

3D-005-29135



Cimarex Energy Co., Inc.

Chaves Co., New Mexico

Yorktown 12 Fee #1H

Yorktown 12 Fee #1H

Lateral #1

Plan: Plan #1

Standard Survey Report

30 January, 2008





Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Yorktown 12 Fee #1H
Project:	Chaves Co., New Mexico	TVD Reference:	WELL @ 4384.00ft (Original Well Elev)
Site:	Yorktown 12 Fee #1H	MD Reference:	WELL @ 4384.00ft (Original Well Elev)
Well:	Yorktown 12 Fee #1H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Project	Chaves Co., New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Yorktown 12 Fee #1H		
Site Position:		Northing:	741,276.00 ft
From:	Map	Easting:	668,921.90 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	33° 2' 11.791 N
		Longitude:	103° 46' 55.673 W
		Grid Convergence:	0.30 °

Well	Yorktown 12 Fee #1H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	33° 2' 11.791 N
		Longitude:	103° 46' 55.673 W
		Ground Level:	0.00 ft

Wellbore	Lateral #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2000	12/31/2004	8.73
			Dip Angle
			(°)
			61.15
			Field Strength
			(nT)
			49,884

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			8,650.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			90.00

Survey Tool Program	Date 01/30/2008		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
8,650.00	13,393.73	Plan #1 (Lateral #1)	MWD
			Description
			MWD - Standard

Planned Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	(°/100ft)
8,650.00	0.00	0.00	8,650.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP @ 8650.00' MD									
8,659.01	0.00	0.00	8,659.01	0.00	0.00	0.00	0.00	0.00	0.00
Build 30.00°/100'									
8,670.00	3.30	90.00	8,669.99	0.00	0.32	0.32	30.00	30.00	0.00
8,675.02	4.80	90.00	8,675.00	0.00	0.67	0.67	30.00	30.00	0.00
Wolfcamp									
8,680.00	6.30	90.00	8,679.96	0.00	1.15	1.15	30.00	30.00	0.00
8,690.00	9.30	90.00	8,689.86	0.00	2.51	2.51	30.00	30.00	0.00
8,700.00	12.30	90.00	8,699.69	0.00	4.38	4.38	30.00	30.00	0.00
8,710.00	15.30	90.00	8,709.40	0.00	6.77	6.77	30.00	30.00	0.00
8,720.00	18.30	90.00	8,718.97	0.00	9.65	9.65	30.00	30.00	0.00
8,730.00	21.30	90.00	8,728.38	0.00	13.04	13.04	30.00	30.00	0.00



