

Form 3160-3  
(June 2015)

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**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No.
3a. Address		9. API Well No. <b>3001547171</b>
3b. Phone No. (include area code)		10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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)

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Well plat certified by a registered surveyor.</li> <li>2. A Drilling Plan.</li> <li>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).</li> </ul> | <ul style="list-style-type: none"> <li>4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).</li> <li>5. Operator certification.</li> <li>6. Such other site specific information and/or plans as may be requested by the BLM.</li> </ul> |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		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.



**DISTRICT I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone: (575) 393-6161 Fax: (575) 393-0720

**DISTRICT II**  
 811 S. First St., Artesia, NM 88210  
 Phone: (575) 748-1283 Fax: (575) 748-9720

**DISTRICT III**  
 1000 Rio Brazos Road, Aztec, NM 87410  
 Phone: (505) 334-6178 Fax: (505) 334-6170

**DISTRICT IV**  
 1220 S. St. Francis Dr., Santa Fe, NM 87505  
 Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
 Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
 1220 South St. Francis Dr.  
 Santa Fe, New Mexico 87505

Form C-102  
 Revised August 1, 2011  
 Submit one copy to appropriate  
 District Office

□ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number <b>3001547171</b>	Pool Code	Pool Name <b>PURPLE SAGE ; WOLFCAMP</b>
Property Code <b>328285</b>	Property Name <b>HARROUN RANCH 20702 20-17 FEDERAL COM</b>	
OGRID No. <b>260297</b>	Operator Name <b>BTA OIL PRODUCERS, LLC</b>	Well Number <b>7H</b>
		Elevation <b>3018'</b>

**Surface Location**

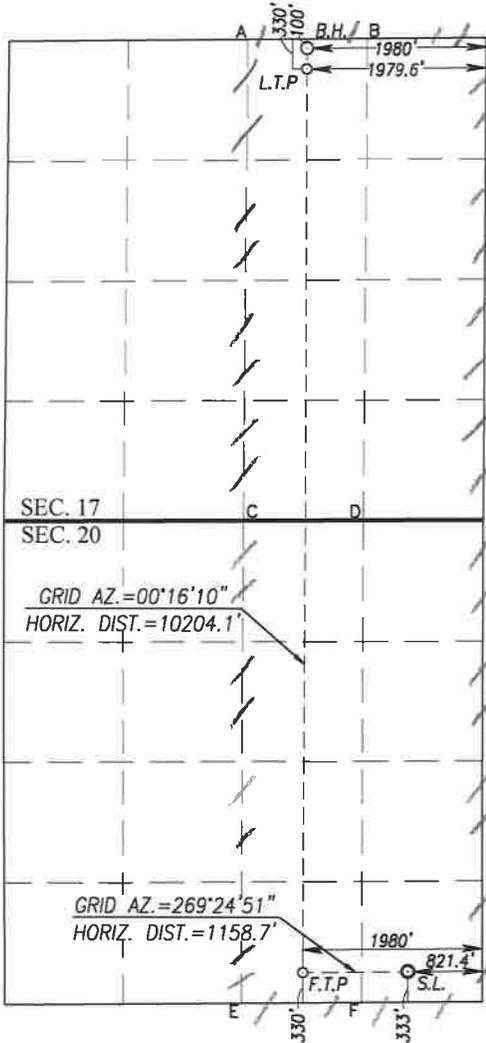
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	20	23-S	29-E		333	SOUTH	821.4	EAST	EDDY

**Bottom Hole Location If Different From Surface**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	17	23-S	29-E		100	NORTH	1980	EAST	EDDY

Dedicated Acres <b>640</b>	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



SCALE: 1"=2000'

<b>BOTTOM HOLE LOCATION</b> <b>GEODETIC COORDINATES</b> NAD 83 NME Y=477449.7 N X=642885.6 E LAT.=32.312154° N LONG.=103.004628° W  <b>LAST TAKE POINT</b> <b>GEODETIC COORDINATES</b> NAD 83 NME Y=477219.7 N X=642884.6 E LAT.=32.311522° N LONG.=104.004634° W	<b>BOTTOM HOLE LOCATION</b> <b>GEODETIC COORDINATES</b> NAD 27 NME Y=477390.0 N X=601702.7 E LAT.=32.312032° N LONG.=104.004136° W  <b>LAST TAKE POINT</b> <b>GEODETIC COORDINATES</b> NAD 27 NME Y=477160.0 N X=601701.6 E LAT.=32.311400° N LONG.=104.004141° W
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CORNER COORDINATES TABLE	
NAD 27 NME	
A - Y= 477483.9 N, X= 601051.2 E	B - Y= 477496.2 N, X= 602367.2 E
C - Y= 472180.9 N, X= 600996.0 E	D - Y= 472185.4 N, X= 602319.5 E
E - Y= 466853.3 N, X= 600973.0 E	F - Y= 466863.5 N, X= 602303.2 E

CORNER COORDINATES TABLE	
NAD 83 NME	
A - Y= 477543.6 N, X= 642234.1 E	B - Y= 477555.8 N, X= 643550.1 E
C - Y= 472240.4 N, X= 642179.1 E	D - Y= 472245.0 N, X= 643502.6 E
E - Y= 466912.7 N, X= 642156.3 E	F - Y= 466922.9 N, X= 643486.5 E

<b>FIRST TAKE POINT</b> <b>GEODETIC COORDINATES</b> NAD 83 NME Y=467247.9 N X=642837.7 E LAT.=32.284111° N LONG.=104.004885° W	<b>FIRST TAKE POINT</b> <b>GEODETIC COORDINATES</b> NAD 27 NME Y=467188.4 N X=601654.4 E LAT.=32.283989° N LONG.=104.004393° W
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<b>SURFACE LOCATION</b> <b>GEODETIC COORDINATES</b> NAD 83 NME Y=467259.7 N X=643996.1 E LAT.=32.284134° N LONG.=104.001136° W	<b>SURFACE LOCATION</b> <b>GEODETIC COORDINATES</b> NAD 27 NME Y=467200.3 N X=602812.8 E LAT.=32.284012° N LONG.=104.000645° W
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**OPERATOR CERTIFICATION**

