



An Operating Unit of Smith International, Inc.

30.015-37053

DIRECTIONAL SURVEY REPORT

MARBOB ENERGY CORPORATION

GRAVY STATE COM # 1H

EDDY COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder Energy Services, Inc.
6213 W. Interstate 20 • Midland, TX • 79706
(432) 681-6000

me

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) David Baker
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 05/22/09 to 05/26/09
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

MARBOB ENERGY CORPORATION
GRAVY STATE COM # 1H
EDDY COUNTY, NM
RIG: PATRIOT # 3
9. SURVEY CERTIFIED FROM: 7285 TO 12077 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4558.77 FEET ON A BEARING OF 269.39 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12154 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



FRANCISCO SINISTERRA
MWD COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 05/21/2009
Date Completed: 06/17/2009

MARBOB ENERGY, INC.
GRAVY STATE COM #1H
EDDY COUNTY, NM
Rig:Patriot #3
PathFinder Office Supervisor: Francisco Sinisterra
PathFinder Field Engineers:David Baker

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.8.47.6672 N LON:103.54.14.9414 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 632832.9000 Y: 417310.0000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.74° EAST TO GRID
Vertical Section Plane: 269.36
Survey Vert. Reference: 22.00' Rotary Table To Ground
Altitude:3208.00' Ground To MSL

Measured Depth	12154.00	(feet)
Inclination	90.92	(deg)
Azimuth	269.00	(deg)
True Vertical Depth	7835.01	(feet)
Vertical Section	4558.77	(feet)
Survey X cord	628274.38	(feet)
Survey Y cord	417261.45	(feet)
Survey Lat	32.14648983 N	(deg)
Survey Lon	103.91887921 W	(deg)
Rectangular Corr. N/S	48.55 S	(feet)
Rectangular Corr. E/W	4558.52 W	(feet)
Closure Distance	4558.77	(feet)
Direction of Closure	269.39	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

MARBOB ENERGY, INC.
GRAVY STATE COM #1H
EDDY COUNTY, NM

Rig:Patriot #3

PathFinder Office Supervisor: Francisco Sinisterra

PathFinder Field Engineers: David Baker

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.8.47.6672 N LON:103.54.14.9414 W

