



**CNX Gas Company, LLC**

Field: MARSHALL COUNTY, WV  
 Site: MC 57 WELL LOCATION  
 Well: ACCESS MC-57  
 Wellpath: WEST LEG

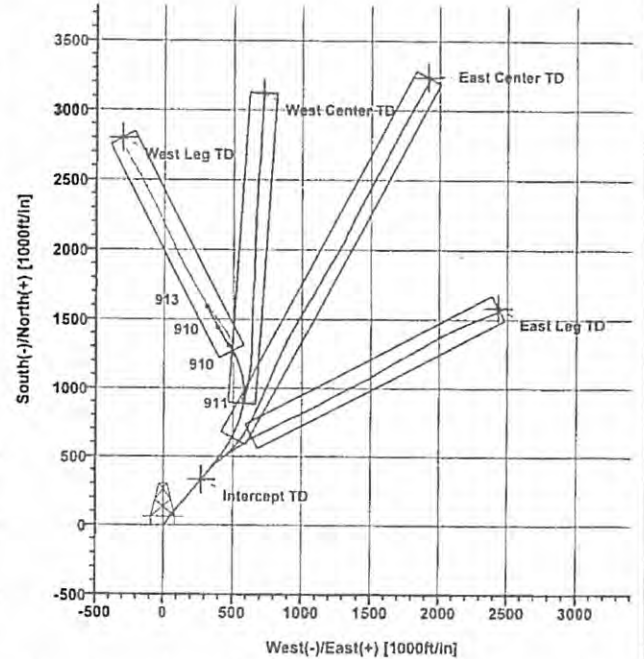
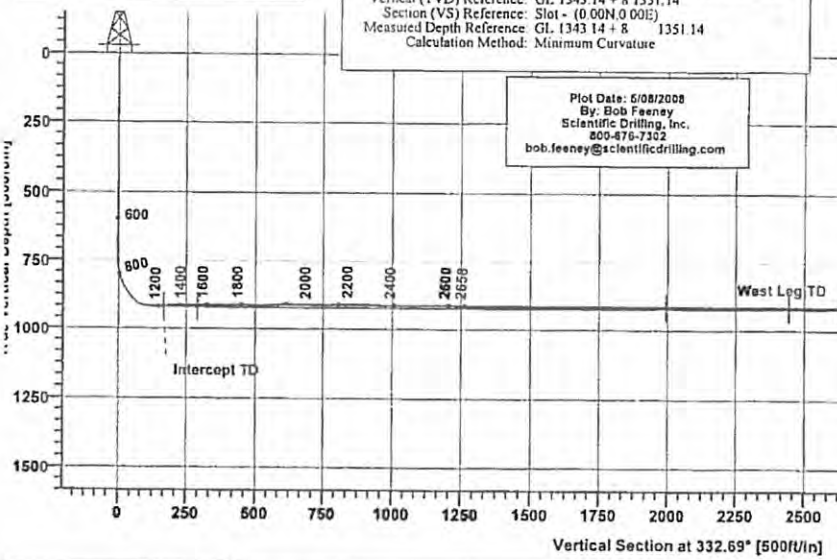


TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Intercept TD	917.00	330.10	275.62	495151.88	1698149.89	Circle (Radius: 1)
West Leg TD	917.00	2802.34	-305.43	497624.12	1697567.84	Rectangle (1727x200)
East Leg TD	917.00	1595.50	2435.23	496407.28	1700309.50	Rectangle (2029x200)
East Center TD	917.00	3236.97	1919.48	498058.75	1699793.75	Rectangle (2962x200)
West Center TD	917.00	3121.91	718.95	497943.69	1698593.22	Rectangle (2237x200)

**SITE DETAILS**  
**MC 57 WELL LOCATION**  
 Marshall Co., WV  
 Site Centre Northing: 494821.78  
 Easting: 1697874.27  
 Ground Level: 1343.14  
 Positional Uncertainty: 0.00  
 Convergence: -0.69

**REFERENCE INFORMATION**  
 Co-ordinate (N/E) Reference: Well Centre ACCESS MC-57, Grid North  
 Vertical (TVD) Reference: GL 1343.14 + 8 1351.14  
 Section (VS) Reference: Slot - (0.00N.0.00E)  
 Measured Depth Reference: GL 1343.14 + 8 1351.14  
 Calculation Method: Minimum Curvature

Plot Date: 5/08/2008  
 By: Bob Feeney  
 Scientific Drilling, Inc.  
 800-476-7322  
 bob.feeney@scientificdrilling.com



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# Scientific Drilling Survey Report

WV Department of  
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<b>Company:</b> CNX Gas Company, LLC		<b>Date:</b> 5/8/2008	<b>Time:</b> 12:51:59	<b>Page:</b> 1						
<b>Field:</b> MARSHALL COUNTY, WV		<b>Co-ordinate(NE) Reference:</b>	<b>Well:</b> ACCESS MC-57, Grid North							
<b>Site:</b> MC 57 WELL LOCATION		<b>Vertical (TVD) Reference:</b>	GL 1343.14 + 8 1351.1							
<b>Well:</b> ACCESS MC-57		<b>Section (VS) Reference:</b>	Well (0.00N,0.00E,332.69Az)							
<b>Wellpath:</b> WEST LEG		<b>Survey Calculation Method:</b>	Minimum Curvature	<b>Db:</b> Sybase						
<b>Field:</b> MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A.										
<b>Map System:</b> US State Plane Coordinate System 1927		<b>Map Zone:</b>	West Virginia, Northern Zone							
<b>Geo Datum:</b> NAD27 (Clarke 1866)		<b>Coordinate System:</b>	Well Centre							
<b>Sys Datum:</b> Mean Sea Level		<b>Geomagnetic Model:</b>	lgrf2005							
<b>Site:</b> MC 57 WELL LOCATION										
Marshall Co., WV										
<b>Site Position:</b>	<b>Northing:</b> 494821.78 ft	<b>Latitude:</b>	39 51 12.929 N							
<b>From:</b> Map	<b>Easting:</b> 1697874.27 ft	<b>Longitude:</b>	80 34 34.143 W							
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b>	Grid							
<b>Ground Level:</b> 1343.14 ft		<b>Grid Convergence:</b>	-0.69 deg							
<b>Well:</b> ACCESS MC-57										
<b>Slot Name:</b>										
<b>Well Position:</b>	<b>+N/-S</b> 0.00 ft	<b>Northing:</b> 494821.78 ft	<b>Latitude:</b>	39 51 12.929 N						
	<b>+E/-W</b> 0.00 ft	<b>Easting:</b> 1697874.27 ft	<b>Longitude:</b>	80 34 34.143 W						
<b>Position Uncertainty:</b> 0.00 ft										
<b>Wellpath:</b> WEST LEG										
<b>Current Datum:</b> GL 1343.14 + 8		<b>Height</b> 1351.14 ft	<b>Drilled From:</b>	Surface						
<b>Magnetic Data:</b> 4/24/2008			<b>Tie-on Depth:</b>	0.00 ft						
<b>Field Strength:</b> 53293 uT			<b>Above System Datum:</b>	Mean Sea Level						
<b>Vertical Section:</b> Depth From (TVD)		<b>+N/-S</b>	<b>Declination:</b>	-8.48 deg						
	ft	ft	<b>Mag Dip Angle:</b>	67.82 deg						
			<b>+E/-W</b>	Direction						
			ft	deg						
1351.14		0.00	0.00	332.69						
<b>Survey Program for Definitive Wellpath</b>										
<b>Date:</b> 5/7/2008		<b>Validated:</b> No	<b>Version:</b> 3							
<b>Actual From</b>	<b>To</b>	<b>Survey</b>	<b>Toolcode</b>	<b>Tool Name</b>						
ft	ft									
50.00	646.00	Survey #1	Drop Gyro-SYS	Drop Gyro Systematic						
646.00	2658.00	Survey #2	MWD-SDI-SYS	Scientific MWD Systematic						
<b>Survey</b>										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.48	226.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.17	274.10	100.00	-0.22	-0.32	-0.05	0.39	-0.31	47.90	Drop Gyro-SYS
200.00	0.23	200.30	200.00	-0.36	-0.55	-0.06	0.24	0.06	-73.80	Drop Gyro-SYS
300.00	0.42	151.50	300.00	-0.89	-0.43	-0.59	0.32	0.19	-48.80	Drop Gyro-SYS
400.00	0.32	170.30	399.99	-1.56	-0.19	-1.30	0.16	-0.10	18.80	Drop Gyro-SYS
500.00	0.48	126.10	499.99	-2.03	0.15	-1.87	0.34	0.16	-44.20	Drop Gyro-SYS
600.00	0.34	140.00	599.99	-2.48	0.71	-2.53	0.17	-0.14	13.90	Drop Gyro-SYS
700.00	0.64	166.50	699.99	-3.34	0.71	-3.29	0.37	0.30	26.50	MWD-SDI-SYS
800.00	27.74	35.36	797.25	10.16	11.24	3.87	28.17	27.09	-131.14	MWD-SDI-SYS
900.00	59.11	39.60	866.49	65.96	54.04	33.82	31.50	31.38	4.24	MWD-SDI-SYS
1000.00	75.58	38.99	904.82	137.36	112.19	70.58	16.48	16.47	-0.61	MWD-SDI-SYS
1100.00	86.34	39.04	916.13	213.75	175.48	109.42	10.75	10.75	0.05	MWD-SDI-SYS
1200.00	89.19	39.46	918.78	281.42	238.40	149.56	2.88	2.85	0.42	MWD-SDI-SYS
1300.00	90.65	40.17	918.56	367.37	303.44	187.20	1.62	1.46	0.71	MWD-SDI-SYS
1400.00	81.82	36.60	916.16	445.65	365.59	228.24	3.75	1.17	-3.57	MWD-SDI-SYS
1500.00	90.92	34.45	913.23	526.46	424.42	273.05	2.34	-0.90	-2.16	MWD-SDI-SYS
1600.00	89.42	30.27	913.01	611.23	477.41	324.07	4.43	-1.49	-4.18	MWD-SDI-SYS
1700.00	91.61	23.82	913.49	700.58	522.15	382.92	6.81	2.18	-6.45	MWD-SDI-SYS
1800.00	89.71	15.22	911.29	794.63	555.75	451.08	8.80	-1.90	-8.60	MWD-SDI-SYS
1900.00	92.17	7.44	911.62	892.54	575.65	528.95	8.16	2.46	-7.78	MWD-SDI-SYS
2000.00	91.50	357.29	907.56	992.25	579.54	615.76	10.17	-0.67	-10.15	MWD-SDI-SYS
2100.00	87.97	347.96	908.91	1091.18	566.06	709.85	9.97	-3.54	-9.32	MWD-SDI-SYS

## Scientific Drilling Survey Report

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 12:51:59	<b>Page:</b> 2
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b>	<b>Well:</b> ACCESS MC-57, Grid North	
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b>	GL 1343.14 + 8 1351.1	
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b>	Well (0.00N,0.00E,332.69Azi)	
<b>Wellpath:</b> WEST LEG	<b>Survey Calculation Method:</b>	Minimum Curvature	<b>Db:</b> Sybase

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2200.00	91.66	338.25	909.41	1186.85	537.42	807.99	10.39	3.70	-9.71	MWD-SDI-SYS
2300.00	88.10	328.36	908.08	1275.33	491.21	907.81	10.51	-3.56	-9.99	MWD-SDI-SYS
2400.00	89.43	327.87	910.76	1359.83	437.83	1007.39	1.41	1.33	-0.49	MWD-SDI-SYS
2500.00	91.88	331.71	910.14	1446.25	387.60	1107.22	4.55	2.44	3.84	MWD-SDI-SYS
2600.00	86.91	333.46	910.20	1534.92	341.50	1207.15	5.26	-4.96	1.75	MWD-SDI-SYS
2658.00	86.91	333.46	913.32	1586.73	315.63	1265.06	0.00	0.00	0.00	MWD-SDI-SYS

