68	171.70	1.49	6,619.91
12,547.00	89.08	356.46	6,357.85	6,711.54	166.76	1.42	6,713.61
12,641.00	88.81	354.52	6,359.58	6,805.23	159.37	1.34	6,807.10
12,736.00	88.64	353.03	6,361.70	6,899.64	149.07	1.24	6,901.25
12,831.00	88.81	353.71	6,363.81	6,993.98	138.10	1.13	6,995.35
12,925.00	88.46	356.63	6,366.05	7,087.61	130.19	1.05	7,088.81
13,020.00	88.64	357.51	6,368.45	7,182.46	125.34	1.00	7,183.55
13,101.00	89.08	355.58	6,370.07	7,263.29	120.46	0.95	7,264.29
13,195.00	88.46	358.30	6,372.08	7,357.13	115.44	0.90	7,358.03
13,290.00	89.08	355.58	6,374.12	7,451.96	110.37	0.85	7,452.78
13,384.00	88.11	358.13	6,376.43	7,545.78	105.21	0.80	7,546.51
13,479.00	88.99	359.10	6,378.83	7,640.72	102.92	0.77	7,641.41
13,573.00	88.46	357.95	6,380.92	7,734.66	100.50	0.74	7,735.32
13,668.00	88.72	355.93	6,383.26	7,829.49	95.43	0.70	7,830.08
13,763.00	88.55	354.96	6,385.53	7,924.17	87.89	0.64	7,924.65
13,857.00	88.46	353.38	6,387.98	8,017.65	78.34	0.56	8,018.03

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<b>Site:</b>	University 46	<b>MD Reference:</b>	RF @ 2589.53usft (H&P #328)
<b>Well:</b>	#1304H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH - Job #32D0712949	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	EDM-Regulatory

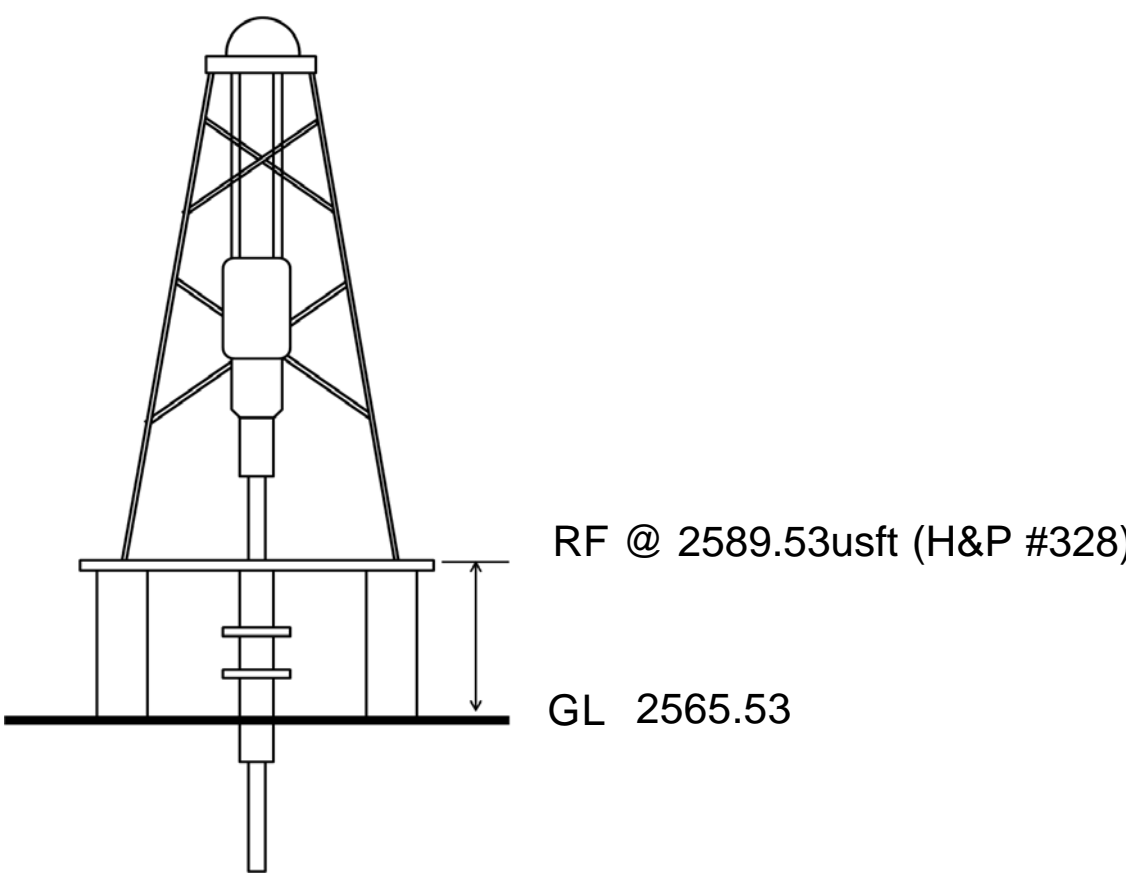
Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
13,912.88	88.61	352.50	6,389.41	8,073.08	71.48	0.51	8,073.40
<b>PBHL - Univ 46 #1304H</b>							
13,952.00	88.72	351.89	6,390.32	8,111.83	66.17	0.47	8,112.10
<b>Last MWD Survey</b>							
14,025.00	88.72	351.89	6,391.95	8,184.08	55.87	0.39	8,184.27
<b>Projection to Bit</b>							

