ATS-08-456
EA-08-916

OCD-ARTESIA

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

5. Lease Serial No. **LC-029509A**

6 If Indian, Allotee or Tribe Name **N/A**

1a. Type of work: ☑ DRILL ☐ REENTER UNORTHODOX OIL LOCATION

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

1b Type of Well. ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. <302519> **M C FEDERAL #32**

2. Name of Operator <229137> COG Operating LLC Roswell Controlled Water Basin

9. API Well No. 30-025-39000

3a Address **550 W. Texas, Suite 1300 Midland TX 79701**

3b. Phone No. *(include area code)* **(432) 685-4340**

10. Field and Pool, or Exploratory **Maljamar; Yeso, West 44500**

4 Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **1900' FSL & 2560' FWL, UL K**
At proposed prod. zone **1650' FSL & 2310' FWL, UL K**

11. Sec., T. R. M or Blk. and Survey or Area **Sec 21, T17S, R32E**

14. Distance in miles and direction from nearest town or post office* **3 miles South of Maljamar NM**

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)	16 No of acres in lease	17. Spacing Unit dedicated to this well
1900'	**640**	**40**

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19 Proposed Depth	20 BLM/BIA Bond No. on file
691'	**7000'** TVD 7025 MD	**NMB000215**

21 Elevations (Show whether DF, KDB, RT, GL, etc)	22. Approximate date work will start*	23 Estimated duration
4042' GL	**07/15/2008**	**10 days**

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5 Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Phyllis A. Edwards	**Phyllis A. Edwards**	**05/16/2008**

Title **Regulatory Analyst**

Approved by (Signature) /S/ DAVID D. EVANS	Name *(Printed/Typed)* /S/ DAVID D. EVANS	Date JUN 11 2008
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval 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.
Conditions of approval, if any, are attached. APPROVAL FOR TWO YEARS

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

(Instructions on page 2)

RECEIVED
JUN 16 2008
HOBBS OCD

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease- 4 Copies
Fee Lease- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025- 39800	44500	MALJAMAR; YESO, WEST

Property Code	Property Name	Well Number
302519	MC FEDERAL	32
OGRID No.	**Operator Name**	**Elevation**
229137	COG OPERATING LLC.	4042.1'

Surface Location

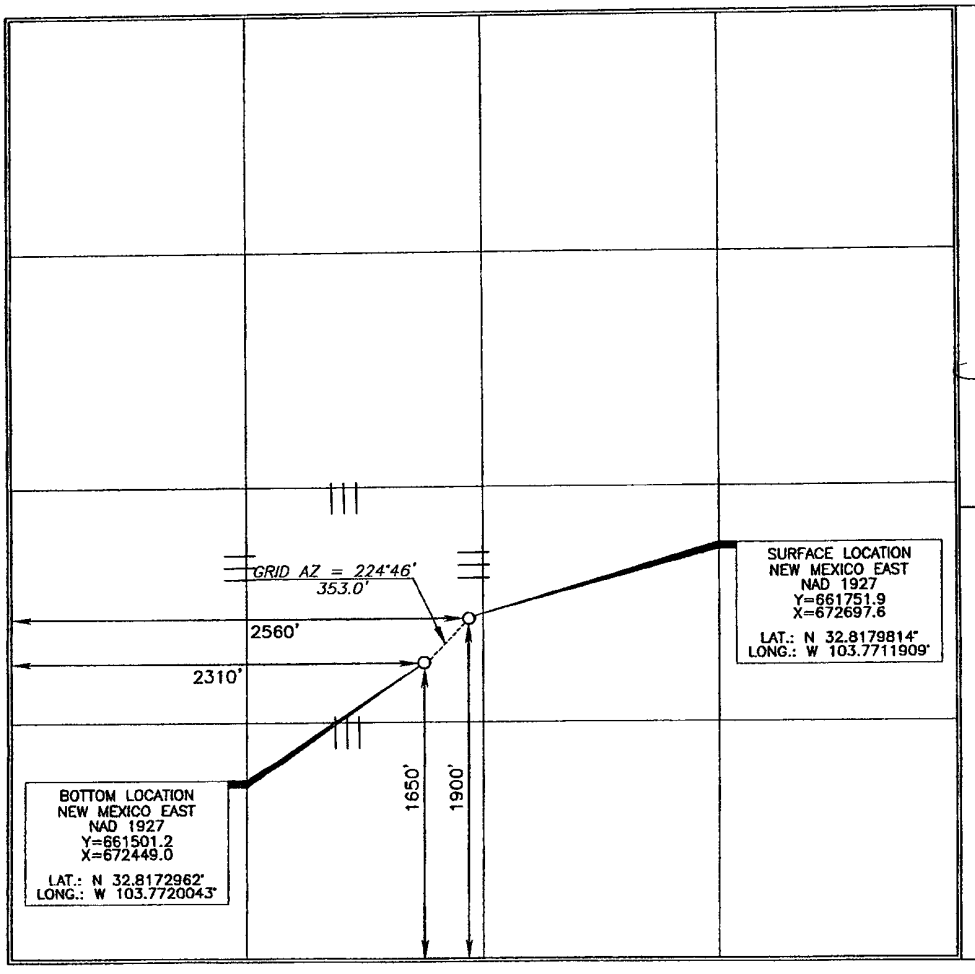
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	21	17 SOUTH	32 EAST, N.M.P.M.		1900'	SOUTH	2560'	WEST	LEA

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
K	21	17 SOUTH	32 EAST, N.M.P.M.		1650'	SOUTH	2310'	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	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 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 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.

Phyllis A. Edwards 5-6-08
Signature Date

Phyllis A. Edwards
Printed Name Regulatory Analyst

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 11, 2008
Date of Survey

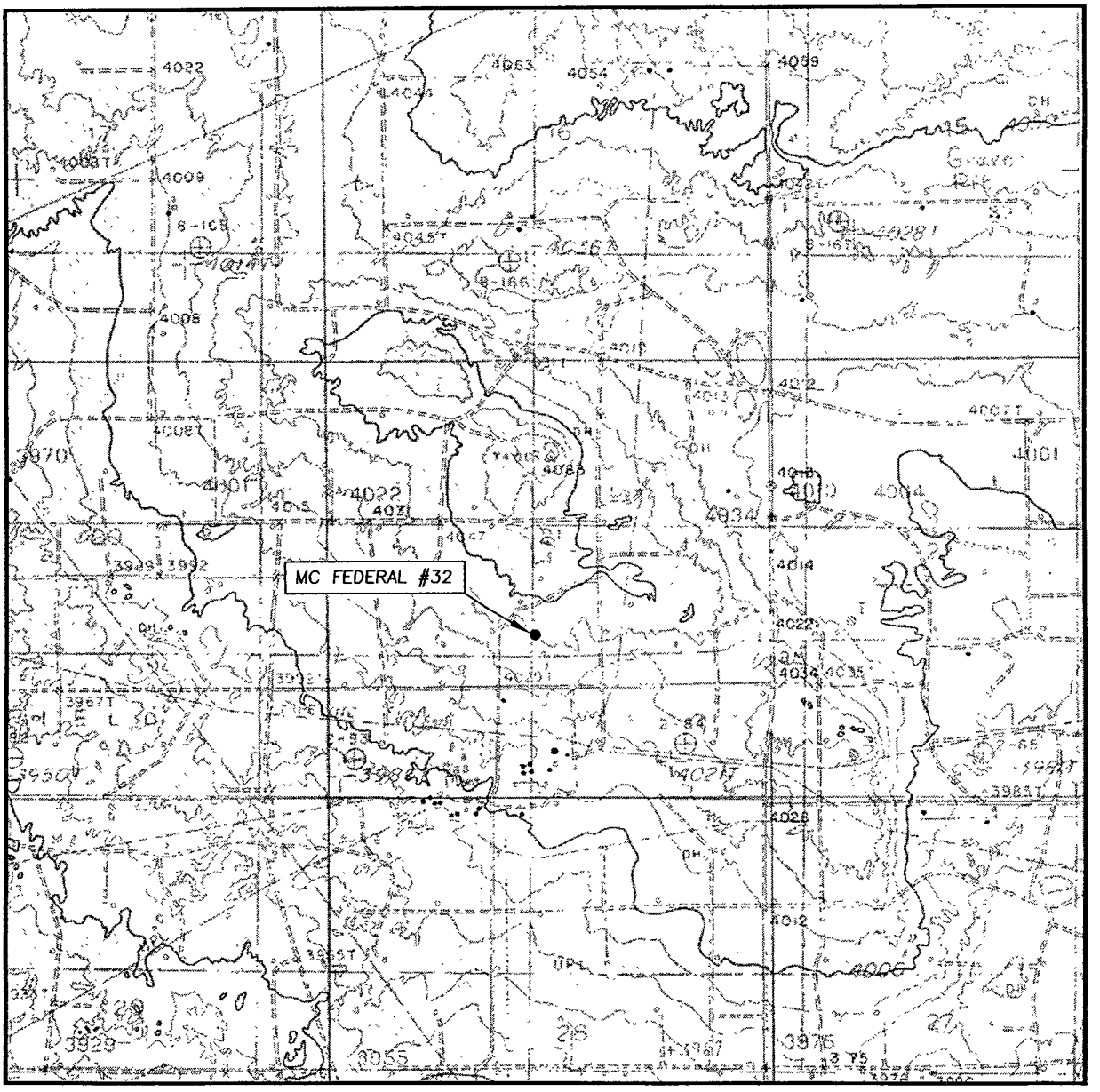
Signature and Seal of Professional Surveyor

NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

Terry J. Asel 5/5/2008
Certificate Number 15079

WO# 080311WL-d (Rev. A) (KA)

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 21 TWP. 17-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 1900' FSL & 2560' FWL

ELEVATION 4042.1'

OPERATOR COG OPERATING LLC.

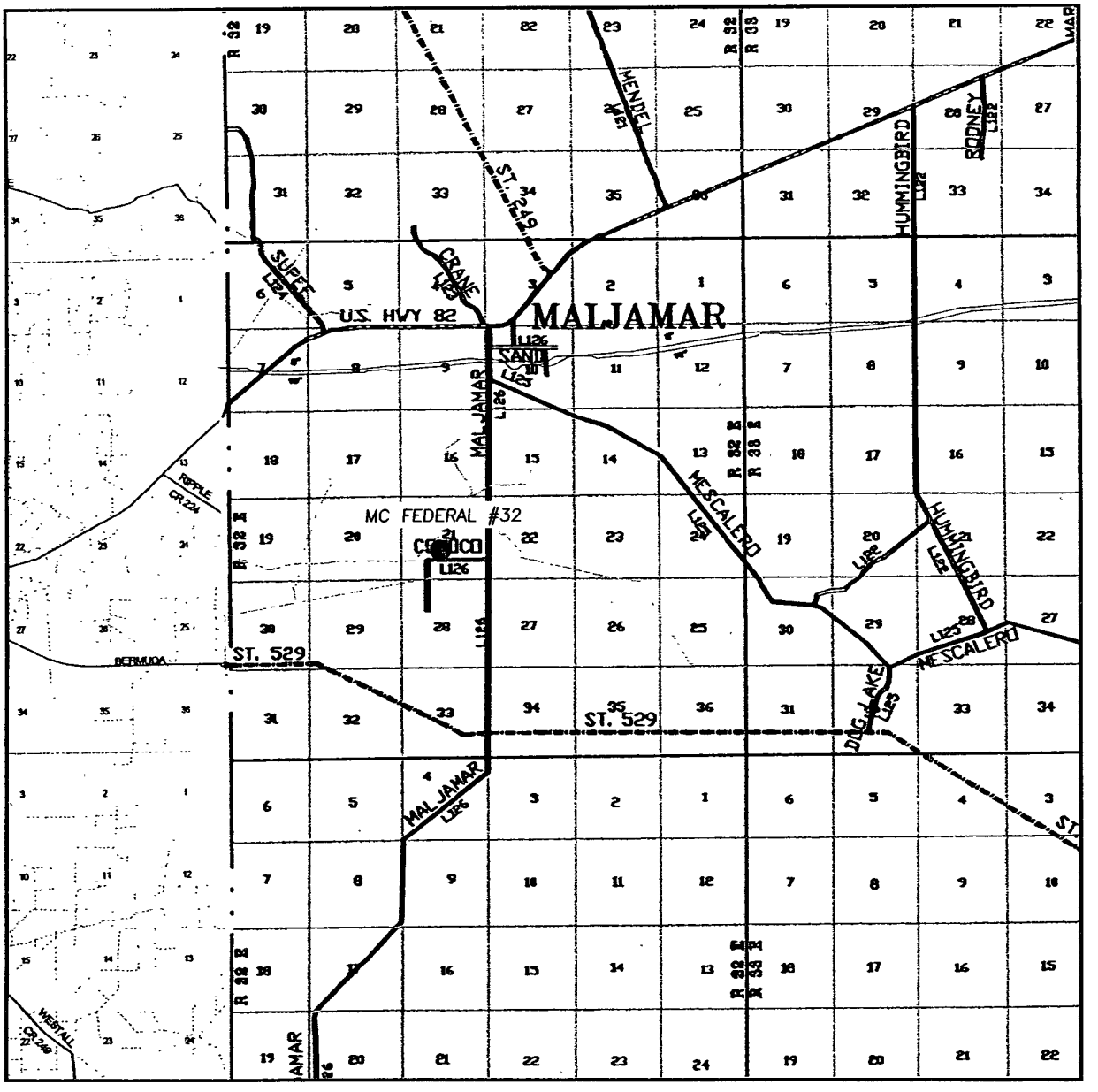
LEASE MC FEDERAL #32

U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M.

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

VICINITY MAP



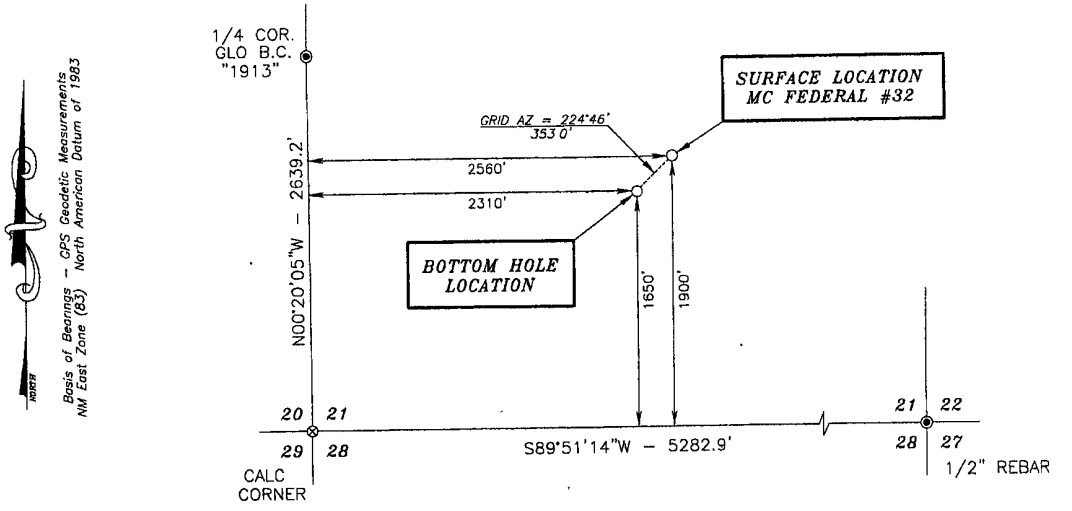
SCALE: 1" = 2 MILES

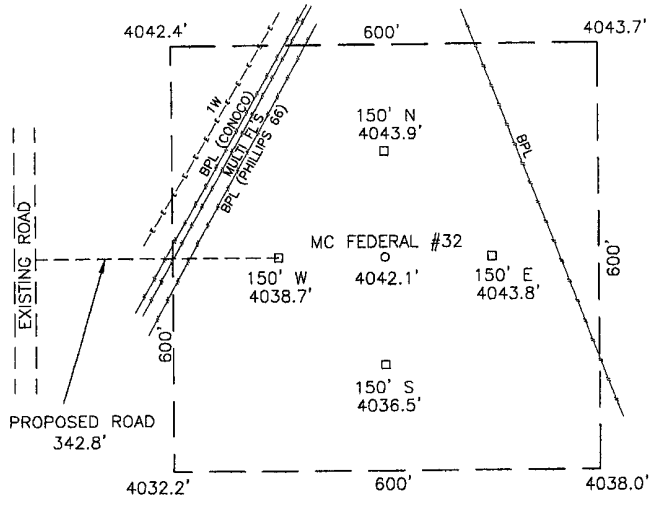
SEC. 21 TWP. 17-S RGE. 32-E
SURVEY N.M.P.M.
COUNTY LEA
DESCRIPTION 1900' FSL & 2560' FWL
ELEVATION 4042.1'
OPERATOR COG OPERATING LLC.
LEASE MC FEDERAL #32

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

SECTION 21, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M., NEW MEXICO
LEA COUNTY





SCALE-1'=200'

TERRY J. ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

◉ - DENOTES FOUND MONUMENT AS NOTED
⊗ - DENOTES CALCULATED CORNER

1000' 0 1000' 2000' FEET
SCALE: 1"=1000'

SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 5/5/2008
Terry J. Asel N.M. R.P.S. No. 15079

Asel Surveying
P.O. BOX 393 - 310 W TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

COG OPERATING, LLC.

