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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

Lease Serial No.
NMLC061842

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No. (40481)
FLAT HEAD FEDERAL COM 26H

9. API Well No.
30-025-47902

10. Field and Pool, or Exploratory (44500)
MALJAMAR / YESO, WEST

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 14 / T17S / R32E / NMP

12. County or Parish
LEA

13. State
NM

1a. Type of work: DRILL REENTER

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

2. Name of Operator
COG OPERATING LLC (229137)

3a. Address
600 West Illinois Ave Midland TX 79701

3b. Phone No. (include area code)
(432)683-7443

4. Location of Well (Report location clearly and in accordance with any State requirements.)*
At surface NWNE / 1123 FNL / 1823 FEL / LAT 32.838717 / LONG -103.734434
At proposed prod. zone NWNE / 220 FNL / 1650 FEL / LAT 32.8557195 / LONG -103.7338832

14. Distance in miles and direction from nearest town or post office*
1.5 miles

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
220 feet

16. No. of acres in lease
320

17. Spacing Unit dedicated to this well
200

18. Distance from proposed location* to nearest well, drilling, completed, 1 feet applied for, on this lease, ft.
1 feet

19. Proposed Depth
6525 feet / 12490 feet

20. BLM/BIA Bond No. on file
FED: NMB000215

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
4089 feet

22. Approximate date work will start*
09/18/2017

23. Estimated duration
15 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)
Robyn Odom / Ph: (432)685-4385

Date
04/06/2017

Title
Regulatory Analyst

Approved by (Signature)
(Electronic Submission)

Name (Printed/Typed)
Bobby Ballard / Ph: (575)234-2235

Date
07/18/2017

Title
Natural Resource Specialist

Office
CARLSBAD

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
07/24/17

APD ID: 10400009396	Submission Date: 04/06/2017	Highlight All Changes
Operator Name: COG OPERATING LLC	Federal/Indian APD: FED	
Well Name: FLAT HEAD FEDERAL COM	Well Number: 26H	
Well Type: OIL WELL	Well Work Type: Drill	

Application

Section 1 - General

APD ID: 10400009396	Tie to previous NOS?	Submission Date: 04/06/2017
BLM Office: CARLSBAD	User: Robyn Odom	Title: Regulatory Analyst
Federal/Indian APD: FED	Is the first lease penetrated for production Federal or Indian? FED	
Lease number: NMLC061842	Lease Acres: 320	
Surface access agreement in place?	Allotted?	Reservation:
Agreement in place? NO	Federal or Indian agreement:	
Agreement number:		
Agreement name:		
Keep application confidential? NO		
Permitting Agent? NO	APD Operator: COG OPERATING LLC	
Operator letter of designation:		
Keep application confidential? NO		

Operator Info

Operator Organization Name: COG OPERATING LLC

Operator Address: 600 West Illinois Ave

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)683-7443

Operator Internet Address: RODOM@CONCHO.COM

Zip: 79701

Section 2 - Well Information

Well in Master Development Plan? NO	Mater Development Plan name:
Well in Master SUPO? NO	Master SUPO name:
Well in Master Drilling Plan? NO	Master Drilling Plan name:

Operator Name: COG OPERATING LLC
Well Name: FLAT HEAD FEDERAL COM **Well Number:** 26H

Well Name: FLAT HEAD FEDERAL COM **Well Number:** 26H **Well API Number:**
Field/Pool or Exploratory? Field and Pool **Field Name:** MALJAMAR **Pool Name:** YESO, WEST

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: SINGLE WELL **Multiple Well Pad Name:** **Number:**

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 1.5 Miles **Distance to nearest well:** 1 FT **Distance to lease line:** 220 FT