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
13,952.00	6,390.32	8,111.83	66.17	Last MWD Survey	
14,025.00	6,391.95	8,184.08	55.87	Projection to Bit	

Checked By: _____	Approved By: _____	Date: _____
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University 46 #1304H  
Crockett County, Texas (NAD 83 TXC)  
Northing (Y) 10313940.58  
Easting (X) 1976663.79  
Plan #4 vs Actual - 8-3/4" Hole



WELL DETAILS: University 46

+N/-S	+E/-W	Northing	Ground Level: Easting	2565.53 Latitude	Longitude	Slot
0.00	0.00	10314481.15	1977344.68	30° 57' 37.374 N	101° 21' 6.815 W	

PROJECT DETAILS: Crockett County, Texas (NAD 83 TXC)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Texas Central Zone  
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	9992.00	91.10	3.05	6260.75	4161.12	115.75	0.00	0.00	4162.55	
2	10139.82	87.50	0.46	6262.55	4308.82	120.28	3.00	-144.28	4310.31	
3	11926.82	87.50	0.46	6340.50	6094.06	134.61	0.00	0.00	6095.51	
4	11983.61	89.20	0.45	6342.13	6150.83	135.06	3.00	-0.49	6152.28	
5	13916.78	89.20	0.45	6369.00	8083.75	150.09	0.00	0.00	8085.14	PBHL - Univ 46 #1304H

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - Univ 46 #1304H - plan hits target center	6369.00	8083.75	150.09	10322564.90	1977494.77	30° 58' 57.399 N	101° 21' 5.941 W	Point

SITE DETAILS: University 46

Site Centre Northing: 10313940.58  
Easting: 1976663.79  
Positional Uncertainty: 0.00  
Convergence: -0.53  
Local North: Grid

