

SEP - 5 2008

UNITED STATES

OCD-ARTESIA

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO 1004-0137
Expires March 31 2007

S

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other		5 Lease Serial No NM-111400	
b Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff Resvr, Other		6 If Indian, Allottee or Tribe Name	
2 Name of Operator EOG Resources Inc.		7 Unit or CA Agreement Name and No	
3 Address P.O. Box 2267 Midland, Texas 79702		8 Lease Name and Well No Crusoe BKO Fed Com 1H	
3a Phone No (include area code) 432 686 3689		9 API Well No 30-015-34729	
4 Location of Well (Report location clearly and in accordance with Federal requirements)* At surface 660' FNL & 700' FEL, U/L A At top prod interval reported below At total depth 964' FNL & 756' FWL, U/L D		10 Field and Pool, or Exploratory Cottonwood Creek; WC, West	
14 Date Spudded 7/26/07		11 Sec, T., R., M., or Block and Survey or Area Sec 24, T16S, R24E	
15 Date T D Reached 8/09/07		12 County or Parish Eddy	
16 Date Completed ☐ D & A ☒ Ready to Prod 8/17/07		13 State NM	
17 Elevations (DF, RKB, RT, GL)* 3590' GL			
18 Total Depth MD TVD 8368 4650		19 Plug Back T D MD TVD 8344	
20. Depth Bridge Plug Set: MD TVD			
21 Type Electric & Other Mechanical Logs Run (Submit copy of each)		22 Was well cored? ☒ No ☐ Yes (Submit analysis) Was DST run ☒ No ☐ Yes (Submit report) Directional Survey? ☐ No ☒ Yes (Submit copy)	

CONFIDENTIAL

23 Casing and Liner Record (Report all strings set in well)									
Hole Size	Size/Grade	Wt (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No of Sks & Type of Cement	Slurry Vol (BBL)	Cement Top*	Amount Pulled
14 3/4	11 3/4	42		420		600		surface	
12 1/4	8 5/8	32		1016		1710		surface	
7 7/8	5 1/2	17		8344		1405		surface	

24 Tubing Record							
Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)

25 Producing Intervals				26. Perforation Record			
Formation	Top	Bottom		Perforated Interval	Size	No Holes	Perf Status
A) Wolfcamp				4900 - 8265	0.42"	128	Producing
B)							
C)							
D)							

27 Acid, Fracture, Treatment, Cement Squeeze, Etc	
Depth Interval	Amount and Type of Material
4900 - 8295	Frac w/ 12096 gals 15% HCL acid, 94920 gals XL gel, 212083 lbs 100 mesh sand, 286831 lbs 30/50 sand, 114358 lbs 20/40 sand, 879505 gals slick water.

28 Production - Interval A									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
8/17/07	8/30/07	24	→	0	1719	60			Producing
Choke Size	Tbg Press Flwg SI	Csg Press	24 Hr	Oil BBL	Gas MCF	Water BBL	Gas Oil Ratio	Well Status	
Open		420	→					PGW	

28a Production-Interval B									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
Choke Size	Tbg Press Flwg SI	Csg Press	24 Hr	Oil BBL	Gas MCF	Water BBL	Gas Oil Ratio	Well Status	

ACCEPTED FOR RECORD

Producing

SEP 19 2007

JERRY FANT
PETROLEUM GEOLOGIST



DIRECTIONAL SURVEY REPORT

EOG RESOURCES

CRUSOE BKO FED COM #1H

EDDY COUNTY, NEW MEXICO

PREPARED BY: CODY MEBANE

Pathfinder Energy Services, Inc.
6213 W. County Road 112 • Midland, TX • 79706
(432)681-6000

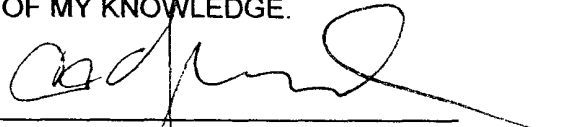
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) MATT SHIPP
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 8/3/07 TO 8/9/07
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:

EOG RESOURCES
CRUSOE BKO FED COM #1H
EDDY COUNTY, NM
RIG: MCVAY #4

9. SURVEY CERTIFIED FROM: 4211 TO 8290 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 3835.70 FEET ON A BEARING OF 265.44 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 8370 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



CODY MEBANE
M/LWD SERVICE COORDINATOR

PATHFINDER
ENERGY SERVICES
DIRECTIONAL SURVEY INFORMATION

FAXED AUG 13 2007

APPROVED AUG 14 2007

Prepared By: FRANCISCO SINISTERRA

Name of Client: EOG Resources, Inc

Attention: _____

☐ Directional Only Job OR ☒ Logging Job

Name(s) of Persons Performing Surveys:

A) MATT SHIPP D) _____
B) JUSTIN FALLIN E) _____
C) _____ F) _____

Positions of Said Persons: Surveyors / Field Engineers: Other _____

Date(s) Survey was Performed: From 8/3/2007 To 8/9/2007

Type of Survey Performed: (Specify if other than MWD) _____

IDENTIFICATION OF WELL:

Client:	<u>EOG Resources, Inc.</u>	Rig Name:	<u>McVay #4</u>
Well No.:	<u>Crusoe BKO Fed Com #1H</u>	API No.:	<u>30-015-34729</u>
Location:	<u>Thames Field</u>	Job No.:	<u>101006630-WT-WT</u>
State:	<u>NM</u>		

TEXAS RAILROAD COMMISSION INFORMATION:

Field: _____

Abstract No.: _____

Well Plat Survey Co.: _____

Surveys Performed From 4211 Feet TO 8290 Feet

MMS / ASCII / LAS Diskette Filename: _____

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOW THE WELL TO BE DISPLACED AT 3835.70 FEET ON A BEARING OF 265.44 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT PROJECTED DEPTH OF 8370 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 08/03/2007
Date Completed: 08/09/2007

EOG RESOURCES, INC.
CRUSOE BKO FED CGM #1H
Eddy COUNTY, NM
Rig:McVay #4
PathFinder Office Supervisor: Cody Mebane
PathFinder Field Engineers:Matt Shipp
Justin Fallin

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.54.49.8384 N LON:104.32.6.8856 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 438036.8107 Y: 696227.5070
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.64° EAST TO GRID
Vertical Section Plane: 268.30
Survey Vert. Reference: 17.50' Rotary Table To Ground
Altitude:3590.00' Ground To MSL

Measured Depth	8370.00	(feet)
Inclination	92.51	(deg)
Azimuth	265.03	(deg)
True Vertical Depth	4650.73	(feet)
Vertical Section	3830.93	(feet)
Survey X cord	434213.27	(feet)
Survey Y cord	695922.66	(feet)
Survey Lat	32.91298532 N	(deg)
Survey Lon	104.54770328 W	(deg)
Rectangular Corr. N/S	304.94 S	(feet)
Rectangular Corr. E/W	3823.56 W	(feet)
Closure Distance	3835.70	(feet)
Direction of Closure	265.44	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/03

Tie-In Date: 08/03/2007

Date Completed: 08/09/2007

EOG RESOURCES, INC.
CRUSOE BKO FED COM #1H
Eddy COUNTY, NM
Rig:McVay #4
PathFinder Office Supervisor: Cody Mebane
PathFinder Field Engineers: Matt Shipp
Justin Fallin

