



# **SWEPI**

**Loving County, Texas (NAD27 - TC)  
University 19 TG Unit  
1308H ST01  
42301352180100  
ST01 / 67705**

**Survey: Phoenix MWD Surveys**

## **Standard Survey Report**

**29 June, 2021**



<b>Company:</b>	SWEPI	<b>Local Co-ordinate Reference:</b>	Well 1308H
<b>Project:</b>	Loving County, Texas (NAD27 - TC)	<b>TVD Reference:</b>	RKB @ 2839.60usft (Nabors X05)
<b>Site:</b>	University 19 TG Unit	<b>MD Reference:</b>	RKB @ 2839.60usft (Nabors X05)
<b>Well:</b>	1308H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01 / 67705	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Nabors X05)	<b>Database:</b>	USA Compass

<b>Project</b>	Loving County, Texas (NAD27 - TC), Loving, Texas		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Texas Central 4203		

<b>Site</b>	University 19 TG Unit		
<b>Site Position:</b>		<b>Northing:</b>	737,883.55 usft
<b>From:</b>	Map	<b>Easting:</b>	1,047,489.21 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	31° 39' 34.128273 N
		<b>Longitude:</b>	103° 23' 42.038789 W
		<b>Grid Convergence:</b>	-1.58 °

<b>Well</b>	1308H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b> 753,208.37 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b> 1,048,718.30 usft
<b>Position Uncertainty</b>	1.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	31° 42' 6.072436 N
		<b>Longitude:</b>	103° 23' 32.698791 W
		<b>Ground Level:</b>	2,807.60 usft

<b>Wellbore</b>	ST01 / 67705		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IFR	4/14/2021	6.75
			<b>Dip Angle (°)</b> 59.36
			<b>Field Strength (nT)</b> 47,217.80000000

<b>Design</b>	Surveys (Nabors X05)		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	14,189.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b> 161.77

<b>Survey Program</b>	<b>Date</b>	6/29/2021		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
200.00	14,189.00	Phoenix MWD Surveys (OH / 67705)	PTW MWD+IFR+AXIAL	MWD+IFR1+Axial Correction
14,279.00	22,283.00	Phoenix MWD Surveys (ST01 / 67705)	PTW MWD+IFR+AXIAL	MWD+IFR1+Axial Correction

<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>
14,189.00	89.04	159.89	11,671.18	-2,053.27	883.14	2,226.49	0.00	0.00	0.00
<b>Tie In - ST01</b>									
14,279.00	88.79	159.17	11,672.88	-2,137.57	914.61	2,316.40	0.85	-0.28	-0.80
<b>First Phoenix MWD Survey - ST01</b>									
14,370.00	87.37	154.49	11,675.93	-2,221.16	950.39	2,406.98	5.37	-1.56	-5.14
14,460.00	91.62	157.81	11,676.72	-2,303.44	986.76	2,496.52	5.99	4.72	3.69
14,550.00	90.78	155.23	11,674.84	-2,385.96	1,022.61	2,586.11	3.01	-0.93	-2.87
14,641.00	91.37	153.36	11,673.13	-2,467.94	1,062.07	2,676.32	2.15	0.65	-2.05
14,732.00	92.09	153.67	11,670.38	-2,549.35	1,102.63	2,766.33	0.86	0.79	0.34

<b>Company:</b>	SWEPI	<b>Local Co-ordinate Reference:</b>	Well 1308H
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<b>Site:</b>	University 19 TG Unit	<b>MD Reference:</b>	RKB @ 2839.60usft (Nabors X05)
<b>Well:</b>	1308H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	ST01 / 67705	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Nabors X05)	<b>Database:</b>	USA Compass

