

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

OCT 07 2008

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

## 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.

Serial No  
NMNM-100844

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.

1 Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2 Name of Operator **COG Operating LLC**3a Address  
**550 W. Texas Ave., Suite 1300 Midland, TX 79701**3b Phone No (include area code)  
**432-685-4332**

8. Well Name and No.

**Comet 22 Federal #4**

9. API Well No

**30-015-35716**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

**330 FNL & 1650 FWL BHL: 330 FNL & 330 FEL  
Section 22, T16S, R28E, UL C Section 22, T16S, R28E, UL A**

10 Field and Pool, or Exploratory Area

**Crow Flats, Wolfcamp**

11 County or Parish, State

**Eddy County, NM**

## 12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

- 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 permission to:

Change Field and Pool from Crow Flats, Wolfcamp to Crow Flats, Abo.

Change proposed casing and cementing program.

Change Pilot Hole TD to 6850' MD.

Request a variance to the 200' minimum tie back in order to set the pump as close to the formation as possible. The curve and horizontal are all located in the Abo Formation.

Attached is a revised attachment to the Form 3160-3 Drill Plan with changes reflected in shaded areas.

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

14 I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

**Phyllis A. Edwards**

Title **Regulatory Analyst**

Signature

*Phyllis A. Edwards*

Date

**09/10/2008**

**APPROVED**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

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.

Title

Office

Date

**OCT 4 2008**

**WESLEY W. INGRAM**

Title 18 USC Section 1001 and Title 43 USC 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)

**Revised 09/08/2008**

1. Proration Unit Spacing: 120 Acres
2. Ground Elevation: 3385'
3. Proposed Depths: Pilot Hole TD = 6850', Horizontal TVD = 6550'; Horizontal MD = 9816'
4. Estimated tops of geological markers:

Quaternary	Surface
Yates	580'
Queens	1120'
San Andres	1940'
Glorietta	3350'
Abo	5380'
Top Basal Abo	6530'

5. Possible mineral bearing formations:

Water Sand	Fresh Water	150'
San Andres	Oil / Gas	1940'
Glorietta	Oil / Gas	3350'
Abo	Oil / Gas	5380'
Top Basal Abo	Oil / Gas	6530'

- ## 6. Casing Program

Hole size	Interval	OD of Casing	Weight	Thread	Collar	Grade
17-1/2"	0' - +/-500'	13-3/8"	48#	New	STC	H40
Collapse sf - 2.98, Burst sf – 2.33, Tension sf – 13.42						
12 1/4"	0' - +/-1800'	9-5/8"	40#	New	STC	J-55
Collapse sf - 2. 86, Burst sf – 1.42, Tension sf – 7.22						
8-3/4"	0' – +/-6050'MD	7"	26#	New	LTC	P-110
Collapse sf - 2. 18, Burst sf – 1.53, Tension sf – 4.37						
6-1/8"	5950' – +/-9816'MD	4-1/2"	11.6#	New	BTC	P-110
Collapse sf – 2.47, Burst sf – 1.64, Tension sf – 4.48						

# ATTACHMENT TO FORM 3160-3

COG Operating  
Comet "22" Federal #4  
Page 2 of 3

## 7. Cement Program

← see COA

13 3/8" Surface Casing set at +/- 500', Circ to Surf with +/- 500 sx Class "C" w/ 2% CaCl<sub>2</sub>, 1.35 yd.

9 5/8" Intermediate Casing set at +/- 1800', Circ. to Surf with +/- 600 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class "C" w/ 2% CaCl<sub>2</sub>, 1.35 yd.

7" Production Casing set at +/- 6050' MD, Cement with +/- 500 sx. 50/50/10 "C", 2.45 yd & +/- 200 sx Class "H", 1.18 yd., Est. TOC @ 200' minimum tie back into intermediate casing.

4 1/2" Production Liner set from +/- 5950' to +/- 9816' MD, 6550' TVD, Liner run with +/- 5 isolation Packers and Sliding sleeves in un-cemented Lateral.

