OCD Hobbs

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM120908

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
WINDWARD FEDERAL 1H

2. Name of Operator
COG PRODUCTION LLC
Contact: MELANIE J PARKER
E-Mail: mparker@concho.com

9. API Well No.
30-025-41414-00-X1

3a. Address
2208 W MAIN STREET
ARTESIA, NM 88210

3b. Phone No. (include area code)
Ph: 575-748-6952

HOBBS OCD
AUG 25 2014
RECEIVED

10. Field and Pool, or Exploratory
WC-025 G06 S253206M

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 30 T24S R32E Lot 1 190FNL 430FWL
32.194957 N Lat, 103.721102 W Lon

11. County or Parish, and State
LEA COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 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 recompletion 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 Production LLC respectfully requests the following changes to the original APD:

We will no longer drill a pilot hole.
Drill 8 3/4" vertical, curve and lateral to 14,900' MD/10,306' TVD (see directional plan and anticollision). Run 5 1/2" 17# P-110 csg to TD. Cmt in 1 stage with Lead: 1000 sx 36:65:6 H + Salt + Gilsonite + CF + CFR-3 @ 10.4 ppg/3.08 yield, Tail: 1350 sx 50:50:2 H + Salt + GasStop + CFR-3 @ 14.4 ppg/1.25 yield, 35% excess on OH.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #256573 verified by the BLM Well Information System
For COG PRODUCTION LLC, sent to the Hobbs
Committed to AFMSS for processing by JENNIFER MASON on 08/14/2014 (14JAM0086SE)

Name *(Printed/Typed)* SETH WILD — Title DRILLING ENGINEER

Signature (Electronic Submission) — Date 08/11/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
AUG 15 2014
/s/ Jennifer Mason
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

AUG 27 2014

Well: Winward Federal Well No. 1H
Site: Winward Federal
Project: Lea County, New Mexico
Design: rev1
Rig: Independence 205

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	9922.66	0.00	0.00	9922.66	0.00	0.00	0.00	0.00	0.00	KOP Begin 12 deg./100' build
3	10661.54	88.67	180.26	10400.00	-466.34	-2.14	12.00	180.26	466.34	Begin 88.67 ° lateral
4	14955.21	88.67	180.26	10500.00	-4758.80	-21.80	0.00	0.00	4758.85	PBHL/TD

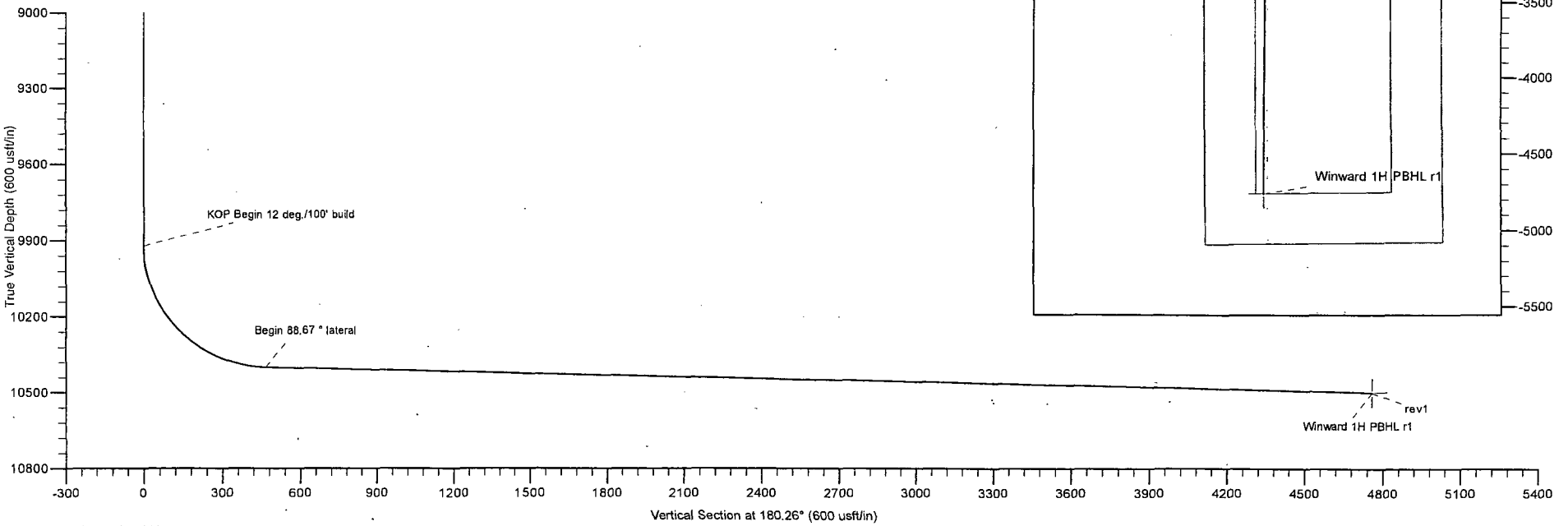
RKB Elevation: RKB=3539.1+26 @ 3565.10usft (Independence 205)
US State Plane 1927 (Exact solution)
New Mexico East 3001