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.54.49.8384 N LON:104.32.6.8856 W
Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 438036.8107 Y: 696227.5070
North Aligned To:GRID NORTH
Total Magnetic Correction: 8.64° EAST TO GRID
Vertical Section Plane: 268.30
Survey Vert. Reference: 17.50' Rotary Table To Ground
Altitude:3590.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Retangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIE-IN PROVIDED BY SCIENTIFIC DRILLING CONTROLS.										
4148.00	0.64	66.85	4147.56	0.00	2.45	4.75 N	2.59 W	5.41@	331.40	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
4211.00	0.97	83.08	4210.55	63.00	1.59	4.95 N	1.74 W	5.25@	340.67	0.63
4243.00	0.26	87.40	4242.55	32.00	1.25	4.99 N	1.40 W	5.18@	344.37	2.22
4274.00	3.08	256.53	4273.54	31.00	1.99	4.80 N	2.14 W	5.25@	336.01	10.76
4306.00	6.95	257.65	4305.41	32.00	4.74	4.18 N	4.86 W	6.42@	310.70	12.10
4338.00	10.82	257.51	4337.02	32.00	9.59	3.12 N	9.69 W	10.18@	287.84	12.09
4370.00	14.95	257.44	4368.21	32.00	16.60	1.57 N	16.65 W	16.73@	275.39	12.91
4401.00	18.73	257.12	4397.87	31.00	25.41	0.41 S	25.41 W	25.42@	269.08	12.20
4433.00	22.34	258.35	4427.83	32.00	36.45	2.78 S	36.38 W	36.49@	265.63	11.36
4465.00	25.94	260.50	4457.03	32.00	49.38	5.17 S	49.24 W	49.51@	264.01	11.58
4496.00	29.55	262.16	4484.46	31.00	63.70	7.33 S	63.51 W	63.93@	263.42	11.91
4528.00	33.06	263.23	4511.80	32.00	80.24	9.44 S	80.00 W	80.55@	263.27	11.11
4560.00	36.84	262.23	4538.02	32.00	98.48	11.76 S	98.18 W	98.88@	263.17	11.95
4592.00	40.45	260.91	4563.01	32.00	118.32	14.70 S	117.94 W	118.85@	262.90	11.57
4624.00	44.14	260.06	4586.68	32.00	139.65	18.26 S	139.17 W	140.37@	262.52	11.67
4655.00	48.01	259.14	4608.18	31.00	161.72	22.30 S	161.13 W	162.66@	262.12	12.66
4687.00	51.88	258.15	4628.77	32.00	185.86	27.13 S	185.14 W	187.11@	261.66	12.32
4719.00	55.84	257.70	4647.64	32.00	211.27	32.53 S	210.40 W	212.90@	261.21	12.43
4750.00	59.62	258.08	4664.19	31.00	237.05	38.03 S	236.03 W	239.07@	260.85	12.24
4782.00	63.14	259.54	4679.51	32.00	264.75	43.48 S	263.58 W	267.14@	260.63	11.71
4814.00	67.18	261.13	4692.95	32.00	293.50	48.34 S	292.20 W	296.17@	260.61	13.41
4845.00	71.05	262.94	4704.00	31.00	322.29	52.35 S	320.88 W	325.12@	260.73	13.62
4877.00	74.92	263.62	4713.37	32.00	352.76	55.93 S	351.26 W	355.68@	260.95	12.26
4908.00	78.79	262.93	4720.41	31.00	382.83	59.46 S	381.23 W	385.84@	261.13	12.67

PathFinder Energy Services, Inc.

