

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM117555

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.8. Well Name and No.
CHIMAY 6 FEDERAL COM LBB 5H9. API Well No.
30-015-41584-00-X110. Field and Pool, or Exploratory
LOCO HILLS11. County or Parish, and State
EDDY COUNTY, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
COG OPERATING LLCContact: KELLY J HOLLY
E-Mail: kholly@concho.com3a. Address
ONE CONCHO CENTER 600 W ILLINOIS AVENUE
MIDLAND, TX 797013b. Phone No. (include area code)
Ph: 432-685-43844. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 1 T17S R29E NESE 2310FSL 10FEL**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC respectfully requests to change the TVD and name of this well:

FROM: Chimay 6 Federal Com LBB #5H

TO: Chimay 6 Federal Com UBB #5H 313347

FROM: 5424' TVD; 10144' MD

TO: 5024' TVD; 9744' MD

Attached is the revised C-102 and directional plan.

Accepted for record

NMOCD-107

6614

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 06 2014

RECEIVED

Original Copy Still apply

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #246527 verified by the BLM Well Information System

For COG OPERATING LLC, sent to the Carlsbad

Committed to AFMSS for processing by CATHY QUEEN on 05/28/2014 (14CQ0063SE)

Name (Printed/Typed) KELLY J HOLLY

Title PERMITTING TECH

Signature (Electronic Submission)

Date 05/21/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

BUREAU OF LAND MANAGEMENT

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.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1. API Number 30-015-41584		2. Pool Code 96718		3. Pool Name Loco Hills; Glorieta Yeso	
4. Property Code 40051		5. Property Name CHIMAY 6 FED. COM. UBB			6. Well Number 5H
7. OGRID No. 229137		8. Operator Name COG OPERATING, LLC			9. Elevation 3686'

10. Surface Location

UL or lot no.	Section	Township	Range	Lot 1/4	Feet from the	North/South line	Feet from the	East/West line	County
I	1	17-S	29-E		2310	SOUTH	10	EAST	EDDY

11. Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot 1/4	Feet from the	North/South line	Feet from the	East/West line	County
I	6	17-S	30-E		2301	SOUTH	330	EAST	EDDY

12. Dedicated Acres 157.17	13. Joint or Infill	14. Consolidation Code	15. Order No.
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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.

16. SURFACE LOCATION				17. 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 undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this 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. Signature: <i>Kelly J. Holly</i> Date: 5-21-14 Printed Name: Kelly J. Holly E-mail Address: kholly@concho.com			
CORNER DATA NAD 27 GRID - NM EAST A: BRASS CAP "1914" N 675322.5 - E 591200.4 B: BRASS CAP "1914" N 677961.6 - E 591198.9 C: BRASS CAP "1914" N 680599.9 - E 591196.5 D: BRASS CAP 1914 N 680602.4 - E 593835.9 E: BRASS CAP "1914" N 680602.3 - E 596475.6 F: BRASS CAP "1914" N 677961.9 - E 596474.4 G: BRASS CAP "1914" N 675324.2 - E 596474.6				GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 677633.6 - E 596464.3 LAT: 32.862504° N LONG: 104.019177° W BOTTOM LOCATION N 677654.7 - E 601331.2			
DETAIL "A"				18. 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. Date of Survey: 2/28/13 Signature and Seal of Professional Surveyor: <i>Robert M. Howett</i> 19680 Certificate Number Revised: 5/5/14 NAME			

COG OPERATING, LLC

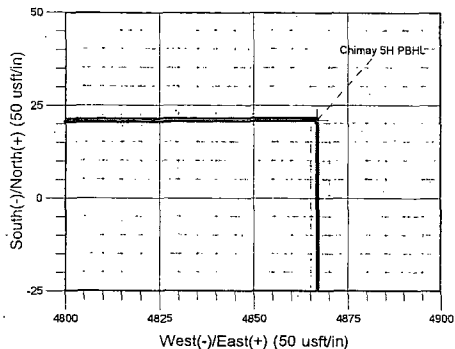
Field: Eddy County, NM
Site: Chimay 6 Federal Com UBB 5H
Well: 5H
Wellbore: Lateral
Plan: Plan #2

