

30 039 29821

Field: Carracas Canyon
Site: Carracas 26A-11
Well: Carracas 26A-11
Wellpath: OH

Survey: Pathfinder MWD Surveys

Surface 2240/S 955/E Sec 27-32N-5W
Lateral origin 1876/S 186/W Sec 26 Md 4771' Tvd 3829'
end of lateral 1580/S 188/W Md 5959 Tvd 3849'

PATHFINDER

ENERGEN
RESOURCES

TARGET DETAILS					
Name	TVD	+N/S	+E/W	Shape	
PBHL	3824.00	-640.00	2835.00	Point	
Entry Point	3830.00	-366.80	1625.00	Point	

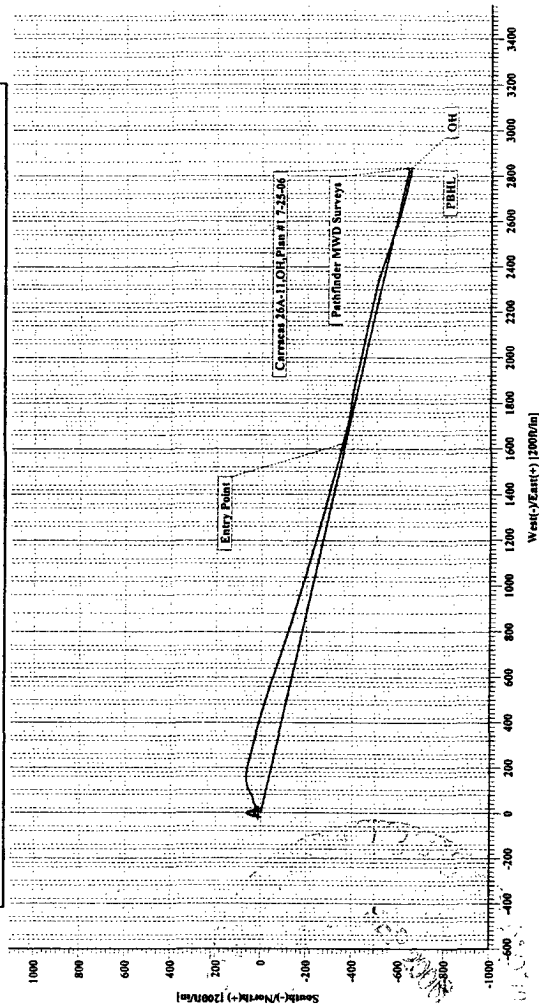
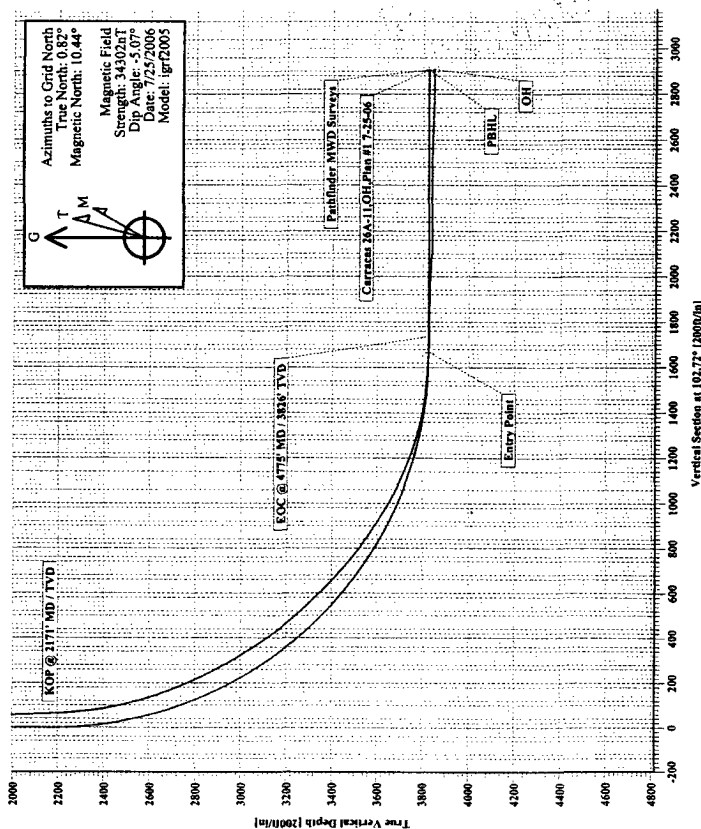
WELLPATH DETAILS		
OH		
Rig:	SITE	0.00r
Ref. Datum:	Origin	0.00
V. Section	Origin	0.00
Angle	+N/S	0.00
102.72°	+E/W	0.00
	Starting	0.00
	From TVD	

