

API 47-103-03015

**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production- Middlesex**

**Wetzel County, WV**

**Wetzel County 515643**

**Well #515643**

**Main Wellbore**

**Design: 515643 As Drilled Surveys**

## **Standard Survey Report**

**14 July, 2015**

RECEIVED  
Office of Oil and  
JUN 27 2016  
WV Department  
Environmental Pro

10/28/2016



# Phoenix Technology Services

## Survey Report

<b>Database:</b> PHX+OWSG MWD + HDGM <b>Company:</b> PHX Technology Services <b>Project:</b> PHX+OWSG MWD <b>Site:</b> PHX+OWSG MWD <b>Well:</b> PHX+OWSG MWD <b>Wellbore:</b> PHX+OWSG MWD <b>Design:</b> PHX+OWSG MWD	<b>Local Co-ordinate Reference:</b> PHX+OWSG MWD <b>TVD Reference:</b> PHX+OWSG MWD <b>MD Reference:</b> PHX+OWSG MWD <b>North Reference:</b> PHX+OWSG MWD <b>Survey Calculation Method:</b> PHX+OWSG MWD	<b>PHX+OWSG MWD + HDGM</b> <b>PHX+OWSG MWD + HDGM</b> <b>PHX+OWSG MWD + HDGM</b> <b>PHX+OWSG MWD + HDGM</b> <b>PHX+OWSG MWD + HDGM</b>
---	---	--

<b>Project</b> PHX+OWSG MWD			
<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>	West Virginia North 4701		Using geodetic scale factor

<b>Site</b> PHX+OWSG MWD			
<b>Site Position:</b>		<b>Northing:</b>	386,682.01 usft
<b>From:</b>	Map	<b>Easting:</b>	1,695,476.91 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.56
		<b>Longitude:</b>	-80.58
		<b>Grid Convergence:</b>	-0.69 °

<b>Well</b> PHX+OWSG MWD			
<b>Well Position</b>	<b>+N/S</b>	0.0 usft	<b>Northing:</b> 386,682.01 usft
	<b>+E/W</b>	0.0 usft	<b>Easting:</b> 1,695,476.91 usft
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b> usft
			<b>Latitude:</b> 39° 33' 23.912 N
			<b>Longitude:</b> 80° 34' 48.211 W
			<b>Ground Level:</b> 1,443.0 usft

<b>Wellbore</b> PHX+OWSG MWD					
<b>Magnetics:</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	6/22/2015	-8.35	67.07	52,524

<b>Design</b> PHX+OWSG MWD					
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/S (usft)</b>	<b>+E/W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	152.90	

<b>Survey Program</b>		<b>Date</b>	7/14/2015		
<b>From (')</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	5,273.0	515643 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	15,506.0	515643 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	

<b>Survey</b> PHX+OWSG MWD										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-1,459.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.04	32.59	103.0	-1,356.0	0.0	0.0	0.0	0.04	0.04	0.00
203.0	0.05	66.08	203.0	-1,256.0	0.1	0.1	0.0	0.03	0.01	33.49
303.0	0.13	344.62	303.0	-1,156.0	0.2	0.1	-0.1	0.13	0.08	-81.46
403.0	0.28	2.96	403.0	-1,056.0	0.5	0.1	-0.4	0.14	0.13	18.34
503.0	0.46	36.24	503.0	-956.0	1.1	0.3	-0.8	0.28	0.20	33.28
603.0	0.51	44.17	603.0	-856.0	1.7	0.9	-1.1	0.08	0.05	7.93
703.0	0.54	49.81	703.0	-756.0	2.4	1.5	-1.4	0.06	0.03	5.64







# Phoenix Technology Services

## Survey Report

<b>Database:</b> <b>Company:</b> <b>Project:</b> <b>Site:</b> <b>Well:</b> <b>Wellbore:</b> <b>Design:</b>	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b>	
--	--	--