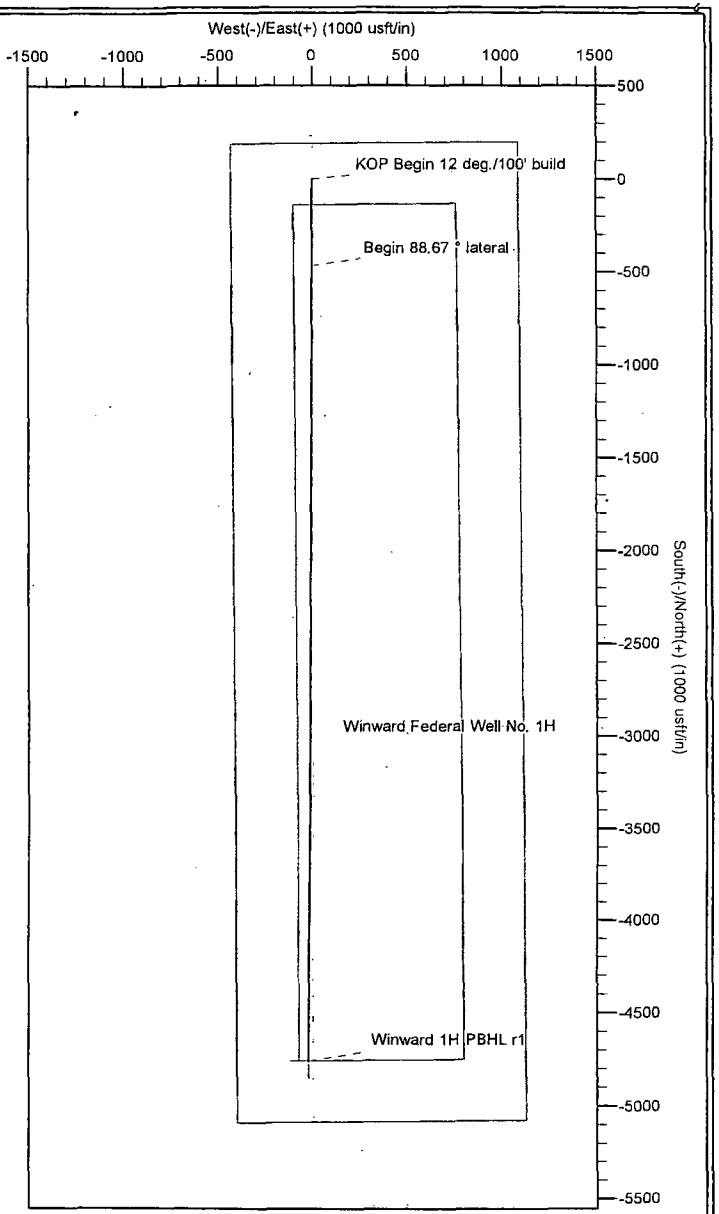
Northing	Easting	Latitude	Longitude
435184.60	689387.40	32.194957	-103.721102

Total Correction (M => G) To convert a Magnetic Direction to a Grid Direction, Add 6.94°

Azimuths to Grid North
True North: -0.33°
Magnetic North: 6.94°

Magnetic Field
Strength: 48267.3snT
Dip Angle: 60.06°
Date: 8/7/2014
Model: IGRF2010