Reference:NAD27 new mexico east Transverse Mercator

Ref GRID Coor: X: 632832.9000 Y: 417310.0000

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.74° EAST TO GRID

Vertical Section Plane: 269.36

Survey Vert. Reference: 22.00' Rotary Table To Ground

Altitude:3208.00' Ground To MSL

Survey Calculations by RX5 V5.11i using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIE INTO SCIENTIFIC DRILLING GYRO SURVEY @7200'MD.										
7200.00	1.16	231.39	7197.78	0.00	39.68	13.35 N	39.83 W	42.01@	288.53	0.00
THE FOLLOWING ARE PATHINDER MWD SURVEYS.										
7285.00	1.14	222.95	7282.76	85.00	40.94	12.19 N	41.08 W	42.85@	286.53	0.20
7317.00	1.23	220.70	7314.76	32.00	41.39	11.70 N	41.52 W	43.14@	285.74	0.32
7361.00	1.23	233.95	7358.75	44.00	42.08	11.06 N	42.21 W	43.64@	284.69	0.64
7381.00	2.02	255.69	7378.74	20.00	42.60	10.85 N	42.72 W	44.08@	284.25	4.94
7413.00	4.75	266.69	7410.68	32.00	44.47	10.64 N	44.59 W	45.84@	283.41	8.73
7444.00	7.39	265.86	7441.50	31.00	47.74	10.42 N	47.86 W	48.98@	282.28	8.52
7476.00	9.41	264.57	7473.16	32.00	52.41	10.02 N	52.52 W	53.47@	280.80	6.34
7520.00	13.01	268.88	7516.31	44.00	60.95	9.58 N	61.06 W	61.80@	278.92	8.39
7552.00	18.47	267.17	7547.10	32.00	69.62	9.26 N	69.73 W	70.34@	277.57	17.12
7584.00	25.41	265.26	7576.77	32.00	81.55	8.44 N	81.65 W	82.08@	275.90	21.80
7616.00	30.60	262.77	7605.01	32.00	96.50	6.85 N	96.58 W	96.82@	274.06	16.62
7647.00	35.61	263.80	7630.97	31.00	113.33	4.88 N	113.39 W	113.50@	272.47	16.26
7679.00	40.71	267.37	7656.13	32.00	133.05	3.40 N	133.09 W	133.14@	271.46	17.36
7711.00	45.90	270.23	7679.41	32.00	154.98	2.96 N	155.02 W	155.05@	271.09	17.33
7743.00	51.27	270.45	7700.57	32.00	178.97	3.11 N	179.01 W	179.04@	270.99	16.79
7775.00	55.93	270.36	7719.55	32.00	204.71	3.29 N	204.76 W	204.79@	270.92	14.56
7795.00	59.44	271.25	7730.24	20.00	221.61	3.53 N	221.66 W	221.69@	270.91	17.95
7827.00	64.19	271.61	7745.35	32.00	249.79	4.23 N	249.85 W	249.88@	270.97	14.88
7858.00	66.21	271.77	7758.35	31.00	277.90	5.06 N	277.98 W	278.02@	271.04	6.53
7890.00	67.80	270.89	7770.85	32.00	307.34	5.75 N	307.42 W	307.48@	271.07	5.58
7922.00	68.15	271.10	7782.85	32.00	336.99	6.26 N	337.08 W	337.14@	271.06	1.25
7954.00	69.38	272.00	7794.44	32.00	366.80	7.07 N	366.90 W	366.97@	271.10	4.65
7986.00	71.31	271.97	7805.21	32.00	396.90	8.11 N	397.02 W	397.10@	271.17	6.03

PathFinder Energy Services, Inc.

Survey Report

MARBOB ENERGY, INC.
GRAVY STATE COM #1H
EDDY COUNTY, NM
RIG:Patriot #3

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8017.00	73.51	271.54	7814.58	31.00	426.42	9.02 N	426.55 W	426.64@	271.21	7.22
8049.00	75.36	270.87	7823.16	32.00	457.23	9.66 N	457.37 W	457.47@	271.21	6.12
8081.00	77.38	269.92	7830.70	32.00	488.32	9.88 N	488.46 W	488.56@	271.16	6.94
8113.00	79.58	269.66	7837.09	32.00	519.68	9.76 N	519.82 W	519.91@	271.08	6.92
8145.00	82.04	268.02	7842.20	32.00	551.26	9.12 N	551.40 W	551.47@	270.95	9.20
8176.00	84.06	266.56	7845.95	31.00	582.01	7.67 N	582.13 W	582.18@	270.75	8.02
8208.00	87.23	266.53	7848.38	32.00	613.87	5.74 N	613.98 W	614.00@	270.54	9.91
8240.00	88.11	266.85	7849.69	32.00	645.81	3.90 N	645.90 W	645.91@	270.35	2.93
8272.00	89.96	267.58	7850.22	32.00	677.78	2.34 N	677.85 W	677.86@	270.20	6.22
8304.00	89.87	267.37	7850.27	32.00	709.77	0.93 N	709.82 W	709.82@	270.08	0.71
8335.00	89.96	267.66	7850.32	31.00	740.75	0.41 S	740.79 W	740.79@	269.97	0.98
8367.00	90.84	267.62	7850.09	32.00	772.74	1.73 S	772.76 W	772.77@	269.87	2.75
8399.00	90.92	267.73	7849.60	32.00	804.72	3.03 S	804.73 W	804.74@	269.78	0.42
8431.00	90.75	267.66	7849.14	32.00	836.70	4.31 S	836.71 W	836.72@	269.70	0.57
8463.00	89.78	268.46	7848.99	32.00	868.69	5.40 S	868.69 W	868.70@	269.64	3.93
8494.00	89.60	268.37	7849.16	31.00	899.69	6.25 S	899.67 W	899.70@	269.60	0.65
8526.00	89.60	268.50	7849.38	32.00	931.68	7.13 S	931.66 W	931.69@	269.56	0.41
8590.00	90.13	268.31	7849.53	64.00	995.67	8.91 S	995.64 W	995.68@	269.49	0.88
8622.00	89.78	267.96	7849.56	32.00	1027.67	9.95 S	1027.62 W	1027.67@	269.45	1.55
8716.00	91.01	269.42	7848.91	94.00	1121.65	12.10 S	1121.59 W	1121.65@	269.38	2.03
8780.00	91.10	269.76	7847.73	64.00	1185.64	12.56 S	1185.57 W	1185.64@	269.39	0.55
8875.00	90.75	270.02	7846.20	95.00	1280.62	12.74 S	1280.56 W	1280.63@	269.43	0.46
8907.00	90.48	269.62	7845.85	32.00	1312.62	12.84 S	1312.56 W	1312.62@	269.44	1.51
9002.00	91.01	270.04	7844.62	95.00	1407.61	13.12 S	1407.55 W	1407.61@	269.47	0.71
9098.00	89.69	270.79	7844.03	96.00	1503.59	12.43 S	1503.54 W	1503.59@	269.53	1.58
9129.00	89.69	270.69	7844.20	31.00	1534.58	12.03 S	1534.54 W	1534.59@	269.55	0.32

