



Field: Carson
 Site: Carson #207S
 Well: Carson #207S
 Wellpath: OH

Survey: Pathfinder LWD Surveys

PATHFINDER

Surface 1085/W 1585/W
 Start lateral 1799/N 1414/W
 End Lateral 2093/S 1086/W

C-8-30N-4W

30 039 27580

WELLPATH DETAILS

OH

Rig: V-Section Angle 193.62°
 Ref. Datum: SITE 0.00R
 Origin +N/S 0.00
 Origin +E/W 0.00
 Starting From TVD 0.00

SITE DETAILS

Carson #207S
 Site Centre Northing: 2122048.98
 Easting: 661533.82
 Water Depth: 0.00
 Positional Uncertainty: 0.00
 Convergence: -2.00

TARGET DETAILS

Name	TVD	+N/S	+E/W	Shape
PBHL	4016.00	-3434.00	-832.04	Point

ANNOTATIONS

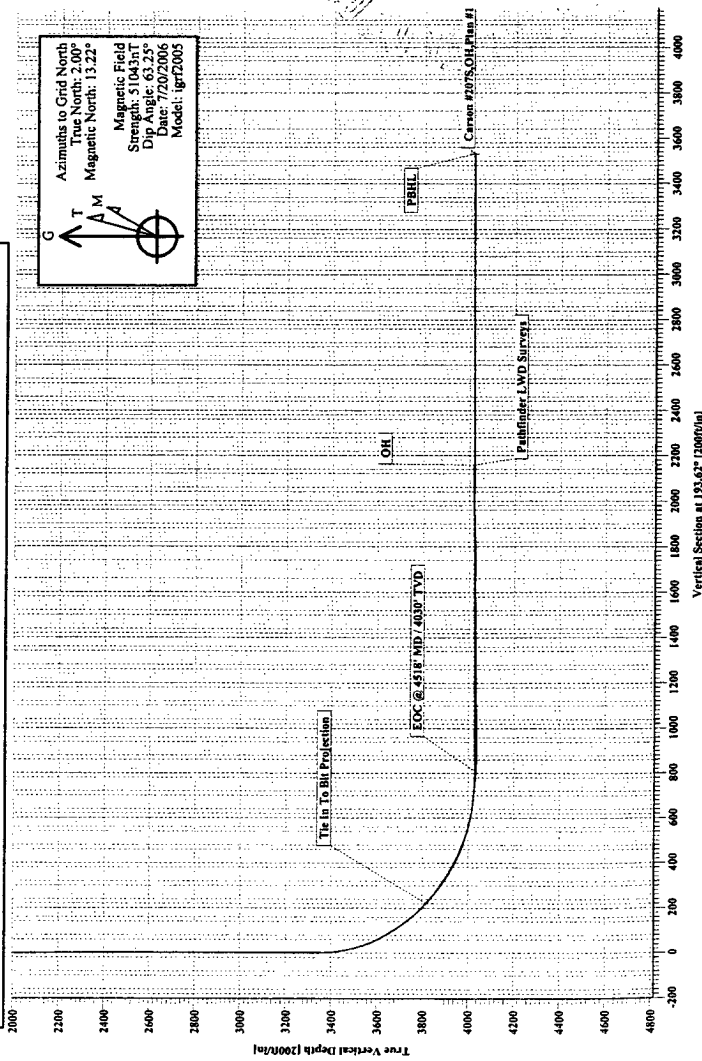
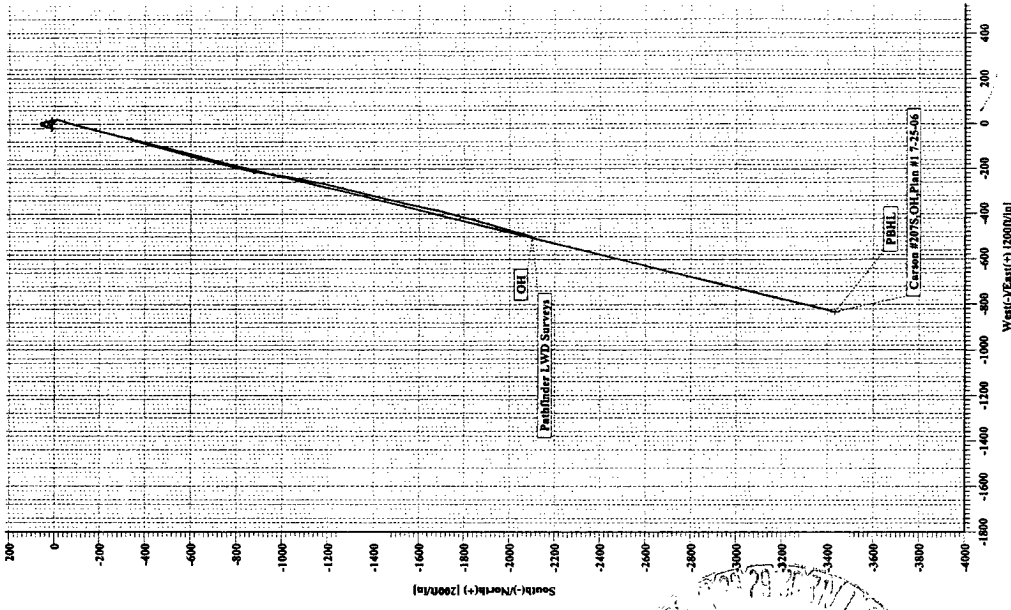
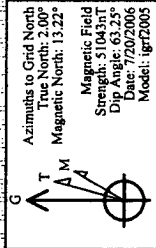
No.	TVD	MD	Annotation
1	3818.50	3882.00	Tie In To Bit Projection
2	4034.80	4518.22	EOC @ 4518' MD / 4030' TVD

