

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CONFIDENTIAL

OCD-ARTESIA

FORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

JAN 27 2009

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other				6. If Indian, Allottee or Tribe Name					
b. Type of Completion: ☐ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr Other _____				7. Unit or CA Agreement Name and No NSL-5847					
2. Name of Operator Cimarex Energy Co. of Colorado				8. Lease Name and Well No. Chosa Draw 27 Federal Com 2					
3. Address PO Box 140907; Irving, TX 75014				9. API Well No 30-015-36453					
3a. Phone No. (include area code) 972-443-6489				10. Field and Pool, or Exploratory Cottonwood Draw; Delaware, North					
4. Location of Well (Report Location clearly and in accordance with Federal requirements)* At surface 130' FNL & 940' FEL At top prod interval reported below 168' FNL & 932' FEL At total depth 2295' FNL & 682' FEL				11. Sec., T, R, M., on Block and Survey or Area 27-25S-26E					
14. Date Spudded 09.04.08				15. Date T D. Reached 09.28.08					
16. Date Completed ☐ D & A ☒ Ready to Prod.				17. Elevations (DF, RKB, RT, GL)* 3,251' GR					
18. Total Depth: MD 4996' Pilot hole 3650' TVD 2936'				19. Plug Back TD: MD 4996' pilot hole 2690' TVD 2936'					
20. Depth Bridge Plug Set:				21. Type Electric & Other Mechanical Logs Run (Submit copy of each) SDDSN, DLL, CSGR					
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
12 1/4"	8 5/8" J-55	24#	0'	406'		350 sx Class C		0' circ	
7 7/8"	5 1/2" J-55 BTC	17#	0'	792'		660 sx 50/50 POZ/C		0' circ	
	5 1/2" J-55 LTC	17#	792'	3082'		660 sx 50/50 POZ/C		0' circ	
4 3/4"	2 7/8" L-80	6.5#	2646'	4785'		PEAK, no cement			
24. Tubing Record									
Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	
2 7/8"	2646'	2,646'	AS-1 10K 5 1/2"						
25. Producing Intervals				26. Perforation Record					
Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf Status			
A) Cherry Canyon	3082'	4996'	Peak Liner assembly						
B)									
C)									
D)									
27. Acid, Fracture, Treatment, Cement Squeeze, etc									
Depth Interval	Amount and Type of Material								
	Please see attachment.							JAN 25 2009	
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 (BTU)	Production Method
10.18.08	11.13.08	24	→	22	94	125	41.9	1	Pumping
Choke Size	Tbg Press Flwg	Csg. Press	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
open	SI 320	300	→	22	94	125	4273	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)

Accepted for record - NMOCD

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.*)

Flare testing gas waiting for pipeline f 10-24 t 12-19, first gas sales 12-20-08

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
				Top Salt	996'
				Base Salt	1,589'
				Delaware	1,789'
				Cherry Canyon	2,766'

32. Additional remarks (include plugging procedure):

09.16.08 Set Cement Plug from 3650' to 2220' with lead of 265 sx H and Tail with 190 sx C.

09.17.08 Drill Cement from 2220' to 2690' began drilling curve.

11.08.08 Installed 25-200 RHBC-16-3-00 Quinn pump

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*) Scott Haynes Title Regulatory AnalystSignature Scott Haynes Date January 2, 2009

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.

Acid, Fracture, Treatment, Cement Squeeze, etc. Attachment
Chosa Draw 27 Federal Com 2
 27-25S-26E
 Eddy County, NM

Depth Interval	Amount and Type of Material Used
Stage 1 4996' 4585'	Pump 36 bbls 20# liner gel & BD at 2584#. Pump 71 bbls of 20# liner gel pad followed by 1 ppg to 3 ppg 16/30 white sand in Silverstim gel system. Pump down 2 7/8" tbg at 15 BPM at 2400#. Drop 1 1/2" ball. Pump 25 bbls 20# liner gel seat ball. 6000# 16/30 white sand pumped.
Stage 2 4585'-4222'	Pump 71 bbls of 20# liner gel pad at 15 BPM followed by 1 ppg to 3 ppg 16/30 white sand in Silverstim gel system, drop 1 3/4" ball. Pump 22.5 bbls 20# liner gel, seat ball, 6000# 16/30 white sand pumped.
Stage 3 4222'-3866'	Pump 71 bbls of 20# liner gel pad at 15 BPM followed by 1 ppg to 3 ppg 16/30 white sand in Silverstim gel system, drop 2" ball. Pump 20 bbls 20# liner gel, seat ball, 6000# 16/30 white sand pumped.
Stage 4 3862'-3465'	Pump 71 bbls of 20# liner gel pad at 15 BPM followed by 1 ppg to 3 ppg 16/30 white sand in Silverstim gel system, drop 2 1/4" ball. Pump 18 bbls 20# liner gel, seat ball, 6000# 16/30 white sand pumped.
Stage 5 3465'-3082'	Pump 71 bbls of 20# liner gel pad at 15 BPM followed by 1 ppg to 3 ppg 16/30 white sand in Silverstim gel system, Flush with 19 bbls 20# liner gel, 6000# 16/30 white sand pumped.

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 30-015-36453	Pool Code 96720	Pool Name Cottonwood Draw; Delaware, North
Property Code	Property Name CHOSA DRAW "27" FEDERAL COM	Well Number 2
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3251'

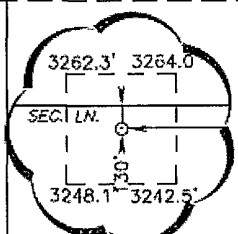
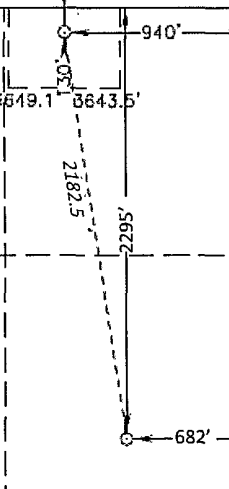
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	27	25 S	26 E		130	NORTH	940	EAST	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
H	27	25 S	26 E		2295	NORTH	682	EAST	EDDY
Dedicated Acres 80	Joint or Infill	Consolidation Code P	Order No.						

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

Penetration point 168'FNL & 932' FEL SURFACE LOCATION Lat - N32°06'27.73" Long - W104°16'30.02" NMSPC- N 402923.3 E 559397.3 (NAD-83) 		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. 01-02-09 Signature _____ Date Scott Haynes 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. MARCH 4 2008 Date Surveyed Signature _____ Professional Surveyor 7977 Certificate No. Gary L. Jones 7977 BASIN SURVEYS

WELL NAME AND NUMBER Chosa Draw 27 Federal Com #2

LOCATION Section 27 T 25S, R 26E, 130FNL, 940 FEL, Eddy County

OPERATOR Cimarex Energy

DRILLING CONTRACTOR United Drilling, Inc.

The undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above described well and had conducted deviation test and obtained the following results:

Degrees @ Depth	Degrees @ Depth	Degrees @ Depth
1/2 @ 248'		
1/2 @ 410'		
2-1/2 @ 895'		
3 @ 966'		
3-1/4 @ 952'		
1 @ 1362'		
2-1/2 @ 1590'		
2-1/4 @ 1647'		
1-1/2 @ 1773'		
1/2 @ 2026'		
1/2 @ 2275'		
1/8 @ 2436'		
1/8 @ 2718'		
1/2 @ 2980'		
3/4 @ 3165'		
3/4 @ 3642'		

Drilling Contractor- UNITED DRILLING, INC.

