Form 3160- 5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004- 0137
Expires: October 31, 2014

SUNDRY NOTICES AND REPORTS ON WELLS

OCD Artesia

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other Instructions on page 2.*

5. Lease Serial No.: NMNM115417
6. If Indian, Allottee, or Tribe Name:
7. If Unit or CA. Agreement Name and/or No.:
8. Well Name and No.: Big Papi Federal Com #2H
9. API Well No.: 30-015-37833
10. Field and Pool, or Exploratory Area: Corral Canyon; Bone Spring, South
11. County or Parish, State: ~~Lea County~~ Eddy NM

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: COG Operating LLC
3a. Address: 2208 W. Main Street, Artesia, NM 88210
3b. Phone No. *(include area code)*: 575-748-6940
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*: 330' FNL & 1980' FWL Unit Letter C (NENW) Sec 4-26S-29E
Lat.
Long.

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

TYPE OF SUBMISSION	TYPE OF ACTION			
[X] Notice of Intent	[ ] Acidize	[ ] Deepen	[ ] Production (Start/ Resume)	[ ] Water Shut-off
	[ ] Altering Casing	[ ] Fracture Treat	[ ] Reclamation	[ ] Well Integrity
[ ] Subsequent Report	[ ] Casing Repair	[ ] New Construction	[ ] Recomplete	[ ] Other
	[X] Change Plans	[ ] Plug and abandon	[ ] Temporarily Abandon	
[ ] Final Abandonment Notice	[ ] Convert to Injection	[ ] Plug back	[ ] 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 recomplete horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the 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 recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC respectfully requests approval for the following changes to the original APD.

See attached.

Accepted for record
NMOCD TES
2-28-2014

SEE ATTACHED FOR CONDITIONS OF APPROVAL

RECEIVED
FEB 28 2014
NMOCD ARTESIA

14. I hereby certify that the foregoing is true and correct.
Name *(Printed/ Typed)*: Mayte Reyes
Title: Regulatory Analyst
Signature: Mayte Reyes
Date: 1/30/14

APPROVED
FEB 21 2014
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

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

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 any department or agency of the United States any false, fictitiousor fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

We will not drill a pilot hole.

Rustler – 246'
TOS- 604'
Fletcher- 2738'
Delaware- 2933'
Bone Spring- 6679'
MD- 13,096'
TVD- 8650'

Surface:
Change surface TD from 525' to 400'.
Run 13-3/8" 48# H-40 STC csg
Cement: 400 sx Class C + 2% CaCl2 (14.8#/ 1.34 yd/ 6.3 gal per sk)

Intermediate:
Run 9-5/8" 36# LTC Casing to TD @ 2900'.
Cement:

- Lead: 550 sx Class C + 4% Gel (13.5 ppg /1.75 cuft/sx / 9.2 gal/sk)
- Tail: 250 sx Class C (14.8 ppg / 1.34 cuft/sx / 6.3 gal/sk)

Production:
Run 5.5" 17# LTC P110 to TD @ 13,096'.
Cement:

- Lead: 600 sx 50:50:10 H Blend (11.9 ppg / 2.51 cuft/sx / 14.1 gal/sk)
- Tail: 950 sx 50:50:2 H +Salt+GasStop +CFR-3 (14.4 ppg /1.24 cuft/sx / 6.4 gal/sk)

Estimated BHP & BHT:
Lateral TD = 4048 psi
Lateral TD= 143° F

CONCHO

COG OPERATING LLC

Eddy County, NM
Section 4-26S-29E Big Papi Fed Com #2H
Big Papi Fed Com #2H

Original Hole

Plan: Plan#2

Standard Planning Report

30 January, 2014

STRYKER DIRECTIONAL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Big Papi Fed Com #2H
Company:	COG Operating LLC	**TVD Reference:**	GL 2975 + 18 @ 2993.0usft (Silver Oak #7)
Project:	Eddy County, NM	**MD Reference:**	GL 2975 + 18 @ 2993.0usft (Silver Oak #7)
Site:	Section 4-26S-29E Big Papi Fed Com #2H	**North Reference:**	Grid
Well:	Big Papi Fed Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#2		