SITE DETAILS		
Carracas 26A-11		
Water Depth:	0.00	
Positional Uncertainty:	0.00	
Convergence:	-0.82	

TARGET DETAILS			
Name	TVD	+N/S	+E/W
PBHL	3824.00	-640.00	2835.00
Entry Point	3830.00	-366.80	1625.00

ANNOTATIONS			
No.	TVD	MD	Annotation
1	2169.08	2171.10	KOP @ 2171' MD / TVD
2	3830.14	4774.58	EOC @ 4775' MD / 3826' TVD

Survey: Pathfinder MWD Surveys (Carracas 26A-11/OH)										
No	MD	Inc	Az	TVD	+N/S	+E/W	DLeg	TFace	VSec	
111	3403.00	89.16	103.38	3841.46	-902.75	2309.29	2.05	56.56	2363.31	
112	3435.00	89.60	104.61	3841.80	-510.49	2340.34	4.08	70.32	2195.30	
113	3466.00	89.69	106.80	3842.00	-518.88	2370.18	7.07	87.65	2426.26	
114	3497.00	89.97	107.68	3842.09	-528.07	2399.78	2.98	72.35	2457.16	
115	3529.00	90.66	108.30	3841.91	-537.95	2430.22	2.90	41.94	2489.02	
116	3559.00	89.60	108.74	3841.84	-547.48	2458.66	3.83	157.46	2518.87	
117	3591.00	88.46	108.56	3842.39	-557.71	2488.98	3.61	-171.03	2550.69	
118	3621.00	88.20	108.56	3842.42	-567.82	2518.33	0.81	-90.00	2582.52	
119	3654.00	88.20	108.56	3842.42	-577.45	2548.13	1.19	153.82	2613.56	
120	3686.00	87.93	107.60	3845.23	-587.55	2579.13	3.11	-105.73	2645.20	
121	3718.00	87.67	106.19	3846.46	-596.84	2609.72	4.48	-100.48	2677.09	
122	3749.00	88.29	105.31	3847.55	-605.25	2639.54	3.47	-54.83	2708.03	
123	3780.00	88.46	104.52	3848.43	-613.22	2669.48	2.61	-77.86	2738.99	
124	3812.00	89.16	103.64	3849.10	-621.01	2700.51	3.51	-51.50	2770.97	
125	3844.00	90.31	102.85	3849.24	-628.34	2731.66	4.36	-34.49	2802.97	
126	3875.00	90.48	102.32	3849.03	-635.09	2761.92	1.80	-72.21	2833.97	
127	3902.00	90.06	102.13	3848.86	-638.69	2778.53	1.46	-43.36	2850.97	
128	3930.00	91.50	102.13	3847.77	-650.90	2835.22	1.45	0.00	2908.96	



Pathfinder Energy

Survey Report

Company: Energen Resources Corporation
Field: Carracas Canyon
Site: Carracas 26A-11
Well: Carracas 26A-11
Wellpath: OH

Date: 8/28/2006 **Time:** 16:19:10 **Page:** 1
Co-ordinate(NE) Reference: Well: Carracas 26A-11, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,102.72Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Field: Carracas Canyon
 Rio Arriba County, NM

