

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD Hobbs
HOBBS OCD

JUN 02 2017

RECEIVED

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM120908
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator COG PRODUCTION LLC (217955)		7. If Unit or CA Agreement, Name and No.
3a. Address 2208 West Main Street Artesia NM 88210		8. Lease Name and Well No. AZORES FEDERAL 6H (39881)
3b. Phone No. (include area code) (575)748-6940		9. API Well No. 30-025-43845
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface SWSE / 210 FSL / 1850 FEL / LAT 32.18176 / LONG -103.694133 At proposed prod. zone NWNE / 200 FNL / 1650 FEL / LAT 32.195156 / LONG -103.69351		10. Field and Pool, or Exploratory WC-025 G-06 S253206M / BONE SPRIN
14. Distance in miles and direction from nearest town or post office* 22 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 29 / T24S / R32E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 210 feet	16. No. of acres in lease 1891.72	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, 201 feet applied for, on this lease, ft. 201 feet	19. Proposed Depth 9190 feet / 13894 feet	20. BLM/BIA Bond No. on file FED: NMB000860
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3497 feet	22. Approximate date work will start* 03/01/2017	23. Estimated duration 30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature (Electronic Submission)	Name (Printed/Typed) Mayte Reyes / Ph: (575)748-6945	Date 02/20/2017
Title Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 05/26/2017
Title Supervisor Multiple Resources		

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.

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

KZ
06/02/17

COG Production LLC - Azores Federal #6H

1. Geologic Formations

TVD of target	9,190' EOL	Pilot hole depth	NA
MD at TD:	13,894'	Deepest expected fresh water:	380'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	854	Water	
Top of Salt	1071	Salt	
Base of Salt	4389	Salt	
Lamar	4617	Salt Water	
Bell Canyon	4639	Salt Water	
Cherry Canyon	5549	Oil/Gas	
Brushy Canyon	6939	Oil/Gas	
Bone Spring Lime	8563	Oil/Gas	
U. Avalon Shale	8803	Oil/Gas	
L. Avalon Shale	9043	Target Oil/Gas	
1st Bone Spring Sand	9622	Not Penetrated	
2nd Bone Spring Sand	X	Not Penetrated	
3rd Bone Spring Sand	X	Not Penetrated	
Wolfcamp	X	Not Penetrated	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	880	13.375"	54.5	J55	STC	2.81	1.37	10.72
12.25"	0	4645	9.625"	40	J55	LTC	1.04	1.11	2.80
8.75"	0	13,894	5.5"	17	P110	LTC	1.67	2.98	2.85
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

COG Production LLC - Azores Federal #6H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

COG Production LLC - Azores Federal #6H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft ³ / sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	340	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Inter.	880	12.7	2.0	9.6	16	Lead: 35:65:6 C Blend
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	700	11	3.2	19.7	40	Lead: NEOCEM TM 2 lbm/sk kol-seal
	1170	13.2	1.41	7.5	18	Tail: NEOCEM TM

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1 st Intermediate	0'	50%
Production	4,145'	25% OH in Lateral (KOP to EOL) – 40% OH in Vertical

COG Production LLC - Azores Federal #6H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12-1/4"	13-5/8"	2M	Annular	x	2000 psi
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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 will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
N	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

COG Production LLC - Azores Federal #6H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Saturated Brine	10 - 10.2	28-34	N/C
9-5/8" Int shoe	Lateral TD	Cut Brine	8.6 - 9.4	28-34	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

COG Production LLC - Azores Federal #6H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4495 psi at 9190' TVD
Abnormal Temperature	NO 150 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N H₂S is present

Y H₂S Plan attached

8. Other Facets of Operation

N	Is it a walking operation?
N	Is casing pre-set?

x	H ₂ S Plan.
x	BOP & Choke Schematics.
x	Directional Plan



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

05/26/2017

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Mayte Reyes

Signed on: 02/20/2017

Title: Regulatory Analyst

Street Address: 2208 W Main Street

City: Artesia

State: NM

Zip: 88210

Phone: (575)748-6945

Email address: Mreyes1@concho.com

Field Representative

Representative Name: Rand French

Street Address: 2208 West Main Street

City: Artesia

State: NM

Zip: 88210

Phone: (575)748-6940

Email address: rfrench@concho.com



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

05/26/2017

APD ID: 10400011660

Submission Date: 02/20/2017

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400011660

Tie to previous NOS?