PathFinder Energy Services, Inc.

Survey Report

MARBOB ENERGY, INC.
GRAVY STATE COM #1H
EDDY COUNTY, NM
RIG:Patriot #3

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
(ft)	(deg)	(deg)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(deg)	(dg/100ft)
9161.00	89.96	271.04	7844.30	32.00	1566.57	11.54 S	1566.54 W	1566.58@	269.58	1.38
9225.00	89.78	271.15	7844.44	64.00	1630.54	10.32 S	1630.53 W	1630.56@	269.64	0.33
9257.00	89.25	270.00	7844.71	32.00	1662.53	10.00 S	1662.52 W	1662.55@	269.66	3.96
9320.00	89.69	270.09	7845.29	63.00	1725.52	9.95 S	1725.52 W	1725.55@	269.67	0.71
9384.00	88.72	268.42	7846.18	64.00	1789.51	10.78 S	1789.50 W	1789.54@	269.65	3.02
9447.00	88.64	266.94	7847.63	63.00	1852.47	13.33 S	1852.43 W	1852.48@	269.59	2.35
9511.00	89.08	268.06	7848.91	64.00	1916.42	16.12 S	1916.36 W	1916.43@	269.52	1.88
9575.00	88.90	267.67	7850.04	64.00	1980.39	18.51 S	1980.30 W	1980.39@	269.46	0.67
9670.00	89.43	268.32	7851.42	95.00	2075.35	21.83 S	2075.24 W	2075.35@	269.40	0.88
9734.00	89.34	268.32	7852.11	64.00	2139.34	23.71 S	2139.20 W	2139.34@	269.37	0.14
9797.00	89.52	268.07	7852.73	63.00	2202.32	25.69 S	2202.17 W	2202.32@	269.33	0.49
9893.00	89.78	269.36	7853.32	96.00	2298.31	27.84 S	2298.14 W	2298.31@	269.31	1.37
9925.00	90.04	269.92	7853.37	32.00	2330.31	28.04 S	2330.14 W	2330.31@	269.31	1.93
9988.00	90.13	270.09	7853.28	63.00	2393.30	28.04 S	2393.14 W	2393.30@	269.33	0.31
10052.00	89.25	268.98	7853.62	64.00	2457.30	28.56 S	2457.14 W	2457.30@	269.33	2.21
10115.00	88.72	268.53	7854.74	63.00	2520.29	29.93 S	2520.11 W	2520.29@	269.32	1.10
10179.00	89.43	268.77	7855.77	64.00	2584.27	31.43 S	2584.08 W	2584.28@	269.30	1.17
10242.00	90.22	268.06	7855.96	63.00	2647.26	33.18 S	2647.06 W	2647.27@	269.28	1.69
10306.00	91.01	269.49	7855.28	64.00	2711.26	34.54 S	2711.04 W	2711.26@	269.27	2.55
10369.00	91.19	269.52	7854.07	63.00	2774.24	35.09 S	2774.02 W	2774.25@	269.28	0.29
10433.00	91.10	269.65	7852.79	64.00	2838.23	35.55 S	2838.01 W	2838.23@	269.28	0.25
10497.00	91.19	269.99	7851.51	64.00	2902.22	35.75 S	2902.00 W	2902.22@	269.29	0.55
10560.00	91.28	270.30	7850.15	63.00	2965.19	35.59 S	2964.98 W	2965.20@	269.31	0.51
10624.00	90.66	270.59	7849.07	64.00	3029.17	35.10 S	3028.97 W	3029.17@	269.34	1.07
10655.00	91.36	270.74	7848.52	31.00	3060.16	34.74 S	3059.96 W	3060.16@	269.35	2.31
10719.00	90.75	270.34	7847.34	64.00	3124.14	34.13 S	3123.95 W	3124.14@	269.37	1.14