By: Luisa Noriega

Luisa Noriega

Title: Asst. Office Mgr

Asst. Office Mgr

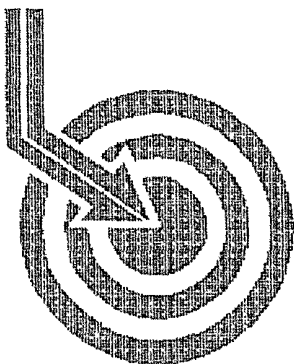
Subscribed and sworn to before me this 3 day of October, 2008

Deoxy A. Cho
Notary Public

Chaves NM
County State

My Commission Expires:

10-8-08



Scientific Drilling

CIMAREX ENERGY

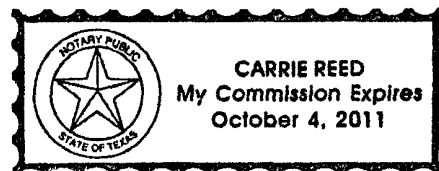
Field: Cottonwood Draw
Site: Eddy County, NM
Well: Chosa Draw 27 Federal Com #2
Wellpath: VH - Job #32K0908719
Survey: 09/16/08

This survey is correct to the best of my knowledge
and is supported by actual field data.

.....*L. Wharton*..... Company Representative

Notorized this date 14th of October, 2008.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International Survey Report

Company: CIMAREX ENERGY Date: 10/13/2008 Time: 10:18:35 Page: 1
Field: Cottonwood Draw Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Site: Eddy County, NM Vertical (TVD) Reference: SITE 0.0
Well: Chosa Draw 27 Federal Com #2 Section (VS) Reference: Well (0.00N,0.00E,166.71Azi)
Wellpath: VH - Job #32K0908719 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 09/16/08 Start Date: 09/16/2008
KSRG 0'-2644'
Company: Scientific Drilling Internatio Engineer: Madrid w/P&M
Tool: Keeper;Keeper Gyro Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.30	220.01	100.00	0.16	-0.20	-0.17	0.30	0.26	220.01
200.00	0.34	229.11	200.00	0.45	-0.60	-0.56	0.06	0.82	223.30
300.00	0.49	219.75	300.00	0.85	-1.12	-1.06	0.16	1.54	223.43
400.00	0.54	225.74	399.99	1.34	-1.78	-1.67	0.07	2.44	223.23
500.00	0.68	219.94	499.99	1.94	-2.56	-2.39	0.15	3.50	223.01
600.00	0.98	206.49	599.98	2.95	-3.78	-3.15	0.36	4.92	219.81
700.00	1.42	213.86	699.95	4.45	-5.57	-4.22	0.47	6.99	217.14
800.00	2.17	215.09	799.90	6.56	-8.15	-6.00	0.75	10.12	216.36
900.00	2.84	221.52	899.81	9.24	-11.56	-8.73	0.73	14.48	217.07
1000.00	3.05	221.44	999.68	12.20	-15.41	-12.13	0.21	19.61	218.23
1100.00	1.86	204.87	1099.58	15.02	-18.87	-14.58	1.37	23.85	217.68
1200.00	1.17	179.94	1199.55	17.29	-21.37	-15.26	0.94	26.26	215.53
1300.00	1.09	169.28	1299.53	19.23	-23.32	-15.08	0.22	27.77	212.89
1400.00	1.36	121.09	1399.51	21.01	-24.87	-13.89	1.03	28.48	209.18
1500.00	2.08	96.97	1499.46	22.47	-25.70	-11.07	1.01	27.98	203.30
1600.00	2.39	93.22	1599.39	23.69	-26.04	-7.19	0.34	27.01	195.43
1700.00	2.08	88.82	1699.31	24.66	-26.12	-3.29	0.35	26.33	187.18
1800.00	1.43	85.87	1799.26	25.24	-25.99	-0.23	0.66	25.99	180.51
1900.00	0.98	77.78	1899.24	25.46	-25.72	1.85	0.48	25.79	175.89
2000.00	0.61	70.69	1999.23	25.42	-25.36	3.19	0.38	25.56	172.84
2100.00	0.40	74.24	2099.23	25.35	-25.09	4.02	0.21	25.41	170.89
2200.00	0.27	81.37	2199.23	25.35	-24.96	4.59	0.14	25.38	169.57
2300.00	0.33	104.10	2299.23	25.50	-25.00	5.11	0.13	25.51	168.46
2400.00	0.27	138.08	2399.22	25.84	-25.24	5.54	0.18	25.84	167.62
2500.00	0.42	155.40	2499.22	26.41	-25.75	5.85	0.18	26.41	167.20
2600.00	0.37	147.93	2599.22	27.07	-26.36	6.18	0.07	27.07	166.81
2644.00	0.34	166.58	2643.22	27.34	-26.61	6.28	0.27	27.34	166.71