## 8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 1000 psi w/ rig pump.

After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000 psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester, this equipment will be used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WP rating.

## 9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 500'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
500' - 1800'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.
1800' - 6850'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.
6050' - 9816' 9971'	9.5	36	10	Drill horizontal section with XCD polymer / cut brine / starch.

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

## 10. Production Hole Drilling Summary:

Drill 8-3/4" pilot hole thru Top Basal Abo to +/- 6850', run open hole logs. Spot 350 sx, "H" Kick off plug from +/- 6600' to +/- 5950'. Dress off to 6050' and set 7" production casing. Drill 6-1/8" hole and kick off at +/- 6200', building curve over +/- 350' to horizontal at 6550' TVD. Drill horizontal section in an easterly direction for +/- 3300' lateral to TD at +/- 9816' MD. Run 4-1/2" production liner in Open hole lateral and set isolation packers and liner top packer @ +/- 5950' MD.

↑  
see  
COA

ATTACHMENT TO FORM 3160-3  
COG Operating  
Comet "22" Federal #4  
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11. 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.

12. 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 ran from T.D. in Pilot hole to 9 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 4 1/2" production liner packers have been installed at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2300 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H<sub>2</sub>S may be present while drilling of the well. An H<sub>2</sub>S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on Sept. 22, 2008 with drilling and completion operations lasting approximately 90 days.

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-35716	Pool Code 97691	Pool Name Crow Flats ABO
Property Code 36629	Property Name COMET "22" FEDERAL	Well Number 4
OGRID No. 229137	Operator Name C.O.G. OPERATING L.L.C.	Elevation 3385'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	22	16 S	28 E		330	NORTH	1650	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	22	16 S	28 E		330	NORTH	330	EAST	EDDY
Dedicated Acres 120	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Phyllis A. Edwards</i> 9-18-08 Signature Date</p> <p>Phyllis A. Edwards Printed Name Regulatory Analyst</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>APR 11 2007 Date Surveyed</p> <p><i>Gary L. Jones</i> Signature Professional Surveyor</p> <p>7977 Surveyor License No.</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>
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# Planned Wellpath Report

#4 PWP  
Page 1 of 4



## REFERENCE WELLPATH IDENTIFICATION

Operator	Concho O&G	Slot	#4 SHL
Area	Eddy County, NM	Well	#4
Field	Section 22 T16S R28E (Comet)	Wellbore	#4 PWB
Facility	Comet 22 Federal #4		

## REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect™ 1.2
North Reference	Grid	User	Jonebea
Scale	0.999912	Report Generated	08/02/07 at 17:09:04
Wellbore last revised	08/02/07	Database/Source file	WA_Midland/#4_PWB.

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North [feet]	East [feet]	Easting [US feet]	Northing [US feet]	Latitude [°]	Longitude [°]
Slot Location	0.00	0.00	592371.89	696560.76	32 54 53.100N	104 10 01.300W
Facility Reference Pt			592371.89	696560.76	32 54 53.100N	104 10 01.300W
Field Reference Pt			591052.32	692055.85	32 54 08.544N	104 10 16.861W

## WELLPATH DATUM

Calculation method	Minimum curvature	Rig on #4 SHL (RT) to Facility Vertical Datum	0.00 feet
Horizontal Reference Pt	Facility Center	Rig on #4 SHL (RT) to GRN. ELEV.	3385.00 feet
Vertical Reference Pt	Rig on #4 SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00 feet
MD Reference Pt	Rig on #4 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	GRN. ELEV.	Section Azimuth	86.72°

