

Submit 3 Copies To Appropriate District
Office
District I
1625 N French Dr., Hobbs, NM 88240
District II
1301 W Grand Ave., 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

Form C-103
May 27, 2004

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

WELL API NO. 30-015-40412
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Grave Digger State Com
8. Well Number 5H
9. OGRID Number 229137
10. Pool name or Wildcat N Seven Rivers; Glorieta-Yeso

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator
COG Operating LLC

3. Address of Operator
One Concho Center 600 W Illinois Midland, TX 79701

4. Well Location
Unit Letter **D** : **205'** feet from the **North** line and **990'** feet from the **West** line
Section **2** Township **20S** Range **25E** NMPM County **EDDY**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3473' GR

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type _____ Depth to Groundwater _____ Distance from nearest fresh water well _____ Distance from nearest surface water _____

Pit Liner Thickness: _____ Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK ☐	REMEDIAL WORK ☐
TEMPORARILY ABANDON ☐	ALTERING CASING ☐
PULL OR ALTER CASING ☐	COMMENCE DRILLING OPNS ☐
PLUG AND ABANDON ☐	P AND A ☐
CHANGE PLANS ☐	CASING/CEMENT JOB ☐
MULTIPLE COMPL ☐	
OTHER ☒ Change Casing Program	OTHER ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions. Attach wellbore diagram of proposed completion or recompletion

COG proposes to drill a 12 1/4" hole to 1100' w/ fresh water, run 8 5/8" 32# J-55 and cement to surface. Drill 7 7/8" hole to 2415' MD and kick off and drill curve to 3237' MD. Drill a 7 7/8" lateral to new BHL @ 2935' TVD 7407' MD. Run a 5 1/2" 17# L-80 casing to TD cement to surface with 800 sacks.

Directional Plan attached.

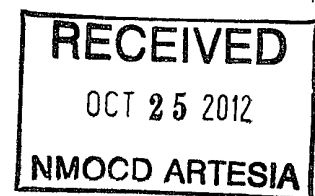
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE [Signature] TITLE Permitting Tech DATE 10/24/12

Type or print name Kelly J. Holly E-mail address: kholly@concho.com Telephone No 432-685-4384
For State Use Only

APPROVED BY: [Signature] TITLE Geologist DATE 10/25/2012

Conditions of Approval (if any):





COG Operating LLC

Eddy County, NM (NAN27 NME)

Grave Digger State Com #5H

OH

Plan #1 8-3/4" Hole

Surface: 205' FNL, 990' FWL, Sec 2, T20S, R25E, Lot 4

PP: 330' FNL, 990' FWL, Sec 2, T20S, R25E, Lot 4

BHL: 340' FSL, 980' FWL, Sec 2, T20S, R25E, Unit M

Standard Planning Report

23 October, 2012





Scientific Drilling
Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	RF @ 3486 00usft (JW #4)
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	RF @ 3486 00usft (JW #4)
Site:	Grave Digger State Com	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" Hole		

Project:	Eddy County, NM (NAN27 NME)		
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		Using geodetic scale factor

Site:	Grave Digger State Com		
Site Position:		Northing:	585,274 50 usft
From:	Map	Easting:	463,340 80 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 36' 32 284 N
		Longitude:	104° 27' 8 584 W
		Grid Convergence:	-0 06 °

Well:	#5H			
Well Position	+N-S	27 50 usft	Northing:	585,302 00 usft
	+E-W	-2,446 12 usft	Easting:	460,894 90 usft
Position Uncertainty		0 00 usft	Latitude:	32° 36' 32 528 N
			Longitude:	104° 27' 37 179 W
		Wellhead Elevation:	Ground Level:	3,473 00 usft

Wellbore:	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	BGGM2012	10/11/2012	7 96	60 32	48,596

Design:	Plan #1 8-3/4" Hole			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0 00
Vertical Section	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 00	0 00	0 00	180 33

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,414 50	0 00	0 00	2,414 50	0 00	0 00	0 00	0 00	0 00	0 00	
3,237 22	90 50	180 33	2,935 35	-525 40	-3 00	11 00	11 00	-21 84	180 33	
7,406 56	90 50	180 33	2,899 00	-4,694 52	-26 80	0 00	0 00	0 00	0 00	PBHL



Scientific Drilling
Planning Report



Database: EDM 5000 1 Single User Db
Company: COG Operating, LLC
Project: Eddy County, NM (NAN27 NME)
Site: Grave Digger State Corn
Well: #5H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well #5H
RF @ 3486 00usft (JW.#4)
RF @ 3486 00usft (JW.#4)
Grid
Minimum Curvature