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division

Signature: *Sammy Hajar* Date: 12/2/2019

Printed Name: **SHAJAR@BTAOIL.COM**

E-mail Address

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: **OCTOBER 24 2019**  
 Signature & Seal of Professional Surveyor: *Ronald J. Eidson*

Certificate Number: Gary G. Eidson 12641  
 Ronald J. Eidson 3239

ACK JWSC W O : 19.11.1173

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>BTA Oil Producers</b>
<b>LEASE NO.:</b>	<b>NMNM119271</b>
<b>WELL NAME &amp; NO.:</b>	<b>HARROUN RANCH 20702 20-17 FED COM 7H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>333'S &amp; 821'E</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>100'N &amp; 1980'E</b>
<b>LOCATION:</b>	<b>Section 20, T.23 S., R.29 E., NMP</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

#### Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **400** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

- completing the cement job.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The **7-5/8** inch intermediate casing shall be set at approximately **9325** feet. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. Excess cement calculates to -13%, additional cement might be required.**

**Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
  - b. Second stage above DV tool:
    - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

### D. SPECIAL REQUIREMENT (S)

#### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

## C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

**D. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**OTA04082020**

**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:** Sammy Hajar**Signed on:** 12/04/2019**Title:** Regulatory Analyst**Street Address:** 104 S. Pecos**City:** Midland**State:** TX**Zip:** 79701**Phone:** (432)682-3753**Email address:** shajar@btaoil.com**Field Representative****Representative Name:****Street Address:****City:****State:****Zip:****Phone:****Email address:**

<b>APD ID:</b> 10400051925	<b>Submission Date:</b> 12/04/2019	<b>Highlighted data reflects the most recent changes</b>
<b>Operator Name:</b> BTA OIL PRODUCERS LLC		
<b>Well Name:</b> HARROUN RANCH 20702 20-17 FEDERAL COM	<b>Well Number:</b> 7H	<a href="#">Show Final Text</a>
<b>Well Type:</b> OTHER	<b>Well Work Type:</b> Drill	

## Section 1 - General

<b>APD ID:</b> 10400051925	<b>Tie to previous NOS?</b>	<b>Submission Date:</b> 12/04/2019
<b>BLM Office:</b> CARLSBAD	<b>User:</b> Sammy Hajar	<b>Title:</b> Regulatory Analyst
<b>Federal/Indian APD:</b> FED	<b>Is the first lease penetrated for production Federal or Indian?</b> FED	
<b>Lease number:</b> NMNM119271	<b>Lease Acres:</b> 160	
<b>Surface access agreement in place?</b>	<b>Allotted?</b>	<b>Reservation:</b>
<b>Agreement in place?</b> YES	<b>Federal or Indian agreement:</b> FEDERAL	
<b>Agreement number:</b> NMNM138686		
<b>Agreement name:</b>		
<b>Keep application confidential?</b> Y		
<b>Permitting Agent?</b> NO	<b>APD Operator:</b> BTA OIL PRODUCERS LLC	
<b>Operator letter of designation:</b>		

## Operator Info

<b>Operator Organization Name:</b> BTA OIL PRODUCERS LLC		
<b>Operator Address:</b> 104 S. Pecos	<b>Zip:</b> 79701	
<b>Operator PO Box:</b>		
<b>Operator City:</b> Midland	<b>State:</b> TX	
<b>Operator Phone:</b> (432)682-3753		
<b>Operator Internet Address:</b>		

## Section 2 - Well Information

<b>Well in Master Development Plan?</b> NO	<b>Master Development Plan name:</b>	
<b>Well in Master SUPO?</b> NO	<b>Master SUPO name:</b>	
<b>Well in Master Drilling Plan?</b> NO	<b>Master Drilling Plan name:</b>	
<b>Well Name:</b> HARROUN RANCH 20702 20-17 FEDERAL COM	<b>Well Number:</b> 7H	<b>Well API Number:</b>
<b>Field/Pool or Exploratory?</b> Field and Pool	<b>Field Name:</b> BOBCAT DRAW	<b>Pool Name:</b> BOBCAT DRAW; UPPER WOLFCAMP

**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL COM

**Well Number:** 7H

**Is the proposed well in an area containing other mineral resources?** NONE

**Is the proposed well in a Helium production area?** N

**Use Existing Well Pad?** Y

**New surface disturbance?** N

**Type of Well Pad:** MULTIPLE WELL

**Multiple Well Pad Name:**

**Number:** 5H, 6H, & 7H

**Well Class:** HORIZONTAL

HARROUN RANCH 20702 20-17

FEDERAL COM

**Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OTHER

**Describe Well Type:** GAS WELL

**Well sub-Type:** INFILL

**Describe sub-type:**

**Distance to town:** 5 Miles

**Distance to nearest well:** 977 FT

**Distance to lease line:** 333 FT

**Reservoir well spacing assigned acres Measurement:** 640 Acres

**Well plat:** Harroun\_Ranch\_Fed\_Com\_7H\_c102\_20191204131833.pdf

**Well work start Date:** 01/31/2020

**Duration:** 30 DAYS

### Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83

**Vertical Datum:** NGVD29

**Survey number:**

**Reference Datum:** GROUND LEVEL

Wellbore	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	Will this well produce from this lease?
SHL Leg #1	333	FSL	821	FEL	23S	29E	20	Aliquot SESE 4	32.284134	-104.001136	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 119271	3018	0	0	Y
KOP Leg #1	330	FSL	1980	FEL	23S	29E	20	Aliquot SWSE 1	32.284111	-104.004885	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 119271	-6512	9615	9530	Y