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,197.0	44.50	76.80	6,889.6	5,430.6	263.4	869.7	161.6	3.90	3.87	0.65
7,229.0	43.80	81.50	6,912.6	5,453.6	267.6	891.5	167.9	10.46	-2.19	14.69
7,261.0	44.00	88.20	6,935.7	5,476.7	269.6	913.6	176.1	14.53	0.63	20.94
7,292.0	43.40	92.40	6,958.1	5,499.1	269.5	935.0	186.0	9.56	-1.94	13.55
7,324.0	43.90	96.80	6,981.3	5,522.3	267.7	957.0	197.6	9.62	1.56	13.75
7,355.0	44.40	101.80	7,003.5	5,544.5	264.2	978.3	210.4	11.35	1.61	16.13
7,387.0	44.40	105.70	7,026.4	5,567.4	258.9	1,000.1	225.0	8.53	0.00	12.19
7,419.0	44.60	109.20	7,049.2	5,590.2	252.2	1,021.5	240.8	7.69	0.63	10.94
7,450.0	45.50	111.90	7,071.1	5,612.1	244.4	1,042.0	257.0	6.81	2.90	8.71
7,481.0	45.50	113.50	7,092.8	5,633.8	235.9	1,062.4	273.9	3.68	0.00	5.16
7,513.0	47.30	115.90	7,114.9	5,655.9	226.2	1,083.4	292.1	7.82	5.63	7.50
7,545.0	48.90	118.00	7,136.3	5,677.3	215.4	1,104.7	311.4	6.99	5.00	6.56
7,576.0	52.20	120.40	7,156.0	5,697.0	203.7	1,125.5	331.3	12.21	10.65	7.74
7,608.0	54.40	122.90	7,175.1	5,716.1	190.3	1,147.4	353.2	9.30	6.88	7.81
7,639.0	56.60	124.90	7,192.7	5,733.7	176.0	1,168.6	375.6	8.87	7.10	6.45
7,671.0	58.00	127.90	7,209.9	5,750.9	160.0	1,190.2	399.7	9.02	4.38	9.38
7,702.0	59.70	131.70	7,226.0	5,767.0	143.1	1,210.6	424.0	11.84	5.48	12.26
7,734.0	62.50	134.70	7,241.4	5,782.4	123.9	1,231.0	450.4	12.00	8.75	9.38
7,766.0	65.70	137.70	7,255.4	5,796.4	103.1	1,250.9	478.0	13.08	10.00	9.38
7,797.0	67.80	140.30	7,267.7	5,808.7	81.6	1,269.6	505.6	10.26	6.77	8.39
7,829.0	69.10	143.10	7,279.4	5,820.4	58.3	1,288.1	534.8	9.10	4.06	8.75
7,860.0	72.10	146.00	7,289.7	5,830.7	34.4	1,305.0	563.7	13.10	9.68	9.35
7,892.0	74.00	148.20	7,299.0	5,840.0	8.7	1,321.6	594.2	8.86	5.94	6.88
7,923.0	75.90	150.80	7,307.1	5,848.1	-17.1	1,336.8	624.1	10.16	6.13	8.39
7,955.0	78.50	152.50	7,314.2	5,855.2	-44.5	1,351.6	655.3	9.64	8.13	5.31
7,986.0	81.50	154.30	7,319.6	5,860.6	-71.8	1,365.3	685.8	11.24	9.68	5.81
8,018.0	83.60	156.30	7,323.7	5,864.7	-100.6	1,378.5	717.5	9.03	6.56	6.25
8,049.0	84.70	158.50	7,326.9	5,867.9	-129.1	1,390.4	748.2	7.90	3.55	7.10
UNCORRECTED										
8,077.0	86.89	160.16	7,328.9	5,869.9	-155.2	1,400.2	776.0	9.80	7.81	5.94
8,081.0	87.20	160.40	7,329.1	5,870.1	-159.0	1,401.6	779.9	9.80	7.82	5.92
8,112.0	88.90	161.40	7,330.2	5,871.2	-188.3	1,411.7	810.6	6.36	5.48	3.23
CORRECTED										
8,164.0	89.20	163.90	7,331.1	5,872.1	-237.9	1,427.2	861.9	4.84	0.56	4.81
8,227.0	89.40	164.80	7,331.8	5,872.8	-298.5	1,444.2	923.6	1.46	0.32	1.43
8,290.0	87.80	163.50	7,333.4	5,874.4	-359.1	1,461.4	985.1	0.27	2.54	-2.06
8,354.0	87.80	162.10	7,335.8	5,876.8	-420.2	1,480.3	1,048.4	2.19	0.00	-2.19
8,417.0	87.60	161.70	7,338.4	5,879.4	-480.1	1,499.9	1,110.5	0.35	0.32	-0.63
8,480.0	87.70	161.50	7,340.9	5,881.9	-539.8	1,519.8	1,172.8	0.35	0.16	-0.32
8,543.0	87.70	161.30	7,343.5	5,884.5	-599.4	1,539.9	1,235.0	0.32	0.00	-0.82
8,606.0	88.80	161.70	7,345.4	5,886.4	-659.2	1,559.8	1,297.3	1.66	1.75	0.41
8,669.0	89.60	161.80	7,346.3	5,887.3	-719.0	1,579.6	1,359.6	1.28	1.27	0.16
8,732.0	90.30	161.10	7,346.3	5,887.3	-778.7	1,599.6	1,421.8	1.57	1.11	-1.11

