

17-06291

**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production - Geneseo Shale**

Doddridge County, WV  
Doddridge County 514142  
Well #514142

514142 ST01

Design: As Drilled Surveys

## **Standard Survey Report**

02 December, 2013

Received  
JUL 31 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection



Where energy meets innovation.

09/05/2014

<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Well Well #514142	<div style="font-size: 2em; font-weight: bold; opacity: 0.5;">Received</div> <div style="font-size: 1.5em; font-weight: bold; margin-top: 10px;">JUL 31 2014</div>
<b>Company:</b>	EQT Production - Genesee Shale	<b>TVD Reference:</b>	KB @ 1277.0usft	
<b>Project:</b>	Doddridge County, WV	<b>MD Reference:</b>	KB @ 1277.0usft	
<b>Site:</b>	Doddridge County 514142	<b>North Reference:</b>	Grid	
<b>Well:</b>	Well #514142	<b>Survey Calculation Method:</b>	Minimum Curvature	
<b>Wellbore:</b>	514142 ST01			
<b>Design:</b>	As Drilled Surveys			

<b>Project</b>	Doddridge County, WV		Office of Oil and Gas WV Dept. of Environmental Protection
<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		

<b>Site</b>	Doddridge County 514142				
<b>Site Position:</b>		<b>Northing:</b>	280,262.70 usft	<b>Latitude:</b>	39.26
<b>From:</b>	Map	<b>Easting:</b>	1,649,373.40 usft	<b>Longitude:</b>	-80.74
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.79 "

<b>Well</b>	Well #514142					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	280,262.70 usft	<b>Latitude:</b>	39° 15' 46.267 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,649,373.40 usft	<b>Longitude:</b>	80° 44' 18.071 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,254.0 usft

<b>Wellbore</b>	514142 ST01				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010_14	11/24/2013	-8.48	66.84	52,343

<b>Design</b>	As Drilled Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9,284.0
<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	161.31	

<b>Survey Program</b>	<b>Date</b>	12/2/2013			
<b>From (l)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	5,360.0	514142 Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	9,284.0	514142 MWD (Main Wellbore)	MWD	MWD - Standard	
0.00	12,325.0	514142 ST01 MWD (514142 ST01)	MWD	MWD - Standard	

<b>Survey</b>											
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>Subsea 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>	
0.0	0.00	0.00	0.0	-1,277.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
110.0	0.10	9.30	110.0	-1,167.0	0.1	0.0	-0.1	0.09	0.09		0.00
210.0	0.12	31.10	210.0	-1,067.0	0.3	0.1	-0.2	0.05	0.02		21.80
310.0	0.14	76.58	310.0	-967.0	0.4	0.3	-0.3	0.10	0.02		45.48
410.0	0.11	86.18	410.0	-867.0	0.4	0.5	-0.2	0.04	-0.03		9.60
510.0	0.12	92.72	510.0	-767.0	0.4	0.7	-0.2	0.02	0.01		6.54
610.0	0.07	97.37	610.0	-667.0	0.4	0.8	-0.1	0.05	-0.05		4.65



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Phoenix Technologies, Inc. Survey Report



Received JUL 31 2014

<b>Database:</b> EQT_DB	<b>Local Co-ordinate Reference:</b> Well Well #514142
<b>Company:</b> EQT Production - Genesee Shale	<b>TVD Reference:</b> KB @ 1277 0usf
<b>Project:</b> Doddridge County, WV	<b>MD Reference:</b> KB @ 1277 0usf
<b>Site:</b> Doddridge County #14142	<b>North Reference:</b> Grid
<b>Well:</b> Well #514142	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> 514142 ST01	
<b>Design:</b> As Drilled Surveys	