**Scientific
Drilling**

Field: Cottonwood Draw

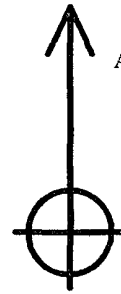
Site: Eddy County, NM

Well: Chosa Draw 27 Federal Com #2

Wellpath: VH - Job #32K0908719

Survey: 09/16/08

G/T/M

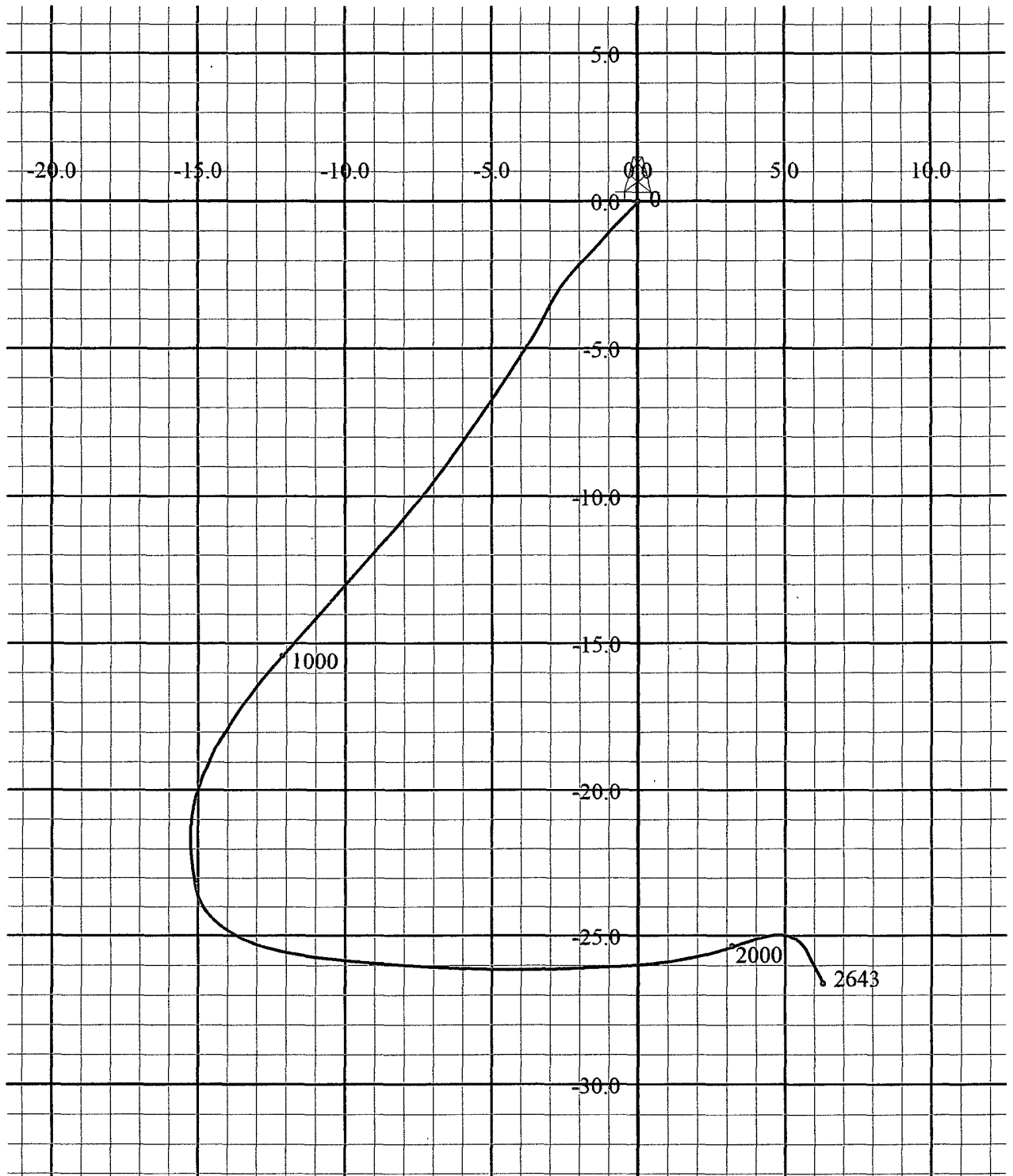


Azimuths to Grid North
True North: 0.00°
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 10/13/2008
Model: igrf2000

West(-)/East(+) [5ft/in]

South(-)/North(+) [5ft/in]

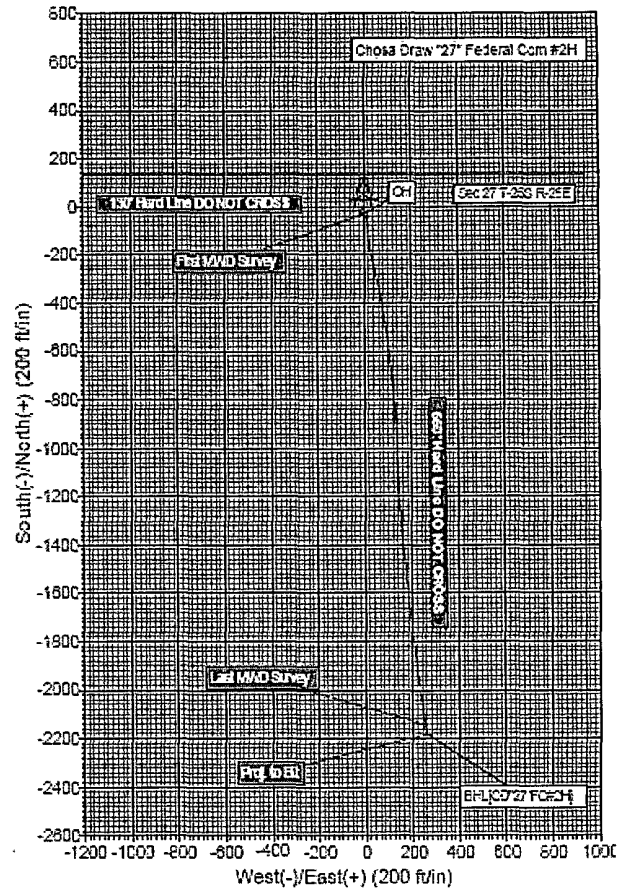
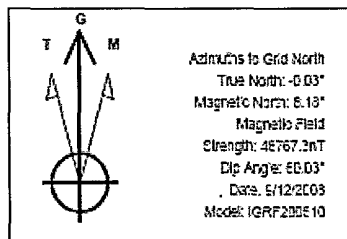




Project: Eddy Co., New Mexico
 Site: Chosa Draw "27" Federal Com #2H
 Well: Chosa Draw "27" Federal Com #2H
 Wellbore: Lateral #1
 Plan: Plan #1a (Chosa Draw "27" Federal Com #2H Lateral #1)



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	DLeg	TFace	VSec	Target
1	2644.00	0.34	186.53	2643.22	-26.61	6.28	0.00	0.00	27.16	
2	2690.00	0.34	186.53	2689.22	-26.87	6.35	0.00	0.00	27.43	
3	3063.39	89.40	173.29	2628.00	-262.02	34.28	23.85	6.71	285.12	
4	4926.34	89.40	173.29	2648.24	-212.52	260.12	0.00	0.00	2197.87	FBHL#1a(CD"27"FC#2H

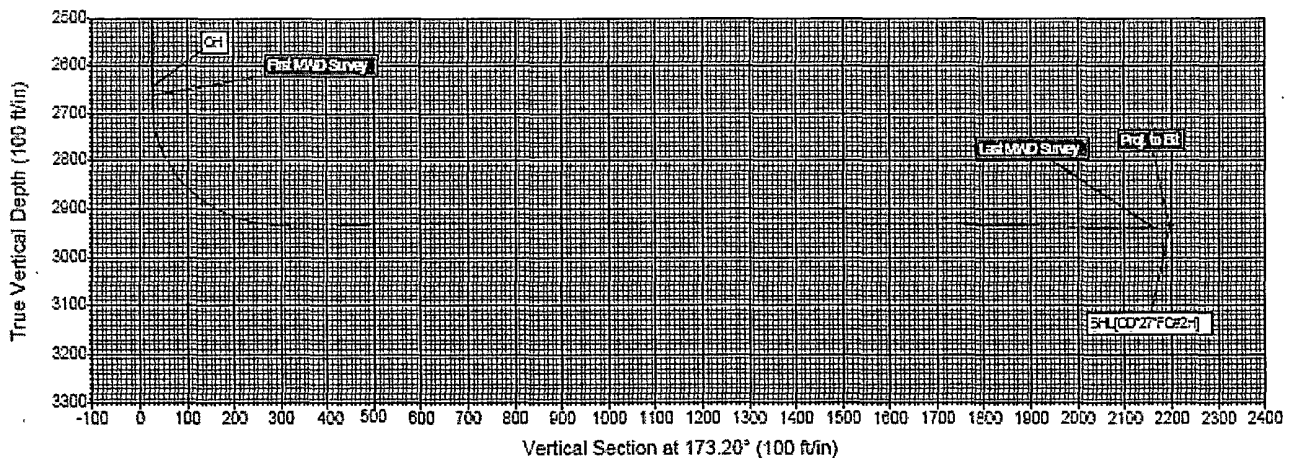


ANNOTATIONS

TVD	MD	Annotation
2569.22	2690.00	KOP Build 23.85°/100' TFO 5.71
2528.00	3063.39	EOC Hold 89.4° INC - 173.29° AZI

PROJECT DETAILS: Eddy Co., New Mexico

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



Final

Plan: Plan #1a (Chosa Draw "27" Federal Com #2H Lateral #1)
 Created by: Heather Vannoy Date: October 14, 2003

Cimarex Energy Co., Inc.

