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HOBBSUCD

Results of Directional Survey

API number:	30-025-39799		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	JG STATE # 5

surface	ULSTR:	F	16	T	17S	R	32E
				2310	FNL	2050	FWL

BH Loc	ULSTR:	F	16	T	17S	R	32E
7026	MD	7013.0	TVD	2307	FNL	2320	FWL

Top Perf/OH	ULSTR:	F	16	T	17S	R	32E
5450	MD	5445.3	TVD	2300	FNL	2167	FWL

Bot Perf/OH	ULSTR:	F	16	T	17S	R	32E
6817	MD	6805.4	TVD	2306	FNL	2299	FWL

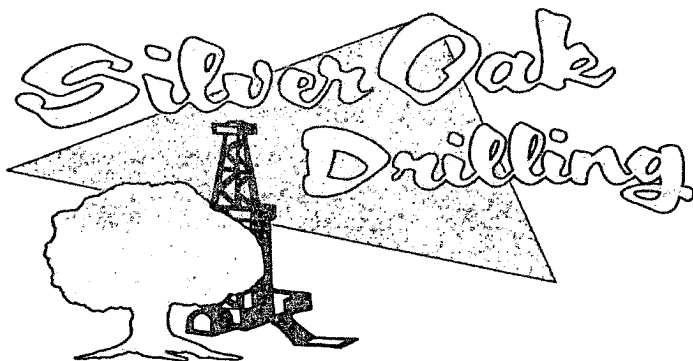
	MD	N/S	E/W	VD
	5433	10.30	115.10	5428.4
TOP PERFS/OH	5450	10.10	116.56	5445.33
	5526	9.20	123.10	5521.00
	5807	7.30	149.50	5800.80
BOT PERFS/OH	6817	4.04	249.41	6805.37
	5900	7.00	158.70	5893.30

NEXT TO LAST	5807	7.30	149.50	5800.80
LAST READING	5900	7.00	158.70	5893.30
TD	7026	3.37	270.09	7013.25

Surface Location	2310	FN	2050	FW
Projected BHL	2307	FN	2320	FW
Location of				
Top Perfs/OH	2300	FN	2167	FW
Bottom Perfs/OH	2306	FN	2299	FW

SUMMARY of Subsurface Locations

Surface Location	F-16-17S-32E	2310	FN	2050	FW	Vert. Depth
Top Perfs/OH	F-16-17S-32E	2300	FN	2167	FW	5445.33
Bottom Perfs/OH	F-16-17S-32E	2306	FN	2299	FW	6805.37
Projected TD	F-16-17S-32E	2307	FN	2320	FW	7013.25



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

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September 24, 2010

Cimarex Energy Co.
Attn: Jim Evans
600 N. Marienfeld, Suite 600
Midland, TX 79701

RE: JG 16 State #5
2310' FNL & 2050' FWL
Sec. 16, T17S, R32E
Lea County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

SUR: F-16-17s-32e, 2310/N & 2050/W
BHL : F-16-17s-32e, 2307/N & 2320/W
API # 30-025-39799

Very truly yours,

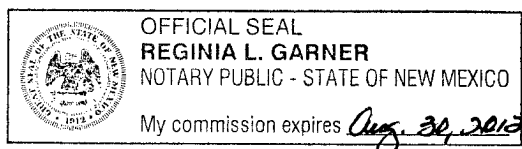
A handwritten signature in black ink, appearing to read "Eddie C. LaRue". The signature is fluid and cursive.

Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 24th day of September, 2010.

Notary Public



30-025-39799

Pason DataHub Deviation Survey

Well Dossier 1283961342 - J G 16 STATE # 5

#

#	Date	Depth	Deviation	Direction
	9/9/2010	416	0.10	0.00
	9/11/2010	880	1.80	0.00
	9/11/2010	1346	0.80	0.00
	9/11/2010	1844	1.10	0.00
	9/13/2010	2325	0.60	0.00
	9/14/2010	2760	0.20	0.00
	9/14/2010	3196	0.90	0.00
	9/14/2010	3632	0.40	0.00
	9/16/2010	4363	0.50	326.20
	9/16/2010	4394	0.70	81.30
	9/16/2010	4456	1.70	106.40
	9/17/2010	4500	5.00	104.60
	9/17/2010	4593	4.90	103.20
	9/17/2010	4687	5.80	95.90
	9/17/2010	4780	5.60	96.20
	9/17/2010	4892	5.60	96.00
	9/17/2010	4986	5.70	93.30
	9/17/2010	5097	5.50	94.20
	9/18/2010	5153	5.30	0.00
	9/18/2010	5215	5.30	101.20
	9/18/2010	5309	5.30	99.30
	9/18/2010	5402	5.30	99.00
	9/19/2010	5465	5.00	98.10
	9/19/2010	5526	4.90	97.30
	9/19/2010	5682	5.50	92.00
	9/19/2010	5775	5.60	92.80
	9/20/2010	5900	5.80	91.30

