



June 26, 2017

Railroad Commission of Texas  
Oil and Gas Division  
P.O. Box 12967  
Capitol Station  
Austin, Texas 78711

Attention: Regulatory Department

Re: PT Petroleum LLC  
University Orange 1042A  
Reagan County, TX  
API #42-383-39859  
Job No. 61364

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Piers Duffy	1042A	1,332	17,189	6/12/17	6/20/17	MWD

A certified plat on which the bottomhole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

*Brittany Carley*

Brittany Carley  
Operations Administrator



# **PT Petroleum LLC**

**Reagan County, TX (NAD83 TC)  
University Orange  
1042A**

**OH / Job #61364**

**Survey: Phoenix MWD Surveys**

## **Standard Survey Report**

**20 June, 2017**





# Phoenix Technology Services LP

## Survey Report



<b>Company:</b>	PT Petroleum LLC	<b>Local Co-ordinate Reference:</b>	Well 1042A
<b>Project:</b>	Reagan County, TX (NAD83 TC)	<b>TVD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Site:</b>	University Orange	<b>MD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Well:</b>	1042A	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH / Job #61364	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Precision 312)	<b>Database:</b>	Compass 5000 GCR

<b>Project</b>	Reagan County, TX (NAD83 TC)		
<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 Orange		
<b>Site Position:</b>		<b>Northing:</b>	10,377,064.49 usft
<b>From:</b>	Map	<b>Easting:</b>	1,858,873.42 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	31° 7' 44.05594 N
		<b>Longitude:</b>	101° 43' 56.50638 W
		<b>Grid Convergence:</b>	-0.72 °

<b>Well</b>	1042A		
<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>	0.00 usft
		<b>Latitude:</b>	31° 7' 44.05837 N
		<b>Longitude:</b>	101° 43' 56.79375 W
		<b>Ground Level:</b>	2,769.00 usft

<b>Wellbore</b>	OH / Job #61364				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	7/14/2017	6.18	59.55	47,573

<b>Design</b>	Surveys (Precision 312)				
<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	356.79	

<b>Survey Program</b>	Date 6/20/2017				
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
85.00	1,180.00	Trueshot MWD Surveys (OH / Job #61364	MWD	MWD - Standard	
1,332.00	17,255.00	Phoenix MWD Surveys (OH / Job #61364)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

<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>	
1,180.00	0.70	23.60	1,179.98	-1.11	2.64	-1.26	0.00	0.00	0.00	
<b>Tie In</b>										
1,332.00	0.70	63.98	1,331.97	0.15	3.85	-0.07	0.32	0.00	26.57	
<b>First Phoenix MWD Survey</b>										
1,427.00	0.44	62.69	1,426.97	0.57	4.70	0.31	0.27	-0.27	-1.36	
1,522.00	0.77	39.46	1,521.96	1.23	5.43	0.93	0.43	0.35	-24.45	
1,618.00	0.73	49.37	1,617.95	2.13	6.30	1.77	0.14	-0.04	10.32	
1,713.00	1.07	46.23	1,712.94	3.13	7.40	2.72	0.36	0.36	-3.31	
1,808.00	0.92	29.04	1,807.93	4.42	8.41	3.94	0.35	-0.16	-18.09	



# Phoenix Technology Services LP

## Survey Report



<b>Company:</b>	PT Petroleum LLC	<b>Local Co-ordinate Reference:</b>	Well 1042A
<b>Project:</b>	Reagan County, TX (NAD83 TC)	<b>TVD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Site:</b>	University Orange	<b>MD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Well:</b>	1042A	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH / Job #61364	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Precision 312)	<b>Database:</b>	Compass 5000 GCR