**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL COM

**Well Number:** 7H

Wellbore	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	Will this well produce from this lease?
PPP Leg #1-1	330	FSL	1980	FEL	23S	29E	20	Aliquot SWSE 1	32.284111	-104.004885	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 119271	-6895	10077	9913	Y
EXIT Leg #1	330	FNL	1980	FEL	23S	29E	17	Aliquot NWNE 2	32.311522	-104.004634	EDD Y	NEW MEXICO	NEW MEXICO	F	FEE	-6990	20109	10008	Y
BHL Leg #1	100	FNL	1980	FEL	23S	29E	17	Aliquot NWNE 4	32.312154	-104.004628	EDD Y	NEW MEXICO	NEW MEXICO	F	FEE	-6990	20389	10008	Y

APD ID: 10400051925

Submission Date: 12/04/2019

Highlighted data reflects the most recent changes

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH 20702 20-17 FEDERAL COM

Well Number: 7H

[Show Final Text](#)

Well Type: OTHER

Well Work Type: Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
601783	QUATERNARY	3018	0	0	ALLUVIUM	NONE	N
601784	RUSTLER	2795	223	223	ANHYDRITE	NONE	N
601785	TOP SALT	2450	568	568	SALT	NONE	N
601786	BASE OF SALT	395	2623	2623	SALT	NONE	N
601787	DELAWARE	132	2886	2886	LIMESTONE	NATURAL GAS, OIL	N
602283	BELL CANYON	100	2918	2918	SANDSTONE	NATURAL GAS, OIL	N
601789	CHERRY CANYON	-725	3743	3743	SANDSTONE	NATURAL GAS, OIL	N
601790	BRUSHY CANYON	-1922	4940	4940	SANDSTONE	NATURAL GAS, OIL	N
601791	BONE SPRING LIME	-3580	6598	6598	LIMESTONE	NATURAL GAS, OIL	N
601792	FIRST BONE SPRING SAND	-4600	7618	7618	SANDSTONE	NATURAL GAS, OIL	N
601793	BONE SPRING 2ND	-5375	8393	8393	SANDSTONE	NATURAL GAS, OIL	N
601794	BONE SPRING 3RD	-6535	9553	9553	SANDSTONE	NATURAL GAS, OIL	N
601795	WOLFCAMP	-6895	9913	9913	SHALE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL COM      **Well Number:** 7H

**Pressure Rating (PSI):** 5M

**Rating Depth:** 11000

**Equipment:** The blowout preventer equipment (BOP) shown in Exhibit A will consist of a (5M system) double ram type (5,000 psi WP) preventer and a bag-type (Hydril) preventer (5000 psi WP). Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 5" drill pipe rams on bottom. The BOPs will be installed on the 10-3/4" surface casing and utilized continuously until total depth is reached. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. A remote kill line will be used for the 5M system as per onshore order #2. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines, and choke manifold having a 5,000 psi WP rating. The 5M annular will be tested as per BLM drilling Operations Order No. 2.

**Requesting Variance?** NO

**Variance request:**

**Testing Procedure:** Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. All BOPs and associated equipment will be tested as per BLM drilling Operations Order No. 2.

**Choke Diagram Attachment:**

Choke\_Hose\_\_\_Test\_Chart\_and\_Specs\_20190723082742.pdf

5M\_choke\_mannifold\_20190723082749.pdf

**BOP Diagram Attachment:**

5M\_BOP\_diagram\_20190723082754.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	14.75	10.75	NEW	API	N	0	500	0	500	3018	2518	500	J-55	40.5	ST&C	7.3	14.5	DRY	20.7	DRY	31.1
2	PRODUCTION	6.75	5.5	NEW	API	Y	0	9125	0	9040	3018	-6022	9125	P-110	20	BUTT	1.7	1.9	DRY	3.7	DRY	3.5
3	INTERMEDIATE	9.875	7.625	NEW	API	N	0	9325	0	9240	3018	-6222	9325	P-110	29.7	BUTT	2.2	2.1	DRY	3.5	DRY	3.4
4	PRODUCTION	6.75	5.0	NEW	API	Y	9125	20389	9040	10008	-6022	-6990	11264	P-110	18	BUTT	1.8	1.9	DRY	1.7	DRY	1.6

**Casing Attachments**

**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL  
COM

**Well Number:** 7H

### Casing Attachments

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Harroun\_Ranch\_Fed\_Com\_7H\_Casing\_Assumption\_20191204153013.JPG

---

**Casing ID:** 2            **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

5.5\_tapered\_string\_spec\_20190930151650.jpg

**Casing Design Assumptions and Worksheet(s):**

Harroun\_Ranch\_Fed\_Com\_7H\_Casing\_Assumption\_20191204153059.JPG

---

**Casing ID:** 3            **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

vaca\_draw\_5.5\_tapered\_string\_spec\_20190723093759.JPG

**Casing Design Assumptions and Worksheet(s):**

Harroun\_Ranch\_Fed\_Com\_7H\_Casing\_Assumption\_20191204153051.JPG

---

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH 20702 20-17 FEDERAL  
COM

Well Number: 7H

### Casing Attachments

Casing ID: 4 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

5\_tapered\_string\_spec\_20190930151627.jpg

Casing Design Assumptions and Worksheet(s):

Harroun\_Ranch\_Fed\_Com\_7H\_Casing\_Assumption\_20191204153034.JPG

### 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	255	160	1.8	13.5	288	100	Class C	2% CaCl2
SURFACE	Tail		255	500	200	1.34	14.8	268	100	Class C	2% CaCl2
INTERMEDIATE	Lead	2901	0	2470	400	2.19	12.7	876	50	Class C	0.5% CaCl2
INTERMEDIATE	Tail		2470	2901	150	1.33	14.8	199.5	50	Class C	1% CaCl2
INTERMEDIATE	Lead		2901	7660	485	2.64	10.5	1280.4	25	Class H	0.5% CaCl2
INTERMEDIATE	Tail		7660	9325	400	1.19	15.6	476	25	Class H	1% CaCl2
PRODUCTION	Lead		8125	9125	0	0	0	0		n/a	n/a