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
710.0	0.11	104.28	710.0	-567.0	0.4	1.0	0.0	0.04	0.04	6.91
810.0	0.13	102.29	810.0	-467.0	0.3	1.2	0.1	0.02	0.02	-1.99
910.0	0.10	98.18	910.0	-367.0	0.3	1.4	0.2	0.03	-0.03	-4.11
1,010.0	0.14	95.61	1,010.0	-267.0	0.3	1.6	0.3	0.04	0.04	-2.57
1,110.0	0.08	101.00	1,110.0	-167.0	0.2	1.8	0.3	0.06	-0.06	5.39
1,210.0	0.10	105.30	1,210.0	-67.0	0.2	1.9	0.4	0.02	0.02	4.30
1,310.0	0.16	107.77	1,310.0	33.0	0.1	2.2	0.6	0.06	0.06	2.47
1,410.0	0.09	106.27	1,410.0	133.0	0.1	2.4	0.7	0.07	-0.07	-1.50
1,510.0	0.19	105.37	1,510.0	233.0	0.0	2.6	0.8	0.10	0.10	-0.90
1,610.0	0.41	107.10	1,610.0	333.0	-0.1	3.1	1.1	0.22	0.22	1.73
1,710.0	0.50	113.68	1,710.0	433.0	-0.4	3.8	1.6	0.10	0.09	6.58
1,810.0	0.51	129.26	1,810.0	533.0	-0.9	4.6	2.3	0.14	0.01	15.58
1,910.0	0.54	142.56	1,910.0	633.0	-1.5	5.2	3.1	0.13	0.03	13.30
2,010.0	0.49	163.08	2,010.0	733.0	-2.3	5.6	4.0	0.19	-0.05	20.52
2,110.0	0.48	201.02	2,110.0	833.0	-3.1	5.6	4.7	0.32	-0.01	37.94
2,210.0	0.38	240.97	2,210.0	933.0	-3.7	5.2	5.1	0.31	-0.10	39.95
2,310.0	0.19	243.26	2,310.0	1,033.0	-3.9	4.7	5.2	0.19	-0.19	2.29
2,410.0	0.27	249.28	2,410.0	1,133.0	-4.1	4.4	5.2	0.08	0.08	6.02
2,510.0	0.13	247.48	2,510.0	1,233.0	-4.2	4.0	5.3	0.14	-0.14	-1.80
2,610.0	0.27	236.46	2,610.0	1,333.0	-4.4	3.7	5.3	0.14	0.14	-11.02
2,710.0	0.41	246.41	2,710.0	1,433.0	-4.6	3.2	5.4	0.15	0.14	9.95
2,810.0	0.43	253.87	2,810.0	1,533.0	-4.9	2.5	5.4	0.06	0.02	7.46
2,910.0	0.43	272.02	2,910.0	1,633.0	-5.0	1.8	5.3	0.14	0.00	18.15
3,010.0	0.43	279.19	3,010.0	1,733.0	-4.9	1.0	5.0	0.05	0.00	7.17
3,110.0	0.39	273.08	3,110.0	1,833.0	-4.8	0.3	4.7	0.06	-0.04	-6.11
3,210.0	0.37	276.57	3,210.0	1,933.0	-4.8	-0.3	4.4	0.03	-0.02	3.49
3,310.0	0.26	275.92	3,310.0	2,033.0	-4.7	-0.9	4.2	0.11	-0.11	-0.65
3,410.0	0.32	268.30	3,410.0	2,133.0	-4.7	-1.4	4.0	0.07	0.06	-7.62
3,510.0	0.32	260.28	3,510.0	2,233.0	-4.7	-1.9	3.9	0.04	0.00	-8.02
3,610.0	0.31	263.37	3,610.0	2,333.0	-4.8	-2.5	3.8	0.02	-0.01	3.09
3,710.0	0.24	267.98	3,709.9	2,432.9	-4.9	-3.0	3.7	0.07	-0.07	4.61
3,810.0	0.25	277.29	3,809.9	2,532.9	-4.8	-3.4	3.5	0.04	0.01	9.31
3,910.0	0.33	289.84	3,909.9	2,632.9	-4.7	-3.9	3.2	0.10	0.08	12.55
4,010.0	0.47	308.27	4,009.9	2,732.9	-4.4	-4.5	2.7	0.19	0.14	18.43
4,110.0	0.67	307.39	4,109.9	2,832.9	-3.8	-5.3	1.9	0.20	0.20	-0.88
4,210.0	0.91	303.90	4,209.9	2,932.9	-3.0	-6.4	0.8	0.24	0.24	-3.49
4,310.0	1.04	308.43	4,309.9	3,032.9	-2.0	-7.8	-0.6	0.14	0.13	2.53
4,410.0	1.24	304.70	4,409.9	3,132.9	-0.8	-9.4	-2.2	0.20	0.20	-1.73
4,510.0	1.23	308.32	4,509.9	3,232.9	0.5	-11.1	-4.0	0.08	-0.01	3.62
4,610.0	1.23	316.42	4,609.8	3,332.8	1.9	-12.7	-5.9	0.17	0.00	8.10
4,710.0	1.27	323.66	4,709.8	3,432.8	3.6	-14.1	-7.9	0.16	0.04	7.24
4,810.0	1.42	324.09	4,809.8	3,532.8	5.5	-15.5	-10.1	0.15	0.15	0.43
4,910.0	1.60	325.51	4,909.8	3,632.8	7.6	-17.0	-12.7	0.18	0.18	1.42