Eddy Co., New Mexico

Chosa Draw "27" Federal Com #2H

Chosa Draw "27" Federal Com #2H

Lateral #1

Survey: MWD Survey #1

Standard Survey Report

14 October, 2008

Black Viper Energy

Survey Report

Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Chosa Draw "27" Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	KB Elevation @ 3269.00ft (KB Elevation Unit Rig #40)
Site:	Chosa Draw "27" Federal Com #2H	MD Reference:	KB Elevation @ 3269.00ft (KB Elevation Unit Rig #40)
Well:	Chosa Draw "27" Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	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:	Chosa Draw "27" Federal Com #2H		
Site Position:		Northing:	402,923.30 ft
From:	Map	Easting:	559,397.30 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 6' 27.719 N
		Longitude:	104° 16' 30.032 W
		Grid Convergence:	0.03 °

Well:	Chosa Draw "27" Federal Com #2H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,269.00 ft
		Latitude:	32° 6' 27.719 N
		Longitude:	104° 16' 30.032 W
		Ground Level:	3,251.00 ft

Wellbore:	Lateral #1		
Magnetics:	Model Name	Sample Date	Declination
	IGRF200510	9/12/2008	8.21
			Dip Angle
			60.03
			Field Strength
			48,767

Design:	Lateral #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	2,644.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			169.15

Survey Program:	Date: 10/14/2008		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
100.00	2,644.00	Gyro Survey #1 (OH)	NS-GYRO-MS
2,644.00	4,996.00	MWD Survey #1 (Lateral #1)	MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard

Survey:			
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)
2,663.00	0.40	156.70	2,662.22
First MWD Survey			
2,670.00	0.79	171.83	2,669.22
2,700.00	3.49	177.35	2,699.20
2,730.00	10.13	172.62	2,728.98
2,760.00	17.91	170.05	2,758.06
2,790.00	25.58	169.61	2,785.90
2,820.00	32.80	169.70	2,812.08
2,850.00	40.74	170.77	2,836.09
2,880.00	47.70	173.00	2,857.57
2,910.00	53.63	174.05	2,876.56
2,940.00	59.20	173.55	2,893.14
			+N/-S
			(ft)
			+E/-W
			(ft)
			Vertical Section
			(ft)
			Dogleg Rate
			(°/100ft)
			Build Rate
			(°/100ft)
			Turn Rate
			(°/100ft)
			0.00
			216.18
			18.38
			-15.76
			-8.55
			-1.49
			0.31
			3.57
			7.43
			3.52
			-1.69

Black Viper Energy

Survey Report

Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Chosa Draw '27' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	KB Elevation @ 3269.00ft (KB Elevation Unit Rig #40)
Site:	Chosa Draw '27' Federal Com #2H	MD Reference:	KB Elevation @ 3269.00ft (KB Elevation Unit Rig #40)
Well:	Chosa Draw '27' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	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)	
2,970.00	65.58	171.54	2,907.08	-176.34	27.06	178.28	22.08	21.27	-6.69	
3,000.00	71.55	169.04	2,918.00	-203.86	31.76	206.19	21.36	19.91	-8.33	
3,030.00	78.20	167.13	2,925.89	-232.15	37.78	235.11	23.00	22.16	-6.38	
3,060.00	82.21	167.19	2,930.84	-260.98	44.44	264.68	13.37	13.37	0.23	
3,090.00	85.47	167.68	2,934.06	-290.09	50.93	294.49	10.99	10.88	1.62	
3,120.00	88.35	168.10	2,935.59	-319.38	57.20	324.44	9.70	9.60	1.39	
3,150.00	89.05	168.27	2,936.33	-348.73	63.37	354.42	2.38	2.31	0.58	
3,180.00	91.31	169.30	2,936.16	-378.16	69.15	384.42	8.29	7.55	3.41	
3,210.00	91.48	168.83	2,935.45	-407.60	74.91	414.41	1.65	0.56	-1.56	
3,240.00	92.27	170.81	2,934.46	-437.12	80.13	444.39	7.10	2.63	6.60	
3,270.00	92.83	170.03	2,933.10	-466.66	85.15	474.35	3.19	1.85	-2.61	
3,300.00	92.11	170.31	2,931.81	-496.20	90.27	504.32	2.56	-2.39	0.94	
3,330.00	92.39	170.59	2,930.64	-525.76	95.24	534.29	1.33	0.94	0.94	
3,360.00	91.28	171.82	2,929.66	-555.39	99.83	564.25	5.52	-3.71	4.09	
3,390.00	90.84	172.89	2,929.12	-585.12	103.82	594.20	3.88	-1.46	3.59	
3,420.00	90.21	173.59	2,928.84	-614.91	107.34	624.12	3.13	-2.10	2.32	
3,450.00	90.10	173.70	2,928.78	-644.73	110.64	654.03	0.52	-0.36	0.36	
3,480.00	89.56	174.63	2,928.85	-674.56	113.74	683.91	3.59	-1.81	3.10	
3,510.00	88.97	174.76	2,929.24	-704.44	116.45	713.76	2.01	-1.96	0.42	
3,540.00	89.07	174.56	2,929.80	-734.30	119.24	743.62	0.72	0.34	-0.64	
3,570.00	89.72	174.31	2,930.14	-764.16	122.14	773.49	2.32	2.15	-0.86	
3,600.00	90.18	174.26	2,930.14	-794.01	125.15	803.37	1.55	1.54	-0.16	
3,630.00	90.46	174.41	2,929.97	-823.86	128.12	833.25	1.08	0.95	0.50	
3,660.00	90.20	175.85	2,929.73	-853.74	130.82	863.10	4.88	-0.88	4.80	
3,690.00	89.80	176.89	2,929.78	-883.69	132.51	892.83	3.73	-1.33	3.48	
3,720.00	90.11	177.08	2,929.85	-913.64	134.22	922.57	1.21	1.03	0.62	
3,750.00	90.71	178.14	2,929.61	-943.61	135.40	952.23	4.06	1.99	3.54	
3,780.00	90.84	178.40	2,929.18	-973.60	136.29	981.85	0.96	0.44	0.86	
3,810.00	90.68	178.45	2,928.79	-1,003.58	137.12	1,011.45	0.57	-0.54	0.17	
3,840.00	90.51	178.54	2,928.46	-1,033.57	137.89	1,041.05	0.64	-0.56	0.31	
3,870.00	90.11	178.13	2,928.32	-1,063.56	138.73	1,070.66	1.90	-1.31	-1.37	
3,900.00	90.12	177.03	2,928.23	-1,093.53	140.03	1,100.34	3.68	0.04	-3.68	
3,930.00	89.41	177.30	2,928.36	-1,123.49	141.51	1,130.05	2.55	-2.38	0.91	
3,960.00	89.70	177.30	2,928.60	-1,153.46	142.93	1,159.74	0.97	0.97	0.00	
3,990.00	89.23	177.58	2,928.88	-1,183.43	144.27	1,189.43	1.82	-1.56	0.94	
4,020.00	89.37	176.90	2,929.25	-1,213.39	145.69	1,219.12	2.32	0.48	-2.27	
4,050.00	89.24	176.07	2,929.60	-1,243.33	147.53	1,248.87	2.81	-0.46	-2.77	
4,080.00	88.88	174.86	2,930.09	-1,273.24	149.88	1,278.69	4.20	-1.19	-4.03	
4,110.00	88.72	174.45	2,930.73	-1,303.10	152.72	1,308.54	1.46	-0.52	-1.37	
4,140.00	88.97	174.19	2,931.35	-1,332.94	155.69	1,338.42	1.19	0.83	-0.85	
4,170.00	89.46	173.92	2,931.77	-1,362.78	158.79	1,368.30	1.87	1.63	-0.92	
4,200.00	89.97	173.69	2,931.92	-1,392.60	162.04	1,398.20	1.83	1.67	-0.75	
4,230.00	90.20	173.79	2,931.84	-1,422.42	165.34	1,428.11	0.84	0.78	0.31	
4,260.00	89.78	173.96	2,931.79	-1,452.25	168.52	1,458.01	1.51	-1.40	0.57	
4,290.00	89.12	174.35	2,932.12	-1,482.08	171.65	1,487.90	2.55	-2.19	1.31	
4,320.00	89.19	175.33	2,932.61	-1,511.96	174.32	1,517.74	3.26	0.23	3.25	
4,350.00	89.68	175.60	2,932.88	-1,541.87	176.62	1,547.55	1.88	1.64	0.92	
4,380.00	89.94	174.88	2,932.98	-1,571.77	179.09	1,577.38	2.56	0.86	-2.41	
4,410.00	90.19	174.02	2,932.95	-1,601.63	182.01	1,607.25	2.98	0.83	-2.86	
4,440.00	90.70	173.56	2,932.71	-1,631.45	185.26	1,637.15	2.28	1.69	-1.54	
4,470.00	90.68	173.21	2,932.34	-1,661.25	188.72	1,667.07	1.16	-0.06	-1.16	
4,500.00	90.39	173.37	2,932.06	-1,691.04	192.22	1,696.99	1.10	-0.97	0.53	
4,530.00	90.10	172.50	2,931.93	-1,720.81	195.91	1,726.92	3.06	-0.97	-2.90	
4,560.00	88.60	172.31	2,932.27	-1,750.55	199.87	1,756.87	5.04	-5.00	-0.62	