RECEIVED  
 Office of Oil and Gas  
 JUN 27 2016  
 WV Department of  
 Environmental Protection



# Phoenix Technology Services

## Survey Report

<b>Database:</b> <b>Company:</b> <b>Project:</b> <b>Site:</b> <b>Well:</b> <b>Wellbore:</b> <b>Design:</b>	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b>	
--	--	--

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,795.0	90.20	160.40	7,346.0	5,887.0	-838.2	1,820.4	1,484.2	1.12	-0.16	-1.11
8,842.4	89.90	160.10	7,346.0	5,887.0	-882.8	1,636.4	1,531.3	0.90	-0.63	-0.63
8,858.0	89.80	160.00	7,346.0	5,887.0	-897.5	1,641.7	1,546.7	0.90	-0.63	-0.63
8,921.0	89.70	159.60	7,346.3	5,887.3	-956.6	1,663.5	1,609.3	0.65	-0.16	-0.63
8,984.0	89.60	160.20	7,346.7	5,887.7	-1,015.8	1,685.1	1,671.8	0.97	-0.16	0.95
9,048.0	89.30	161.20	7,347.3	5,888.3	-1,076.2	1,706.3	1,735.2	1.63	-0.47	1.56
9,111.0	89.70	162.70	7,347.9	5,888.9	-1,136.0	1,725.8	1,797.4	2.46	0.63	2.38
9,174.0	89.00	163.60	7,346.6	5,889.6	-1,196.3	1,744.0	1,859.4	1.81	-1.11	1.43
9,237.0	89.80	162.80	7,349.2	5,890.2	-1,256.6	1,762.3	1,921.4	1.80	1.27	-1.27
9,300.0	90.50	162.60	7,349.1	5,890.1	-1,316.8	1,781.0	1,983.5	1.16	1.11	-0.32
9,363.0	90.10	162.50	7,348.7	5,889.7	-1,376.9	1,799.9	2,045.6	0.65	-0.63	-0.16
9,426.0	89.50	161.20	7,348.0	5,890.0	-1,436.8	1,819.5	2,107.8	2.27	-0.95	-2.06
9,489.0	89.50	158.70	7,349.5	5,890.5	-1,495.9	1,841.1	2,170.3	3.97	0.00	-3.97
9,552.0	89.40	158.70	7,350.1	5,891.1	-1,554.6	1,864.0	2,233.0	0.16	-0.16	0.00
9,615.0	90.20	160.70	7,350.3	5,891.3	-1,613.7	1,885.8	2,295.6	3.42	1.27	3.17
9,678.0	89.90	162.10	7,350.3	5,891.3	-1,673.4	1,905.9	2,357.9	2.27	-0.48	2.22
9,741.0	89.70	164.80	7,350.5	5,891.5	-1,733.8	1,923.9	2,419.8	4.30	-0.32	4.29
9,804.0	89.40	165.70	7,351.0	5,892.0	-1,794.7	1,939.9	2,481.3	1.51	-0.48	1.43
9,867.0	88.40	163.50	7,352.2	5,893.2	-1,855.4	1,956.6	2,543.0	3.84	-1.59	-3.49