MC FEDERAL #32
IN SECTION 21, TOWNSHIP 17 SOUTH,
RANGE 32 EAST, N.M.P.M., LEA COUNTY,
NEW MEXICO

Survey Date: 03/11/08	Sheet 1 of 1 Sheets	
W.O. Number: 080311WL-d (Rev. A)	Drawn By: KA	Rev: A
Date: 05/05/08	080311WL-d	Scale:1"=1000'

COG Operating LLC
Master Drilling Plan Revised 3-25-08
Maljamar ; Yeso
Use for Sections 3-35, T17S, R32E
Lea County, NM

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

Water Sand	150'	Fresh Water
Grayburg	3475'	Oil/Gas
San Andres	3775'	Oil/Gas
Glorietta	5225'	Oil/Gas
Yeso Group	5325'	Oil/Gas

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 back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 1/2" production casing back to 200' into the intermediate casing, to be run at TD.

4. Casing Program

See COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 ½"	0-650'	13 3/8"	48#	H-40	ST&C/New	6.03/2.578/10.32
11"or12 ¼"	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"	17#	J-55orL-80	LT&C/New	1.59/1.463/2.05

5. Cement Program

13 3/8" Surface Casing:	Class C, 500 sx lead, yield-1.98 + 200 sx tail, yield-1.32.
8 5/8" Intermediate Casing:	11" Hole: Class C, 500 sx lead, yield-2.45 + 200 sx tail, yield-1.32, back to surface. 12-1/4" Hole: Class C, 700 sx lead, yield-2.45 + 200 sx tail, yield-1.32, back to surface.
5 1/2" Production Casing:	Class C, 700 sx Lead, yield-1.97 + 400 sx Tail, yield-1.37, to 200' minimum tie back to intermediate casing.

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) will a 2000 psi WP rating.

see COA

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'	Fresh Water	8.5	28	N.C.
650-2100'	Brine	10	30	N.C.
2100'-TD	Cut Brine	8.7-9.1	29	N.C.

see COA

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.

9. Logging, Testing and Coring Program

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 ½" 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. Low levels of hydrogen sulfide have been monitored in producing wells in the area, so H_2S may be present while drilling the well. 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.

Proposal

Report Date:	May 9, 2008	**Survey / DLS Computation Method:**	Minimum Curvature / Lubinski
Client:	COG Operating, LLC.	**Vertical Section Azimuth:**	224 760°
Field:	Lea County, NM	**Vertical Section Origin:**	N 0.000 ft, E 0.000 ft
Structure / Slot:	MC Federal #32 / MC Federal #32	**TVD Reference Datum.**	RKB
Well:	MC Federal #32	**TVD Reference Elevation:**	0.0 ft relative to
Borehole.	MC Federal #32	**Sea Bed / Ground Level Elevation:**	0.000 ft relative to
UWI/API#:		**Magnetic Declination:**	8.086°
Survey Name / Date:	MC Federal #32_r1 / May 9, 2008	**Total Field Strength:**	49314.076 nT
Tort / AHD / DDI / ERD ratio:	4.040° / 353.08 ft / 3.155 / 0.050	**Magnetic Dip:**	60.792°
Grid Coordinate System:	NAD27 New Mexico State Planes, Eastern Zone, US Feet	**Declination Date:**	May 09, 2008
Location Lat/Long:	N 32 49 4 733, W 103 46 16.287	**Magnetic Declination Model:**	IGRF 2005
Location Grid N/E Y/X:	N 661751 900 ftUS, E 672697.600 ftUS	**North Reference:**	Grid North
Grid Convergence Angle:	+0.30467245°	**Total Corr Mag North -> Grid North:**	+7.781°
Grid Scale Factor:	0.99994324	**Local Coordinates Referenced To:**	Well Head

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
Tie-In	0 00	0.00	224 76	0.00	0.00	0.00	0.00	0.00	0 00	0.00	---	0 00	0.00
	100.00	0.00	224.76	100.00	0.00	0.00	0 00	0.00	0.00	0.00	---	0 00	0.00
	200.00	0.00	224.76	200.00	0.00	0 00	0.00	0.00	0.00	0 00	---	0 00	0.00
	300.00	0 00	224 76	300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	400.00	0.00	224.76	400.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	500.00	0.00	224.76	500.00	0.00	0 00	0.00	0.00	0 00	0.00	---	0.00	0.00
	600 00	0.00	224.76	600.00	0.00	0 00	0.00	0 00	0 00	0 00	---	0 00	0.00
	700 00	0.00	224.76	700.00	0.00	0 00	0.00	0 00	0.00	0.00	---	0 00	0 00
	800 00	0.00	224 76	800.00	0.00	0 00	0.00	0.00	0.00	0.00	---	0.00	0 00
	900.00	0.00	224.76	900 00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1000.00	0.00	224.76	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1100.00	0.00	224.76	1100 00	0 00	0.00	0.00	0 00	0.00	0.00	---	0.00	0.00
	1200.00	0.00	224.76	1200.00	0 00	0.00	0.00	0.00	0.00	0 00	---	0.00	0 00
	1300.00	0.00	224.76	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1400.00	0 00	224.76	1400.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1500.00	0.00	224.76	1500.00	0.00	0.00	0.00	0.00	0.00	0 00	---	0.00	0 00
	1600.00	0.00	224.76	1600.00	0.00	0.00	0.00	0 00	0 00	0.00	---	0.00	0 00
	1700.00	0.00	224.76	1700.00	0.00	0 00	0 00	0 00	0 00	0.00	---	0.00	0 00
	1800.00	0.00	224.76	1800.00	0.00	0.00	0.00	0.00	0 00	0 00	---	0.00	0.00
Build (KOP)	1900.00	0.00	224.76	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	224.76M	0.00	0.00
	2000 00	2.00	224.76	1999.98	1.75	-1.24	-1.23	1.75	224.76	2 00	224 76M	2.00	0.00
	2100.00	4.00	224.76	2099.84	6.98	-4.96	-4 91	6.98	224 76	2.00	224.76M	2 00	0.00
EOB	2102 01	4.04	224.76	2101.84	7.12	-5.06	-5.01	7.12	224.76	2.00	---	2.00	0.00
	2200.00	4.04	224 76	2199 59	14.02	-9.96	-9.87	14.02	224 76	0 00	---	0.00	0.00
	2300 00	4.04	224.76	2299.34	21.07	-14.96	-14.84	21.07	224 76	0 00	---	0.00	0.00
	2400.00	4.04	224.76	2399.09	28.11	-19.96	-19.80	28.11	224.76	0.00	---	0.00	0.00
	2500.00	4.04	224.76	2498.84	35.16	-24.97	-24.76	35.16	224.76	0 00	---	0 00	0.00
	2600.00	4 04	224.76	2598.60	42 21	-29.97	-29.72	42.21	224.76	0 00	---	0.00	0.00
	2700.00	4.04	224 76	2698.35	49.25	-34 97	-34.68	49.25	224 76	0 00	---	0.00	0 00
	2800.00	4.04	224.76	2798.10	56.30	-39.97	-39.64	56.30	224.76	0.00	---	0.00	0.00
	2900 00	4.04	224 76	2897 85	63.34	-44.98	-44.60	63.34	224.76	0.00	---	0.00	0 00
	3000.00	4 04	224 76	2997 60	70 39	-49 98	-49 56	70.39	224.76	0 00	---	0.00	0.00
	3100.00	4.04	224.76	3097.35	77.43	-54.98	-54.52	77.43	224.76	0.00	---	0.00	0 00
	3200 00	4.04	224.76	3197.10	84.48	-59 99	-59.48	84.48	224.76	0.00	---	0.00	0 00
	3300.00	4.04	224.76	3296 86	91.52	-64 99	-64.44	91 52	224.76	0.00	---	0 00	0.00
	3400 00	4.04	224.76	3396 61	98.57	-69.99	-69.41	98.57	224.76	0.00	---	0.00	0 00
	3500.00	4.04	224.76	3496.36	105.62	-75.00	-74 37	105 62	224.76	0 00	---	0 00	0.00
	3600 00	4 04	224.76	3596.11	112 66	-80 00	-79.33	112.66	224.76	0.00	---	0.00	0.00
	3700 00	4.04	224 76	3695.86	119.71	-85.00	-84.29	119.71	224 76	0 00	---	0.00	0.00
	3800 00	4.04	224 76	3795.61	126.75	-90.00	-89.25	126.75	224.76	0.00	---	0 00	0.00
	3900.00	4.04	224.76	3895 36	133.80	-95 01	-94 21	133.80	224.76	0.00	---	0.00	0 00