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## WELLPATH DATA (99 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]
0.00	0.000	86.718	0.00	0.00	0.00	0.00	0.00
100.00†	0.000	0.000	100.00	0.00	0.00	0.00	0.00
200.00†	0.000	0.000	200.00	0.00	0.00	0.00	0.00
300.00†	0.000	0.000	300.00	0.00	0.00	0.00	0.00
400.00†	0.000	0.000	400.00	0.00	0.00	0.00	0.00
500.00†	0.000	0.000	500.00	0.00	0.00	0.00	0.00
600.00†	0.000	0.000	600.00	0.00	0.00	0.00	0.00
700.00†	0.000	0.000	700.00	0.00	0.00	0.00	0.00
800.00†	0.000	0.000	800.00	0.00	0.00	0.00	0.00
900.00†	0.000	0.000	900.00	0.00	0.00	0.00	0.00
1000.00†	0.000	0.000	1000.00	0.00	0.00	0.00	0.00
1100.00†	0.000	0.000	1100.00	0.00	0.00	0.00	0.00
1200.00†	0.000	0.000	1200.00	0.00	0.00	0.00	0.00
1300.00†	0.000	0.000	1300.00	0.00	0.00	0.00	0.00
1400.00†	0.000	0.000	1400.00	0.00	0.00	0.00	0.00
1500.00†	0.000	0.000	1500.00	0.00	0.00	0.00	0.00
1600.00†	0.000	0.000	1600.00	0.00	0.00	0.00	0.00
1700.00†	0.000	0.000	1700.00	0.00	0.00	0.00	0.00
1800.00†	0.000	0.000	1800.00	0.00	0.00	0.00	0.00
1900.00†	0.000	0.000	1900.00	0.00	0.00	0.00	0.00
2000.00†	0.000	0.000	2000.00	0.00	0.00	0.00	0.00
2100.00†	0.000	0.000	2100.00	0.00	0.00	0.00	0.00
2200.00†	0.000	0.000	2200.00	0.00	0.00	0.00	0.00
2300.00†	0.000	0.000	2300.00	0.00	0.00	0.00	0.00
2400.00†	0.000	0.000	2400.00	0.00	0.00	0.00	0.00
2500.00†	0.000	0.000	2500.00	0.00	0.00	0.00	0.00
2600.00†	0.000	0.000	2600.00	0.00	0.00	0.00	0.00
2700.00†	0.000	0.000	2700.00	0.00	0.00	0.00	0.00
2800.00†	0.000	0.000	2800.00	0.00	0.00	0.00	0.00
2900.00†	0.000	0.000	2900.00	0.00	0.00	0.00	0.00
3000.00†	0.000	0.000	3000.00	0.00	0.00	0.00	0.00
3100.00†	0.000	0.000	3100.00	0.00	0.00	0.00	0.00
3200.00†	0.000	0.000	3200.00	0.00	0.00	0.00	0.00
3300.00†	0.000	0.000	3300.00	0.00	0.00	0.00	0.00
3400.00†	0.000	0.000	3400.00	0.00	0.00	0.00	0.00
3500.00†	0.000	0.000	3500.00	0.00	0.00	0.00	0.00
3600.00†	0.000	0.000	3600.00	0.00	0.00	0.00	0.00
3700.00†	0.000	0.000	3700.00	0.00	0.00	0.00	0.00
3800.00†	0.000	0.000	3800.00	0.00	0.00	0.00	0.00
3900.00†	0.000	0.000	3900.00	0.00	0.00	0.00	0.00

# Planned Wellpath Report

#4 PWP  
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Facility	Comet 22 Federal #4		