**Targets**

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →		← Longitude →					
							Deg	Min	Sec	Deg	Min	Sec		
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W
-Circle (Radius: 1)														
West Leg TD		917.00	2802.34	-306.43	497624.12	1697567.84	39	51	40.587	N	80	34	38.503	W
-Rectangle (1727x200)														

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# Scientific Drilling Survey Report - Geographic

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<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 12:54:03	<b>Page:</b> 1
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b> Well: ACCESS MC-57, Grid North		
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b> GL 1343.14 + 8 1351.1		
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,332.69Azi)		
<b>Wellpath:</b> WEST LEG	<b>Survey Calculation Method:</b> Minimum Curvature	<b>Db:</b> Sybase	

<b>Field:</b> MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A.	<b>Map System:</b> US State Plane Coordinate System 1927	<b>Map Zone:</b> West Virginia, Northern Zone
<b>Geo Datum:</b> NAD27 (Clarke 1866)	<b>Coordinate System:</b> Well Centre	<b>Geomagnetic Model:</b> igrf2005
<b>Sys Datum:</b> Mean Sea Level		

<b>Site:</b> MC 57 WELL LOCATION			
Marshall Co., WV			
<b>Site Position:</b>	<b>Northing:</b> 494821.78 ft	<b>Latitude:</b> 39 51 12.929 N	
<b>From: Map</b>	<b>Easting:</b> 1697874.27 ft	<b>Longitude:</b> 80 34 34.143 W	
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid	
<b>Ground Level:</b> 1343.14 ft		<b>Grid Convergence:</b> -0.69 deg	

<b>Well:</b> ACCESS MC-57	<b>Slot Name:</b>
<b>Well Position:</b> +N-S 0.00 ft	<b>Latitude:</b> 39 51 12.929 N
+E-W 0.00 ft	<b>Longitude:</b> 80 34 34.143 W
<b>Position Uncertainty:</b> 0.00 ft	

<b>Wellpath:</b> WEST LEG	<b>Drilled From:</b> Surface
<b>Current Datum:</b> GL 1343.14 + 8	<b>Tie-on Depth:</b> 0.00 ft
<b>Magnetic Data:</b> 4/24/2008	<b>Above System Datum:</b> Mean Sea Level
<b>Field Strength:</b> 53293 nT	<b>Declination:</b> -8.48 deg
<b>Vertical Section:</b> Depth From (TVD)	<b>Mag Dip Angle:</b> 67.82 deg
ft	+N-S ft
	+E-W ft
	Direction deg
1351.14	0.00
	0.00
	332.69

<b>Survey Program for Definitive Wellpath</b>			<b>Version:</b> 3	
<b>Date:</b> 5/7/2008	<b>Validated:</b> No		<b>Toolcode</b>	<b>Tool Name</b>
<b>Actual From</b> ft	<b>To</b> ft	<b>Survey</b>		
50.00	646.00	Survey #1	Drop Gyro-SYS	Drop Gyro Systematic
646.00	2658.00	Survey #2	MWD-SDI-SYS	Scientific MWD Systematic

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	Map Northing ft	Map Easting ft	← Latitude →		← Longitude →	
								Deg	Min	Sec	Deg
0.00	0.48	226.20	0.00	0.00	0.00	494821.78	1697874.27	39 51	12.929 N	80 34	34.143 W
100.00	0.17	274.10	100.00	-0.22	-0.32	494821.56	1697873.95	39 51	12.927 N	80 34	34.147 W
200.00	0.23	200.30	200.00	-0.36	-0.55	494821.42	1697873.72	39 51	12.925 N	80 34	34.150 W
300.00	0.42	151.50	300.00	-0.89	-0.43	494820.89	1697873.84	39 51	12.920 N	80 34	34.148 W
400.00	0.32	170.30	399.99	-1.56	-0.19	494820.22	1697874.08	39 51	12.913 N	80 34	34.145 W
500.00	0.48	126.10	499.99	-2.03	0.15	494819.75	1697874.42	39 51	12.909 N	80 34	34.141 W
600.00	0.34	140.00	599.99	-2.48	0.71	494819.30	1697874.98	39 51	12.904 N	80 34	34.133 W
700.00	0.64	166.50	699.99	-3.34	0.71	494818.44	1697874.98	39 51	12.896 N	80 34	34.133 W
800.00	27.74	35.36	797.25	10.16	11.24	494831.94	1697885.51	39 51	13.031 N	80 34	34.000 W
900.00	59.11	39.60	866.49	65.96	54.04	494887.74	1697928.31	39 51	13.587 N	80 34	33.460 W
1000.00	75.58	38.99	904.82	137.36	112.19	494959.14	1697986.46	39 51	14.300 N	80 34	32.726 W
1100.00	86.34	39.04	916.13	213.75	175.48	495035.53	1698049.75	39 51	15.052 N	80 34	31.926 W
1200.00	89.19	39.46	918.78	291.42	238.40	495113.20	1698112.67	39 51	15.837 N	80 34	31.131 W
1300.00	90.85	40.17	918.56	367.37	303.44	495189.15	1698177.71	39 51	16.595 N	80 34	30.309 W
1400.00	91.82	36.60	916.16	445.65	365.59	495267.43	1698239.86	39 51	17.376 N	80 34	29.524 W
1500.00	90.92	34.45	913.23	526.46	424.42	495348.24	1698298.69	39 51	18.182 N	80 34	28.782 W
1600.00	89.42	30.27	913.01	611.23	477.41	495433.01	1698351.68	39 51	19.026 N	80 34	28.115 W
1700.00	91.61	23.82	913.49	700.58	522.15	495522.36	1698396.42	39 51	19.914 N	80 34	27.555 W
1800.00	89.71	15.22	911.29	794.63	555.75	495616.41	1698430.02	39 51	20.848 N	80 34	27.139 W
1900.00	92.17	7.44	911.62	892.54	575.65	495714.32	1698449.92	39 51	21.817 N	80 34	26.899 W
2000.00	91.50	357.29	907.56	992.25	579.54	495814.03	1698453.81	39 51	22.803 N	80 34	26.864 W

## Scientific Drilling Survey Report - Geographic

<b>Company:</b> CNX Gas Company, LLC <b>Field:</b> MARSHALL COUNTY, WV <b>Site:</b> MC 57 WELL LOCATION <b>Well:</b> ACCESS MC-57 <b>Wellpath:</b> WEST LEG	<b>Date:</b> 5/8/2008 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Survey Calculation Method:</b>	<b>Time:</b> 12:54:03 <b>Well:</b> ACCESS MC-57, Grid North <b>GL 1343.14 + 8 1351.1</b> <b>Well (0.00N,0.00E,332.69Azi)</b> <b>Minimum Curvature</b>	<b>Page:</b> 2 <b>Db:</b> Sybase
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**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →				
								Deg	Min	Sec	Deg	Min	Sec		
2100.00	87.97	347.86	908.91	1091.18	566.06	495912.96	1698440.33	39	51	23.779	N	80	34	27.052	W
2200.00	91.66	338.25	909.41	1186.85	537.42	496008.63	1698411.69	39	51	24.721	N	80	34	27.434	W
2300.00	88.10	328.36	908.08	1275.33	491.21	496097.11	1698365.48	39	51	25.590	N	80	34	28.040	W
2400.00	89.43	327.87	910.76	1359.83	437.83	496181.61	1698312.10	39	51	26.419	N	80	34	28.738	W
2500.00	91.88	331.71	910.14	1446.25	387.60	496268.03	1698261.87	39	51	27.267	N	80	34	29.395	W
2600.00	86.91	333.46	910.20	1534.92	341.50	496356.70	1698215.77	39	51	28.138	N	80	34	30.000	W
2658.00	86.91	333.46	913.32	1586.73	315.63	496408.51	1698189.90	39	51	28.647	N	80	34	30.339	W

**Targets**

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →					
							Deg	Min	Sec	Deg	Min	Sec			
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W	
-Circle (Radius: 1)															
West Leg TD		917.00	2802.34	-306.43	497624.12	1697567.84	39	51	40.587	N	80	34	38.503	W	
-Rectangle (1727x200)															

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WV Department of  
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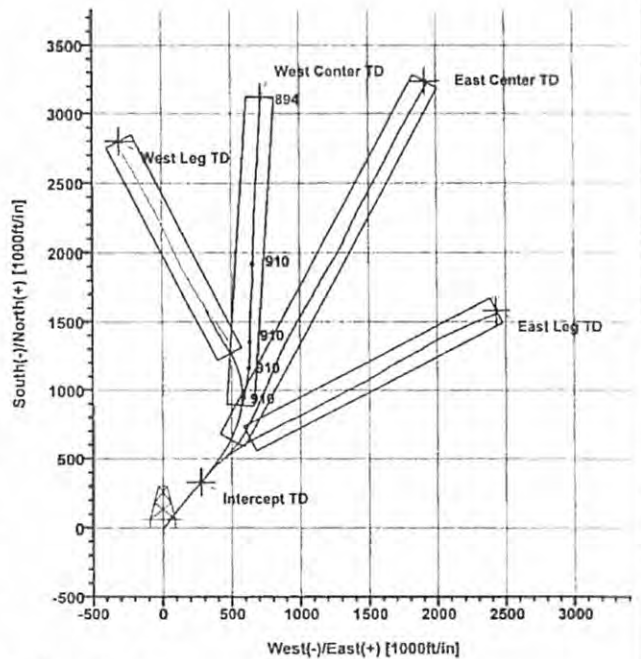


CNX Gas Company, LLC

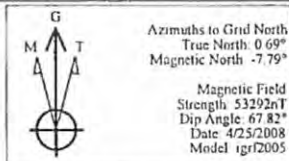
Field: MARSHALL COUNTY, WV  
 Site: MC 57 WELL LOCATION  
 Well: ACCESS MC-57  
 Wellpath: WEST CENTER



TARGET DETAILS						
Name	TVD	+N/S	+E/W	Northing	Easting	Shape
Intercept TD	917.00	330.10	275.62	495151.88	1698149.89	Circle (Radius: 1)
West Center TD	917.00	3121.91	718.95	497943.69	1698593.22	Rectangle (2237x200)
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East Leg TD	917.00	1585.50	2435.23	496407.28	1700309.50	Rectangle (2029x200)
West Leg TD	917.00	2802.34	-306.43	497624.12	1697567.84	Rectangle (1727x200)

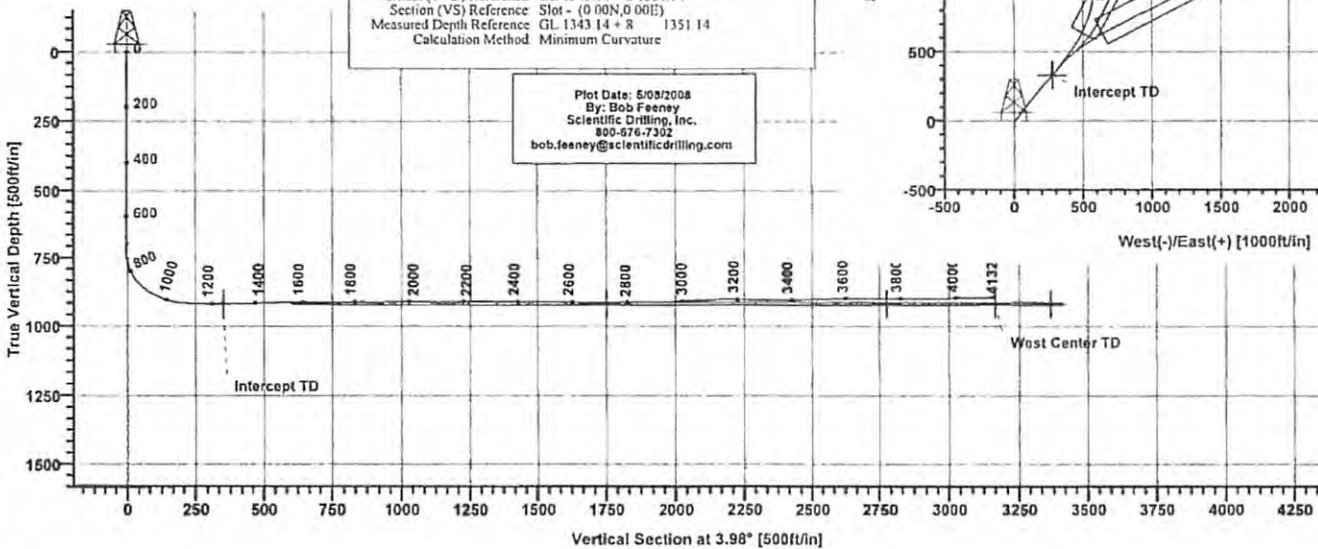


**SITE DETAILS**  
 MC 57 WELL LOCATION  
 Marshall Co., WV  
 Site Centre Northing: 494821.78  
 Easting: 1697874.27  
 Ground Level: 1343.14  
 Positional Uncertainty: 0.00  
 Convergence: -0.69