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)
1,903.00	0.85	11.48	1,902.92	5.77	8.92	5.26	0.29	-0.07	-18.48
1,998.00	1.44	317.86	1,997.90	7.35	8.26	6.87	1.22	0.62	-56.44
2,093.00	2.02	303.91	2,092.86	9.17	6.07	8.81	0.75	0.61	-14.68
2,189.00	3.45	286.10	2,188.74	10.91	1.89	10.79	1.72	1.49	-18.55
2,284.00	3.77	277.12	2,283.56	12.09	-3.95	12.29	0.68	0.34	-9.45
2,379.00	4.51	271.58	2,378.31	12.58	-10.79	13.17	0.88	0.78	-5.83
2,474.00	4.65	270.06	2,473.01	12.69	-18.37	13.70	0.20	0.15	-1.60
2,569.00	6.59	270.92	2,567.54	12.78	-27.67	14.31	2.04	2.04	0.91
2,664.00	7.41	266.45	2,661.84	12.49	-39.24	14.66	1.04	0.86	-4.71
2,759.00	9.02	265.20	2,755.86	11.49	-52.78	14.42	1.71	1.69	-1.32
2,854.00	9.82	257.75	2,849.58	9.14	-68.11	12.94	1.53	0.84	-7.84
2,949.00	10.86	256.39	2,943.04	5.32	-84.73	10.05	1.12	1.09	-1.43
3,043.00	10.88	257.00	3,035.35	1.24	-101.98	6.94	0.12	0.02	0.65
3,139.00	11.54	260.75	3,129.52	-2.34	-120.29	4.39	1.02	0.69	3.91
3,234.00	11.54	269.23	3,222.61	-4.00	-139.17	3.79	1.78	0.00	8.93
3,328.00	11.21	270.26	3,314.76	-4.08	-157.71	4.74	0.41	-0.35	1.10
3,423.00	11.84	267.40	3,407.84	-4.48	-176.68	5.41	0.90	0.66	-3.01
3,519.00	12.17	267.66	3,501.74	-5.34	-196.63	5.66	0.35	0.34	0.27
3,614.00	12.70	269.59	3,594.52	-5.83	-217.07	6.32	0.71	0.56	2.03
3,709.00	12.70	270.18	3,687.19	-5.87	-237.96	7.45	0.14	0.00	0.62
3,804.00	12.58	271.04	3,779.89	-5.65	-258.75	8.83	0.23	-0.13	0.91
3,899.00	12.69	265.82	3,872.59	-6.22	-279.50	9.42	1.21	0.12	-5.49
3,994.00	11.82	266.09	3,965.43	-7.64	-299.61	9.12	0.92	-0.92	0.28
4,089.00	11.45	267.14	4,058.47	-8.78	-318.74	9.06	0.45	-0.39	1.11
4,184.00	10.95	268.40	4,151.66	-9.50	-337.17	9.37	0.59	-0.53	1.33
4,279.00	11.29	269.48	4,244.88	-9.84	-355.49	10.06	0.42	0.36	1.14
4,375.00	10.68	268.09	4,339.12	-10.22	-373.78	10.70	0.69	-0.64	-1.45
4,470.00	11.11	265.23	4,432.41	-11.27	-391.70	10.65	0.73	0.45	-3.01
4,565.00	11.33	261.70	4,525.59	-13.38	-410.05	9.57	0.76	0.23	-3.72
4,660.00	11.82	259.38	4,618.66	-16.52	-428.85	7.49	0.71	0.52	-2.44
4,755.00	10.58	260.38	4,711.85	-19.77	-447.01	5.26	1.32	-1.31	1.05
4,850.00	12.44	265.95	4,804.94	-21.95	-465.82	4.13	2.28	1.96	5.86
4,946.00	12.80	265.52	4,898.62	-23.51	-486.74	3.74	0.39	0.38	-0.45
5,041.00	11.82	266.83	4,991.44	-24.87	-506.95	3.52	1.07	-1.03	1.38
5,136.00	10.38	266.79	5,084.66	-25.89	-525.21	3.52	1.52	-1.52	-0.04
5,230.00	11.70	265.02	5,176.91	-27.19	-543.16	3.22	1.45	1.40	-1.88
5,325.00	9.07	265.27	5,270.35	-28.65	-560.22	2.73	2.77	-2.77	0.26
5,420.00	9.37	262.23	5,364.12	-30.31	-575.34	1.91	0.60	0.32	-3.20
5,515.00	9.74	268.43	5,457.81	-31.57	-591.04	1.53	1.15	0.39	6.53
5,610.00	10.76	266.59	5,551.29	-32.32	-607.92	1.72	1.13	1.07	-1.94
5,704.00	11.13	264.92	5,643.58	-33.65	-625.72	1.40	0.52	0.39	-1.78
5,800.00	11.67	266.94	5,737.69	-34.99	-644.65	1.12	0.70	0.56	2.10
5,894.00	12.80	266.34	5,829.55	-36.16	-664.53	1.06	1.21	1.20	-0.64