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

Map Zone: New Mexico, Western Zone
Coordinate System: Well Centre
Geomagnetic Model: igrf2005

Site: Carracas 26A-11

Site Position:	Northing:	ft	Latitude:
From: Lease Line	Easting:	ft	Longitude:
Position Uncertainty: 0.00 ft			North Reference: Grid
Ground Level: 0.00 ft			Grid Convergence: -0.82 deg

Well: Carracas 26A-11

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 0.00 ft	Latitude: 30 59 24.512 N
+E/-W 0.00 ft	Easting: 0.00 ft	Longitude: 109 25 44.094 W
Position Uncertainty: 0.00 ft		

Wellpath: OH

Current Datum: SITE	Height 0.00 ft	Drilled From: Surface
Magnetic Data: 7/25/2006		Tie-on Depth: 0.00 ft
Field Strength: 34302 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)		Declination: 9.61 deg
ft	+N/-S ft	Mag Dip Angle: -5.07 deg
		+E/-W ft
		Direction deg
0.00	0.00	0.00 102.72

Survey: Pathfinder MWD Surveys

Start Date: 8/11/2006

Company: Pathfinder Energy
Tool:

Engineer: Midwellplan
Tied-to: From Surface

Survey: Pathfinder MWD 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	
276.00	0.53	57.94	276.00	0.68	1.08	0.91	0.19	0.19	0.00	
711.00	2.11	50.38	710.87	6.85	8.96	7.23	0.36	0.36	-1.74	
1144.00	3.78	53.81	1143.28	20.36	26.62	21.48	0.39	0.39	0.79	
1574.00	2.64	78.24	1572.62	30.75	47.75	39.81	0.41	-0.27	5.68	
2007.00	2.64	78.64	2005.16	34.75	67.29	57.99	0.00	0.00	0.09	
2128.00	2.55	66.64	2126.04	36.37	72.50	62.71	0.45	-0.07	-9.92	
2159.00	3.08	68.57	2157.00	36.94	73.90	63.96	1.74	1.71	6.23	
2190.00	4.13	72.35	2187.94	37.59	75.74	65.61	3.47	3.39	12.19	
2221.00	5.10	67.17	2218.84	38.46	78.08	67.69	3.40	3.13	-16.71	
2252.00	6.07	59.52	2249.69	39.83	80.76	70.01	3.94	3.13	-24.68	
2283.00	7.21	54.60	2280.48	41.78	83.76	72.50	4.11	3.68	-15.87	
2313.00	8.71	55.56	2310.19	44.16	87.17	75.30	5.02	5.00	3.20	
2344.00	9.67	57.15	2340.79	46.90	91.29	78.72	3.20	3.10	5.13	
2375.00	10.82	60.40	2371.30	49.75	96.01	82.70	4.15	3.71	10.48	
2406.00	12.05	63.65	2401.68	52.62	101.44	87.36	4.48	3.97	10.48	
2437.00	13.19	67.96	2431.93	55.39	107.61	92.78	4.77	3.68	13.90	
2468.00	14.16	72.18	2462.05	57.87	114.50	98.95	4.49	3.13	13.61	
2499.00	14.86	76.22	2492.07	59.98	121.97	105.77	3.97	2.26	13.03	
2529.00	15.30	79.82	2521.03	61.60	129.61	112.86	3.45	1.47	12.00	
2560.00	16.53	83.60	2550.85	62.81	138.01	120.80	5.19	3.97	12.19	
2591.00	17.85	86.33	2580.46	63.61	147.14	129.52	4.99	4.26	8.81	
2623.00	19.26	89.75	2610.80	63.94	157.31	139.37	5.56	4.41	10.69	
2653.00	19.87	93.62	2639.07	63.64	167.35	149.23	4.77	2.03	12.90	