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4579.21	0.00	0.00	4579.21	0.00	0.00	0.00	0.00	0.00	
3	5406.48	91.00	91.00	5100.00	-9.25	529.88	11.00	91.00	529.84	
4	5453.43	91.00	89.59	5099.18	-9.49	576.82	3.00	-89.98	576.77	
5	9744.27	91.00	89.59	5024.28	21.10	4866.90	0.00	0.00	4866.95	Chimay 5H PBHL

TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
Chimay 5H PP	0.00	-5.94	340.13	677627.66	596804.43	32° 51' 44.94 N	104° 1' 5.05 W	Point
Chimay 5H Surface	0.00	0.00	0.00	677633.60	596464.30	32° 51' 45.01 N	104° 1' 9.04 W	Point
Chimay 5H PBHL	5024.28	21.10	4866.90	677654.70	601331.20	32° 51' 45.07 N	104° 0' 11.98 W	Point



Section Distances

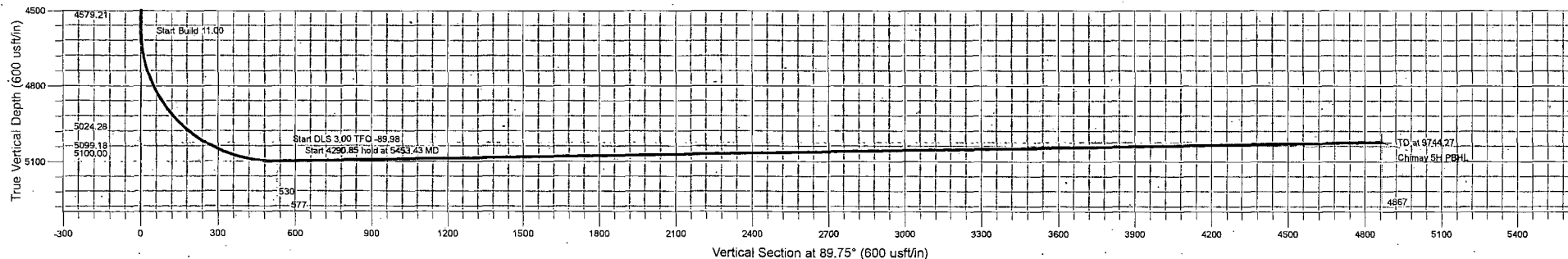
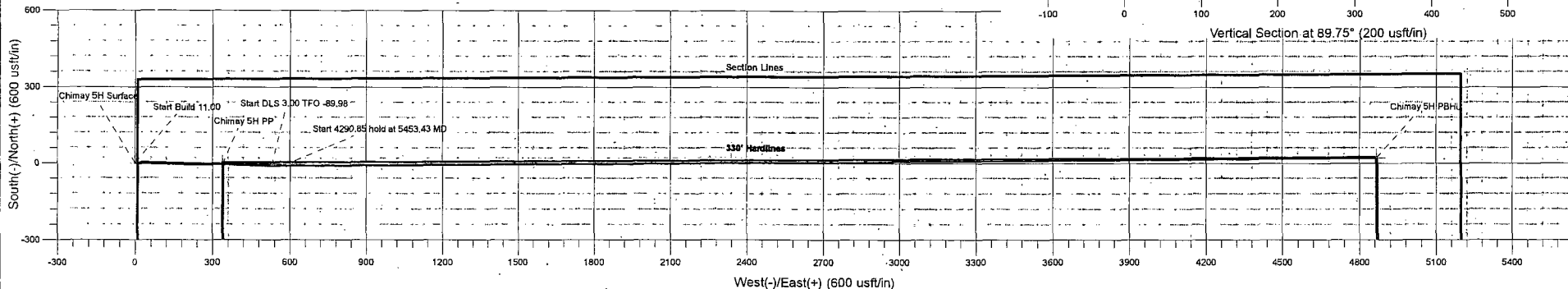
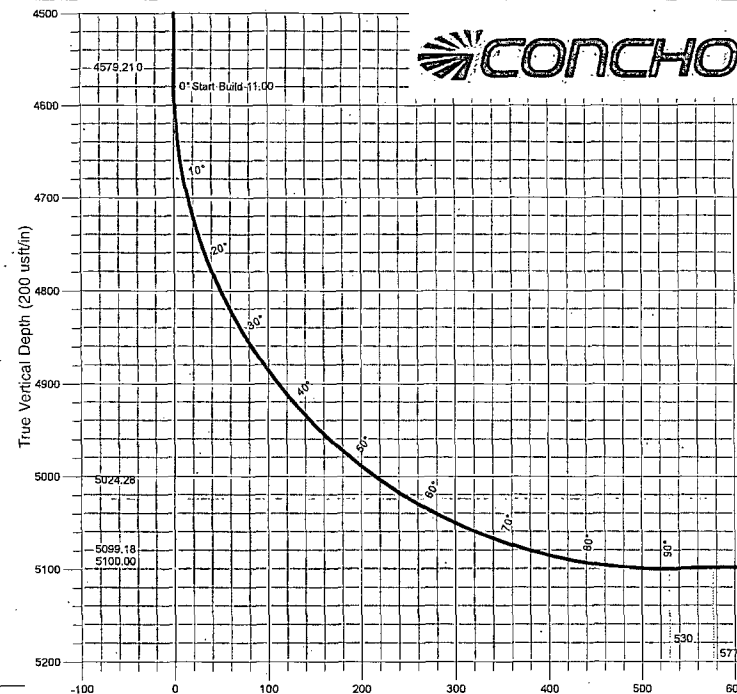
Sec1, T17S, R29E
SHL - Unit I
2310'FSL, 10'FEL