TARGET DETAILS

Name	TVD	+N/S	+E/W	Shape
PBHL	4016.00	-3434.00	-832.04	Point

Survey: Pathfinder LWD Surveys (Carson #207S/OH)

No	MD	Inc	Az	TVD	+N/S	+E/W	DLog	TFace	VSec
82	5654.00	91.28	196.47	4024.65	-1890.55	-438.84	1.64	98.74	1940.72
83	5686.00	91.36	196.30	4023.91	-1921.24	-447.87	0.59	-64.79	1972.68
84	5708.00	91.28	196.03	4023.17	-1951.97	-456.77	0.88	-106.51	2004.64
85	5750.00	91.10	196.47	4022.51	-1982.68	-463.72	1.49	112.25	2036.60
86	5781.00	91.19	196.56	4021.89	-2012.40	-474.54	0.41	44.99	2067.55
87	5813.00	90.66	194.80	4021.37	-2043.20	-483.18	5.74	-106.75	2099.53
88	5874.00	90.66	194.80	4020.67	-2102.17	-488.76	0.00	0.00	2160.51



Survey: Pathfinder LWD Survey (Carson #207S/OH)

Vertical Section at 193.62° [2000m]

Survey: Pathfinder LWD Survey (Carson #207S/OH)
 Created By: Subiraj
 Date: 8/20/06

Pathfinder Energy

Survey Report

Company: Energen Resources Corporation		Date: 8/9/2006	Time: 13:29:17	Page: 1
Field: Carson		Co-ordinate(NE) Reference: Well: Carson #207S, Grid North		
Site: Carson #207S		Vertical (TVD) Reference: SITE 0.0		
Well: Carson #207S		Section (VS) Reference: Well (0.00N,0.00E,193.62Azi)		
Wellpath: OH		Survey Calculation Method: Minimum Curvature Db: Sybase		

Field: Carson Rio Arriba County, NM	
Map System: US State Plane Coordinate System 1983	Map Zone: New Mexico, Central Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2005

Site: Carson #207S	
Site Position:	Northing: 2122048.98 ft
From: Map	Easting: 661533.82 ft
Position Uncertainty: 0.00 ft	Latitude: 36 47 5.130 N
Ground Level: 0.00 ft	Longitude: 109 35 32.517 W
	North Reference: Grid
	Grid Convergence: -2.00 deg