**REFERENCE INFORMATION**  
 Co-ordinate (N/E) Reference: Well Centre: ACCESS MC-57, Grid North  
 Vertical (TVD) Reference: GL 1343.14 + 8 1351.14  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: GL 1343.14 + 8 1351.14  
 Calculation Method: Minimum Curvature

Plot Date: 5/08/2008  
 By: Bob Feeney  
 Scientific Drilling, Inc.  
 800-676-7302  
 bob.feeney@scientificdrilling.com



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# Scientific Drilling Survey Report

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Environmental Protection

<b>Company:</b> CNX Gas Company, LLC <b>Field:</b> MARSHALL COUNTY, WV <b>Site:</b> MC 57 WELL LOCATION <b>Well:</b> ACCESS MC-57 <b>Wellpath:</b> WEST CENTER		<b>Date:</b> 5/8/2008 <b>Co-ordinate(NE) Reference:</b> Well: ACCESS MC-57, Grid North <b>Vertical (TVD) Reference:</b> GL 1343.14 + 8 1351.1 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,3.98Azi) <b>Survey Calculation Method:</b> Minimum Curvature		<b>Time:</b> 13:17:55 <b>Page:</b> 1 <b>Db:</b> Sybase						
<b>Field:</b> MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A. <b>Map System:</b> US State Plane Coordinate System 1927 <b>Geo Datum:</b> NAD27 (Clarke 1866) <b>Sys Datum:</b> Mean Sea Level						<b>Map Zone:</b> West Virginia, Northern Zone <b>Coordinate System:</b> Well Centre <b>Geomagnetic Model:</b> igr12005				
<b>Site:</b> MC 57 WELL LOCATION Marshall Co., WV <b>Site Position:</b>						<b>Northing:</b> 494821.78 ft <b>Latitude:</b> 39 51 12.929 N <b>From: Map</b> <b>Easting:</b> 1697874.27 ft <b>Longitude:</b> 80 34 34.143 W <b>Position Uncertainty:</b> 0.00 ft <b>Ground Level:</b> 1343.14 ft <b>North Reference:</b> Grid <b>Grid Convergence:</b> -0.69 deg				
<b>Well:</b> ACCESS MC-57 <b>Well Position:</b>						<b>Slot Name:</b> <b>+N-S</b> 0.00 ft <b>Northing:</b> 494821.78 ft <b>Latitude:</b> 39 51 12.929 N <b>+E-W</b> 0.00 ft <b>Easting:</b> 1697874.27 ft <b>Longitude:</b> 80 34 34.143 W <b>Position Uncertainty:</b> 0.00 ft				
<b>Wellpath:</b> WEST CENTER <b>Current Datum:</b> GL 1343.14 + 8 <b>Magnetic Data:</b> 4/25/2008 <b>Field Strength:</b> 53292 nT <b>Vertical Section:</b>						<b>Drilled From:</b> WEST LEG <b>Tie-on Depth:</b> 1690.00 ft <b>Above System Datum:</b> Mean Sea Level <b>Declination:</b> -8.48 deg <b>Mag Dip Angle:</b> 67.82 deg <b>+N-S</b> 0.00 ft <b>+E-W</b> 0.00 ft <b>Direction</b> deg 3.98				
<b>Survey Program for Definitive Wellpath</b> <b>Date:</b> 5/4/2008 <b>Actual From</b> <b>To</b> ft ft 50.00 646.00 646.00 1890.00 1890.00 4132.00 <b>Validated:</b> No <b>Survey</b> Survey #1 (0) Survey #2 (0) Survey #1 <b>Version:</b> 0 <b>Toolcode</b> Drop Gyro-SYS MWD-SDI-SYS MWD-SDI-SYS <b>Tool Name</b> Drop Gyro Systematic Scientific MWD Systematic Scientific MWD Systematic										
<b>Survey</b>										
MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.48	226.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.17	274.10	100.00	-0.22	-0.32	-0.24	0.39	-0.31	47.90	Drop Gyro-SYS
200.00	0.23	200.30	200.00	-0.36	-0.55	-0.39	0.24	0.06	-73.80	Drop Gyro-SYS
300.00	0.42	151.50	300.00	-0.89	-0.43	-0.92	0.32	0.19	-48.80	Drop Gyro-SYS
400.00	0.32	170.30	389.99	-1.56	-0.19	-1.57	0.16	-0.10	18.80	Drop Gyro-SYS
500.00	0.48	126.10	499.99	-2.03	0.15	-2.02	0.34	0.16	-44.20	Drop Gyro-SYS
600.00	0.34	140.00	599.99	-2.48	0.71	-2.43	0.17	-0.14	13.90	Drop Gyro-SYS
700.00	0.64	166.50	699.99	-3.34	0.71	-3.28	0.37	0.30	26.50	MWD-SDI-SYS
800.00	27.74	35.36	797.25	10.16	11.24	10.92	28.17	27.09	-131.14	MWD-SDI-SYS
800.00	59.11	39.60	866.49	65.96	54.04	69.56	31.50	31.38	4.24	MWD-SDI-SYS
1000.00	75.58	38.99	904.82	137.36	112.19	144.82	16.48	16.47	-0.61	MWD-SDI-SYS
1100.00	86.34	39.04	916.13	213.75	175.48	225.42	10.75	10.75	0.05	MWD-SDI-SYS
1200.00	89.19	39.46	918.78	291.42	238.40	307.26	2.88	2.85	0.42	MWD-SDI-SYS
1300.00	90.65	40.17	918.56	367.37	303.44	387.54	1.62	1.46	0.71	MWD-SDI-SYS
1400.00	91.82	36.60	918.16	445.65	365.59	469.95	3.75	1.17	-3.57	MWD-SDI-SYS
1500.00	90.92	34.45	913.23	526.46	424.42	554.65	2.34	-0.90	-2.16	MWD-SDI-SYS
1600.00	89.42	30.27	913.01	611.23	477.41	642.89	4.43	-1.49	-4.18	MWD-SDI-SYS
1700.00	91.61	23.82	913.49	700.58	522.15	735.13	6.81	2.18	-6.45	MWD-SDI-SYS
1800.00	89.71	15.22	911.29	794.63	555.75	831.29	8.80	-1.90	-8.60	MWD-SDI-SYS
1900.00	91.61	10.10	911.67	892.51	575.88	930.32	5.47	1.91	-5.13	MWD-SDI-SYS
2000.00	91.37	12.93	908.77	989.46	600.06	1028.72	2.84	-0.25	2.83	MWD-SDI-SYS

## Scientific Drilling Survey Report

WV Department of  
Environmental Protection

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 13:17:55	<b>Page:</b> 2
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b>	<b>Well:</b> ACCESS MC-57, Grid North	
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b>	<b>GL 1343.14 + 8 1351.1</b>	
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b>	<b>Well (0.00N,0.00E,3.98Azi)</b>	
<b>Wellpath:</b> WEST CENTER	<b>Survey Calculation Method:</b>	<b>Minimum Curvature</b>	<b>Db:</b> Sybase

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2100.00	88.20	7.68	911.15	1087.67	618.37	1127.97	6.13	-3.17	-5.25	MWD-SDI-SYS
2200.00	92.25	4.37	909.32	1186.86	630.68	1227.77	5.23	4.05	-3.31	MWD-SDI-SYS
2300.00	88.33	0.64	908.47	1286.76	633.81	1327.65	5.41	-3.92	-3.72	MWD-SDI-SYS
2400.00	88.88	1.36	910.73	1386.69	636.75	1427.54	0.90	0.56	0.71	MWD-SDI-SYS
2500.00	90.57	1.57	911.36	1486.66	638.59	1527.40	1.70	1.68	0.21	MWD-SDI-SYS
2600.00	87.80	3.03	911.67	1586.55	643.02	1627.35	3.13	-2.77	1.46	MWD-SDI-SYS
2700.00	90.24	4.03	915.37	1686.29	648.89	1727.26	2.64	2.45	1.00	MWD-SDI-SYS
2800.00	92.63	2.40	910.81	1785.86	656.67	1827.13	2.89	2.39	-1.63	MWD-SDI-SYS
2900.00	89.80	1.01	910.68	1885.81	659.03	1927.01	3.16	-2.83	-1.39	MWD-SDI-SYS
3000.00	92.16	1.80	906.79	1985.70	661.20	2026.81	2.49	2.36	0.79	MWD-SDI-SYS
3100.00	91.44	2.71	903.25	2085.56	664.86	2126.68	1.17	-0.72	0.92	MWD-SDI-SYS
3200.00	88.51	0.85	902.22	2185.45	668.28	2226.57	3.47	-2.93	-1.86	MWD-SDI-SYS
3300.00	89.67	3.10	903.43	2285.39	671.17	2326.47	2.53	1.16	2.25	MWD-SDI-SYS
3400.00	90.00	3.71	903.54	2385.23	676.94	2426.46	0.69	0.33	0.61	MWD-SDI-SYS
3500.00	92.22	3.41	901.34	2485.01	683.10	2526.43	2.24	2.22	-0.30	MWD-SDI-SYS
3600.00	91.27	4.89	898.71	2584.73	690.01	2626.38	1.76	-0.95	1.48	MWD-SDI-SYS
3700.00	88.31	3.70	898.50	2684.39	697.70	2726.35	3.19	-2.96	-1.18	MWD-SDI-SYS
3800.00	89.96	2.92	899.66	2784.22	703.42	2826.33	1.83	1.65	-0.78	MWD-SDI-SYS
3900.00	90.27	2.81	899.83	2884.11	708.09	2926.30	0.33	0.31	-0.10	MWD-SDI-SYS
4000.00	92.11	2.87	896.62	2983.86	714.19	3026.23	1.84	1.84	0.06	MWD-SDI-SYS
4100.00	91.58	3.05	894.81	3083.73	718.84	3126.19	0.56	-0.53	0.18	MWD-SDI-SYS
4132.00	92.78	3.44	893.59	3115.65	720.65	3158.16	3.93	3.74	1.21	MWD-SDI-SYS

### Targets

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →				
							Deg	Min	Sec	Deg	Min	Sec		
Intercept TD	-Circle (Radius: 1)	917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W
West Center TD	-Rectangle (2237x200)	917.00	3121.91	718.95	497943.69	1698593.22	39	51	43.866	N	80	34	25.403	W



# Scientific Drilling Survey Report - Geographic

WV Department of  
Environmental Protection

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 13:18:51	<b>Page:</b> 1
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b>	<b>Well:</b> ACCESS MC-57, Grid North	
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b>	GL 1343.14 + 8 1351.1	
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b>	Well (0.00N,0.00E,3.98Azi)	
<b>Wellpath:</b> WEST CENTER	<b>Survey Calculation Method:</b>	Minimum Curvature	<b>Db:</b> Sybase

<b>Field:</b> MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A.	<b>Map System:</b> US State Plane Coordinate System 1927	<b>Map Zone:</b> West Virginia, Northern Zone
<b>Geo Datum:</b> NAD27 (Clarke 1866)	<b>Coordinate System:</b> Well Centre	
<b>Sys Datum:</b> Mean Sea Level	<b>Geomagnetic Model:</b> igrf2005	

