



Cimarex Energy Co., Inc.

Lea County (NAD 83)

Sherman '13' Fee #3H

Sherman '13' Fee #3H

Lateral #1

Plan: Plan #1

Standard Survey Report

06 August, 2007





Black Viper Energy Survey Report



Company: Cimarex Energy Co., Inc
Project: Lea County (NAD 83)
Site: Sherman '13' Fee #3H
Well: Sherman '13' Fee #3H
Wellbore: Lateral #1
Design: Plan #1

Local Co-ordinate Reference: Well Sherman '13' Fee #3H
TVD Reference: WELL @ 3776 00ft (Original Well Elev)
MD Reference: WELL @ 3776 00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003 14 10 Server DB

Project Lea County (NAD 83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Ground Level

Site Sherman '13' Fee #3H

Site Position: Northing: 738,097 50 ft Latitude: 33° 1' 24 165 N
From: Map Easting: 905,121 21 ft Longitude: 103° 8' 47 259 W
Position Uncertainty: 0 00 ft Slot Radius: " Grid Convergence: 0 65 °

Well Sherman '13' Fee #3H

Well Position +N/-S 0 00 ft Northing: 738,097 50 ft Latitude: 33° 1' 24 165 N
+E/-W 0 00 ft Easting: 905,121 21 ft Longitude: 103° 8' 47 259 W
Position Uncertainty 0 00 ft Wellhead Elevation: ft Ground Level: 0 00 ft

Wellbore Lateral #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/6/2007	7 90	61 11	49,526

Design Plan #1

Audit Notes:

Version: Phase: PROTOTYPE Tie On Depth: 9,203 00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 00	0 00	0 00	180 00

Survey Tool Program Date 8/6/2007

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
9,203 00	11,191 92	Plan #1 (Lateral #1)	MWD	MWD - Standard

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)
9,203 01	0 00	0 00	9,203 01	0 00	0 00	0 00	0 00	0 00	0 00
KOP - Build 30.0° / 100									
9,210 00	2 10	180 00	9,210 00	-0 13	0 00	0 13	30 00	30 00	0 00
9,220 00	5 10	180 00	9,219 98	-0 75	0 00	0 75	30 00	30 00	0 00
9,230 00	8 10	180 00	9,229 91	-1 90	0 00	1 90	30 00	30 00	0 00
9,240 00	11 10	180 00	9,239 77	-3 57	0 00	3 57	30 00	30 00	0 00
9,250 00	14 10	180 00	9,249 53	-5 75	0 00	5 75	30 00	30 00	0 00
9,260 00	17 10	180 00	9,259 16	-8 44	0 00	8 44	30 00	30 00	0 00
9,270 00	20 10	180 00	9,268 64	-11 63	0 00	11 63	30 00	30 00	0 00
9,280 00	23 10	180 00	9,277 93	-15 31	0 00	15 31	30 00	30 00	0 00
9,290 00	26 10	180 00	9,287 02	-19 47	0 00	19 47	30 00	30 00	0 00
9,300 00	29 10	180 00	9,295 88	-24 10	0 00	24 10	30 00	30 00	0 00
9,310 00	32 10	180 00	9,304 49	-29 19	0 00	29 19	30 00	30 00	0 00