Well: Carson #207S		Slot Name:	
Well Position: +N/-S 0.00 ft	Northing: 2122048.98 ft	Latitude: 36 47 5.130 N	
+E/-W 0.00 ft	Easting: 661533.82 ft	Longitude: 109 35 32.517 W	
Position Uncertainty: 0.00 ft			

Wellpath: OH		Drilled From: Surface	
Current Datum: SITE	Height 0.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 7/20/2006		Above System Datum: Mean Sea Level	
Field Strength: 51043 nT		Declination: 11.21 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 63.25 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	193.62

Survey: Pathfinder LWD Surveys	Start Date: 7/28/2006
Company: Pathfinder Energy	Engineer: Midwellplan
Tool:	Tied-to: From Surface

Survey: Pathfinder LWD Surveys										
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
297.00	0.18	73.26	297.00	0.13	0.45	-0.24	0.06	0.06	0.00	
763.00	0.44	47.24	762.99	1.56	2.46	-2.10	0.06	0.06	-5.58	
1251.00	0.70	117.91	1250.97	1.44	6.47	-2.92	0.14	0.05	14.48	
1637.00	0.88	123.49	1636.94	-1.30	11.03	-1.33	0.05	0.05	1.45	
2073.00	0.88	152.17	2072.89	-6.11	15.38	2.32	0.10	0.00	6.58	
2495.00	0.79	123.88	2494.84	-10.60	19.31	5.75	0.10	-0.02	-6.70	
2920.00	0.35	72.58	2919.82	-11.84	22.98	6.10	0.15	-0.10	-12.07	
3291.00	0.53	291.78	3290.82	-10.87	22.47	5.27	0.22	0.05	-37.95	
3321.00	0.53	313.28	3320.82	-10.72	22.24	5.18	0.66	0.00	71.67	
3353.00	0.88	217.48	3352.82	-10.81	21.98	5.33	3.35	1.09	-299.37	
3385.00	3.34	195.33	3384.79	-11.91	21.59	6.49	7.96	7.69	-69.22	
3416.00	7.03	194.19	3415.66	-14.62	20.88	9.29	11.91	11.90	-3.68	
3448.00	10.02	194.89	3447.30	-19.21	19.69	14.03	9.35	9.34	2.19	
3479.00	12.93	194.54	3477.68	-25.17	18.12	20.20	9.39	9.39	-1.13	
3510.00	15.83	195.86	3507.71	-32.60	16.10	27.89	9.41	9.35	4.26	
3541.00	18.73	197.09	3537.30	-41.43	13.48	37.09	9.43	9.35	3.97	
3572.00	21.90	198.23	3566.37	-51.68	10.20	47.82	10.30	10.23	3.68	
3604.00	25.06	198.58	3595.72	-63.77	6.18	60.52	9.88	9.87	1.09	
3635.00	28.14	197.44	3623.43	-76.97	1.89	74.36	10.07	9.94	-3.68	
3666.00	30.60	195.51	3650.45	-91.55	-2.41	89.55	8.50	7.94	-6.23	
3698.00	33.40	195.51	3677.58	-107.89	-6.94	106.49	8.75	8.75	0.00	
3729.00	34.82	194.01	3703.25	-124.70	-11.37	123.87	5.32	4.58	-4.84	
3759.00	36.58	193.84	3727.61	-141.69	-15.58	141.38	5.88	5.87	-0.57	

Pathfinder Energy

Survey Report

Company: Energen Resources Corporation
 Field: Carson
 Site: Carson #207S
 Well: Carson #207S
 Wellpath: OH

Date: 8/9/2006 Time: 13:29:17 Page: 2
 Co-ordinate(NE) Reference: Well: Carson #207S, Grid North
 Vertical (TVD) Reference: SITE 0.0
 Section (VS) Reference: Well (0.00N,0.00E,193.62Azi)
 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: Pathfinder LWD Surveys