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
	4000.00	4.04	224.76	3995.12	140 84	-100.01	-99.17	140 84	224 76	0.00	---	0.00	0.00
	4100.00	4.04	224.76	4094.87	147.89	-105.01	-104 13	147 89	224.76	0 00	---	0.00	0 00
	4200.00	4 04	224.76	4194.62	154.93	-110.02	-109.09	154 93	224 76	0 00	---	0 00	0 00
	4300.00	4.04	224.76	4294.37	161.98	-115.02	-114.05	161.98	224 76	0.00	---	0 00	0 00
	4400.00	4 04	224.76	4394 12	169.03	-120.02	-119.02	169.03	224 76	0.00	---	0 00	0 00
	4500.00	4 04	224.76	4493 87	176.07	-125.02	-123.98	176.07	224 76	0.00	---	0.00	0.00
	4600 00	4.04	224.76	4593 62	183.12	-130.03	-128.94	183.12	224.76	0.00	---	0.00	0.00
	4700 00	4.04	224.76	4693 38	190.16	-135.03	-133.90	190 16	224.76	0.00	---	0.00	0.00
	4800 00	4.04	224.76	4793.13	197.21	-140.03	-138.86	197.21	224.76	0.00	---	0.00	0.00
	4900.00	4.04	224.76	4892 88	204.25	-145.04	-143.82	204 25	224.76	0.00	---	0.00	0.00
	5000.00	4.04	224.76	4992.63	211.30	-150 04	-148.78	211.30	224 76	0.00	---	0.00	0.00
	5100.00	4.04	224.76	5092 38	218.34	-155.04	-153.74	218 34	224.76	0.00	---	0.00	0.00
	5200 00	4.04	224.76	5192 13	225.39	-160.04	-158 70	225.39	224 76	0.00	---	0.00	0.00
	5300.00	4.04	224.76	5291.89	232.44	-165.05	-163.66	232 44	224 76	0.00	---	0.00	0.00
	5400.00	4.04	224.76	5391.64	239.48	-170.05	-168.63	239.48	224.76	0.00	---	0 00	0.00
	5500.00	4.04	224.76	5491.39	246.53	-175.05	-173.59	246.53	224.76	0 00	---	0 00	0.00
	5600 00	4.04	224.76	5591.14	253.57	-180.06	-178.55	253.57	224.76	0 00	---	0.00	0.00
	5700.00	4.04	224.76	5690.89	260.62	-185.06	-183.51	260.62	224.76	0 00	---	0.00	0.00
	5800.00	4.04	224.76	5790.64	267.66	-190.06	-188.47	267.66	224.76	0 00	---	0.00	0 00
	5900.00	4.04	224.76	5890 39	274.71	-195.06	-193.43	274.71	224.76	0.00	---	0.00	0 00
	6000.00	4.04	224.76	5990.15	281.76	-200.07	-198.39	281.76	224.76	0.00	---	0.00	0 00
	6100.00	4.04	224.76	6089.90	288.80	-205.07	-203.35	288.80	224.76	0.00	---	0.00	0 00
	6200.00	4.04	224.76	6189 65	295.85	-210.07	-208.31	295.85	224.76	0.00	---	0.00	0.00
	6300.00	4 04	224.76	6289.40	302.89	-215.08	-213 27	302.89	224.76	0 00	---	0.00	0.00
	6400.00	4.04	224.76	6389.15	309.94	-220.08	-218 24	309.94	224.76	0.00	---	0.00	0.00
	6500.00	4.04	224.76	6488.90	316 98	-225.08	-223.20	316.98	224.76	0.00	---	0 00	0.00
	6600.00	4 04	224.76	6588.65	324.03	-230 08	-228.16	324.03	224 76	0.00	---	0 00	0 00
	6700.00	4 04	224.76	6688 41	331.07	-235 09	-233.12	331.07	224 76	0.00	---	0.00	0 00
	6800.00	4.04	224.76	6788.16	338 12	-240.09	-238.08	338 12	224.76	0.00	---	0.00	0.00
	6900.00	4.04	224.76	6887.91	345 17	-245.09	-243.04	345 17	224.76	0.00	---	0 00	0.00
	7000 00	4.04	224.76	6987.66	352.21	-250.10	-248 00	352.21	224.76	0.00	---	0 00	0.00
PBHL	7012 37	4 04	224.76	7000.00	353.08	-250.71	-248.61	353.08	224.76	0.00	---	0.00	0.00

Proposal

Report Date:	May 9, 2008
Client:	COG Operating, LLC
Field:	Lea County, NM
Structure / Slot:	MC Federal #32 / MC Federal #32
Well:	MC Federal #32
Borehole	MC Federal #32
UWI/API#:	
Survey Name / Date:	MC Federal #32_r1 / May 9, 2008
Tort / AHD / DDI / ERD ratio:	4 040° / 353 08 ft / 3 155 / 0.050
Grid Coordinate System:	NAD27 New Mexico State Planes, Eastern Zone, US Feet
Location Lat/Long:	N 32 49 4 733, W 103 46 16.287
Location Grid N/E Y/X:	N 661751 900 ftUS, E 672697 600 ftUS
Grid Convergence Angle:	+0 30467245°
Grid Scale Factor:	0.99994324

Survey / DLS Computation Method:	Minimum Curvature / Lubinski
Vertical Section Azimuth:	224 760°
Vertical Section Origin:	N 0 000 ft, E 0 000 ft
TVD Reference Datum:	RKB
TVD Reference Elevation:	0 0 ft relative to
Sea Bed / Ground Level Elevation:	0 000 ft relative to
Magnetic Declination:	8 086°
Total Field Strength:	49314 076 nT
Magnetic Dip:	60.792°
Declination Date:	May 09, 2008
Magnetic Declination Model:	IGRF 2005
North Reference:	Grid North
Total Corr Mag North -> Grid North:	+7 781°
Local Coordinates Referenced To:	Well Head