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Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,102.72Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey: Pathfinder MWD 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
2684.00	20.14	95.64	2668.20	62.79	177.92	159.73	2.39	0.87	6.52	
2715.00	21.02	98.10	2697.22	61.48	188.73	170.56	3.98	2.84	7.94	
2747.00	22.16	100.39	2726.97	59.58	200.35	182.32	4.43	3.56	7.16	
2778.00	22.86	102.32	2755.61	57.24	211.99	194.18	3.28	2.26	6.23	
2810.00	23.39	103.64	2785.04	54.42	224.23	206.75	2.32	1.66	4.12	
2841.00	24.45	104.26	2813.38	51.39	236.43	219.31	3.51	3.42	2.00	
2873.00	26.12	104.52	2842.31	47.99	249.67	232.97	5.23	5.22	0.81	
2904.00	27.35	104.26	2870.00	44.52	263.17	246.91	3.99	3.97	-0.84	
2936.00	28.31	103.90	2898.29	40.89	277.67	261.85	3.05	3.00	-1.12	
2967.00	28.67	104.69	2925.54	37.24	291.99	276.63	1.68	1.16	2.55	
2998.00	30.07	104.78	2952.56	33.37	306.70	291.82	4.52	4.52	0.29	
3029.00	31.48	104.52	2979.19	29.36	322.04	307.67	4.57	4.55	-0.84	
3059.00	32.36	104.96	3004.65	25.32	337.38	323.53	3.03	2.93	1.47	
3090.00	32.80	105.31	3030.78	20.97	353.50	340.20	1.54	1.42	1.13	
3120.00	33.68	105.57	3055.87	16.59	369.35	356.63	2.97	2.93	0.87	
3151.00	34.73	105.49	3081.50	11.92	386.14	374.04	3.39	3.39	-0.26	
3181.00	35.44	105.57	3106.05	7.30	402.75	391.26	2.37	2.37	0.27	
3212.00	36.40	106.54	3131.16	2.27	420.23	409.41	3.60	3.10	3.13	
3242.00	37.46	106.63	3155.14	-2.87	437.50	427.40	3.54	3.53	0.30	
3273.00	38.69	107.07	3179.54	-8.41	455.80	446.46	4.06	3.97	1.42	
3303.00	40.54	106.98	3202.65	-14.01	474.09	465.54	6.17	6.17	-0.30	
3334.00	41.50	106.72	3226.04	-19.91	493.56	485.83	3.15	3.10	-0.84	
3365.00	42.21	107.60	3249.13	-26.02	513.32	506.45	2.97	2.29	2.84	
3397.00	42.47	107.86	3272.78	-32.58	533.85	527.92	0.98	0.81	0.81	
3428.00	43.70	107.51	3295.42	-39.01	554.03	549.02	4.04	3.97	-1.13	
3459.00	44.67	108.56	3317.65	-45.70	574.57	570.53	3.92	3.13	3.39	
3490.00	44.05	108.03	3339.82	-52.51	595.15	592.10	2.33	-2.00	-1.71	
3522.00	45.11	108.03	3362.61	-59.46	616.51	614.47	3.31	3.31	0.00	
3553.00	45.90	108.21	3384.33	-66.34	637.52	636.48	2.58	2.55	0.58	
3585.00	46.78	108.47	3406.43	-73.62	659.50	659.52	2.81	2.75	0.81	
3615.00	47.57	108.74	3426.82	-80.64	680.35	681.41	2.71	2.63	0.90	
3647.00	48.63	108.65	3448.19	-88.27	702.91	705.10	3.32	3.31	-0.28	
3678.00	50.12	108.21	3468.37	-95.71	725.23	728.51	4.93	4.81	-1.42	
3708.00	51.62	108.30	3487.31	-103.00	747.33	751.67	5.01	5.00	0.30	
3739.00	53.11	108.56	3506.23	-110.76	770.62	776.10	4.85	4.81	0.84	
3770.00	54.34	108.12	3524.58	-118.63	794.34	800.97	4.13	3.97	-1.42	
3801.00	55.40	107.60	3542.41	-126.40	818.47	826.22	3.68	3.42	-1.68	
3831.00	55.84	107.60	3559.35	-133.89	842.07	850.89	1.47	1.47	0.00	
3862.00	56.45	107.07	3576.62	-141.56	866.65	876.55	2.43	1.97	-1.71	
3893.00	56.89	107.60	3593.66	-149.27	891.37	902.36	2.01	1.42	1.71	
3924.00	57.77	107.42	3610.39	-157.13	916.26	928.37	2.88	2.84	-0.58	
3954.00	58.56	106.89	3626.22	-164.64	940.61	953.78	3.03	2.63	-1.77	
3985.00	59.62	107.24	3642.14	-172.45	966.04	980.30	3.55	3.42	1.13	
4015.00	61.03	107.33	3656.99	-180.19	990.93	1006.28	4.71	4.70	0.30	
4046.00	62.34	106.98	3671.69	-188.24	1017.00	1033.49	4.34	4.23	-1.13	
4076.00	63.40	106.72	3685.38	-195.98	1042.55	1060.12	3.62	3.53	-0.87	
4107.00	64.81	106.10	3698.91	-203.86	1069.31	1087.95	4.89	4.55	-2.00	
4138.00	66.13	105.75	3711.78	-211.60	1096.42	1116.11	4.38	4.26	-1.13	
4169.00	67.27	105.75	3724.05	-219.32	1123.83	1144.54	3.68	3.68	0.00	
4199.00	68.41	105.93	3735.36	-226.91	1150.56	1172.28	3.84	3.80	0.60	
4230.00	69.56	106.80	3746.48	-235.06	1178.32	1201.16	4.54	3.71	2.81	
4261.00	70.87	106.36	3756.97	-243.38	1206.28	1230.26	4.43	4.23	-1.42	
4292.00	72.28	106.01	3766.77	-251.58	1234.52	1259.62	4.67	4.55	-1.13	

