

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

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other _____

2. Name of Operator
Cimarex Energy Co. of Colorado

3. Address
PO Box 140907; Irving, TX 75014

3a. Phone No. (include area code)
972-443-6489

4. Location of Well (Report Location clearly and in accordance with Federal requirements)*

At surface 1250' FSL & 660' FWL

At top prod. interval reported below 1250' FSL & 660' FWL

At total depth 330' FSL & 330' FWL

14. Date Spudded
10.17.07

15. Date T D. Reached
12.27.07

16. Date Completed 02.07.08
☐ D & A ☒ Ready to Prod

18. Total Depth: MD 3,917'
TVD 2,980'

19. Plug Back TD. MD 3,896'
TVD 2,984'

20. Depth Bridge Plug Set. MD
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

CBL, DSN, DLL

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey ☐ No ☒ Yes (Submit copy)

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
17½"	13¾" H-40	48	0'	312'		340 sx PPCIII		0'	
12¼"	9¾" J-55	40	0'	2,742'		1125 sx IntC/PP		0'	
7¾"				12,460'		Cmt plugs from 11,395' to 2,699'		2,699'	
6¾"	5½" N-80	17	0'	3,917'		400 sx IntC/PBSH		0'	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2½"	2,780'	2,780'						

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No Holes	Perf. Status
A) Delaware	1,832'	5,358'	3700'-3884'	0.48	1105	Producing
B)			3480'-3680'	0.32	1120	Producing
C)			3060'-3460'	0.32	2229	Producing
D)						

26 Perforation Record

27. Acid, Fracture, Treatment, Cement Squeeze, etc

Depth Interval	Amount and Type of Material

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
02.07.08	03.05.08	24	→	28	33	6	39.4	0.758	Flowing
Choke Size	Tbg Press Flwg	Csg. Press	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
24/64	SI 615	20	→				1,179	Producing	

28. 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	Csg. Press	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
	SI		→						

(See instructions and spaces for additional data on page 2)

MAY 15 2008
OCD-ARTESIA

28b Production - Interval C									
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 Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c Production - Interval D									
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 Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)
 Flared. Waiting on pipeline installation.

30. Summary of Porous Zones (Include Aquifers)
 Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas Depth
				Base Salt	1,634'
				Bell Canyon	1,832'
				Bone Spring	5,358'
				FBSS	6,345'
				SBSS	7,621'
				TBSS	8,222'
				Wolfcamp	8,565'
				Cisco-Canyon	10,279'
				Strawn	10,588'
				Atoka	10,792'
				Morrow	11,395'

32. Additional remarks (include plugging procedure)
 Well initially drilled as a Morrow test. Once original TD was reached, logs were evaluated and the well was plugged back to 2699.' Cimarex then kicked off to drill horizontally and was completed in the Delaware.

33. Indicate which items have been attached by placing a check in the appropriate boxes:

☒ Electrical/Mechanical Logs (1 full set req'd.)	☐ Geologic Report	☐ DST Report	☒ Directional Survey
☐ Sundry Notice for plugging and cement verification	☐ Core Analysis	☐ Other:	

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Natalie Krueger Title Regulatory Analyst

Signature Natalie Krueger Date May 15, 2008

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

OPERATOR
WELL/LEASE
COUNTY

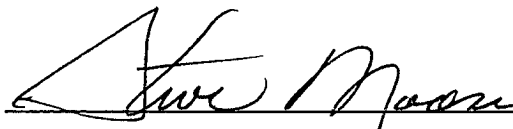
CIMAREX ENERGY COMPANY
PINTAIL 23 FED. 2
EDDY

080-0056

STATE OF NEW MEXICO
DEVIATION REPORT

282	0.75	8,620	1.00
501	1.00	9,155	1.00
895	1.00	9,414	1.00
1,219	1.50	9,907	1.00
1,708	2.00	10,428	1.00
1,972	1.00	10,584	2.50
2,226	1.00	10,753	2.00
2,745	1.00	11,165	2.00
2,977	1.00	11,357	2.00
3,231	1.00	11,569	2.00
3,473	1.00	11,771	2.00
3,650	1.00	11,980	2.00
3,993	1.00	12,149	3.00
4,247	1.00	12,338	2.00
4,533	1.00	12,460	3.00
4,774	1.00		
5,105	1.00		
5,220	1.25		
5,486	2.00		
5,758	2.00		
6,057	3.00		
6,153	2.00		
6,247	1.00		
6,312	2.00		
6,470	2.00		
6,590	1.00		
6,851	1.00		
7,106	1.00		
7,352	1.00		
7,605	1.00		
7,866	1.00		
8,121	1.00		
8,361	1.00		