# Phoenix Technology Services LP

## Survey Report



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<b>Wellbore:</b>	OH / Job #61364	<b>Survey Calculation Method:</b>	Minimum Curvature
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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)
5,990.00	9.25	263.93	5,923.76	-37.65	-682.82	0.59	3.73	-3.70	-2.51
6,085.00	10.39	267.89	6,017.37	-38.78	-698.98	0.37	1.39	1.20	4.17
6,180.00	12.87	265.68	6,110.41	-39.89	-718.09	0.33	2.65	2.61	-2.33
6,275.00	10.69	266.39	6,203.41	-41.24	-737.44	0.06	2.30	-2.29	0.75
6,371.00	7.24	263.15	6,298.22	-42.52	-752.33	-0.39	3.63	-3.59	-3.38
6,466.00	6.48	263.50	6,392.54	-43.84	-763.60	-1.07	0.80	-0.80	0.37
6,561.00	4.45	265.81	6,487.10	-44.72	-772.61	-1.45	2.15	-2.14	2.43
6,656.00	4.61	263.55	6,581.81	-45.42	-780.07	-1.72	0.25	0.17	-2.38
6,750.00	3.78	267.45	6,675.56	-45.98	-786.92	-1.90	0.93	-0.88	4.15
6,845.00	2.83	279.97	6,770.40	-45.71	-792.36	-1.33	1.25	-1.00	13.18
6,939.00	1.90	266.30	6,864.32	-45.41	-796.20	-0.82	1.15	-0.99	-14.54
7,029.00	1.48	284.81	6,954.28	-45.21	-798.82	-0.47	0.76	-0.47	20.57
7,122.00	12.64	359.20	7,046.49	-34.69	-800.12	10.11	13.25	12.00	79.99
7,216.00	19.63	7.80	7,136.75	-8.73	-798.12	35.92	7.84	7.44	9.15
7,283.59	24.12	3.69	7,199.46	16.32	-795.69	60.79	7.02	6.65	-6.08
FTP HL Crossing									
7,311.00	25.97	2.41	7,224.29	27.91	-795.08	72.32	7.02	6.74	-4.67
7,406.00	35.65	1.65	7,305.78	76.48	-793.40	120.73	10.20	10.19	-0.80
7,499.00	41.80	1.86	7,378.30	134.60	-791.61	178.66	6.61	6.61	0.23
7,595.00	46.09	1.71	7,447.41	201.17	-789.54	245.01	4.47	4.47	-0.16
7,690.00	54.76	3.60	7,507.88	274.24	-786.08	317.77	9.25	9.13	1.99
7,783.00	64.36	2.27	7,554.94	354.22	-782.02	397.40	10.40	10.32	-1.43
7,879.00	69.28	2.55	7,592.72	442.37	-778.31	485.20	5.13	5.13	0.29
7,973.00	78.12	359.59	7,619.08	532.47	-776.68	575.07	9.88	9.40	-3.15
8,068.00	84.14	358.78	7,633.72	626.28	-778.02	668.81	6.39	6.34	-0.85
8,163.00	88.79	358.39	7,639.58	721.05	-780.36	763.56	4.91	4.89	-0.41
8,259.00	88.53	358.29	7,641.82	816.98	-783.14	859.50	0.29	-0.27	-0.10
8,351.00	87.87	358.42	7,644.71	908.90	-785.78	951.42	0.73	-0.72	0.14
8,444.00	87.74	358.61	7,648.27	1,001.80	-788.19	1,044.31	0.25	-0.14	0.20
8,539.00	87.99	358.75	7,651.81	1,096.71	-790.38	1,139.19	0.30	0.26	0.15
8,632.00	91.07	359.32	7,652.57	1,189.68	-791.94	1,232.10	3.37	3.31	0.61
8,727.00	91.41	359.20	7,650.52	1,284.65	-793.17	1,326.99	0.38	0.36	-0.13
8,820.00	92.00	359.08	7,647.75	1,377.60	-794.56	1,419.87	0.65	0.63	-0.13
8,916.00	90.05	0.35	7,646.03	1,473.57	-795.04	1,515.73	2.42	-2.03	1.32
9,009.00	89.66	0.45	7,646.27	1,566.57	-794.39	1,608.54	0.43	-0.42	0.11
9,103.00	88.62	0.20	7,647.68	1,660.56	-793.86	1,702.35	1.14	-1.11	-0.27
9,198.00	90.54	1.93	7,648.38	1,755.53	-792.09	1,797.08	2.72	2.02	1.82
9,292.00	89.39	1.00	7,648.43	1,849.50	-789.69	1,890.76	1.57	-1.22	-0.99
9,388.00	89.79	2.86	7,649.12	1,945.43	-786.46	1,986.37	1.98	0.42	1.94
9,482.00	88.96	3.31	7,650.15	2,039.29	-781.40	2,079.80	1.00	-0.88	0.48
9,575.00	87.84	3.08	7,652.74	2,132.11	-776.22	2,172.18	1.23	-1.20	-0.25
9,669.00	90.29	3.49	7,654.28	2,225.93	-770.83	2,265.56	2.64	2.61	0.44
9,762.00	89.55	3.23	7,654.41	2,318.77	-765.38	2,357.95	0.84	-0.80	-0.28
9,856.00	90.07	4.04	7,654.72	2,412.58	-759.42	2,451.28	1.02	0.55	0.86