Project Eddy County, NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Section 4-26S-29E Big Papi Fed Com #2H

Site Position:		**Northing:**	392,241.40 usft	**Latitude:**	32° 4' 40.529 N
From:	Map	**Easting:**	606,030.90 usft	**Longitude:**	103° 59' 27.612 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well Big Papi Fed Com #2H

Well Position	**+N/-S**	0.0 usft	**Northing:**	392,241.40 usft	**Latitude:**	32° 4' 40.529 N
	+E/-W	0.0 usft	**Easting:**	606,030.90 usft	**Longitude:**	103° 59' 27.612 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	2,975.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/29/2014	7.45	59.91	48,223

Design Plan#2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	178.77

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,172.5	0.00	0.00	8,172.5	0.0	0.0	0.00	0.00	0.00	0.00	
8,922.5	90.00	178.77	8,650.0	-477.4	10.3	12.00	12.00	23.84	178.77	
13,097.1	90.00	178.77	8,650.0	-4,651.0	100.0	0.00	0.00	0.00	0.00	PBHL Big Papi Fed

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Big Papi Fed Com #2H
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Project:	Eddy County, NM	MD Reference:	GL 2975 + 18 @ 2993.0usft (Silver Oak #7)
Site:	Section 4-26S-29E. Big Papi Fed Com #2H	North Reference:	Grid
Well:	Big Papi Fed Com #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00

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Site:	Section 4-26S-29E Big Papi Fed Com #2H	**North Reference:**	Grid
Well:	Big Papi Fed Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,172.5	0.00	0.00	8,172.5	0.0	0.0	0.0	0.00	0.00	0.00
8172.5' MD KOP									
8,175.0	0.30	178.77	8,175.0	0.0	0.0	0.0	12.00	12.00	0.00
8,200.0	3.30	178.77	8,200.0	-0.8	0.0	0.8	12.00	12.00	0.00
8,225.0	6.30	178.77	8,224.9	-2.9	0.1	2.9	12.00	12.00	0.00
8,250.0	9.30	178.77	8,249.7	-6.3	0.1	6.3	12.00	12.00	0.00
8,275.0	12.30	178.77	8,274.2	-11.0	0.2	11.0	12.00	12.00	0.00
8,300.0	15.30	178.77	8,298.5	-16.9	0.4	16.9	12.00	12.00	0.00
8,325.0	18.30	178.77	8,322.4	-24.1	0.5	24.1	12.00	12.00	0.00
8,350.0	21.30	178.77	8,345.9	-32.6	0.7	32.6	12.00	12.00	0.00
8,375.0	24.30	178.77	8,369.0	-42.3	0.9	42.3	12.00	12.00	0.00
8,400.0	27.30	178.77	8,391.5	-53.2	1.1	53.2	12.00	12.00	0.00
8,425.0	30.30	178.77	8,413.4	-65.2	1.4	65.2	12.00	12.00	0.00
8,450.0	33.30	178.77	8,434.6	-78.4	1.7	78.4	12.00	12.00	0.00
8,475.0	36.30	178.77	8,455.2	-92.6	2.0	92.7	12.00	12.00	0.00
8,500.0	39.30	178.77	8,474.9	-108.0	2.3	108.0	12.00	12.00	0.00
8,525.0	42.30	178.77	8,493.8	-124.3	2.7	124.3	12.00	12.00	0.00
8,550.0	45.30	178.77	8,511.9	-141.6	3.0	141.6	12.00	12.00	0.00
8,575.0	48.30	178.77	8,529.0	-159.8	3.4	159.8	12.00	12.00	0.00
8,600.0	51.30	178.77	8,545.1	-178.9	3.8	178.9	12.00	12.00	0.00
8,625.0	54.30	178.77	8,560.2	-198.8	4.3	198.8	12.00	12.00	0.00
8,650.0	57.30	178.77	8,574.3	-219.5	4.7	219.5	12.00	12.00	0.00
8,675.0	60.30	178.77	8,587.2	-240.8	5.2	240.9	12.00	12.00	0.00
8,700.0	63.30	178.77	8,599.1	-262.9	5.7	262.9	12.00	12.00	0.00
8,725.0	66.30	178.77	8,609.7	-285.5	6.1	285.5	12.00	12.00	0.00