PathFinder Energy Services, Inc.

Survey Report

MARBOB ENERGY, INC.
GRAVY STATE COM #1H
EDDY COUNTY, NM
RIG:Patriot #3

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
10783.00	89.87	269.94	7847.00	64.00	3188.13	33.98 S	3187.95 W	3188.13@	269.39	1.51
10846.00	90.66	270.15	7846.71	63.00	3251.12	33.93 S	3250.95 W	3251.12@	269.40	1.30
10910.00	90.40	269.89	7846.11	64.00	3315.12	33.91 S	3314.94 W	3315.12@	269.41	0.57
10973.00	88.55	270.12	7846.69	63.00	3378.11	33.90 S	3377.94 W	3378.11@	269.43	2.96
11037.00	88.55	271.07	7848.31	64.00	3442.07	33.24 S	3441.91 W	3442.07@	269.45	1.48
11101.00	88.46	271.09	7849.98	64.00	3506.02	32.03 S	3505.88 W	3506.03@	269.48	0.14
11164.00	89.69	270.58	7851.00	63.00	3568.99	31.11 S	3568.86 W	3569.00@	269.50	2.11
11228.00	90.22	269.73	7851.05	64.00	3632.98	30.94 S	3632.86 W	3632.99@	269.51	1.56
11291.00	90.31	269.57	7850.76	63.00	3695.98	31.32 S	3695.86 W	3695.99@	269.51	0.29
11355.00	91.19	268.80	7849.92	64.00	3759.97	32.23 S	3759.85 W	3759.99@	269.51	1.83
11419.00	91.10	268.95	7848.64	64.00	3823.96	33.49 S	3823.82 W	3823.97@	269.50	0.27
11482.00	91.36	268.64	7847.29	63.00	3886.94	34.82 S	3886.79 W	3886.95@	269.49	0.64
11545.00	91.54	268.83	7845.69	63.00	3949.92	36.21 S	3949.76 W	3949.92@	269.47	0.42
11609.00	91.45	269.05	7844.02	64.00	4013.89	37.39 S	4013.73 W	4013.90@	269.47	0.37
11673.00	91.36	269.08	7842.45	64.00	4077.87	38.43 S	4077.70 W	4077.88@	269.46	0.15
11736.00	91.36	268.73	7840.96	63.00	4140.85	39.64 S	4140.67 W	4140.86@	269.45	0.56
11799.00	91.28	268.79	7839.51	63.00	4203.83	41.00 S	4203.64 W	4203.84@	269.44	0.16
11863.00	91.45	268.38	7837.98	64.00	4267.81	42.58 S	4267.60 W	4267.81@	269.43	0.69
11926.00	90.13	268.80	7837.12	63.00	4330.80	44.13 S	4330.57 W	4330.80@	269.42	2.20
11990.00	90.22	268.76	7836.92	64.00	4394.79	45.49 S	4394.56 W	4394.79@	269.41	0.15
12053.00	90.48	268.91	7836.53	63.00	4457.79	46.77 S	4457.54 W	4457.79@	269.40	0.48
12077.00	90.92	269.00	7836.24	24.00	4481.79	47.21 S	4481.54 W	4481.79@	269.40	1.87
STRAIGHT-LINE PROJECTION TO BIT @ 12154'MD.										
12154.00	90.92	269.00	7835.01	77.00	4558.77	48.55 S	4558.52 W	4558.77@	269.39	0.00

