

Pathfinder Energy

Survey Report

Company: Marbob Energy Field: Tea Fed #1-H Site: Tea Fed #1-H Well: Tea Fed #1-H Wellpath: Original Hole	Date: 10/20/2006 Time: 11:27:04 Page: 1 Co-ordinate(NE) Reference: Well: Tea Fed #1-H, Grid North Vertical (TVD) Reference: SITE 3736.0 Section (VS) Reference: Well (0.00N,0.00E,87.95Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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Field: Tea Fed #1-H S-18, T-17S, R31E Eddy County, NM Map System: US State Plane Coordinate System 1927 Geo Datum: NAD27 (Clarke 1866) Sys Datum: Mean Sea Level	Map Zone: New Mexico, Eastern Zone Coordinate System: Well Centre Geomagnetic Model: igrf2005
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Site: Tea Fed #1-H

Site Position:	Northing: 669721.50 ft	Latitude: 32 50 25.583 N
From: Map	Easting: 629478.60 ft	Longitude: 103 54 42.352 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3736.00 ft		Grid Convergence: 0.23 deg

Well: Tea Fed #1-H

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 669721.50 ft	Latitude: 32 50 25.583 N
+E/-W 0.00 ft	Easting: 629478.60 ft	Longitude: 103 54 42.352 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: 8.34 deg
Mag Dip Angle: 60.82 deg
+E/-W Direction
ft deg

Current Datum: SITE	Height: 3736.00 ft
Magnetic Data: 10/12/2006	
Field Strength: 49463 nT	
Vertical Section: Depth From (TVD)	+N/-S
ft	ft
0.00	0.00

0.00	0.00	0.00	87.95
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Survey: Pathfinder MWD Surveys

Start Date: 10/16/2006

Company: Pathfinder Energy
Tool:

Engineer: Midwellplan
Tied-to: From: Definitive Path

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
4303.00	0.35	252.34	4302.92	-10.88	-7.32	-7.71	0.00	0.00	0.00	
4340.00	0.18	75.54	4339.92	-10.90	-7.38	-7.76	1.43	-0.46	-477.84	
4372.00	3.96	83.89	4371.90	-10.77	-6.23	-6.61	11.82	11.81	26.09	
4404.00	9.32	81.51	4403.67	-10.27	-2.56	-2.93	16.77	16.75	-7.44	
4436.00	15.12	80.81	4434.93	-9.22	4.13	3.79	18.13	18.12	-2.19	
4467.00	20.75	81.60	4464.41	-7.77	13.56	13.27	18.18	18.16	2.55	
4499.00	26.47	83.71	4493.72	-6.16	26.26	26.03	18.07	17.87	6.59	
4531.00	32.10	85.38	4521.62	-4.69	41.84	41.65	17.78	17.59	5.22	
4563.00	37.90	86.35	4547.83	-3.38	60.14	59.98	18.21	18.12	3.03	
4595.00	43.26	87.58	4572.12	-2.29	80.92	80.78	16.93	16.75	3.84	
4627.00	45.73	87.76	4594.95	-1.38	103.33	103.21	7.73	7.72	0.56	
4659.00	47.48	87.23	4616.93	-0.36	126.55	126.46	5.60	5.47	-1.66	
4690.00	49.95	87.32	4637.38	0.75	149.82	149.75	7.97	7.97	0.29	
4722.00	53.02	87.93	4657.31	1.78	174.83	174.79	9.71	9.59	1.91	
4754.00	55.66	88.99	4675.96	2.48	200.82	200.78	8.68	8.25	3.31	
4786.00	57.07	89.86	4693.68	2.74	227.46	227.41	4.95	4.41	2.72	
4818.00	58.21	90.22	4710.81	2.72	254.49	254.43	3.69	3.56	1.12	
4850.00	60.06	90.13	4727.23	2.64	281.96	281.87	5.79	5.78	-0.28	
4881.00	62.17	89.51	4742.20	2.73	309.10	309.00	7.03	6.81	-2.00	
4913.00	63.84	89.07	4756.73	3.08	337.61	337.50	5.36	5.22	-1.37	
4945.00	66.39	88.19	4770.19	3.78	366.63	366.53	8.35	7.97	-2.75	
4977.00	70.35	87.84	4781.98	4.81	396.35	396.27	12.42	12.37	-1.09	
5009.00	73.42	88.46	4791.93	5.79	426.75	426.68	9.77	9.59	1.94	
5040.00	76.50	88.90	4799.98	6.48	456.67	456.61	10.03	9.94	1.42	