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
Tie-In	0.00	0 00	224 76	0 00	0.00	0 00	0 00	0 00	0 00	0 00	---	0 00	0 00
	100 00	0 00	224 76	100.00	0 00	0.00	0 00	0 00	0.00	0 00	---	0 00	0 00
	200 00	0 00	224 76	200 00	0 00	0 00	0 00	0.00	0 00	0 00	---	0 00	0 00
	300 00	0 00	224 76	300 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0 00	0.00
	400 00	0 00	224 76	400 00	0.00	0 00	0 00	0 00	0.00	0 00	---	0 00	0 00
	500 00	0 00	224.76	500 00	0 00	0.00	0 00	0 00	0 00	0 00	---	0.00	0.00
	600 00	0 00	224 76	600 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0.00	0 00
	700 00	0 00	224 76	700 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0 00	0.00
	800 00	0.00	224 76	800 00	0 00	0 00	0 00	0 00	0.00	0 00	---	0 00	0 00
	900 00	0 00	224 76	900 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0.00	0 00
	1000.00	0 00	224 76	1000.00	0 00	0.00	0 00	0 00	0.00	0 00	---	0 00	0 00
	1100 00	0 00	224 76	1100 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0 00	0 00
	1200.00	0 00	224 76	1200 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0.00	0 00
	1300 00	0 00	224 76	1300 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0 00	0.00
	1400 00	0 00	224 76	1400 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0 00	0.00
	1500 00	0 00	224.76	1500 00	0 00	0 00	0 00	0 00	0 00	0.00	---	0 00	0 00
	1600.00	0 00	224 76	1600 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0.00	0.00
	1700.00	0 00	224 76	1700 00	0 00	0 00	0 00	0 00	0 00	0 00	---	0 00	0 00
	1800 00	0 00	224.76	1800 00	0.00	0 00	0 00	0.00	0 00	0 00	---	0 00	0 00
Build (KOP)	1900 00	0 00	224 76	1900 00	0 00	0 00	0 00	0 00	0 00	0 00	224 76M	0 00	0 00
	2000.00	2 00	224 76	1999 98	1 75	-1 24	-1.23	1 75	224 76	2 00	224 76M	2 00	0.00
EOB	2102.01	4 04	224.76	2101 84	6 98	-4 96	-4.91	6 98	224 76	2 00	224 76M	2 00	0 00
	2200.00	4 04	224 76	2199.59	7.12	-5 06	-5 01	7 12	224.76	2 00	---	2 00	0 00
	2300 00	4 04	224 76	2299 34	14 02	-9 96	-9 87	14 02	224 76	0.00	---	0.00	0 00
	2400.00	4 04	224 76	2399 09	21 07	-14 96	-14 84	21 07	224 76	0 00	---	0 00	0 00
	2500 00	4 04	224 76	2498 84	28 11	-19 96	-19.80	28 11	224 76	0 00	---	0 00	0 00
	2600.00	4 04	224 76	2598 60	35 16	-24 97	-24 76	35 16	224.76	0 00	---	0 00	0 00
	2700 00	4 04	224 76	2698 35	42 21	-29 97	-29 72	42 21	224 76	0 00	---	0 00	0 00
	2800 00	4 04	224.76	2798 10	49.25	-34 97	-34 68	49 25	224 76	0 00	---	0 00	0.00
	2900 00	4 04	224 76	2897 85	56 30	-39 97	-39 64	56 30	224.76	0 00	---	0 00	0 00
	3000 00	4 04	224 76	2997 60	63.34	-44 98	-44 60	63 34	224 76	0 00	---	0 00	0 00
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	3200 00	4 04	224 76	3197.10	77 43	-54 98	-54 52	77 43	224 76	0.00	---	0 00	0 00
	3300 00	4 04	224 76	3296 86	84 48	-59 99	-59 48	84 48	224 76	0.00	---	0 00	0.00
	3400 00	4 04	224 76	3396.61	91 52	-64 99	-64 44	91 52	224 76	0 00	---	0 00	0 00
	3500.00	4 04	224 76	3496 36	98 57	-69 99	-69.41	98.57	224 76	0 00	---	0 00	0 00
	3600 00	4 04	224 76	3596 11	105 62	-75 00	-74.37	105 62	224 76	0 00	---	0 00	0 00
	3700 00	4 04	224 76	3695 86	112 66	-80 00	-79 33	112 66	224 76	0.00	---	0 00	0 00
	3800 00	4 04	224 76	3795.61	119 71	-85 00	-84 29	119.71	224 76	0.00	---	0 00	0 00
	3900 00	4 04	224 76	3895 36	126.75	-90 00	-89 25	126 75	224 76	0 00	---	0 00	0 00
	4000 00	4 04	224 76	3995 12	133 80	-95 01	-94 21	133 80	224 76	0 00	---	0 00	0 00
	4100 00	4 04	224 76	4094 87	140 84	-100 01	-99 17	140 84	224.76	0 00	---	0 00	0 00
					147 89	-105 01	-104 13	147 89	224 76	0 00	---	0 00	0 00

	4200 00	4 04	224 76	4194 62	154 93	-110 02	-109 09	154 93	224 76	0 00	---	0 00	0 00
	4300 00	4 04	224 76	4294 37	161 98	-115 02	-114 05	161 98	224 76	0 00	---	0 00	0 00
	4400 00	4 04	224 76	4394 12	169 03	-120 02	-119 02	169 03	224 76	0 00	---	0 00	0 00
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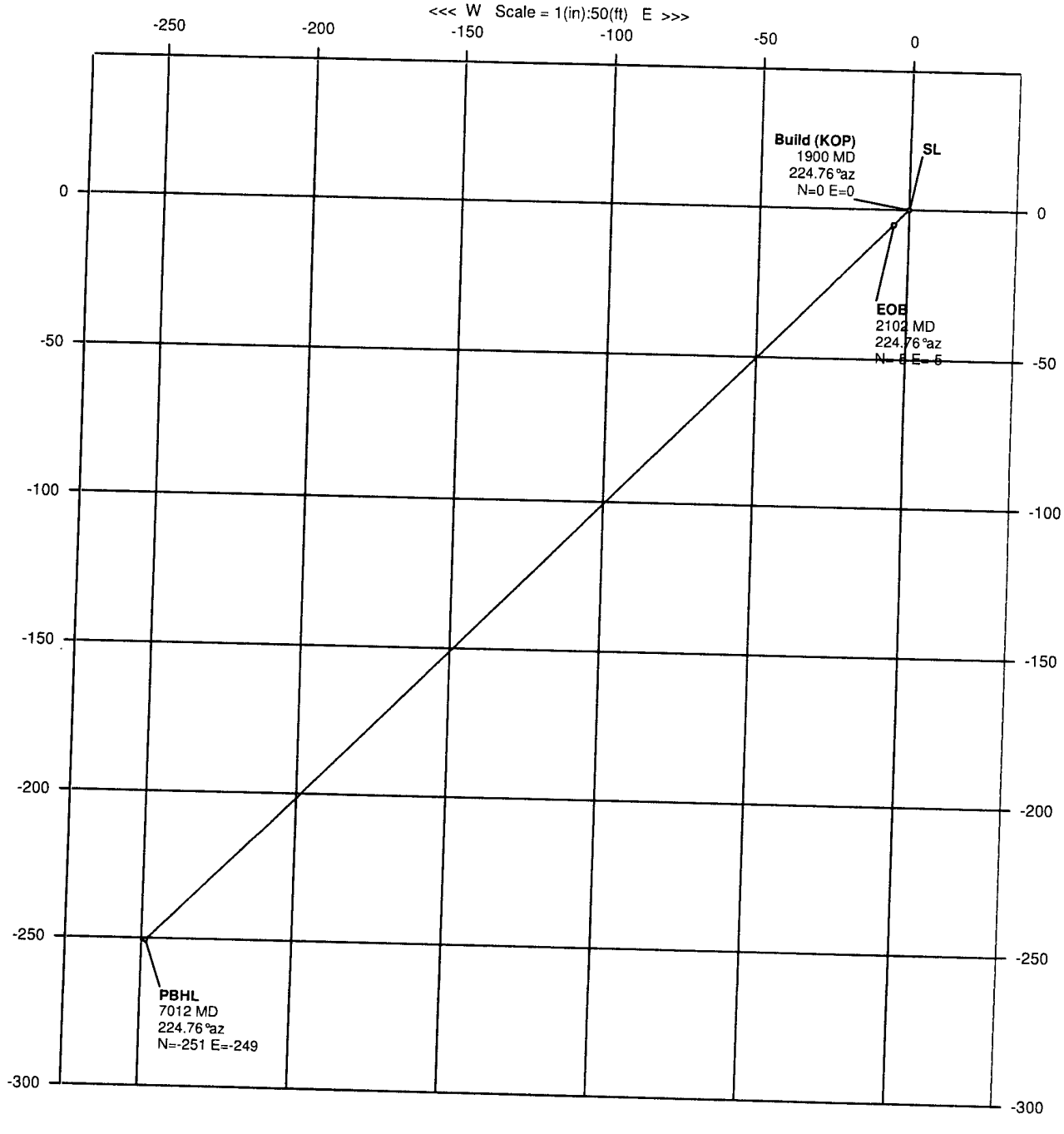
	4700 00	4 04	224 76	4693 38	190 16	-135 03	-133 90	190 16	224 76	0 00	---	0 00	0 00
	4800 00	4 04	224 76	4793 13	197 21	-140 03	-138 86	197 21	224 76	0 00	---	0 00	0 00
	4900 00	4 04	224 76	4892 88	204 25	-145 04	-143 82	204 25	224 76	0 00	---	0 00	0 00
	5000.00	4 04	224 76	4992 63	211 30	-150 04	-148 78	211 30	224 76	0 00	---	0.00	0 00
	5100.00	4 04	224 76	5092 38	218 34	-155 04	-153 74	218 34	224 76	0 00	---	0.00	0.00
	5200 00	4 04	224 76	5192 13	225 39	-160 04	-158 70	225 39	224 76	0 00	---	0 00	0 00
	5300 00	4 04	224 76	5291 89	232 44	-165.05	-163 66	232 44	224 76	0 00	---	0 00	0 00
	5400.00	4 04	224.76	5391.64	239 48	-170 05	-168 63	239 48	224 76	0 00	---	0 00	0 00
	5500 00	4 04	224 76	5491 39	246 53	-175 05	-173 59	246 53	224 76	0 00	---	0 00	0.00
	5600 00	4 04	224 76	5591 14	253 57	-180 06	-178 55	253 57	224 76	0.00	---	0 00	0 00
	5700 00	4.04	224 76	5690 89	260 62	-185 06	-183 51	260 62	224 76	0 00	---	0 00	0 00
	5800.00	4 04	224 76	5790 64	267 66	-190 06	-188 47	267 66	224.76	0 00	---	0 00	0 00
	5900 00	4 04	224 76	5890 39	274 71	-195 06	-193 43	274 71	224 76	0 00	---	0 00	0 00
	6000 00	4 04	224 76	5990 15	281 76	-200 07	-198 39	281 76	224.76	0 00	---	0 00	0 00
	6100 00	4 04	224 76	6089 90	288 80	-205 07	-203 35	288.80	224 76	0 00	---	0 00	0 00
	6200 00	4 04	224 76	6189 65	295 85	-210 07	-208 31	295 85	224 76	0 00	---	0 00	0 00
	6300 00	4 04	224 76	6289 40	302 89	-215 08	-213 27	302 89	224 76	0 00	---	0 00	0 00
	6400 00	4 04	224 76	6389 15	309 94	-220 08	-218.24	309.94	224 76	0 00	---	0 00	0 00
	6500 00	4 04	224.76	6488 90	316.98	-225 08	-223.20	316 98	224 76	0 00	---	0 00	0 00
	6600 00	4 04	224.76	6588 65	324 03	-230 08	-228 16	324 03	224 76	0 00	---	0.00	0 00
	6700 00	4 04	224 76	6688 41	331 07	-235 09	-233 12	331 07	224 76	0.00	---	0.00	0 00
	6800 00	4 04	224 76	6788 16	338 12	-240 09	-238 08	338 12	224 76	0.00	---	0 00	0 00
	6900 00	4 04	224 76	6887 91	345 17	-245 09	-243 04	345 17	224 76	0 00	---	0 00	0 00
	7000 00	4 04	224.76	6987 66	352 21	-250 10	-248 00	352 21	224 76	0 00	---	0 00	0 00
PBHL	7012 37	4 04	224 76	7000 00	353 08	-250 71	-248.61	353 08	224 76	0 00	---	0 00	0 00