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	Marbob Energy		
LEASE / WELL No.:	Gravy State Com	#1H	
WELL LOCATION:	Eddy County, NM		
COUNTY / STATE / COUNTRY:	Eddy	NM	USA
RIG:	Patriot #3		
API WELL No:	30-015-37053		
JOB No:	101008511-WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PES		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	7.74	LWD Calculated:	7.74
		Agreed Upon:	7.74
X =	632832.900000	Feet	Y = 417310.000000
			Feet
SITE LATITUDE:	32.146574 N	SITE LONGITUDE:	103.90415 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	New Mexico East
PROPOSED DRIFT DIRECTION:	269.36		
KELLY BUSHING ELEVATION:	22'		
ALTITUDE:	3208	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	7200		
DRIFT ANGLE:	1.16		
DRIFT DIRECTION:	231.39		
TRUE VERTICAL DEPTH:	7197		
VERTICAL SECTION:	39.68		
RECTANGULAR COORDINATE (N / S) :	13.35		
RECTANGULAR COORDINATE (E / W) :	-39.83		
CLOSURE DISTANCE / DIRECTION:	42.01	288.53	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	Scientific Drilling		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	7382	TOTAL DEPTH:	12174
KICKOFF ANGLE:	1.17	MAX ANGLE:	90

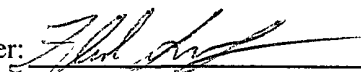
PES Engineers:



David Baker

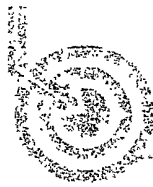
**Signature of both field engineers required if applicable

Directional Driller:



Floyd Smith

DATE: 8-Jun-2009



Scientific Drilling

Gyroscopic Survey Report for MARBOB

Well Location	LEA COUNTY, NEW MEXICO
Well Name	GRAVY ST. COM NO.1H
Rig Name	PATRIOT NO.3
Survey Date	6/5/2009
Latitude	32.15 deg
North Reference	Grid North
Grid Correction	-0.23 deg
Depth Reference	RIG FLOOR
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 269.36Azim (deg)
Definitive Survey	FINAL SURVEY
Operator	VICTOR MELENDEZ JR