18:11, August 08 2014

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well Winward Federal Well No. 1H
Project:	Lea County, New Mexico	**TVD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Site:	Winward Federal	**MD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Well:	Winward Federal Well No. 1H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	EDM 5000.1 Single User Db

Project Lea County, New Mexico

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 Winward Federal

Site Position:		**Northing:**	435,224.40 usft	**Latitude:**	32.194994
From:	Map	**Easting:**	694,014.30 usft	**Longitude:**	-103.706145
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.33 °

Well Winward Federal Well No. 1H, Surf Loc 190 FNL 430 FWL Sect 30

Well Position	**+N/-S**	0.00 usft	**Northing:**	435,184.60 usft	**Latitude:**	32.194957
	+E/-W	0.00 usft	**Easting:**	689,387.40 usft	**Longitude:**	-103.721102
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,539.10 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/7/2014	7.27	60.06	48,267

Design rev1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.26

Survey Tool Program Date 8/8/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	14,954.56	rev1 (Original Hole)	MWD	MWD - Standard

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40

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2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40

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5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
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6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
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6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40

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8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
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8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	435,184.60	689,387.40
9,922.66	0.00	0.00	9,922.66	0.00	0.00	0.00	0.00	435,184.60	689,387.40
KOP Begin 12 deg/100' build									
10,000.00	9.28	180.26	9,999.66	-6.25	-0.03	12.00	6.25	435,178.35	689,387.37
10,100.00	21.28	180.26	10,095.95	-32.56	-0.15	12.00	32.56	435,152.04	689,387.25
10,200.00	33.28	180.26	10,184.67	-78.31	-0.36	12.00	78.31	435,106.29	689,387.04
10,300.00	45.28	180.26	10,261.93	-141.50	-0.65	12.00	141.50	435,043.10	689,386.75
10,400.00	57.28	180.26	10,324.37	-219.38	-1.00	12.00	219.38	434,965.22	689,386.40
10,500.00	69.28	180.26	10,369.25	-308.54	-1.41	12.00	308.54	434,876.06	689,385.99

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well Winward Federal Well No. 1H
Project:	Lea County, New Mexico	**TVD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Site:	Winward Federal	**MD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Well:	Winward Federal Well No. 1H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)
10,600.00	81.28	180.26	10,394.61	-405.08	-1.86	12.00	405.08	434,779.52	689,385.54
10,661.54	88.67	180.26	10,400.00	-466.34	-2.14	12.00	466.34	434,718.26	689,385.26
Begin 88.67° lateral									
10,700.00	88.67	180.26	10,400.89	-504.79	-2.31	0.00	504.80	434,679.81	689,385.09
10,800.00	88.67	180.26	10,403.22	-604.76	-2.77	0.00	604.77	434,579.84	689,384.63
10,900.00	88.67	180.26	10,405.55	-704.73	-3.23	0.00	704.74	434,479.87	689,384.17
11,000.00	88.67	180.26	10,407.88	-804.71	-3.69	0.00	804.71	434,379.89	689,383.71
11,100.00	88.67	180.26	10,410.21	-904.68	-4.14	0.00	904.69	434,279.92	689,383.26
11,200.00	88.67	180.26	10,412.54	-1,004.65	-4.60	0.00	1,004.66	434,179.95	689,382.80
11,300.00	88.67	180.26	10,414.87	-1,104.62	-5.06	0.00	1,104.63	434,079.98	689,382.34
11,400.00	88.67	180.26	10,417.19	-1,204.59	-5.52	0.00	1,204.61	433,980.01	689,381.88
11,500.00	88.67	180.26	10,419.52	-1,304.56	-5.98	0.00	1,304.58	433,880.04	689,381.42
11,600.00	88.67	180.26	10,421.85	-1,404.54	-6.43	0.00	1,404.55	433,780.06	689,380.97
11,700.00	88.67	180.26	10,424.18	-1,504.51	-6.89	0.00	1,504.52	433,680.09	689,380.51
11,800.00	88.67	180.26	10,426.51	-1,604.48	-7.35	0.00	1,604.50	433,580.12	689,380.05
11,900.00	88.67	180.26	10,428.84	-1,704.45	-7.81	0.00	1,704.47	433,480.15	689,379.59
12,000.00	88.67	180.26	10,431.17	-1,804.42	-8.27	0.00	1,804.44	433,380.18	689,379.13
12,100.00	88.67	180.26	10,433.50	-1,904.40	-8.72	0.00	1,904.42	433,280.20	689,378.68
12,200.00	88.67	180.26	10,435.83	-2,004.37	-9.18	0.00	2,004.39	433,180.23	689,378.22
12,300.00	88.67	180.26	10,438.16	-2,104.34	-9.64	0.00	2,104.36	433,080.26	689,377.76
12,400.00	88.67	180.26	10,440.49	-2,204.31	-10.10	0.00	2,204.33	432,980.29	689,377.30
12,500.00	88.67	180.26	10,442.82	-2,304.28	-10.56	0.00	2,304.31	432,880.32	689,376.84
12,600.00	88.67	180.26	10,445.14	-2,404.25	-11.01	0.00	2,404.28	432,780.35	689,376.39
12,700.00	88.67	180.26	10,447.47	-2,504.23	-11.47	0.00	2,504.25	432,680.37	689,375.93
12,800.00	88.67	180.26	10,449.80	-2,604.20	-11.93	0.00	2,604.23	432,580.40	689,375.47
12,900.00	88.67	180.26	10,452.13	-2,704.17	-12.39	0.00	2,704.20	432,480.43	689,375.01
13,000.00	88.67	180.26	10,454.46	-2,804.14	-12.85	0.00	2,804.17	432,380.46	689,374.55