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Site:	Yorktown 12 Fee #1H	MD Reference:	WELL @ 4384.00ft (Original Well Elev)
Well:	Yorktown 12 Fee #1H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,740.00	24.30	90.00	8,737.59	0.00	16.92	16.92	30.00	30.00	0.00	
8,750.00	27.30	90.00	8,746.60	0.00	21.27	21.27	30.00	30.00	0.00	
8,760.00	30.30	90.00	8,755.36	0.00	26.08	26.08	30.00	30.00	0.00	
8,770.00	33.30	90.00	8,763.86	0.00	31.35	31.35	30.00	30.00	0.00	
8,780.00	36.30	90.00	8,772.07	0.00	37.06	37.06	30.00	30.00	0.00	
8,790.00	39.30	90.00	8,779.97	0.00	43.18	43.18	30.00	30.00	0.00	
8,800.00	42.30	90.00	8,787.54	0.00	49.72	49.72	30.00	30.00	0.00	
8,810.00	45.30	90.00	8,794.76	0.00	56.64	56.64	30.00	30.00	0.00	
8,820.00	48.30	90.00	8,801.60	0.00	63.93	63.93	30.00	30.00	0.00	
8,830.00	51.30	90.00	8,808.06	0.00	71.56	71.56	30.00	30.00	0.00	
8,840.00	54.30	90.00	8,814.10	0.00	79.53	79.53	30.00	30.00	0.00	
8,850.00	57.30	90.00	8,819.72	0.00	87.80	87.80	30.00	30.00	0.00	
8,860.00	60.30	90.00	8,824.90	0.00	96.35	96.35	30.00	30.00	0.00	
8,870.00	63.30	90.00	8,829.63	0.00	105.16	105.16	30.00	30.00	0.00	
8,880.00	66.30	90.00	8,833.89	0.00	114.21	114.21	30.00	30.00	0.00	
8,890.00	69.30	90.00	8,837.67	0.00	123.46	123.46	30.00	30.00	0.00	
8,900.00	72.30	90.00	8,840.95	0.00	132.91	132.91	30.00	30.00	0.00	
8,910.00	75.30	90.00	8,843.74	0.00	142.51	142.51	30.00	30.00	0.00	
8,920.00	78.30	90.00	8,846.03	0.00	152.24	152.24	30.00	30.00	0.00	
8,930.00	81.30	90.00	8,847.80	0.00	162.08	162.08	30.00	30.00	0.00	
8,940.00	84.30	90.00	8,849.05	0.00	172.00	172.00	30.00	30.00	0.00	
8,950.00	87.30	90.00	8,849.79	0.00	181.98	181.98	30.00	30.00	0.00	
8,959.01	90.00	90.00	8,850.00	0.00	190.99	190.99	30.00	30.00	0.00	
Hold 90.° Inc. :: 90° Azm.										
9,000.00	90.00	90.00	8,850.00	0.00	231.97	231.97	0.00	0.00	0.00	
9,100.00	90.00	90.00	8,850.00	0.00	331.97	331.97	0.00	0.00	0.00	
9,200.00	90.00	90.00	8,850.00	0.00	431.97	431.97	0.00	0.00	0.00	
9,300.00	90.00	90.00	8,850.00	0.00	531.97	531.97	0.00	0.00	0.00	
9,400.00	90.00	90.00	8,850.00	0.00	631.97	631.97	0.00	0.00	0.00	
9,500.00	90.00	90.00	8,850.00	0.00	731.97	731.97	0.00	0.00	0.00	
9,600.00	90.00	90.00	8,850.00	0.00	831.97	831.97	0.00	0.00	0.00	
9,700.00	90.00	90.00	8,850.00	0.00	931.97	931.97	0.00	0.00	0.00	
9,800.00	90.00	90.00	8,850.00	0.00	1,031.97	1,031.97	0.00	0.00	0.00	
9,900.00	90.00	90.00	8,850.00	0.00	1,131.97	1,131.97	0.00	0.00	0.00	
10,000.00	90.00	90.00	8,850.00	0.00	1,231.97	1,231.97	0.00	0.00	0.00	
10,100.00	90.00	90.00	8,850.00	0.00	1,331.97	1,331.97	0.00	0.00	0.00	
10,200.00	90.00	90.00	8,850.00	0.00	1,431.97	1,431.97	0.00	0.00	0.00	
10,300.00	90.00	90.00	8,850.00	0.00	1,531.97	1,531.97	0.00	0.00	0.00	
10,400.00	90.00	90.00	8,850.00	0.00	1,631.97	1,631.97	0.00	0.00	0.00	
10,500.00	90.00	90.00	8,850.00	0.00	1,731.97	1,731.97	0.00	0.00	0.00	
10,600.00	90.00	90.00	8,850.00	0.00	1,831.97	1,831.97	0.00	0.00	0.00	
10,700.00	90.00	90.00	8,850.00	0.00	1,931.97	1,931.97	0.00	0.00	0.00	
10,800.00	90.00	90.00	8,850.00	0.00	2,031.97	2,031.97	0.00	0.00	0.00	
10,900.00	90.00	90.00	8,850.00	0.00	2,131.97	2,131.97	0.00	0.00	0.00	
11,000.00	90.00	90.00	8,850.00	0.00	2,231.97	2,231.97	0.00	0.00	0.00	
11,100.00	90.00	90.00	8,850.00	0.00	2,331.97	2,331.97	0.00	0.00	0.00	
11,200.00	90.00	90.00	8,850.00	0.00	2,431.97	2,431.97	0.00	0.00	0.00	
11,300.00	90.00	90.00	8,850.00	0.00	2,531.97	2,531.97	0.00	0.00	0.00	
11,400.00	90.00	90.00	8,850.00	0.00	2,631.97	2,631.97	0.00	0.00	0.00	
11,500.00	90.00	90.00	8,850.00	0.00	2,731.97	2,731.97	0.00	0.00	0.00	
11,600.00	90.00	90.00	8,850.00	0.00	2,831.97	2,831.97	0.00	0.00	0.00	
11,700.00	90.00	90.00	8,850.00	0.00	2,931.97	2,931.97	0.00	0.00	0.00	
11,800.00	90.00	90.00	8,850.00	0.00	3,031.97	3,031.97	0.00	0.00	0.00	
11,900.00	90.00	90.00	8,850.00	0.00	3,131.97	3,131.97	0.00	0.00	0.00	
12,000.00	90.00	90.00	8,850.00	0.00	3,231.97	3,231.97	0.00	0.00	0.00	



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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,100.00	90.00	90.00	8,850.00	0.00	3,331.97	3,331.97	0.00	0.00	0.00	
12,200.00	90.00	90.00	8,850.00	0.00	3,431.97	3,431.97	0.00	0.00	0.00	
12,300.00	90.00	90.00	8,850.00	0.00	3,531.97	3,531.97	0.00	0.00	0.00	
12,400.00	90.00	90.00	8,850.00	0.00	3,631.97	3,631.97	0.00	0.00	0.00	
12,500.00	90.00	90.00	8,850.00	0.00	3,731.97	3,731.97	0.00	0.00	0.00	
12,600.00	90.00	90.00	8,850.00	0.00	3,831.97	3,831.97	0.00	0.00	0.00	
12,700.00	90.00	90.00	8,850.00	0.00	3,931.97	3,931.97	0.00	0.00	0.00	
12,800.00	90.00	90.00	8,850.00	0.00	4,031.97	4,031.97	0.00	0.00	0.00	
12,900.00	90.00	90.00	8,850.00	0.00	4,131.97	4,131.97	0.00	0.00	0.00	
13,000.00	90.00	90.00	8,850.00	0.00	4,231.97	4,231.97	0.00	0.00	0.00	
13,100.00	90.00	90.00	8,850.00	0.00	4,331.97	4,331.97	0.00	0.00	0.00	
13,200.00	90.00	90.00	8,850.00	0.00	4,431.97	4,431.97	0.00	0.00	0.00	
13,300.00	90.00	90.00	8,850.00	0.00	4,531.97	4,531.97	0.00	0.00	0.00	
13,393.73	90.00	90.00	8,850.00	0.00	4,625.70	4,625.70	0.00	0.00	0.00	
PBHL[Y12 Fee#1H]										

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL[Y12 Fee#1H]	0.00	0.00	8,850.00	0.00	4,625.70	741,276.00	673,547.60	33° 2' 11.547 N	103° 46' 1.337 W
- plan hits target									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
	8,585.00	Lower Abo	Dolomite	0.00	0.00	
8,675.02	8,675.00	Wolfcamp		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,650.00	8,650.00	0.00	0.00	KOP @ 8650.00' MD
8,659.01	8,659.01	0.00	0.00	Build 30.00°/100'
8,959.01	8,850.00	190.99	0.00	Hold 90.° Inc. :: 90° Azm.

Checked By: _____ Approved By: _____ Date: _____