## 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)
14,822.00	92.99	157.78	11,666.39	-2,631.30	1,139.59	2,855.72	4.67	1.00	4.57
14,913.00	92.97	157.62	11,661.66	-2,715.38	1,174.07	2,946.37	0.18	-0.02	-0.18
15,003.00	89.82	159.86	11,659.47	-2,799.21	1,206.69	3,036.20	4.29	-3.50	2.49
15,093.00	90.63	159.62	11,659.12	-2,883.64	1,237.86	3,126.14	0.94	0.90	-0.27
15,184.00	91.53	162.53	11,657.40	-2,969.70	1,267.36	3,217.11	3.35	0.99	3.20
15,274.00	93.29	163.16	11,653.62	-3,055.61	1,293.88	3,307.01	2.08	1.96	0.70
15,365.00	92.80	162.44	11,648.78	-3,142.42	1,320.76	3,397.87	0.96	-0.54	-0.79
15,455.00	89.04	161.65	11,647.34	-3,228.01	1,348.49	3,487.84	4.27	-4.18	-0.88
15,546.00	90.41	164.54	11,647.78	-3,315.06	1,374.95	3,578.80	3.51	1.51	3.18
15,636.00	89.33	165.61	11,647.98	-3,402.02	1,398.13	3,668.65	1.69	-1.20	1.19
15,726.00	89.98	167.92	11,648.52	-3,489.63	1,418.73	3,758.30	2.67	0.72	2.57
15,817.00	89.48	169.64	11,648.95	-3,578.88	1,436.44	3,848.61	1.97	-0.55	1.89
15,907.00	88.51	165.20	11,650.53	-3,666.69	1,456.03	3,938.14	5.05	-1.08	-4.93
15,998.00	90.09	164.82	11,651.64	-3,754.58	1,479.56	4,028.98	1.79	1.74	-0.42
16,088.00	90.79	166.37	11,650.95	-3,841.74	1,501.95	4,118.78	1.89	0.78	1.72
16,178.00	88.40	163.95	11,651.59	-3,928.73	1,525.00	4,208.60	3.78	-2.66	-2.69
16,269.00	88.54	162.32	11,654.02	-4,015.78	1,551.39	4,299.54	1.80	0.15	-1.79
16,360.00	87.51	161.49	11,657.15	-4,102.23	1,579.64	4,390.49	1.45	-1.13	-0.91
16,450.00	88.79	162.53	11,660.06	-4,187.78	1,607.42	4,480.43	1.83	1.42	1.16
16,541.00	91.81	162.94	11,659.58	-4,274.67	1,634.42	4,571.41	3.35	3.32	0.45
16,631.00	89.48	160.58	11,658.57	-4,360.13	1,662.59	4,661.39	3.68	-2.59	-2.62
16,722.00	89.84	161.24	11,659.11	-4,446.12	1,692.35	4,752.38	0.83	0.40	0.73
16,812.00	90.59	162.77	11,658.77	-4,531.71	1,720.15	4,842.37	1.89	0.83	1.70
16,903.00	89.95	162.41	11,658.34	-4,618.54	1,747.38	4,933.36	0.81	-0.70	-0.40
16,994.00	90.32	162.90	11,658.13	-4,705.40	1,774.51	5,024.35	0.67	0.41	0.54
17,084.00	89.30	159.32	11,658.43	-4,790.54	1,803.64	5,114.33	4.14	-1.13	-3.98
17,175.00	89.01	159.34	11,659.77	-4,875.68	1,835.76	5,205.24	0.32	-0.32	0.02
17,265.00	88.88	159.63	11,661.43	-4,959.95	1,867.29	5,295.15	0.35	-0.14	0.32
17,356.00	89.99	161.30	11,662.32	-5,045.71	1,897.72	5,386.12	2.20	1.22	1.84
17,446.00	92.40	162.97	11,660.45	-5,131.34	1,925.32	5,476.09	3.26	2.68	1.86
17,537.00	91.53	161.38	11,657.33	-5,217.92	1,953.16	5,567.03	1.99	-0.96	-1.75
17,628.00	91.90	160.99	11,654.60	-5,304.01	1,982.49	5,657.98	0.59	0.41	-0.43
17,718.00	90.38	163.09	11,652.81	-5,389.60	2,010.24	5,747.95	2.88	-1.69	2.33
17,809.00	90.09	164.12	11,652.44	-5,476.90	2,035.92	5,838.91	1.18	-0.32	1.13
17,899.00	90.73	168.98	11,651.79	-5,564.40	2,056.85	5,928.56	5.45	0.71	5.40
17,990.00	90.13	169.42	11,651.11	-5,653.79	2,073.90	6,018.80	0.82	-0.66	0.48
18,080.00	89.48	166.42	11,651.42	-5,741.79	2,092.73	6,108.27	3.41	-0.72	-3.33
18,171.00	86.77	159.48	11,654.40	-5,828.68	2,119.38	6,199.13	8.18	-2.98	-7.63
18,261.00	88.71	159.17	11,657.95	-5,912.81	2,151.13	6,288.98	2.18	2.16	-0.34
18,352.00	90.65	160.42	11,658.46	-5,998.21	2,182.55	6,379.92	2.54	2.13	1.37
18,442.00	92.32	160.35	11,656.12	-6,082.95	2,212.76	6,469.86	1.86	1.86	-0.08
18,533.00	90.98	162.33	11,653.50	-6,169.13	2,241.86	6,560.81	2.63	-1.47	2.18
18,624.00	89.95	163.80	11,652.76	-6,256.17	2,268.36	6,651.78	1.97	-1.13	1.62