BY:

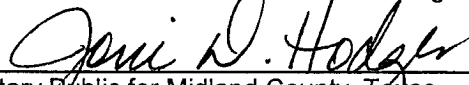


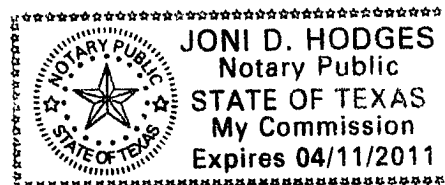
STATE OF TEXAS

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on
Moore on behalf of Patterson-UTL Drilling Company LLC.

December 3, 2007 , by Steve


Notary Public for Midland County, Texas
My Commission Expires: 4/11/11



DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-35757	Pool Code 96720	Pool Name Cottonwood Draw; Delaware, North
Property Code <i>34072</i>	Property Name PINTAIL "23" FEDERAL COM	Well Number 2
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3270'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	23	25 S	26 E		1250	SOUTH	660	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	23	25 S	26 E		330	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			NSL-5786

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

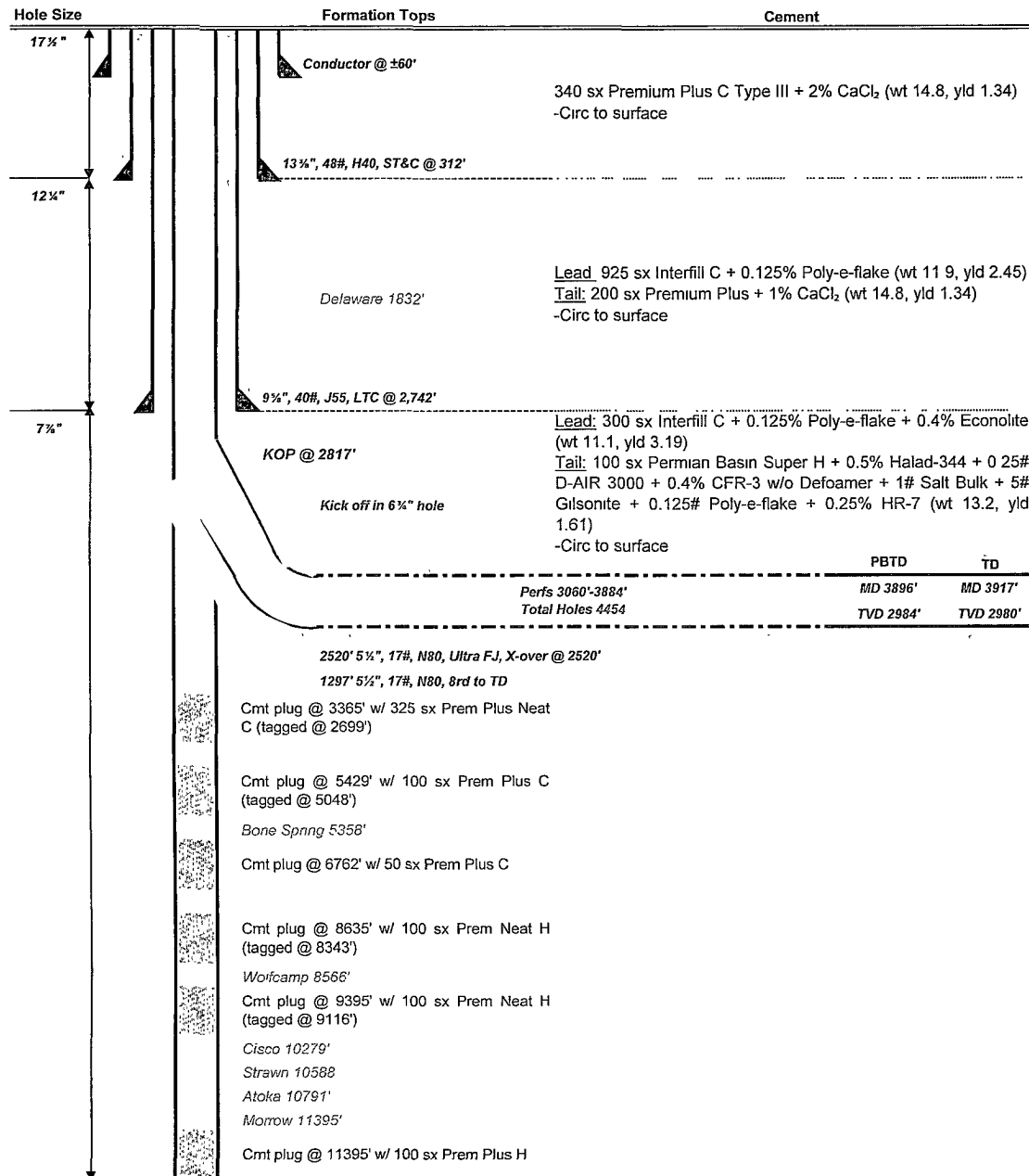
	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Zeno Farris</i> 05-15-08 Signature Date Zeno Farris Printed Name	
	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. JULY 09, 2007 Date Surveyed <i>GARY L. JONES</i> Signature Professional Surveyor 7977 Certificate No. Gary L. Jones BASIN SURVEYS	