Submission Date: 02/20/2017

BLM Office: HOBBS

User: Mayte Reyes

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM120908

Lease Acres: 1891.72

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: COG PRODUCTION LLC

Operator letter of designation:

Keep application confidential? YES

Operator Info

Operator Organization Name: COG PRODUCTION LLC

Operator Address: 2208 West Main Street

Zip: 88210

Operator PO Box:

Operator City: Artesia

State: NM

Operator Phone: (575)748-6940

Operator Internet Address: mreyes1@concho.com

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: AZORES FEDERAL

Well Number: 6H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-06
S253206M

Pool Name: BONE SPRING

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** YES **New surface disturbance?** Y

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 2H

Well Class: HORIZONTAL

AZORES FEDERAL

Number of Legs:

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 22 Miles

Distance to nearest well: 201 FT

Distance to lease line: 210 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: COG Azores 6H_C102_02-20-2017.pdf

Well work start Date: 03/01/2017

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

STATE: NEW MEXICO

Meridian: NEW MEXICO PRINCIPAL **County:** LEA

Latitude: 32.18176

Longitude: -103.694133

SHL

Elevation: 3497

MD: 0

TVD: 0

Leg #: 1

Lease Type: FEDERAL

Lease #: NMNM120908

NS-Foot: 210

NS Indicator: FSL

EW-Foot: 1850

EW Indicator: FEL

Twsp: 24S

Range: 32E

Section: 29

Aliquot: SWSE

Lot:

Tract:

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.18176	Longitude: -103.694133	
KOP	Elevation: 3497	MD: 0	TVD: 0
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM120908	
	NS-Foot: 210	NS Indicator: FSL	
	EW-Foot: 1850	EW Indicator: FEL	
	Twsp: 24S	Range: 32E	Section: 29
	Aliquot: SWSE	Lot:	Tract:
	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.182093	Longitude: -103.693488	
PPP	Elevation: -5225	MD: 8722	TVD: 8722
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM120908	
	NS-Foot: 330	NS Indicator: FSL	
	EW-Foot: 1650	EW Indicator: FEL	
	Twsp: 24S	Range: 32E	Section: 29
	Aliquot: SWSE	Lot:	Tract:
	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.194798	Longitude: -103.69351	
EXIT	Elevation: -1282	MD: 13800	TVD: 4779
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM120908	
	NS-Foot: 330	NS Indicator: FNL	
	EW-Foot: 1650	EW Indicator: FEL	
	Twsp: 24S	Range: 32E	Section: 29
	Aliquot: NWNE	Lot:	Tract:
	STATE: NEW MEXICO	Meridian: NEW MEXICO PRINCIPAL	County: LEA
	Latitude: 32.195156	Longitude: -103.69351	
BHL	Elevation: -5693	MD: 13894	TVD: 9190
Leg #: 1	Lease Type: FEDERAL	Lease #: NMNM120908	
	NS-Foot: 200	NS Indicator: FNL	
	EW-Foot: 1650	EW Indicator: FEL	

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Twsp: 24S

Range: 32E

Section: 29

Aliquot: NWNE

Lot:

Tract:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

05/26/2017

APD ID: 10400011660

Submission Date: 02/20/2017

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

ID: Surface formation

Name: UNKNOWN

Lithology(ies):

Elevation: 3497

True Vertical Depth: 0

Measured Depth: 0

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 1

Name: RUSTLER

Lithology(ies):

Elevation: 2643

True Vertical Depth: 854

Measured Depth: 854

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 2

Name: TOP OF SALT

Lithology(ies):

Elevation: 2426

True Vertical Depth: 1071

Measured Depth: 1071

Mineral Resource(s):

NONE

Is this a producing formation? N

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

ID: Formation 3

Name: BASE OF SALT

Lithology(ies):

Elevation: -892

True Vertical Depth: 4389

Measured Depth: 4389

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 4

Name: LAMAR LS

Lithology(ies):

SILTSTONE

Elevation: -1120

True Vertical Depth: 4617

Measured Depth: 4617

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 5

Name: BELL CANYON

Lithology(ies):

Elevation: -1142

True Vertical Depth: 4639

Measured Depth: 4639

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 6

Name: CHERRY CANYON

Lithology(ies):