Comments



Scientific Drilling

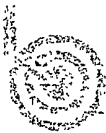
Survey Report

Well Name:		GRAVY ST. COM NO.1H							
Survey:		FINAL SURVEY							
Survey Date:		6/5/2009							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.45	195.86	100.00	0.11	-0.38	-0.11	0.45	0.39	195.86
200.00	0.70	222.88	199.99	0.65	-1.20	-0.63	0.37	1.36	207.70
300.00	0.95	228.03	299.98	1.69	-2.21	-1.67	0.26	2.77	217.03
400.00	1.18	231.57	399.97	3.12	-3.40	-3.09	0.24	4.59	222.23
500.00	1.41	233.25	499.94	4.93	-4.78	-4.88	0.24	6.83	225.60
600.00	1.12	272.11	599.92	6.91	-5.48	-6.85	0.89	8.77	231.34
700.00	2.08	316.87	699.88	9.12	-4.11	-9.07	1.51	9.96	245.60
800.00	2.91	321.46	799.79	11.90	-0.80	-11.89	0.84	11.92	266.13
900.00	2.92	324.24	899.66	14.92	3.25	-14.96	0.14	15.31	282.25
1000.00	2.89	328.80	999.53	17.67	7.47	-17.76	0.23	19.27	292.82
1100.00	2.88	331.29	1099.40	20.13	11.83	-20.27	0.13	23.47	300.27
1200.00	2.43	351.97	1199.30	21.59	16.13	-21.77	1.05	27.09	306.53
1300.00	2.13	12.97	1299.22	21.42	20.04	-21.65	0.88	29.50	312.78
1400.00	2.13	7.63	1399.15	20.72	23.68	-20.99	0.20	31.64	318.46
1500.00	2.12	13.30	1499.08	20.01	27.32	-20.31	0.21	34.05	323.37
1600.00	2.20	21.67	1599.01	18.84	30.90	-19.18	0.33	36.37	328.17
1700.00	2.37	26.97	1698.93	17.15	34.53	-17.54	0.27	38.73	333.07
1800.00	2.45	32.55	1798.84	15.02	38.17	-15.45	0.25	41.18	337.96
1900.00	2.49	34.20	1898.75	12.61	41.77	-13.08	0.08	43.77	342.61
2000.00	1.12	53.51	1998.70	10.58	44.14	-11.07	1.48	45.51	345.92
2100.00	1.88	107.47	2098.67	8.23	44.23	-8.73	1.52	45.08	348.84
2200.00	2.53	89.00	2198.59	4.46	43.78	-4.95	0.96	44.06	353.54
2300.00	1.49	78.35	2298.53	0.97	44.08	-1.46	1.10	44.10	358.10
2400.00	1.49	93.31	2398.50	-1.60	44.27	1.11	0.39	44.28	1.43
2500.00	1.56	85.42	2498.46	-4.25	44.30	3.76	0.22	44.46	4.85
2600.00	1.08	81.15	2598.44	-6.54	44.55	6.04	0.48	44.96	7.73
2700.00	0.95	121.20	2698.42	-8.18	44.27	7.69	0.71	44.93	9.85
2800.00	1.16	116.42	2798.41	-9.79	43.39	9.30	0.23	44.38	12.10
2900.00	1.18	62.03	2898.39	-11.60	43.42	11.12	1.07	44.82	14.36
3000.00	0.36	57.83	2998.38	-12.78	44.07	12.29	0.82	45.75	15.58
3100.00	0.70	93.10	3098.37	-13.66	44.20	13.16	0.46	46.12	16.58
3200.00	1.30	60.68	3198.36	-15.26	44.72	14.76	0.80	47.10	18.27
3300.00	0.13	58.17	3298.35	-16.35	45.34	15.85	1.17	48.03	19.27
3400.00	1.18	235.59	3398.34	-15.60	44.82	15.10	1.32	47.29	18.62
3500.00	1.31	229.46	3498.32	-13.66	43.49	13.38	0.18	45.50	17.10
3600.00	1.22	230.75	3598.29	-12.15	42.07	11.68	0.09	43.66	15.52
3700.00	0.88	233.27	3698.28	-10.69	40.94	10.24	0.34	42.20	14.04
3800.00	1.06	243.23	3798.26	-9.24	40.06	8.80	0.24	41.01	12.39