<b>Site:</b> MC 57 WELL LOCATION			
Marshall Co., WV			
<b>Site Position:</b>	<b>Northing:</b> 494821.78 ft	<b>Latitude:</b> 39 51 12.929 N	
<b>From:</b> Map	<b>Easting:</b> 1697874.27 ft	<b>Longitude:</b> 80 34 34.143 W	
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid	
<b>Ground Level:</b> 1343.14 ft		<b>Grid Convergence:</b> -0.69 deg	

<b>Well:</b> ACCESS MC-57				<b>Slot Name:</b>			
<b>Well Position:</b>	<b>+N-S</b> 0.00 ft	<b>Northlag:</b> 494821.78 ft	<b>Latitude:</b> 39 51 12.929 N				
<b>+E-W</b> 0.00 ft	<b>Easting:</b> 1697874.27 ft	<b>Longitude:</b> 80 34 34.143 W					
<b>Position Uncertainty:</b> 0.00 ft							

<b>Wellpath:</b> WEST CENTER				<b>Drilled From:</b> WEST LEG			
<b>Current Datum:</b> GL 1343.14 + 8	<b>Height</b> 1351.14 ft	<b>Tie-on Depth:</b> 1880.00 ft		<b>Above System Datum:</b> Mean Sea Level			
<b>Magnetic Data:</b> 4/25/2008		<b>Declination:</b> -8.48 deg		<b>Mag Dip Angle:</b> 67.82 deg			
<b>Field Strength:</b> 53282 nT		<b>+N-S</b> 0.00 ft		<b>+E-W</b> 0.00 ft		<b>Direction</b> 3.98 deg	
<b>Vertical Section:</b> Depth From (TVD)							
	ft	ft	ft	ft	ft	deg	
	0.00	0.00	0.00	0.00	0.00	3.98	

<b>Survey Program for Definitive Wellpath</b>					
<b>Date:</b> 5/4/2008	<b>Validated:</b> No	<b>Version:</b> 0			
<b>Actual From</b>	<b>To</b>	<b>Survey</b>	<b>Toolcode</b>	<b>Tool Name</b>	
50.00	646.00	Survey #1 (0)	Drop Gyro-SYS	Drop Gyro Systematic	
646.00	1890.00	Survey #2 (0)	MWD-SDI-SYS	Scientific MWD Systematic	
1890.00	4132.00	Survey #1	MWD-SDI-SYS	Scientific MWD Systematic	

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →		
								Deg	Min	Sec	Deg	Min	Sec
0.00	0.48	226.20	0.00	0.00	0.00	494821.78	1697874.27	39 51	12.929 N	80 34	34.143 W		
100.00	0.17	274.10	100.00	-0.22	-0.32	494821.56	1697873.95	39 51	12.927 N	80 34	34.147 W		
200.00	0.23	200.30	200.00	-0.36	-0.55	494821.42	1697873.72	39 51	12.925 N	80 34	34.150 W		
300.00	0.42	151.50	300.00	-0.89	-0.43	494820.89	1697873.84	39 51	12.920 N	80 34	34.148 W		
400.00	0.32	170.30	399.99	-1.56	-0.19	494820.22	1697874.08	39 51	12.913 N	80 34	34.145 W		
500.00	0.48	126.10	499.99	-2.03	0.15	494819.75	1697874.42	39 51	12.909 N	80 34	34.141 W		
600.00	0.34	140.00	599.99	-2.48	0.71	494819.30	1697874.98	39 51	12.904 N	80 34	34.133 W		
700.00	0.64	166.50	699.99	-3.34	0.71	494818.44	1697874.98	39 51	12.896 N	80 34	34.133 W		
800.00	27.74	35.36	797.25	10.16	11.24	494831.94	1697885.51	39 51	13.031 N	80 34	34.000 W		
900.00	59.11	39.60	866.49	65.96	54.04	494887.74	1697928.31	39 51	13.587 N	80 34	33.460 W		
1000.00	75.58	38.99	904.82	137.36	112.19	494959.14	1697986.46	39 51	14.300 N	80 34	32.726 W		
1100.00	86.34	39.04	916.13	213.75	175.48	495035.53	1698049.75	39 51	15.062 N	80 34	31.926 W		
1200.00	89.19	39.46	918.78	291.42	238.40	495113.20	1698112.67	39 51	15.837 N	80 34	31.131 W		
1300.00	90.65	40.17	918.56	367.37	303.44	495189.15	1698177.71	39 51	16.595 N	80 34	30.309 W		
1400.00	91.82	36.60	916.16	445.65	365.59	495267.43	1698239.86	39 51	17.376 N	80 34	29.524 W		
1500.00	90.92	34.45	913.23	526.46	424.42	495348.24	1698298.69	39 51	18.182 N	80 34	28.782 W		
1600.00	89.42	30.27	913.01	611.23	477.41	495433.01	1698351.68	39 51	19.026 N	80 34	28.115 W		
1700.00	91.61	23.82	913.49	700.58	522.15	495522.36	1698396.42	39 51	19.914 N	80 34	27.555 W		
1800.00	89.71	15.22	911.29	794.63	555.75	495616.41	1698430.02	39 51	20.848 N	80 34	27.139 W		
1900.00	91.61	10.10	911.67	892.51	575.88	495714.29	1698450.15	39 51	21.817 N	80 34	26.896 W		

## Scientific Drilling Survey Report - Geographic

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 13:18:51	<b>Page:</b> 2
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b> Well: ACCESS MC-57, Grid North		
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b> GL 1343.14 + 8 1351.1		
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,3.98Azi)		
<b>Wellpath:</b> WEST CENTER	<b>Survey Calculation Method:</b> Minimum Curvature	<b>Db:</b> Sybase	

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →				
								Deg	Min	Sec	Deg	Min	Sec		
2000.00	91.37	12.93	908.77	989.46	600.06	495811.24	1698474.33	39	51	22.778	N	80	34	26.601	W
2100.00	88.20	7.68	911.15	1087.67	618.37	495909.45	1698492.64	39	51	23.751	N	80	34	26.381	W
2200.00	92.25	4.37	909.32	1186.86	630.68	496008.64	1698504.95	39	51	24.733	N	80	34	26.238	W
2300.00	88.33	0.64	908.47	1286.76	633.81	496108.54	1698508.08	39	51	25.720	N	80	34	26.214	W
2400.00	88.88	1.36	910.73	1386.69	636.75	496208.47	1698511.02	39	51	26.708	N	80	34	26.191	W
2500.00	90.57	1.57	911.36	1486.66	638.59	496308.44	1698512.86	39	51	27.696	N	80	34	26.183	W
2600.00	87.80	3.03	911.67	1586.55	643.02	496408.33	1698517.29	39	51	28.684	N	80	34	26.141	W
2700.00	90.24	4.03	915.37	1686.29	648.89	496508.07	1698523.16	39	51	29.670	N	80	34	26.081	W
2800.00	92.63	2.40	910.81	1785.86	656.67	496607.64	1698530.94	39	51	30.655	N	80	34	25.997	W
2900.00	89.80	1.01	910.68	1885.81	659.03	496707.59	1698533.30	39	51	31.643	N	80	34	25.982	W
3000.00	92.16	1.80	906.79	1985.70	661.20	496807.48	1698535.47	39	51	32.631	N	80	34	25.970	W
3100.00	91.44	2.71	903.25	2085.56	664.86	496907.34	1698539.13	39	51	33.618	N	80	34	25.938	W
3200.00	88.51	0.85	902.22	2185.45	668.28	497007.23	1698542.55	39	51	34.606	N	80	34	25.909	W
3300.00	89.67	3.10	903.43	2285.39	671.17	497107.17	1698545.44	39	51	35.594	N	80	34	25.888	W
3400.00	90.00	3.71	903.54	2385.23	676.94	497207.01	1698551.21	39	51	36.581	N	80	34	25.829	W
3500.00	92.22	3.41	901.34	2485.01	683.10	497306.79	1698557.37	39	51	37.568	N	80	34	25.765	W
3600.00	91.27	4.89	898.71	2584.73	690.01	497406.51	1698564.28	39	51	38.554	N	80	34	25.692	W
3700.00	88.31	3.70	898.50	2684.39	697.70	497506.17	1698571.97	39	51	39.540	N	80	34	25.608	W
3800.00	89.96	2.92	899.66	2784.22	703.42	497606.00	1698577.69	39	51	40.527	N	80	34	25.551	W
3900.00	90.27	2.81	899.83	2884.11	708.09	497705.89	1698582.36	39	51	41.515	N	80	34	25.506	W
4000.00	92.11	2.87	896.62	2983.86	714.19	497805.64	1698588.46	39	51	42.501	N	80	34	25.443	W
4100.00	91.58	3.05	894.81	3083.73	718.84	497905.51	1698593.11	39	51	43.489	N	80	34	25.399	W
4132.00	92.78	3.44	893.59	3115.65	720.65	497937.43	1698594.92	39	51	43.805	N	80	34	25.380	W

**Targets**

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →				
							Deg	Min	Sec	Deg	Min	Sec		
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W
-Circle (Radius: 1)														
West Center TD		917.00	3121.91	718.95	497943.69	1698593.22	39	51	43.866	N	80	34	25.403	W
-Rectangle (2237x200)														

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Office of Oil and Gas

SEP 25 2017

WV Department of  
Environmental Protection



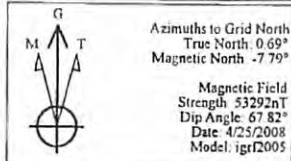
CNX Gas Company, LLC

Field: MARSHALL COUNTY, WV  
 Site: MC 57 WELL LOCATION  
 Well: ACCESS MC-57  
 Wellpath: EAST LEG



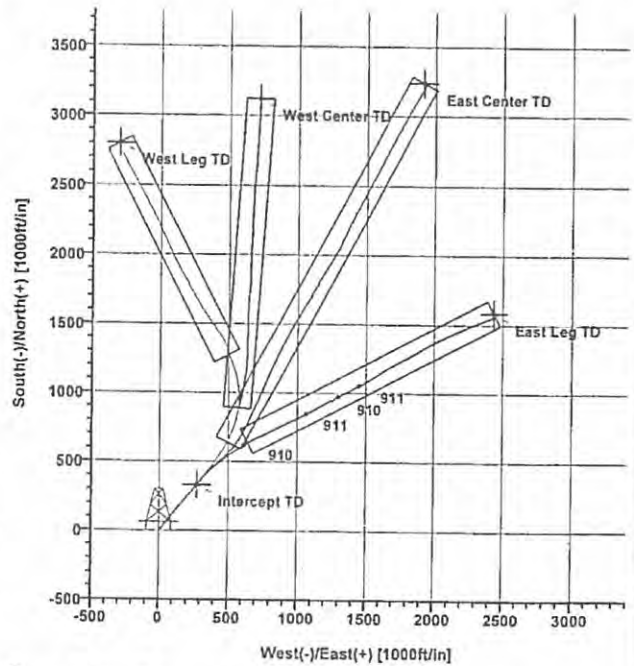
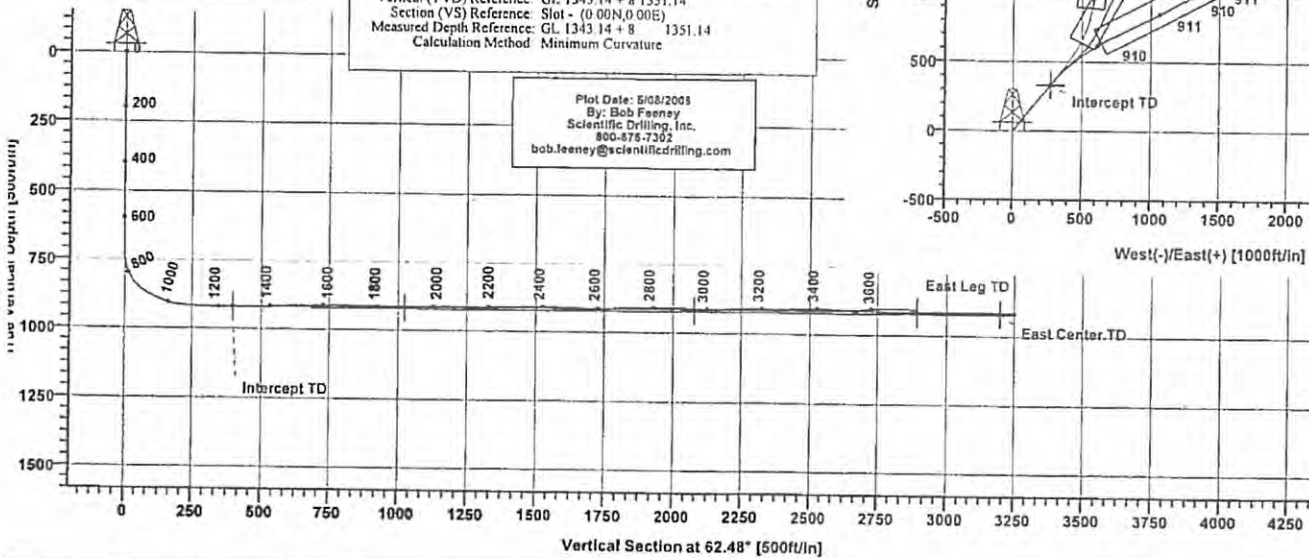
TARGET DETAILS						
Name	TVD	+N/S	+E/W	Northing	Easting	Shape
Intercept TD	917.00	330.10	275.62	495151.88	1698149.89	Circle (Radius: 1)
East Leg TD	917.00	1585.50	2435.23	496407.28	1700309.50	Rectangle (2029x200)
East Center TD	917.00	3236.97	1919.48	498058.75	1699793.75	Rectangle (2962x200)
West Center TD	917.00	3121.91	718.95	497943.69	1698593.22	Rectangle (2237x200)
West Leg TD	917.00	2802.34	-306.43	497624.12	1697567.84	Rectangle (1727x200)