09/05/2014



17-06291

Phoenix Technologies, Inc.  
Survey Report



<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Well Wall #514142
<b>Company:</b>	EQT Production - Genesis State	<b>TVD Reference:</b>	KB @ 1277.0usd
<b>Project:</b>	Doddridge County, WV	<b>MD Reference:</b>	KB @ 1277.0usd
<b>Site:</b>	Doddridge County 514142	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514142	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	514142 STD1		
<b>Design:</b>	As Drilled Surveys		

Received  
JUL 31 2014

Survey Office of Oil and Gas

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)
5,010.0	1.72	325.35	5,009.7	3,732.7	10.0	-18.6	-15.5	0.12	0.12	-0.16
5,110.0	1.87	331.65	5,109.7	3,832.7	12.7	-20.3	-18.5	0.25	0.15	6.30
5,210.0	1.79	338.51	5,209.6	3,932.6	15.6	-21.6	-21.7	0.23	-0.08	6.86
5,310.0	2.32	338.50	5,309.6	4,032.6	18.9	-22.9	-25.3	0.53	0.53	-0.01
5,360.0	2.25	342.40	5,359.5	4,082.5	20.8	-23.6	-27.3	0.34	-0.14	7.80
5,462.0	2.30	323.20	5,461.4	4,184.4	24.3	-25.4	-31.2	0.75	0.05	-18.82
5,493.0	2.20	317.50	5,492.4	4,215.4	25.3	-26.2	-32.3	0.79	-0.32	-18.39
5,525.0	2.00	307.90	5,524.4	4,247.4	26.1	-27.1	-33.4	1.26	-0.63	-30.00
5,556.0	3.00	321.60	5,555.4	4,278.4	27.0	-28.0	-34.6	3.74	3.23	44.19
5,587.0	7.20	335.10	5,586.2	4,309.2	29.4	-29.3	-37.3	14.00	13.55	43.55
5,619.0	10.80	332.70	5,617.8	4,340.8	33.9	-31.5	-42.2	11.31	11.25	-7.50
5,650.0	12.10	322.40	5,648.2	4,371.2	39.1	-34.8	-48.2	7.80	4.19	-33.23
5,682.0	14.10	309.10	5,679.4	4,402.4	44.2	-39.9	-54.7	11.27	6.25	-41.56
5,713.0	16.50	300.20	5,709.3	4,432.3	48.8	-46.7	-61.2	10.81	7.74	-28.71
5,744.0	18.40	296.00	5,738.9	4,461.9	53.1	-54.9	-67.9	7.35	6.13	-13.55
5,776.0	20.40	294.50	5,769.1	4,492.1	57.7	-64.5	-75.3	6.44	6.25	-4.69
5,807.0	22.80	294.80	5,797.9	4,520.9	62.4	-74.8	-83.1	7.75	7.74	0.97
5,838.0	25.70	292.90	5,826.1	4,549.1	67.6	-86.5	-91.7	9.69	9.35	-6.13
5,870.0	29.70	292.80	5,854.5	4,577.5	73.3	-100.2	-101.6	12.50	12.50	-0.31
5,901.0	33.70	292.80	5,880.8	4,603.8	79.7	-115.2	-112.4	12.90	12.90	0.00
5,933.0	34.40	293.70	5,907.3	4,630.3	86.7	-131.7	-124.4	2.70	2.19	2.81
5,964.0	32.10	288.50	5,933.3	4,656.3	92.9	-147.5	-135.2	11.81	-7.42	-16.77
5,995.0	30.10	281.00	5,959.8	4,682.8	97.0	-163.0	-144.1	14.05	-6.45	-24.19
6,027.0	29.70	275.40	5,987.6	4,710.6	99.2	-178.7	-151.3	8.81	-1.25	-17.50
6,058.0	29.50	272.30	6,014.5	4,737.5	100.3	-194.0	-157.2	4.98	-0.65	-10.00
6,089.0	30.40	270.70	6,041.4	4,764.4	100.7	-209.5	-162.5	3.88	2.90	-5.16
6,121.0	30.60	266.00	6,069.0	4,792.0	100.2	-225.7	-167.3	7.48	0.63	-14.69
6,152.0	30.50	258.00	6,095.7	4,818.7	98.0	-241.3	-170.2	13.11	-0.32	-25.81
6,183.0	30.00	250.10	6,122.5	4,845.5	93.7	-256.3	-170.9	12.93	-1.61	-25.48
6,215.0	28.90	243.30	6,150.3	4,873.3	87.5	-270.7	-169.7	10.99	-3.44	-21.25
6,246.0	27.60	236.10	6,177.7	4,900.7	80.2	-283.3	-166.8	11.76	-4.19	-23.23
6,277.0	25.60	230.00	6,205.4	4,928.4	71.9	-294.4	-162.4	10.91	-6.45	-19.68
6,309.0	24.50	226.40	6,234.4	4,957.4	62.8	-304.5	-157.1	5.87	-3.44	-11.25
6,340.0	25.30	220.50	6,262.5	4,985.5	53.4	-313.5	-151.0	8.41	2.58	-19.03
6,371.0	26.20	212.80	6,290.4	5,013.4	42.6	-321.5	-143.4	11.17	2.90	-24.84
6,403.0	26.80	204.20	6,319.1	5,042.1	30.0	-328.3	-133.7	12.13	1.88	-26.88
6,434.0	28.40	196.80	6,346.5	5,069.5	16.6	-333.3	-122.6	12.20	5.16	-23.87
6,466.0	30.90	192.40	6,374.4	5,097.4	1.3	-337.3	-109.3	10.35	7.81	-13.75
6,497.0	34.20	189.20	6,400.5	5,123.5	-15.1	-340.4	-94.8	12.00	10.65	-10.32
6,528.0	38.00	186.00	6,425.5	5,148.5	-33.2	-342.8	-78.4	13.68	12.26	-10.32
6,560.0	41.50	183.60	6,450.1	5,173.1	-53.6	-344.5	-59.7	11.94	10.94	-7.50
6,591.0	43.80	181.70	6,472.9	5,195.9	-74.5	-345.4	-40.1	8.50	7.42	-6.13