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
3790.00	39.31	194.19	3752.06	-160.18	-20.20	160.44	8.83	8.81	1.13	
3822.00	42.21	194.63	3776.29	-180.42	-25.40	181.32	9.11	9.06	1.37	
3853.00	45.73	194.54	3798.60	-201.24	-30.82	202.84	11.36	11.35	-0.29	
3884.00	47.75	194.45	3819.84	-223.10	-36.47	225.41	6.52	6.52	-0.29	
3916.00	49.42	194.89	3841.01	-246.31	-42.54	249.41	5.32	5.22	1.37	
3947.00	52.06	195.42	3860.63	-269.48	-48.82	273.40	8.62	8.52	1.71	
3978.00	53.38	195.51	3879.40	-293.25	-55.40	298.05	4.26	4.26	0.29	
4010.00	55.05	195.51	3898.11	-318.26	-62.34	323.99	5.22	5.22	0.00	
4041.00	57.77	195.33	3915.26	-343.16	-69.20	349.80	8.79	8.77	-0.58	
4072.00	60.50	195.86	3931.17	-368.78	-76.36	376.39	8.93	8.81	1.71	
4103.00	63.40	196.30	3945.74	-395.07	-83.94	403.72	9.44	9.35	1.42	
4134.00	66.21	196.56	3958.94	-421.97	-91.87	431.74	9.10	9.06	0.84	
4166.00	69.12	196.47	3971.10	-450.35	-100.28	461.30	9.10	9.09	-0.28	
4197.00	71.67	195.42	3981.50	-478.42	-108.30	490.47	8.82	8.23	-3.39	
4229.00	72.90	195.16	3991.23	-507.83	-116.34	520.94	3.92	3.84	-0.81	
4260.00	74.22	195.33	4000.01	-536.51	-124.16	550.66	4.29	4.26	0.55	
4291.00	76.77	194.89	4007.77	-565.48	-131.98	580.66	8.34	8.23	-1.42	
4322.00	79.49	194.98	4014.15	-594.79	-139.80	610.99	8.78	8.77	0.29	
4415.00	85.56	194.28	4026.24	-683.97	-163.07	703.14	6.57	6.53	-0.75	
4446.00	84.06	195.07	4029.04	-713.84	-170.90	734.01	5.46	-4.84	2.55	Enter tool
4478.00	85.03	193.92	4032.09	-744.68	-178.87	765.86	4.69	3.03	-3.59	
4510.00	86.88	194.80	4034.34	-775.60	-186.78	797.77	6.40	5.78	2.75	
4542.00	86.53	193.84	4036.18	-806.55	-194.69	829.72	3.19	-1.09	-3.00	
4574.00	86.70	192.43	4038.07	-837.66	-201.95	861.66	4.43	0.53	-4.41	
4606.00	90.48	190.23	4038.86	-869.02	-208.23	893.62	13.67	11.81	-6.87	
4637.00	91.10	189.97	4038.43	-899.54	-213.66	924.55	2.17	2.00	-0.84	
4669.00	90.40	189.88	4038.01	-931.05	-219.18	956.48	2.21	-2.19	-0.28	
4701.00	90.48	189.44	4037.77	-962.60	-224.55	988.41	1.40	0.25	-1.37	
4733.00	90.84	188.39	4037.40	-994.21	-229.51	1020.30	3.47	1.12	-3.28	
4765.00	91.19	189.88	4036.83	-1025.80	-234.59	1052.19	4.78	1.09	4.66	
4797.00	91.54	192.17	4036.07	-1057.20	-240.70	1084.15	7.24	1.09	7.16	
4828.00	90.92	192.34	4035.40	-1087.48	-247.28	1115.13	2.07	-2.00	0.55	
4860.00	90.22	191.29	4035.09	-1118.80	-253.83	1147.11	3.94	-2.19	-3.28	
4892.00	90.22	190.06	4034.96	-1150.25	-259.76	1179.07	3.84	0.00	-3.84	
4924.00	90.40	191.11	4034.79	-1181.70	-265.64	1211.03	3.33	0.56	3.28	
4955.00	91.01	193.57	4034.41	-1211.98	-272.26	1242.01	8.18	1.97	7.94	
4987.00	91.19	194.45	4033.79	-1243.02	-280.01	1274.01	2.81	0.56	2.75	
5020.00	91.36	194.45	4033.06	-1274.97	-288.24	1306.99	0.52	0.52	0.00	
5051.00	91.36	194.37	4032.32	-1304.99	-295.95	1337.98	0.26	0.00	-0.26	
5083.00	91.01	194.01	4031.66	-1336.01	-303.80	1369.97	1.57	-1.09	-1.12	
5115.00	90.48	193.66	4031.25	-1367.07	-311.45	1401.97	1.98	-1.66	-1.09	
5146.00	90.57	193.66	4030.96	-1397.20	-318.77	1432.97	0.29	0.29	0.00	
5178.00	88.91	192.87	4031.11	-1428.34	-326.11	1464.97	5.74	-5.19	-2.47	
5210.00	90.75	193.49	4031.20	-1459.50	-333.41	1496.96	6.07	5.75	1.94	
5242.00	91.80	193.75	4030.49	-1490.59	-340.94	1528.96	3.38	3.28	0.81	
5273.00	91.45	193.49	4029.61	-1520.70	-348.24	1559.94	1.41	-1.13	-0.84	
5305.00	91.54	193.49	4028.78	-1551.81	-355.70	1591.93	0.28	0.28	0.00	
5337.00	90.22	193.31	4028.28	-1582.94	-363.11	1623.93	4.16	-4.12	-0.56	
5368.00	89.34	191.82	4028.40	-1613.19	-369.86	1654.92	5.58	-2.84	-4.81	
5400.00	89.08	191.02	4028.84	-1644.55	-376.19	1686.89	2.63	-0.81	-2.50	
5432.00	89.08	191.73	4029.36	-1675.92	-382.50	1718.87	2.22	0.00	2.22	
5464.00	91.19	193.31	4029.28	-1707.16	-389.44	1750.86	8.24	6.59	4.94	
5496.00	91.45	194.80	4028.55	-1738.19	-397.21	1782.85	4.73	0.81	4.66	