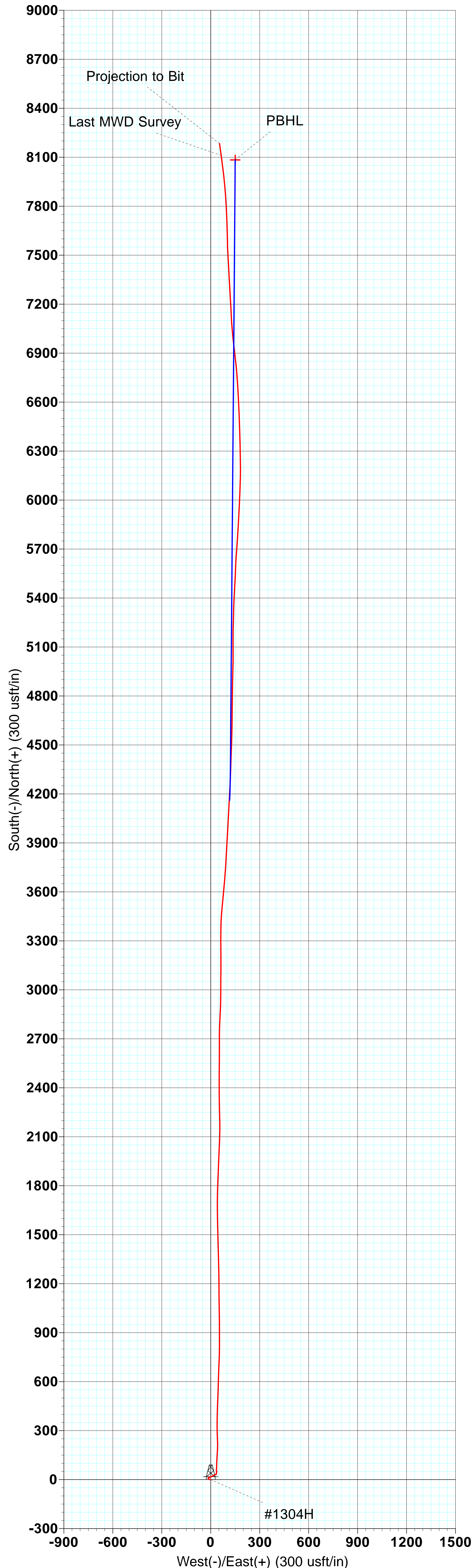
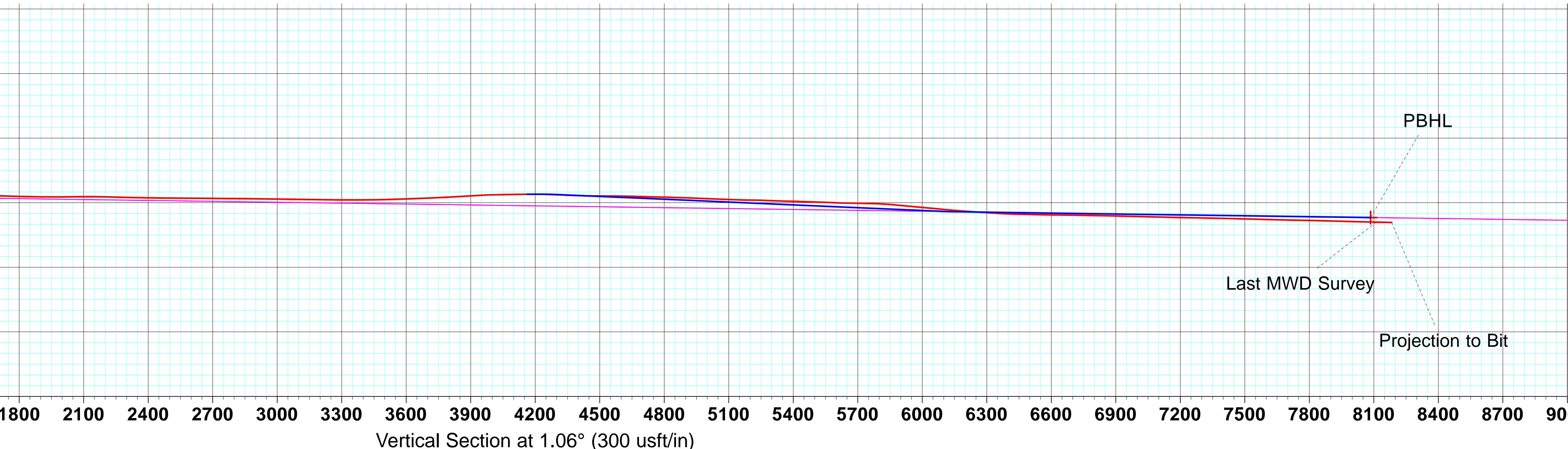
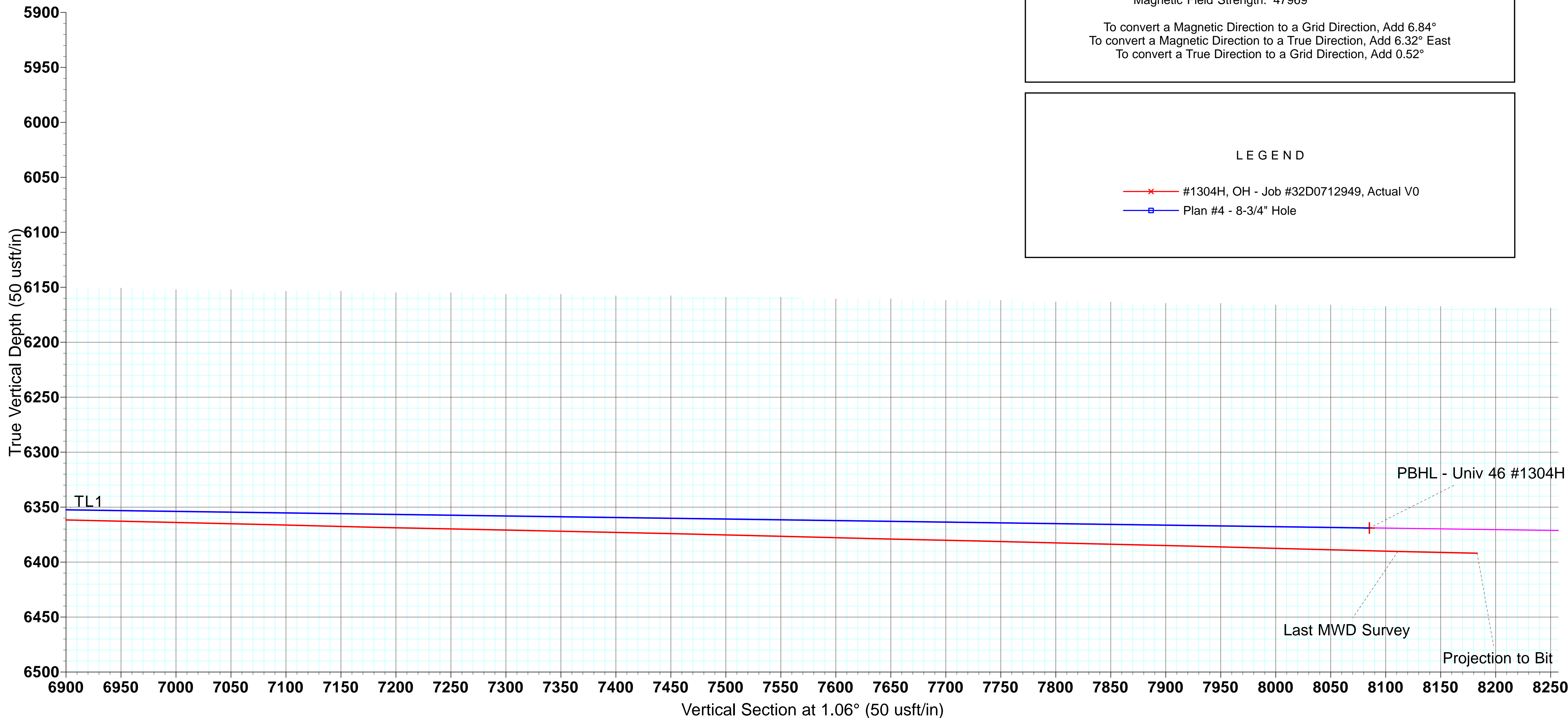
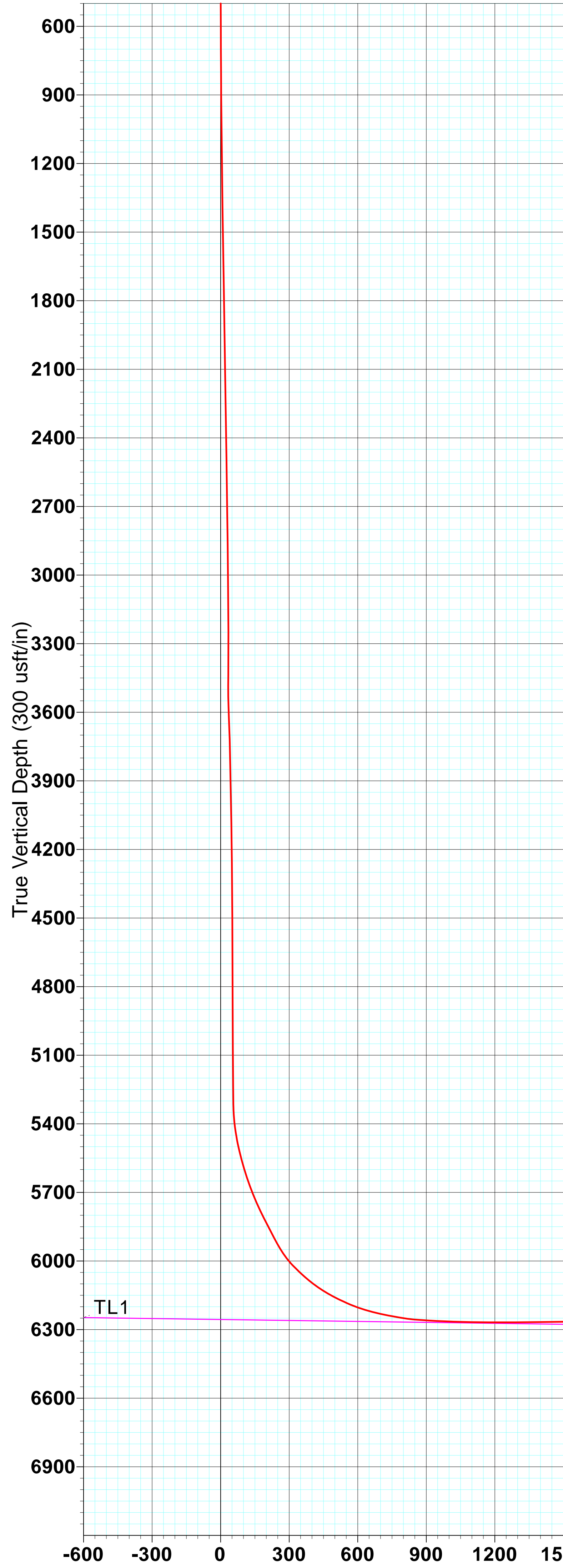
Map System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone Name: Texas Central Zone  
Local Origin: Well #1304H, Grid North  
Latitude: 30° 57' 37.374 N  
Longitude: 101° 21' 6.815 W  
Grid East: 1977344.68  
Grid North: 10314481.15  
Scale Factor: 1.000