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Phoenix Technologies, Inc.  
Survey Report



<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Well Well #514142
<b>Company:</b>	EQT Production - Gasland Shale	<b>TVD Reference:</b>	KB @ 1277 Duff
<b>Project:</b>	Doddridge County, WV	<b>MD Reference:</b>	KB @ 1277 Duff
<b>Site:</b>	Doddridge County 514142	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514142	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	514142 ST01		
<b>Design:</b>	As Drilled Surveys		

Received

JUL 31 2014

Survey											
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)	
6,622.0	47.70	179.90	6,494.6	5,217.6	-96.7	-345.7	-19.2	13.25	12.58	-5.81	
6,654.0	51.40	178.70	6,515.3	5,238.3	-121.1	-345.4	4.0	11.91	11.56	-3.75	
6,685.0	55.50	177.90	6,533.8	5,256.8	-146.0	-344.7	27.8	13.39	13.23	-2.58	
6,717.0	60.20	175.50	6,550.8	5,273.8	-173.0	-343.1	53.9	16.00	14.69	-7.50	
6,748.0	64.30	173.40	6,565.2	5,288.2	-200.3	-340.4	80.6	14.52	13.23	-6.77	
6,780.0	66.60	171.40	6,578.5	5,301.5	-229.2	-336.6	109.2	9.16	7.19	-6.25	
6,811.0	68.00	170.70	6,590.5	5,313.5	-257.4	-332.1	137.4	4.97	4.52	-2.26	
6,843.0	69.90	169.20	6,602.0	5,325.0	-286.8	-326.9	166.9	7.37	5.94	-4.69	
6,874.0	72.50	167.40	6,612.0	5,335.0	-315.5	-321.0	196.0	10.03	8.39	-5.81	
6,905.0	75.10	164.90	6,620.6	5,343.6	-344.4	-313.8	225.7	11.42	8.39	-8.06	
6,937.0	78.20	163.80	6,628.0	5,351.0	-374.4	-305.4	256.8	10.25	9.69	-3.44	
6,968.0	80.40	162.50	6,633.8	5,356.8	-403.6	-296.6	287.2	8.21	7.10	-4.19	
7,000.0	81.50	162.50	6,638.8	5,361.8	-433.7	-287.1	318.8	3.44	3.44	0.00	
7,031.0	83.90	161.00	6,642.7	5,365.7	-462.9	-277.5	349.5	9.11	7.74	-4.84	
7,062.0	85.90	159.60	6,645.5	5,368.5	-491.9	-266.8	380.4	10.05	6.45	-7.74	
7,093.0	87.60	157.30	6,647.3	5,370.3	-520.6	-255.2	411.3	6.90	5.48	-4.19	
7,156.0	88.40	156.50	6,649.5	5,372.5	-578.5	-230.5	474.1	1.80	1.27	-1.27	