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well Winward Federal Well No. 1H
Project:	Lea County, New Mexico	**TVD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Site:	Winward Federal	**MD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Well:	Winward Federal Well No. 1H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)
13,100.00	88.67	180.26	10,456.79	-2,904.11	-13.30	0.00	2,904.14	432,280.49	689,374.10
13,200.00	88.67	180.26	10,459.12	-3,004.09	-13.76	0.00	3,004.12	432,180.51	689,373.64
13,300.00	88.67	180.26	10,461.45	-3,104.06	-14.22	0.00	3,104.09	432,080.54	689,373.18
13,400.00	88.67	180.26	10,463.78	-3,204.03	-14.68	0.00	3,204.06	431,980.57	689,372.72
13,500.00	88.67	180.26	10,466.11	-3,304.00	-15.14	0.00	3,304.04	431,880.60	689,372.26
13,600.00	88.67	180.26	10,468.44	-3,403.97	-15.59	0.00	3,404.01	431,780.63	689,371.81
13,700.00	88.67	180.26	10,470.76	-3,503.94	-16.05	0.00	3,503.98	431,680.66	689,371.35
13,800.00	88.67	180.26	10,473.09	-3,603.92	-16.51	0.00	3,603.95	431,580.68	689,370.89
13,900.00	88.67	180.26	10,475.42	-3,703.89	-16.97	0.00	3,703.93	431,480.71	689,370.43
14,000.00	88.67	180.26	10,477.75	-3,803.86	-17.43	0.00	3,803.90	431,380.74	689,369.97
14,100.00	88.67	180.26	10,480.08	-3,903.83	-17.88	0.00	3,903.87	431,280.77	689,369.52
14,200.00	88.67	180.26	10,482.41	-4,003.80	-18.34	0.00	4,003.85	431,180.80	689,369.06
14,300.00	88.67	180.26	10,484.74	-4,103.78	-18.80	0.00	4,103.82	431,080.82	689,368.60
14,400.00	88.67	180.26	10,487.07	-4,203.75	-19.26	0.00	4,203.79	430,980.85	689,368.14
14,500.00	88.67	180.26	10,489.40	-4,303.72	-19.72	0.00	4,303.76	430,880.88	689,367.68
14,600.00	88.67	180.26	10,491.73	-4,403.69	-20.17	0.00	4,403.74	430,780.91	689,367.23
14,700.00	88.67	180.26	10,494.06	-4,503.66	-20.63	0.00	4,503.71	430,680.94	689,366.77
14,800.00	88.67	180.26	10,496.39	-4,603.63	-21.09	0.00	4,603.68	430,580.97	689,366.31
14,900.00	88.67	180.26	10,498.71	-4,703.61	-21.55	0.00	4,703.66	430,480.99	689,365.85
14,955.21	88.67	180.26	10,500.00	-4,758.80	-21.80	0.00	4,758.85	430,425.80	689,365.60
PBHL/TD									