Reservoir well spacing assigned acres Measurement: 200 Acres

Well plat: Flat_Head_Federal_Com_26H_C102_03-14-2017.pdf

Well work start Date: 09/18/2017 **Duration:** 15 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	1123	FNL	1823	FEL	17S	32E	14	Aliquot NWNE	32.838717	-103.7344344	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC061842	4089	0	0
KOP Leg #1	1123	FNL	1823	FEL	17S	32E	14	Aliquot NWNE	32.838717	-103.7344344	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC061842	-1915	6004	6004
PPP Leg #1	985	FNL	1819	FEL	17S	32E	14	Aliquot NWNE	32.8391	-103.734458	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC061842	-2274	6400	6363

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FNL	1650	FEL	17S	32E	11	Aliquot NWNE	32.8557195	-103.7338832	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-2436	12490	6525
BHL Leg #1	220	FNL	1650	FEL	17S	32E	11	Aliquot NWNE	32.8557195	-103.7338832	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-2436	12490	6525

Drilling Plan

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
17691	UNKNOWN	4089	0	0	ALLUVIUM	USEABLE WATER	No
17746	RUSTLER	3150	918	918	ANHYDRITE	OTHER : Brackish Water	No
17718	TOP SALT	2948	1120	1120	SALT	OTHER : Salt	No
17724	TANSILL	1948	2120	2120	DOLOMITE	NONE	No
17694	YATES	1832	2236	2236	SANDSTONE,DOLOMITE	NATURAL GAS,OIL	No
15319	SEVEN RIVERS	1487	2581	2581	SANDSTONE,DOLOMITE	NATURAL GAS,OIL	No
15318	QUEEN	856	3212	3212	SANDSTONE	NATURAL GAS,OIL	No
17683	GRAYBURG	437	3631	3631	SANDSTONE,DOLOMITE	NATURAL GAS,OIL	No
15314	SAN ANDRES	104	3964	3964	DOLOMITE,ANHYDRITE	NATURAL GAS,OIL	No
17701	GLORIETA	-1382	5450	5450	SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
17700	PADDOCK	-1447	5515	5515	DOLOMITE	NATURAL GAS,OIL	No
15342	BLINEBRY	-1887	5955	5955	DOLOMITE	NATURAL GAS,OIL	Yes
17685	TUBB	-2777	6845	6845	SANDSTONE,DOLOMITE	NATURAL GAS,OIL	No

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 9500

Equipment: ALL REQUIRED EQUIPMENT PER FEDERAL AND STATE REGULATIONS TO BE IN PLACE PRIOR TO DRILLING OUT THE SURFACE CASING.

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 of 2000 psi per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure of 2000 psi. 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.

Choke Diagram Attachment:

2M Choke Schematic_12-22-2016.pdf

BOP Diagram Attachment:

2M ANNULAR BOP_12-22-2016.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1100	0	1100			1100	H-40	48	STC	1.79	3.28	DRY	8.4	DRY	14
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2375	0	2375			2375	J-55	40	LTC	2.47	1.44	DRY	6.1	DRY	7
3	PRODUCTION	8.75	7.0	NEW	API	N	0	6004	0	6004			6004	L-80	29	LTC	3.17	1.33	DRY	3.77	DRY	4
4	PRODUCTION	8.75	5.5	NEW	API	N	6004	6822	6004	6525			818	L-80	17	LTC	2.29	1.26	DRY	4.28	DRY	5
5	PRODUCTION	7.875	5.5	NEW	API	N	6822	12490	6525	6525			5668	L-80	17	LTC	2.29	1.26	DRY	4.28	DRY	5

Casing Attachments

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Attachement_04-06-2017.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Attachement_04-06-2017.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Attachement_04-06-2017.pdf

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Casing Attachments

Casing ID: 4 String Type: PRODUCTION

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Attachment_04-06-2017.pdf

Casing ID: 5 String Type: PRODUCTION

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Attachment_04-06-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1100	550	1.75	13.5	962.5		Class C	4%Gel+2% CaCl2+0.25pps CF
SURFACE	Tail				200	1.32	14.8	264	61	Class C	2% CaCl2+0.25pps CF
INTERMEDIATE	Lead		0	2375	425	2.45	11.8	1041.25		50:50:10 C; Poz:Gel	5%Salt+5pps LCM+0.25pps CF
INTERMEDIATE	Tail				200	1.32	14.8	264	123	Class C	2% CaCl2