**SITE DETAILS**  
**MC 57 WELL LOCATION**  
 Marshall Co., WV  
 Site Centre Northing: 494821.78  
 Easting: 1697874.27  
 Ground Level: 1343.14  
 Positional Uncertainty: 0.00  
 Convergence: -0.69



**REFERENCE INFORMATION**  
 Co-ordinate (N/E) Reference: Well Centre ACCESS MC-57, Grid North  
 Vertical (TVD) Reference: GL 1343.14 + 8 1351.14  
 Section (VS) Reference: Slot - (0.00N,0.00E)  
 Measured Depth Reference: GL 1343.14 + 8 1351.14  
 Calculation Method: Minimum Curvature

Plot Date: 5/08/2008  
 By: Bob Feeney  
 Scientific Drilling, Inc.  
 800-578-7302  
 bob.feeney@scientificdrilling.com



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# Scientific Drilling Survey Report

WV Department of  
Environmental Protection

Company: CNX Gas Company, LLC		Date: 5/8/2008	Time: 10:41:48	Page: 1						
Field: MARSHALL COUNTY, WV		Co-ordinate(NE) Reference:	Well: ACCESS MC-57, Grid North							
Site: MC 57 WELL LOCATION		Vertical (TVD) Reference:	GL 1343.14 + 8 1351.1							
Well: ACCESS MC-57		Section (VS) Reference:	Well (0.00N,0.00E,62.48Azi)							
Wellpath: EAST LEG		Survey Calculation Method:	Minimum Curvature	Db: Sybase						
Field: MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A.										
Map System: US State Plane Coordinate System 1927		Map Zone:	West Virginia, Northern Zone							
Geo Datum: NAD27 (Clarke 1866)		Coordinate System:	Well Centre							
Sys Datum: Mean Sea Level		Geomagnetic Model:	igrf2005							
Site: MC 57 WELL LOCATION										
Marshall Co., WV										
Site Position:	Northing:	494821.78 ft	Latitude:	39 51 12.929 N						
From: Map	Easting:	1697874.27 ft	Longitude:	80 34 34.143 W						
Position Uncertainty:	0.00 ft		North Reference:	Grid						
Ground Level:	1343.14 ft		Grid Convergence:	-0.69 deg						
Well: ACCESS MC-57 Slot Name:										
Well Position:	+N-S 0.00 ft	Northing: 494821.78 ft	Latitude:	39 51 12.929 N						
	+E-W 0.00 ft	Easting: 1697874.27 ft	Longitude:	80 34 34.143 W						
Position Uncertainty:	0.00 ft									
Wellpath: EAST LEG Drilled From: WEST LEG										
Current Datum:	GL 1343.14 + 8	Height 1351.14 ft	Tie-on Depth:	1321.00 ft						
Magnetic Data:	4/25/2008		Above System Datum:	Mean Sea Level						
Field Strength:	53292 nT		Declination:	-8.48 deg						
Vertical Section:	Depth From (TVD)	+N-S	Mag Dip Angle:	67.82 deg						
	ft	ft	+E-W	Direction						
	0.00	0.00	ft	deg						
				62.48						
Survey Program for Definitive Wellpath										
Date:	5/6/2008	Validated:	No	Version: 0						
Actual From	To	Survey	Toolcode	Tool Name						
ft	ft									
50.00	646.00	Survey #1 (0)	Drop Gyro-SYS	Drop Gyro Systematic						
646.00	1321.00	Survey #2 (0)								
1321.00	3765.00	Survey #1	MWD-SDI-SYS	Scientific MWD Systematic						
Survey										
MD	Incl	Azim	TVD	+N-S	+E-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.48	226.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.17	274.10	100.00	-0.22	-0.32	-0.38	0.39	-0.31	47.90	Drop Gyro-SYS
200.00	0.23	200.30	200.00	-0.36	-0.55	-0.65	0.24	0.06	-73.80	Drop Gyro-SYS
300.00	0.42	151.50	300.00	-0.89	-0.43	-0.79	0.32	0.19	-48.80	Drop Gyro-SYS
400.00	0.32	170.30	399.99	-1.56	-0.19	-0.89	0.16	-0.10	18.80	Drop Gyro-SYS
500.00	0.48	126.10	499.99	-2.03	0.15	-0.81	0.34	0.16	-44.20	Drop Gyro-SYS
600.00	0.34	140.00	599.99	-2.48	0.71	-0.52	0.17	-0.14	13.90	Drop Gyro-SYS
700.00	0.64	166.50	699.99	-3.34	0.71	-0.91	0.37	0.30	26.50	
800.00	27.74	35.36	797.25	10.16	11.24	14.67	28.17	27.09	-131.14	
900.00	59.11	39.60	886.49	65.96	54.04	78.40	31.50	31.38	4.24	
1000.00	75.58	38.99	904.82	137.36	112.19	162.96	16.48	16.47	-0.61	
1100.00	86.34	39.04	916.13	213.75	175.48	254.39	10.75	10.75	0.05	
1200.00	89.19	39.46	918.78	291.42	238.40	346.08	2.88	2.85	0.42	
1300.00	90.65	40.17	918.56	367.37	303.44	438.85	1.62	1.46	0.71	MWD-SDI-SYS
1400.00	92.85	47.87	916.54	439.86	372.07	533.21	8.00	2.20	7.69	MWD-SDI-SYS
1500.00	91.35	53.02	912.83	504.48	448.23	630.61	5.37	-1.50	5.16	MWD-SDI-SYS
1600.00	91.65	56.20	911.09	562.87	529.39	729.57	3.19	0.30	3.18	MWD-SDI-SYS
1700.00	87.95	58.22	910.01	616.15	613.96	829.19	4.22	-3.70	2.01	MWD-SDI-SYS
1800.00	89.17	62.28	913.76	665.15	701.01	929.03	4.24	1.22	4.06	MWD-SDI-SYS
1900.00	91.16	63.09	912.46	710.98	789.88	1029.02	2.15	2.00	0.81	MWD-SDI-SYS
2000.00	91.13	63.62	910.39	755.88	879.21	1128.99	0.53	-0.03	0.53	MWD-SDI-SYS

## Scientific Drilling Survey Report

Company: CNX Gas Company, LLC  
 Field: MARSHALL COUNTY, WV  
 Site: MC 57 WELL LOCATION  
 Well: ACCESS MC-57  
 Wellpath: EAST LEG

Date: 5/8/2008 Time: 10:41:48 Page: 2  
 Co-ordinate(NE) Reference: Well: ACCESS MC-57, Grid North  
 Vertical (TVD) Reference: GL 1343.14 + 8 1351.1  
 Section (VS) Reference: Well (0.00N,0.00E,62.48Azi)  
 Survey Calculation Method: Minimum Curvature Db: Sybase

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2100.00	88.50	64.19	911.15	789.40	969.22	1228.92	2.70	-2.64	0.58	MWD-SDI-SYS
2200.00	92.34	62.88	911.31	844.46	1058.45	1328.87	4.06	3.85	-1.31	MWD-SDI-SYS
2300.00	90.77	60.55	908.82	891.54	1146.62	1428.82	2.81	-1.57	-2.33	MWD-SDI-SYS
2400.00	89.65	61.37	907.45	940.55	1233.78	1528.76	1.38	-1.12	0.82	MWD-SDI-SYS
2500.00	88.36	62.84	910.82	987.11	1322.21	1628.70	1.96	-1.29	1.47	MWD-SDI-SYS
2600.00	91.19	62.68	912.23	1032.55	1411.26	1728.67	2.83	2.83	-0.16	MWD-SDI-SYS
2700.00	92.02	60.04	908.93	1079.86	1498.29	1828.60	2.77	0.84	-2.64	MWD-SDI-SYS
2800.00	89.50	58.48	906.80	1131.50	1584.88	1928.37	2.96	-2.52	-1.55	MWD-SDI-SYS
2900.00	89.98	60.55	906.44	1184.04	1669.94	2028.09	2.12	0.48	2.06	MWD-SDI-SYS
3000.00	89.19	61.55	909.73	1232.36	1757.42	2127.99	1.27	-0.79	1.00	MWD-SDI-SYS
3100.00	91.28	60.70	907.37	1279.47	1845.59	2227.95	2.25	2.08	-0.85	MWD-SDI-SYS
3200.00	87.83	59.90	907.07	1329.65	1932.06	2327.82	3.54	-3.45	-0.80	MWD-SDI-SYS
3300.00	93.10	63.03	906.80	1378.42	2019.27	2427.70	6.13	5.27	3.13	MWD-SDI-SYS
3400.00	89.51	64.13	903.55	1422.33	2109.03	2527.59	3.76	-3.59	1.11	MWD-SDI-SYS
3500.00	88.40	65.26	907.18	1464.91	2199.43	2627.44	1.58	-1.11	1.13	MWD-SDI-SYS
3600.00	92.50	68.33	904.25	1504.23	2291.27	2727.06	5.12	4.09	3.07	MWD-SDI-SYS
3700.00	89.88	68.56	902.30	1541.22	2384.15	2826.51	2.63	-2.62	0.22	MWD-SDI-SYS
3765.00	86.32	70.00	904.46	1564.12	2444.93	2891.00	5.91	-5.47	2.22	MWD-SDI-SYS

**Targets**

Name	Description	TVD ft	+N-S ft	+E-W ft	Map Northing ft	Map Easting ft	← Latitude → Deg Min Sec	← Longitude → Deg Min Sec
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39 51 16.224 N	80 34 30.660 W
-Circle (Radius: 1)								
East Leg TD		917.00	1585.50	2435.23	486407.28	1700309.50	39 51 28.885 N	80 34 3.161 W
-Rectangle (2029x200)								

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Environmental Protection

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# Scientific Drilling Survey Report - Geographic