WBD
Cimarex Energy Co. of Colorado

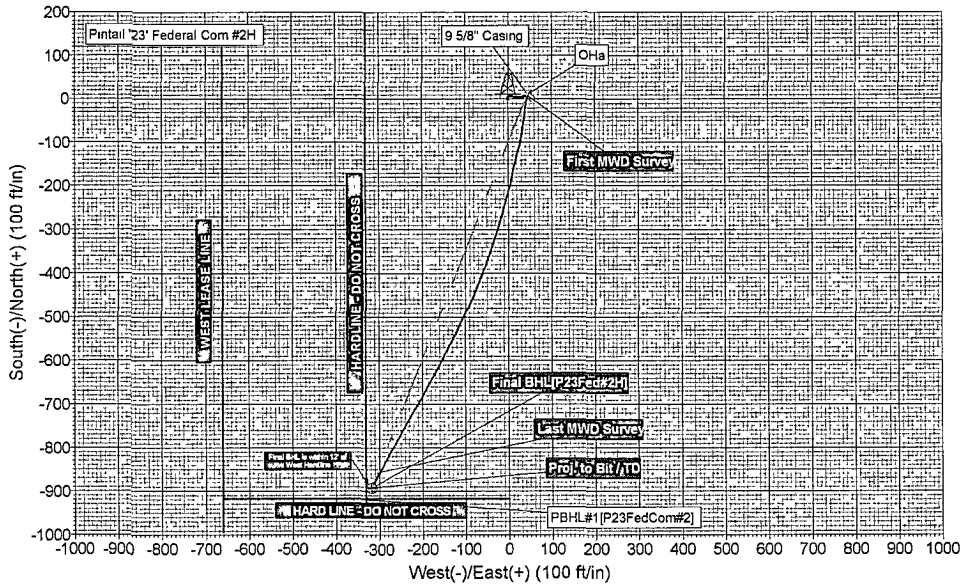
Well: Pintail 23 Fed Com #2
Location: Sec 23, T25S, R26E
County, State: Eddy County, NM
Surface Location: 1250 FSL, 660 FWL
Bottomhole Loc: 330 FSL, 330 FWL

API#: 30-015-35757
Field: Cottonwood Draw, Delaware, North
Objective: Cherry Canyon
TVD/MD: 2980', 3917'
Cementing: Halliburton





Project: Eddy Co., New Mexico
 Site: Pintail 23' Federal Com #2H
 Well: Pintail 23' Federal Com #2H
 Wellbore: Lateral
 Plan: Plan #1a (Pintail 23' Federal Com #2H/Lateral)



PROJECT DETAILS Eddy Co., New Mexico

Geodetic System US State Plane 1983
 Datum North American Datum 1983
 Ellipsoid GRS 1980
 Zone New Mexico Eastern Zone
 System Datum Mean Sea Level