7,250.0	88.70	156.40	6,651.8	5,374.8	-664.6	-192.9	567.7	0.34	0.32	-0.11	
7,345.0	90.60	158.60	6,652.4	5,375.4	-752.4	-156.6	662.5	3.06	2.00	2.32	
7,439.0	89.10	154.80	6,652.7	5,375.7	-838.7	-119.4	756.2	4.35	-1.60	-4.04	
7,533.0	90.40	154.80	6,653.1	5,376.1	-923.7	-79.2	849.5	1.40	1.38	-0.21	
7,627.0	88.60	154.20	6,653.9	5,376.9	-1,008.4	-38.6	942.9	1.96	-1.91	-0.43	
7,721.0	89.20	153.90	6,655.7	5,378.7	-1,092.9	2.5	1,036.1	0.71	0.64	-0.32	
7,815.0	90.60	155.50	6,655.9	5,378.9	-1,177.9	42.7	1,129.5	2.26	1.49	1.70	
7,910.0	89.80	153.30	6,655.5	5,378.5	-1,263.6	83.7	1,223.8	2.46	-0.84	-2.32	
8,004.0	88.80	152.60	6,656.7	5,379.7	-1,347.3	126.5	1,316.7	1.30	-1.06	-0.74	
8,098.0	89.40	151.10	6,658.1	5,381.1	-1,430.2	170.8	1,409.5	1.72	0.64	-1.60	
8,193.0	88.20	152.50	6,660.1	5,383.1	-1,513.9	215.7	1,503.1	1.94	-1.26	1.47	
8,287.0	88.30	154.20	6,663.0	5,386.0	-1,597.8	257.8	1,596.2	1.81	0.11	1.81	
8,381.0	88.30	157.60	6,665.8	5,388.8	-1,683.6	296.2	1,689.7	3.62	0.00	3.62	
8,475.0	88.80	157.60	6,668.2	5,391.2	-1,770.5	332.0	1,783.5	0.53	0.53	0.00	
8,570.0	90.10	158.30	6,669.1	5,392.1	-1,858.5	367.6	1,878.3	1.55	1.37	0.74	
8,664.0	90.20	158.80	6,668.8	5,391.8	-1,946.0	402.0	1,972.2	0.54	0.11	0.53	
8,758.0	90.70	158.10	6,668.1	5,391.1	-2,032.8	438.1	2,066.0	2.92	0.53	-2.87	
8,852.0	91.20	155.70	6,666.5	5,389.5	-2,118.6	476.4	2,159.5	0.68	0.53	-0.43	
8,946.0	89.20	156.10	6,666.2	5,389.2	-2,204.4	514.8	2,253.1	2.17	-2.13	0.43	
9,041.0	89.50	157.40	6,667.3	5,390.3	-2,291.7	552.3	2,347.8	1.40	0.32	1.37	
9,135.0	89.30	152.50	6,668.3	5,391.3	-2,376.8	592.1	2,441.2	5.22	-0.21	-5.21	
9,228.0	89.20	151.80	6,669.5	5,392.5	-2,459.0	635.5	2,533.0	0.76	-0.11	-0.76	
<b>ST01 Tie In MD#9264</b>											
9,284.0	90.50	152.63	6,669.6	5,392.6	-2,508.6	661.7	2,588.3	2.74	2.32	1.47	
9,323.0	87.30	146.70	6,670.4	5,393.4	-2,542.2	681.3	2,626.5	17.26	-8.20	-15.19	
9,417.0	90.80	143.90	6,672.0	5,395.0	-2,619.5	734.8	2,716.8	4.77	3.72	-2.98	



