



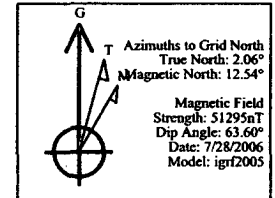
Field: San Juan County, NM NAD-83
 Site: Up Fruitland Coal
 Well: Lobato 29-9-3 #1S
 Wellpath: Original Hole
 Survey: Pathfinder MWD Surveys

PATHFINDER

Surface 465°N 1700°W
 CSG shoe 693°N 1697°W
 TD ? ?

WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lobato 29-9-3 #1S	0.00	0.00	2113937.71	-465756.19	36°45'35.000N	107°46'15.000W

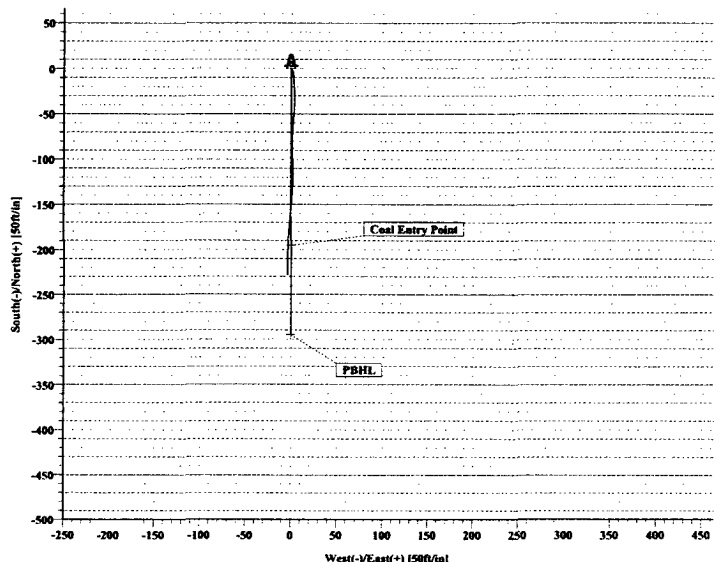
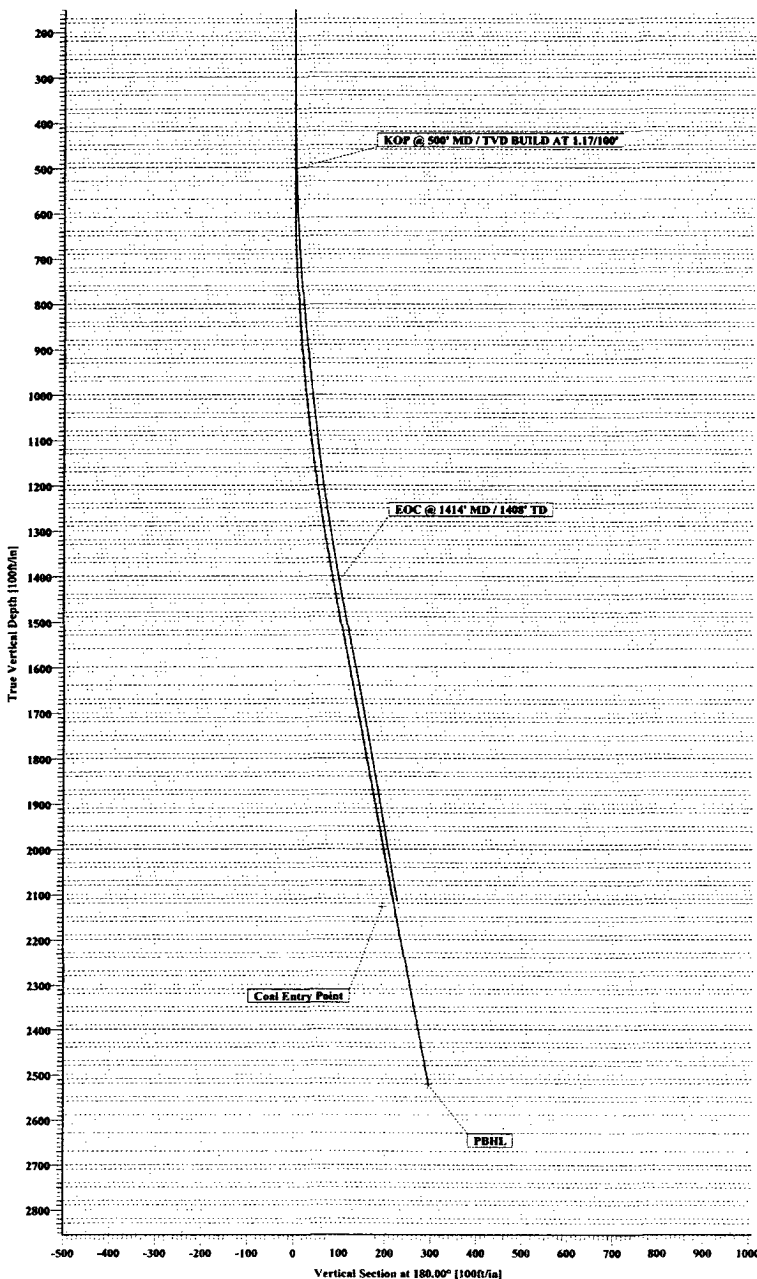
Survey: Pathfinder MWD Surveys (Lobato 29-9-3 #1S/Original Hole)									
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
25	1905.00	10.02	184.06	1890.99	-188.57	-2.41	0.74	-129.24	188.57
26	1967.00	10.02	182.92	1952.05	-199.34	-3.07	0.32	-90.56	199.34
27	2029.00	10.02	180.64	2013.10	-210.12	-3.41	0.64	-91.12	210.12
28	2092.00	10.29	179.76	2075.11	-221.22	-3.44	0.49	-30.32	221.22
29	2132.00	10.29	179.76	2114.47	-228.37	-3.41	0.00	0.00	228.37