9,931.0	88.10	164.10	7,354.2	5,895.2	-1,916.9	1,974.5	2,605.8	1.05	-0.47	0.94
9,994.0	89.00	163.60	7,355.8	5,896.8	-1,977.4	1,992.0	2,667.7	1.63	1.43	-0.79
10,056.0	89.00	161.20	7,356.8	5,897.8	-2,036.5	2,010.7	2,728.8	3.87	0.00	-3.87
10,120.0	89.40	163.00	7,357.7	5,898.7	-2,097.3	2,030.4	2,792.0	2.88	0.63	2.81
10,183.0	89.30	163.60	7,358.5	5,899.5	-2,157.7	2,048.5	2,853.9	0.97	-0.16	0.95
10,246.0	88.70	163.60	7,359.6	5,900.6	-2,218.1	2,066.3	2,915.8	0.95	-0.95	0.00
10,309.0	88.70	165.70	7,361.0	5,902.0	-2,278.8	2,083.0	2,977.5	3.33	0.00	3.33
10,372.0	88.60	163.40	7,362.5	5,903.5	-2,339.5	2,099.8	3,039.2	3.65	-0.16	-3.65
10,435.0	88.90	161.10	7,363.8	5,904.8	-2,399.5	2,119.0	3,101.3	3.68	0.48	-3.65
10,498.0	89.20	158.90	7,364.9	5,905.9	-2,458.7	2,140.5	3,163.8	3.52	0.48	-3.49
10,561.0	89.90	158.60	7,365.4	5,906.4	-2,517.4	2,163.3	3,226.5	1.21	1.11	-0.48
10,624.0	89.60	159.90	7,365.7	5,906.7	-2,576.3	2,185.6	3,289.1	2.12	-0.48	2.06
10,687.0	89.20	160.30	7,366.3	5,907.3	-2,635.6	2,207.1	3,351.6	0.90	-0.63	0.63
10,751.0	88.70	159.40	7,367.5	5,908.5	-2,695.6	2,229.1	3,415.1	1.61	-0.79	1.41
10,814.0	89.00	160.60	7,368.8	5,909.8	-2,754.8	2,250.7	3,477.6	1.96	0.48	1.90
10,877.0	89.50	161.10	7,369.6	5,910.6	-2,814.3	2,271.3	3,540.0	3.97	0.16	3.97
10,940.0	89.60	163.60	7,370.1	5,911.1	-2,874.4	2,290.4	3,602.1	0.61	0.16	0.63
11,004.0	89.50	164.00	7,370.6	5,911.6	-2,935.8	2,308.3	3,665.0	3.51	-0.32	-3.49
11,067.0	89.30	161.80	7,371.2	5,912.2	-2,996.0	2,326.8	3,727.0	3.69	1.59	3.33
11,130.0	90.30	160.70	7,371.5	5,912.5	-3,055.7	2,347.1	3,789.4	3.69	1.59	3.33
11,193.0	91.30	162.80	7,370.6	5,911.6	-3,115.5	2,368.8	3,851.6	3.69	1.59	3.33
11,256.0	91.00	162.50	7,369.3	5,910.3	-3,175.6	2,385.6	3,913.7	4.02	-0.48	-0.48
11,319.0	88.50	162.10	7,369.6	5,910.6	-3,235.6	2,404.7	3,975.8	4.02	-3.97	-0.63