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## Survey Report



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<b>Wellbore:</b>	OH / Job #61364	<b>Survey Calculation Method:</b>	Minimum Curvature
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Survey										
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9,952.00	88.00	0.44	7,656.34	2,508.48	-755.67	2,546.81	4.33	-2.16	-3.75	
10,047.00	88.25	0.26	7,659.44	2,603.42	-755.09	2,641.58	0.32	0.26	-0.19	
10,138.00	88.55	359.80	7,661.98	2,694.39	-755.04	2,732.39	0.60	0.33	-0.51	
10,232.00	88.24	358.20	7,664.62	2,788.33	-756.68	2,826.28	1.73	-0.33	-1.70	
10,326.00	87.73	357.39	7,667.92	2,882.20	-760.30	2,920.21	1.02	-0.54	-0.86	
10,421.00	90.26	0.22	7,669.59	2,977.15	-762.28	3,015.12	4.00	2.66	2.98	
10,515.00	90.76	359.87	7,668.75	3,071.15	-762.20	3,108.97	0.65	0.53	-0.37	
10,610.00	90.23	0.20	7,667.93	3,166.14	-762.14	3,203.81	0.66	-0.56	0.35	
10,704.00	89.37	0.74	7,668.26	3,260.14	-761.37	3,297.61	1.08	-0.91	0.57	
10,798.00	89.06	0.01	7,669.55	3,354.13	-760.76	3,391.42	0.84	-0.33	-0.78	
10,894.00	87.44	358.63	7,672.48	3,450.07	-761.90	3,487.28	2.22	-1.69	-1.44	
10,989.00	89.02	1.06	7,675.41	3,545.01	-762.15	3,582.09	3.05	1.66	2.56	
11,082.00	91.07	0.88	7,675.34	3,638.00	-760.58	3,674.84	2.21	2.20	-0.19	
11,175.00	91.43	3.76	7,673.31	3,730.89	-756.82	3,767.37	3.12	0.39	3.10	
11,270.00	91.91	4.00	7,670.54	3,825.63	-750.39	3,861.61	0.56	0.51	0.25	
11,365.00	92.64	4.21	7,666.77	3,920.31	-743.59	3,955.76	0.80	0.77	0.22	
11,457.00	93.53	4.34	7,661.82	4,011.92	-736.75	4,046.84	0.98	0.97	0.14	
11,552.00	90.61	4.12	7,658.39	4,106.59	-729.74	4,140.97	3.08	-3.07	-0.23	
11,648.00	87.88	2.66	7,659.66	4,202.40	-724.07	4,236.32	3.22	-2.84	-1.52	
11,741.00	87.31	2.76	7,663.56	4,295.21	-719.68	4,328.74	0.62	-0.61	0.11	
11,833.00	86.83	2.98	7,668.26	4,386.98	-715.08	4,420.10	0.57	-0.52	0.24	
11,926.00	88.40	2.51	7,672.13	4,479.79	-710.63	4,512.52	1.76	1.69	-0.51	
12,020.00	88.53	2.33	7,674.65	4,573.67	-706.66	4,606.03	0.24	0.14	-0.19	