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
9,320 00	35 10	180 00	9,312 82	-34 72	0 00	34 72	30 00	30 00	0 00
9,330 00	38 10	180 00	9,320 85	-40 68	0 00	40 68	30 00	30 00	0 00
9,340 00	41 10	180 00	9,328 55	-47 06	0 00	47 06	30 00	30 00	0 00
9,350 00	44 10	180 00	9,335 91	-53 82	0 00	53 82	30 00	30 00	0 00
9,360 00	47 10	180 00	9,342 91	-60 97	0 00	60 97	30 00	30 00	0 00
9,363 10	48 03	180 00	9,345 00	-63 25	0 00	63 25	30 00	30 00	0 00
Wolfcamp									
9,370 00	50 10	180 00	9,349 52	-68 47	0 00	68 47	30 00	30 00	0 00
9,380 00	53 10	180 00	9,355 73	-76 30	0 00	76 30	30 00	30 00	0 00
9,390 00	56 10	180 00	9,361 53	-84 45	0 00	84 45	30 00	30 00	0 00
9,400 00	59 10	180 00	9,366 89	-92 89	0 00	92 89	30 00	30 00	0 00
9,410 00	62 10	180 00	9,371 79	-101 61	0 00	101 61	30 00	30 00	0 00
9,420 00	65 10	180 00	9,376 24	-110 56	0 00	110 56	30 00	30 00	0 00
9,430 00	68 10	180 00	9,380 21	-119 74	0 00	119 74	30 00	30 00	0 00
9,440 00	71 10	180 00	9,383 70	-129 11	0 00	129 11	30 00	30 00	0 00
9,450 00	74 10	180 00	9,386 69	-138 65	0 00	138 65	30 00	30 00	0 00
9,460 00	77 10	180 00	9,389 18	-148 33	0 00	148 33	30 00	30 00	0 00
9,470 00	80 10	180 00	9,391 15	-158 14	0 00	158 14	30 00	30 00	0 00
9,480 00	83 10	180 00	9,392 62	-168 03	0 00	168 03	30 00	30 00	0 00
9,490 00	86 10	180 00	9,393 56	-177 98	0 00	177 98	30 00	30 00	0 00
9,500 00	89 10	180 00	9,393 98	-187 97	0 00	187 97	30 00	30 00	0 00
9,503 01	90 00	180 00	9,394 00	-190 99	0 00	190 99	30 00	30 00	0 00
EOC - Hold 90.0° Inc. :: 180.0° Azi.									
9,600 00	90 00	180 00	9,394 00	-287 97	0 00	287 97	0 00	0 00	0 00
9,700 00	90 00	180 00	9,394 00	-387 97	0 00	387 97	0 00	0 00	0 00
9,800 00	90 00	180 00	9,394 00	-487 97	0 00	487 97	0 00	0 00	0 00
9,900 00	90 00	180 00	9,394 00	-587 97	0 00	587 97	0 00	0 00	0 00
10,000 00	90 00	180 00	9,394 00	-687 97	0 00	687 97	0 00	0 00	0 00
10,100 00	90 00	180 00	9,394 00	-787 97	0 00	787 97	0 00	0 00	0 00
10,200 00	90 00	180 00	9,394 00	-887 97	0 00	887 97	0 00	0 00	0 00
10,300 00	90 00	180 00	9,394 00	-987 97	0 00	987 97	0 00	0 00	0 00
10,400 00	90 00	180 00	9,394 00	-1,087 97	0 00	1,087 97	0 00	0 00	0 00
10,500 00	90 00	180 00	9,394 00	-1,187 97	0 00	1,187 97	0 00	0 00	0 00
10,600 00	90 00	180 00	9,394 00	-1,287 97	0 00	1,287 97	0 00	0 00	0 00
10,700 00	90 00	180 00	9,394 00	-1,387 97	0 00	1,387 97	0 00	0 00	0 00
10,800 00	90 00	180 00	9,394 00	-1,487 97	0 00	1,487 97	0 00	0 00	0 00
10,900 00	90 00	180 00	9,394 00	-1,587 97	0 00	1,587 97	0 00	0 00	0 00
11,000 00	90 00	180 00	9,394 00	-1,687 97	0 00	1,687 97	0 00	0 00	0 00
11,100 00	90 00	180 00	9,394 00	-1,787 97	0 00	1,787 97	0 00	0 00	0 00
11,191 92	90 00	180 00	9,394 00	-1,879 89	0 00	1,879 89	0 00	0 00	0 00

PBHL #1[S13Fee3H]



Black Viper Energy
Survey Report



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MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Sherman '13' Fee #3H
WELL @ 3776 00ft (Original Well Elev)
WELL @ 3776 00ft (Original Well Elev)
Gnd
Minimum Curvature
EDM 2003 14 1 0 Server DB

Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PBHL #1[S13Fee3H]	0 00	0 00	9,394 00	-1,879 89	0 00	736,217 61	905,121 21	33° 1' 5.568 N	103° 8' 47.509 W
- plan hits target									
- Point									

Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
	8,190 00	Abo Dolomite		0 00	0 00
9,363 10	9,345 00	Wolfcamp		0 00	0 00
	9,619 00	Wolfcamp 'B'		0 00	0 00

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates	Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)
9,203 01	9,203 01	0 00	0 00
9,503 01	9,394 00	-190 99	0 00
			KOP - Build 30 0° / 100
			EOC - Hold 90 0° Inc 180 0° Azi

Checked By: _____ Approved By: _____ Date: _____