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	1249 0	500	2.01	12.5	1206		35:65:6 C:Poz:Gel	5%Salt+5pps LCM+0.25pps CF
PRODUCTION	Tail			1249 0	1700	1.37	14	2329	82	50:50:2 C:Poz:Gel	5%salt+3pps LCM+0.6%SMS+1%FL-
PRODUCTION	Lead		0	1249 0	500	2.01	12.5	1206		35:65:6 C:Poz:Gel	5%salt+5pps LCM+0.2%SMS+1%FL-
PRODUCTION	Tail				1700	1.37	14	2329	82	50:50:2 C:Poz:Gel	5%salt+3pps LCM+0.6%SMS+1%FL-
PRODUCTION	Lead		0	1249 0	500	2.01	12.5	1206		35:65:6 C:Poz:Gel	5%Salt+5pps LCM+0.25pps CF
PRODUCTION	Tail				1700	1.37	14	2329	82	50:50:2 C:Poz:Gel	5%salt+3pps LCM+0.6%SMS+1%FL-

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	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	2320	WATER-BASED MUD	8.6	8.8							
0	6525	SALT SATURATED	10	10.2							
6525	1249 0	WATER-BASED MUD	8.5	9.2							

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Section 6 - Test, Logging, Coring

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

INTERVAL PERFORATING, FRACTURE STIMULATING, FLOW BACK TESTING.

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

CNL,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2871

Anticipated Surface Pressure: 1435.5

Anticipated Bottom Hole Temperature(F): 119

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:

H2S Plan_12-22-2016.pdf

Flat_Head_Federal_Com_26H_H2S_Diagram_03-14-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Flat_Head_Federal_Com_26H_Design_2_Rpt_03-14-2017.pdf

Flat_Head_Federal_Com_26H_Design_2_AC_Rpt_03-14-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Closed Loop Schematic_12-22-2016.pdf

Flat_Head_Fed_Com_26H_Prod_Cement_Breakdown_04-06-2017.pdf

Flat_Head_Federal_Com_26H_Gas_Capture_Plan_05-26-2017.pdf

Flat_Head_Fed_Com_26H_Contingent_Multi_Stage_Cmt_Plan_05-26-2017.pdf

Other Variance attachment:

SUPO

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Flat_Head_Federal_Com_26H_Vicinity_Plat_03-14-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

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:

Flat_Head_Federal_Com_26H_1mileRadius_Map_03-14-2017.pdf

Existing Wells description:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: If the well is productive, contemplated facilities will be as follows: Two (2) proposed flowlines, will follow an archaeologically approved route to the Flat Head Fed Com #6H Federal Tank Battery in Sec 14, T17S, R32E. The flowlines will be SDR 7 3" Poly line laid on the surface and will be approx. 520 feet in length. Normal working pressure of the flowlines will be below 70 psi and carry a mixture of produced oil, water and gas. Flowlines will follow existing well-traveled or proposed roads. The tank battery and facilities including all flowlines and piping will be installed according to API specifications.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL,
INTERMEDIATE/PRODUCTION CASING, SURFACE CASING
Describe type:

Water source type: GW WELL

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: COMMERCIAL

Water source transport method: PIPELINE, TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 8000

Source volume (acre-feet): 1.0311447

Source volume (gal): 336000

Water source and transportation map:

Caswell Ranch_Water Supply_12-22-2016.pdf

Loco Hills Water Disposal Co Water Supply_12-22-2016.pdf

Water source comments: The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. Water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Vicinity Map. A fresh water source is nearby and fast line may be laid along existing road ROW's and fresh water pumped to the well. Water will originate from 1 and/or all of the 3 private wells location depicted on the attached "Caswell Ranch Water Supply" Map. A secondary water source will be from private wells location described on the attached "Loco Hills Water Disposal Co Water Supply" map attached to this APD. James R. Maloney, 575-677-2118. No water well will be drilled on the location.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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: Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. Secondary candidate source will be Caswell Ranch owned Caliche Pit located in NESE of Section 9, T17S, R32E. A third candidate source will be the NMSLO Caliche Pit located in S2/SW4 of Sec 32, T16S, R30E.

