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Form 3160-3
(June 2015)

OCD – HOBBS
07/12/2016
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FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NM-117125

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☑ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.: Sheba Federal Com #1H [316498]

2. Name of Operator: GMT Exploration Company LLC [260511]

9. API Well No.: 30-025-43358

3a. Address: 1560 Broadway Suite 2000, Denver, CO 80202

3b. Phone No. *(include area code)*: 303.586.9275

10. Field and Pool, or Exploratory: Red Hills North [96434]
RED HILLS;BONE SPRING,NORTH

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: 620' FNL & 535' FEL, Lat 32.123090 Lon 103.270363

At proposed prod. zone: 330' FSL & 350' FEL, Lat 32.114807 Lon 103.270149

11. Sec., T. R. M. or Blk. and Survey or Area: Sec 22 T24S R34E

14. Distance in miles and direction from nearest town or post office*: Jal, NM is 16 miles southwest of location

12. County or Parish: Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 535'

16. No of acres in lease: 120

17. Spacing Unit dedicated to this well: 160.19

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1165'

19. Proposed Depth: 16600' MD, 12120' TVD

20. BLM/BIA Bond No. in file: NMB000886

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3499' GL

22. Approximate date work will start*: 08/01/2016

23. Estimated duration: 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature: [signature] Name *(Printed/Typed)*: Marissa Walters Date: 11/20/15

Title: Petrotech

Approved by *(Signature)*: [signature] for Cody Layton Name *(Printed/Typed)*: Edward Fernandez For Cody Layton Date: 6/7/2016

Title: FIELD MANAGER Office: CARLSBAD FIELD OFFICE

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.

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

KZ

07/12/2016

KZ

(Continued on page 2)

*(Instructions on page 2)

GMT

Your Lease NM117125 shows to expire on 11/30/2016. This approved APD for well Sheba Federal Com 1H, will also expire on this date if it is not spudded before 11/30/2016.

GMT Exploration Company LLC
Sheba Federal Com #1H
620' FNL 535' FEL Section 22, T24S, R34E
Lea County, New Mexico

DRILLING PROGRAM

Drilling operations for this well will be conducted in accordance with the Onshore Oil and Gas Order #1, 2, 6 as provided for in 43 CFR 3164.1. This includes the well control equipment and its testing, the mud system and associated equipment, and the casing and cementing.

1. Estimated tops of important geologic markers (Measured Depth):

Ground Level	***3499'***
Fresh Water	600'
Rustler	1,150'
Salt Top	1,250'
Salt Base	3,820'
Lamar Limestone	3,875'
Delaware Bell Canyon	5,400'
Delaware Cherry Canyon	6,570'
Delaware Brushy Canyon	7,750'
Lower Brushy Canyon Marker	9,055'
Bone Spring	9,210'
Avalon Shale Top	9,275'
Avalon Carbonate	9,510'
1st Bone Spring Sand	10,300'
1st Bone Spring Carbonate	10,545'
2nd Bone Spring Sand	10,900'
2nd Bone Spring Carbonate	11,340'
3rd Bone Spring Sand	11,875'
Actual Target	12,120'
Wolfcamp	12,375'

2. Estimated depths of anticipated water, oil, gas or minerals:

Mineral	Formation	Depth (Measured Depth)
Water		600'
Natural Gas/Oil	Lower Brushy Canyon Marker	9,055'
Natural Gas/Oil	Avalon Shale Top	9,275'
Natural Gas/Oil	1st Bone Spring Sand	10,300'
Natural Gas/Oil	2nd Bone Spring Sand	10,900'
Natural Gas/Oil	3rd Bone Spring Sand	11,875'
Actual Target		12,120'

Fresh water: Fresh water aquifers will be protected with surface casing set at ~~1,865~~ 1135'. All potentially productive usable water, hydrocarbons, and other mineral zones will be protected with casing and cement.

3. Minimum specifications for pressure control:

The BOP and related equipment will meet or exceed the requirements of a 5M-psi system as set forth in On Shore Order No. 2. See attached BOP Schematic.