PRODUCTION	Lead		9125	20389	1170	1.27	14.8	1485.9	10	Class H	0.1% Fluid Loss
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**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL  
COM

**Well Number:** 7H

## 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	500	OTHER : FW SPUD	8.3	8.4							
500	9240	OTHER : DBE	9	9.4							
9240	10008	OIL-BASED MUD	11	12.5							

## Section 6 - Test, Logging, Coring

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

Drill Stem Tests will be based on geological sample shows.

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

MUD LOG/GEOLOGICAL LITHOLOGY LOG,GAMMA RAY LOG,CEMENT BOND LOG,

**Coring operation description for the well:**

None planned

**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL  
COM

**Well Number:** 7H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6505

**Anticipated Surface Pressure:** 4303

**Anticipated Bottom Hole Temperature(F):** 160

**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:**

BTA\_Oil\_Producers\_LLC\_\_\_EMERGENCY\_CALL\_LIST\_20190723161502.pdf

H2S\_Equipment\_Schematic\_20190723161502.pdf

H2S\_Plan\_20190723161502.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Harroun\_Ranch\_07H\_Wall\_plot\_20191204154052.pdf

Harroun\_Ranch\_07H\_directional\_plan\_20191204154052.pdf

Harroun\_Ranch\_Fed\_Com\_7H\_Gas\_Capture\_Plan\_20191204154103.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

**Other Variance attachment:**

Casing\_Head\_Running\_Procedure\_20190723163249.pdf

Multi\_Bowl\_Diagram\_\_3\_STRING\_10\_34\_SOW\_20190723163249.pdf

# EMERGENCY CALL LIST

	<u>OFFICE</u>	<u>MOBILE</u>
BTA Oil Producers LLC OFFICE	432-682-3753	
BEN GRIMES, Operations	432-682-3753	432-559-4309
NICK EATON, Drilling	432-682-3753	432-260-7841
TRACE WOHLFAHRT, Completions	432-682-3753	

# EMERGENCY RESPONSE NUMBERS

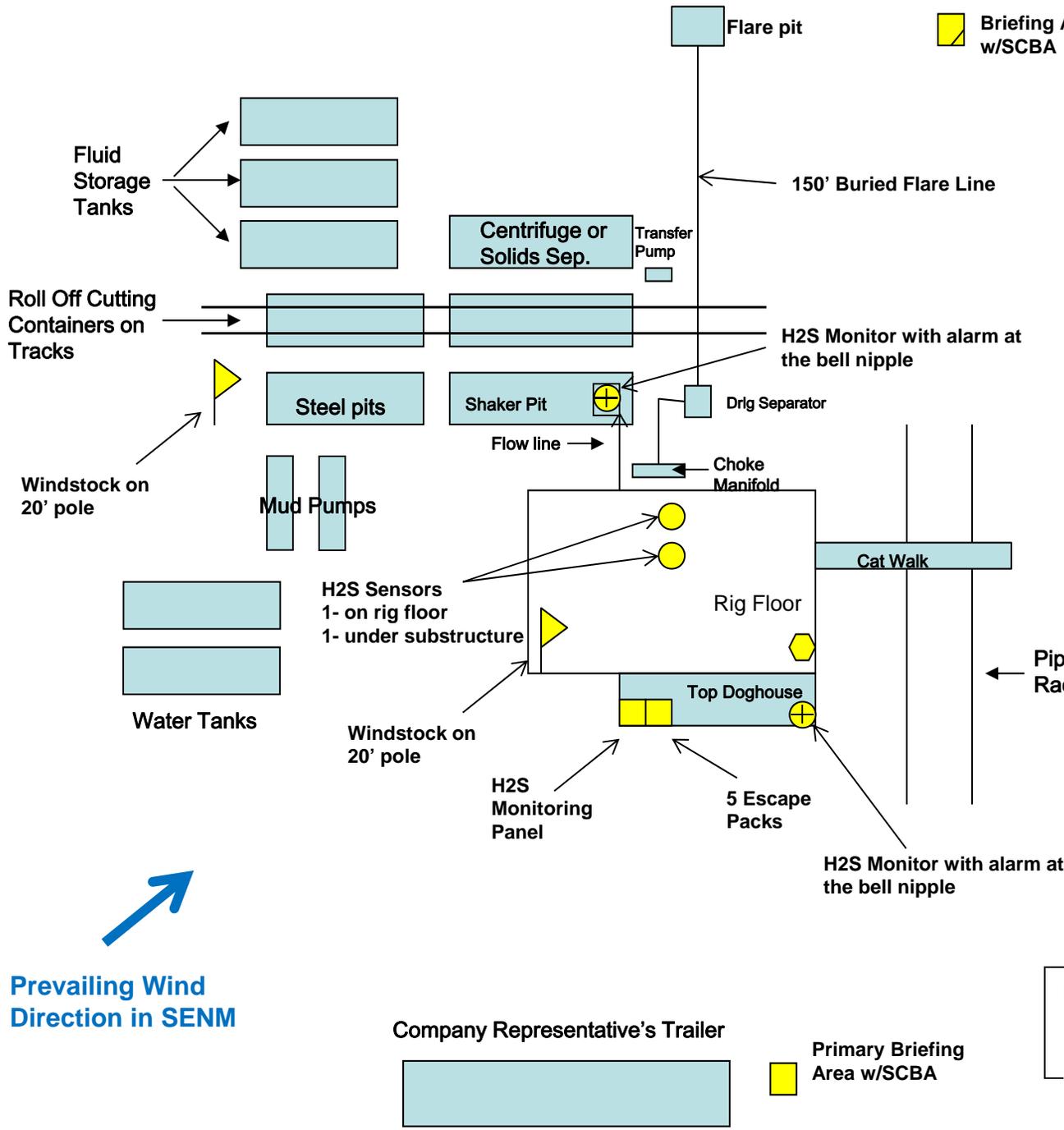
	<u>OFFICE</u>
STATE POLICE	575-748-9718
EDDY COUNTY SHERIFF	575-746-2701
EMERGENCY MEDICAL SERVICES (AMBULANCE)	911 or 575-746-2701
EDDY COUNTY EMERGENCY MANAGEMENT (HARRY BURGESS)	575-887-9511
STATE EMERGENCY RESPONSE CENTER (SERC)	575-476-9620
CARLSBAD POLICE DEPARTMENT	575-885-2111
CARLSBAD FIRE DEPARTMENT	575-885-3125
NEW MEXICO OIL CONSERVATION DIVISION	575-748-1283
INDIAN FIRE & SAFETY	800-530-8693
HALLIBURTON SERVICES	800-844-8451