SITE DETAILS
 Up Fruitland Coal
 465° FNL 1700° FWL, S3 T29N R9W
 Ground Level: 5679.00
 Positional Uncertainty: 0.00
 Convergence: -2.06

FIELD DETAILS
 San Juan County, NM NAD-83
 Geodetic System: US State Plane Coordinate System 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico, Eastern Zone
 Magnetic Model: igrf2005
 System Datum: Mean Sea Level
 Local North: Grid North

ANNOTATIONS			
No.	TVD	MD	Annotation
1	499.97	500.00	KOP @ 500' MD / TVD BUILD AT 1.17/100'
2	1407.82	1413.60	EOC @ 1414' MD / 1408' TD



Pathfinder Energy

Survey Report

Company: Energen Resources Corporation	Date: 9/6/2006	Time: 16:48:14	Page: 1
Field: San Juan County, NM NAD-83	Co-ordinate(NE) Reference: Well: Lobato 29-9-3 #1S, Grid North		
Site: Up Fruitland Coal	Vertical (TVD) Reference: SITE 5679.0		
Well: Lobato 29-9-3 #1S	Section (VS) Reference: Well (0.00N,0.00E,180.00Azi)		
Wellpath: Original Hole	Survey Calculation Method: Minimum Curvature		Db: Sybase

Field: San Juan County, NM NAD-83

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

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

Site: Up Fruitland Coal

465' FNL 1700' FWL, S3 T29N R9W

Site Position:	Northing:	ft	Latitude:
From: Lease Line	Easting:	ft	Longitude:
Position Uncertainty: 0.00 ft			North Reference: Grid
Ground Level: 5679.00 ft			Grid Convergence: -2.06 deg

Well: Lobato 29-9-3 #1S

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 2113937.71 ft	Latitude: 36 45 35.000 N
+E/-W 0.00 ft	Easting: -465756.19 ft	Longitude: 107 46 15.000 W
Position Uncertainty: 0.00 ft		

Wellpath: Original Hole

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 10.48 deg
Mag Dip Angle: 63.60 deg