Elevation: -2052

True Vertical Depth: 5549

Measured Depth: 5549

Mineral Resource(s):

NATURAL GAS

OIL

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Is this a producing formation? N

ID: Formation 7

Name: BRUSHY CANYON

Lithology(ies):

Elevation: -3442

True Vertical Depth: 6939

Measured Depth: 6939

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 8

Name: BONE SPRING LIME

Lithology(ies):

Elevation: -5066

True Vertical Depth: 8563

Measured Depth: 8563

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 9

Name: AVALON

Lithology(ies):

Elevation: -5306

True Vertical Depth: 8803

Measured Depth: 8803

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 10

Name: AVALON

Lithology(ies):

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Elevation: -5546

True Vertical Depth: 9043

Measured Depth: 9043

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 11

Name: BONE SPRING 1ST

Lithology(ies):

Elevation: -6125

True Vertical Depth: 9622

Measured Depth: 9622

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 4645

Equipment: Annular. The BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? NO

Variance request:

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional and tested.

Choke Diagram Attachment:

COG Azores 6H_2M Choke_02-20-2017.pdf

BOP Diagram Attachment:

COG Azores 6H_2M BOP_02-20-2017.pdf

Pressure Rating (PSI): 3M

Rating Depth: 9190

Equipment: Annular, blind ram, pipe ram. The BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? NO

Variance request:

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

working pressure listed in the table above. If the system is upgraded all of the components installed will be functional and tested.

Choke Diagram Attachment:

COG Azores 6H_3M Choke_02-20-2017.pdf

BOP Diagram Attachment:

COG Azores 6H_3M BOP_02-20-2017.pdf

Section 3 - Casing

String Type: SURFACE

Other String Type:

Hole Size: 17.5

Top setting depth MD: 0

Top setting depth TVD: 0

Top setting depth MSL: -5693

Bottom setting depth MD: 880

Bottom setting depth TVD: 880

Bottom setting depth MSL: -6548

Calculated casing length MD: 880

Casing Size: 13.375

Other Size

Grade: J-55

Other Grade:

Weight: 54.5

Joint Type: STC

Other Joint Type:

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2.81

Burst Design Safety Factor: 1.37

Joint Tensile Design Safety Factor type: DRY

Joint Tensile Design Safety Factor: 10.72

Body Tensile Design Safety Factor type: DRY

Body Tensile Design Safety Factor: 10.72

Casing Design Assumptions and Worksheet(s):

COG Azores 6H_Casing Plan_02-20-2017.pdf

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

String Type: INTERMEDIATE

Other String Type:

Hole Size: 12.25

Top setting depth MD: 0

Top setting depth TVD: 0

Top setting depth MSL: -5693

Bottom setting depth MD: 4645

Bottom setting depth TVD: 4645

Bottom setting depth MSL: -10308

Calculated casing length MD: 4645

Casing Size: 9.625

Other Size

Grade: J-55

Other Grade:

Weight: 40

Joint Type: LTC

Other Joint Type:

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.04

Burst Design Safety Factor: 1.11

Joint Tensile Design Safety Factor type: DRY

Joint Tensile Design Safety Factor: 2.8

Body Tensile Design Safety Factor type: DRY

Body Tensile Design Safety Factor: 2.8

Casing Design Assumptions and Worksheet(s):

COG Azores 6H_Casing Plan_02-20-2017.pdf

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

String Type: PRODUCTION

Other String Type:

Hole Size: 8.75

Top setting depth MD: 0

Top setting depth TVD: 0

Top setting depth MSL: -5693

Bottom setting depth MD: 13894

Bottom setting depth TVD: 13894

Bottom setting depth MSL: -14873

Calculated casing length MD: 13894

Casing Size: 5.5

Other Size

Grade: P-110

Other Grade:

Weight: 17

Joint Type: LTC

Other Joint Type:

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.67

Burst Design Safety Factor: 2.98

Joint Tensile Design Safety Factor type: DRY

Joint Tensile Design Safety Factor: 2.85

Body Tensile Design Safety Factor type: DRY

Body Tensile Design Safety Factor: 2.85

Casing Design Assumptions and Worksheet(s):

COG Azores 6H_Casing Plan_02-20-2017.pdf

Section 4 - Cement

Casing String Type: SURFACE

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Stage Tool Depth:

Lead

Top MD of Segment: 0

Bottom MD Segment: 880

Cement Type: Class C

Additives: 4% gel + 1% CaCl₂

Quantity (sks): 340

Yield (cu.ff./sk): 1.75

Density: 13.5

Volume (cu.ft.): 595

Percent Excess: 50

Tail

Top MD of Segment: 0

Bottom MD Segment: 880

Cement Type: Class C

Additives: 2% CaCl₂

Quantity (sks): 250

Yield (cu.ff./sk): 1.34

Density: 14.8

Volume (cu.ft.): 335

Percent Excess: 50

Casing String Type: INTERMEDIATE

Stage Tool Depth:

Lead

Top MD of Segment: 0

Bottom MD Segment: 4645

Cement Type: 35:65:6 C Blend

Additives: No additives.

Quantity (sks): 880

Yield (cu.ff./sk): 2

Density: 12.7

Volume (cu.ft.): 1760

Percent Excess: 50

Tail

Top MD of Segment: 0

Bottom MD Segment: 4645

Cement Type: Class C

Additives: 2% CaCl

Quantity (sks): 250

Yield (cu.ff./sk): 1.34

Density: 14.8

Volume (cu.ft.): 335

Percent Excess: 50

Casing String Type: PRODUCTION

Stage Tool Depth:

Lead

Top MD of Segment: 4645

Bottom MD Segment: 13894

Cement Type: Lead: NEOCEM TM 2
lbm/sk kol-seal

Additives: No additives

Quantity (sks): 700

Yield (cu.ff./sk): 3.2

Density: 11

Volume (cu.ft.): 2240

Percent Excess: 25

Tail

Top MD of Segment: 4645

Bottom MD Segment: 13894

Cement Type: Tail: NEOCEM TM

Additives: No additives

Quantity (sks): 1170

Yield (cu.ff./sk): 1.41

Density: 13.2

Volume (cu.ft.): 1649

Percent Excess: 25

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth: 0

Bottom Depth: 880

Mud Type: OTHER

FW Gel

Min Weight (lbs./gal.): 8.6

Max Weight (lbs./gal.): 8.8

Density (lbs/cu.ft.):

Gel Strength (lbs/100 sq.ft.):

PH:

Viscosity (CP):

Filtration (cc):

Salinity (ppm):

Additional Characteristics: Fresh water gel

Top Depth: 4645

Bottom Depth: 13894

Mud Type: OTHER

Cut Brine

Min Weight (lbs./gal.): 8.6

Max Weight (lbs./gal.): 9.4

Density (lbs/cu.ft.):

Gel Strength (lbs/100 sq.ft.):

PH:

Viscosity (CP):

Filtration (cc):

Salinity (ppm):

Additional Characteristics: Cut Brine

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Top Depth: 880

Bottom Depth: 4645

Mud Type: OTHER

Saturated Brine

Min Weight (lbs./gal.): 10

Max Weight (lbs./gal.): 10.2

Density (lbs/cu.ft.):

Gel Strength (lbs/100 sq.ft.):

PH:

Viscosity (CP):

Filtration (cc):

Salinity (ppm):

Additional Characteristics: Saturated Brine

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

None planned

List of open and cased hole logs run in the well:

OTH

Other log type(s):

CNL/GR

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4495

Anticipated Surface Pressure: 2473.19

Anticipated Bottom Hole Temperature(F): 150

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

COG Azores 6H_H2S Plan_02-20-2017.pdf

COG Azores 6H_H2S Schem_02-20-2017.pdf

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG Azores 6H_Direc Plan_02-20-2017.pdf

COG Azores 6H_AC Report_02-20-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

COG Azores 6H_Drill Plan_02-20-2017.pdf

Other Variance attachment:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

PWD Data Report

05/26/2017

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Injection well name:

Injection well API number:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

05/26/2017

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000860

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

SUPO Data Report

05/26/2017

APD ID: 10400011660

Submission Date: 02/20/2017

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

COG_Azores_6H_Maps_04-03-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? YES

ROW ID(s)

ID: NM132549

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

COG Azores 6H_1Mile Map Data_02-20-2017.pdf

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Production will be sent to existing Azores Federal #3H facility. A surface flow line of approximately 1317' of 3" steel pipe carrying oil, gas and water under a maximum pressure of 125 psi will go to the facility at the Azores Central Tank Battery location. We plan to install a 4" surface polyethylene pipe transporting Gas Lift Gas from the Azores Federal #3H central tank battery to the Azores Federal #6H. The surface Gas Lift Gas pipe of approximately 1317' under a maximum pressure of 125 psi will be installed as per the flowline plat.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING

Water source type: OTHER

Describe type: Brine water will be purchased by Malaga 2 Brine Station.