RECEIVED  
 Office of Oil and Gas  
 JUN 27 2016  
 WV Department of Environmental Protection



# Phoenix Technology Services

## Survey Report

<b>Database:</b> <b>Company:</b> <b>Project:</b> <b>Site:</b> <b>Well:</b> <b>Wellbore:</b> <b>Design:</b>	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b>	
--	--	--

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,382.0	88.60	163.40	7,371.2	5,912.2	-3,295.8	2,423.4	4,037.9	2.07	0.16	2.06
11,445.0	88.30	165.00	7,372.9	5,913.9	-3,356.4	2,440.6	4,099.6	2.58	-0.48	2.54
11,509.0	90.40	165.80	7,373.6	5,914.6	-3,418.3	2,456.7	4,162.1	3.51	3.28	1.25
11,572.0	89.50	165.90	7,373.7	5,914.7	-3,479.4	2,472.1	4,223.5	1.44	-1.43	0.16
11,635.0	88.80	166.30	7,374.6	5,915.6	-3,540.5	2,487.2	4,284.8	1.28	-1.11	0.63
11,698.0	89.60	166.40	7,375.5	5,916.5	-3,601.8	2,502.1	4,346.1	1.28	1.27	0.16
11,761.0	89.80	164.30	7,375.8	5,916.8	-3,662.7	2,518.0	4,407.6	3.35	0.32	-3.33
11,824.0	89.20	161.50	7,376.4	5,917.4	-3,722.9	2,536.5	4,469.7	4.55	-0.95	-4.44
11,887.0	89.30	161.30	7,377.2	5,918.2	-3,782.6	2,556.6	4,532.0	0.35	0.16	-0.32
11,950.0	89.30	162.90	7,378.0	5,919.0	-3,842.6	2,576.0	4,594.1	2.54	0.00	2.54
12,014.0	88.70	161.80	7,379.1	5,920.1	-3,903.5	2,595.4	4,657.3	1.96	-0.94	-1.72
12,077.0	88.40	161.20	7,380.7	5,921.7	-3,963.3	2,615.4	4,719.5	1.06	-0.48	-0.96
12,140.0	88.20	160.80	7,382.5	5,923.5	-4,022.8	2,635.9	4,781.9	0.71	-0.32	-0.63
12,203.0	86.40	161.20	7,384.4	5,925.4	-4,082.4	2,656.4	4,844.2	0.71	0.32	0.63
12,265.0	88.70	161.40	7,386.0	5,927.0	-4,141.1	2,676.3	4,905.5	0.58	0.48	0.32
12,328.0	89.80	161.10	7,386.8	5,927.8	-4,200.7	2,696.5	4,967.9	1.81	1.75	-0.48
12,391.0	90.50	160.70	7,386.6	5,927.6	-4,260.2	2,717.1	5,030.3	1.28	1.11	-0.63
12,454.0	90.20	160.20	7,386.2	5,927.2	-4,319.6	2,738.2	5,092.7	0.93	-0.48	-0.79
12,518.0	89.20	159.90	7,386.6	5,927.6	-4,379.8	2,760.0	5,156.2	1.63	-1.56	-0.47