Sec6, T17S, R30E
PP
2301'FSL, 330'FWL
PBHL - Unit I
2301'FSL, 330'FEL



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.32°

Magnetic Field
Strength: 48658.9snT
Dip Angle: 60.63°
Date: 5/9/2014
Model: IGRF2010



Archer

ARCHER DIRECTIONAL DRILLING SERVICES
12101 Cutten Rd. Houston, Texas 77066
Phone: 281-301-2600 Fax: 281-301-2795

Design: Plan #2 (5H/Lateral)
Created By: Ivonne Gonzalez
Date: 15:42, May 09 2014

COG OPERATING, LLC

Eddy County, NM

Chimay 6 Federal Com UBB 5H

5H

Lateral

Plan: Plan #2

Standard Survey Report

09 May, 2014

Section Distances

Sec1,T17S,R29E

SHL - Unit I

2310'FSL, 10'FEL

Sec6,T17S,R30E

PP

2301'FSL, 330'FWL

PBHL - Unit I

2301'FSL, 330'FEL

Archer Survey Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County, NM	ITVD Reference:	3686'GL+14'KB @ 3700.00usft (Planning)
Site:	Chimay 6 Federal Com UBB 5H	MD Reference:	3686'GL+14'KB @ 3700.00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Project	Eddy County, NM		
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						Chimay 6 Federal Com UBB 5H					
Site Position:		Northing:		677,633.60 usft		Latitude:		32° 51' 45.01 N			
From:		Map		Easting:		596,464.30 usft		Longitude:		104° 1' 9.04 W	
Position Uncertainty:		0.00 usft		Slot Radius:		13.200 in		Grid Convergence:		0.17 °	

Well:	5H					
Well Position	+N/-S	0.00 usft	Northing:	677,633.60 usft	Latitude:	32° 51' 45.01 N
	+E/-W	0.00 usft	Easting:	596,464.30 usft	Longitude:	104° 1' 9.04 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,686.00 usft	

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/9/2014	7.48	60.63	48,659

Design: Plan #2				
Audit Notes:				
Version:		Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (ITVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.75

Survey Tool Program		Date	5/9/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	9,744.27	Plan #2 (Lateral)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Archer Survey Report

Company:	COG OPERATING LLC	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM	TVD Reference:	3686 GL+14 KB @ 3700'00usft (Planning)
Site:	Chimay 6 Federal Com UBB 5H	MD Reference:	3686 GL+14 KB @ 3700'00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,579.21	0.00	0.00	4,579.21	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 11.00										
4,600.00	2.29	91.00	4,599.99	-0.01	0.41	0.41	11.00	11.00	0.00	
4,650.00	7.79	91.00	4,649.78	-0.08	4.80	4.80	11.00	11.00	0.00	
4,700.00	13.29	91.00	4,698.92	-0.24	13.94	13.94	11.00	11.00	0.00	
4,750.00	18.79	91.00	4,746.96	-0.48	27.75	27.74	11.00	11.00	0.00	
4,800.00	24.29	91.00	4,793.45	-0.80	46.09	46.09	11.00	11.00	0.00	
4,850.00	29.79	91.00	4,837.97	-1.20	68.81	68.80	11.00	11.00	0.00	

