

3D-015-31497

End of Well Recap FOR

**Cimarex Energy
Palmillo State #4
Eddy Co, NM**

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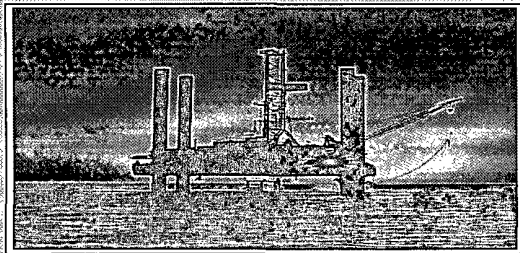
NMOCD ARTESIA

Proposal No. 02400-433-22

Presented By:

Terry Morgan
Regional Manager

Aaron Pullin
Well Planner





Great White Directional Services

Survey Report



Company:	Cimarex Energy Co.	Local Co-ordinate Reference:	Well Palmillo State Com #4
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 32 - T18S - R29E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Palmillo State Com #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project:	Eddy County (NM83E)	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 32 - T18S - R29E				
Site Position:		Northing:	619,430.60 usft	Latitude:	32° 42' 9.525 N
From:	Map	Easting:	612,072.30 usft	Longitude:	104° 6' 12.158 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	Palmillo State Com #4					
Well Position	+N-S	0.0 usft	Northing:	619,435.72 usft	Latitude:	32° 42' 9.576 N
	+E-W	0.0 usft	Easting:	612,077.12 usft	Longitude:	104° 6' 12.101 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore:	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	09/20/10	7.94	60.58	48,978

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)	Direction (°)	
	0.0	0.0	0.0	190.98	

Survey Program	Date	10/11/10			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,444.0	Gyro Survey (Wellbore #1)	MWD	MWD - Standard	
7,479.0	9,210.0	MWD Survey (Wellbore #1)	MWD	MWD - Standard	

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)
7,444.0	1.19	86.84	7,443.5	-13.2	-28.5	18.4	0.00	0.00	0.00
7,479.0	1.70	147.00	7,478.5	-13.6	-27.8	18.7	4.33	1.46	171.89
First MWD Survey									
7,511.0	13.30	199.80	7,510.2	-17.5	-28.8	22.7	38.58	36.25	165.00
7,543.0	22.80	201.90	7,540.5	-26.8	-32.4	32.4	29.75	29.69	6.56
7,574.0	29.50	194.20	7,568.4	-39.7	-36.5	46.0	24.19	21.61	-24.84
7,606.0	36.50	190.50	7,595.2	-56.8	-40.2	63.4	22.75	21.88	-11.56
7,638.0	43.50	188.70	7,619.7	-77.0	-43.6	83.9	22.17	21.88	-5.63
7,669.0	50.60	186.90	7,640.8	-99.5	-46.6	106.6	23.29	22.90	-5.81
7,701.0	57.60	187.80	7,659.5	-125.2	-50.0	132.4	21.99	21.88	2.81



Great White Directional Services

Survey Report



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Site:	Sec 32 - T18S - R29E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Palmillo State Com #4	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)
7,733.0	65.00	189.80	7,674.9	-152.9	-54.3	160.4	23.76	23.13	6.25
7,764.0	73.30	190.00	7,685.9	-181.4	-59.2	189.4	26.78	26.77	0.65
7,796.0	81.50	189.70	7,692.9	-212.2	-64.6	220.6	25.64	25.63	-0.94
7,825.0	89.30	189.10	7,695.2	-240.7	-69.3	249.5	26.98	26.90	-2.07
7,856.0	90.40	189.10	7,695.3	-271.3	-74.2	280.4	3.55	3.55	0.00
7,888.0	90.20	189.10	7,695.1	-302.9	-79.3	312.4	0.63	-0.63	0.00
7,982.0	90.00	190.60	7,695.0	-395.5	-95.3	406.4	1.61	-0.21	1.60
8,077.0	89.30	190.20	7,695.6	-488.9	-112.5	501.4	0.85	-0.74	-0.42
8,171.0	88.70	190.20	7,697.2	-581.4	-129.1	595.4	0.64	-0.64	0.00
8,266.0	90.30	189.70	7,698.0	-675.0	-145.6	690.3	1.76	1.68	-0.53
8,360.0	89.70	190.40	7,698.0	-767.5	-162.0	784.3	0.98	-0.64	0.74
8,454.0	90.10	191.30	7,698.2	-859.8	-179.6	878.3	1.05	0.43	0.96
8,550.0	90.10	191.00	7,698.0	-954.0	-198.2	974.3	0.31	0.00	-0.31
8,645.0	91.30	191.90	7,696.9	-1,047.1	-217.1	1,069.3	1.58	1.26	0.95
8,739.0	91.90	192.10	7,694.2	-1,139.0	-236.6	1,163.3	0.67	0.64	0.21
8,834.0	89.70	190.30	7,692.9	-1,232.2	-255.1	1,258.2	2.99	-2.32	-1.89
8,929.0	89.50	189.40	7,693.6	-1,325.8	-271.3	1,353.2	0.97	-0.21	-0.95
9,024.0	89.50	190.00	7,694.4	-1,419.5	-287.3	1,448.2	0.63	0.00	0.63
9,119.0	86.40	187.80	7,697.8	-1,513.2	-302.0	1,543.1	4.00	-3.26	-2.32
Last MWD Survey									
9,210.0	87.20	186.40	7,702.9	-1,603.4	-313.2	1,633.7	1.77	0.88	-1.54
Projection to TD - Palmillo #4									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,479.0	7,478.5	-13.6	-27.8	First MWD Survey
9,119.0	7,697.8	-1,513.2	-302.0	Last MWD Survey
9,210.0	7,702.9	-1,603.4	-313.2	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County (NM83F)
Site: Sec 32 - T18S - R29E
Well: Palmillo State Com #4
Wellbore: Wellbore #1
Design: Plan #2

WELL DETAILS: Palmillo State Com #4

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	619435.72	612077.12	32° 42' 9.576 N	104° 6' 12.101 W
SHL: 1980' FSL / 660' FWL					
BHL: 330' FSL / 330' FWL					



Azimuths to Grid North

Total Correction: 7.82°

Magnetic Field
Strength: 48978.1snT
Dip Angle: 60.58°
Date: 09/20/2010
Model: IGRF200510

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Palmillo #4	7684.0	-1651.8	-320.6	617783.90	611756.50

PLAN DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
7444.0	1.19	86.84	7443.5	-13.2	-28.5	0.00	0.00	18.4	
7493.0	1.19	86.84	7492.5	-13.2	-27.5	0.00	0.00	18.2	
7793.9	90.00	190.27	7684.3	-201.8	-57.7	30.00	103.43	209.1	
4 9267.6	90.00	190.27	7684.3	-1651.9	-320.4	0.00	0.00	1682.6	Palmillo #4

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
7443.5	7444.0	1.19	86.84	-13.2	-28.5	18.4	0.0	Tie into Gyro
7492.5	7493.0	1.19	86.84	-13.2	-27.5	18.2	1.0	KOP 30°/100 @ 190.27° AZI
7684.3	7793.0	89.72	190.26	-200.9	-57.5	208.2	191.3	EOC - Hold to TD
7684.3	9267.6	90.00	190.27	-1651.8	-320.4	1682.6	1665.9	TD at 9267