WV Department of  
Environmental Protection

<b>Company:</b> CNX Gas Company, LLC <b>Field:</b> MARSHALL COUNTY, WV <b>Site:</b> MC 57 WELL LOCATION <b>Well:</b> ACCESS MC-57 <b>Wellpath:</b> EAST LEG	<b>Date:</b> 5/8/2008 <b>Co-ordinate(NE) Reference:</b> Well: ACCESS MC-57, Grid North <b>Vertical (TVD) Reference:</b> GL 1343.14 + 8 1351.1 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,62.48Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Sybase
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<b>Field:</b> MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A. <b>Map System:</b> US State Plane Coordinate System 1927 <b>Geo Datum:</b> NAD27 (Clarke 1866) <b>Sys Datum:</b> Mean Sea Level	<b>Map Zone:</b> West Virginia, Northern Zone <b>Coordinate System:</b> Well Centre <b>Geomagnetic Model:</b> igrf2005
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<b>Site:</b> MC 57 WELL LOCATION			
Marshall Co., WV			
<b>Site Position:</b>	<b>Northing:</b>	<b>Latitude:</b>	
<b>From:</b> Map	494821.78 ft	39 51 12.929 N	
<b>Position Uncertainty:</b>	<b>Easting:</b>	<b>Longitude:</b>	
0.00 ft	1697874.27 ft	80 34 34.143 W	
<b>Ground Level:</b>		<b>North Reference:</b>	Grid
1343.14 ft		<b>Grid Convergence:</b>	-0.69 deg

<b>Well:</b> ACCESS MC-57	<b>Slot Name:</b>		
<b>Well Position:</b>	<b>Northing:</b>	<b>Latitude:</b>	
+N/-S 0.00 ft	494821.78 ft	39 51 12.929 N	
+E/-W 0.00 ft	1697874.27 ft	80 34 34.143 W	
<b>Position Uncertainty:</b>			
0.00 ft			

<b>Wellpath:</b> EAST LEG	<b>Drilled From:</b> WEST LEG		
<b>Current Datum:</b> GL 1343.14 + 8	<b>Tie-on Depth:</b> 1321.00 ft		
<b>Magnetic Data:</b> 4/25/2008	<b>Above System Datum:</b> Mean Sea Level		
<b>Field Strength:</b> 53292 nT	<b>Declination:</b> -8.48 deg		
<b>Vertical Section:</b> Depth From (TVD)	<b>Mag Dip Angle:</b> 67.82 deg		
ft	+N/-S ft	+E/-W ft	Direction deg
0.00	0.00	0.00	62.48

Survey Program for Definitive Wellpath			Version: 0	
Date:	Validated:	Toolcode		
Actual From	To	Tool Name		
ft	ft			
50.00	646.00	Survey #1 (0)	Drop Gyro-SYS	Drop Gyro Systematic
646.00	1321.00	Survey #2 (0)		
1321.00	3765.00	Survey #1	MWD-SDI-SYS	Scientific MWD Systematic

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →		
								Deg	Min	Sec	Deg	Min	Sec
0.00	0.48	226.20	0.00	0.00	0.00	494821.78	1697874.27	39 51	12.929 N	80 34	34.143 W		
100.00	0.17	274.10	100.00	-0.22	-0.32	494821.56	1697873.95	39 51	12.927 N	80 34	34.147 W		
200.00	0.23	200.30	200.00	-0.36	-0.55	494821.42	1697873.72	39 51	12.925 N	80 34	34.150 W		
300.00	0.42	151.50	300.00	-0.89	-0.43	494820.89	1697873.84	39 51	12.920 N	80 34	34.148 W		
400.00	0.32	170.30	399.99	-1.56	-0.19	494820.22	1697874.08	39 51	12.913 N	80 34	34.145 W		
500.00	0.48	126.10	499.99	-2.03	0.15	494819.75	1697874.42	39 51	12.909 N	80 34	34.141 W		
600.00	0.34	140.00	599.99	-2.48	0.71	494819.30	1697874.98	39 51	12.904 N	80 34	34.133 W		
700.00	0.64	166.50	699.99	-3.34	0.71	494818.44	1697874.98	39 51	12.896 N	80 34	34.133 W		
800.00	27.74	35.36	797.25	10.16	11.24	494831.94	1697885.51	39 51	13.031 N	80 34	34.000 W		
900.00	59.11	39.60	866.49	65.96	54.04	494887.74	1697928.31	39 51	13.587 N	80 34	33.460 W		
1000.00	75.58	38.89	904.82	137.36	112.19	494959.14	1697986.46	39 51	14.300 N	80 34	32.726 W		
1100.00	86.34	39.04	916.13	213.75	175.48	495035.53	1698049.75	39 51	15.062 N	80 34	31.926 W		
1200.00	89.19	39.46	918.78	291.42	238.40	495113.20	1698112.67	39 51	15.837 N	80 34	31.131 W		
1300.00	90.65	40.17	918.56	367.37	303.44	495189.15	1698177.71	39 51	16.595 N	80 34	30.309 W		
1400.00	92.85	47.87	916.54	439.86	372.07	495261.64	1698246.34	39 51	17.320 N	80 34	29.440 W		
1500.00	91.35	53.02	912.83	504.48	448.23	495326.26	1698322.50	39 51	17.967 N	80 34	28.473 W		
1600.00	91.65	56.20	911.09	562.87	529.39	495384.65	1698403.66	39 51	18.554 N	80 34	27.442 W		
1700.00	87.95	58.22	910.01	616.15	613.96	495437.93	1698488.23	39 51	19.091 N	80 34	26.365 W		
1800.00	89.17	62.28	913.76	665.15	701.01	495486.93	1698575.28	39 51	19.585 N	80 34	25.257 W		
1900.00	91.16	63.09	912.46	710.98	789.88	495532.76	1698664.15	39 51	20.048 N	80 34	24.124 W		

## Scientific Drilling Survey Report - Geographic

<b>Company:</b> CNX Gas Company, LLC <b>Field:</b> MARSHALL COUNTY, WV <b>Site:</b> MC 57 WELL LOCATION <b>Well:</b> ACCESS MC-57 <b>Wellpath:</b> EAST LEG	<b>Date:</b> 5/8/2008 <b>Time:</b> 10:45:34 <b>Page:</b> 2 <b>Co-ordinate(NE) Reference:</b> Well: ACCESS MC-57, Grid North <b>Vertical (TVD) Reference:</b> GL 1343.14 + 8 1351.1 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,62.48Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Sybase
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**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	Map Northing ft	Map Easting ft	← Latitude →		← Longitude →					
								Deg	Min	Sec	Deg	Min	Sec		
2000.00	91.13	63.62	910.39	755.88	879.21	495577.66	1698753.48	39	51	20.503	N	80	34	22.986	W
2100.00	88.50	64.19	911.15	799.40	969.22	495621.18	1698843.49	39	51	20.943	N	80	34	21.838	W
2200.00	92.34	62.88	911.31	844.46	1058.45	495666.24	1698932.72	39	51	21.399	N	80	34	20.701	W
2300.00	90.77	60.55	908.82	891.54	1146.62	495713.32	1699020.89	39	51	21.875	N	80	34	19.578	W
2400.00	89.65	61.37	907.45	940.55	1233.78	495762.33	1699108.05	39	51	22.370	N	80	34	18.468	W
2500.00	88.36	62.84	910.82	987.11	1322.21	495808.89	1699196.48	39	51	22.840	N	80	34	17.341	W
2600.00	91.19	62.68	912.23	1032.55	1411.26	495854.33	1699285.53	39	51	23.300	N	80	34	16.206	W
2700.00	92.02	60.04	908.93	1079.86	1499.29	495901.64	1699373.56	39	51	23.778	N	80	34	15.084	W
2800.00	89.50	58.48	906.80	1131.50	1584.88	495953.28	1699459.15	39	51	24.298	N	80	34	13.995	W
2800.00	89.98	60.55	906.44	1184.04	1669.94	496005.82	1699544.21	39	51	24.827	N	80	34	12.912	W
3000.00	89.19	61.55	909.73	1232.36	1757.42	496054.14	1699631.69	39	51	25.315	N	80	34	11.798	W
3100.00	91.28	60.70	907.37	1279.47	1845.59	496101.25	1699719.86	39	51	25.791	N	80	34	10.675	W
3200.00	87.83	59.90	907.07	1329.65	1932.06	496151.43	1699806.33	39	51	26.297	N	80	34	9.573	W
3300.00	93.10	63.03	906.80	1378.42	2019.27	496200.20	1699893.54	39	51	26.789	N	80	34	8.463	W
3400.00	89.51	64.13	903.55	1422.33	2106.03	496244.11	1699983.30	39	51	27.234	N	80	34	7.318	W
3500.00	88.40	65.26	907.18	1464.91	2199.43	496286.69	1700073.70	39	51	27.665	N	80	34	6.166	W
3600.00	92.50	68.33	904.25	1504.23	2291.27	496326.01	1700165.54	39	51	28.065	N	80	34	4.994	W
3700.00	89.88	68.56	902.30	1541.22	2384.15	496363.00	1700258.42	39	51	28.441	N	80	34	3.809	W
3765.00	86.32	70.00	904.46	1584.12	2444.93	496385.90	1700319.20	39	51	28.675	N	80	34	3.033	W

**Targets**

Name	Description	TVD ft	+N-S ft	+E-W ft	Map Northing ft	Map Easting ft	← Latitude →		← Longitude →					
							Deg	Min	Sec	Deg	Min	Sec		
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W
-Circle (Radius: 1)														
East Leg TD		917.00	1585.50	2435.23	496407.28	1700309.50	39	51	28.885	N	80	34	3.161	W
-Rectangle (2029x200)														

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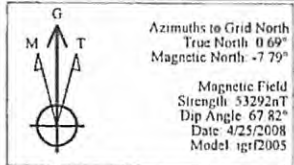
**CNX Gas Company, LLC**

Field: MARSHALL COUNTY, WV  
 Site: MC 57 WELL LOCATION  
 Well: ACCESS MC-57  
 Wellpath: EAST CENTER LEG



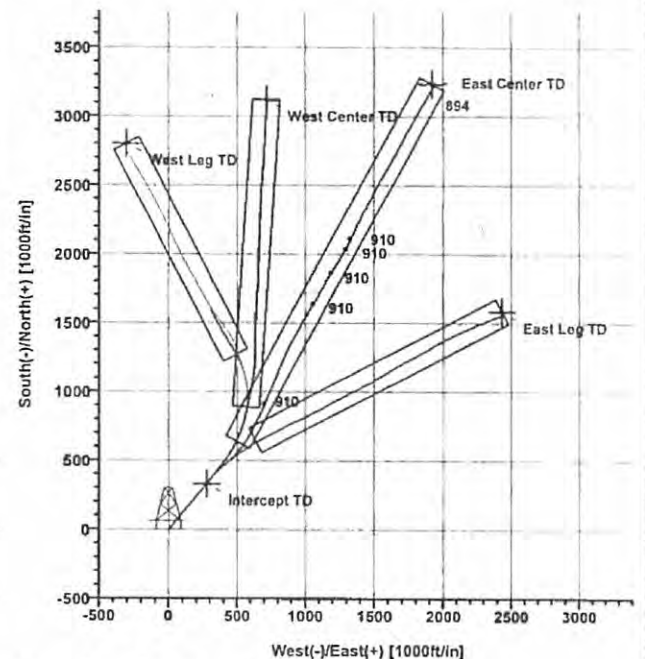
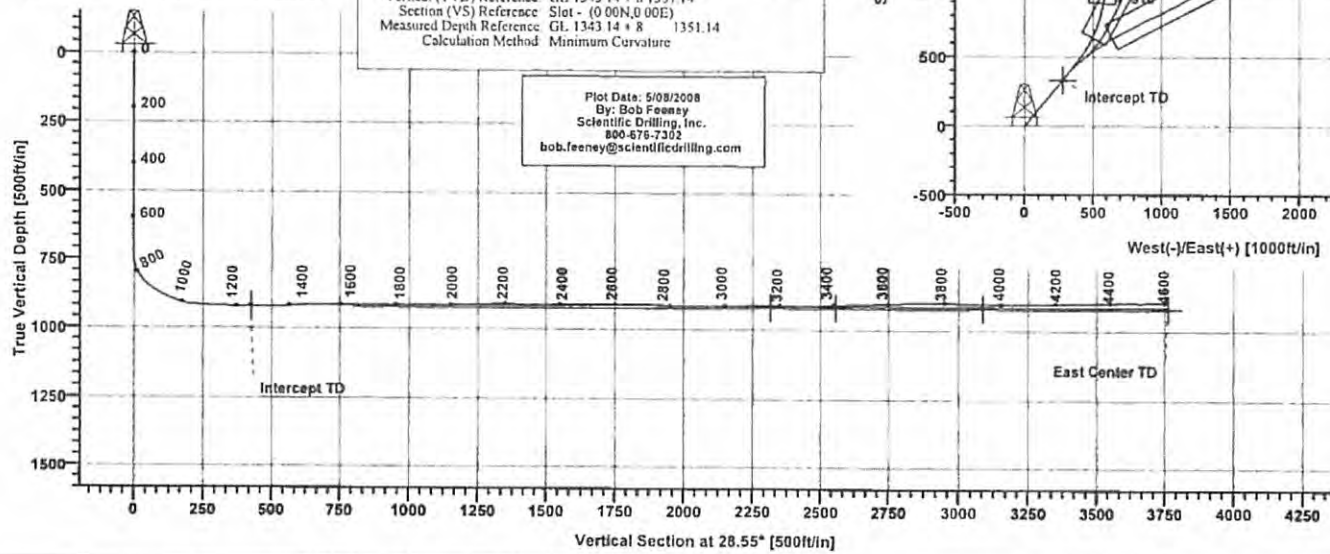
TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Intercept TD	917.00	330.10	275.62	495151.88	1698149.89	Circle (Radius: 1)
East Center TD	917.00	3236.97	1919.48	498058.75	1699793.75	Rectangle (2962x200)
East Leg TD	917.00	1585.50	2435.23	496407.28	1700309.50	Rectangle (2029x200)
West Leg TD	917.00	2802.34	-305.43	497624.12	1697567.84	Rectangle (1727x200)
West Center TD	917.00	3121.91	718.95	497943.69	1698593.22	Rectangle (2237x200)