Because of hole problem, Operator will run a cased hole gyro.

EOF



WELL DETAILS: JG State #5						
Ground Level:	0.0					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slut
0.0	0.0	668160.30	713327.50	32° 50' 7.965 N	103° 46' 24.138 W	
SHL: 2310' FNL / 2050' FWL						
BHL: 2310' FNL / 2310' FWL						



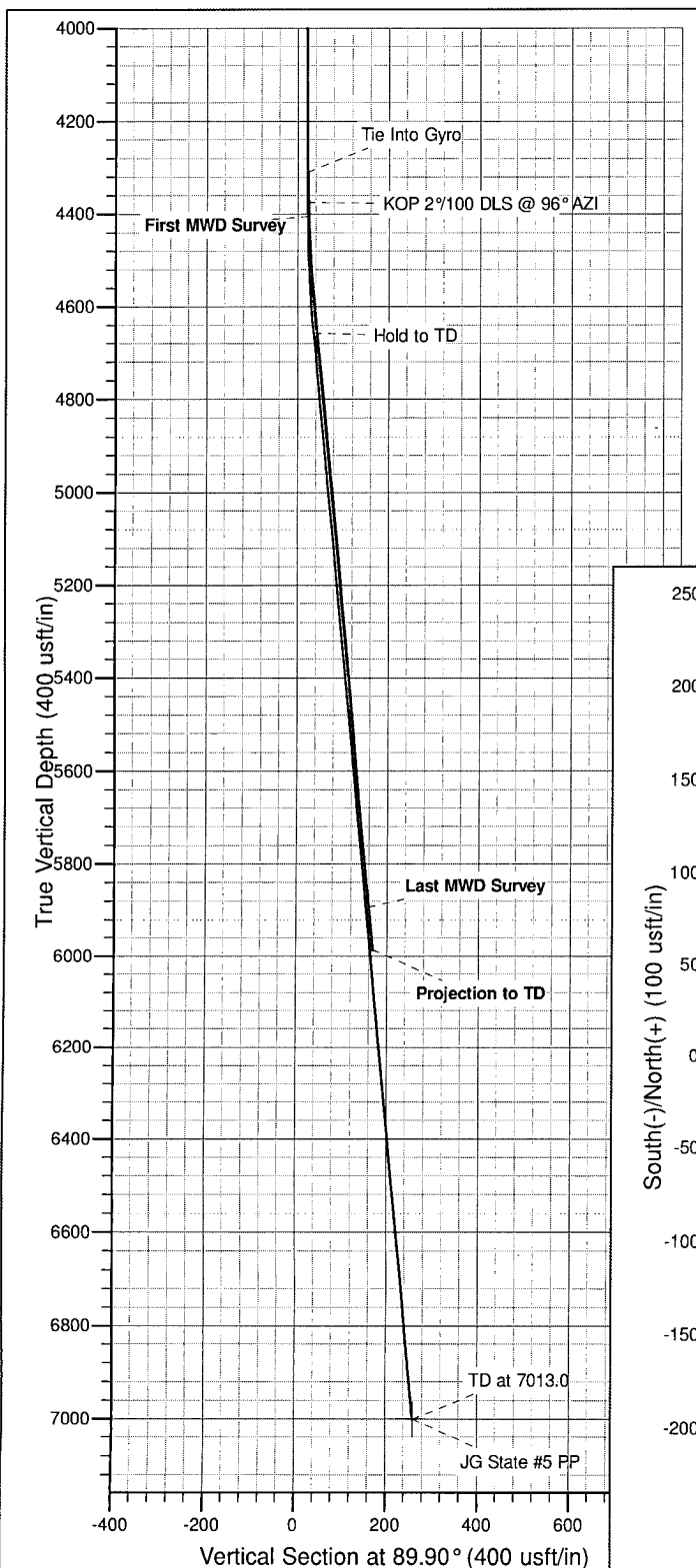
Project: Lea County (NAD 83)
 Site: Sec 16 - T17S - R32E
 Well: JG State #5
 Wellbore: Wellbore #1
 Design: Plan #2