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Well:	Big Papi Fed Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,750.0	69.30	178.77	8,619.1	-308.6	6.6	308.7	12.00	12.00	0.00
8,775.0	72.30	178.77	8,627.4	-332.2	7.1	332.3	12.00	12.00	0.00
8,800.0	75.30	178.77	8,634.3	-356.2	7.7	356.3	12.00	12.00	0.00
8,825.0	78.30	178.77	8,640.0	-380.6	8.2	380.6	12.00	12.00	0.00
8,850.0	81.30	178.77	8,644.5	-405.1	8.7	405.2	12.00	12.00	0.00
8,875.0	84.30	178.77	8,647.6	-429.9	9.2	430.0	12.00	12.00	0.00
8,900.0	87.30	178.77	8,649.4	-454.9	9.8	455.0	12.00	12.00	0.00
8,922.5	90.00	178.77	8,650.0	-477.4	10.3	477.5	12.00	12.00	0.00
8922.5' MD LP									
9,000.0	90.00	178.77	8,650.0	-554.8	11.9	555.0	0.00	0.00	0.00
9,100.0	90.00	178.77	8,650.0	-654.8	14.1	655.0	0.00	0.00	0.00
9,200.0	90.00	178.77	8,650.0	-754.8	16.2	755.0	0.00	0.00	0.00
9,300.0	90.00	178.77	8,650.0	-854.8	18.4	855.0	0.00	0.00	0.00
9,400.0	90.00	178.77	8,650.0	-954.7	20.5	955.0	0.00	0.00	0.00
9,500.0	90.00	178.77	8,650.0	-1,054.7	22.7	1,055.0	0.00	0.00	0.00
9,600.0	90.00	178.77	8,650.0	-1,154.7	24.8	1,155.0	0.00	0.00	0.00
9,700.0	90.00	178.77	8,650.0	-1,254.7	27.0	1,255.0	0.00	0.00	0.00
9,800.0	90.00	178.77	8,650.0	-1,354.7	29.1	1,355.0	0.00	0.00	0.00
9,900.0	90.00	178.77	8,650.0	-1,454.6	31.3	1,455.0	0.00	0.00	0.00
10,000.0	90.00	178.77	8,650.0	-1,554.6	33.4	1,555.0	0.00	0.00	0.00
10,100.0	90.00	178.77	8,650.0	-1,654.6	35.6	1,655.0	0.00	0.00	0.00
10,200.0	90.00	178.77	8,650.0	-1,754.6	37.7	1,755.0	0.00	0.00	0.00
10,300.0	90.00	178.77	8,650.0	-1,854.5	39.9	1,855.0	0.00	0.00	0.00
10,400.0	90.00	178.77	8,650.0	-1,954.5	42.0	1,955.0	0.00	0.00	0.00
10,500.0	90.00	178.77	8,650.0	-2,054.5	44.2	2,055.0	0.00	0.00	0.00
10,600.0	90.00	178.77	8,650.0	-2,154.5	46.3	2,155.0	0.00	0.00	0.00