Pathfinder Energy

Survey Report

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Date: 8/28/2006 **Time:** 16:19:10 **Page:** 3
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Survey: Pathfinder MWD 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
4322.00	73.69	105.57	3775.55	-259.39	1262.12	1288.26	4.90	4.70	-1.47	
4352.00	75.18	105.57	3783.60	-267.14	1289.96	1317.13	4.97	4.97	0.00	
4383.00	76.77	104.96	3791.11	-275.06	1318.98	1347.17	5.47	5.13	-1.97	
4414.00	78.00	105.13	3797.88	-282.91	1348.19	1377.40	4.00	3.97	0.55	
4444.00	79.05	105.49	3803.85	-290.68	1376.55	1406.77	3.69	3.50	1.20	
4475.00	80.90	104.78	3809.24	-298.65	1406.01	1437.27	6.38	5.97	-2.29	
4506.00	83.10	104.61	3813.56	-306.43	1435.71	1467.94	7.12	7.10	-0.55	
4537.00	85.12	104.96	3816.74	-314.30	1465.52	1498.76	6.61	6.52	1.13	
4567.00	85.30	105.66	3819.24	-322.20	1494.35	1528.62	2.40	0.60	2.33	
4599.00	85.38	105.57	3821.84	-330.78	1525.07	1560.48	0.38	0.25	-0.28	
4630.00	86.26	105.31	3824.10	-339.01	1554.87	1591.36	2.96	2.84	-0.84	
4660.00	87.49	105.93	3825.74	-347.08	1583.72	1621.28	4.59	4.10	2.07	
4691.00	86.61	105.49	3827.33	-355.46	1613.52	1652.19	3.17	-2.84	-1.42	
4722.00	87.14	105.13	3829.02	-363.63	1643.38	1683.11	2.07	1.71	-1.16	
4805.00	92.33	103.02	3829.41	-383.81	1723.85	1766.06	6.75	6.25	-2.54	
4836.00	89.08	99.33	3829.03	-389.82	1754.25	1797.03	15.86	-10.48	-11.90	
4868.00	88.81	95.99	3829.62	-394.08	1785.96	1828.90	10.47	-0.84	-10.44	
4900.00	90.04	98.89	3829.94	-398.22	1817.68	1860.76	9.84	3.84	9.06	
4932.00	89.34	98.98	3830.11	-403.19	1849.30	1892.69	2.21	-2.19	0.28	
4964.00	88.90	101.44	3830.60	-408.86	1880.78	1924.65	7.81	-1.37	7.69	
4995.00	88.46	102.76	3831.32	-415.36	1911.08	1955.64	4.49	-1.42	4.26	
5027.00	86.26	103.20	3832.79	-422.54	1942.23	1987.60	7.01	-6.87	1.37	
5058.00	86.61	102.41	3834.72	-429.40	1972.40	2018.54	2.78	1.13	-2.55	
5090.00	86.17	102.76	3836.73	-436.35	2003.57	2050.48	1.76	-1.37	1.09	