Scientific Drilling

Survey Report

Well Name:		GRAVY ST. COM NO.1H								
Survey:		FINAL SURVEY								
Survey Date:		6/5/2009								
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle	
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg	
3900.00	1.11	240.57	3898.25	-7.57	39.17	7.13	0.08	39.81	10.31	
4000.00	1.02	232.61	3998.23	-6.00	38.15	5.58	0.18	38.56	8.32	
4100.00	1.10	235.85	4098.21	-4.49	37.07	4.08	0.11	37.30	6.28	
4200.00	1.00	236.61	4198.19	-2.95	36.05	2.55	0.10	36.14	4.04	
4300.00	0.99	237.50	4298.18	-1.48	35.11	1.09	0.02	35.12	1.78	
4400.00	0.77	237.09	4398.17	-0.18	34.28	-0.20	0.22	34.28	359.67	
4500.00	1.00	249.70	4498.16	1.21	33.61	-1.58	0.30	33.65	357.31	
4600.00	0.99	252.08	4598.14	2.86	33.04	-3.23	0.04	33.20	354.43	
4700.00	1.07	257.48	4698.12	4.60	32.57	-4.96	0.13	32.95	351.34	
4800.00	0.96	253.86	4798.11	6.32	32.14	-6.68	0.13	32.82	348.25	
4900.00	0.81	254.84	4898.10	7.82	31.72	-8.18	0.15	32.75	345.54	
5000.00	0.57	248.02	4998.09	8.98	31.34	-9.33	0.25	32.70	343.43	
5100.00	0.84	245.95	5098.08	10.12	30.86	-10.46	0.27	32.58	341.27	
5200.00	0.92	247.80	5198.07	11.54	30.25	-11.88	0.08	32.50	338.57	
5300.00	0.67	258.69	5298.06	12.85	29.84	-13.19	0.29	32.62	336.15	
5400.00	0.84	252.13	5398.05	14.12	29.50	-14.46	0.20	32.85	333.89	
5500.00	0.68	245.75	5498.04	15.37	29.03	-15.70	0.18	33.00	331.60	
5600.00	0.69	246.26	5598.03	16.47	28.54	-16.79	0.01	33.11	329.53	
5700.00	0.67	247.18	5698.03	17.56	28.07	-17.87	0.02	33.28	327.52	
5800.00	0.69	255.77	5798.02	18.69	27.70	-19.00	0.10	33.59	325.56	
5900.00	0.76	252.06	5898.01	19.90	27.35	-20.21	0.08	34.00	323.54	
6000.00	0.83	237.60	5998.00	21.15	26.76	-21.45	0.21	34.29	321.29	
6100.00	0.91	243.90	6097.99	22.47	26.02	-22.77	0.12	34.58	318.82	
6200.00	0.98	244.25	6197.98	23.96	25.30	-24.25	0.07	35.05	316.22	
6300.00	1.13	246.46	6297.96	25.65	24.54	-25.92	0.16	35.69	313.43	
6400.00	1.02	235.18	6397.94	27.30	23.63	-27.56	0.24	36.31	310.61	
6500.00	1.16	230.76	6497.93	28.82	22.49	-29.07	0.16	36.76	307.72	
6600.00	1.06	235.17	6597.91	30.37	21.32	-30.61	0.13	37.31	304.85	
6700.00	1.17	233.37	6697.89	31.97	20.18	-32.19	0.11	38.00	302.08	
6800.00	1.13	234.08	6797.87	33.60	18.99	-33.81	0.04	38.78	299.33	
6900.00	1.27	221.25	6897.85	35.14	17.58	-35.34	0.30	39.47	296.45	
7000.00	1.16	229.92	6997.82	36.66	16.10	-36.85	0.21	40.21	293.60	
7100.00	1.17	223.96	7097.80	38.16	14.71	-38.33	0.12	41.06	291.00	
7200.00	1.16	231.39	7197.78	39.68	13.35	-39.83	0.15	42.01	288.53	
7300.00	1.14	224.39	7297.76	41.18	12.01	-41.31	0.14	43.02	286.20	
7400.00	1.18	225.97	7397.74	42.63	10.58	-42.75	0.05	44.04	283.91	
7500.00	1.20	234.34	7497.72	44.23	9.26	-44.34	0.18	45.29	281.79	
7600.00	1.18	222.90	7597.70	45.80	7.89	-45.89	0.24	46.57	279.75	