Pathfinder Energy

Survey Report

Company: Marbob Energy
Field: Tea Fed #1-H
Site: Tea Fed #1-H
Well: Tea Fed #1-H
Wellpath: Original Hole

Date: 10/20/2006 **Time:** 11:27:04 **Page:** 2
Co-ordinate(NE) Reference: Well: Tea Fed #1-H, Grid North
Vertical (TVD) Reference: SITE 3736.0
Section (VS) Reference: Well (0.00N,0.00E,87.95Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey: Pathfinder MWD 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
5072.00	78.00	88.19	4807.04	7.27	487.87	487.82	5.16	4.69	-2.22	
5104.00	80.90	88.28	4812.90	8.24	519.31	519.27	9.07	9.06	0.28	
5136.00	83.19	88.46	4817.33	9.14	550.99	550.96	7.18	7.16	0.56	
5168.00	85.47	89.51	4820.49	9.70	582.83	582.80	7.84	7.12	3.28	
5200.00	87.76	89.86	4822.38	9.88	614.77	614.73	7.24	7.16	1.09	
5231.00	90.13	89.95	4822.95	9.93	645.76	645.70	7.65	7.65	0.29	
5263.00	90.66	90.83	4822.73	9.71	677.76	677.67	3.21	1.66	2.75	
5295.00	90.40	90.39	4822.43	9.37	709.75	709.63	1.60	-0.81	-1.37	
5327.00	89.69	89.16	4822.41	9.50	741.75	741.62	4.44	-2.22	-3.84	
5359.00	89.16	88.63	4822.73	10.12	773.75	773.61	2.34	-1.66	-1.66	
5391.00	89.16	88.99	4823.20	10.78	805.74	805.60	1.12	0.00	1.12	
5422.00	88.99	88.72	4823.70	11.40	836.72	836.60	1.03	-0.55	-0.87	
5454.00	88.90	88.99	4824.28	12.04	868.71	868.59	0.89	-0.28	0.84	
5486.00	88.99	88.19	4824.87	12.83	900.70	900.58	2.52	0.28	-2.50	
5518.00	88.90	88.55	4825.46	13.74	932.68	932.57	1.16	-0.28	1.12	
5550.00	89.16	88.55	4826.01	14.55	964.66	964.57	0.81	0.81	0.00	
5581.00	89.60	88.19	4826.34	15.43	995.65	995.56	1.83	1.42	-1.16	
5613.00	89.87	88.29	4826.49	16.41	1027.63	1027.56	0.90	0.84	0.31	
5645.00	89.60	87.93	4826.64	17.47	1059.62	1059.56	1.41	-0.84	-1.12	
5677.00	89.77	87.67	4826.81	18.69	1091.59	1091.56	0.97	0.53	-0.81	
5709.00	89.25	87.84	4827.09	19.95	1123.57	1123.56	1.71	-1.62	0.53	
5740.00	89.25	88.11	4827.49	21.04	1154.54	1154.56	0.87	0.00	0.87	
5772.00	89.34	88.37	4827.89	22.03	1186.53	1186.55	0.86	0.28	0.81	
5804.00	89.34	88.63	4828.25	22.86	1218.51	1218.55	0.81	0.00	0.81	
5836.00	89.25	87.84	4828.65	23.85	1250.50	1250.55	2.48	-0.28	-2.47	
5868.00	89.08	88.28	4829.11	24.93	1282.47	1282.54	1.47	-0.53	1.37	
5899.00	89.08	87.08	4829.61	26.19	1313.44	1313.54	3.87	0.00	-3.87	
5931.00	88.81	87.93	4830.20	27.58	1345.41	1345.53	2.79	-0.84	2.66	
5963.00	88.81	87.58	4830.87	28.83	1377.38	1377.52	1.09	0.00	-1.09	
5995.00	88.81	88.11	4831.53	30.04	1409.35	1409.52	1.66	0.00	1.66	
6026.00	89.87	88.28	4831.89	31.01	1440.33	1440.52	3.46	3.42	0.55	
6058.00	90.66	88.02	4831.74	32.05	1472.31	1472.51	2.60	2.47	-0.81	
6090.00	90.57	88.37	4831.40	33.05	1504.29	1504.51	1.13	-0.28	1.09	
6122.00	90.48	87.93	4831.10	34.09	1536.28	1536.51	1.40	-0.28	-1.37	
6154.00	91.19	87.67	4830.64	35.31	1568.25	1568.51	2.36	2.22	-0.81	
6186.00	91.01	87.32	4830.02	36.71	1600.21	1600.50	1.23	-0.56	-1.09	
6217.00	90.92	86.88	4829.50	38.28	1631.17	1631.49	1.45	-0.29	-1.42	
6249.00	90.84	87.23	4829.01	39.92	1663.12	1663.48	1.12	-0.25	1.09	
6281.00	91.01	87.32	4828.49	41.45	1695.08	1695.48	0.60	0.53	0.28	
6313.00	90.92	87.58	4827.95	42.87	1727.05	1727.47	0.86	-0.28	0.81	
6344.00	90.66	86.96	4827.53	44.35	1758.01	1758.47	2.17	-0.84	-2.00	
6376.00	91.19	87.58	4827.01	45.87	1789.97	1790.46	2.55	1.66	1.94	
6408.00	91.01	87.40	4826.39	47.27	1821.93	1822.45	0.80	-0.56	-0.56	
6440.00	91.19	87.49	4825.78	48.70	1853.89	1854.45	0.63	0.56	0.28	
6472.00	91.10	87.05	4825.14	50.22	1885.85	1886.44	1.40	-0.28	-1.37	
6504.00	90.75	87.05	4824.62	51.87	1917.80	1918.43	1.09	-1.09	0.00	
6535.00	90.31	86.88	4824.34	53.51	1948.76	1949.42	1.52	-1.42	-0.55	
6567.00	90.40	87.05	4824.14	55.20	1980.71	1981.42	0.60	0.28	0.53	
6599.00	90.13	86.88	4823.99	56.90	2012.67	2013.41	1.00	-0.84	-0.53	
6631.00	90.22	86.70	4823.89	58.69	2044.62	2045.41	0.63	0.28	-0.56	
6662.00	90.40	86.79	4823.73	60.45	2075.57	2076.40	0.65	0.58	0.29	
6694.00	90.92	86.61	4823.36	62.29	2107.51	2108.39	1.72	1.62	-0.56	
6725.00	90.84	86.88	4822.88	64.05	2138.46	2139.38	0.91	-0.26	0.87	