A. Casinghead: 14 3/4" x 13 3/8" x 5000 psi WP
Tubinghead: 7-1/16" - 5000 psi WP x 4 1/16" - 10,000 psi WP

B. Minimum Specified Pressure Control Equipment

- Annular preventer
- One Pipe ram, One blind ram
- Drilling spool, or blowout preventer with 2 side outlets. Choke side will be a 3-inch minimum diameter, kill will shall be at least 2-inch diameter
- 3 inch diameter choke line
- 2 – 3 inch choke line valves
- 2 inch Kill line
- 2 chokes with 1 remotely controlled from rig floor (see Figure 2)
- 2 – 2 inch kill line valves and a check valve
- Upper kelly cock valve with handle available
- When the expected pressures approach working pressure of the system, 1 remote kill line tested to stack pressure (which shall run to the outer edge of the substructure and be unobstructed)
- Lower kelly cock valve with handle available
- Safety valve(s) and subs to fit all drill string connections in use
- Inside BOP or float sub available
- Pressure gauge on choke manifold
- All BOPE connections subjected to well pressure shall be flanged, welded, or clamped
- Fill-up line above the uppermost preventer.

C. Auxiliary Equipment

- Audio and visual mud monitoring equipment shall be placed to detect volume changes indicating loss or gain of circulating fluid volume. (OOS 1, III.C.2)
- Gas Buster will be used below 6,000'.
- Upper and lower kelly cocks with handles, safety valve and subs to fit all drill string connections and pressure gauge on choke manifold.

D. BOP Testing procedures:

- The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum:
  a. when initially installed
  b. whenever any seal subject to test pressure is broken
  c. following related repairs
  d. at 30 day intervals
  e. Checked daily as to mechanical operating conditions.

- The ram type preventer(s) shall be tested to the approved BOP stack working pressure when a test plug is used. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing.

- The annular type preventer(s) shall be tested to 50% of the approved BOP stack working pressure. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer.

- A Sundry Notice (Form 3160-5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test.

- If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure.

- GMT has engaged Sierra Engineering to perform the BOP tests. We will invite the BLM to witness them.

The BOP Configuration, Choke manifold layout, and Accumulator system, will be in compliance with Onshore Order 2 for a 5000 psi system.

A remote accumulator will be used. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM supervised BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

4. **Supplementary Information:**

Any required operational changes in the casing and cement design specified below will be submitted to the BLM Authorized Officer for approval **prior** to running casing and cementing.

A: Proposed Casing Program: See COA

PURPOSE	INTERVAL	HOLE SIZE	CASING SIZE	WT/FT (lbs/ft)	GRADE	COND	THREAD & Coupling
CONDUCTOR	0-80'	26"	20"	94	H-40	NEW	ST&C
SURFACE	~~0-1,865'~~ 1135' 5100'	17 1/2"	13 3/8"	54.5	J-55	NEW	ST&C
INTERMEDIATE	0 – ~~5,400~~	12 1/4"	8 5/8"	36	J-55	NEW	LT&C
PRODUCTION	0-16,600'	7 7/8"	5 ½"	20	P-110	NEW	BT&C

Minimum design safety factors: Burst-1.0, Collapse-1.125, Axial -1.6.

Centralizer Program:

Surface:
- 3 welded bow spring centralizers, one on each of the bottom 3 joints, plus one on the shoe joint (4 minimum)
- No Cement baskets will be run

Production:
- 1 welded bow spring centralizer on a stop ring 6' above float shoe
- 1 centralizer every other joint to the top of the tail cement
- 1 centralizer every 4 joints to 500' below the top of the lead cement
- The actual number and placement of centralizers will be determined from hole deviation and potential production zones. Centralizers will be run for maximum practical standoff and through all potential productive zones.

- All casing strings below the conductor shall be tested, prior to drilling out the casing shoe, to 0.22 psi/ft of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the internal yield pressure of the casing. If pressure declines more than 10 percent in 30 minutes, corrective action will be taken.