COG Operating, LLC.

WELL	FIELD	STRUCTURE
MC Federal #32	Lea County, NM	MC Federal #32

Magnetic Parameters				Surface Location					Miscellaneous			
Model IGRF 2005	Dip 60.792°	Date May 09, 2008		Lat N32 49 4.733	Northing 661751.90 ftUS	NAD27 New Mexico State Planes Eastern Zone US Feet	Grid Conv +0.30467245°		Slot MC Federal #32	TVD Ref RKB (0.00 ft above)		
	Mag Dec +8.086°	FS 49314.1 nT		Lon W103 46 16.287	Easting 672697.60 ftUS		Scale Fact 0.999943448		Plan MC Federal #32 rt	Srvy Date May 09, 2008		

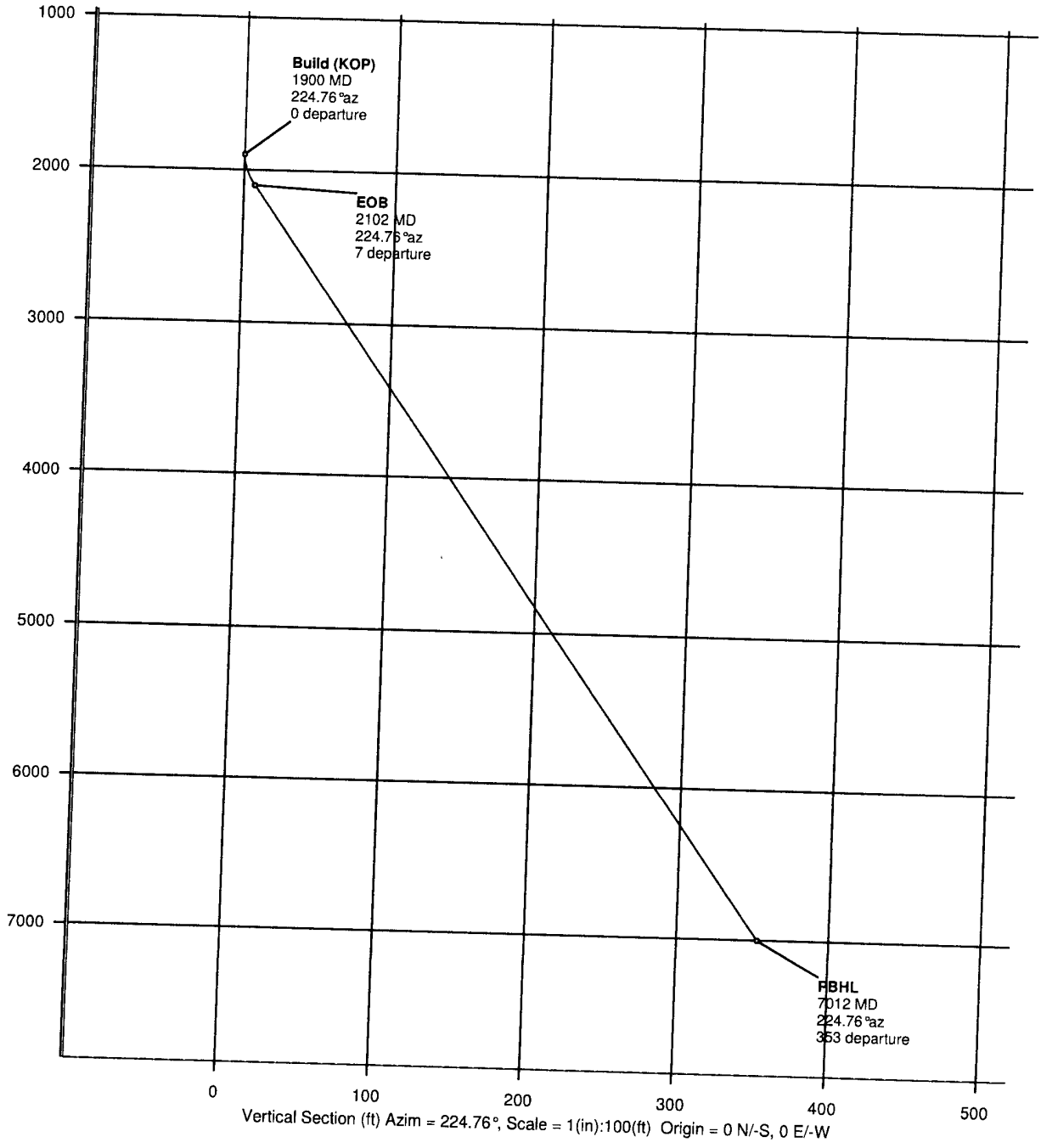


INTREPID
Directional Drilling Specialists

COG Operating, LLC.

WELL	FIELD	STRUCTURE
MC Federal #32	Lea County, NM	MC Federal #32

Magnetic Parameters				Surface Location				Miscellaneous			
Model	IGRF 2005	Dip	60.792°	Lat	N32 49 4.733	NAD27 New Mexico State Planes, Eastern Zone, US Feet		Slot	MC Federal #32	TVD Ref	RKB (0.00 ft above)
		Mag Dec	+8.086°	Lon	W103 46 16.287	Northing	66175.90 FUS	Grid Conv	+0.30467245°	Plan	MC Federal #32 r1
		FS	49314.1 nT			Easting	672697.60 FUS	Scale Fac	0.99994324	Srvy Date	May 09, 2008
		Date	May 09, 2008								