Geomagnetic Model: IGRF2010  
Sample Date: 16-Jul-12  
Magnetic Declination: 6.32°  
Dip Angle from Horizontal: 59.34°  
Magnetic Field Strength: 47969

To convert a Magnetic Direction to a Grid Direction, Add 6.84°  
To convert a Magnetic Direction to a True Direction, Add 6.32° East  
To convert a True Direction to a Grid Direction, Add 0.52°

LEGEND

- #1304H, OH - Job #32D0712949, Actual VO
- Plan #4 - 8-3/4" Hole



Becky Wharton  
Scientific Drilling  
2034 Trade Drive  
Midland, TX 79703



NAD 83 GRID  
TEXAS CENTRAL ZONE

NW CORNER  
NAD 83  
LAT. = 30.98246812° N  
LONG. = 101.35481151° W  
NAD 27  
LAT. = 30.98230743° N  
LONG. = 101.35441499° W

BOTTOM HOLE LOCATION  
NAD 83  
Y = 10,322,564.90  
X = 1,977,494.77  
LAT. = 30.98261097° N  
LONG. = 101.35165020° W  
NAD 27  
Y = 479,988.37  
X = 1,681,028.52  
LAT. = 30.98245025° N  
LONG. = 101.35125373° W

NE CORNER  
NAD 83  
LAT. = 30.98413961° N  
LONG. = 101.33599640° W  
NAD 27  
LAT. = 30.98397877° N  
LONG. = 101.33560016° W

I HEREBY STATE THAT THIS PLAT  
SHOWS THE SUBJECT LOCATION BASED  
ON INFORMATION PROVIDED BY  
THE CLIENT.