Black Viper Energy

Survey Report

Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Chosa Draw "27" Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	KB Elevation @ 3269.00ft (KB Elevation Unit Rig #40)
Site:	Chosa Draw "27" Federal Com #2H	MD Reference:	KB Elevation @ 3269.00ft (KB Elevation Unit Rig #40)
Well:	Chosa Draw "27" Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	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)
4,590.00	88.15	172.30	2,933.14	-1,780.26	203.89	1,786.81	1.50	-1.50	-0.04
4,620.00	88.75	171.97	2,933.99	-1,809.97	207.98	1,816.76	2.27	2.00	-1.08
4,650.00	89.57	172.35	2,934.43	-1,839.68	212.11	1,846.71	3.02	2.75	1.25
4,680.00	89.45	172.93	2,934.62	-1,869.43	215.95	1,876.66	1.97	-0.43	1.92
4,710.00	88.73	173.04	2,935.08	-1,899.21	219.58	1,906.58	2.42	-2.39	0.37
4,740.00	88.73	173.00	2,935.83	-1,928.98	223.23	1,936.51	0.12	0.00	-0.12
4,770.00	89.05	172.70	2,936.38	-1,958.74	226.93	1,966.44	1.47	1.08	-1.00
4,800.00	89.44	172.25	2,936.82	-1,988.48	230.88	1,996.38	1.97	1.30	-1.48
4,830.00	89.80	172.14	2,936.97	-2,018.20	234.97	2,026.34	1.26	1.20	-0.37
4,860.00	89.92	172.13	2,937.06	-2,047.92	239.06	2,056.30	0.41	0.41	-0.03
4,890.00	90.23	171.97	2,937.02	-2,077.63	243.21	2,086.26	1.16	1.02	-0.56
4,920.00	90.53	171.80	2,936.82	-2,107.33	247.44	2,116.23	1.16	1.02	-0.56
4,950.00	90.84	171.63	2,936.47	-2,137.01	251.77	2,146.19	1.16	1.02	-0.56
4,956.00	90.90	171.60	2,936.37	-2,142.95	252.64	2,152.19	1.16	1.02	-0.56
Last MWD Survey									
4,980.00	90.90	171.84	2,936.00	-2,166.69	256.10	2,176.16	1.00	0.00	1.00
4,996.00	90.90	172.00	2,935.75	-2,182.53	258.34	2,192.14	1.00	0.00	1.00
Proj. to Bit									

Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
PBHL#1[CD"27"FC#2H]	- survey misses by 5.99ft at 4996.00ft MD (2935.75 TVD, -2182.53 N, 258.34 E)	0.00	0.00	2,930.00	-2,182.53	260.04	400,740.77	559,657.34	32° 6' 6.119 N 104° 16' 27.023 W
BHL[CD"27"FC#2H]	- survey misses by 1.70ft at 4996.00ft MD (2935.75 TVD, -2182.53 N, 258.34 E)	0.00	0.00	2,935.75	-2,182.53	260.04	400,740.77	559,657.34	32° 6' 6.119 N 104° 16' 27.023 W
PBHL#1a[CD"27"FC#2H]	- survey misses by 12.51ft at 4996.00ft MD (2935.75 TVD, -2182.53 N, 258.34 E)	0.00	0.00	2,948.14	-2,182.53	260.04	400,740.77	559,657.34	32° 6' 6.119 N 104° 16' 27.023 W
LL[CD"27"FC#2H]	- survey misses by 2662.36ft at 2663.00ft MD (2662.22 TVD, -26.72 N, 6.32 E)	0.00	0.00	0.00	0.00	0.00	402,923.30	559,397.30	32° 6' 27.719 N 104° 16' 30.032 W
HL[CD"27"FC#2H]	- survey misses by 2662.36ft at 2663.00ft MD (2662.22 TVD, -26.72 N, 6.32 E)	0.00	0.00	0.00	0.00	0.00	402,923.30	559,397.30	32° 6' 27.719 N 104° 16' 30.032 W

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,663.00	2,662.22	-26.72	6.32	First MWD Survey
4,956.00	2,936.37	-2,142.95	252.64	Last MWD Survey
4,996.00	2,935.75	-2,182.53	258.34	Proj. to Bit

Checked By: _____ Approved By: _____ Date: _____

Chosa Draw '27' Fed Com #2H Lateral #1 FINAL Report.txt
 Cimarex Energy Co., Inc.
 Chosa Draw "27" Federal Com #2H - MWD Survey #1

Eddy Co., New Mexico
 Chosa Draw "27" Federal Com #2H

Measured Dogleg Depth Rate (ft) (°/100ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)
2650.00	0.358	163.106	2649.22	26.64 S	6.29 E	27.35
0.00						
2660.00	0.390	158.054	2659.22	26.70 S	6.31 E	27.41
0.46						
2670.00	0.789	171.833	2669.22	26.79 S	6.34 E	27.51
4.21						
2680.00	1.373	178.071	2679.22	26.98 S	6.35 E	27.69
5.95						
2690.00	1.963	180.575	2689.21	27.27 S	6.35 E	27.98
5.95						
2700.00	3.485	177.347	2699.20	27.71 S	6.36 E	28.41
15.29						
2710.00	5.642	174.841	2709.17	28.51 S	6.42 E	29.20
21.65						
2720.00	7.803	173.719	2719.10	29.67 S	6.53 E	30.37
21.65						
2730.00	10.135	172.618	2728.98	31.21 S	6.72 E	31.92
23.39						
2740.00	12.727	171.395	2738.78	33.17 S	6.99 E	33.90
26.03						
2750.00	15.322	170.580	2748.48	35.57 S	7.38 E	36.32
26.03						
2760.00	17.913	170.054	2758.06	38.38 S	7.86 E	39.18
25.96						
2770.00	20.480	169.857	2767.51	41.62 S	8.43 E	42.46
25.67						
2780.00	23.047	169.702	2776.79	45.27 S	9.09 E	46.17
25.67						
2790.00	25.581	169.608	2785.90	49.32 S	9.83 E	50.29
25.35						
2800.00	27.987	169.643	2794.83	53.75 S	10.64 E	54.80
24.06						
2810.00	30.394	169.674	2803.56	58.55 S	11.52 E	59.67
24.06						
2820.00	32.800	169.700	2812.08	63.71 S	12.46 E	64.91
24.06						
2830.00	35.444	170.103	2820.35	69.23 S	13.44 E	70.52
26.54						
2840.00	38.089	170.456	2828.36	75.13 S	14.45 E	76.50
26.54						
2850.00	40.735	170.770	2836.09	81.39 S	15.48 E	82.85
26.54						
2860.00	43.076	171.541	2843.53	87.99 S	16.51 E	89.53
23.97						
2870.00	45.388	172.299	2850.69	94.90 S	17.49 E	96.49
23.72						
2880.00	47.704	173.000	2857.57	102.10 S	18.42 E	103.74
23.72						
2890.00	49.755	173.434	2864.16	109.57 S	19.30 E	111.24
20.77						