Current Datum: SITE
Magnetic Data: 7/28/2006
Field Strength: 51295 nT
Vertical Section: Depth From (TVD) +N/-S
 ft ft

0.00	0.00	0.00	180.00
------	------	------	--------

Survey: Pathfinder MWD Surveys

Start Date: 9/6/2006

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	
475.00	1.06	151.46	474.97	-3.86	2.10	3.86	0.22	0.22	0.00	
539.00	1.85	168.68	538.95	-5.39	2.58	5.39	1.40	1.23	26.91	
602.00	2.81	178.09	601.90	-7.93	2.84	7.93	1.64	1.52	14.94	
664.00	3.87	177.38	663.79	-11.54	2.98	11.54	1.71	1.71	-1.15	
727.00	4.04	173.52	726.64	-15.87	3.33	15.87	0.50	0.27	-6.13	
791.00	4.57	177.47	790.46	-20.66	3.70	20.66	0.95	0.83	6.17	
852.00	5.54	177.12	851.22	-26.03	3.95	26.03	1.59	1.59	-0.57	
916.00	5.98	177.82	914.90	-32.44	4.23	32.44	0.70	0.69	1.09	
979.00	5.98	185.47	977.56	-38.99	4.05	38.99	1.26	0.00	12.14	
1041.00	6.16	182.57	1039.21	-45.53	3.59	45.53	0.57	0.29	-4.68	
1104.00	6.77	184.06	1101.81	-52.61	3.17	52.61	1.00	0.97	2.37	
1167.00	7.47	184.33	1164.33	-60.40	2.60	60.40	1.11	1.11	0.43	
1230.00	8.88	182.66	1226.68	-69.34	2.07	69.34	2.27	2.24	-2.65	
1292.00	8.97	180.72	1287.93	-78.95	1.78	78.95	0.51	0.15	-3.13	
1354.00	9.58	179.41	1349.12	-88.94	1.78	88.94	1.04	0.98	-2.11	
1416.00	10.46	176.77	1410.18	-99.72	2.15	99.72	1.60	1.42	-4.26	
1478.00	10.55	178.09	1471.14	-111.01	2.65	111.01	0.41	0.15	2.13	
1540.00	10.73	182.92	1532.07	-122.45	2.55	122.45	1.47	0.29	7.79	
1601.00	11.08	183.45	1591.97	-133.97	1.91	133.97	0.60	0.57	0.87	
1664.00	10.55	185.03	1653.85	-145.76	1.04	145.76	0.96	-0.84	2.51	
1724.00	10.20	183.10	1712.87	-156.54	0.27	156.54	0.82	-0.58	-3.22	
1785.00	10.29	184.77	1772.90	-167.36	-0.48	167.36	0.51	0.15	2.74	
1846.00	10.29	186.00	1832.92	-178.21	-1.50	178.21	0.36	0.00	2.02	

Pathfinder Energy

Survey Report

Company: Energen Resources Corporation Field: San Juan County, NM NAD-83 Site: Up Fruitland Coal Well: Lobato 29-9-3 #1S Wellpath: Original Hole	Date: 9/6/2006 Time: 16:48:14 Page: 2 Co-ordinate(NE) Reference: Well: Lobato 29-9-3 #1S, Grid North Vertical (TVD) Reference: SITE 5679.0 Section (VS) Reference: Well (0.00N,0.00E,180.00Azi) 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
1905.00	10.02	184.06	1890.99	-188.57	-2.41	188.57	0.74	-0.46	-3.29	
1967.00	10.02	182.92	1952.05	-199.34	-3.07	199.34	0.32	0.00	-1.84	
2029.00	10.02	180.64	2013.10	-210.12	-3.41	210.12	0.64	0.00	-3.68	
2092.00	10.29	179.76	2075.11	-221.22	-3.44	221.22	0.49	0.43	-1.40	
2132.00	10.29	179.76	2114.47	-228.37	-3.41	228.37	0.00	0.00	0.00	