## WELLPATH DATA (99 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]
4000.00†	0.000	0.000	4000.00	0.00	0.00	0.00	0.00
4100.00†	0.000	0.000	4100.00	0.00	0.00	0.00	0.00
4200.00†	0.000	0.000	4200.00	0.00	0.00	0.00	0.00
4300.00†	0.000	0.000	4300.00	0.00	0.00	0.00	0.00
4400.00†	0.000	0.000	4400.00	0.00	0.00	0.00	0.00
4500.00†	0.000	0.000	4500.00	0.00	0.00	0.00	0.00
4600.00†	0.000	0.000	4600.00	0.00	0.00	0.00	0.00
4700.00†	0.000	0.000	4700.00	0.00	0.00	0.00	0.00
4800.00†	0.000	0.000	4800.00	0.00	0.00	0.00	0.00
4900.00†	0.000	0.000	4900.00	0.00	0.00	0.00	0.00
5000.00†	0.000	0.000	5000.00	0.00	0.00	0.00	0.00
5100.00†	0.000	0.000	5100.00	0.00	0.00	0.00	0.00
5200.00†	0.000	0.000	5200.00	0.00	0.00	0.00	0.00
5300.00†	0.000	0.000	5300.00	0.00	0.00	0.00	0.00
5400.00†	0.000	0.000	5400.00	0.00	0.00	0.00	0.00
5500.00†	0.000	0.000	5500.00	0.00	0.00	0.00	0.00
5600.00†	0.000	0.000	5600.00	0.00	0.00	0.00	0.00
5700.00†	0.000	0.000	5700.00	0.00	0.00	0.00	0.00
5800.00†	0.000	0.000	5800.00	0.00	0.00	0.00	0.00
5900.00†	0.000	0.000	5900.00	0.00	0.00	0.00	0.00
5970.08	0.000	86.718	5970.08	0.00	0.00	0.00	0.00
6000.00†	2.956	86.718	5999.99	0.77	0.04	0.77	9.88
6100.00†	12.836	86.718	6098.92	14.49	0.83	14.47	9.88
6200.00†	22.716	86.718	6194.02	44.98	2.58	44.91	9.88
6300.00†	32.596	86.718	6282.49	91.34	5.23	91.19	9.88
6400.00†	42.476	86.718	6361.69	152.19	8.71	151.94	9.88
6500.00†	52.356	86.718	6429.27	225.73	12.92	225.36	9.88
6600.00†	62.236	86.718	6483.24	309.77	17.74	309.26	9.88
6700.00†	72.116	86.718	6521.98	401.83	23.01	401.17	9.88
6800.00†	81.996	86.718	6544.35	499.17	28.58	498.35	9.88
6881.01	90.000	86.718	6550.00	579.92	33.21	578.97	9.88
6900.00†	90.000	86.718	6550.00	598.90	34.29	597.92	0.00
7000.00†	90.000	86.718	6550.00	698.90	40.02	697.76	0.00
7100.00†	90.000	86.718	6550.00	798.90	45.74	797.59	0.00
7200.00†	90.000	86.718	6550.00	898.90	51.47	897.43	0.00
7300.00†	90.000	86.718	6550.00	998.90	57.20	997.26	0.00
7400.00†	90.000	86.718	6550.00	1098.90	62.92	1097.10	0.00
7500.00†	90.000	86.718	6550.00	1198.90	68.65	1196.94	0.00
7600.00†	90.000	86.718	6550.00	1298.90	74.37	1296.77	0.00
7700.00†	90.000	86.718	6550.00	1398.90	80.10	1396.61	0.00

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MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]
7800.00+	90.000	86.718	6550.00	1498.90	85.82	1496.44	0.00
7900.00+	90.000	86.718	6550.00	1598.90	91.55	1596.28	0.00
8000.00+	90.000	86.718	6550.00	1698.90	97.28	1696.12	0.00
8100.00+	90.000	86.718	6550.00	1798.90	103.00	1795.95	0.00
8200.00+	90.000	86.718	6550.00	1898.90	108.73	1895.79	0.00
8300.00+	90.000	86.718	6550.00	1998.90	114.45	1995.62	0.00
8400.00+	90.000	86.718	6550.00	2098.90	120.18	2095.46	0.00
8500.00+	90.000	86.718	6550.00	2198.90	125.91	2195.29	0.00
8600.00+	90.000	86.718	6550.00	2298.90	131.63	2295.13	0.00
8700.00+	90.000	86.718	6550.00	2398.90	137.36	2394.97	0.00
8800.00+	90.000	86.718	6550.00	2498.90	143.08	2494.80	0.00
8900.00+	90.000	86.718	6550.00	2598.90	148.81	2594.64	0.00
9000.00+	90.000	86.718	6550.00	2698.90	154.53	2694.47	0.00
9100.00+	90.000	86.718	6550.00	2798.90	160.26	2794.31	0.00
9200.00+	90.000	86.718	6550.00	2898.90	165.99	2894.15	0.00
9300.00+	90.000	86.718	6550.00	2998.90	171.71	2993.98	0.00
9400.00+	90.000	86.718	6550.00	3098.90	177.44	3093.82	0.00
9500.00+	90.000	86.718	6550.00	3198.90	183.16	3193.65	0.00
9571.22	90.000	86.718	6550.00	3270.13	187.24	3264.76	0.00