12,580.0	89.20	158.40	7,387.4	5,928.4	-4,437.7	2,782.1	5,217.8	2.42	0.00	-2.42
12,644.0	89.40	160.20	7,388.2	5,929.2	-4,497.6	2,804.7	5,281.4	2.83	0.31	2.81
12,706.0	89.60	162.80	7,388.8	5,929.8	-4,556.3	2,824.4	5,342.7	4.21	0.32	4.19
12,770.0	89.40	161.70	7,389.3	5,930.3	-4,617.3	2,843.9	5,405.9	1.75	-0.31	-1.72
12,833.0	89.60	159.20	7,389.9	5,930.9	-4,676.7	2,865.0	5,468.3	3.98	0.32	-3.97
12,896.0	89.90	159.20	7,390.2	5,931.2	-4,735.6	2,887.3	5,530.9	0.48	0.48	0.00
12,959.0	90.40	161.40	7,390.0	5,931.0	-4,794.9	2,908.6	5,593.4	3.58	0.79	3.49
13,022.0	90.20	160.60	7,389.7	5,930.7	-4,854.4	2,929.1	5,655.8	1.31	-0.32	-1.27
13,085.0	89.80	161.90	7,389.7	5,930.7	-4,914.1	2,949.3	5,718.1	2.16	-0.63	2.06
13,148.0	89.50	162.10	7,390.0	5,931.0	-4,974.0	2,968.8	5,780.3	0.57	-0.48	0.32
13,211.0	89.50	164.10	7,390.6	5,931.6	-5,034.3	2,987.1	5,842.3	3.17	0.00	3.17
13,274.0	88.80	162.60	7,391.5	5,932.5	-5,094.6	3,005.2	5,904.3	2.63	-1.11	-2.38
13,337.0	88.60	163.60	7,393.0	5,934.0	-5,154.9	3,023.5	5,966.2	1.62	-0.32	1.59
13,400.0	88.00	163.50	7,394.8	5,935.8	-5,215.3	3,041.3	6,028.1	0.97	-0.95	-0.16
13,463.0	88.60	162.70	7,396.7	5,937.7	-5,275.5	3,059.6	6,090.1	1.59	0.95	-1.27
13,526.0	89.80	163.10	7,397.6	5,938.6	-5,335.7	3,078.1	6,152.2	2.01	1.90	0.63
13,589.0	89.60	164.10	7,397.9	5,938.9	-5,396.2	3,095.9	6,214.1	1.62	-0.32	1.59
13,652.0	89.70	164.00	7,398.3	5,939.3	-5,456.7	3,113.2	6,275.9	0.22	0.16	-0.16
13,715.0	89.80	162.10	7,398.6	5,939.6	-5,517.0	3,131.6	6,337.9	3.02	0.16	-3.02
13,778.0	89.90	160.30	7,398.7	5,939.7	-5,576.6	3,151.9	6,400.2	2.86	0.16	-2.86
13,841.0	90.00	158.50	7,398.8	5,939.8	-5,635.6	3,174.1	6,462.8	2.86	0.16	-2.86
13,904.0	89.50	159.00	7,399.1	5,940.1	-5,694.3	3,196.9	6,525.5	1.12	-0.79	0.79
13,967.0	89.20	158.60	7,399.8	5,940.8	-5,753.1	3,219.7	6,588.1	0.79	-0.48	-0.63