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well Winward Federal Well No. 1H
Project:	Lea County, New Mexico	**TVD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Site:	Winward Federal	**MD Reference:**	RKB=3539.1+26 @ 3565.10usft (Independence 205)
Well:	Winward Federal Well No. 1H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	EDM 5000.1 Single User Db

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,922.66	9,922.66	0.00	0.00	KOP Begin 12 deg./100' build
10,661.54	10,400.00	-466.34	-2.14	Begin 88.67 ° lateral
14,955.21	10,500.00	-4,758.80	-21.80	PBHL/TD

Lea County, NM
Sect 30 T24S, R32E

SHL	BHL
190' FNL	330' FSL
430' FWL	380' FWL

KB: 3565'
GL: 3539'

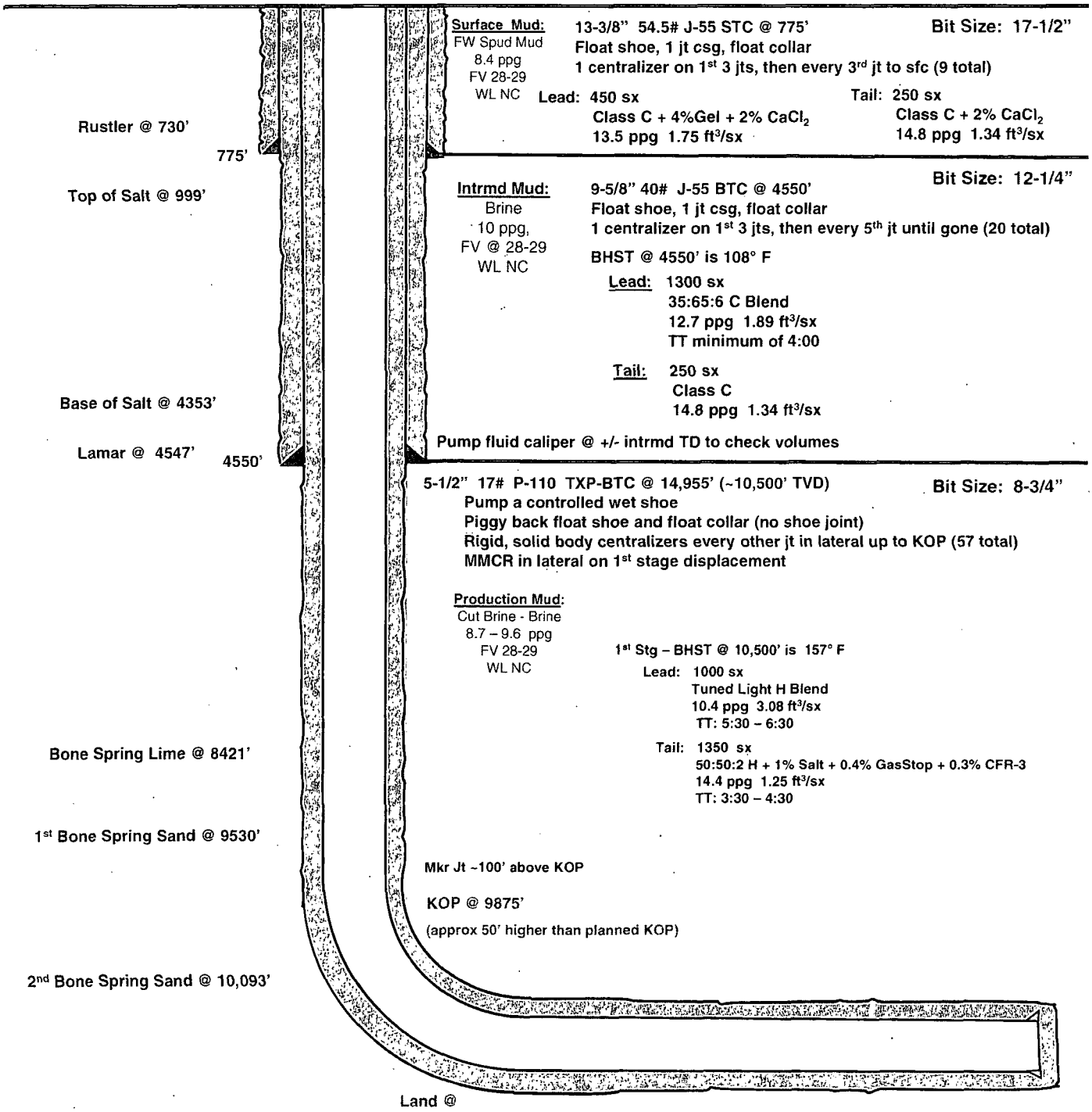
Windward Federal 1H

API: 30-025-41414

Lat/Long: 32.194957°N / 103.721102°W

Rig: Independence 205
Cmt: Halliburton
Mud: Nova
Dir Drlg: NZone
Wellhead: AFS

AFE @ Rig Rls: $2,944,000
AFE Days: 25



Surface Mud:
FW Spud Mud
8.4 ppg
FV 28-29
WL NC

13-3/8" 54.5# J-55 STC @ 775'
Bit Size: 17-1/2"
Float shoe, 1 jt csg, float collar
1 centralizer on 1st 3 jts, then every 3rd jt to sfc (9 total)

Lead: 450 sx
Class C + 4%Gel + 2% $CaCl_2$
13.5 ppg 1.75 ft^3/sx

Tail: 250 sx
Class C + 2% $CaCl_2$
14.8 ppg 1.34 ft^3/sx

Intrmd Mud:
Brine
10 ppg,
FV @ 28-29
WL NC

9-5/8" 40# J-55 BTC @ 4550'
Bit Size: 12-1/4"
Float shoe, 1 jt csg, float collar
1 centralizer on 1st 3 jts, then every 5th jt until gone (20 total)
BHST @ 4550' is 108° F

Lead: 1300 sx
35:65:6 C Blend
12.7 ppg 1.89 ft^3/sx
TT minimum of 4:00

Tail: 250 sx
Class C
14.8 ppg 1.34 ft^3/sx

Pump fluid caliper @ +/- intrmd TD to check volumes

5-1/2" 17# P-110 TXP-BTC @ 14,955' (~10,500' TVD)
Bit Size: 8-3/4"
Pump a controlled wet shoe
Piggy back float shoe and float collar (no shoe joint)
Rigid, solid body centralizers every other jt in lateral up to KOP (57 total)
MMCR in lateral on 1st stage displacement

Production Mud:
Cut Brine - Brine
8.7 – 9.6 ppg
FV 28-29
WL NC

1st Stg – BHST @ 10,500' is 157° F

Lead: 1000 sx
Tuned Light H Blend
10.4 ppg 3.08 ft^3/sx
TT: 5:30 – 6:30

Tail: 1350 sx
50:50:2 H + 1% Salt + 0.4% GasStop + 0.3% CFR-3
14.4 ppg 1.25 ft^3/sx
TT: 3:30 – 4:30

