ATS -10-84

ζ.	OCD Hobbs	REC	;eive	þ				
Forn 3160-3 (April 2004)		JUL	302010		OMB N	APPROVED to 1004-0137 March 31, 20		
DEPARTM	NITED STATES	INTERIORIOE		C	5 Lease Serial No. NMLC-02950			
APPLICATION FOR	OF LAND MAN	IAGEMENT			6 If Indian, Allotee N/A	e or Tribe N	ame	
1a. Type of work: 🖌 DRILL	REENTI	3R			7 If Unit or CA Agr N/A	eement, Nar	ne and No.	,
lb. Type of Well: ✔Oul Well Gas W	elle Other	Single Zo	one Multir	le Zone	8 Lease Name and M C FEDER		(202	51
2. Name of Operator COG Operating LLO		122913	\rightarrow		9 API Well No. 30-025-	209	177	-
3a Address 550 W. Texas, Suite 1300 Mid	land TX 79701	3b. Phone No. (inclute (432) 685-43			10. Field and Pool, or Maljamar;			-
At surface	SL & 2444' FWL,	Unit K UNO	SUR FA	ACE OX	11. Sec., T. R M or E Sec 21, T17S,		vey or Area	-
At proposed prod. zone BHL: 2310' F 4 Distance in miles and direction from nearest to 2.5 miles south of Ma		LC	CATIO	N	12 County or Parish Lea		13 State NM	-
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any)	1972'	16 No of acres in 640	lease	17. Spacir 40	ng Unit dedicated to this	well		-
 8 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 	330'	19 Proposed Depth 2221 MD 7100			BIA Bond No. on file 000215			-
Elevations (Show whether DF, KDB, RT, G 4040' GL	L, etc.)	7200 +1/1 22. Approximate da 07/2		t*	23. Estimated duration 10 days	on		
		24. Attachmen	its					
 The following, completed in accordance with the refl. Well plat certified by a registered surveyor A Drilling Plan. A Surface Use Plan (if the location is on Natisup SuPO shall be filed with the appropriate Fores 	ional Forest System	Lands, the 5	Bond to cover th Item 20 above) Operator certific	e operatio	is torm ns unless covered by an prmation and/or plans as	-		9
25. Signature		Name (Printe	authorized office ed/Typed)			Date		=
ttle Regulatory Analyst	por	Köbyi	1 M. Odom			04/12	2/2010	-
pproved by (Signature) /s/ Don Pet	erson	Name (Printe	ed/Typed) /s/ Do	n Pete	rson	Date + J	UL 2 9	20
Itle FIELD MANAGER		Office	CARLSBAD			L		-
pplication approval does not warrant or certify th onduct operations thereon. conditions of approval, if any, are attached.	nat the applicant hold.	s legalor equitable ti	tle to those right		ject lease which would e PROVAL FO	-	·	5
itle 18 U.S.C. Section 1001 and Title 43 U.S.C. Sect tates any false, fictitious or fraudulent statements	ion 1212, make it a cr or representations as t	ime for any person ki o any matter within its	nowingly and w s jurisdiction	illfully to m	nake to any department of	or agency of	the United	=
(Instructions on page 2) Well-	becomes	othe	rdoy a	tap	projima	tely	5,100	- M
Roswell Controlled Water Basin		۰. ١	1/ 1	AUG	2 0 2010	V		
E ATTACHED FOR				Aj	proval Subject to & Special Stin	o Genera	l Requiren	nent
NDITIONS OF APPRO					& Special Stip	Julations	Attached	