# Phoenix Technology Services

## Survey Report

<b>Database:</b> Phoenix Technology Services <b>Company:</b> Phoenix Technology Services <b>Project:</b> [Redacted] <b>Site:</b> [Redacted] <b>Well:</b> [Redacted] <b>Wellbore:</b> [Redacted] <b>Design:</b> [Redacted]	<b>Local Co-ordinate Reference:</b> [Redacted] <b>TVD Reference:</b> [Redacted] <b>MD Reference:</b> [Redacted] <b>North Reference:</b> [Redacted] <b>Survey Calculation Method:</b> [Redacted]	
---	---	--

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,031.0	90.50	158.50	7,399.9	5,940.9	-5,812.6	3,243.1	6,651.8	2.04	2.03	-0.16
14,094.0	91.50	159.80	7,398.8	5,939.8	-5,871.5	3,265.5	6,714.4	2.60	1.59	2.06
14,157.0	91.50	160.00	7,397.2	5,938.2	-5,930.6	3,287.2	6,777.0	0.32	0.00	0.32
14,220.0	91.60	161.80	7,395.5	5,936.5	-5,990.1	3,307.8	6,839.3	2.86	0.16	2.86
14,283.0	90.80	162.80	7,394.2	5,935.2	-6,050.1	3,326.9	6,901.5	2.03	-1.27	1.59
14,346.0	90.30	163.00	7,393.6	5,934.6	-6,110.4	3,345.4	6,963.5	0.85	-0.79	0.32
14,409.0	89.50	160.50	7,393.7	5,934.7	-6,170.2	3,365.2	7,025.7	4.17	-1.27	-3.97
14,473.0	89.50	161.20	7,394.2	5,935.2	-6,230.6	3,386.2	7,089.1	1.09	0.00	1.09
14,536.0	89.90	164.60	7,394.6	5,935.6	-6,290.8	3,404.7	7,151.2	5.43	0.63	5.40
14,599.0	89.50	165.70	7,394.9	5,935.9	-6,351.7	3,420.8	7,212.7	1.86	-0.83	1.75
14,662.0	89.80	166.80	7,395.3	5,936.3	-6,412.9	3,435.8	7,274.0	1.81	0.48	1.75
14,725.0	88.80	166.00	7,396.0	5,937.0	-6,474.2	3,450.6	7,335.3	2.03	-1.59	-1.27
14,788.0	89.00	164.40	7,397.3	5,938.3	-6,535.1	3,466.7	7,396.8	2.56	0.32	-2.54
14,851.0	89.70	163.40	7,398.0	5,939.0	-6,595.6	3,484.2	7,458.7	1.94	1.11	-1.59
14,914.0	89.70	162.80	7,398.3	5,939.3	-6,655.9	3,502.5	7,520.7	0.95	0.00	-0.95
14,977.0	89.80	164.30	7,398.6	5,939.6	-6,716.3	3,520.3	7,582.6	2.39	0.16	2.38
15,040.0	89.10	164.50	7,399.2	5,940.2	-6,776.9	3,537.3	7,644.3	1.16	-1.11	0.32
15,103.0	88.10	162.40	7,400.7	5,941.7	-6,837.3	3,555.2	7,706.2	3.69	-1.59	-3.33
15,166.0	88.00	162.10	7,402.9	5,943.9	-6,897.3	3,574.4	7,768.3	0.50	-0.16	-0.48
15,229.0	87.70	162.30	7,405.2	5,946.2	-6,957.2	3,593.6	7,830.5	0.57	-0.48	0.32
15,292.0	87.60	162.00	7,407.8	5,948.8	-7,017.1	3,612.9	7,892.6	0.50	-0.16	-0.48
15,355.0	88.00	161.30	7,410.2	5,951.2	-7,076.9	3,632.8	7,954.8	1.28	0.63	-1.11
15,418.0	88.50	160.90	7,412.2	5,953.2	-7,136.5	3,653.2	8,017.2	1.02	0.79	-0.63
15,449.0	88.30	160.50	7,413.0	5,954.0	-7,165.7	3,663.4	8,047.9	1.44	-0.65	-1.29
15,499.0	88.30	160.50	7,414.5	5,955.5	-7,212.8	3,680.1	8,097.4	0.00	0.00	0.00
15,503.8	88.30	160.50	7,414.6	5,955.6	-7,217.4	3,681.7	8,102.2	0.00	0.00	0.00
15,506.0	88.30	160.50	7,414.7	5,955.7	-7,219.4	3,682.4	8,104.3	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,273.0	5,271.8	72.0	23.0	Gyro Tie On=5273' MD
8,164.0	7,331.1	-237.9	1,427.2	LP=8164' MD/7331' TVD
15,499.0	7,414.5	-7,212.8	3,680.1	Final Survey=15499' MD/7415' TVD
15,506.0	7,414.7	-7,219.4	3,682.4	PROJ to Bit/Deepest Point=15506' MD/7415' TVD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_





Project: Wetzel County, WV  
Site: Wetzel County 515643  
Well: Well #515643  
Wellbore: Main Wellbore  
Design: 515643 As Drilled Surveys