 Briefing Area w/SCBA

Road Access 

Location Entry Condition and H2S Sign 



	Wind Direction Indicators
	Safe Briefing Area with caution signs and breathing equipment
	H2S Monitor with alarm at the bell nipple

Prevailing Wind Direction in SENM 

BTA OIL PRODUCERS LLC  
H<sub>2</sub>S Equipment Schematic

## BTA OIL PRODUCERS LLC



### HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

#### 1. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- a. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
- b. The proper use and maintenance of personal protective equipment and life support systems.
- c. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- d. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- a. The effects of H<sub>2</sub>S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- b. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- c. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

#### 2. H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S. If H<sub>2</sub>S greater than 100 ppm is encountered in the gas stream we will shut in and install H<sub>2</sub>S equipment.

- a. Well Control Equipment:
  - Flare line.
  - Choke manifold with remotely operated choke.
  - Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
  - Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.
- b. Protective equipment for essential personnel:
  - Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
- c. H<sub>2</sub>S detection and monitoring equipment:

- 2 - portable H2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.
- d. Visual warning systems:  
Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.
- e. Mud Program:  
The mud program has been designed to minimize the volume of H2S circulated to the surface.
- f. Metallurgy:  
All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- g. Communication:  
Company vehicles equipped with cellular telephone.

# **W A R N I N G**

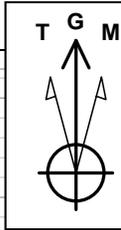
**YOU ARE ENTERING AN H<sub>2</sub>S AREA  
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED***
- 2. HARD HATS REQUIRED***
- 3. SMOKING IN DESIGNATED AREAS ONLY***
- 4. BE WIND CONSCIOUS AT ALL TIMES***
- 5. CK WITH BTA OIL PRODUCERS LLC FOREMAN AT MAIN OFFICE***