**SITE DETAILS**  
**MC 57 WELL LOCATION**  
 Marshall Co., WV  
 Site Centre Northing: 494821.78  
 Easting: 1697874.27  
 Ground Level: 1343.14  
 Positional Uncertainty: 0.00  
 Convergence: -0.69



**REFERENCE INFORMATION**  
 Co-ordinate (N/E) Reference Well Centre ACCESS MC-57, Grid North  
 Vertical (TVD) Reference GL 1343.14 + 8 1351.14  
 Section (VS) Reference Slot - (0.00N,0.00E)  
 Measured Depth Reference GL 1343.14 + 8 1351.14  
 Calculation Method Minimum Curvature

Plot Date: 5/08/2008  
 By: Bob Feeney  
 Scientific Drilling, Inc.  
 800-678-7302  
 bob.feeney@scientificdrilling.com



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WV Department of  
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# Scientific Drilling Survey Report

SEP 25 2017

WV Department of  
Environmental Protection

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 11:03:49	<b>Page:</b> 1
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b> Well: ACCESS MC-57, Grid North		
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b> GL 1343.14 + 8 1351.1		
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,28.55Azi)		
<b>Wellpath:</b> EAST CENTER LEG	<b>Survey Calculation Method:</b> Minimum Curvature	<b>Db:</b> Sybase	

<b>Field:</b> MARSHALL COUNTY, WV Northern West Virginia and Pennsylvania Operations U.S.A.	<b>Map System:</b> US State Plane Coordinate System 1927	<b>Map Zone:</b> West Virginia, Northern Zone
<b>Geo Datum:</b> NAD27 (Clarke 1866)	<b>Coordinate System:</b> Well Centre	
<b>Sys Datum:</b> Mean Sea Level	<b>Geomagnetic Model:</b> igrf2005	

**Site:** MC 57 WELL LOCATION

Marshall Co., WV

<b>Site Position:</b>	<b>Northing:</b> 494821.78 ft	<b>Latitude:</b> 39 51 12.929 N
<b>From:</b> Map	<b>Easting:</b> 1697874.27 ft	<b>Longitude:</b> 80 34 34.143 W
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid
<b>Ground Level:</b> 1343.14 ft		<b>Grid Convergence:</b> -0.69 deg

<b>Well:</b> ACCESS MC-57	<b>Slot Name:</b>
<b>Well Position:</b> +N-S 0.00 ft Northing: 494821.78 ft Latitude: 39 51 12.929 N	
+E-W 0.00 ft Easting: 1697874.27 ft Longitude: 80 34 34.143 W	
<b>Position Uncertainty:</b> 0.00 ft	

<b>Wellpath:</b> EAST CENTER LEG	<b>Drilled From:</b> EAST LEG
<b>Current Datum:</b> GL 1343.14 + 8	<b>Tie-on Depth:</b> 1478.00 ft
<b>Magnetic Data:</b> 4/25/2008	<b>Above System Datum:</b> Mean Sea Level
<b>Field Strength:</b> 53292 nT	<b>Declination:</b> -8.48 deg
<b>Vertical Section:</b> Depth From (TVD) ft	<b>Mag Dip Angle:</b> 67.82 deg
	<b>+N-S</b> ft
	<b>+E-W</b> ft
	<b>Direction</b> deg
0.00	0.00 0.00 28.55

Survey Program for Definitive Wellpath			Version:	Tool Name
Date:	Validated:	Survey	0	
Actual From	To		Toolcode	
ft	ft			
50.00	646.00	Survey #1 (0)	Drop Gyro-SYS	Drop Gyro Systematic
646.00	1321.00	Survey #2 (0)		
1321.00	1479.00	Survey #1 (3)	MWD-SDI-SYS	Scientific MWD Systematic
1479.00	4610.00	Survey #1	MWD-SDI-SYS	Scientific MWD Systematic

MD	Incl	Azim	TVD	+N-S	+E-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.48	226.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.17	274.10	100.00	-0.22	-0.32	-0.35	0.39	-0.31	47.90	Drop Gyro-SYS
200.00	0.23	200.30	200.00	-0.36	-0.55	-0.57	0.24	0.06	-73.80	Drop Gyro-SYS
300.00	0.42	151.50	300.00	-0.89	-0.43	-0.99	0.32	0.19	-48.80	Drop Gyro-SYS
400.00	0.32	170.30	399.99	-1.56	-0.19	-1.46	0.16	-0.10	18.80	Drop Gyro-SYS
500.00	0.48	126.10	499.99	-2.03	0.15	-1.71	0.34	0.16	-44.20	Drop Gyro-SYS
600.00	0.34	140.00	599.99	-2.48	0.71	-1.84	0.17	-0.14	13.90	Drop Gyro-SYS
700.00	0.64	166.50	699.99	-3.34	0.71	-2.59	0.37	0.30	26.50	
800.00	27.74	35.36	797.25	10.16	11.24	14.30	28.17	27.09	-131.14	
900.00	59.11	39.60	866.49	65.96	54.04	83.77	31.50	31.38	4.24	
1000.00	75.58	38.99	904.82	137.36	112.19	174.28	16.48	16.47	-0.61	
1100.00	86.34	39.04	916.13	213.75	175.48	271.63	10.75	10.75	0.05	
1200.00	89.19	39.46	918.78	291.42	238.40	369.92	2.88	2.85	0.42	
1300.00	90.65	40.17	918.56	367.37	303.44	467.72	1.62	1.46	0.71	MWD-SDI-SYS
1400.00	92.85	47.87	916.54	439.86	372.07	564.20	8.00	2.20	7.69	MWD-SDI-SYS
1500.00	90.52	48.57	912.99	505.11	447.72	657.67	2.44	-2.33	0.70	MWD-SDI-SYS
1600.00	90.88	40.60	912.39	577.06	517.08	754.02	7.98	0.36	-7.97	MWD-SDI-SYS
1700.00	89.86	31.51	912.40	657.25	576.68	852.94	9.15	-1.02	-9.09	MWD-SDI-SYS
1800.00	90.79	26.84	912.34	745.35	623.93	952.91	4.76	0.93	-4.67	MWD-SDI-SYS
1800.00	80.29	25.00	910.43	835.17	667.83	1052.79	1.90	-0.50	-1.84	MWD-SDI-SYS

## Scientific Drilling Survey Report

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 11:03:49	<b>Page:</b> 2
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b>	<b>Well:</b> ACCESS MC-57, Grid North	
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b>	GL 1343.14 + 8 1351.1	
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b>	Well (0.00N,0.00E,28.55Azi)	
<b>Wellpath:</b> EAST CENTER LEG	<b>Survey Calculation Method:</b>	Minimum Curvature	<b>Db:</b> Sybase

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/S ft	+E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2000.00	90.76	24.31	910.08	926.12	709.40	1152.54	0.84	0.47	-0.69	MWD-SDI-SYS
2100.00	91.62	23.13	908.42	1017.43	760.11	1252.21	1.47	0.87	-1.18	MWD-SDI-SYS
2200.00	89.29	22.63	905.21	1109.54	788.89	1351.65	2.39	-2.33	-0.50	MWD-SDI-SYS
2300.00	89.43	24.21	909.38	1201.39	828.17	1451.10	1.59	0.14	1.58	MWD-SDI-SYS
2400.00	90.94	25.48	907.72	1291.78	870.88	1550.92	1.97	1.51	1.27	MWD-SDI-SYS
2500.00	89.37	27.43	907.55	1381.36	915.29	1650.83	2.50	-1.57	1.95	MWD-SDI-SYS
2600.00	91.34	29.30	907.24	1469.67	962.20	1750.82	2.72	1.97	1.88	MWD-SDI-SYS
2700.00	89.14	29.58	905.56	1556.44	1011.86	1850.77	2.22	-2.20	0.28	MWD-SDI-SYS
2800.00	86.78	31.71	910.30	1642.42	1062.66	1950.57	3.17	-2.35	2.12	MWD-SDI-SYS
2900.00	90.71	29.33	911.26	1728.67	1113.20	2050.49	4.59	3.93	-2.38	MWD-SDI-SYS
3000.00	90.10	29.68	910.72	1815.60	1162.62	2150.47	0.70	-0.61	0.35	MWD-SDI-SYS
3100.00	91.63	31.89	908.64	1901.63	1213.50	2250.36	2.68	1.53	2.21	MWD-SDI-SYS
3200.00	88.74	31.98	908.57	1986.43	1266.48	2350.16	2.89	-2.89	0.09	MWD-SDI-SYS
3300.00	89.83	24.07	910.72	2074.75	1313.12	2450.03	7.98	1.09	-7.91	MWD-SDI-SYS
3400.00	93.07	26.11	906.64	2165.34	1355.18	2549.71	3.83	3.24	2.04	MWD-SDI-SYS
3500.00	90.60	27.25	903.44	2254.57	1400.18	2649.60	2.72	-2.47	1.14	MWD-SDI-SYS
3600.00	91.97	27.38	902.26	2343.34	1446.21	2749.57	1.38	1.37	0.13	MWD-SDI-SYS
3700.00	91.65	28.74	897.75	2431.17	1493.79	2849.46	1.40	-0.32	1.36	MWD-SDI-SYS
3800.00	88.61	28.30	897.39	2519.02	1541.53	2949.45	3.08	-3.05	-0.44	MWD-SDI-SYS
3900.00	89.03	28.14	900.89	2607.41	1588.16	3049.38	0.45	0.43	-0.15	MWD-SDI-SYS
4000.00	89.72	28.73	901.69	2695.29	1635.87	3149.37	0.90	0.68	0.59	MWD-SDI-SYS
4100.00	89.80	28.66	900.59	2782.89	1684.08	3249.36	0.11	0.09	-0.07	MWD-SDI-SYS
4200.00	91.32	28.31	899.80	2870.87	1731.62	3349.35	1.56	1.51	-0.36	MWD-SDI-SYS
4300.00	90.94	29.73	897.43	2958.27	1780.14	3449.32	1.48	-0.38	1.43	MWD-SDI-SYS
4400.00	90.75	30.54	895.23	3044.79	1830.23	3549.26	0.83	-0.19	0.81	MWD-SDI-SYS
4500.00	89.84	30.04	895.02	3131.15	1880.63	3649.21	1.03	-0.90	-0.50	MWD-SDI-SYS
4600.00	91.04	29.77	894.10	3217.86	1930.44	3749.18	1.23	1.20	-0.27	MWD-SDI-SYS
4610.00	91.04	29.77	893.91	3226.54	1935.40	3759.17	0.00	0.00	0.00	MWD-SDI-SYS