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State of New Mexico Energy, Minerals and Natural Resources Department 1625 N. FRENCH DR., HOBBS, NM 66240 Form C-102 Revised October 12, 2005 DISTRICT II HOBBSCOD CONSERVATION DIVISION Submit to Appropriate District Office 1301 W. GRAND AVENUE, ARTESIA. State Lease - 4 Copies 1220 SOUTH ST. FRANCIS DR. Fee Lease - 3 Copies Santa Fe, New Mexico 87505 DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410 DISTRICT IV WELL LOCATION AND ACREAGE DEDICATION PLAT □ AMENDED REPORT 1220 S. ST. FRANCIS DR., SANTA FE, NM 87505 Pool Code Pool Name **API** Number 30-025-44500 MALJAMAR; YESO, WEST **Property** Code **Property** Name Well Number 302519 MC FEDERAL 60 **Operator** Name Elevation OGRID No. COG OPERATING, LLC 229137 4040 Surface Location Lot Idn Feet from the North/South line Feet from the East/West line County UL or lot No. Section Township Range Κ 21 17 - S32-F 1972 SOUTH 2444 WFST 1 FA Bottom Hole Location If Different From Surface Feet from the North/South line East/West line UL or lot No. Section Township Range Lot Idn Feet from the County Κ 32-E 2310 2310 WEST LEA 17-S SOUTH 21 **Consolidation** Code **Dedicated** Acres Joint or Infill Order No. 40 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 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 GEODETIC COORDINATES or unlessed inneral 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 mineral or working interest, NAD 27 NME SURFACE LOCATION Y=661822.8 N or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. X=672581.1 E LAT.=32.818178° N DETAIL LONG.=103.771569* W 4049 4' 4/12/201 4045.7'_ Signature Date BOTTOM HOLE LOCATION Y=662160.4 N 600 Robyn Odom Ο X=672444.8 E Printed Name 600 4033.6 4037.7 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plet (as plotted from field notes of actival surveys, made by the or under my supervision, and that the same is true and sorriect to the less, or my benef. 12641 MARCH 30, 2010 B.H. 2310 GRID. AZ.-338'01'24" HORZ, DIST.-364.1 S L 2444 SEE DETAIL 30, 2010 Date Surveyed Signature Seal, of c) Professional Sunveyor Chill ò 972 231 4/8/10 09.11.1034 Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239

RECEIVED

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COG Operating LLC Master Drilling Plan Revised 7-22-09 Maljamar ; Yeso Use for Sections 3-35, T17S, R32E Lea County, NM

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JUL 3 0 2010 HOBBSOCD

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	900'
Base of Salt	1700'
Yates	2000'
Seven Rivers	2375'
Queen	2975'
Grayburg	3475'
San Andres	3775'
Glorietta	5225'
Yeso Group	5325'

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas

150'	Fresh Water
3475'	Oil/Gas
3775'	Oil/Gas
5225'	Oil/Gas
5325'	Oil/Gas
	3475' 3775' 5225'

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 650° and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to 2100' and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing, to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or the environment.

COG Operating LLC Master Drilling Plan Revised 7-22-09 Maljamar ; Yeso, West Use for Sections 3-35, T17S, R32E Lea County, NM

4. **Casing Program**

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		OD		•	Jt.,	
Hole Size	Interval	Casing	Weight	Grade	Condition	burst/collapse/tension
17 1/2"	0-650'833	13 3/8"	48#	H-40orJ-55	ST&C/New	6.03/2.578/10.32
11" or 12-1/4"	0-2100'	8 5/8"	24or32#	J-55	ST&C/New	1.85/1.241/4.78
7 7/8"	0-T.D.	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	1.59/1.463/2.05

5. **Cement Program**

13 3/8" Surface Casing:

8 5/8" Intermediate Casing:

Class C, 4% Gel, 2% CaCl2, .25 pps CF, 450 sx lead, yield-1.98 + 200 sx tail, yield-1.32.

11" Hole:

Single Stage: 50:50:10, 400 sx lead, yield-2.45 +Class C, 200 sx tail, yield-1.32, back to surface.

Multi-Stage: Stage 1: Class C, 400 sx, vield - 1.32; Stage 2: Class C, 200 sx, yield - 1.32, back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 650'

5 1/2" Production Casing:

CBA

Single Stage: 35:65:6, 500 sx Lead, yield-2.05 + 50:50:2, 400 sx Tail, yield-1.37, to 200' minimum tie back to intermediate casing.

Multi-Stage: Stage 1: 50:50:2, 400 sx, yield - 1.37;Stage 2: 35:65:6, 500 sx, yield -2.05, to 200' minimum tie back to intermediate casing. Multi stage tool to be set at approximately, depending on hole conditions, $\mathbf{N} - 2000^{\circ}$.

COG Operating LLC Master Drilling Plan Revised 7-22-09 Maljamar ; Yeso Use for Sections 3-35, T17S, R32E Lea County, NM

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See 70A

6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. The BOP will be nippled up on the 13 3/8" surface casing with BOP equipment and tested together to 1000 psi by rig pump in-one-test. The BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of the intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

7. Types and Characteristics of the Proposed Mud System

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-650' 833	Fresh Water	8.5	28	N.C.
\$50-2100'	Brine	10	30	N.C.
2100'-TD	Cut Brine	8.7-9.1	29	N.C.

Sufficient mud materials will be kept at the well site to maintain mud properties and meet minimum lost circulation and weight increase requirements at all times.

8. Auxiliary Well Control and Monitoring Equipment

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

COG Operating LLC Master Drilling Plan Revised 7-22-09 Maljamar ; Yeso Use for Sections 3-35, T17S, R32E Lea County, NM

9. Logging, Testing and Coring Program See COA

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to 8 5/8" casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined after the 5 ¹/₂" production casing has been cemented at TD, based on drill shows and log evaluation.