Pathfinder Energy

Survey Report

Company: Energen Resources Corporation
Field: Carson
Site: Carson #207S
Well: Carson #207S
Wellpath: OH

Date: 8/9/2006 **Time:** 13:29:17 **Page:** 3
Co-ordinate(NE) Reference: Well: Carson #207S, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,193.62Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey: Pathfinder LWD Surveys

MD ft	Incl deg	Azlm deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
5527.00	91.36	195.33	4027.79	-1768.12	-405.26	1813.83	1.73	-0.29	1.71	
5559.00	91.36	195.07	4027.03	-1798.99	-413.65	1845.81	0.81	0.00	-0.81	
5591.00	91.63	194.42	4026.19	-1829.92	-421.79	1877.79	2.20	0.84	-2.03	
5622.00	91.36	195.95	4025.38	-1859.83	-429.91	1908.77	5.01	-0.87	4.94	
5654.00	91.28	196.47	4024.65	-1890.55	-438.84	1940.72	1.64	-0.25	1.62	
5686.00	91.36	196.30	4023.91	-1921.24	-447.87	1972.68	0.59	0.25	-0.53	
5718.00	91.28	196.03	4023.17	-1951.97	-456.77	2004.64	0.88	-0.25	-0.84	
5750.00	91.10	196.47	4022.51	-1982.68	-465.72	2036.60	1.49	-0.56	1.37	
5781.00	91.19	196.56	4021.89	-2012.40	-474.54	2067.55	0.41	0.29	0.29	
5813.00	90.66	194.80	4021.37	-2043.20	-483.18	2099.53	5.74	-1.66	-5.50	
5874.00	90.66	194.80	4020.67	-2102.17	-498.76	2160.51	0.00	0.00	0.00	