INTREPID
Directional Drilling Specialists

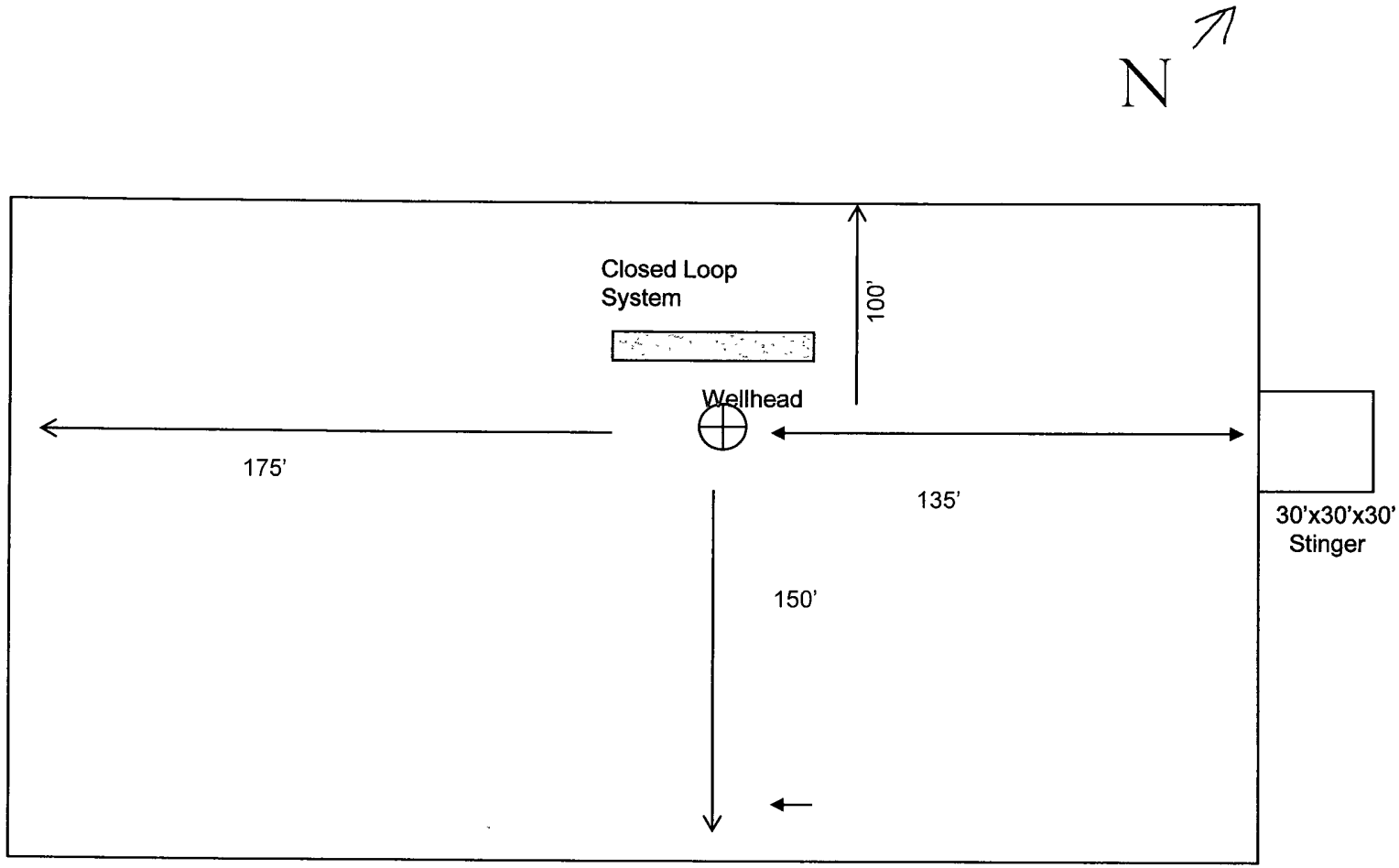


Exhibit 6

COG OPERATING, LLC

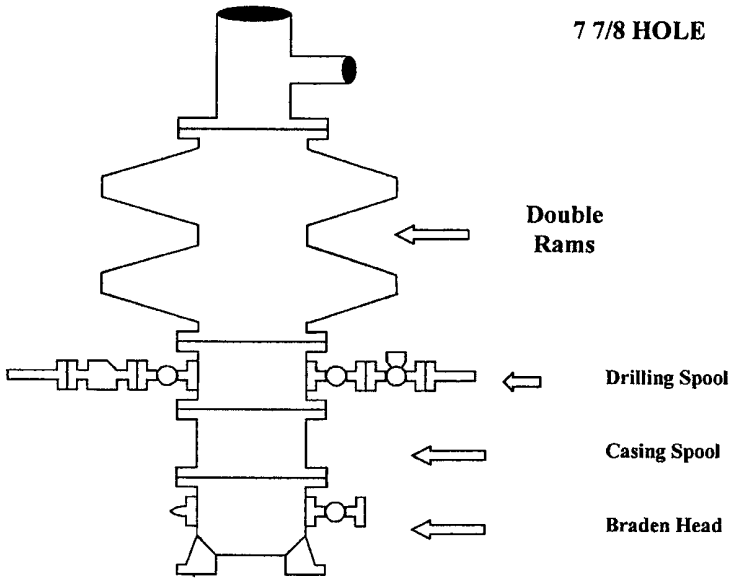
Rig Layout- Closed Loop System

Not To Scale

COG Operating LLC

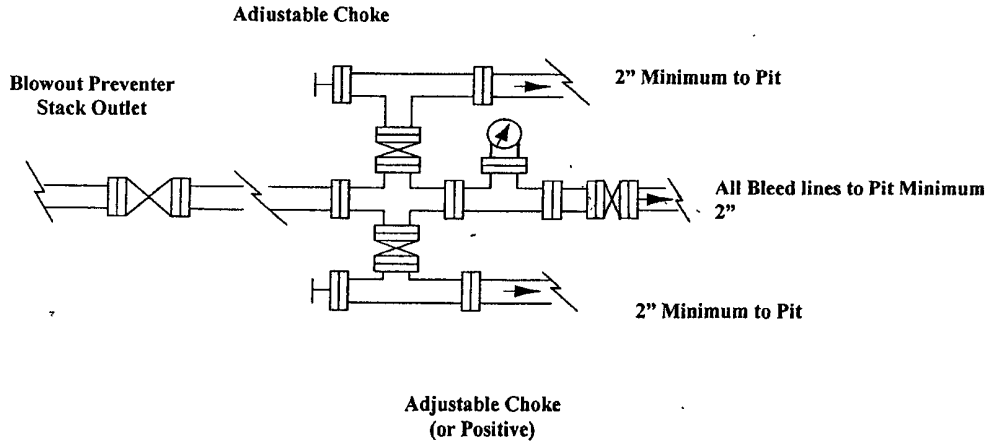
Exhibit #9

BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

Choke Manifold Requirement (2000 psi WP)
No Annular Required



NOTES REGARDING THE BLOWOUT PREVENTERS

Master Drilling Plan

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.

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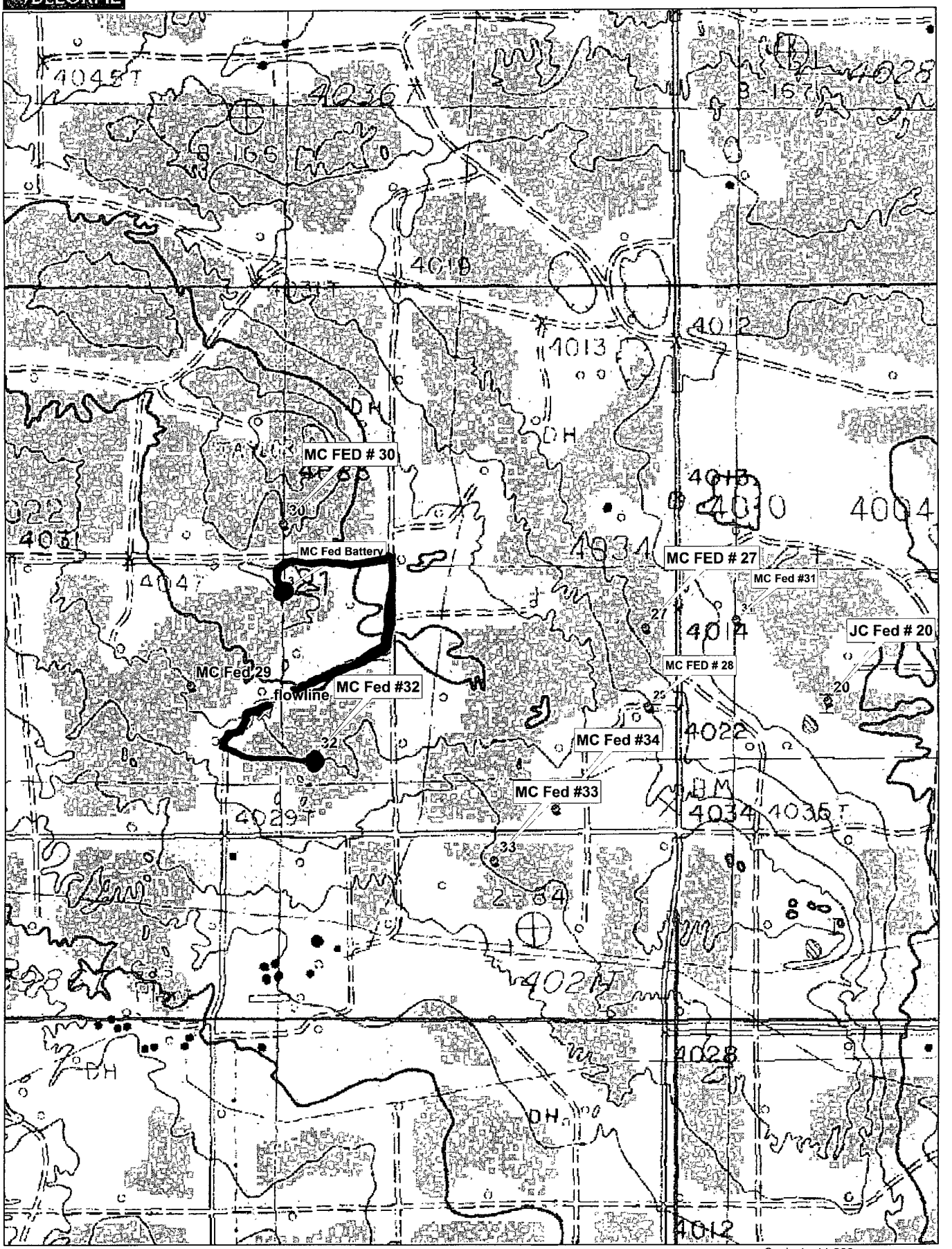