Source latitude: 32.20927

Source longitude: -104.004105

Source datum: NAD83

Water source permit type: PRIVATE CONTRACT

Source land ownership: COMMERCIAL

Water source transport method: TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 30000

Source volume (acre-feet): 3.866793

Source volume (gal): 1260000

Water source use type: STIMULATION, SURFACE CASING

Water source type: OTHER

Describe type: Fresh water will be furnished by C-11A water well, the water will be purchased by Mesquite SWD P.O. Box 1479 Carlsbad, NM 88221 575-706-1840.

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: COMMERCIAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 225000

Source volume (acre-feet): 29.000946

Source volume (gal): 9450000

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Water source and transportation map:

COG Azores 6H_Brine H2O_02-20-2017.pdf

COG Azores 6H_Fresh H2O_02-20-2017.pdf

Water source comments: Fresh water will be furnished by C-11A water well, the water will be purchased by Mesquite SWD P.O. Box 1479 Carlsbad, NM 88221 575-706-1840. Brine water will be purchased by Malaga 2 Brine Station.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, candidate source will be caliche from a State pit located about 5 miles South on CR1

Construction Materials source location attachment:

COG Azores 6H_Caliche pit_02-20-2017.pdf

Section 7 - Methods for Handling Waste

Waste type: SEWAGE

Waste content description: Human waste and grey water

Amount of waste: 1000 gallons

Waste disposal frequency : One Time Only

Safe containment description: Waste will be properly contained and disposed of properly at a state approved disposal facility

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: DRILLING

Waste content description: Drilling fluids, produced oil and water during drilling and completion operations

Amount of waste: 6000 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling waste will be stored safely and disposed of properly

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations

Amount of waste: 500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Roll-off cutting containers

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: YES

Ancillary Facilities attachment:

Azores Federal 6H GCP_02-20-2017.pdf

Comments: Gas Capture Plan attached

Section 9 - Well Site Layout

Well Site Layout Diagram:

COG Azores 6H_Prod Facility_02-20-2017.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

COG Azores 6H_Prod Facility_02-20-2017.pdf

Drainage/Erosion control construction: No waddles are necessary for this location, due to relatively flat topography and lower elevations are on the South end of location next to the road.

Drainage/Erosion control reclamation: NA

Wellpad long term disturbance (acres): 2.5

Wellpad short term disturbance (acres): 3.03

Access road long term disturbance (acres): 0

Access road short term disturbance (acres): 0

Pipeline long term disturbance (acres): 0.9070248

Pipeline short term disturbance (acres): 0.9070248

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 3.4070249

Total short term disturbance: 3.9370248

Reconstruction method: Portions of the pad not needed for production operations will be re-contoured to its original state as much as possible. The caliche that is removed will be re-used. The stockpiled topsoil will be spread out over reclaimed area and reseeded with BLM approved seed mixture

Topsoil redistribution: West 70'

Soil treatment: None

Existing Vegetation at the well pad: Native prairie grasses, some mesquite and shinnery oak

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Native prairie grasses, some mesquite and shinnery oak

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Native prairie grasses, some mesquite and shinnery oak

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

Seed Type Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Rand

Last Name: French

Phone: (432)254-5556

Email: rfrench@concho.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: NA

Weed treatment plan attachment:

Monitoring plan description: NA

Monitoring plan attachment:

Success standards: NA

Pit closure description: NA

Pit closure attachment:

COG Azores 6H_Closed Loop_02-20-2017.pdf

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: COG PRODUCTION LLC

Well Name: AZORES FEDERAL

Well Number: 6H

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Onsite completed 2/1/17 by Gerald Herrera (COG), Jeff Robertson (BLM) and Harcrow Surveying

Other SUPO Attachment

COG Azores 6H_Certification_02-20-2017.pdf

COG Azores 6H_Pipeline_02-20-2017.pdf