5121.00	86.88	102.85	3838.61	-443.21	2033.74	2081.42	2.31	2.29	0.29	
5152.00	87.41	101.88	3840.16	-449.84	2063.99	2112.38	3.56	1.71	-3.13	
5183.00	88.81	101.00	3841.18	-455.99	2094.35	2143.36	5.33	4.52	-2.84	
5215.00	90.75	100.83	3841.30	-462.05	2125.77	2175.34	6.09	6.06	-0.53	
5246.00	90.66	102.06	3840.92	-468.20	2156.15	2206.33	3.98	-0.29	3.97	
5278.00	90.48	102.23	3840.60	-474.93	2187.44	2238.32	0.77	-0.56	0.53	
5308.00	90.40	103.20	3840.37	-481.53	2216.70	2268.32	3.24	-0.27	3.23	
5340.00	89.43	102.59	3840.42	-488.67	2247.89	2300.32	3.58	-3.03	-1.91	
5372.00	88.81	102.85	3840.91	-495.72	2279.10	2332.32	2.10	-1.94	0.81	
5403.00	89.16	103.38	3841.46	-502.75	2309.29	2363.31	2.05	1.13	1.71	
5435.00	89.60	104.61	3841.80	-510.49	2340.34	2395.30	4.08	1.37	3.84	
5466.00	89.69	106.80	3842.00	-518.88	2370.18	2426.26	7.07	0.29	7.06	
5497.00	89.97	107.68	3842.09	-528.07	2399.78	2457.16	2.98	0.90	2.84	
5529.00	90.66	108.30	3841.91	-537.95	2430.22	2489.02	2.90	2.16	1.94	
5559.00	89.60	108.74	3841.84	-547.48	2458.66	2518.87	3.83	-3.53	1.47	
5591.00	88.46	108.56	3842.39	-557.71	2488.98	2550.69	3.61	-3.56	-0.56	
5623.00	88.46	108.30	3843.25	-567.82	2519.33	2582.52	0.81	0.00	-0.81	
5654.00	88.20	108.56	3844.15	-577.62	2548.72	2613.36	1.19	-0.84	0.84	
5686.00	87.93	107.60	3845.23	-587.55	2579.13	2645.20	3.11	-0.84	-3.00	
5718.00	87.67	106.19	3846.46	-596.84	2609.72	2677.09	4.48	-0.81	-4.41	
5749.00	88.29	105.31	3847.55	-605.25	2639.54	2708.03	3.47	2.00	-2.84	
5780.00	88.46	104.52	3848.43	-613.22	2669.48	2738.99	2.61	0.55	-2.55	
5812.00	89.16	103.64	3849.10	-621.01	2700.51	2770.97	3.51	2.19	-2.75	
5844.00	90.31	102.85	3849.24	-628.34	2731.66	2802.97	4.36	3.59	-2.47	
5875.00	90.48	102.32	3849.03	-635.09	2761.92	2833.97	1.80	0.55	-1.71	
5892.00	90.66	102.15	3848.86	-638.69	2778.53	2850.97	1.46	1.06	-1.00	
5950.00	91.50	102.15	3847.77	-650.90	2835.22	2908.96	1.45	1.45	0.00	

Origin