Mkr Jt ~100' above KOP

KOP @ 9875'
(approx 50' higher than planned KOP)

Land @
10,661 MD
10,400' TVD
88.67°, 180 azm

4758' VS Lateral 180° AZ

EOL @
14,955' MD,
~10,500' TVD

Wild: 8/11/14

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Production, LLC
LEASE NO.:	NMNM-120908
WELL NAME & NO.:	Windward Federal 1H
SURFACE HOLE FOOTAGE:	0190' FNL & 0430' FWL
BOTTOM HOLE FOOTAGE	0330' FSL & 0380' FWL
LOCATION:	Section 30, T. 24 S., R 32 E., NMPM
COUNTY:	Lea County, New Mexico
API:	30-025-41414

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)

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

1. **Hydrogen Sulfide has been reported, but no measurements have been recorded. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, please report measurements 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 or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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.

Possibility of water and brine flows in the Salado, Castile, and Delaware and Bone Spring.
Possibility of lost circulation in the Delaware and Bone Spring.

1. The **13-3/8** inch surface casing shall be set at approximately **775** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) 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 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.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

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.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required through the curve and a minimum of one every other joint.

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

    ☒ Cement should tie-back at least 500 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. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

3. 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.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

5. 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**.

    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.

    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.

D. DRILL STEM TEST

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

E. 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 081514