10,700.0	90.00	178.77	8,650.0	-2,254.4	48.5	2,255.0	0.00	0.00	0.00
10,800.0	90.00	178.77	8,650.0	-2,354.4	50.6	2,355.0	0.00	0.00	0.00
10,900.0	90.00	178.77	8,650.0	-2,454.4	52.8	2,455.0	0.00	0.00	0.00
11,000.0	90.00	178.77	8,650.0	-2,554.4	54.9	2,555.0	0.00	0.00	0.00
11,100.0	90.00	178.77	8,650.0	-2,654.4	57.1	2,655.0	0.00	0.00	0.00
11,200.0	90.00	178.77	8,650.0	-2,754.3	59.2	2,755.0	0.00	0.00	0.00
11,300.0	90.00	178.77	8,650.0	-2,854.3	61.4	2,855.0	0.00	0.00	0.00
11,400.0	90.00	178.77	8,650.0	-2,954.3	63.5	2,955.0	0.00	0.00	0.00
11,500.0	90.00	178.77	8,650.0	-3,054.3	65.7	3,055.0	0.00	0.00	0.00
11,600.0	90.00	178.77	8,650.0	-3,154.2	67.8	3,155.0	0.00	0.00	0.00
11,700.0	90.00	178.77	8,650.0	-3,254.2	70.0	3,255.0	0.00	0.00	0.00
11,800.0	90.00	178.77	8,650.0	-3,354.2	72.1	3,355.0	0.00	0.00	0.00
11,900.0	90.00	178.77	8,650.0	-3,454.2	74.3	3,455.0	0.00	0.00	0.00
12,000.0	90.00	178.77	8,650.0	-3,554.1	76.4	3,555.0	0.00	0.00	0.00
12,100.0	90.00	178.77	8,650.0	-3,654.1	78.6	3,655.0	0.00	0.00	0.00
12,200.0	90.00	178.77	8,650.0	-3,754.1	80.7	3,755.0	0.00	0.00	0.00
12,300.0	90.00	178.77	8,650.0	-3,854.1	82.9	3,855.0	0.00	0.00	0.00
12,400.0	90.00	178.77	8,650.0	-3,954.1	85.0	3,955.0	0.00	0.00	0.00
12,500.0	90.00	178.77	8,650.0	-4,054.0	87.2	4,055.0	0.00	0.00	0.00
12,600.0	90.00	178.77	8,650.0	-4,154.0	89.3	4,155.0	0.00	0.00	0.00
12,700.0	90.00	178.77	8,650.0	-4,254.0	91.5	4,255.0	0.00	0.00	0.00
12,800.0	90.00	178.77	8,650.0	-4,354.0	93.6	4,355.0	0.00	0.00	0.00
12,900.0	90.00	178.77	8,650.0	-4,453.9	95.8	4,455.0	0.00	0.00	0.00
13,000.0	90.00	178.77	8,650.0	-4,553.9	97.9	4,555.0	0.00	0.00	0.00
13,097.1	90.00	178.77	8,650.0	-4,651.0	100.0	4,652.1	0.00	0.00	0.00
13097.1' MD PBHL									