Survey Report

EOG RESOURCES, INC.
CRUSOE BKO FED COM #1H
Eddy COUNTY, NM
RIG:McVay #4

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Retangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
4940.00	81.25	262.89	4725.96	32.00	414.20	63.35 S	412.51 W	417.34@	261.27	7.69
4972.00	84.15	263.87	4730.03	32.00	445.82	67.01 S	444.03 W	449.06@	261.42	9.56
5003.00	86.61	264.61	4732.52	31.00	476.64	70.11 S	474.77 W	479.92@	261.60	8.28
5067.00	89.60	265.95	4734.64	64.00	540.51	75.37 S	538.51 W	543.76@	262.03	5.12
5162.00	91.28	266.67	4733.91	95.00	635.45	81.49 S	633.31 W	638.53@	262.67	1.92
5226.00	92.07	267.16	4732.04	64.00	699.40	84.93 S	697.19 W	702.34@	263.05	1.45
5321.00	89.78	265.07	4730.50	95.00	794.31	91.37 S	791.95 W	797.20@	263.42	3.26
5384.00	90.31	265.45	4730.46	63.00	857.22	96.57 S	854.73 W	860.17@	263.55	1.04
5448.00	90.84	265.90	4729.81	64.00	921.15	101.40 S	918.54 W	924.12@	263.70	1.09
5511.00	90.04	264.96	4729.33	63.00	984.07	106.42 S	981.34 W	987.09@	263.81	1.96
5575.00	89.69	263.76	4729.48	64.00	1047.91	112.71 S	1045.03 W	1051.09@	263.84	1.95
5670.00	91.54	264.01	4728.46	95.00	1142.62	122.83 S	1139.48 W	1146.08@	263.85	1.96
5734.00	89.69	261.30	4727.77	64.00	1206.30	131.01 S	1202.94 W	1210.05@	263.78	5.13
5829.00	88.99	260.55	4728.87	95.00	1300.50	145.99 S	1296.74 W	1304.94@	263.58	1.08
5924.00	91.80	262.58	4728.21	95.00	1394.83	159.92 S	1390.70 W	1399.87@	263.44	3.65
6017.00	90.48	261.86	4726.36	93.00	1487.29	172.51 S	1482.82 W	1492.82@	263.36	1.62
6110.00	90.31	261.47	4725.72	93.00	1579.66	185.99 S	1574.84 W	1585.78@	263.26	0.46
6294.00	89.96	260.34	4725.29	184.00	1762.13	215.07 S	1756.52 W	1769.64@	263.02	0.64
6388.00	91.28	259.63	4724.27	94.00	1855.13	231.42 S	1849.08 W	1863.51@	262.87	1.59
6481.00	90.57	259.24	4722.77	93.00	1947.01	248.47 S	1940.49 W	1956.34@	262.70	0.87
6638.00	92.51	263.05	4718.55	157.00	2102.69	272.63 S	2095.53 W	2113.19@	262.59	2.72
6731.00	93.47	262.98	4713.70	93.00	2195.17	283.92 S	2187.71 W	2206.06@	262.61	1.04
6856.00	93.30	266.73	4706.31	125.00	2319.71	295.11 S	2311.97 W	2330.73@	262.73	3.00
6981.00	92.95	268.79	4699.50	125.00	2444.51	299.99 S	2436.68 W	2455.08@	262.98	1.67
7075.00	93.74	270.42	4694.01	94.00	2538.32	300.63 S	2530.51 W	2548.31@	263.22	1.92
7168.00	93.30	271.47	4688.30	93.00	2631.04	299.10 S	2623.32 W	2640.32@	263.50	1.22

PathFinder Energy Services, Inc.

Survey Report

EOG RESOURCES, INC.
CRUSOE BKO FED COM #1H
Eddy COUNTY, NM
RIG:McVay #4

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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)	(ft)	(ft)	(deg)	
7263.00	92.95	272.63	4683.13	95.00	2725.70	295.71 S	2718.12 W	2734.16@	263.79	1.27
7358.00	93.03	273.49	4678.17	95.00	2820.24	290.64 S	2812.85 W	2827.83@	264.10	0.91
7450.00	91.98	271.63	4674.15	92.00	2911.89	286.54 S	2904.67 W	2918.77@	264.37	2.32
7544.00	92.15	270.78	4670.76	94.00	3005.71	284.56 S	2998.59 W	3012.06@	264.58	0.92
7637.00	90.57	269.30	4668.55	93.00	3098.63	284.50 S	3091.56 W	3104.62@	264.74	2.33
7731.00	91.28	269.41	4667.04	94.00	3192.61	285.56 S	3185.54 W	3198.31@	264.88	0.76
7857.00	90.04	267.30	4665.59	126.00	3318.59	289.17 S	3311.47 W	3324.07@	265.01	1.94
7981.00	90.66	267.46	4664.83	124.00	3442.57	294.84 S	3435.33 W	3447.96@	265.09	0.52
8134.00	92.33	272.59	4660.83	153.00	3595.39	294.78 S	3588.23 W	3600.31@	265.30	3.52
8290.00	92.51	265.03	4654.24	156.00	3751.13	298.01 S	3743.94 W	3755.78@	265.45	4.84
STRAIGHT LINE PROJECTION TO BIT @ 8370 ' MD.										
8370.00	92.51	265.03	4650.73	80.00	3830.93	304.94 S	3823.56 W	3835.70@	265.44	0.00