**BTA OIL PRODUCERS LLC**

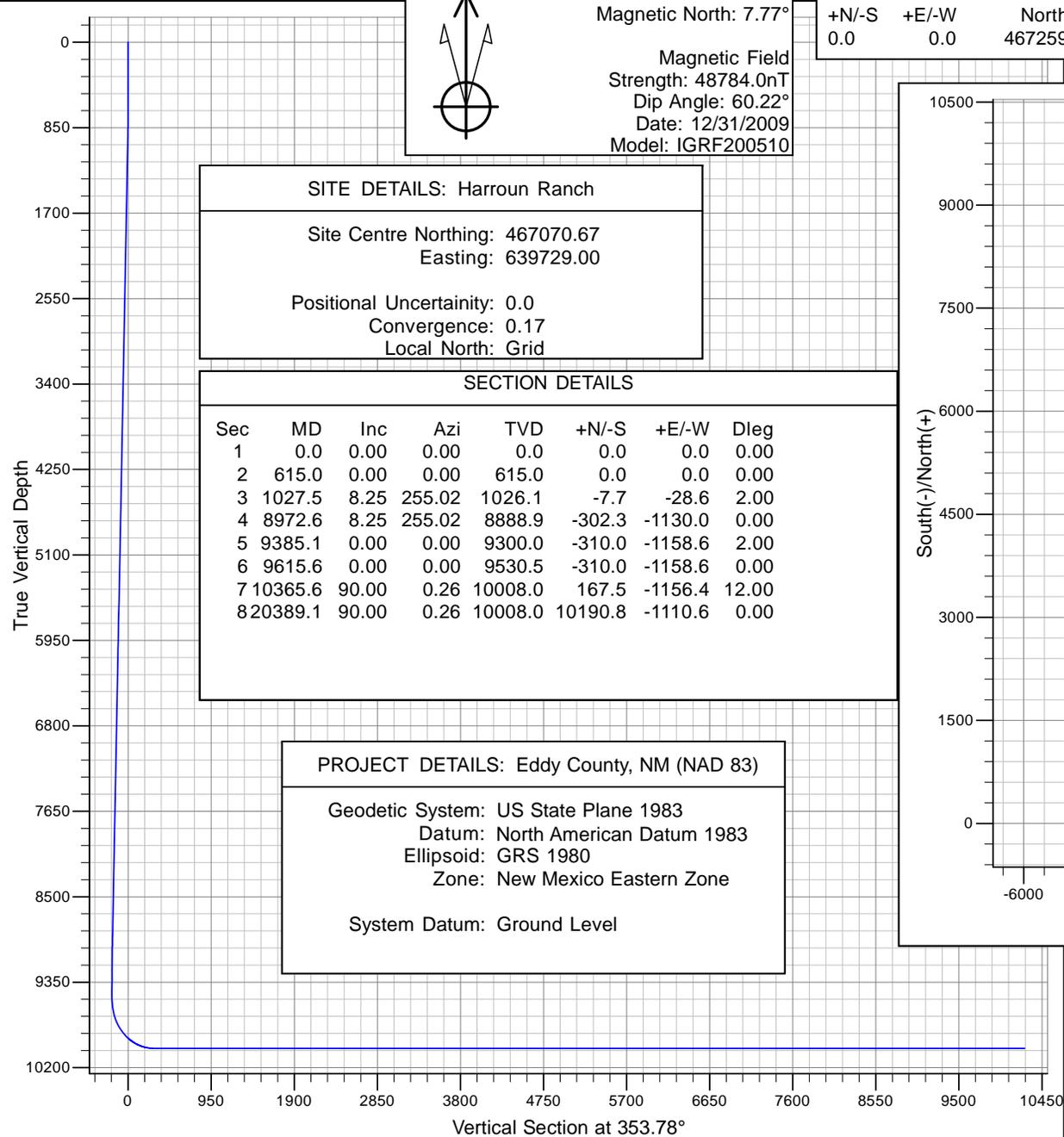
**1-432-682-3753**

# BTA Oil Producers, LLC



Azimuths to Grid North  
 True North:  $-0.18^\circ$   
 Magnetic North:  $7.77^\circ$

Magnetic Field  
 Strength: 48784.0nT  
 Dip Angle:  $60.22^\circ$   
 Date: 12/31/2009  
 Model: IGRF200510



**SITE DETAILS: Harroun Ranch**

Site Centre Northing: 467070.67  
 Easting: 639729.00

Positional Uncertainty: 0.0  
 Convergence: 0.17  
 Local North: Grid

**SECTION DETAILS**

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00
2	615.0	0.00	0.00	615.0	0.0	0.0	0.00
3	1027.5	8.25	255.02	1026.1	-7.7	-28.6	2.00
4	8972.6	8.25	255.02	8888.9	-302.3	-1130.0	0.00
5	9385.1	0.00	0.00	9300.0	-310.0	-1158.6	2.00
6	9615.6	0.00	0.00	9530.5	-310.0	-1158.6	0.00
7	10365.6	90.00	0.26	10008.0	167.5	-1156.4	12.00
8	20389.1	90.00	0.26	10008.0	10190.8	-1110.6	0.00

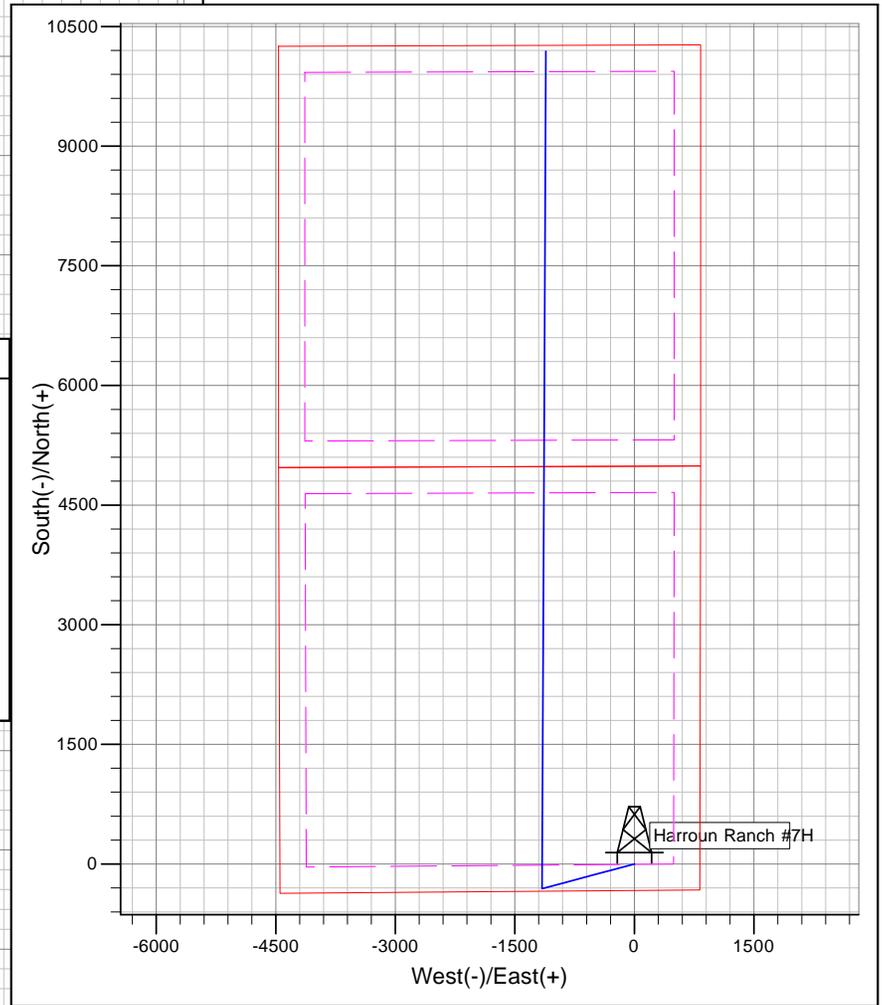
**PROJECT DETAILS: Eddy County, NM (NAD 83)**

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone

System Datum: Ground Level

## WELL DETAILS: Harroun Ranch #7H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	467259.70	643996.10	32° 17' 2.883 N	104° 0' 4.090 W



# **BTA Oil Producers, LLC**

**Eddy County, NM (NAD 83)**

**Harroun Ranch**

**Harroun Ranch #7H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**04 December, 2019**

# Microsoft Planning Report

<b>Database:</b>	Old	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #7H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #7H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Eddy County, NM (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Ground Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		Using geodetic scale factor