COMPANY: COG Operating LLC
WELL: Big Papi Fed Com #2H
COUNTY: Eddy County, NM
DATUM: NAD 1927 (NADCON CONUS)
RIG: Silver Oak #7
GRID CORRECTION: **To convert a Magnetic Direction to a Grid Direction, Add 7.26°**

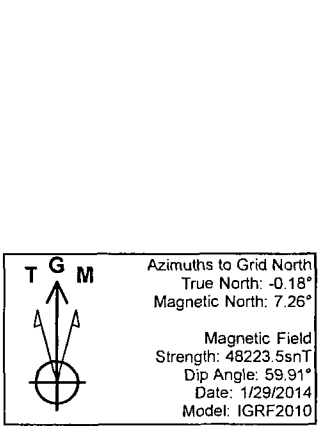
OFFICE: 936.582.7296

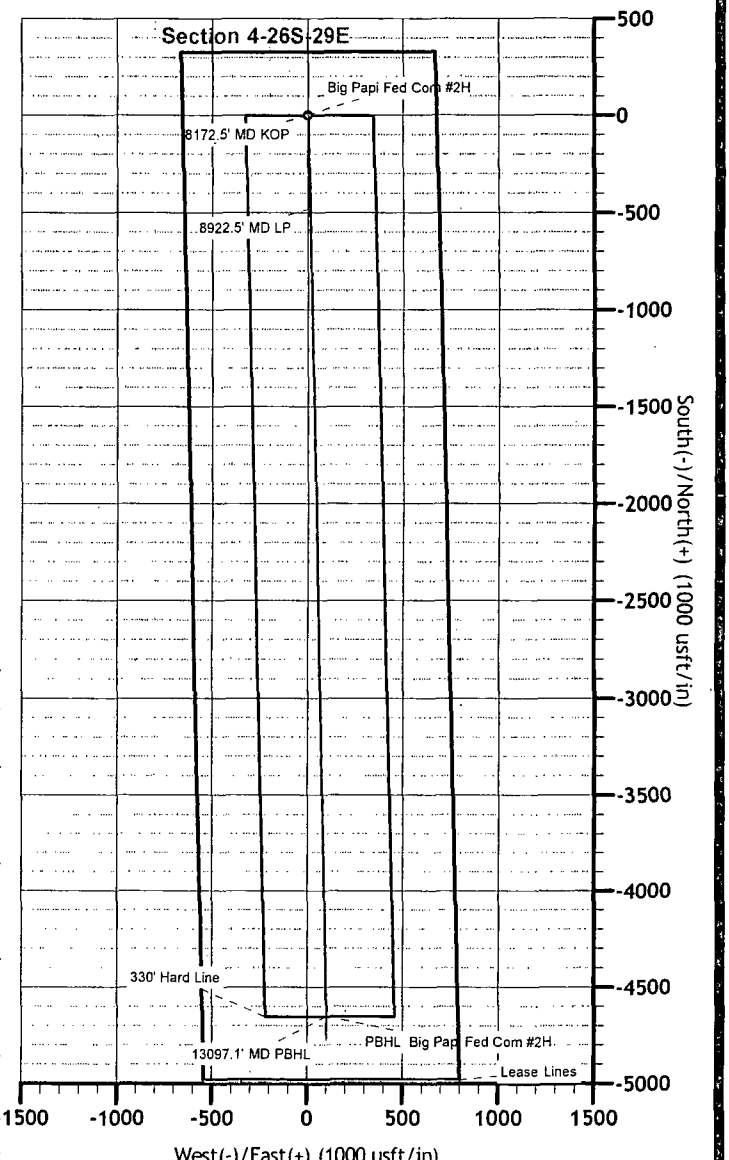
GEODETIC ZONE: New Mexico East 3001
GL 2975 + 18 @ 2993.0usft (Silver Oak #7)
GROUND ELEVATION: 2975.0