## TARGETS

Name	MD [feet]	TVD [feet]	North [feet]	East [feet]	Grid East [us survey feet]	Grid North [us survey feet]	Latitude [°]	Longitude [°]	Shape
1) #4 BHL	9571.22	6550.00	187.24	3264.76	595636.36	696747.99	32°54'54.900N	104°09'23.000W	point

## SURVEY PROGRAM Ref Wellbore: #4 PWB Ref Wellpath: #4 PWP

Start MD [feet]	End MD [feet]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	9571.22	NaviTrak (Standard)		#4 PWB

Location	Eddy County, NM
Field	Section 22 T16S R28E (Comet)
Facility	Comet 22 Federal #4

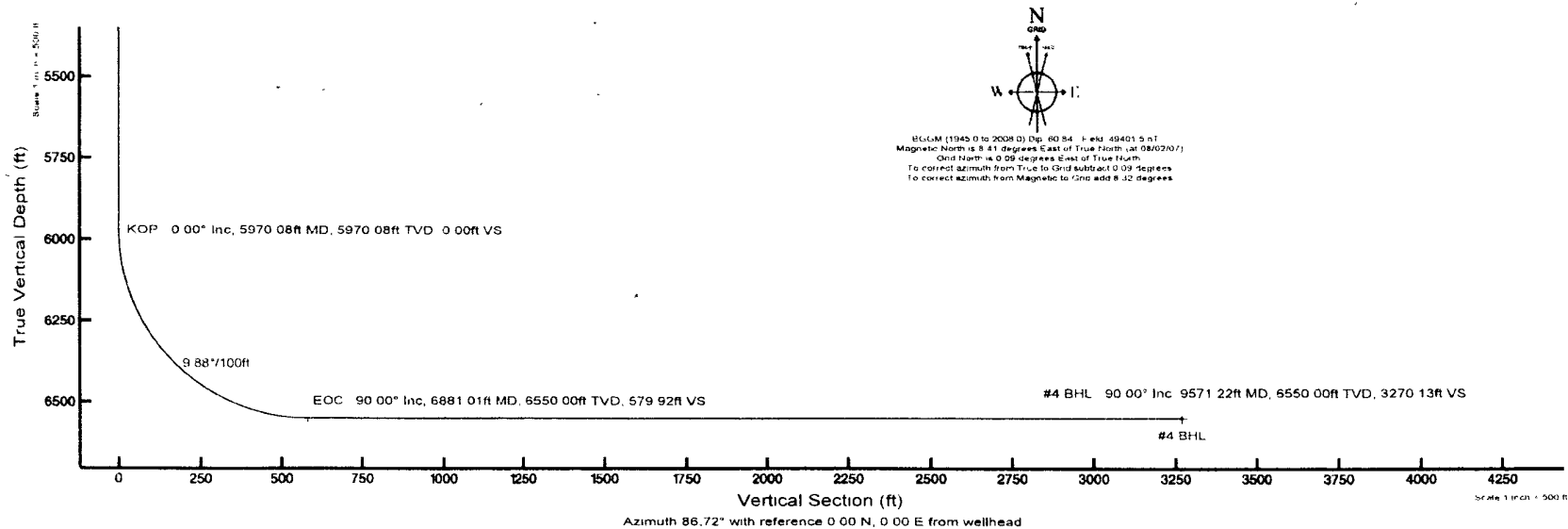
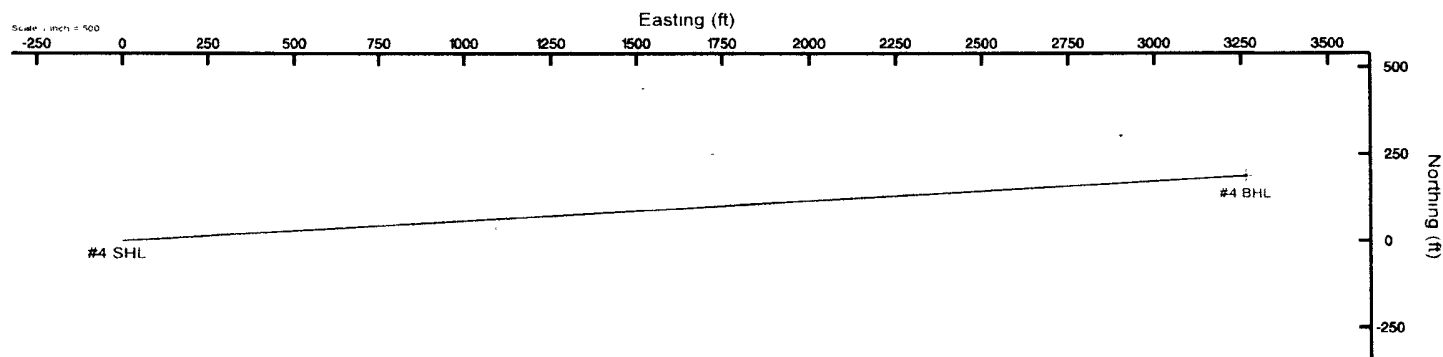
Slot: #4 SHL  
Well: #4  
Wellbore: #4 PWB