<b>Site</b>	Harroun Ranch		
<b>Site Position:</b>		<b>Northing:</b>	467,070.67 usft
<b>From:</b>	Map	<b>Easting:</b>	639,729.01 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32° 17' 1.140 N
		<b>Longitude:</b>	104° 0' 53.805 W
		<b>Grid Convergence:</b>	0.17 °

<b>Well</b>	Harroun Ranch #7H					
<b>Well Position</b>	<b>+N/-S</b>	189.0 usft	<b>Northing:</b>	467,259.70 usft	<b>Latitude:</b>	32° 17' 2.883 N
	<b>+E/-W</b>	4,267.4 usft	<b>Easting:</b>	643,996.10 usft	<b>Longitude:</b>	104° 0' 4.090 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	3,018.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	7.95	60.22	48,784.04259998

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	353.78

<b>Plan Survey Tool Program</b>	<b>Date</b>	12/4/2019		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	20,389.1	Design #1 (Wellbore #1)	

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
615.0	0.00	0.00	615.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,027.5	8.25	255.02	1,026.1	-7.7	-28.6	2.00	2.00	0.00	255.02	
8,972.6	8.25	255.02	8,888.9	-302.3	-1,130.0	0.00	0.00	0.00	0.00	
9,385.1	0.00	0.00	9,300.0	-310.0	-1,158.6	2.00	-2.00	0.00	180.00	
9,615.6	0.00	0.00	9,530.5	-310.0	-1,158.6	0.00	0.00	0.00	0.00	
10,365.6	90.00	0.26	10,008.0	167.5	-1,156.4	12.00	12.00	0.00	0.26	
20,389.1	90.00	0.26	10,008.0	10,190.8	-1,110.6	0.00	0.00	0.00	0.00	Harroun Ranch #7H E

# Microsoft Planning Report

<b>Database:</b>	Old	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #7H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #7H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
615.0	0.00	0.00	615.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	1.70	255.02	700.0	-0.3	-1.2	-0.2	2.00	2.00	0.00
800.0	3.70	255.02	799.9	-1.5	-5.8	-0.9	2.00	2.00	0.00
900.0	5.70	255.02	899.5	-3.7	-13.7	-2.2	2.00	2.00	0.00
1,000.0	7.70	255.02	998.8	-6.7	-25.0	-3.9	2.00	2.00	0.00
1,027.5	8.25	255.02	1,026.1	-7.7	-28.6	-4.5	2.00	2.00	0.00
1,100.0	8.25	255.02	1,097.8	-10.4	-38.7	-6.1	0.00	0.00	0.00
1,200.0	8.25	255.02	1,196.8	-14.1	-52.6	-8.3	0.00	0.00	0.00
1,300.0	8.25	255.02	1,295.8	-17.8	-66.4	-10.5	0.00	0.00	0.00
1,400.0	8.25	255.02	1,394.7	-21.5	-80.3	-12.7	0.00	0.00	0.00
1,500.0	8.25	255.02	1,493.7	-25.2	-94.1	-14.8	0.00	0.00	0.00
1,600.0	8.25	255.02	1,592.7	-28.9	-108.0	-17.0	0.00	0.00	0.00
1,700.0	8.25	255.02	1,691.6	-32.6	-121.9	-19.2	0.00	0.00	0.00
1,800.0	8.25	255.02	1,790.6	-36.3	-135.7	-21.4	0.00	0.00	0.00
1,900.0	8.25	255.02	1,889.5	-40.0	-149.6	-23.6	0.00	0.00	0.00
2,000.0	8.25	255.02	1,988.5	-43.7	-163.4	-25.8	0.00	0.00	0.00
2,100.0	8.25	255.02	2,087.5	-47.4	-177.3	-28.0	0.00	0.00	0.00
2,200.0	8.25	255.02	2,186.4	-51.2	-191.2	-30.1	0.00	0.00	0.00
2,300.0	8.25	255.02	2,285.4	-54.9	-205.0	-32.3	0.00	0.00	0.00
2,400.0	8.25	255.02	2,384.4	-58.6	-218.9	-34.5	0.00	0.00	0.00
2,500.0	8.25	255.02	2,483.3	-62.3	-232.8	-36.7	0.00	0.00	0.00
2,600.0	8.25	255.02	2,582.3	-66.0	-246.6	-38.9	0.00	0.00	0.00
2,700.0	8.25	255.02	2,681.3	-69.7	-260.5	-41.1	0.00	0.00	0.00
2,800.0	8.25	255.02	2,780.2	-73.4	-274.3	-43.3	0.00	0.00	0.00
2,900.0	8.25	255.02	2,879.2	-77.1	-288.2	-45.4	0.00	0.00	0.00
3,000.0	8.25	255.02	2,978.2	-80.8	-302.1	-47.6	0.00	0.00	0.00
3,100.0	8.25	255.02	3,077.1	-84.5	-315.9	-49.8	0.00	0.00	0.00
3,200.0	8.25	255.02	3,176.1	-88.2	-329.8	-52.0	0.00	0.00	0.00
3,300.0	8.25	255.02	3,275.1	-91.9	-343.6	-54.2	0.00	0.00	0.00
3,400.0	8.25	255.02	3,374.0	-95.7	-357.5	-56.4	0.00	0.00	0.00
3,500.0	8.25	255.02	3,473.0	-99.4	-371.4	-58.5	0.00	0.00	0.00
3,600.0	8.25	255.02	3,572.0	-103.1	-385.2	-60.7	0.00	0.00	0.00
3,700.0	8.25	255.02	3,670.9	-106.8	-399.1	-62.9	0.00	0.00	0.00
3,800.0	8.25	255.02	3,769.9	-110.5	-413.0	-65.1	0.00	0.00	0.00
3,900.0	8.25	255.02	3,868.8	-114.2	-426.8	-67.3	0.00	0.00	0.00
4,000.0	8.25	255.02	3,967.8	-117.9	-440.7	-69.5	0.00	0.00	0.00
4,100.0	8.25	255.02	4,066.8	-121.6	-454.5	-71.7	0.00	0.00	0.00
4,200.0	8.25	255.02	4,165.7	-125.3	-468.4	-73.8	0.00	0.00	0.00
4,300.0	8.25	255.02	4,264.7	-129.0	-482.3	-76.0	0.00	0.00	0.00
4,400.0	8.25	255.02	4,363.7	-132.7	-496.1	-78.2	0.00	0.00	0.00
4,500.0	8.25	255.02	4,462.6	-136.5	-510.0	-80.4	0.00	0.00	0.00
4,600.0	8.25	255.02	4,561.6	-140.2	-523.9	-82.6	0.00	0.00	0.00
4,700.0	8.25	255.02	4,660.6	-143.9	-537.7	-84.8	0.00	0.00	0.00
4,800.0	8.25	255.02	4,759.5	-147.6	-551.6	-87.0	0.00	0.00	0.00
4,900.0	8.25	255.02	4,858.5	-151.3	-565.4	-89.1	0.00	0.00	0.00
5,000.0	8.25	255.02	4,957.5	-155.0	-579.3	-91.3	0.00	0.00	0.00
5,100.0	8.25	255.02	5,056.4	-158.7	-593.2	-93.5	0.00	0.00	0.00