Azimuths to Grid North
 True North 0 24°
 Magnetic North 8 80°

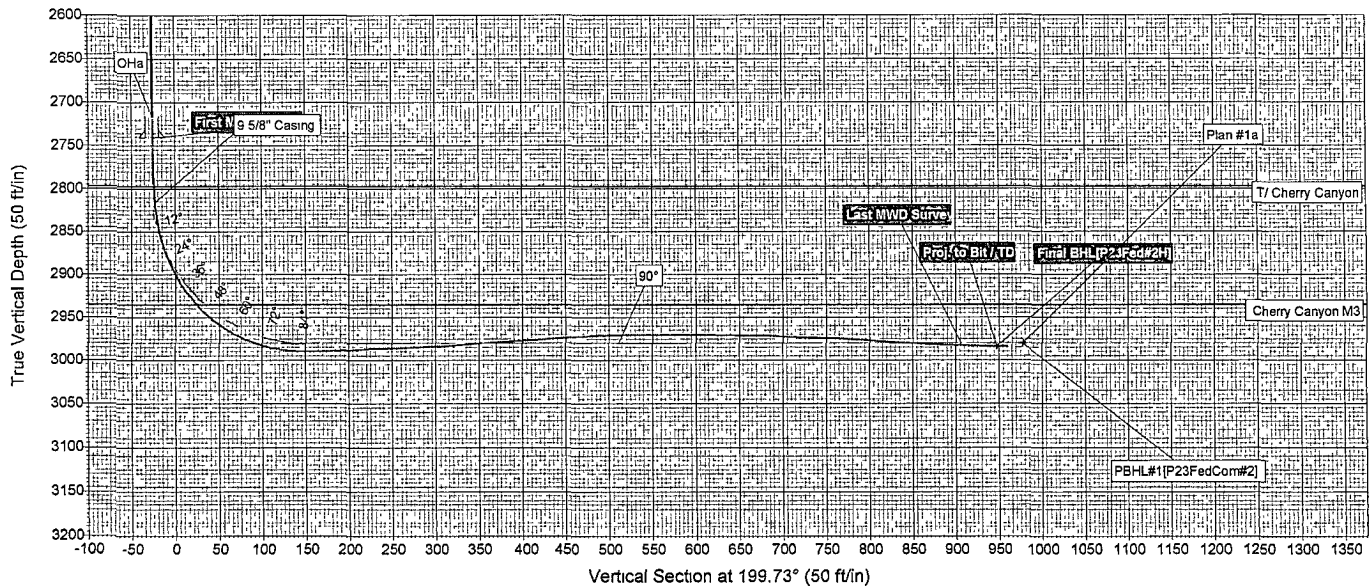
Magnetic Field
 Strength 49069 3nT
 Dip Angle 60 36°
 Date 11/26/2007
 Model IGRF200510

ANNOTATIONS

TVD	MD	Annotation
2715 90	2717 00	Tie In
2798 90	2800 00	KOP - Build 31 35° / 100' . Turn -40 17°
2881 00	3085 73	EOC - Hold 90 0° Inc . 201 86° Azi

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	2717 00	0 41	316 64	2715 90	11 39	45 60	0 00	0 00	-26 12	
2	2799 00	0 41	316 64	2797 90	11 82	45 19	0 00	0 00	-26 38	
3	2800 00	0 41	316 64	2798 90	11 82	45 19	0 00	0 00	-26 38	
4	3085 73	90 00	201 86	2980 00	-155 31	-23 15	31 56	-114 77	154 01	
5	3909 69	90 00	201 86	2980 00	-920 00	-330 00	0 00	0 00	977 39	PBHL#1[P23FedCom#2]



Plan Final Plan vs Actual (Pintail 23' Federal Com #2H/Lateral)
 Created By L.D. Burton Date December 27, 2007

Final

Company:
Survey / Plan:
Wellbore Type:

Cimarex Energy Co., Inc.
Pintall 23 Federal Com #2H - MWD Survey #1
Horizontal

County:
Well Name:

Eddy Co., New Mexico
Pintall 23 Federal Com #2H



	Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	
Reference	0	0	0	0	0	0	0	0	
Site In	2717	0.41	316.64	2715.9	11.39	45.6	5.69	0	Gyro
First MWD Survey	2817	3.7	199.6	2815.84	8.61	44.27	7.81	3.9	MWD
	2833	7.5	193.1	2831.76	7.1	43.86	9.07	24.04	MWD
	2849	12.2	189.8	2847.52	4.42	43.33	11.39	29.57	MWD
	2865	16.8	189.2	2863	0.47	42.68	14.84	28.77	MWD
	2881	21	190.1	2878.14	-4.64	41.8	19.3	26.31	MWD
	2891	24.1	189.7	2887.37	-8.41	41.15	22.59	31.04	MWD
	2901	26.8	189.5	2896.4	-12.65	40.43	26.29	27.01	MWD
	2912	29.8	189.2	2906.09	-17.8	39.58	30.79	27.3	MWD
	2922	33.1	188.9	2914.62	-22.95	38.76	35.31	33.04	MWD
	2932	36.6	188.3	2922.82	-28.6	37.91	40.27	35.17	MWD
	2944	41.3	186.8	2932.15	-36.07	36.92	46.9	39.94	MWD
	2954	44.5	186.5	2939.48	-42.84	36.14	52.93	32.07	MWD
	2964	48.2	185.6	2946.38	-50.03	35.38	59.38	37.57	MWD
	2975	52.3	187.4	2953.41	-58.43	34.41	66.88	39.34	MWD
	2985	55.7	187.9	2959.29	-66.45	33.34	73.98	34.24	MWD
	2995	58.9	189.5	2964.69	-74.76	32.06	81.29	34.72	MWD
	3007	62.8	190.8	2970.53	-85.08	30.21	90.25	33.85	MWD
	3017	66.2	191.9	2974.84	-93.92	28.44	97.88	35.42	MWD
	3027	69.9	193.6	2978.57	-102.97	26.39	105.59	40.22	MWD
	3039	73.6	194.8	2982.33	-114.01	23.59	114.9	32.26	MWD
	3049	77.2	195.1	2984.85	-123.36	21.1	122.74	36.12	MWD
	3059	80.6	194.2	2986.78	-132.85	18.61	130.71	35.13	MWD
	3072	85.2	193.3	2988.38	-145.38	15.55	141.31	36.05	MWD
	3104	91.7	192.3	2989.25	-176.56	8.47	167.89	20.55	MWD
	3136	92	194.7	2988.22	-207.65	1	194.25	7.55	MWD
	3168	92.7	195.5	2986.9	-238.52	-7.33	220.09	3.32	MWD
	3199	92.1	197	2985.61	-268.26	-15.99	244.75	5.21	MWD
	3231	92.9	197.4	2984.21	-298.8	-25.45	269.88	2.79	MWD
	3263	94.1	198	2982.26	-329.23	-35.16	294.82	4.19	MWD
	3295	93.7	200.5	2980.08	-359.36	-45.68	319.19	7.89	MWD
	3326	94.5	201	2977.86	-388.28	-56.64	342.26	3.04	MWD
	3358	93.7	202.1	2975.57	-417.96	-68.36	365.79	4.24	MWD
	3390	94.3	202.4	2973.34	-447.51	-80.45	389.04	2.1	MWD
	3421	92.1	205.3	2971.61	-475.81	-92.96	410.99	11.73	MWD
	3453	92.1	205.1	2970.44	-504.75	-106.58	433.13	0.62	MWD
	3485	89.8	206.5	2969.91	-533.55	-120.5	455.04	8.41	MWD
	3517	90.2	207.3	2969.91	-562.09	-134.98	476.51	2.8	MWD
	3548	89.2	208.7	2970.07	-589.46	-149.53	496.85	5.55	MWD
	3580	89.3	208.6	2970.49	-617.54	-164.88	517.58	0.44	MWD
	3612	89.1	209	2970.94	-645.58	-180.29	538.24	1.4	MWD
	3644	87.6	209.6	2971.86	-673.47	-195.94	558.68	5.05	MWD
	3675	87.9	209.9	2973.08	-700.36	-211.31	578.29	1.37	MWD
	3707	87.7	209.9	2974.3	-728.08	-227.25	598.46	0.63	MWD
	3739	85.9	209.4	2976.09	-755.85	-243.06	618.73	5.84	MWD
	3771	86	209.5	2978.35	-783.65	-258.75	639.06	0.44	MWD
	3802	86.6	208.8	2980.35	-810.66	-273.82	658.9	2.97	MWD
	3834	88	208.2	2981.86	-838.75	-289.07	679.66	4.76	MWD
Last MWD Survey	3854	88.6	208.7	2982.45	-856.33	-298.6	692.67	3.9	MWD
Final BHL	3895	88.6	208.7	2983.45	-892.28	-318.28	719.19	0	MWD

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to Rig KB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Site and calculated along an Azimuth of 159.022° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Central meridian is -104.333°.
Grid Convergence at Surface is -0.239°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 3895.00ft.,
the Bottom Hole Displacement is 947.35ft., in the Direction of 159.022° (Grid).