	Chosa	Draw '27'	Fed Com #2H	Lateral #1	FINAL	Report.txt	
2900.00	51.693	173.753	2870.49	117.26 S	20.17 E	118.96	
19.53							
2910.00	53.631	174.055	2876.56	125.16 S	21.01 E	126.88	
19.53							
2920.00	55.519	174.064	2882.35	133.27 S	21.84 E	135.00	
18.88							
2930.00	57.357	173.800	2887.88	141.56 S	22.73 E	143.30	
18.52							
2940.00	59.196	173.547	2893.14	150.01 S	23.66 E	151.78	
18.52							
2950.00	61.178	173.077	2898.12	158.62 S	24.66 E	160.43	
20.23							
2960.00	63.375	172.294	2902.77	167.40 S	25.79 E	169.27	
23.04							
2970.00	65.577	171.540	2907.08	176.34 S	27.06 E	178.28	
23.04							
2980.00	67.673	170.748	2911.04	185.41 S	28.47 E	187.45	
22.19							
2990.00	69.610	169.884	2914.68	194.59 S	30.04 E	196.76	
20.97							
3000.00	71.550	169.042	2918.00	203.86 S	31.76 E	206.19	
20.97							
3010.00	73.533	168.243	2921.01	213.21 S	33.64 E	215.73	
21.24							
3020.00	75.866	167.679	2923.65	222.64 S	35.66 E	225.37	
23.95							
3030.00	78.199	167.127	2925.89	232.15 S	37.78 E	235.11	
23.95							
3040.00	80.035	166.866	2927.75	241.72 S	40.01 E	244.93	
18.53							
3050.00	81.122	167.031	2929.39	251.33 S	42.23 E	254.79	
10.99							
3060.00	82.210	167.195	2930.84	260.98 S	44.44 E	264.68	
10.99							
3070.00	83.297	167.358	2932.10	270.65 S	46.62 E	274.59	
10.99							
3080.00	84.385	167.520	2933.17	280.36 S	48.79 E	284.53	
10.99							
3090.00	85.472	167.682	2934.06	290.09 S	50.93 E	294.49	
10.99							
3100.00	86.560	167.843	2934.75	299.84 S	53.04 E	304.46	
10.99							
3110.00	87.647	168.004	2935.26	309.60 S	55.13 E	314.44	
10.99							
3120.00	88.353	168.100	2935.59	319.38 S	57.20 E	324.44	
7.12							
3130.00	88.487	168.100	2935.86	329.16 S	59.26 E	334.43	
1.33							
3140.00	88.620	168.100	2936.11	338.94 S	61.32 E	344.43	
1.33							
3150.00	89.047	168.273	2936.33	348.73 S	63.37 E	354.42	
4.61							
3160.00	89.913	168.707	2936.42	358.53 S	65.37 E	364.42	
9.69							
3170.00	90.780	169.140	2936.36	368.34 S	67.29 E	374.42	
9.69							
3180.00	91.313	169.297	2936.16	378.16 S	69.15 E	384.42	
5.55							
3190.00	91.345	169.039	2935.93	387.98 S	71.03 E	394.42	
2.60							
3200.00	91.377	168.781	2935.69	397.79 S	72.95 E	404.41	
2.60							
3210.00	91.480	168.830	2935.45	407.60 S	74.91 E	414.41	

Chosa Draw '27' Fed Com #2H Lateral #1 FINAL Report.txt

1.14							
3220.00	91.747	169.596	2935.17	417.42 S	76.78 E	424.41	
8.11							
3230.00	92.014	170.363	2934.84	427.26 S	78.52 E	434.40	
8.11							
3240.00	92.270	170.810	2934.46	437.12 S	80.13 E	444.39	
5.15							
3250.00	92.503	170.510	2934.05	446.98 S	81.75 E	454.38	
3.80							
3260.00	92.737	170.210	2933.59	456.83 S	83.43 E	464.36	
3.80							
3270.00	92.825	170.028	2933.10	466.66 S	85.15 E	474.35	
2.02							
3280.00	92.575	170.122	2932.63	476.50 S	86.87 E	484.34	
2.67							
3290.00	92.325	170.216	2932.20	486.35 S	88.58 E	494.33	
2.67							
3300.00	92.109	170.309	2931.81	496.20 S	90.27 E	504.32	
2.35							
3310.00	92.203	170.403	2931.44	506.05 S	91.94 E	514.31	
1.33							
3320.00	92.297	170.497	2931.05	515.90 S	93.60 E	524.30	
1.33							
3330.00	92.391	170.591	2930.64	525.76 S	95.24 E	534.29	
1.33							
3340.00	92.052	170.978	2930.24	535.62 S	96.84 E	544.28	
5.14							
3350.00	91.665	171.397	2929.92	545.50 S	98.37 E	554.26	
5.71							
3360.00	91.277	171.816	2929.66	555.39 S	99.83 E	564.25	
5.71							
3370.00	91.097	172.184	2929.46	565.29 S	101.22 E	574.24	
4.10							
3380.00	90.968	172.539	2929.28	575.20 S	102.55 E	584.22	
3.78							
3390.00	90.839	172.894	2929.12	585.12 S	103.82 E	594.20	
3.78							
3400.00	90.647	173.153	2928.99	595.04 S	105.03 E	604.17	
3.23							
3410.00	90.428	173.372	2928.90	604.97 S	106.20 E	614.15	
3.09							
3420.00	90.209	173.591	2928.84	614.91 S	107.34 E	624.12	
3.09							
3430.00	90.100	173.700	2928.82	624.85 S	108.44 E	634.09	
1.55							
3440.00	90.100	173.700	2928.80	634.79 S	109.54 E	644.06	
0.00							
3450.00	90.100	173.700	2928.78	644.73 S	110.64 E	654.03	
0.00							
3460.00	90.010	173.855	2928.77	654.67 S	111.73 E	663.99	
1.79							
3470.00	89.784	174.242	2928.79	664.61 S	112.77 E	673.96	
4.48							
3480.00	89.558	174.629	2928.85	674.56 S	113.74 E	683.91	
4.48							
3490.00	89.344	174.881	2928.94	684.52 S	114.64 E	693.86	
3.31							
3500.00	89.156	174.819	2929.07	694.48 S	115.54 E	703.81	
1.98							
3510.00	88.969	174.756	2929.24	704.44 S	116.45 E	713.76	
1.98							
3520.00	88.813	174.694	2929.43	714.39 S	117.37 E	723.72	
1.68							