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## Survey

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18,714.00	89.78	163.58	11,652.98	-6,342.55	2,293.64	6,741.73	0.31	-0.19	-0.24
18,805.00	90.27	165.13	11,652.94	-6,430.18	2,318.18	6,832.63	1.79	0.54	1.70
18,895.00	90.69	162.50	11,652.18	-6,516.60	2,343.26	6,922.57	2.96	0.47	-2.92
19,076.00	91.16	161.30	11,649.26	-6,688.62	2,399.48	7,103.54	0.71	0.26	-0.66
19,256.00	88.67	158.08	11,649.53	-6,857.39	2,461.95	7,283.38	2.26	-1.38	-1.79
19,347.00	88.40	158.04	11,651.85	-6,941.77	2,495.94	7,374.16	0.30	-0.30	-0.04
19,438.00	89.28	159.14	11,653.70	-7,026.47	2,529.15	7,465.00	1.55	0.97	1.21
19,528.00	91.79	164.77	11,652.85	-7,112.00	2,557.01	7,554.95	6.85	2.79	6.26
19,618.00	92.04	165.80	11,649.85	-7,199.00	2,579.86	7,644.73	1.18	0.28	1.14
19,709.00	90.61	165.44	11,647.74	-7,287.12	2,602.46	7,735.50	1.62	-1.57	-0.40
19,800.00	89.64	165.85	11,647.54	-7,375.28	2,625.02	7,826.29	1.16	-1.07	0.45
19,890.00	89.96	167.76	11,647.86	-7,462.90	2,645.56	7,915.94	2.15	0.36	2.12
19,980.00	89.84	170.03	11,648.02	-7,551.21	2,662.89	8,005.24	2.53	-0.13	2.52
20,071.00	89.02	168.07	11,648.92	-7,640.54	2,680.18	8,095.49	2.33	-0.90	-2.15
20,161.00	89.30	167.74	11,650.24	-7,728.53	2,699.03	8,184.97	0.48	0.31	-0.37
20,252.00	90.47	163.73	11,650.42	-7,816.71	2,721.45	8,275.73	4.59	1.29	-4.41
20,342.00	91.06	163.05	11,649.22	-7,902.94	2,747.17	8,365.69	1.00	0.66	-0.76
20,433.00	90.56	162.56	11,647.94	-7,989.87	2,774.07	8,456.66	0.77	-0.55	-0.54
20,523.00	89.95	159.59	11,647.53	-8,074.99	2,803.26	8,546.64	3.37	-0.68	-3.30
20,614.00	91.01	162.83	11,646.77	-8,161.13	2,832.57	8,637.62	3.75	1.16	3.56
20,704.00	91.12	162.32	11,645.10	-8,246.98	2,859.51	8,727.60	0.58	0.12	-0.57
20,795.00	90.21	162.41	11,644.04	-8,333.70	2,887.08	8,818.59	1.00	-1.00	0.10
20,885.00	86.45	163.01	11,646.67	-8,419.58	2,913.81	8,908.52	4.23	-4.18	0.67
20,976.00	85.38	162.70	11,653.15	-8,506.31	2,940.57	8,999.27	1.22	-1.18	-0.34
21,066.00	89.71	166.16	11,657.00	-8,592.90	2,964.69	9,089.05	6.16	4.81	3.84
21,157.00	91.32	167.58	11,656.19	-8,681.51	2,985.36	9,179.69	2.36	1.77	1.56
21,247.00	91.73	168.25	11,653.79	-8,769.48	3,004.20	9,269.14	0.87	0.46	0.74
21,338.00	91.91	167.32	11,650.90	-8,858.38	3,023.44	9,359.59	1.04	0.20	-1.02
21,519.00	90.78	170.10	11,646.65	-9,035.81	3,058.86	9,539.19	1.66	-0.62	1.54
21,609.00	91.04	173.45	11,645.22	-9,124.86	3,071.73	9,627.80	3.73	0.29	3.72
21,700.00	89.58	169.21	11,644.73	-9,214.79	3,085.45	9,717.51	4.93	-1.60	-4.66
21,790.00	91.30	168.67	11,644.04	-9,303.11	3,102.71	9,806.80	2.00	1.91	-0.60
21,881.00	89.45	164.90	11,643.44	-9,391.68	3,123.51	9,897.43	4.61	-2.03	-4.14
21,971.00	89.30	164.65	11,644.42	-9,478.52	3,147.14	9,987.30	0.32	-0.17	-0.28
22,062.00	89.16	165.33	11,645.65	-9,566.41	3,170.71	10,078.15	0.76	-0.15	0.75
22,152.00	89.53	166.19	11,646.68	-9,653.63	3,192.84	10,167.93	1.04	0.41	0.96
22,225.00	91.04	167.85	11,646.31	-9,724.76	3,209.24	10,240.61	3.07	2.07	2.27
<b>Final Phoenix MWD Survey - ST01</b>									
22,283.00	91.04	167.85	11,645.26	-9,781.45	3,221.45	10,298.28	0.00	0.00	0.00
<b>Projection to TD - ST01</b>									



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<b>Design:</b>	Surveys (Nabors X05)	<b>Database:</b>	USA Compass

## Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,189.00	11,671.18	-2,053.27	883.14	Tie In - ST01
14,279.00	11,672.88	-2,137.57	914.61	First Phoenix MWD Survey - ST01
22,225.00	11,646.31	-9,724.76	3,209.24	Final Phoenix MWD Survey - ST01
22,283.00	11,645.26	-9,781.45	3,221.45	Projection to TD - ST01