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1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Original  
to Appropriate  
District Office

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

**NM OIL CONSERVATION  
ARTESIA DISTRICT**

**GAS CAPTURE PLAN**

**FEB 12 2019**

Date: 1/2/2018

**RECEIVED**

☒ Original

Operator & OGRID No.: COG Operating LLC, OGRID 229137

☐ Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

**Well(s)/Production Facility – Name of facility**

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Momba Federal Com 801H	30-015-45721			1,455 MMCFD		Gas will connect to CTB.

**Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to ETC, and will be connected to Red Bluff low/high pressure gathering system located in Culberson County, Texas. It will require 0' to an undetermined amount of feet of pipeline to connect the facility to low/high pressure gathering system. COG Operating LLC provides (periodically) to ETC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COG Operating LLC and ETC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Red Bluff Processing Plant located in Sec 35-Blk 57, T2, Culberson County, Texas. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

**Flowback Strategy**

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on ETC system at that time. Based on current information, it is COG Operating LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

**Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

# COG Operating, LLC - Momba Federal Com 801H

## 1. Geologic Formations

TVD of target	10,749' EOL	Pilot hole depth	NA
MD at TD:	20,658'	Deepest expected fresh water:	124'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	498	Water	
Top of Salt	962	Salt	
Base of Salt	2568	Salt	
Lamar	2758	Salt Water	
Bell Canyon	2792	Salt Water	
Cherry Canyon	3615	Oil/Gas	
Brushy Canyon	6206	Oil/Gas	
Bone Spring Lime	6434	Oil/Gas	
U. Avalon Shale	6523	Oil/Gas	
L. Avalon Shale	7292	Oil/Gas	
1st Bone Spring Sand	7362	Oil/Gas	
2nd Bone Spring Sand	8034	Oil/Gas	
3rd Bone Spring Sand	9205	Oil/Gas	
Wolfcamp	9565	Target Oil/Gas	

## 2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
	From	To							
17.5"	0	525	13.375"	54.5	J55	STC	4.70	0.73	29.81
12.25"	0	4,000	9.625"	40	L80	BTC	1.65	1.20	2.03
12.25	4,000	10,174	9.625"	47	HCL80	BTC	1.21	1.43	3.74
8.5"	0	20,658	5.5"	23	P110	BTC	2.47	2.64	2.95
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. Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface. Shoe will break down before casing would burst.

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