	Chosa	Draw '27'	Fed Com #2H	Lateral #1	FINAL Report.txt	
1.44	3530.00	88.942	174.629	2929.63	724.35 S	118.30 E 733.67
1.44	3540.00	89.071	174.565	2929.80	734.30 S	119.24 E 743.62
1.44	3550.00	89.200	174.500	2929.95	744.26 S	120.19 E 753.58
2.76	3560.00	89.458	174.403	2930.07	754.21 S	121.16 E 763.53
2.76	3570.00	89.716	174.306	2930.14	764.16 S	122.14 E 773.49
2.76	3580.00	89.974	174.210	2930.17	774.11 S	123.14 E 783.45
1.12	3590.00	90.084	174.228	2930.16	784.06 S	124.15 E 793.41
0.99	3600.00	90.178	174.259	2930.14	794.01 S	125.15 E 803.37
0.99	3610.00	90.272	174.291	2930.10	803.96 S	126.15 E 813.33
1.10	3620.00	90.368	174.345	2930.05	813.91 S	127.14 E 823.29
1.16	3630.00	90.465	174.410	2929.97	823.86 S	128.12 E 833.25
1.16	3640.00	90.561	174.474	2929.88	833.81 S	129.09 E 843.21
5.44	3650.00	90.450	175.006	2929.79	843.77 S	130.02 E 853.16
8.80	3660.00	90.200	175.850	2929.73	853.74 S	130.82 E 863.10
8.80	3670.00	89.950	176.694	2929.72	863.72 S	131.47 E 873.02
4.45	3680.00	89.800	177.113	2929.74	873.70 S	131.99 E 882.93
2.19	3690.00	89.800	176.894	2929.78	883.69 S	132.51 E 892.83
2.19	3700.00	89.800	176.675	2929.81	893.67 S	133.07 E 902.74
0.94	3710.00	89.852	176.597	2929.85	903.66 S	133.67 E 912.66
5.48	3720.00	90.110	177.081	2929.85	913.64 S	134.22 E 922.57
5.48	3730.00	90.368	177.564	2929.81	923.63 S	134.69 E 932.47
5.09	3740.00	90.610	178.013	2929.72	933.62 S	135.07 E 942.35
1.61	3750.00	90.706	178.142	2929.61	943.61 S	135.40 E 952.23
1.61	3760.00	90.803	178.271	2929.48	953.61 S	135.72 E 962.11
1.61	3770.00	90.900	178.400	2929.33	963.60 S	136.01 E 971.98
0.63	3780.00	90.837	178.400	2929.18	973.60 S	136.29 E 981.85
0.63	3790.00	90.775	178.400	2929.04	983.59 S	136.57 E 991.72
0.63	3800.00	90.712	178.400	2928.91	993.59 S	136.85 E 1001.58
0.62	3810.00	90.675	178.450	2928.79	1003.58 S	137.12 E 1011.45
0.70	3820.00	90.644	178.513	2928.67	1013.58 S	137.39 E 1021.32
0.70	3830.00	90.613	178.575	2928.56	1023.58 S	137.64 E 1031.19
	3840.00	90.506	178.544	2928.46	1033.57 S	137.89 E 1041.05

	Chosa Draw '27' Fed Com #2H Lateral #1 FINAL Report.txt					
1.11						
3850.00	90.350	178.450	2928.39	1043.57 S	138.15 E	1050.92
1.82						
3860.00	90.194	178.356	2928.34	1053.57 S	138.43 E	1060.79
1.82						
3870.00	90.113	178.132	2928.32	1063.56 S	138.73 E	1070.66
2.38						
3880.00	90.145	177.713	2928.29	1073.55 S	139.09 E	1080.54
4.21						
3890.00	90.177	177.294	2928.26	1083.54 S	139.53 E	1090.44
4.21						
3900.00	90.125	177.028	2928.23	1093.53 S	140.03 E	1100.34
2.71						
3910.00	89.875	177.122	2928.23	1103.52 S	140.54 E	1110.24
2.67						
3920.00	89.625	177.216	2928.28	1113.51 S	141.04 E	1120.15
2.67						
3930.00	89.410	177.300	2928.36	1123.49 S	141.51 E	1130.05
2.31						
3940.00	89.506	177.300	2928.46	1133.48 S	141.99 E	1139.94
0.97						
3950.00	89.603	177.300	2928.54	1143.47 S	142.46 E	1149.84
0.97						
3960.00	89.700	177.300	2928.60	1153.46 S	142.93 E	1159.74
0.97						
3970.00	89.544	177.394	2928.66	1163.45 S	143.39 E	1169.64
1.82						
3980.00	89.387	177.487	2928.76	1173.44 S	143.84 E	1179.53
1.82						
3990.00	89.231	177.581	2928.88	1183.43 S	144.27 E	1189.43
1.82						
4000.00	89.250	177.400	2929.01	1193.42 S	144.70 E	1199.32
1.82						
4010.00	89.312	177.150	2929.14	1203.41 S	145.18 E	1209.22
2.58						
4020.00	89.375	176.900	2929.25	1213.39 S	145.69 E	1219.12
2.58						
4030.00	89.362	176.631	2929.36	1223.38 S	146.26 E	1229.03
2.69						
4040.00	89.300	176.350	2929.48	1233.36 S	146.87 E	1238.95
2.88						
4050.00	89.237	176.069	2929.60	1243.33 S	147.53 E	1248.87
2.88						
4060.00	89.147	175.727	2929.74	1253.31 S	148.24 E	1258.80
3.54						
4070.00	89.013	175.293	2929.90	1263.28 S	149.03 E	1268.74
4.53						
4080.00	88.880	174.860	2930.09	1273.24 S	149.88 E	1278.69
4.53						
4090.00	88.787	174.575	2930.29	1283.19 S	150.81 E	1288.64
3.00						
4100.00	88.756	174.513	2930.51	1293.14 S	151.76 E	1298.59
0.70						
4110.00	88.725	174.450	2930.73	1303.10 S	152.72 E	1308.54
0.70						
4120.00	88.725	174.381	2930.95	1313.05 S	153.70 E	1318.50
0.69						
4130.00	88.850	174.287	2931.16	1322.99 S	154.68 E	1328.46
1.56						
4140.00	88.975	174.194	2931.35	1332.94 S	155.69 E	1338.42
1.56						
4150.00	89.100	174.100	2931.52	1342.89 S	156.71 E	1348.38
1.56						