10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hold pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 15 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.



COG Operating LLC

Lea County, NM (NAD27 NME) MC Federal #60 MC Federal #60 RECEIVED

JUL 30 2010 HOBBSOCD

OH

Plan: Plan #1 - 7-7/8" Hole SHL = 1972' FSL & 2444' FWL BHL = 2300' FSL & 2300' FWL Top of Paddock = 2300' FSL & 2300' FWL @ 5450' TVD

Standard Planning Report

20 May, 2010



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Scientific Drilling

Planning Report



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(°/100ft)

NOW, GROUND ADDRESS

× 104.500-20.7

Dogleg

Rate

(°/100ft)

Build

Rate

(°/100ft)

272 2022.032.37 . 19 1 16 15.9 Well MC Federal #60 Local Co-ordinate Reference: EDM 5000 1 Single User Db Database: 1.35 COG Operating LLC TVD Reference: GL Elev @ 4040 00ft Company: MD Reference: North Reference: Lea County, NM (NAD27 NME) GL Elev @ 4040 00ft Project: 100 Site: Well: MC Federal #60 Grid Survey Calculation Method: Minimum Curvature MC Federal #60 Wellbore: OН Design: Plan #1 - 7-7/8" Hole 2

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East HL-MC #60 - plan misses target center - Rectangle (sides W0 00 I	0 00 0 00 by 364 08ft at 0 00 H200 00 D0 00)	0 00 0ft MD (0 00 T∨E	337 60 0, 0 00 N, 0	-136 30 00 E)	662,160 40	672,444 80	32° 49' 8 789 N	103° 46' 19 224 W
South HL-MC #60 - plan misses target center - Rectangle (sides W200 0	0 00 0 00 by 364 08ft at 0 00 0 H0 00 D0 00)	0 00 0ft MD (0 00 T∨E	337 60 0, 0 00 N, 0	-136 30 00 E)	662,160 40	672,444 80	32° 49' 8.789 N	103° 46' 19 224 W
TG1-MC #60 - plan hits target center - Point	0 00 0 00	5,450 00	327 60	-146 30	662,150.40	672,434 80	32° 49' 8 690 N	103° 46' 19 342 W
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COG Operating LLC Exhibit #9 BOPE and Choke Schematic



NOTES REGARDING THE BLOWOUT PREVENTERS Master Drilling Plan Eddy County, New Mexico

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- 1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
- 2. Wear ring to be properly installed in head.
- 3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
- 4. All fittings to be flanged.
- 5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
- 6. All choke and fill lines to be securely anchored especially ends of choke lines.
- 7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
- 8. Kelly cock on Kelly.
- 9. Extension wrenches and hands wheels to be properly installed.
- 10. Blow out preventer control to be located as close to driller's position as feasible.
- 11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

Line R. A. Brinner	UNITED STATE DEPARTMENT OF THE BUREAU OF LAND MAN	TA ODMENT			FORM APPROVED OM B No 1004-0137 Expires: March 31, 2007
			3 8 2010	5. Lease Seria VARIO	
JUL 30 2010 SUNDRY Do not use the HOBBS Obendoned we	his form for proposals ell. Use Form 3160-3	to drill or to re- (APD) for such pro-			, Allottee or Tribe Name
	PLICATE- Other inst			7 If Unit or	CA/Agreement, Name and/or No
1 Type of Well ✓ Oil Well□ □	Gas Well			8. Well Nar	ne and No.
2. Name of Operator COG Operat	ing LLC			VARIO 9. API We	
3a Address 550 W. Texas Ave., Suite 1300	Midland, TX 79701	3b. Phone No. (include 432-685-4340	e area code)	VARIC	US 1 Pool, or Exploratory Area
4. Location of Well (Footage, Sec., 7	T., R., M., or Survey Description)		<u> </u>	VARIO	US
VARIOUS				VARIO	or Parish, State US
12. CHECK AF	PROPRIATE BOX(ES) TO	DINDICATE NATUR	E OF NOTICE, R		
TYPE OF SUBMISSION	<u>`</u>		PE OF ACTION		
Notice of Intent Subsequent Report Final Abandonment Notice	Acidize Alter Casing Casing Repair Change Plans Convert to Injection	Deepen Fracture Treat New Construction Plug and Abandon Plug Back	Production (Sta Reclamation Recomplete Temporarily At Water Disposal		Water Shut-Off Well Integrity Other Amend attached list of APD's
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