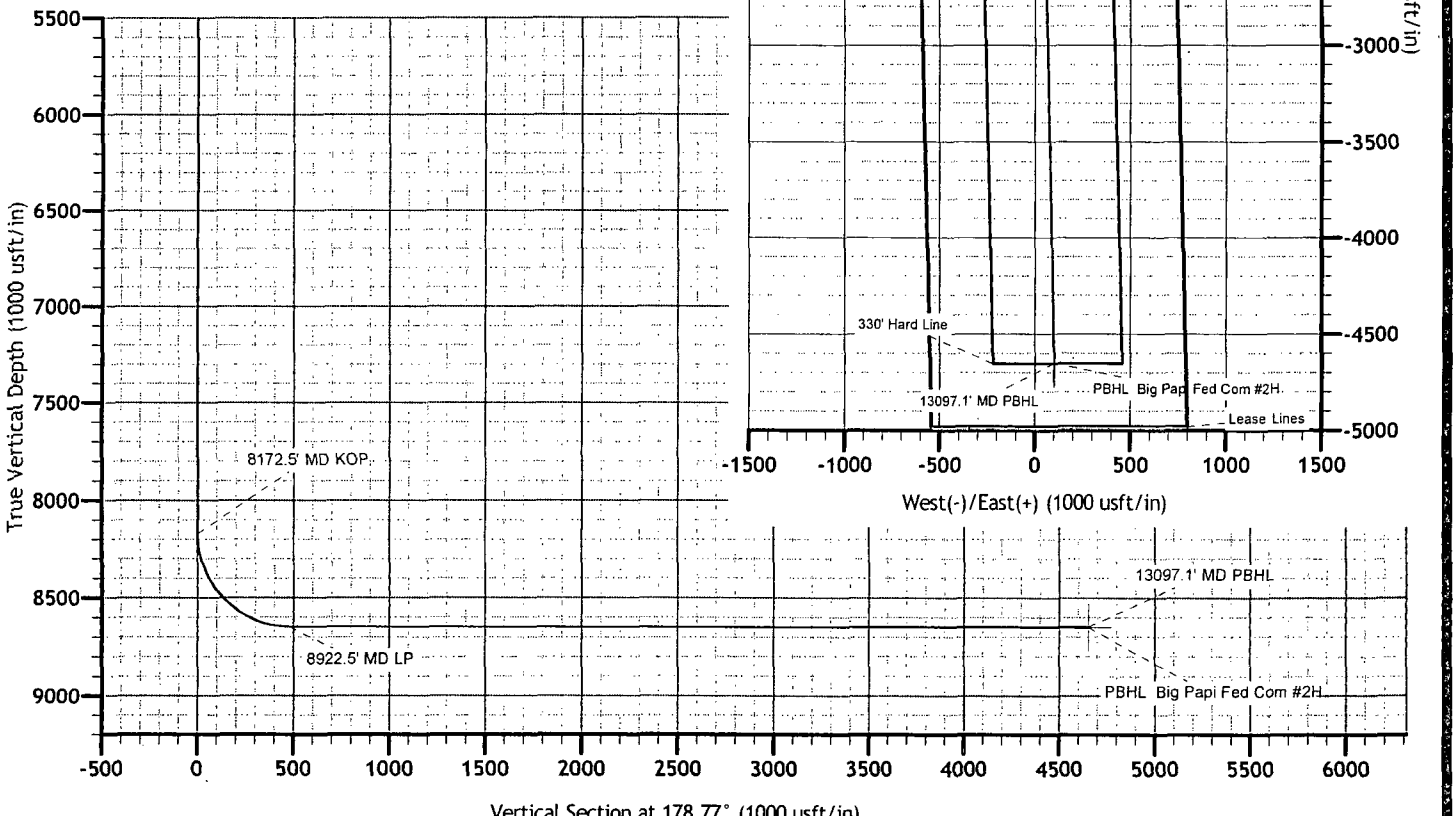
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	392241.40	606030.90	32° 4' 40.529 N	103° 59' 27.612 W	

PLAN SECTIONS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	8172.5	0.00	0.00	8172.5	0.0	0.0	0.00	0.00	0.0	
3	8922.5	90.00	178.77	8650.0	-477.4	10.3	12.00	178.77	477.5	
4	13097.1	90.00	178.77	8650.0	-4651.0	100.0	0.00	0.00	4652.1	PBHL Big Papi Fed Com #2H







PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC
LEASE NO.:	NM53231
WELL NAME & NO.:	2H BIG PAPI FEDERAL COM
SURFACE HOLE FOOTAGE:	0330' FNL & 1980' FWL
BOTTOM HOLE FOOTAGE	0330' FSL & 1980' FWL
LOCATION:	Section 4, T.26 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **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 the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

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 is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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
Possible brine/water flows in the Salado group.
Possible lost circulation in the Delaware Mountain and Bone Spring groups.

1. The **13-3/8** inch surface casing shall be set at **approximately 400 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    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 **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Pilot hole shall be plugged back with a 200' plug at TD with the TOC a minimum 50 feet above the top of the Wolfcamp (if penetrated), a 190' plug at 8500', and a 500' KOP with the base at 6400' or deeper. WOC and tag all plugs except kick off plug. Minimum of 25sx.

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

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

   ☒ Cement shall tie-back at least 400 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8 inch** intermediate casing shoe shall be **3000 (3M)** psi.

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

    e. 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.**

    f. 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. This test shall be performed prior to the test at full stack pressure.

g. **Pilot Hole:** 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.

D. DRILLING MUD (Pilot Hole)

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.

Proposed mud weight may not be adequate for drilling through Wolfcamp.

E. DRILL STEM TEST

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

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 022014