**Targets**

Name	Description	TVD ft	+N/S ft	+E/W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →				
							Deg	Min	Sec	Deg	Min	Sec		
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W
-Circle (Radius: 1)														
East Center TD		917.00	3236.97	1919.48	498058.75	1699793.75	39	51	45.145	N	80	34	10.026	W
-Rectangle (2962x200)														

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WV Department of  
Environmental Protection

SEP 25 2017

# Scientific Drilling Survey Report - Geographic

WV Department of  
Environmental Protection

<b>Company:</b> CNX Gas Company, LLC	<b>Date:</b> 5/8/2008	<b>Time:</b> 11:05:10	<b>Page:</b> 1
<b>Field:</b> MARSHALL COUNTY, WV	<b>Co-ordinate(NE) Reference:</b>	<b>Well:</b> ACCESS MC-57, Grid North	
<b>Site:</b> MC 57 WELL LOCATION	<b>Vertical (TVD) Reference:</b>	GL 1343.14 + 8 1351.1	
<b>Well:</b> ACCESS MC-57	<b>Section (VS) Reference:</b>	Well (0.00N,0.00E,28.55Azi)	
<b>Wellpath:</b> EAST CENTER LEG	<b>Survey Calculation Method:</b>	Minimum Curvature	<b>Db:</b> Sybase

**Field:** MARSHALL COUNTY, WV  
Northern West Virginia and Pennsylvania Operations  
U.S.A.

**Map System:** US State Plane Coordinate System 1927  
**Geo Datum:** NAD27 (Clarke 1866)  
**Sys Datum:** Mean Sea Level

**Map Zone:** West Virginia, Northern Zone  
**Coordinate System:** Well Centre  
**Geomagnetic Model:** Igrf2005

**Site:** MC 57 WELL LOCATION

Marshall Co., WV

**Site Position:** Northing: 494821.78 ft Latitude: 39 51 12.929 N  
From: Map Easting: 1697874.27 ft Longitude: 80 34 34.143 W  
**Position Uncertainty:** 0.00 ft North Reference: Grid  
**Ground Level:** 1343.14 ft Grid Convergence: -0.69 deg

**Well:** ACCESS MC-57 **Slot Name:**

**Well Position:** +N/-S 0.00 ft Northing: 494821.78 ft Latitude: 39 51 12.929 N  
+E/-W 0.00 ft Easting: 1697874.27 ft Longitude: 80 34 34.143 W  
**Position Uncertainty:** 0.00 ft

**Wellpath:** EAST CENTER LEG

<b>Current Datum:</b> GL 1343.14 + 8	<b>Height</b> 1351.14 ft	<b>Drilled From:</b> EAST LEG
<b>Magnetic Data:</b> 4/25/2008		<b>Tie-on Depth:</b> 1479.00 ft
<b>Field Strength:</b> 53292 nT		<b>Above System Datum:</b> Mean Sea Level
<b>Vertical Section:</b> Depth From (TVD)	+N/-S	<b>Declination:</b> -8.48 deg
ft	ft	<b>Mag Dip Angle:</b> 67.82 deg
0.00	0.00	<b>+E/-W</b>
		ft
		<b>Direction</b>
		deg
		28.55

**Survey Program for Definitive Wellpath**

**Date:** 5/8/2008 **Validated:** No  
**Actual From** **To** **Survey** **Version:** 0  
ft ft **Toolcode** **Tool Name**

50.00	646.00	Survey #1 (0)	Drop Gyro-SYS	Drop Gyro Systematic
646.00	1321.00	Survey #2 (0)		
1321.00	1479.00	Survey #1 (3)	MWD-SDI-SYS	Scientific MWD Systematic
1479.00	4610.00	Survey #1	MWD-SDI-SYS	Scientific MWD Systematic

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude → Deg Min Sec	← Longitude → Deg Min Sec
0.00	0.48	226.20	0.00	0.00	0.00	494821.78	1697874.27	39 51 12.929 N	80 34 34.143 W
100.00	0.17	274.10	100.00	-0.22	-0.32	494821.56	1697873.95	39 51 12.927 N	80 34 34.147 W
200.00	0.23	200.30	200.00	-0.36	-0.55	494821.42	1697873.72	39 51 12.925 N	80 34 34.150 W
300.00	0.42	151.50	300.00	-0.89	-0.43	494820.89	1697873.84	39 51 12.920 N	80 34 34.148 W
400.00	0.32	170.30	399.99	-1.56	-0.19	494820.22	1697874.08	39 51 12.913 N	80 34 34.145 W
500.00	0.48	126.10	499.99	-2.03	0.15	494819.75	1697874.42	39 51 12.909 N	80 34 34.141 W
600.00	0.34	140.00	599.99	-2.48	0.71	494819.30	1697874.98	39 51 12.904 N	80 34 34.133 W
700.00	0.64	166.50	699.99	-3.34	0.71	494818.44	1697874.98	39 51 12.898 N	80 34 34.133 W
800.00	27.74	36.36	797.25	10.16	11.24	494831.94	1697885.51	39 51 13.031 N	80 34 34.000 W
900.00	59.11	39.60	866.49	65.96	54.04	494887.74	1697928.31	39 51 13.587 N	80 34 33.460 W
1000.00	75.58	38.99	904.82	137.36	112.19	494959.14	1697986.46	39 51 14.300 N	80 34 32.726 W
1100.00	86.34	39.04	916.13	213.75	175.48	495035.53	1698049.75	39 51 15.062 N	80 34 31.926 W
1200.00	89.19	39.46	918.78	291.42	238.40	495113.20	1698112.67	39 51 15.837 N	80 34 31.131 W
1300.00	90.65	40.17	918.56	367.37	303.44	495189.15	1698177.71	39 51 16.595 N	80 34 30.309 W
1400.00	92.85	47.87	916.54	439.86	372.07	495261.64	1698246.34	39 51 17.320 N	80 34 29.440 W
1500.00	90.52	48.57	912.99	505.11	447.72	495326.89	1698321.99	39 51 17.974 N	80 34 28.480 W
1600.00	90.88	40.60	912.39	577.06	517.08	495398.84	1698391.35	39 51 18.693 N	80 34 27.601 W
1700.00	89.86	31.51	912.40	657.25	576.68	495479.03	1698450.95	39 51 19.492 N	80 34 26.850 W
1800.00	90.79	26.84	912.34	745.35	623.93	495567.13	1698498.20	39 51 20.369 N	80 34 26.257 W
1900.00	90.29	25.00	910.43	835.17	667.83	495656.95	1698542.10	39 51 21.261 N	80 34 25.708 W

## Scientific Drilling Survey Report - Geographic

WV Department of  
Environmental Protection

Company: CNX Gas Company, LLC	Date: 5/8/2008	Time: 11:05:10	Page: 2
Field: MARSHALL COUNTY, WV	Co-ordinate(NE) Reference:	Well: ACCESS MC-57, Grid North	
Site: MC 57 WELL LOCATION	Vertical (TVD) Reference:	GL 1343.14 + 8 1351.1	
Well: ACCESS MC-57	Section (VS) Reference:	Well (0.00N,0.00E,28.55Azi)	
Wellpath: EAST CENTER LEG	Survey Calculation Method:	Minimum Curvature	Db: Sybase

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →		← Longitude →					
								Deg	Min	Sec	Deg	Min	Sec		
2000.00	90.76	24.31	910.08	926.12	709.40	495747.80	1698583.67	39	51	22.165	N	80	34	25.189	W
2100.00	91.62	23.13	908.42	1017.43	750.11	495839.21	1698624.38	39	51	23.072	N	80	34	24.681	W
2200.00	89.29	22.63	905.21	1109.54	788.89	495931.32	1698663.16	39	51	23.987	N	80	34	24.198	W
2300.00	89.43	24.21	909.38	1201.39	828.17	496023.17	1698702.44	39	51	24.899	N	80	34	23.708	W
2400.00	90.94	25.48	907.72	1291.78	870.88	496113.56	1698745.15	39	51	25.798	N	80	34	23.175	W
2500.00	89.37	27.43	907.55	1381.36	915.29	496203.14	1698789.56	39	51	26.688	N	80	34	22.619	W
2600.00	91.34	29.30	907.24	1469.67	962.20	496291.45	1698836.47	39	51	27.567	N	80	34	22.031	W
2700.00	89.14	29.58	905.56	1556.44	1011.86	496378.22	1698886.13	39	51	28.430	N	80	34	21.407	W
2800.00	86.78	31.71	910.30	1642.42	1062.66	496464.20	1698936.93	39	51	29.286	N	80	34	20.769	W
2900.00	90.71	29.33	911.26	1728.67	1113.20	496550.45	1698987.47	39	51	30.144	N	80	34	20.134	W
3000.00	90.10	29.68	910.72	1815.60	1162.62	496637.38	1699036.89	39	51	31.009	N	80	34	19.514	W
3100.00	91.63	31.89	908.64	1901.63	1213.50	496723.41	1699087.77	39	51	31.865	N	80	34	18.875	W
3200.00	88.74	31.98	908.57	1986.43	1266.48	496808.21	1699140.75	39	51	32.709	N	80	34	18.208	W
3300.00	89.83	24.07	910.72	2074.75	1313.12	496896.53	1699187.39	39	51	33.588	N	80	34	17.624	W
3400.00	93.07	26.11	906.64	2165.34	1355.18	496987.12	1699229.45	39	51	34.488	N	80	34	17.098	W
3500.00	90.60	27.25	903.44	2254.57	1400.18	497076.35	1699274.45	39	51	35.375	N	80	34	16.535	W
3600.00	91.97	27.38	902.26	2343.34	1446.21	497165.12	1699320.48	39	51	36.258	N	80	34	15.958	W
3700.00	91.65	28.74	897.75	2431.17	1493.79	497252.95	1699368.06	39	51	37.131	N	80	34	15.362	W
3800.00	88.61	28.30	897.39	2519.02	1541.53	497340.80	1699415.80	39	51	38.005	N	80	34	14.763	W
3900.00	89.03	28.14	900.89	2607.41	1588.16	497429.19	1699462.43	39	51	38.884	N	80	34	14.178	W
4000.00	89.72	28.73	901.69	2695.29	1635.87	497517.07	1699510.14	39	51	39.758	N	80	34	13.580	W
4100.00	89.80	28.66	900.59	2782.89	1684.08	497604.67	1699558.35	39	51	40.630	N	80	34	12.975	W
4200.00	91.32	28.31	899.80	2870.87	1731.62	497692.65	1699605.89	39	51	41.505	N	80	34	12.379	W
4300.00	90.94	29.73	897.43	2958.27	1780.14	497780.05	1699654.41	39	51	42.374	N	80	34	11.770	W
4400.00	90.75	30.54	895.23	3044.79	1830.23	497866.57	1699704.50	39	51	43.235	N	80	34	11.141	W
4500.00	89.84	30.04	895.02	3131.15	1880.63	497952.93	1699754.90	39	51	44.095	N	80	34	10.508	W
4600.00	91.04	29.77	894.10	3217.86	1930.44	498039.64	1699804.71	39	51	44.957	N	80	34	9.882	W
4610.00	91.04	29.77	893.91	3226.54	1935.40	498048.32	1699809.67	39	51	45.044	N	80	34	9.820	W

### Targets

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →		← Longitude →					
							Deg	Min	Sec	Deg	Min	Sec		
Intercept TD		917.00	330.10	275.62	495151.88	1698149.89	39	51	16.224	N	80	34	30.660	W
-Circle (Radius: 1)														
East Center TD		917.00	3236.97	1919.48	498058.75	1699793.75	39	51	45.145	N	80	34	10.026	W
-Rectangle (2962x200)														