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TN

MN (8 1°E)

Scale 1 11,200

1" = 933 3 ft

Data Zoom 14-2

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC
LEASE NO.:	LC-029509-A
WELL NAME & NO.:	M C Federal #32
SURFACE HOLE FOOTAGE:	1900' FSL & 2560' FWL
BOTTOM HOLE FOOTAGE	1650' FSL & 2310' FWL
LOCATION:	Section 21, T. 17 S., R .32 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Mitigation Measures: The mitigation measures include the Pecos District Conditions of Approval, the standard stipulation for the lesser prairie chicken, the standard stipulation for surface pipelines, and the standard stipulations for permanent resource roads.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

MC Federal # 32: Closed Loop V-Door Northeast

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

MC Federal # 32: Closed Loop V-Door Northeast

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

C. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (575) 234-5972.

D. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

E. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

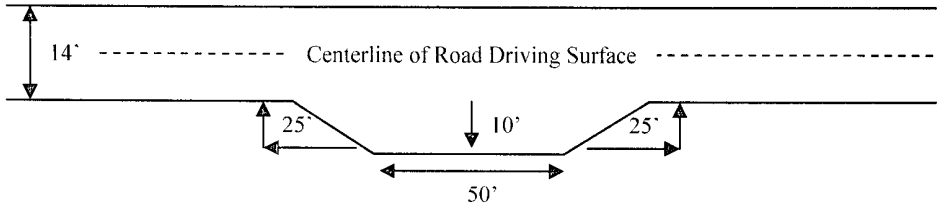
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

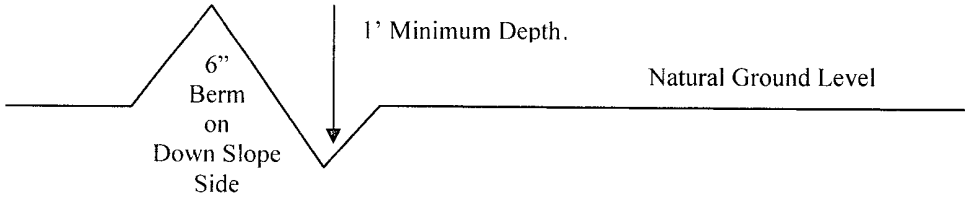
Standard Turnout – Plan View



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

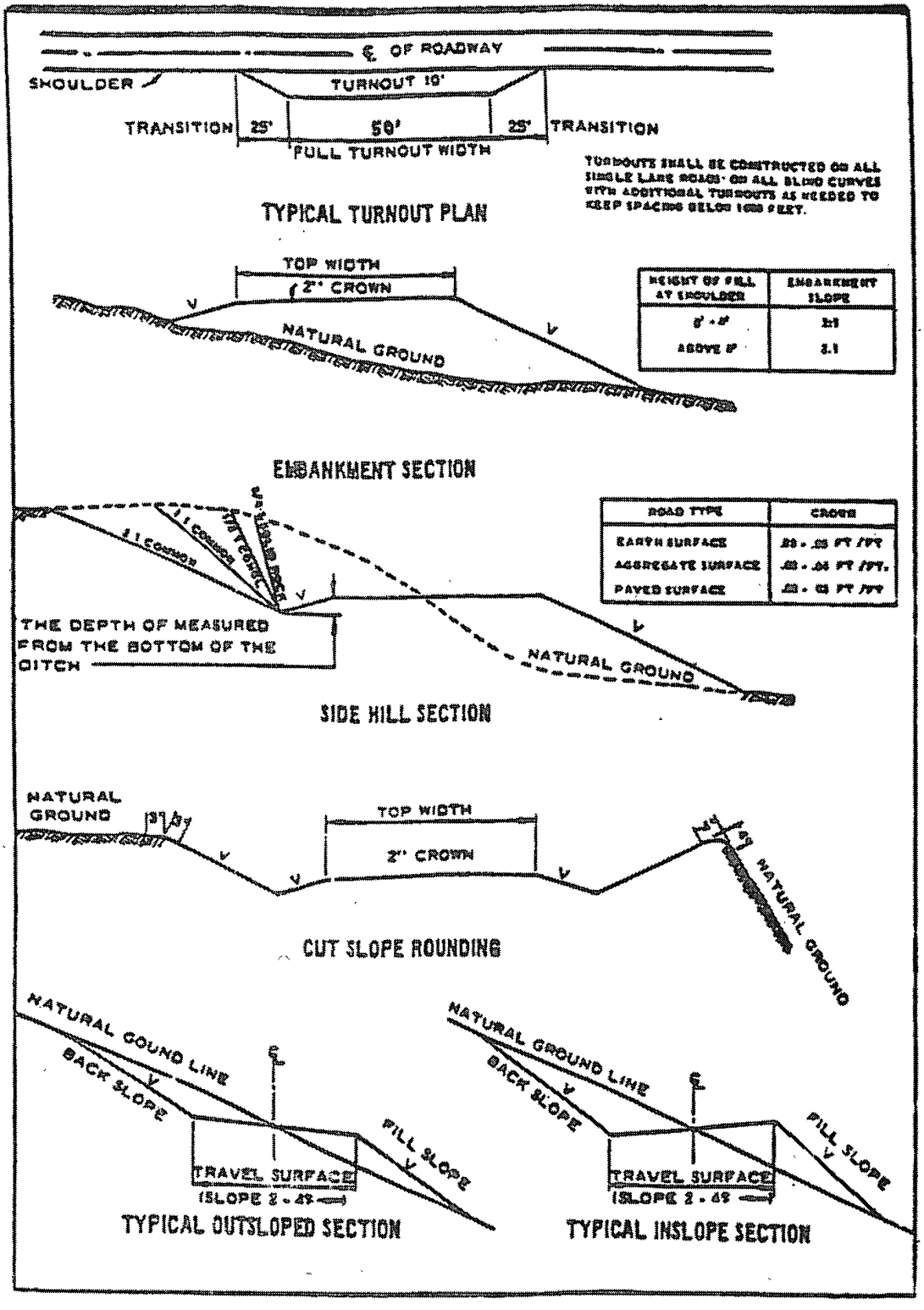
A gate shall be constructed and fastened securely to H-braces.

Fence Requirement
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **Hydrogen Sulfide has been reported through out the township measuring 100-1400 ppm in the gas stream. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible lost circulation in the Grayburg and San Andres formations.
Possible water and brine flows in the Salado and Artesia Group.

1. The **13-3/8** inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite at approximately 805** feet and cemented to the surface. **Fresh water mud to be used to setting depth.**

a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a-d above.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. The tests shall be done by an independent service company.

   b. The results of the test shall be reported to the appropriate BLM office.

c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

e. A variance to test the surface casing and BOP/BOPE **(entire system)** to the reduced pressure of **1000** psi with the rig pumps is approved. **In order to meet BLM requirements, the test cannot be properly done in one step.**

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 052408

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.

b. Activities of other parties including, but not limited to:

(1) Land clearing.
(2) Earth-disturbing and earth-moving work.
(3) Blasting.
(4) Vandalism and sabotage.

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder

of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **25** feet.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his hehalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder. (March 1989)

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The see mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.