12,115.00	89.49	2.22	7,676.29	4,668.58	-702.89	4,700.58	1.02	1.01	-0.12	
12,209.00	89.00	0.58	7,677.53	4,762.54	-700.59	4,794.27	1.82	-0.52	-1.74	
12,303.00	90.07	0.41	7,678.29	4,856.53	-699.78	4,888.07	1.15	1.14	-0.18	
12,398.00	91.17	0.35	7,677.26	4,951.52	-699.15	4,982.87	1.16	1.16	-0.06	
12,491.00	91.32	1.74	7,675.24	5,044.48	-697.45	5,075.59	1.50	0.16	1.49	
12,583.00	88.70	1.87	7,675.23	5,136.43	-694.56	5,167.23	2.85	-2.85	0.14	
12,676.00	89.02	0.70	7,677.08	5,229.39	-692.47	5,259.93	1.30	0.34	-1.26	
12,771.00	89.12	359.36	7,678.62	5,324.37	-692.42	5,354.76	1.41	0.11	-1.41	
12,866.00	90.38	359.54	7,679.03	5,419.36	-693.33	5,449.66	1.34	1.33	0.19	
12,960.00	87.78	1.48	7,680.54	5,513.34	-692.50	5,543.43	3.45	-2.77	2.06	
13,054.00	87.90	2.13	7,684.09	5,607.22	-689.54	5,637.01	0.70	0.13	0.69	
13,147.00	87.98	2.55	7,687.43	5,700.08	-685.74	5,729.51	0.46	0.09	0.45	
13,242.00	90.22	4.85	7,688.92	5,794.86	-679.61	5,823.80	3.38	2.36	2.42	
13,335.00	89.64	2.14	7,689.03	5,887.68	-673.95	5,916.16	2.98	-0.62	-2.91	
13,428.00	90.73	1.89	7,688.73	5,980.62	-670.68	6,008.77	1.20	1.17	-0.27	
13,523.00	90.50	1.78	7,687.71	6,075.57	-667.63	6,103.39	0.27	-0.24	-0.12	
13,618.00	88.27	0.73	7,688.73	6,170.53	-665.55	6,198.09	2.59	-2.35	-1.11	
13,713.00	87.59	359.51	7,692.17	6,265.47	-665.35	6,292.87	1.47	-0.72	-1.28	
13,806.00	89.67	0.95	7,694.39	6,358.43	-664.98	6,385.67	2.72	2.24	1.55	
13,899.00	89.41	359.35	7,695.14	6,451.43	-664.74	6,478.50	1.74	-0.28	-1.72	



# Phoenix Technology Services LP

## Survey Report



<b>Company:</b>	PT Petroleum LLC	<b>Local Co-ordinate Reference:</b>	Well 1042A
<b>Project:</b>	Reagan County, TX (NAD83 TC)	<b>TVD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Site:</b>	University Orange	<b>MD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Well:</b>	1042A	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH / Job #61364	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Precision 312)	<b>Database:</b>	Compass 5000 GCR