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
JG State #5	7000.0	0.0	260.0	668160.30	713587.50	32° 50' 7.952 N	103° 46' 21.091 W
- plan misses target center by 1.0usft at 7011.7usft MD (7000.1 TVD, 0.5 N, 259.2 E)							



Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 7.53°

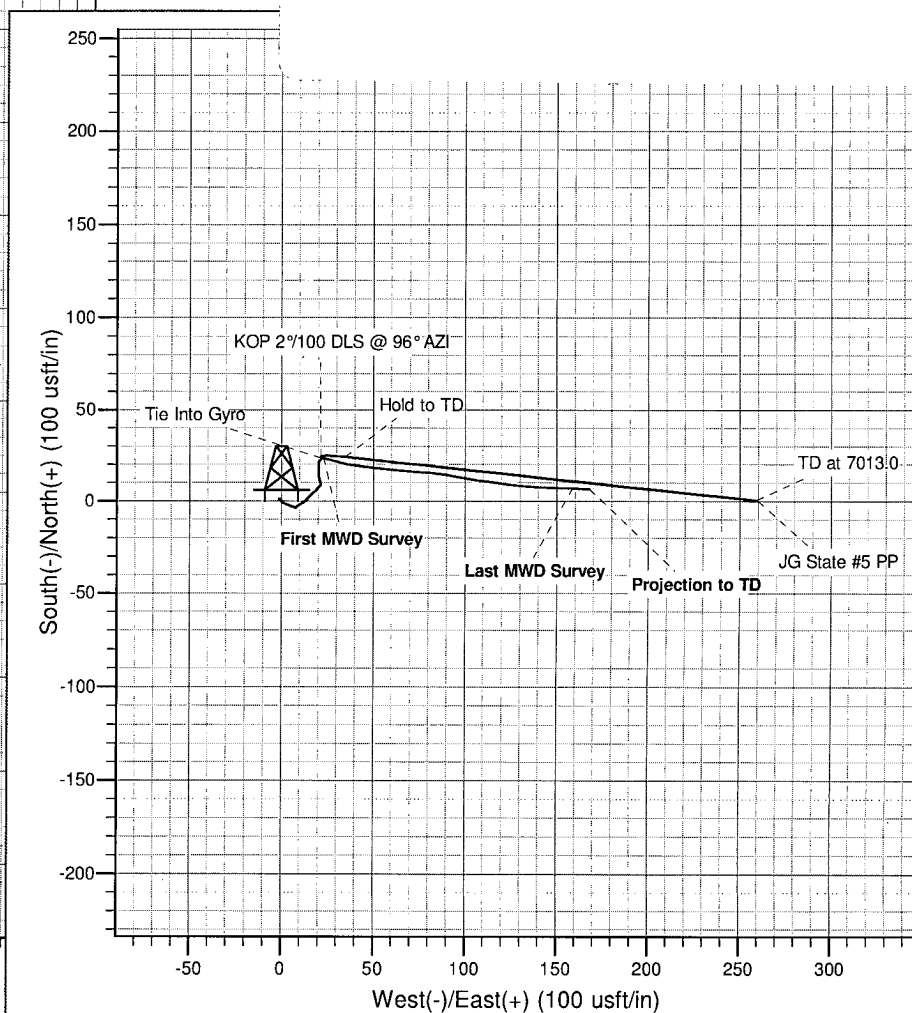
Magnetic Field
 Strength: 49118.4snT
 Dip Angle: 60.76°
 Date: 2010/06/24
 Model: IGRF200510



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	4310.0	0.58	354.30	4309.7	23.4	21.6	0.00	0.00	21.6	
2	4376.0	0.58	354.30	4375.7	24.0	21.5	0.00	0.00	21.6	
3	4658.3	5.50	96.00	4657.6	24.0	34.8	2.00	107.46	34.9	
4	7013.0	5.50	96.00	7001.4	0.5	259.3	0.00	0.00	259.3	