Construction Materials source location attachment:

Construction Turn-Over Procedure_12-22-2016.pdf

Caswell Ranch Caliche Pit_12-22-2016.pdf

NMSLO Caliche Pit_12-22-2016.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: DRILL CUTTINGS AND DRILLING FLUIDS

Amount of waste: 100 barrels

Waste disposal frequency : Daily

Safe containment description: CLOSED LOOP SYSTEM

Safe containmant attachment:

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

Disposal type description:

Disposal location description: R360'S DISPOSAL SITE LOCATED AT 4507 WEST CARLSBAD HIGHWAY, HOBBS, NM 88240.

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Waste type: PRODUCED WATER

Waste content description: PRODUCED WATER

Amount of waste: 100 barrels

Waste disposal frequency : Daily

Safe containment description: STEEL TANKS

Safe containmant attachment:

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

Disposal type description:

Disposal location description: NMOCD APPROVED COMMERCIAL DISPOSAL FACILITY. R360'S DISPOSAL SITE LOCATED AT 4507 WEST CARLSBAD HIGHWAY, HOBBS, NM 88240.

Waste type: GARBAGE

Waste content description: GARBAGE AND TRASH PRODUCED DURING DRILLING AND COMPLETION OPERATIONS.

Amount of waste: 100 pounds

Waste disposal frequency : Weekly

Safe containment description: TRASH BIN

Safe containmant attachment:

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

Disposal type description:

Disposal location description: GARBAGE AND TRASH TO BE COLLECTED IN TRASH BIN AND HAULED TO LEA LANDFILL LLC. LOCATED AT MILE MARKER 64, HIGHWAY 62-180 EAST, PO BOX 3247, CARLSBAD, NM 88221. NO TOXIC WASTE OR HAZARDOUS CHEMICALS WILL BE PRODUCED BY THIS OPERATION.

Waste type: SEWAGE

Waste content description: HUMAN WASTE AND GREY WATER.

Amount of waste: 100 gallons

Waste disposal frequency : Weekly

Safe containment description: PORTABLE SEPTIC SYSTEM AND/OR PORTABLE WASTE GATHERING SYSTEM.

Safe containmant attachment:

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

Disposal type description:

Disposal location description: HAULED TO NMOCD APPROVED WASTE DISPOSAL FACILITY.

Reserve Pit

Reserve Pit being used? NO

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location CLOSED LOOP MUD SYSTEM: ROLL-OFF STYLE MUD BOX.

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?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Flat_Head_Federal_Com_26H_Well_Site_Plant_03-14-2017.pdf

Flat_Head_Federal_Com_26H_Interim_Reclamation_Plant_03-14-2017.pdf

Comments:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Section 10 - Plans for Surface Reclamation

Type of disturbance: PAD EXPANSION

Recontouring attachment:

Drainage/Erosion control construction: NO SEDIMENTATION OR EROSION CONTROL WILL BE NECESSARY ON THIS LOCATION AS IT IS GENERALLY FLAT WITH LITTLE TO NO SLOPE OR CUT AND FILL.

Drainage/Erosion control reclamation: NO SEDIMENTATION OR EROSION CONTROL WILL BE NECESSARY ON THIS LOCATION AS IT IS GENERALLY FLAT WITH LITTLE TO NO SLOPE OR CUT AND FILL.