Scientific Drilling

Survey Report

Well Name:		GRAVY ST. COM NO.1H							
Survey:		FINAL SURVEY							
Survey Date:		6/5/2009							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
7700.00	0.85	235.84	7697.68	47.13	6.72	-47.21	0.40	47.69	278.10
7800.00	0.85	235.12	7797.67	48.37	5.87	-48.44	0.01	48.79	276.91
7900.00	0.84	239.94	7897.66	49.62	5.08	-49.68	0.07	49.94	275.84
8000.00	0.90	276.80	7997.65	51.04	4.81	-51.09	0.55	51.32	275.37
8100.00	1.31	287.58	8097.63	52.90	5.25	-52.97	0.46	53.22	275.66
8200.00	1.61	283.68	8197.60	55.35	5.92	-55.42	0.31	55.73	276.10
8300.00	1.67	287.69	8297.56	58.09	6.70	-58.17	0.13	58.55	276.57
8400.00	1.51	284.44	8397.52	60.74	7.47	-60.83	0.18	61.29	277.00
8500.00	1.41	285.11	8497.49	63.20	8.12	-63.29	0.10	63.81	277.31
8600.00	1.49	283.82	8597.46	65.64	8.75	-65.74	0.08	66.32	277.58
8700.00	1.38	278.24	8697.42	68.08	9.23	-68.19	0.18	68.81	277.71
8800.00	1.35	270.68	8797.40	70.45	9.42	-70.56	0.18	71.19	277.60
8900.00	1.34	277.80	8897.37	72.79	9.59	-72.90	0.17	73.53	277.49
9000.00	1.58	287.85	8997.34	75.26	10.17	-75.38	0.35	76.06	277.68
9100.00	2.16	278.05	9097.28	78.44	10.86	-78.56	0.66	79.31	277.87
9200.00	2.30	278.35	9197.21	82.29	11.41	-82.42	0.14	83.21	277.88
9300.00	2.13	276.75	9297.13	86.12	11.93	-86.26	0.18	87.08	277.87
9400.00	1.43	292.15	9397.08	89.11	12.61	-89.26	0.85	90.14	278.04
9500.00	1.10	286.85	9497.06	91.17	13.36	-91.33	0.35	92.30	278.32
9600.00	1.24	272.71	9597.04	93.16	13.69	-93.32	0.32	94.32	278.35
9700.00	0.48	249.44	9697.03	94.64	13.59	-94.80	0.81	95.76	278.16
9800.00	0.48	171.62	9797.02	94.98	13.03	-95.13	0.60	96.02	277.80
9900.00	0.35	146.20	9897.02	94.75	12.36	-94.90	0.22	95.70	277.42
10000.00	0.43	122.26	9997.02	94.27	11.90	-94.40	0.18	95.15	277.18
10011.23	0.45	117.85	10008.25	94.19	11.86	-94.33	0.35	95.07	277.16

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

MARBOB ENERGY
GRAVY STATE COM #1H
EDDY COUNTY, NEW MEXICO
Rig: PATRIOT 3

Tue May 12 11:32:14 2009

Coordinates

Latitude: 32.146574 N (32 deg. 8 min. 47.6672 sec.)
Longitude: 103.904150 W (-103 deg. 54 min. 14.9414 sec.)
Elevation: 3230.00 feet.
Calculation Date: May/12/2009

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.1232 degrees
Total Magnetic Field: 0.48771 gauss
Magnetic Declination: 7.970113 degrees
Horizontal Intensity: 0.242947 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.970113 Degr

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 632832.9000 feet
Y: 417310.0000 feet
True to Grid: (convergence) -0.228366 degrees
Magnetic to Grid: 7.741747 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.741747 Degr.