Cimarex Energy Co., Inc.

Eddy Co., New Mexico

Pintail '23' Federal Com #2H

Pintail '23' Federal Com #2H

Lateral

Survey: MWD Survey #1

Standard Survey Report

27 December, 2007





Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 2003.14.1.0 Server DB

Project	Eddy Co., New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Pintail '23' Federal Com #2H		
Site Position:	Map	Northing:	560,994.27 ft
From:		Easting:	404,300.52 ft
Position Uncertainty:	0 00 ft	Slot Radius:	"
		Latitude:	32° 32' 29.189 N
		Longitude:	104° 46' 40.940 W
		Grid Convergence:	-0.24 °

Well	Pintail '23' Federal Com #2H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,289.00 ft
		Ground Level:	3,270.00 ft
		Latitude:	32° 32' 29.189 N
		Longitude:	104° 46' 40.940 W

Wellbore	Lateral		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF200510	11/26/2007	8 56
			Dip Angle
			(°)
			60 36
			Field Strength
			(nT)
			49,069

Design	Lateral		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	2,717.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			159.02

Survey Program	Date 12/27/2007		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
100 00	2,717 00	Gyro Survey (OH)	NS-GYRO-MS
2,817.00	3,895 00	MWD Survey #1 (Lateral)	MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard

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)	
2,717.00	0.41	316.64	2,715.90	11.39	45.60	5.69	0.00	0.00	0.00	
2,817.00	3.70	199.60	2,815.84	8.61	44.27	7.81	3.90	3.29	-117.04	
First MWD Survey										
2,833.00	7.50	193.10	2,831.76	7.10	43.86	9.07	24.04	23.75	-40.63	
2,849.00	12.20	189.80	2,847.52	4.42	43.33	11.39	29.57	29.38	-20.63	
2,865.00	16.80	189.20	2,863.00	0.47	42.68	14.84	28.77	28.75	-3.75	
2,881.00	21.00	190.10	2,878.14	-4.64	41.80	19.30	26.31	26.25	5.63	
2,891.00	24.10	189.70	2,887.37	-8.41	41.15	22.59	31.04	31.00	-4.00	
2,901.00	26.80	189.50	2,896.40	-12.65	40.43	26.29	27.01	27.00	-2.00	
2,912.00	29.80	189.20	2,906.09	-17.80	39.58	30.79	27.30	27.27	-2.73	
2,922.00	33.10	188.90	2,914.62	-22.95	38.76	35.31	33.04	33.00	-3.00	
2,932.00	36.60	188.30	2,922.82	-28.60	37.91	40.27	35.17	35.00	-6.00	



Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 2003.14.1.0 Server DB

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)
2,944.00	41.30	186.80	2,932.15	-36.07	36.92	46.90	39.94	39.17	-12.50
2,954.00	44.50	186.50	2,939.48	-42.84	36.14	52.93	32.07	32.00	-3.00
2,964.00	48.20	185.60	2,946.38	-50.03	35.38	59.38	37.57	37.00	-9.00
2,975.00	52.30	187.40	2,953.41	-58.43	34.41	66.88	39.34	37.27	16.36
2,985.00	55.70	187.90	2,959.29	-66.45	33.34	73.98	34.24	34.00	5.00
2,995.00	58.90	189.50	2,964.69	-74.76	32.06	81.29	34.72	32.00	16.00
3,007.00	62.80	190.80	2,970.53	-85.08	30.21	90.25	33.85	32.50	10.83
3,017.00	66.20	191.90	2,974.84	-93.92	28.44	97.88	35.42	34.00	11.00
3,027.00	69.90	193.60	2,978.57	-102.97	26.39	105.59	40.22	37.00	17.00
3,039.00	73.60	194.80	2,982.33	-114.01	23.59	114.90	32.26	30.83	10.00
3,049.00	77.20	195.10	2,984.85	-123.36	21.10	122.74	36.12	36.00	3.00
3,059.00	80.60	194.20	2,986.78	-132.85	18.61	130.71	35.13	34.00	-9.00
3,072.00	85.20	193.30	2,988.38	-145.38	15.55	141.31	36.05	35.38	-6.92
3,104.00	91.70	192.30	2,989.25	-176.56	8.47	167.89	20.55	20.31	-3.13
3,136.00	92.00	194.70	2,988.22	-207.65	1.00	194.25	7.55	0.94	7.50
3,168.00	92.70	195.50	2,986.90	-238.52	-7.33	220.09	3.32	2.19	2.50
3,199.00	92.10	197.00	2,985.61	-268.26	-15.99	244.75	5.21	-1.94	4.84
3,231.00	92.90	197.40	2,984.21	-298.80	-25.45	269.88	2.79	2.50	1.25
3,263.00	94.10	198.00	2,982.26	-329.23	-35.16	294.82	4.19	3.75	1.88
3,295.00	93.70	200.50	2,980.08	-359.36	-45.68	319.19	7.89	-1.25	7.81
3,326.00	94.50	201.00	2,977.86	-388.28	-56.64	342.26	3.04	2.58	1.61
3,358.00	93.70	202.10	2,975.57	-417.96	-68.36	365.79	4.24	-2.50	3.44
3,390.00	94.30	202.40	2,973.34	-447.51	-80.45	389.04	2.10	1.88	0.94
3,421.00	92.10	205.30	2,971.61	-475.81	-92.96	410.99	11.73	-7.10	9.35
3,453.00	92.10	205.10	2,970.44	-504.75	-106.58	433.13	0.62	0.00	-0.63
3,485.00	89.80	206.50	2,969.91	-533.55	-120.50	455.04	8.41	-7.19	4.38
3,517.00	90.20	207.30	2,969.91	-562.09	-134.98	476.51	2.80	1.25	2.50
3,548.00	89.20	208.70	2,970.07	-589.46	-149.53	496.85	5.55	-3.23	4.52
3,580.00	89.30	208.60	2,970.49	-617.54	-164.88	517.58	0.44	0.31	-0.31
3,612.00	89.10	209.00	2,970.94	-645.58	-180.29	538.24	1.40	-0.63	1.25
3,644.00	87.60	209.60	2,971.86	-673.47	-195.94	558.68	5.05	-4.69	1.88
3,675.00	87.90	209.90	2,973.08	-700.36	-211.31	578.29	1.37	0.97	0.97
3,707.00	87.70	209.90	2,974.30	-728.08	-227.25	598.46	0.63	-0.63	0.00
3,739.00	85.90	209.40	2,976.09	-755.85	-243.06	618.73	5.84	-5.63	-1.56
3,771.00	86.00	209.50	2,978.35	-783.65	-258.75	639.06	0.44	0.31	0.31
3,802.00	86.60	208.80	2,980.35	-810.66	-273.82	658.90	2.97	1.94	-2.26
3,834.00	88.00	208.20	2,981.86	-838.75	-289.07	679.66	4.76	4.38	-1.88
3,854.00	88.60	208.70	2,982.45	-856.33	-298.60	692.67	3.90	3.00	2.50
Last MWD Survey									
3,895.00	88.60	208.70	2,983.45	-892.28	-318.28	719.19	0.00	0.00	0.00
Proj. to Bit / TD									
3,909.69	90.00	201.86	2,980.00	-920.00	-330.00	740.87	47.48	9.53	-46.52
PBHL#1[P23FedCom#2]									



Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 2003.14.1.0 Server DB

Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	
									Latitude Longitude
Final BHL[P23Fed#2H]	- survey hits target		360.00	2,983.45	-892.28	-318.28	560,101.99	403,982.24	32° 32' 20.347 N 104° 46' 44.615 W
	- Point								
PBHL#1[P23FedCom#2]	- survey hits target	0.00	360.00	2,980.00	-920.00	-330.00	560,074.27	403,970.52	32° 32' 20.072 N 104° 46' 44.751 W
	- Point								

Survey Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)	Comment	
2,817.00	2,815.84	8.61	44.27	First MWD Survey	
3,854.00	2,982.45	-856.33	-298.60	Last MWD Survey	
3,895.00	2,983.45	-892.28	-318.28	Proj to Bit / TD	

Checked By: _____	Approved By: _____	Date: _____
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Cimarex Energy Co., Inc.