Archer

Survey Report

Company:	COG OPERATING, LLC	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM	TVD Reference:	3686 GL+14 KB @ 3700.00usft (Planning)
Site:	Chimay 6 Federal Com UBB 5H	MD Reference:	3686 GL+14 KB @ 3700.00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.00	35.29	91.00	4,880.10	-1.67	95.69	95.68	11.00	11.00	0.00
4,950.00	40.79	91.00	4,919.47	-2.21	126.48	126.47	11.00	11.00	0.00
5,000.00	46.29	91.00	4,955.70	-2.81	160.90	160.89	11.00	11.00	0.00
5,050.00	51.79	91.00	4,988.47	-3.47	198.64	198.62	11.00	11.00	0.00
5,100.00	57.29	91.00	5,017.46	-4.18	239.34	239.32	11.00	11.00	0.00
5,150.00	62.79	91.00	5,042.43	-4.93	282.63	282.61	11.00	11.00	0.00
5,200.00	68.29	91.00	5,063.12	-5.73	328.12	328.09	11.00	11.00	0.00
5,250.00	73.79	91.00	5,079.37	-6.55	375.38	375.35	11.00	11.00	0.00
5,300.00	79.29	91.00	5,091.00	-7.40	423.98	423.94	11.00	11.00	0.00
5,350.00	84.79	91.00	5,097.93	-8.26	473.47	473.43	11.00	11.00	0.00
5,400.00	90.29	91.00	5,100.07	-9.14	523.40	523.35	11.00	11.00	0.00
5,406.48	91.00	91.00	5,100.00	-9.25	529.88	529.84	11.00	11.00	0.00
Start DLS 3.00 TFO-89.98									
5,453.43	91.00	89.59	5,099.18	-9.49	576.82	576.77	3.00	0.00	-3.00
Start 4290.85 hold at 5453.43 MD									
5,500.00	91.00	89.59	5,098.37	-9.16	623.38	623.33	0.00	0.00	0.00
5,600.00	91.00	89.59	5,096.62	-8.45	723.36	723.32	0.00	0.00	0.00
5,700.00	91.00	89.59	5,094.88	-7.73	823.34	823.30	0.00	0.00	0.00
5,800.00	91.00	89.59	5,093.13	-7.02	923.33	923.29	0.00	0.00	0.00
5,900.00	91.00	89.59	5,091.39	-6.31	1,023.31	1,023.27	0.00	0.00	0.00
6,000.00	91.00	89.59	5,089.64	-5.59	1,123.29	1,123.26	0.00	0.00	0.00
6,100.00	91.00	89.59	5,087.90	-4.88	1,223.27	1,223.24	0.00	0.00	0.00
6,200.00	91.00	89.59	5,086.15	-4.17	1,323.26	1,323.23	0.00	0.00	0.00
6,300.00	91.00	89.59	5,084.40	-3.46	1,423.24	1,423.21	0.00	0.00	0.00
6,400.00	91.00	89.59	5,082.66	-2.74	1,523.22	1,523.19	0.00	0.00	0.00
6,500.00	91.00	89.59	5,080.91	-2.03	1,623.20	1,623.18	0.00	0.00	0.00
6,600.00	91.00	89.59	5,079.17	-1.32	1,723.18	1,723.16	0.00	0.00	0.00
6,700.00	91.00	89.59	5,077.42	-0.60	1,823.17	1,823.15	0.00	0.00	0.00
6,800.00	91.00	89.59	5,075.68	0.11	1,923.15	1,923.13	0.00	0.00	0.00
6,900.00	91.00	89.59	5,073.93	0.82	2,023.13	2,023.12	0.00	0.00	0.00
7,000.00	91.00	89.59	5,072.18	1.53	2,123.11	2,123.10	0.00	0.00	0.00
7,100.00	91.00	89.59	5,070.44	2.25	2,223.10	2,223.08	0.00	0.00	0.00
7,200.00	91.00	89.59	5,068.69	2.96	2,323.08	2,323.07	0.00	0.00	0.00
7,300.00	91.00	89.59	5,066.95	3.67	2,423.06	2,423.05	0.00	0.00	0.00
7,400.00	91.00	89.59	5,065.20	4.39	2,523.04	2,523.04	0.00	0.00	0.00
7,500.00	91.00	89.59	5,063.46	5.10	2,623.02	2,623.02	0.00	0.00	0.00
7,600.00	91.00	89.59	5,061.71	5.81	2,723.01	2,723.01	0.00	0.00	0.00
7,700.00	91.00	89.59	5,059.97	6.53	2,822.99	2,822.99	0.00	0.00	0.00
7,800.00	91.00	89.59	5,058.22	7.24	2,922.97	2,922.98	0.00	0.00	0.00
7,900.00	91.00	89.59	5,056.47	7.95	3,022.95	3,022.96	0.00	0.00	0.00
8,000.00	91.00	89.59	5,054.73	8.66	3,122.94	3,122.94	0.00	0.00	0.00
8,100.00	91.00	89.59	5,052.98	9.38	3,222.92	3,222.93	0.00	0.00	0.00
8,200.00	91.00	89.59	5,051.24	10.09	3,322.90	3,322.91	0.00	0.00	0.00
8,300.00	91.00	89.59	5,049.49	10.80	3,422.88	3,422.90	0.00	0.00	0.00