Pathfinder Energy

Survey Report

Company: Marbob Energy Field: Tea Fed #1-H Site: Tea Fed #1-H Well: Tea Fed #1-H Wellpath: Original Hole	Date: 10/20/2006 Time: 11:27:04 Page: 3 Co-ordinate(NE) Reference: Well: Tea Fed #1-H, Grid North Vertical (TVD) Reference: SITE 3736.0 Section (VS) Reference: Well (0.00N,0.00E,87.95Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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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
6758.00	90.66	86.35	4822.45	66.00	2171.40	2172.37	1.70	-0.55	-1.61	
6805.00	90.66	86.35	4821.91	68.99	2218.30	2219.35	0.00	0.00	0.00	



Field: Tea Fed #1-H Site: Tea Fed #1-H Well: Tea Fed #1-H Wellpath: Original Hole Survey: Pathfinder MWD Surveys

PATHFINDER

Survey: Pathfinder MWD Surveys (Tea Fed #1-H/Original Hole)

No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
73	6590.00	90.13	86.88	4823.99	56.90	2012.67	1.00	-147.80	2013.41
74	6631.00	90.32	86.78	4823.99	58.69	2044.62	0.63	-63.43	2045.41
75	6662.00	90.40	86.79	4823.73	60.45	2075.57	0.65	26.36	2076.40
76	6694.00	90.92	86.61	4823.36	62.29	2107.51	1.72	-19.09	2108.39
77	6725.00	90.84	86.88	4822.88	64.05	2138.46	0.91	106.50	2139.38
78	6758.00	90.66	86.35	4822.45	66.00	2171.40	1.70	-108.76	2172.37
79	6805.00	90.66	86.35	4821.91	68.99	2218.30	0.00	0.00	2219.35

SITE DETAILS

Site Centre Northing 669721.50
Easting 629478.60
Ground Level 3736.00
Positional Uncertainty: 0.00
Convergence 0.23

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
PBHL	4826.00	80.00	2230.00	Point

WELLPATH DETAILS

Original Hole

Rig:	SITE	3736.00ft
Ref Datum:	Origin	Origin
V Section	+N/-S	+E/-W
Angle	87.95°	0.00
From TVD	0.00	0.00

ANNOTATIONS

No	TVD	MD	Annotation
1	4348.42	KOP @ 4349' MD / TVD Build 12°/100'	
2	4812.01	EOC @ 5099' MD / 4826' TVD	
3	4302.92	Tic-In	