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)
13,993.00	90.42	359.58	7,695.28	6,545.42	-665.61	6,572.40	1.10	1.07	0.24
14,087.00	91.76	359.71	7,693.49	6,639.40	-666.20	6,666.26	1.43	1.43	0.14
14,180.00	90.08	1.02	7,691.99	6,732.38	-665.60	6,759.07	2.29	-1.81	1.41
14,275.00	89.42	1.35	7,692.41	6,827.36	-663.64	6,853.79	0.78	-0.69	0.35
14,368.00	88.66	0.85	7,693.97	6,920.33	-661.85	6,946.51	0.98	-0.82	-0.54
14,461.00	89.67	0.40	7,695.32	7,013.31	-660.84	7,039.29	1.19	1.09	-0.48
14,555.00	87.92	2.23	7,697.30	7,107.26	-658.68	7,132.97	2.69	-1.86	1.95
14,650.00	87.55	2.63	7,701.05	7,202.10	-654.66	7,227.44	0.57	-0.39	0.42
14,745.00	88.51	3.00	7,704.32	7,296.92	-650.00	7,321.86	1.08	1.01	0.39
14,836.00	88.80	2.98	7,706.46	7,387.78	-645.25	7,412.30	0.32	0.32	-0.02
14,930.00	89.39	2.75	7,707.94	7,481.65	-640.55	7,505.76	0.67	0.63	-0.24
15,022.00	90.42	3.34	7,708.09	7,573.51	-635.67	7,597.21	1.29	1.12	0.64
15,115.00	90.82	2.25	7,707.09	7,666.40	-631.13	7,689.69	1.25	0.43	-1.17
15,210.00	91.76	2.12	7,704.95	7,761.30	-627.51	7,784.25	1.00	0.99	-0.14
15,304.00	90.11	2.38	7,703.41	7,855.21	-623.82	7,877.81	1.78	-1.76	0.28
15,398.00	89.91	2.24	7,703.40	7,949.14	-620.03	7,971.37	0.26	-0.21	-0.15
15,494.00	87.44	0.80	7,705.62	8,045.07	-617.49	8,067.01	2.98	-2.57	-1.50
15,588.00	87.33	0.20	7,709.91	8,138.97	-616.67	8,160.72	0.65	-0.12	-0.64
15,683.00	88.51	0.64	7,713.35	8,233.90	-615.97	8,255.46	1.33	1.24	0.46
15,776.00	88.91	0.40	7,715.45	8,326.87	-615.13	8,348.24	0.50	0.43	-0.26
15,871.00	89.43	0.65	7,716.82	8,421.86	-614.26	8,443.03	0.61	0.55	0.26
15,966.00	89.80	1.64	7,717.46	8,516.83	-612.36	8,537.75	1.11	0.39	1.04
16,061.00	90.23	1.81	7,717.44	8,611.79	-609.50	8,632.40	0.49	0.45	0.18
16,154.00	90.94	2.10	7,716.49	8,704.73	-606.33	8,725.02	0.82	0.76	0.31
16,247.00	87.82	359.10	7,717.49	8,797.70	-605.35	8,817.78	4.65	-3.35	-3.23
16,341.00	88.14	358.29	7,720.81	8,891.62	-607.49	8,911.67	0.93	0.34	-0.86
16,435.00	89.39	358.48	7,722.83	8,985.55	-610.14	9,005.61	1.35	1.33	0.20
16,529.00	90.88	358.75	7,722.61	9,079.52	-612.41	9,099.56	1.61	1.59	0.29
16,623.00	89.67	359.52	7,722.16	9,173.51	-613.83	9,193.48	1.53	-1.29	0.82
16,717.00	90.67	359.35	7,721.88	9,267.50	-614.76	9,287.38	1.08	1.06	-0.18
16,810.00	88.71	0.65	7,722.38	9,360.50	-614.76	9,380.23	2.53	-2.11	1.40
16,904.00	92.26	4.90	7,721.59	9,454.35	-610.21	9,473.67	5.89	3.78	4.52
17,000.00	91.17	4.54	7,718.72	9,549.98	-602.31	9,568.71	1.20	-1.14	-0.38
17,095.00	90.57	3.49	7,717.27	9,644.73	-595.66	9,662.95	1.27	-0.63	-1.11
17,189.00	91.76	3.75	7,715.36	9,738.52	-589.73	9,756.26	1.30	1.27	0.28
Final Phoenix MWD Survey									
17,255.00	91.76	3.75	7,713.34	9,804.35	-585.41	9,821.74	0.00	0.00	0.00
Projection to TD									



# Phoenix Technology Services LP

## Survey Report



<b>Company:</b>	PT Petroleum LLC	<b>Local Co-ordinate Reference:</b>	Well 1042A
<b>Project:</b>	Reagan County, TX (NAD83 TC)	<b>TVD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Site:</b>	University Orange	<b>MD Reference:</b>	GL + KB @ 2795.00usft (Precision 312)
<b>Well:</b>	1042A	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH / Job #61364	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Precision 312)	<b>Database:</b>	Compass 5000 GCR

### Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,180.00	1,179.98	-1.11	2.64	Tie In
1,332.00	1,331.97	0.15	3.85	First Phoenix MWD Survey
7,283.59	7,199.46	16.32	-795.69	FTP HL Crossing
17,189.00	7,715.36	9,738.52	-589.73	Final Phoenix MWD Survey
17,255.00	7,713.34	9,804.35	-585.41	Projection to TD

# SURVEY DATA CERTIFICATION



**PHOENIX**  
TECHNOLOGY SERVICES

Job #: 61364  
 Client: PT Petroleum  
 County & State: Reagan Co, Tx  
 Well: University Orange 1042A  
 API No: 42-383-39859  
 Proposed Direction: 356.79

## TIE-IN DATA

MD	TVD	INC	AZM	N/-S	E/-W	DATA SOURCE
1180.00	1179.98	0.70	23.60	1.11 S	2.64 E	Gyro
Data Source Company:						TRUEshot LLC

## SURVEY DATA

First Survey Date	First Survey Depth	INC	AZM
12-Jun-17	1,332 ft	0.70°	63.98°

Last Survey Date	Last Survey Depth	INC	AZM
20-Jun-17	17,189 ft	91.76°	3.75°

Survey Instrument Type
Phoenix MWD

Projected TD Survey Date	Projected TD Survey Depth	INC	AZM
20-Jun-17	17,255 ft	91.76°	3.75°

## CORRECTION INFORMATION

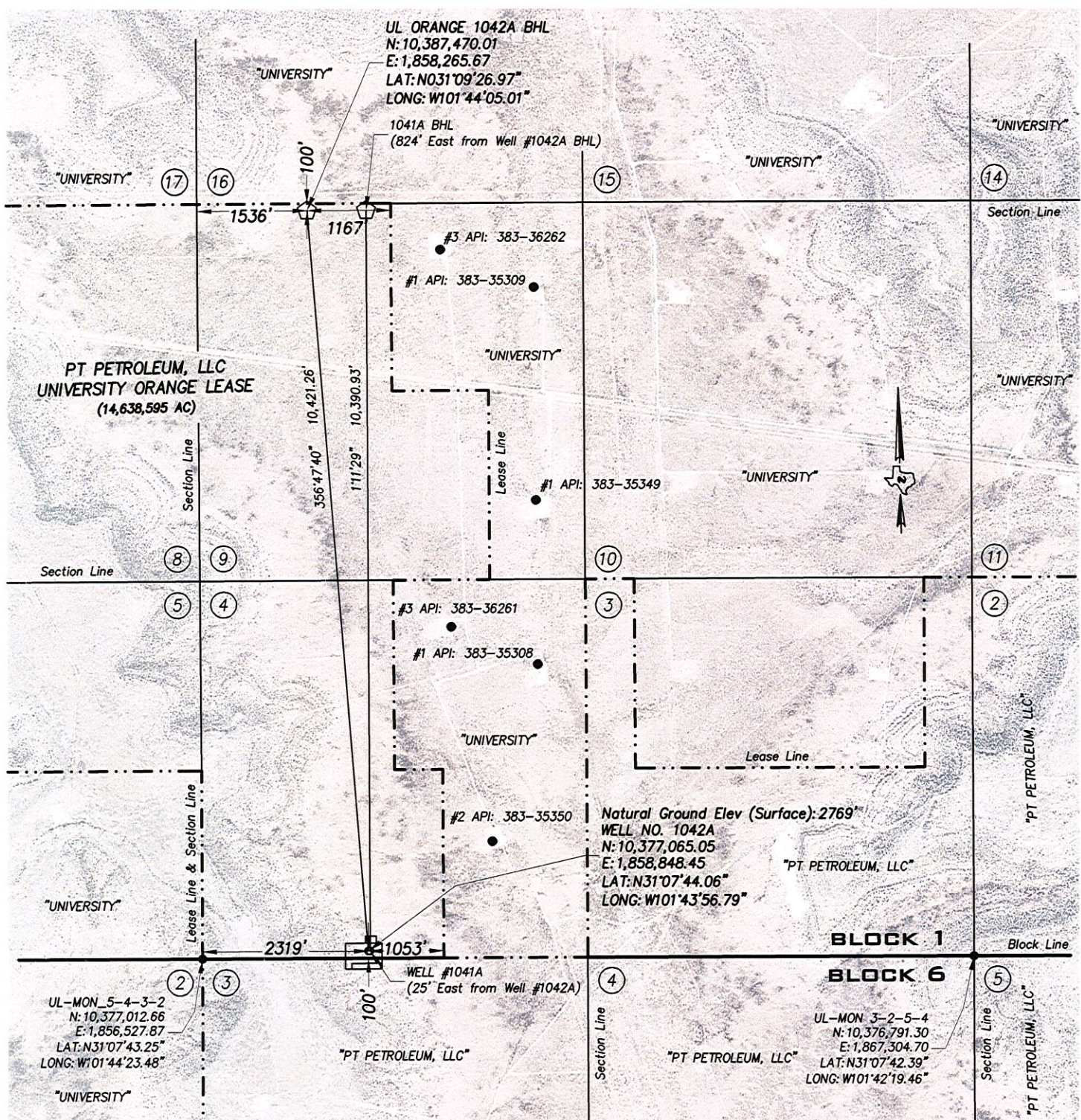
Magnetic Declination Used	6.18 degrees
Grid Convergence Used	-0.72 degrees
Total Correction	6.90 degrees