Wellpad long term disturbance (acres): 1.38

Wellpad short term disturbance (acres): 2.07

Access road long term disturbance (acres): 0

Access road short term disturbance (acres): 0

Pipeline long term disturbance (acres): 0.35812673

Pipeline short term disturbance (acres): 0.35812673

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.7381268

Total short term disturbance: 2.4281268

Reconstruction method: AFTER WELL IS COMPLETED, THE PAD WILL BE DOWNSIZED BY RECLAIMING THE AREAS NOT NEEDED FOR PRODUCTION OPERATIONS. THE PORTIONS OF THE PAD THAT ARE NOT NEEDED FOR PRODUCTION OPERATIONS WILL BE RE-CONTOURED TO ITS ORIGINAL STATE AS MUCH AS POSSIBLE. THE CALICHE THAT IS REMOVED WILL BE REUSED TO EITHER BUILD ANOTHER PAD SITE OR FOR ROAD REPAIRS WITHIN THE LEASE.

Topsoil redistribution: THE STOCKPILED TOPSOIL WILL BE SPREAD OUT ON RECLAIMED AREA AND RESEEDED WITH A BLM APPROVED SEED MIXTURE.

Soil treatment: INTERIM RECLAMATION AS IDENTIFIED DURING ONSITE.

Existing Vegetation at the well pad: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: GRASSLAND AREA WITH SANDY TOPSOIL. VEGETATION IS MODERATELY SPARSE WITH NATIVE PRAIRIE GRASSES, SOME MESQUITE AND SHINNERY OAK.

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:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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:

Seed Type	Pounds/Acre
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Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: APPROVED EPA AND BLM REQUIREMENTS AND POLICIES FOR WEED CONTROL METHODS WILL BE FOLLOWED.

Weed treatment plan attachment:

Monitoring plan description: EVALUATION OF GROWTH WILL BE MADE AFTER THE COMPLETION OF ONE FULL GROWING SEASON AFTER SEEDING. -OR- BLM REPRESENTATIVE WILL BE CONTACTED PRIOR TO COMMENCING CONSTRUCTION OF WELL PAD AND ROAD. BLM REPRESENTATIVE WILL ALSO BE CONTACTED PRIOR TO COMMENCING RECLAMATION WORK.

Monitoring plan attachment:

Success standards: 80% COVERAGE BY 2ND GROWING SEASON OF NATIVE SPECIES WITH LESS THAN 5% INVASIVE SPECIES.

Pit closure description: N/A

Pit closure attachment:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Section 11 - Surface Ownership

Disturbance type: EXISTING ACCESS ROAD

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:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

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:

USFWS Local Office:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: PIPELINE

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:

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: 1. It will be necessary to run electric power if this well is productive. Power will be provided by CVE. There will be no necessary electric line construction for this well. CVE operates an existing primary line parallel to the well pad, therefor no poles will be set off the well pad disturbance. There is no permanent or live water in the immediate

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

area. 2. There are no dwellings within 2 miles of this location. 3. If needed, a Cultural Resources Examination is being prepared by Boone Arch Services of New Mexico, LLC. Carlsbad, NM, 88220. 506 E Chapman Rd. , phone # 575.887.7667 and the results will be forwarded to your office in the near future. Otherwise, COG will be participating in the Permian Basin MOA Program.

Use a previously conducted onsite? YES

Previous Onsite information: Onsite performed on 08/30/2012 by Trisha Badbear (BLM), Caden Jameson (COG), Gary Box (P.C.).

Other SUPO Attachment

Flat_Head_Federal_Com_26H_Flowlines_Map_03-14-2017.pdf

PWD

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:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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?

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

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:

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

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:

Bond Info

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000215

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:

Operator Certification

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.

Operator Name: COG OPERATING LLC

Well Name: FLAT HEAD FEDERAL COM

Well Number: 26H

NAME: Robyn Odom

Signed on: 04/06/2017

Title: Regulatory Analyst

Street Address: 600 W Illinois Ave

City: Midland

State: TX

Zip: 79701

Phone: (432)685-4385

Email address: rodom@concho.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

Payment Info

Payment

APD Fee Payment Method: PAY.GOV

pay.gov Tracking ID: 261NARIC

Contingent Multi-Stage Cement Discussion:

COG does not anticipate losing circulation or encountering water flows while drilling this well. If these situations arise, COG requests approval in this APD to set DV tools where necessary immediately without having to shut down the rig and wait for sundry approval.