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation		
4309.7	4310.0	0.58	354.30	23.4	21.6	21.6	0.0	Tie Into Gyro		
4375.7	4376.0	0.58	354.30	24.0	21.5	21.6	0.7	KOP 2°/100 DLS @ 96° AZI		
4657.6	4658.3	5.50	96.00	24.0	34.8	34.9	14.4	Hold to TD		
7001.4	7013.0	5.50	96.00	0.5	259.3	259.3	240.1	TD at 7013.0		

SUR: F-16-17s-32e, 2310/N & 2050/W
 BHL : F-16-17s-32e, 2307/N & 2320/W
 API # 30-025-39799





Great White Directional Services

Survey Report



Company:	Cimarex Energy Co.	Local Co-ordinate Reference:	Well JG State #5
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 16 - T17S - R32E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	JG State #5	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Lea County (NAD 83)	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 16 - T17S - R32E		
Site Position:		Northing:	665,541.60 usft
From:	Map	Easting:	713,303.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 42.055 N
		Longitude:	103° 46' 24.588 W
		Grid Convergence:	0.30 °

Well	JG State #5		
Well Position	+N/-S	0.0 usft	Northing: 668,160.30 usft
	+E/-W	0.0 usft	Easting: 713,327.50 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 7.965 N
		Longitude:	103° 46' 24.138 W
		Ground Level:	0.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	2010/06/24	7.83
			Dip Angle (°)
			60.76
			Field Strength (nT)
			49,118

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			42.71

Survey Program	Date	2010/09/23		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
91.1	4,310.0	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard
4,406.0	5,993.0	MWD Survey (Wellbore #1)	MWD	MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,310.0	0.58	354.30	4,309.7	23.4	21.6	31.8	0.00	0.00	0.00
4,406.0	1.70	106.40	4,405.7	23.5	22.9	32.8	2.08	1.17	116.77
First MWD Survey									
4,500.0	5.00	104.60	4,499.5	22.0	28.2	35.3	3.51	3.51	-1.91
4,593.0	4.90	103.20	4,592.2	20.1	36.0	39.2	0.17	-0.11	-1.51
4,687.0	5.80	95.90	4,685.8	18.7	44.6	44.0	1.20	0.96	-7.77
4,780.0	5.60	96.20	4,778.3	17.7	53.8	49.5	0.22	-0.22	0.32
4,873.0	5.60	96.00	4,870.8	16.8	62.8	54.9	0.02	0.00	-0.22
4,967.0	5.70	93.30	4,964.4	16.0	72.1	60.6	0.30	0.11	-2.87
5,060.0	5.50	94.20	5,056.9	15.4	81.1	66.3	0.23	-0.22	0.97



Great White Directional Services Survey Report



Company:	Cimarex Energy Co	Local Co-ordinate Reference:	Well JG State #5
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 16 - T17S - R32E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	JG State #5	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,153.0	5.30	99.80	5,149.5	14.4	89.8	71.5	0.61	-0.22	6.02
5,247.0	5.20	99.30	5,243.1	12.9	98.3	76.2	0.12	-0.11	-0.53
5,340.0	5.30	99.70	5,335.7	11.5	106.7	80.8	0.11	0.11	0.43
5,433.0	5.20	97.40	5,428.4	10.3	115.1	85.6	0.25	-0.11	-2.47
5,526.0	4.80	98.10	5,521.0	9.2	123.1	90.2	0.44	-0.43	0.75
5,620.0	5.40	94.50	5,614.6	8.3	131.4	95.2	0.72	0.64	-3.83
5,713.0	5.60	93.40	5,707.2	7.7	140.3	100.8	0.24	0.22	-1.18
5,807.0	5.60	91.50	5,800.8	7.3	149.5	106.7	0.20	0.00	-2.02
5,900.0	5.80	91.30	5,893.3	7.0	158.7	112.8	0.22	0.22	-0.22
Last MWD Survey									
5,993.0	5.60	94.80	5,985.8	6.6	167.9	118.7	0.43	-0.22	3.76
Projection to TD - JG State #5 PP									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,406.0	4,405.7	23.5	22.9	First MWD Survey
5,900.0	5,893.3	7.0	158.7	Last MWD Survey
5,993.0	5,985.8	6.6	167.9	Projection to TD

Checked By: _____ Approved By: _____ Date: _____