17-06291

Phoenix Technologies, Inc.  
Survey Report



Received  
MAY 31 2014  
Oil and Gas

<b>Database:</b> EDT DB	<b>Local Co-ordinate Reference:</b>	Well Well #514142
<b>Company:</b> EDT Production - Gasco 5 shale	<b>TVD Reference:</b>	KB @ 1277.0usft
<b>Project:</b> Doddridge County, WV	<b>MD Reference:</b>	KB @ 1277.0usft
<b>Site:</b> Doddridge County 514142	<b>North Reference:</b>	Grid:
<b>Well:</b> Well #514142	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b> 514142 ST01		
<b>Design:</b> As Drilled Surveys		

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)
9,511.0	89.90	146.60	6,671.4	5,394.4	-2,696.7	788.4	2,807.1	3.03	-0.96	2.87
9,606.0	91.00	153.40	6,670.6	5,393.6	-2,778.9	835.9	2,900.2	7.25	1.16	7.16
9,700.0	90.90	155.10	6,669.1	5,392.1	-2,863.6	876.7	2,993.5	1.81	-0.11	1.81
9,794.0	91.10	154.60	6,667.4	5,390.4	-2,948.6	916.6	3,086.9	0.57	0.21	-0.53
9,888.0	90.20	154.40	6,666.4	5,389.4	-3,033.5	957.1	3,180.2	0.98	-0.96	-0.21
9,982.0	89.60	157.50	6,666.5	5,389.5	-3,119.3	995.4	3,273.8	3.36	-0.64	3.30
10,076.0	90.20	157.60	6,666.7	5,389.7	-3,206.2	1,031.3	3,367.6	0.65	0.64	0.11
10,171.0	89.70	154.00	6,666.8	5,389.8	-3,292.8	1,070.2	3,462.1	3.83	-0.53	-3.79
10,265.0	89.10	151.00	6,667.8	5,390.8	-3,376.2	1,113.6	3,555.0	3.25	-0.64	-3.19
10,359.0	89.40	155.30	6,669.0	5,392.0	-3,460.0	1,156.1	3,648.0	4.59	0.32	4.57
10,453.0	90.10	158.70	6,669.4	5,392.4	-3,546.5	1,192.8	3,741.7	3.69	0.74	3.62
10,548.0	89.00	155.70	6,670.2	5,393.2	-3,634.1	1,229.6	3,836.5	3.36	-1.16	-3.16
10,642.0	89.80	156.90	6,671.1	5,394.1	-3,720.1	1,267.4	3,930.1	1.53	0.85	1.28
10,736.0	90.00	156.10	6,671.3	5,394.3	-3,806.4	1,304.9	4,023.8	0.88	0.21	-0.85
10,830.0	88.70	151.60	6,672.4	5,395.4	-3,890.7	1,346.3	4,116.9	4.98	-1.38	-4.79
10,924.0	89.00	152.20	6,674.3	5,397.3	-3,973.6	1,390.6	4,209.7	0.71	0.32	0.64
11,019.0	88.70	153.30	6,676.2	5,399.2	-4,058.0	1,434.0	4,303.6	1.20	-0.32	1.16
11,113.0	89.10	154.80	6,678.0	5,401.0	-4,142.5	1,475.2	4,396.8	1.65	0.43	1.60
11,207.0	89.30	154.70	6,679.3	5,402.3	-4,227.6	1,515.3	4,490.2	0.24	0.21	-0.11
11,301.0	91.00	155.60	6,679.0	5,402.0	-4,312.9	1,554.6	4,583.7	2.15	1.81	1.17
11,395.0	91.50	154.60	6,677.0	5,400.0	-4,398.2	1,594.0	4,677.1	1.38	0.53	-1.28
11,488.0	88.70	155.90	6,676.8	5,399.8	-4,482.7	1,633.0	4,769.6	3.32	-3.01	1.40
11,583.0	89.50	157.90	6,678.3	5,401.3	-4,570.0	1,670.2	4,864.3	2.27	0.84	2.11
11,677.0	88.80	153.00	6,679.7	5,402.7	-4,655.5	1,709.3	4,957.7	5.27	-0.74	-5.21
11,771.0	89.40	156.50	6,681.2	5,404.2	-4,740.5	1,749.4	5,051.1	3.78	0.64	3.72
11,865.0	89.90	154.70	6,681.8	5,404.8	-4,826.1	1,788.2	5,144.6	1.99	0.53	-1.91
11,959.0	90.30	157.40	6,681.6	5,404.6	-4,912.0	1,826.3	5,238.2	2.90	0.43	2.87
12,053.0	88.70	161.50	6,682.4	5,405.4	-5,000.0	1,859.3	5,332.2	4.68	-1.70	4.36
12,148.0	88.30	161.10	6,684.9	5,407.9	-5,089.9	1,889.8	5,427.1	0.60	-0.42	-0.42
12,242.0	89.00	164.50	6,687.1	5,410.1	-5,179.7	1,917.6	5,521.0	3.69	0.74	3.62
<b>Last Survey MD=12269'</b>										
12,269.0	89.10	165.20	6,687.6	5,410.6	-5,205.8	1,924.6	5,548.0	2.62	0.37	2.59
<b>Projection to TD MD=12325'</b>										
12,325.0	89.10	165.20	6,688.4	5,411.4	-5,259.9	1,938.9	5,603.9	0.00	0.00	0.00