Corrected to True/Grid North
Grid

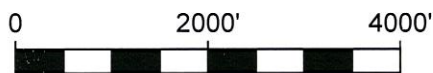
TO THE BEST OF MY KNOWLEDGE, I  
 CERTIFY THIS SURVEY DATA TO BE  
 TRUE AND CORRECT.

Piers Duffy  
 Signature

June 20, 2017  
 Date



GRAPHIC SCALE



( IN FEET )  
1 inch = 2000 ft.

THE UNDERSIGNED DOES HEREBY CERTIFY THAT THIS LOCATION WAS THIS DAY MADE ON THE GROUND BY ME OR UNDER MY SUPERVISION AND THAT THIS PLAT IS A CORRECT REPRESENTATION THEREOF.

DATED THIS 10th DAY OF APRIL, 2017

RJ DAUM  
TEXAS RPLS 4826



SCHUMANN ENGINEERING CO., INC.  
REGISTERED PROFESSIONAL LAND SURVEYORS      REGISTERED PROFESSIONAL CIVIL ENGINEERS  
Civil Engineering ~ Land Surveying  
TEXAS FIRM No. F1880      TEXAS FIRM No. 10149500  
408 N. PECOS STREET - P. O. BOX 504      Office (432) 684-5548  
MIDLAND, TEXAS 79702-0504      Fax (432) 684-6973

NOTE:

COURSES, DISTANCES AND COORDINATES SHOWN HEREON ARE LAMBERT GRID AND CONFORM TO THE "TEXAS COORDINATE SYSTEM", TEXAS CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983. ALL DISTANCES AND COORDINATES ARE SHOWN IN GRID FEET.

ELEVATION IS NAVD 88.

THIS WELL IS TO BE LOCATED 14.1 MILES IN A SOUTHEAST DIRECTION FROM RANKIN WHICH IS THE NEAREST TOWN IN THE COUNTY OF THE WELL SITE.

LOCATION PLAT

PT PETROLEUM LLC

WELL NO. 1042A  
UNIVERSITY ORANGE LEASE  
SURFACE LOCATION:

100 FEET FROM THE SOUTH LINE AND  
2319 FEET FROM THE WEST LINE  
SECTION 4, A-U4, BLOCK 1  
UNIVERSITY LAND SURVEY  
BOTTOM HOLE LOCATION:  
100 FEET FROM THE NORTH LINE AND  
1536 FEET FROM THE EAST LINE  
SECTION 9, A-U9, BLOCK 1  
UNIVERSITY LAND SURVEY

REAGAN COUNTY, TEXAS

QUAD: TEXON  
SCALE: 1" = 2000'

PROJECT: 75578PTP  
JOB NO: 75,578B R-0