FINDER

ENERGY SERVICES

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	EOG Resources, Inc.		
LEASE / WELL No.:	Crusoe BKO Fed Com	#1H	
WELL LOCATION:	Thames Field		
COUNTY / STATE / COUNTRY:	Eddy	NM	USA
RIG:	McVay #4		
API WELL No:	30-015-34729		
JOB No:	101006630-WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	Pathfinder Energy Services		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	8.64	LWD Calculated:	8.64
		Agreed Upon:	8.64
X =	438036.810700	Feet	Y = 696227.507000
			Feet
SITE LATITUDE:	32.91384400N	SITE LONGITUDE:	104.53524600W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐ ZONE:		
PROPOSED DRIFT DIRECTION:	268.3		
KELLY BUSHING ELEVATION:	17.5		
ALTITUDE:	3607.5	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	4148		
DRIFT ANGLE:	0.64		
DRIFT DIRECTION:	66.85		
TRUE VERTICAL DEPTH:	4147.56		
VERTICAL SECTION:	2.44		
RECTANGULAR COORDINATE (N / S) :	4.75		
RECTANGULAR COORDINATE (E / W) :	-2.59		
CLOSURE DISTANCE / DIRECTION:	5.41	331.36	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	Scientific Drilling Controls		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	4148	TOTAL DEPTH:	8487
KICKOFF ANGLE:	0.64	MAX ANGLE:	92

PES Engineers: _____

**Signature of both field engineers required if applicable

Directional Driller: _____

DATE: 8/3/07

FINDER

ENERGY SERVICES

MAGNETIC DECLINATION / TOOLFACE OFFSET WORKSHEET

Client: <u>EOG Resources, Inc.</u>	LWD Run No: <u>1</u>
Well: <u>Crusoe BKO Fed Com #1H</u>	DTA No: _____
Location: <u>Thames Field</u>	HDAS No: <u>5778</u>
Rig: <u>McVay #4</u>	TrkrElec No: _____
Job No: <u>101006630-WT-WT</u>	

Magnetic Declination:

GRID SYSTEM USED: TRUE ☐ UTM ☒ LAMBERT ☐ ZONE New Mexico East

X = 438036.8107 Y = 696227 507

SITE LATITUDE: 32 91384400N SITE LONGITUDE 104.53524600W

Magnetic Declination:

On Wall Plat: 8.64

LWD Calculated: 8.64

Agreed Upon: 8.64

Directional Driller Approval: [Signature]

LWD Engineers Approval: [Signature]

Supervisor Approval: _____

ToolFace Offset Calculation:

1. Ensure all connections between M/LWD are torqued correctly
2. Estimate toolface offset
3. Measure the distance from the M/LWD scribe line to the motor scribe line in a clockwise direction looking down hole
4. Measure the circumference of the tool.
5. Calculate Tool Face Offset using.

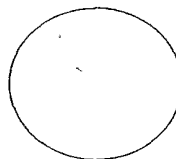
$$\text{TOOL FACE OFFSET} = \frac{\text{Distance from M/LWD to Motor}}{\text{Circumference}} \times 360^\circ$$

ToolFace Offset Using Protractor:

1. Hook protractor onto the M/LWD tool.
2. Read Tool Face Offset from top of protractor where the motor scribe line intersects protractor.
3. If motor scribe line does not intersect protractor flip protractor over and repeat steps 1 and 2.