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)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,414 50	0 00	0 00	2,414 50	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start DLS 11.00 TFO 180.33									
2,500 00	9 41	180 33	2,499 62	-7 00	-0 04	7 00	11 00	11 00	0 00
2,600 00	20 41	180 33	2,596 10	-32 68	-0 19	32 68	11 00	11 00	0 00
2,700 00	31 41	180 33	2,685 92	-76 30	-0 44	76 30	11 00	11 00	0 00
2,800 00	42 41	180 33	2,765 76	-136 26	-0 78	136 26	11 00	11 00	0 00
2,806 58	43 13	180 33	2,770 59	-140 73	-0 80	140 73	11 00	11 00	0 00
PP=330' FNL									
2,900 00	53 41	180 33	2,832 69	-210 35	-1 20	210 35	11 00	11 00	0 00
3,000 00	64 41	180 33	2,884 26	-295 85	-1 69	295 85	11 00	11 00	0 00
3,100 00	75 41	180 33	2,918 56	-389 61	-2 22	389 62	11 00	11 00	0 00
3,200 00	86 41	180 33	2,934 35	-488 20	-2 79	488 21	11 00	11 00	0 00
3,237 22	90 50	180 33	2,935 35	-525 40	-3 00	525 41	11 00	11 00	0 00
EOC Start 4169.34 hold at 3237.22 MD									
3,300 00	90 50	180 33	2,934 80	-588 18	-3 36	588 19	0 00	0 00	0 00
3,400 00	90 50	180 33	2,933 93	-688 17	-3 93	688 18	0 00	0 00	0 00
3,500 00	90 50	180 33	2,933 06	-788 17	-4 50	788 18	0 00	0 00	0 00
3,600 00	90 50	180 33	2,932 19	-888 16	-5 07	888 18	0 00	0 00	0 00
3,700 00	90 50	180 33	2,931 32	-988 16	-5 64	988 17	0 00	0 00	0 00
3,800 00	90 50	180 33	2,930 44	-1,088 15	-6 21	1,088 17	0 00	0 00	0 00
3,900 00	90 50	180 33	2,929 57	-1,188 14	-6 78	1,188 16	0 00	0 00	0 00
4,000 00	90 50	180 33	2,928 70	-1,288 14	-7 35	1,288 16	0 00	0 00	0 00
4,100 00	90 50	180 33	2,927 83	-1,388 13	-7 93	1,388 16	0 00	0 00	0 00
4,200 00	90 50	180 33	2,926 96	-1,488 13	-8 50	1,488 15	0 00	0 00	0 00
4,300 00	90 50	180 33	2,926 09	-1,588 12	-9 07	1,588 15	0 00	0 00	0 00
4,400 00	90 50	180 33	2,925 21	-1,688 12	-9 64	1,688 14	0 00	0 00	0 00
4,500 00	90 50	180 33	2,924 34	-1,788 11	-10 21	1,788 14	0 00	0 00	0 00
4,600 00	90 50	180 33	2,923 47	-1,888 11	-10 78	1,888 14	0 00	0 00	0 00
4,700 00	90 50	180 33	2,922 60	-1,988 10	-11 35	1,988 13	0 00	0 00	0 00
4,800 00	90 50	180 33	2,921 73	-2,088 10	-11 92	2,088 13	0 00	0 00	0 00
4,900 00	90 50	180 33	2,920 85	-2,188 09	-12 49	2,188 13	0 00	0 00	0 00
5,000 00	90 50	180 33	2,919 98	-2,288 08	-13 06	2,288 12	0 00	0 00	0 00
5,100 00	90 50	180 33	2,919 11	-2,388 08	-13 63	2,388 12	0 00	0 00	0 00
5,200 00	90 50	180 33	2,918 24	-2,488 07	-14 21	2,488 11	0 00	0 00	0 00
5,300 00	90 50	180 33	2,917 37	-2,588 07	-14 78	2,588 11	0 00	0 00	0 00
5,400 00	90 50	180 33	2,916 49	-2,688 06	-15 35	2,688 11	0 00	0 00	0 00
5,500 00	90 50	180 33	2,915 62	-2,788 06	-15 92	2,788 10	0 00	0 00	0 00
5,600 00	90 50	180 33	2,914 75	-2,888 05	-16 49	2,888 10	0 00	0 00	0 00
5,700 00	90 50	180 33	2,913 88	-2,988 05	-17 06	2,988 10	0 00	0 00	0 00
5,800 00	90 50	180 33	2,913 01	-3,088 04	-17 63	3,088 09	0 00	0 00	0 00
5,900 00	90 50	180 33	2,912 14	-3,188 04	-18 20	3,188 09	0 00	0 00	0 00
6,000 00	90 50	180 33	2,911 26	-3,288 03	-18 77	3,288 08	0 00	0 00	0 00
6,100 00	90 50	180 33	2,910 39	-3,388 02	-19 34	3,388 08	0 00	0 00	0 00
6,200 00	90 50	180 33	2,909 52	-3,488 02	-19 91	3,488 08	0 00	0 00	0 00
6,300 00	90 50	180 33	2,908 65	-3,588 01	-20 49	3,588 07	0 00	0 00	0 00
6,400 00	90 50	180 33	2,907 78	-3,688 01	-21 06	3,688 07	0 00	0 00	0 00
6,500 00	90 50	180 33	2,906 90	-3,788 00	-21 63	3,788 06	0 00	0 00	0 00
6,600 00	90 50	180 33	2,906 03	-3,888 00	-22 20	3,888 06	0 00	0 00	0 00
6,700 00	90 50	180 33	2,905 16	-3,987 99	-22 77	3,988 06	0 00	0 00	0 00
6,800 00	90 50	180 33	2,904 29	-4,087 99	-23 34	4,088 05	0 00	0 00	0 00
6,900 00	90 50	180 33	2,903 42	-4,187 98	-23 91	4,188 05	0 00	0 00	0 00
7,000 00	90 50	180 33	2,902 54	-4,287 98	-24 48	4,288 05	0 00	0 00	0 00