	Chosa Draw '27'		Fed Com #2H	Lateral #1	FINAL Report.txt		
4160.00	89.282	174.009	2931.66	1352.83 S	157.74 E	1358.34	
2.03							
4170.00	89.464	173.918	2931.77	1362.78 S	158.79 E	1368.30	
2.03							
4180.00	89.645	173.827	2931.85	1372.72 S	159.86 E	1378.27	
2.03							
4190.00	89.809	173.756	2931.90	1382.66 S	160.94 E	1388.24	
1.79							
4200.00	89.966	173.694	2931.92	1392.60 S	162.04 E	1398.20	
1.68							
4210.00	90.122	173.631	2931.91	1402.54 S	163.14 E	1408.17	
1.68							
4220.00	90.200	173.663	2931.88	1412.48 S	164.25 E	1418.14	
0.84							
4230.00	90.200	173.788	2931.84	1422.42 S	165.34 E	1428.11	
1.25							
4240.00	90.200	173.913	2931.81	1432.36 S	166.41 E	1438.08	
1.25							
4250.00	90.103	173.990	2931.78	1442.31 S	167.47 E	1448.04	
1.24							
4260.00	89.781	173.958	2931.79	1452.25 S	168.52 E	1458.01	
3.24							
4270.00	89.458	173.926	2931.85	1462.19 S	169.57 E	1467.97	
3.24							
4280.00	89.187	173.975	2931.97	1472.14 S	170.63 E	1477.93	
2.75							
4290.00	89.125	174.350	2932.12	1482.08 S	171.65 E	1487.90	
3.80							
4300.00	89.062	174.725	2932.28	1492.04 S	172.60 E	1497.85	
3.80							
4310.00	89.000	175.100	2932.45	1502.00 S	173.49 E	1507.80	
3.80							
4320.00	89.194	175.326	2932.61	1511.96 S	174.32 E	1517.74	
2.97							
4330.00	89.387	175.552	2932.73	1521.93 S	175.12 E	1527.68	
2.97							
4340.00	89.581	175.777	2932.82	1531.90 S	175.87 E	1537.61	
2.97							
4350.00	89.684	175.603	2932.88	1541.87 S	176.62 E	1547.55	
2.03							
4360.00	89.778	175.384	2932.93	1551.84 S	177.40 E	1557.49	
2.38							
4370.00	89.872	175.166	2932.96	1561.81 S	178.23 E	1567.43	
2.38							
4380.00	89.944	174.881	2932.98	1571.77 S	179.09 E	1577.38	
2.93							
4390.00	90.006	174.569	2932.98	1581.73 S	180.01 E	1587.33	
3.19							
4400.00	90.069	174.256	2932.97	1591.68 S	180.99 E	1597.29	
3.19							
4410.00	90.194	174.022	2932.95	1601.63 S	182.01 E	1607.25	
2.66							
4420.00	90.381	173.866	2932.90	1611.57 S	183.07 E	1617.21	
2.44							
4430.00	90.569	173.709	2932.82	1621.51 S	184.15 E	1627.18	
2.44							
4440.00	90.700	173.561	2932.71	1631.45 S	185.26 E	1637.15	
1.98							
4450.00	90.700	173.432	2932.59	1641.38 S	186.39 E	1647.12	
1.29							
4460.00	90.700	173.303	2932.46	1651.32 S	187.55 E	1657.09	
1.29							
4470.00	90.681	173.213	2932.34	1661.25 S	188.72 E	1667.07	

Chosa Draw '27' Fed Com #2H Lateral #1 FINAL Report.txt

0.92						
4480.00	90.584	173.277	2932.23	1671.18 S	189.90 E	1677.04
1.16						
4490.00	90.487	173.342	2932.14	1681.11 S	191.06 E	1687.01
1.16						
4500.00	90.390	173.371	2932.06	1691.04 S	192.22 E	1696.99
1.01						
4510.00	90.294	173.081	2932.00	1700.97 S	193.40 E	1706.96
3.06						
4520.00	90.197	172.790	2931.96	1710.89 S	194.63 E	1716.94
3.06						
4530.00	90.100	172.500	2931.93	1720.81 S	195.91 E	1726.92
3.06						
4540.00	89.600	172.438	2931.96	1730.72 S	197.22 E	1736.90
5.04						
4550.00	89.100	172.375	2932.07	1740.64 S	198.54 E	1746.89
5.04						
4560.00	88.600	172.313	2932.27	1750.55 S	199.87 E	1756.87
5.04						
4570.00	88.400	172.300	2932.54	1760.45 S	201.21 E	1766.85
2.00						
4580.00	88.275	172.300	2932.83	1770.36 S	202.55 E	1776.83
1.25						
4590.00	88.150	172.300	2933.14	1780.26 S	203.89 E	1786.81
1.25						
4600.00	88.250	172.225	2933.46	1790.17 S	205.23 E	1796.79
1.25						
4610.00	88.500	172.100	2933.75	1800.07 S	206.59 E	1806.77
2.79						
4620.00	88.750	171.975	2933.99	1809.97 S	207.98 E	1816.76
2.79						
4630.00	89.012	171.975	2934.18	1819.87 S	209.38 E	1826.74
2.63						
4640.00	89.294	172.163	2934.33	1829.77 S	210.76 E	1836.73
3.38						
4650.00	89.575	172.350	2934.43	1839.68 S	212.11 E	1846.71
3.38						
4660.00	89.768	172.539	2934.48	1849.59 S	213.42 E	1856.70
2.70						
4670.00	89.606	172.732	2934.54	1859.51 S	214.71 E	1866.68
2.52						
4680.00	89.445	172.926	2934.62	1869.43 S	215.95 E	1876.66
2.52						
4690.00	89.273	173.097	2934.73	1879.36 S	217.17 E	1886.63
2.43						
4700.00	89.000	173.067	2934.88	1889.28 S	218.37 E	1896.61
2.74						
4710.00	88.727	173.036	2935.08	1899.21 S	219.58 E	1906.58
2.74						
4720.00	88.455	173.006	2935.32	1909.13 S	220.80 E	1916.56
2.74						
4730.00	88.545	173.000	2935.59	1919.05 S	222.02 E	1926.53
0.91						
4740.00	88.727	173.000	2935.83	1928.98 S	223.23 E	1936.51
1.82						
4750.00	88.909	173.000	2936.04	1938.90 S	224.45 E	1946.48
1.82						
4760.00	89.017	172.900	2936.21	1948.82 S	225.68 E	1956.46
1.47						
4770.00	89.050	172.700	2936.38	1958.74 S	226.93 E	1966.44
2.03						
4780.00	89.083	172.500	2936.55	1968.66 S	228.22 E	1976.42
2.03						

	Chosa	Draw '27'	Fed Com #2H	Lateral #1	FINAL Report.txt	
4790.00	89.213	172.352	2936.70	1978.57 S	229.54 E	1986.40
1.97						
4800.00	89.439	172.255	2936.82	1988.48 S	230.88 E	1996.38
2.46						
4810.00	89.665	172.158	2936.89	1998.39 S	232.23 E	2006.37
2.46						
4820.00	89.800	172.113	2936.94	2008.29 S	233.60 E	2016.36
1.43						
4830.00	89.800	172.144	2936.97	2018.20 S	234.97 E	2026.34
0.31						
4840.00	89.800	172.175	2937.01	2028.10 S	236.34 E	2036.33
0.31						
4850.00	89.820	172.189	2937.04	2038.01 S	237.70 E	2046.31
0.25						
4860.00	89.922	172.133	2937.06	2047.92 S	239.06 E	2056.30
1.16						
4870.00	90.024	172.078	2937.07	2057.82 S	240.43 E	2066.29
1.16						
4880.00	90.126	172.022	2937.06	2067.73 S	241.82 E	2076.27
1.16						
4890.00	90.228	171.967	2937.02	2077.63 S	243.21 E	2086.26
1.16						
4900.00	90.330	171.911	2936.98	2087.53 S	244.61 E	2096.25
1.16						
4910.00	90.431	171.856	2936.91	2097.43 S	246.02 E	2106.24
1.16						
4920.00	90.533	171.800	2936.82	2107.33 S	247.44 E	2116.23
1.16						
4930.00	90.635	171.744	2936.72	2117.22 S	248.87 E	2126.22
1.16						
4940.00	90.737	171.689	2936.60	2127.12 S	250.32 E	2136.21
1.16						
4950.00	90.839	171.633	2936.47	2137.01 S	251.77 E	2146.19
1.16						
4960.00	90.900	171.640	2936.31	2146.90 S	253.22 E	2156.18
0.61						
4970.00	90.900	171.740	2936.15	2156.80 S	254.67 E	2166.17
1.00						
4980.00	90.900	171.840	2936.00	2166.69 S	256.10 E	2176.16
1.00						
4990.00	90.900	171.940	2935.84	2176.59 S	257.51 E	2186.15
1.00						
4996.00	90.900	172.000	2935.75	2182.53 S	258.34 E	2192.14
1.00						

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to KB Elevation. 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 169.148° (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 0.031°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 4996.00ft., the Bottom Hole Displacement is 2197.77ft., in the Direction of 169.148° (Grid).