Distance from M/LWD to Motor: _____

Circumference: _____



V- Door

OTF Estimate: 0

OTF Calculated: 0

OTF Protractor: _____

Offset Tool Face Used = 0/MS

M/LWD Engineer #1 [Signature]

M/LWD Engineer #2: [Signature]

Directional Driller: [Signature]

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

EOG RESOURCES, INC.
CRUSOE BKO FED. COM # 1H
EDDY Co., NEW MEXICO
Rig:McVAY 4

Tue Jul 24 09:37:10 2007

Coordinates

Latitude:	32.913844 N (32 deg. 54 min. 49.8395 sec.)
Longitude:	104.535246 W (-104 deg. 32 min. 6.8852 sec.)
Elevation:	3590.00 feet.
Calculation Date:	Jul/24/2007

Magnetic Calculations

Model:	IGRF2005
Dip Angle:	60.7573 degrees
Total Magnetic Field:	0.49330 gauss
Magnetic Declination:	8.530375 degrees
Horizontal Intensity:	0.240981 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.530375 Degr

Transverse Mercator Grid Calculations NAD27

Grid System:	Transverse Mercator: new mexico east
Ellipsoid:	Clarke 1866
X:	438036.8416 feet
Y:	696227.6160 feet
True to Grid: (convergence)	0.109715 degrees
Magnetic to Grid:	8.640090 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 8.640090 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

EOG RESOURCES, INC.
CRUSOE BKO FED COM #1H
THAMES
Rig:McVay #4

Sat Aug 04 12:09:51 2007

Coordinates

Latitude: 32.913844 N (32 deg. 54 min. 49.8384 sec.)
Longitude: 104.535246 W (-104 deg. 32 min. 6.8856 sec.)
Elevation: 3607.50 feet.
Calculation Date: Aug/03/2007

Magnetic Calculations

Model: IGRF2005
Dip Angle: 60.7568 degrees
Total Magnetic Field: 0.49327 gauss
Magnetic Declination: 8.527135 degrees
Horizontal Intensity: 0.240971 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 8.527135 Degr

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 438036.8107 feet
Y: 696227.5070 feet
True to Grid: (convergence) 0.109715 degrees
Magnetic to Grid: 8.636850 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 8.636850 Degr.

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°      S C I E N T I F I C       D R I L L I N G       C O N T R O L S       °
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KEEPER GYRO SURVEY

for

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AAU

Well Number	:	CRUSO BKO FED. COM. #1-H
Well Location	:	EDDY COUNTY, NEW MEXICO
Job Number	:	32K0807657
Location Latitude	:	32.914
Survey Date	:	3-AUG-2007
S.D.C. Personnel	:	TL REHDERS
Length Units	:	Feet
North Reference	:	GRID North
Grid Correction	:	-0.11 Degrees
Survey Depth Zero	:	RKB
Proposal Direction	:	268.18
Calculation Method	:	Minimum Curvature

Remarks : The INRUN Survey will be called definitive

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0          S C I E N T I F I C          D E T A I L I N G          C O N T R O L S          0

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Date : 3-AUG-2007

GRTD

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Depth      T.V.D.      V.S.      Inc      Azimuth      Latitude      Departure      D-leg
( Feet )   ( Feet )   ( Feet )   Deg.      Deg.      ( Feet )   ( Feet )   /100
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01807657

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° S C I E N T I F I C D R I L L I N G C O N T R O L S °
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Inrun Survey
for

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Well No.: CRUSO BKO FED. COM. #1

Date : 3-AUG-2007

Job No. : 32K0807657

GRID

Proposal : 268.18

Depth T.V.D. V.S. Inc Azimuth Latitude Departure D-leg
(Feet) (Feet) (Feet) Deg. Deg. (Feet) (Feet) /100
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4000.00	3999.57	2.84	0.21	205.89	4.51	-2.98	0.29
4100.00	4099.57	2.77	0.29	36.43	4.54	-2.91	0.50
4148.00	4147.56	2.44	0.64	66.85	4.75	-2.59	0.87

The Horizontal Displacement (in Feet) at
Measured Depth 4148.00 is 5.41 in a Direction of 331.36 Degrees
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