*Robert Glen Maloy*  
ROBERT GLEN MALOY  
REGISTERED PROFESSIONAL LAND SURVEYOR  
LICENSE NO. 6028



GENERAL NOTES

- COORDINATES SHOWN ARE BASED ON TEXAS COORDINATE SYSTEM OF NAD 1983, TEXAS CENTRAL ZONE (TEXAS WEST HARN) AND ARE BASED ON THE MONUMENT "SCHNEEMAN" (Y = 10,333,230, X = 1,957,295)
- VERTICAL DATUM IS NAVD 88
- LATITUDE AND LONGITUDE ARE NAD 83 GEOGRAPHIC
- AREA, DISTANCES, AND COORDINATES ARE "GRID"
- UNITS ARE UNITED STATES SURVEY FOOT.
- COMBINED SCALE FACTOR = 0.999763023.
- ALL LEASE AND TRACT INFORMATION SHOWN HEREON IS DONE SO BY LIMITED DEED RECORD INFORMATION ONLY. ALL ACREAGES SHOWN ARE BY DEED AND LEASE CALL, EXCEPT WHERE NOTED. THIS IS NOT IN ANY WAY A "BOUNDARY SURVEY"
- ELEVATIONS SHOWN IN THE LINE TABLE REPRESENT THE ELEVATION AT THE END OF THAT LINE SEGMENT IN THE DIRECTION FROM THE PREVIOUS POINT.



PETROHAWK Operating Company  
6100 S. Yale Ave.  
Suite 500  
Tulsa, Oklahoma 74136

LINE	BEARING	DISTANCE
L1	N 00°01'26" E	517.08'
L2	N 01°08'05" E	7517.83'
L3	N 01°08'05" E	50.32'

**S.D.I**  
**Bottom Hole Location:**  
**8112.1' @ N0.47E**  
**13952.0'MD, 6390.32'TVD**  
**8111.83'N, 66.17'E**

UNIVERSITY 46"  
14,655.3 CALLED ACRES

UPP/PP  
Y=10,314,998.23  
X=1,977,344.90

11820' TO  
UNIT LINE  
11831' TO  
UNIT LINE

PETRO SURFA  
UNIVER  
NAD 8  
Y = 1  
X = 1  
LAT. =  
LONG.  
NAD 2  
Y = 4  
X = 1,680,878.46  
LAT. = 30.96022032° N  
LONG. = 101.35149647° W  
ELEV. = 2,565.53'

SW CORNER  
NAD 83  
LAT. = 30.95274586° N  
LONG. = 101.35517783° W  
NAD 27  
LAT. = 30.95258432° N  
LONG. = 101.35478129° W

SE CORNER  
NAD 83  
LAT. = 30.95421901° N  
LONG. = 101.33576505° W  
NAD 27  
LAT. = 30.95405730° N  
LONG. = 101.33536878° W

SECTION 13,  
BLOCK 46  
UNIVERSITY LANDS

1000 0 1000 2000 3000 4000 5000 6000

SCALE: 1" = 2000 FEET

**FRONTIER**

SURVEYING COMPANY  
3108 W. 8th STREET, FORT WORTH, TEXAS 76107  
PH: (817) 560 - 4500 FAX: (817) 289 - 3530  
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PLOT DATE: 04-30-2012 3:35 P.M.

REV.	DATE	BY	REVISIONS MADE
1	03/23/12	GG	MAKE PRELIMINARY
2	04/10/12	BB	NAME CHANGE
3	04/20/12	BB	CHANGED SHL
4	04/27/12	GG	CHANGED LEASE NAME



**PLAT OF:**



A PROPOSED ACCESS ROAD AND POND SITE FOR:

**PETROHAWK OPERATING CO.**

UNIVERSITY 46 #1304H

SITUATED IN SECTION 13 AND SECTION 8, BOTH  
OF BLOCK 46, OUT OF THE UNIVERSITY LANDS,  
LOCATED APPROX. 18 MILES NORTHWEST OF  
OZONA, CROCKETT COUNTY, TEXAS

Completion Date: 3-23-12	File Name: 1203114
Scale: 1" = 2000'	Surveyed by: RR/WB
Drawn by: GG	Checked by: RM