No freshly hard banded pipe will be rotated in the surface casing

- GMT will not employ an air-drill rig for the surface casing. The casing shoe will be tested by drilling 5'-10' out from under the shoe and pressure testing to the maximum expected mud weight equivalent as shown in the mud program listed in the drilling plan.

B. Proposed Cementing Program:

Casing Size	Interval	% Excess	Cement Blend
Surface: 13 3/8"	0' – ~~1,865'~~ 1135'	150 % over theoretical hole volume	Cement surface with 400 sacks of 35/65/poz Class "C" Lead and 350 sacks Class "C" Tail. Circulate to surface with 177 sacks. Lead: Slurry Density: 12.8 lb/gal Yield: 2.00 ft3/sack Mix Fluid: 10.643 gal/sk Sack Reference: 89lb of Blend Blend: 186.59 lb/ft3 Fresh Water 10.486 gal/sk 5% BWOW Salt 6% BWOB Extender .3% BWOB Fluid Loss .2% BWOB Dispersant 5 lb/sk LCM/extender .2% BWOB Antifoam Tail: Slurry Density: 14.8 lb/gal Yield: 1.34ft3/sk Mix Fluid: 6.336 gal/sk Sack Reference: 94lb of Blend Blend: 197.27 lb/ft3 Fresh Water: 6.366 gal/sk 1% BWOC Accelerator .2% BWOC Antifoam
Intermediate: 8 5/8"	0' – ~~5,400'~~ 5100'	25 % over theoretical hole volume -or- 10% over caliper volume	Cement intermediate with 2,080 sacks of 35/65/poz Class "C" Lead and 350 sacks Class "C" Tail. Circulate to surface with 281 sacks. Lead: Slurry Density: 12.8 lb/gal Yield: 2.0 ft3/sk Mix Fluid: 10.617 gal/sk Sack Reference: 89lb of Blend Blend: 186.59/ft3 Fresh Water: 10.440 gal/sk 5% BWOW Salt 6% BWOB Extender .5% BWOB Fluid Loss 5 lb/sk LCM/extender .4% BWOB Retarder .2% BWOB Dispersant .02 gal/sk Antifoam Tail: Slurry Density: 14.8 lb/gal Yield: 1.33 ft3/sk

			Mix Fluid: 6.375 gal/sk Sack Reference: 94lb of Blend Blend Density: 197.27 lb/ft3 Fresh Water: 6.344 gal/sk .35% BWOC Retarder .2% BWOC Antifoam .02 gal/sk Retarder
Production: 5 1/2"	0- 16,600'	25 % over theoretical hole volume -or- 10% over caliper volume	Cement from TMD to an interlock of at least 1500' into annular space separating 5 1/2" casing(production) and 8 5/8" casing(intermediate) with 440 sacks of 50/50/poz Class "H"Lead and 880 sacks of Trinity Lite. Lead: Slurry Density: 11.8 lb/gal Yield: 2.55 ft3/sk Mix Fluid: 15.134 gal/sk Sack Reference: 86lb of Blend Blend: 182.12 lb/ft3 Fresh Water: 14.910 gal/sk 10%BWOB Extender 5% BWOW Salt .1% BWOB Viscosifier .2% BWOB Antifoam .1% BWOB Retarder Tail: Slurry Density: 13 lb/gal Yield: 1.42 ft3/sk Mix Fluid: 7.289 gal/sk Sack Reference: 75lb of Blend Blend: 176.05 lb/ft3 Fresh Water: 7.289 gal/sk 1.5% BWOC Expanding ce .25% Retarder 1% Fluid Loss .2% BWOC Antifoam

The **surface casing** shall be cemented back to surface. In the event cement does not circulate to surface or fall back of the cement column occurs, remedial cementing shall be done to cement the casing back to surface. Pea Gravel or other material shall not be used to fill up around the surface casing in the event cement fall back occurs.