Archer Survey Report

Company:	COG OPERATING LLC	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM	TVD Reference:	3686'GL+14'KB @13700.00usft (Planning)
Site:	Chimay 5H Federal Com UBB 5H	MD Reference:	3686'GL+14'KB @13700.00usft (Planning)
Well:	5H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,400.00	91.00	89.59	5,047.75	11.52	3,522.86	3,522.88	0.00	0.00	0.00	
8,500.00	91.00	89.59	5,046.00	12.23	3,622.85	3,622.87	0.00	0.00	0.00	
8,600.00	91.00	89.59	5,044.25	12.94	3,722.83	3,722.85	0.00	0.00	0.00	
8,700.00	91.00	89.59	5,042.51	13.65	3,822.81	3,822.83	0.00	0.00	0.00	
8,800.00	91.00	89.59	5,040.76	14.37	3,922.79	3,922.82	0.00	0.00	0.00	
8,900.00	91.00	89.59	5,039.02	15.08	4,022.78	4,022.80	0.00	0.00	0.00	
9,000.00	91.00	89.59	5,037.27	15.79	4,122.76	4,122.79	0.00	0.00	0.00	
9,100.00	91.00	89.59	5,035.53	16.51	4,222.74	4,222.77	0.00	0.00	0.00	
9,200.00	91.00	89.59	5,033.78	17.22	4,322.72	4,322.76	0.00	0.00	0.00	
9,300.00	91.00	89.59	5,032.04	17.93	4,422.70	4,422.74	0.00	0.00	0.00	
9,400.00	91.00	89.59	5,030.29	18.65	4,522.69	4,522.73	0.00	0.00	0.00	
9,500.00	91.00	89.59	5,028.54	19.36	4,622.67	4,622.71	0.00	0.00	0.00	
9,600.00	91.00	89.59	5,026.80	20.07	4,722.65	4,722.69	0.00	0.00	0.00	
9,700.00	91.00	89.59	5,025.05	20.78	4,822.63	4,822.68	0.00	0.00	0.00	
9,744.27	91.00	89.59	5,024.28	21.10	4,866.90	4,866.95	0.00	0.00	0.00	
TD at 9744.27										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Chimay 5H Surface	0.00	0.00	0.00	0.00	0.00	677,633.60	596,464.30	32° 51' 45.01 N	104° 1' 9.04 W	
- plan hits target center										
- Point										
Chimay 5H PP	0.00	0.00	0.00	-5.94	340.13	677,627.66	596,804.43	32° 51' 44.94 N	104° 1' 5.05 W	
- plan misses target center by 340.18usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Point										
Chimay 5H PBHL	0.00	0.00	5,024.28	21.10	4,866.90	677,654.70	601,331.20	32° 51' 45.07 N	104° 0' 11.98 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4579	4579	0	0	Start Build 11.00	
5406	5100	-9	530	Start DLS 3.00 TFO -89.98	
5453	5099	-9	577	Start 4290.85 hold at 5453.43 MD	
9744	5024	21	4867	TD at 9744.27	