09/05/2014



17-06291

Phoenix Technologies, Inc.  
Survey Report



<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Well Well #514142
<b>Company:</b>	EQT Production - Genesee Shale	<b>TVD Reference:</b>	KB @ 1277.0usft
<b>Project:</b>	Doddridge County, WV	<b>MD Reference:</b>	KB @ 1277.0usft
<b>Site:</b>	Doddridge County 514142	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514142	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	514142/ST01		
<b>Design:</b>	As Drilled Surveys		

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,284.0	6,669.6	-2,508.6	661.7	ST01 Tie In MD=9284'
12,269.0	6,687.6	-5,205.8	1,924.6	Last Survey MD=12269'
12,325.0	6,688.4	-5,259.9	1,938.9	Projection to TD MD=12325'

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

Received  
 JUL 31 2014  
 Office of Oil and Gas  
 WV Dept. of Environmental Protection

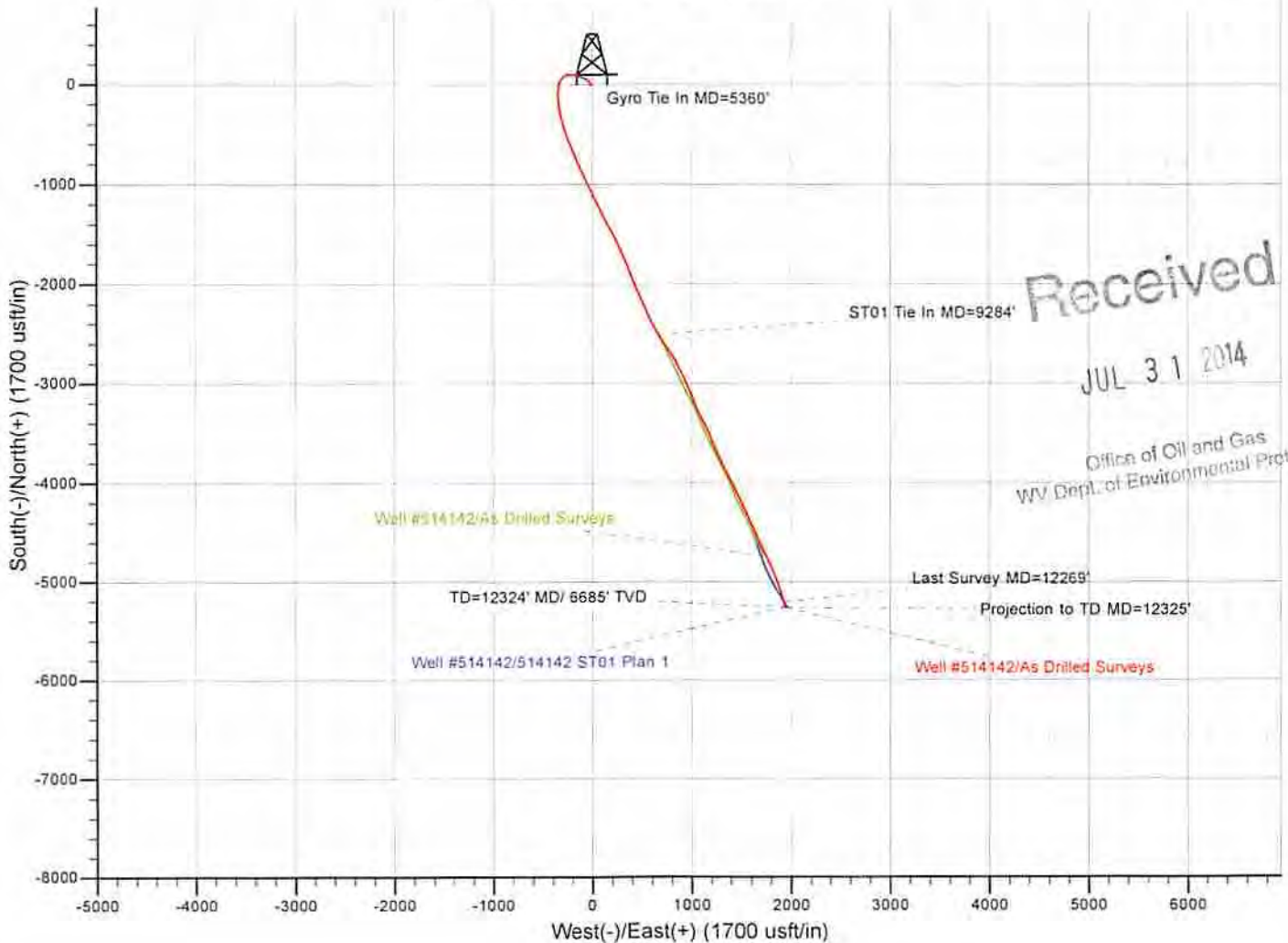
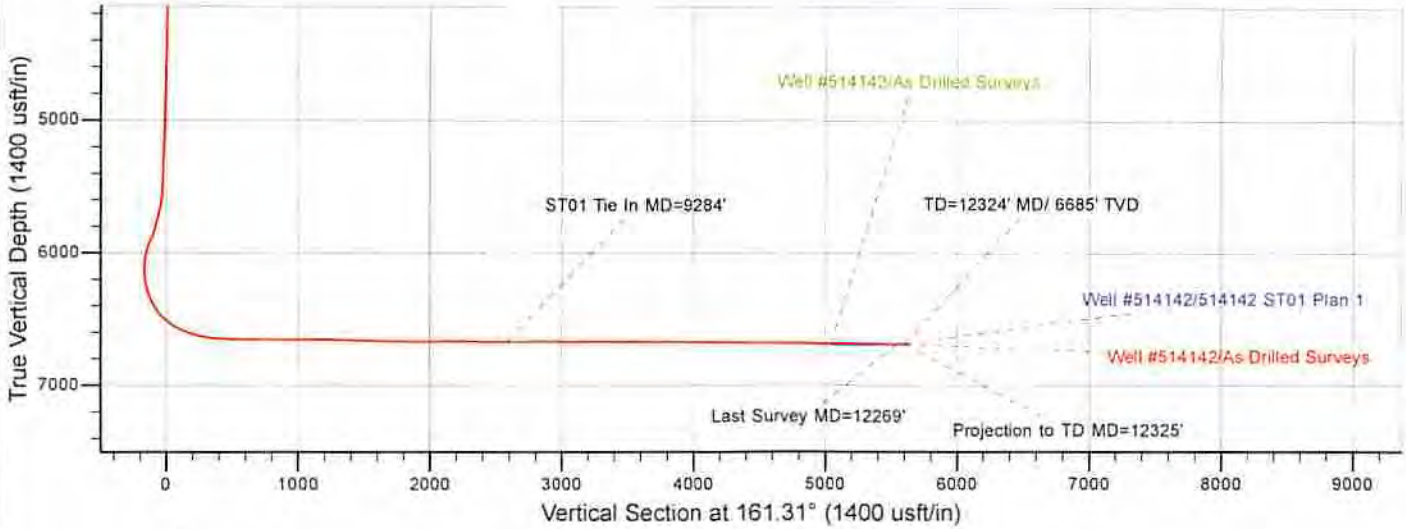
17-06291

**PHOENIX**  
TECHNOLOGY SERVICES



# EQT Production - Geneseo Shale

Project: Doddridge County, WV  
Site: Doddridge County 514142  
Well: Well #514142  
Wellbore: 514142 ST01  
Design: As Drilled Surveys



Received  
JUL 31 2014  
Office of Oil and Gas  
WV Dept. of Environmental Protection

09/05/2014