A Sundry Notice (Form 3160-5), along with a copy of the service company's materials ticket and job log, shall be submitted to the local BLM office within 5 working days following the running and cementing

5. Mud System:

The following is meant as a guide only. Actual mud weights will be determined by hole conditions. Sufficient quantities of mud materials will be maintained or readily accessible for assuring well control.

Mud Weight Viscosity Fluid Loss

Interval	PPG	SEC	CC	PH	Remarks
0'– 1,865' (1135')	8.4 – 8.8	28 – 36	Natural	8.5-9.5	Fresh Water
1,865' – 5,400' (5100')	8.4 – 8.8	26 – 32	No Control	9.0-10.5	Salt Water/Brine
5,400' –16,600'	9.0 – 11.0	34 – 45	8 – 12	9.0-10.5	LSND/weight nondispersed

Mud tests will be performed at a minimum interval of every 24 hours after mudding up to determine: density, viscosity, filtration, and pH for formation compatibility.

GMT will use fresh water from surface casing total depth and then switch to a brine-based solution of salinity sufficient to be saturated for preventing washout (10#/gal) ($\geq$ 185,000 ppm).

Sufficient quantities of mud materials shall be maintained at the well site, at all times, for the purpose of assuring well control.

Drilling of the surface casing will occur with fresh water.

If a temporary surface pipeline is used to transport drilling water, the pipeline shall be laid and removed when the ground surface is dry so as to minimize surface disturbance. No blading or other alteration of the ground surface shall be allowed.

6. Testing, Logging, and Coring Program

Cores-DST's:	None anticipated at this time.	
Surveys:	Inclination only surveys while drilling, directional survey	
Mud Logger:	Morco Geological Services	Leaving intermediate to TD
Logging:	Triple Combo	Intermediate to TD
	CMR	Intermediate to TD

Stimulation Program:
Evaluate open hole logs to determine interval to perforate. Perforate selected intervals of interest after addressing spacing and commingling considerations. A completion program will be based upon evaluation of the logs and formation parameters.

7. Abnormal Conditions/Expected BHP

a. GMT does not expect any temperatures in excess of 200°F or pressures exceeding the normal gradient.

8. Additional Information

a. Anticipated starting date based upon approval will be 8/1/2016.

b. Duration of the drilling operations will be approximately 45 days.

c. This well is a directional well per attached directional plan from Weatherford. Please refer to Exhibit 2.

d. Rat and mouse holes (or any subgrade excavations for drilling operations) shall be filled and compacted, with appropriate native materials, immediately upon release of the drilling rig from the location.

e. Any permanent plug placed in the well during drilling and/or completion operations must have **prior** approval of the Authorized Officer.

f. As provided in NTL-4A, gas produced from this well may not be vented or flared beyond an initial test period, 30 days or 50 MMCF, whichever first occurs, without approval of the Authorized Officer.

g. GMT shall report all fresh water flows encountered while drilling to the Authorized Officers representative (Petroleum Engineer) prior to the running the next string of casing. The reported information shall include a) well name, number and location, b) the date the water flow was encountered, c) depth at which the water flow was encountered and d) estimated water flow rate into the well bore. The operator shall file a Form 3160-5 (Subsequent Report Sundry Notice) of this same information within 30 days of releasing the drilling rig.

h. Anticipated bottom hole temperature is 200°F, and its anticipated pressure is ~4873psi.

GMT Exploration Company, LLC will promptly plug and abandon each newly completed, re-completed or producing well which is not capable of producing in paying quantities. No well may be temporarily abandoned for more than 30 days without prior approval of the Authorized Officer. When justified by the Operator, the Authorized Officer may authorize additional delays, no one of which may exceed an additional 12 months. Upon removal of drilling or producing equipment from the site of a well which is to be permanently abandoned, the surface of the lands disturbed shall be reclaimed in accordance with a plan first approved or prescribed by the Authorized Officer or per the reclamation conditions of approval stated herein.