**BAKER  
HUGHES**  
**INTEQ**

[illegible]

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS % (100ft)	VS (ft)
The ODP	0.00	0.000	86.718	0.00	0.00	3.00	0.00	0.00
KOP	5970.08	0.000	86.718	5970.08	0.00	3.00	0.00	0.00
EOC	6381.01	90.000	86.718	6550.30	33.21	578.97	9.88	579.93
End Hole	9571.22	90.000	86.718	6550.00	187.28	1284.76	0.00	1270.11



## PECOS DISTRICT CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>COG Operating LLC</b>
<b>LEASE NO.:</b>	<b>NMNM-100844</b>
<b>WELL NAME &amp; NO.:</b>	<b>Comet 22 Federal 4</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>0330' FNL &amp; 1650' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>0330' FNL &amp; 330' FEL</b>
<b>LOCATION:</b>	<b>Section 22, T. 16 S., R 28 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

### I. 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

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts 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.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

## **B. CASING**

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

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

**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 for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

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

**High cave/karst area.**

**Possible lost circulation in the Grayburg and San Andres formations.**

**Possible water flows in the Salado and Artesia Groups.**

**High pressure gas bursts possible within the Wolfcamp formation – applies to the pilot hole.**

1. The **13-3/8 inch** surface casing shall be set **in the Tansill Formation at approximately 500 feet** and cemented to the surface.
  - 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 remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - c. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Fresh water mud to be used to setting depth for the 9-5/8" casing.**

2. The minimum required fill of cement behind the **9-5/8 inch** intermediate casing is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a-c above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.**

**If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface with the wait on cement (WOC) time for a primary cement job to include the lead cement slurry due to cave/karst concerns.**

3. The minimum required fill of cement behind the 7 inch production casing is:

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

**A 170' plug is required at the bottom of the pilot hole and plug to be tagged. Recommend that operator consider placing plug from bottom of hole to kick-off point, which will eliminate the need for the tag on the bottom plug.**

4. The minimum required fill of cement behind the 4-1/2 inch production liner is:

- ☒ No cement required – using packer system. No seal test required as the liner is entirely within the Abo formation.

5. 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. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.
- f. 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.

#### **D. DRILLING MUD**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

#### **E. DRILL STEM TEST**

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

**WWI 100208**