Scientific Drilling
Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	RF @ 3486 00usft (JW #4)
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	RF @ 3486 00usft (JW #4)
Site:	Grave Digger State Com	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" Hole		

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)
7,100 00	90 50	180 33	2,901 67	-4,387 97	-25 05	4,388 04	0 00	0 00	0 00
7,200 00	90 50	180 33	2,900 80	-4,487 97	-25 62	4,488 04	0 00	0 00	0 00
7,300 00	90 50	180 33	2,899 93	-4,587 96	-26 19	4,588 03	0 00	0 00	0 00
7,400 00	90 50	180 33	2,899 06	-4,687 95	-26 76	4,688 03	0 00	0 00	0 00
7,406 56	90 50	180 33	2,899 00	-4,694 52	-26 80	4,694 60	0 00	0 00	0 00
PBHL									

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PP=330° FNL		0 00	360 00	2,788 02	-125 00	-0 71	585,177 01	460,894 19	32° 36' 31 291 N	104° 27' 37 186 W
	- plan misses target center by 23 48usft at 2806 58usft MD (2770 59 TVD, -140 73 N, -0 80 E)									
	- Point									
PBHL		0 00	0 00	2,899 00	-4,694 52	-26 80	580,607 90	460,868 10	32° 35' 46 076 N	104° 27' 37 427 W
	- plan hits target center									
	- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
2,414 50	2,414 50	0 00	0 00	KOP Start DLS 11 00 TFO 180 33
3,237 22	2,935 35	-525 40	-3 00	EOC Start 4169 34 hold at 3237 22 MD



Grave Digger State Com#5H
Eddy County, NM (NAN27 NME)
Northing: (Y) 585302.00
Easting: (X) 460894.90
Plan #1 8-3/4" Hole



Azimuths to Grid North
True North 0 03°
Magnetic North 8 03°

Magnetic Field
Strength 48596 Gauss
Dip Angle 60 32°
Date 10/11/2012
Model BGGM2012

To convert a Magnetic Direction to a Grid Direction, Add 8 03°
To convert a True Direction to a Grid Direction, Add 0 07°

WELL DETAILS							
+N/S	+E/W	Ground Level	3473.00	Latitude	Longitude		
0.00	0.00	Northing	585302.00	Easting	460894.90	32° 38' 32.528 N	104° 27' 37.179 W

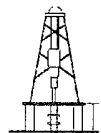
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2414.50	0.00	0.00	2414.50	0.00	0.00	0.00	0.00	0.00	
3237.22	90.50	180.33	2835.35	-525.40	-3.00	11.00	180.33	525.41	
7408.56	90.50	180.33	2899.00	-4684.52	-26.80	0.00	0.00	4684.60	PBHL

DESIGN TARGET DETAILS					
Name	TVD	+N/S	+E/W	Northing	Easting
PP=330' FNL	2788.02	-125.00	-0.71	585177.01	460894.18
PBHL	2899.00	-4684.52	-26.80	580607.00	460898.10

SITE DETAILS			
Grave Digger State Com			
Site Centre Northing	585274.50		
Easting	463340.80		
Positional Uncertainty	0.00		
Convergence	-0.06		
Local North	Grid		

Map System	US State Plane 1927 (Exact solution)
Datum	NAD 1927 (NADCON CONUS)
Ellipsoid	Clarke 1866
Zone Name	New Mexico East 3001
Local Origin	Well #5H Grid North
Latitude	32° 38' 32.528 N
Longitude	104° 27' 37.179 W
Grid East	460894.90
Grid North	585302.00
Scale Factor	1.000
Geomagnetic Model	BGGM2012
Sample Date	11-Oct-12
Magnetic Declination	7.96°
Dip Angle from Horizontal	60.32°
Magnetic Field Strength	48596
To convert a Magnetic Direction to a Grid Direction, Add 8 03°	
To convert a Magnetic Direction to a True Direction, Add 7.96° East	
To convert a True Direction to a Grid Direction, Add 0 07°	

PROJECT DETAILS			
Eddy County, NM (NAN27 NME)			
Geodetic System	US State Plane 1927 (Exact solution)		
Datum	NAD 1927 (NADCON CONUS)		
Ellipsoid	Clarke 1866		
Zone	New Mexico East 3001		
System Datum	Mean Sea Level		



RF @ 3486.00usft (W #4)
Ground Level 3473.00

Info Print
16.20 October 23, 2012
Scientific Drilling
2004 Trade Drive
Midland, TX 79701