Eddy Co., New Mexico

Pintail '23' Federal Com #2H

Pintail '23' Federal Com #2H

OH

Survey: Gyro Survey

Standard Survey Report

08 January, 2008

Black Viper Energy

Survey Report

Company:	Cimarex Energy Co., Inc	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	QHa	Database:	EDM 2003.14 Server Db

Project:	Eddy Co., New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Pintail '23' Federal Com #2H			
Site Position:		Northing:	560,994.27 ft	Latitude: 32° 32' 29.189 N
From:	Map	Easting:	404,300.52 ft	Longitude: 104° 46' 40.940 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence: -0.24 °

Well:	Pintail '23' Federal Com #2H			
Well Position	+N/-S	0.00 ft	Northing:	560,994.27 ft
	+E/-W	0.00 ft	Easting:	404,300.52 ft
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,289.00 ft	Ground Level: 3,270.00 ft

Wellbore:	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	11/26/2007	8.56	60.36	49,069

Design:	QHa			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	199.00

Survey Program:	Date: 12/21/2007			
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
100.00	2,717.00	Gyro Survey (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.41	184.64	100.00	-0.36	-0.03	0.35	0.41	0.41	0.00
200.00	0.32	340.05	200.00	-0.45	-0.15	0.48	0.71	-0.09	155.41
300.00	0.65	338.38	299.99	0.34	-0.46	-0.17	0.33	0.33	-1.67
400.00	0.66	355.59	399.99	1.44	-0.71	-1.13	0.20	0.01	17.21
500.00	0.72	341.85	499.98	2.61	-0.95	-2.16	0.18	0.06	-13.74
600.00	0.44	25.68	599.98	3.55	-0.98	-3.04	0.50	-0.28	43.83
700.00	0.38	8.50	699.97	4.23	-0.76	-3.75	0.14	-0.06	-17.18
800.00	0.20	35.76	799.97	4.70	-0.61	-4.24	0.22	-0.18	27.26
900.00	0.20	45.24	899.97	4.96	-0.39	-4.57	0.03	0.00	9.48
1,000.00	0.22	48.38	999.97	5.21	-0.12	-4.89	0.02	0.02	3.14
1,100.00	1.65	89.34	1,099.96	5.36	1.46	-5.54	1.49	1.43	40.96
1,200.00	2.72	90.78	1,199.88	5.34	5.28	-6.77	1.07	1.07	1.44

Black Viper Energy

Survey Report

Company:	Cimarex Energy Co., Inc	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OHa	Database:	EDM 2003.14 Server Db

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)
1,300.00	2.90	91.70	1,299.76	5.23	10.18	-8.26	0.19	0.18	0.92
1,400.00	3.41	91.78	1,399.61	5.07	15.68	-9.90	0.51	0.51	0.08
1,500.00	3.46	94.62	1,499.43	4.73	21.66	-11.53	0.18	0.05	2.84
1,600.00	3.80	87.17	1,599.23	4.65	27.98	-13.51	0.58	0.34	-7.45
1,700.00	2.68	82.39	1,699.07	5.13	33.60	-15.79	1.15	-1.12	-4.78
1,800.00	1.80	82.60	1,798.99	5.64	37.48	-17.53	0.88	-0.88	0.21
1,900.00	1.01	80.88	1,898.96	5.98	39.90	-18.65	0.79	-0.79	-1.72
2,000.00	0.94	76.52	1,998.95	6.31	41.57	-19.50	0.10	-0.07	-4.36
2,100.00	0.83	63.17	2,098.93	6.83	43.02	-20.46	0.23	-0.11	-13.35
2,200.00	0.50	43.90	2,198.93	7.47	43.97	-21.38	0.39	-0.33	-19.27
2,300.00	0.33	50.69	2,298.92	7.97	44.49	-22.02	0.18	-0.17	6.79
2,400.00	0.49	35.77	2,398.92	8.50	44.96	-22.67	0.19	0.16	-14.92
2,500.00	0.76	26.59	2,498.92	9.44	45.51	-23.74	0.29	0.27	-9.18
2,600.00	0.64	12.05	2,598.91	10.58	45.92	-24.95	0.21	-0.12	-14.54
2,700.00	0.45	299.16	2,698.90	11.31	45.70	-25.57	0.67	-0.19	-72.89
2,717.00	0.41	316.64	2,715.90	11.39	45.60	-25.61	0.80	-0.24	102.82

Checked By: _____ Approved By: _____ Date: _____