Lost Circulation or Water flow Contingent DV Tool Cement Plans are as follows:

1. If lost circulation occurs while drilling the 12 ¼" intermediate hole, it may become necessary to set a DV tool in the 9 5/8" casing. The DV tool depth will be based on hole conditions and cement volumes will be adjusted proportionally. If the DV Tool is needed, it will be set a minimum of 50 feet below the previous casing and a minimum of 200 feet above the current shoe.

2. If water flows in the San Andres are encountered, it may become necessary to set a DV tool in the 7" casing. These water flows normally occur in areas where produced water disposal is happening. This dense cement is used to combat water flows. This cement recipe also has a right angle set time and is mixed a little under saturated so the water flow will be absorbed by cement. The DV tool depth will be based on hole conditions and cement volumes will be adjusted proportionally. If the DV tool is needed, it will be set a minimum of 50 feet below the previous casing and a minimum of 200 feet above the current shoe.

Casing	Bottom MD of Segment	Lead or Tail	Cement Type	Additives	Quantity (Sks)	Yield (cu.ft./sk)	Density (lbs./gal)
Inter. Multi-Stage	+/- 1095'	1 st Lead	50:50:10 C: Poz:Gel	5% Salt + 5 pps LCM + 0.25 pps CF	150	2.45	14.4
		1 st Tail	Class C	2% CaCl ₂	200	1.32	6.3
		2 nd Lead	50:50:10 C: Poz:Gel	5% Salt + 5 pps LCM + 0.25 pps CF	225	2.45	14.4
Prod. Multi-Stage	+/- 4155'	1 st Lead	35:65:6 C:Poz Gel	5% salt+5 pps LCM+0.2% SMS + 1% FL-25+1% BA-58+0.3% FL-52A+ 0.125 pps CF	425	2.01	11.4
		1 st Tail	Class C	0.3% R-3 + 1.5% CD-32	150	0.99	4.8
		2 nd Lead	35:65:6 C:Poz Gel	5% salt + 5 pp LCM + 0.2% SMS + 1% FL-25+ 1% BA-58 + 0.3% FL-52A + 0.125 pps CF	200	2.01	11.4
		2 nd Tail	50:50:2 C: PozGel	5% salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.125 pps CF	1200	1.37	6.4

Casing Program

	Collapse SF	Burst SF	Tension SF
BLM Minimum Safety Factor	1.125	1	1.6 Dry 1.8 Wet

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

Assumed 9.0ppg MW equivalent pore pressure from 9 5/8" shoe to deepest TVD in wellbore.

BLM standard formulas were used on all SF calculations.

Casing design does meet and/or exceed BLM's minimum standards.

The pipe will be kept at a minimum 1/3 fluid fill to avoid approaching the collapse pressure rating of the casing.

This well is not located within the Capitan Reef.

This well is not located in the SOPA or in the R-111-P.

This well is not located in a high or critical Cave/Karst area.

This is not a walking operation.

We will not be pre-setting casing.

All completion intervals are planned to be fracture stimulated.

Well: Flat Head Fed Com 26H

Hole Volumes						
Hole	Hole Section (Length)	Casing	Capacity (ft ³ /Lin.ft)	Cu.Ft	Total Cu.Ft	% Excess
Prod	0-2375 (2375)	7"	0.1585	376.4	376.4	0
Prod	2375-6004 (3629)	7"	0.1503	545.4	1734.3	82.1
Prod	6004-6822 (818)	5.5"	0.2526	206.6		82.1
Prod	6822-12490 (5668)	5.5"	0.1733	982.3		82.1

Cement Volumes					
Blend	Cement Sacks	Yield	Weight	Volume	Total Volume
35:65:6	600	2.01	12.5	1206	3535
50:50:02	1700	1.37	14	2329	

% Excess Calculation			
Total Volume	3535		3158.6
Cu.Ft	-376.4		/1734.3
	3158.6		82.1%excess