**Microsoft**  
Planning Report

<b>Database:</b>	Old	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #7H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #7H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,200.0	8.25	255.02	5,155.4	-162.4	-607.0	-95.7	0.00	0.00	0.00	
5,300.0	8.25	255.02	5,254.4	-166.1	-620.9	-97.9	0.00	0.00	0.00	
5,400.0	8.25	255.02	5,353.3	-169.8	-634.7	-100.1	0.00	0.00	0.00	
5,500.0	8.25	255.02	5,452.3	-173.5	-648.6	-102.3	0.00	0.00	0.00	
5,600.0	8.25	255.02	5,551.3	-177.3	-662.5	-104.4	0.00	0.00	0.00	
5,700.0	8.25	255.02	5,650.2	-181.0	-676.3	-106.6	0.00	0.00	0.00	
5,800.0	8.25	255.02	5,749.2	-184.7	-690.2	-108.8	0.00	0.00	0.00	
5,900.0	8.25	255.02	5,848.2	-188.4	-704.1	-111.0	0.00	0.00	0.00	
6,000.0	8.25	255.02	5,947.1	-192.1	-717.9	-113.2	0.00	0.00	0.00	
6,100.0	8.25	255.02	6,046.1	-195.8	-731.8	-115.4	0.00	0.00	0.00	
6,200.0	8.25	255.02	6,145.0	-199.5	-745.6	-117.6	0.00	0.00	0.00	
6,300.0	8.25	255.02	6,244.0	-203.2	-759.5	-119.7	0.00	0.00	0.00	
6,400.0	8.25	255.02	6,343.0	-206.9	-773.4	-121.9	0.00	0.00	0.00	
6,500.0	8.25	255.02	6,441.9	-210.6	-787.2	-124.1	0.00	0.00	0.00	
6,600.0	8.25	255.02	6,540.9	-214.3	-801.1	-126.3	0.00	0.00	0.00	
6,700.0	8.25	255.02	6,639.9	-218.1	-814.9	-128.5	0.00	0.00	0.00	
6,800.0	8.25	255.02	6,738.8	-221.8	-828.8	-130.7	0.00	0.00	0.00	
6,900.0	8.25	255.02	6,837.8	-225.5	-842.7	-132.8	0.00	0.00	0.00	
7,000.0	8.25	255.02	6,936.8	-229.2	-856.5	-135.0	0.00	0.00	0.00	
7,100.0	8.25	255.02	7,035.7	-232.9	-870.4	-137.2	0.00	0.00	0.00	
7,200.0	8.25	255.02	7,134.7	-236.6	-884.3	-139.4	0.00	0.00	0.00	
7,300.0	8.25	255.02	7,233.7	-240.3	-898.1	-141.6	0.00	0.00	0.00	
7,400.0	8.25	255.02	7,332.6	-244.0	-912.0	-143.8	0.00	0.00	0.00	
7,500.0	8.25	255.02	7,431.6	-247.7	-925.8	-146.0	0.00	0.00	0.00	
7,600.0	8.25	255.02	7,530.6	-251.4	-939.7	-148.1	0.00	0.00	0.00	
7,700.0	8.25	255.02	7,629.5	-255.1	-953.6	-150.3	0.00	0.00	0.00	
7,800.0	8.25	255.02	7,728.5	-258.8	-967.4	-152.5	0.00	0.00	0.00	
7,900.0	8.25	255.02	7,827.5	-262.6	-981.3	-154.7	0.00	0.00	0.00	
8,000.0	8.25	255.02	7,926.4	-266.3	-995.1	-156.9	0.00	0.00	0.00	
8,100.0	8.25	255.02	8,025.4	-270.0	-1,009.0	-159.1	0.00	0.00	0.00	
8,200.0	8.25	255.02	8,124.4	-273.7	-1,022.9	-161.3	0.00	0.00	0.00	
8,300.0	8.25	255.02	8,223.3	-277.4	-1,036.7	-163.4	0.00	0.00	0.00	
8,400.0	8.25	255.02	8,322.3	-281.1	-1,050.6	-165.6	0.00	0.00	0.00	
8,500.0	8.25	255.02	8,421.2	-284.8	-1,064.5	-167.8	0.00	0.00	0.00	
8,600.0	8.25	255.02	8,520.2	-288.5	-1,078.3	-170.0	0.00	0.00	0.00	
8,700.0	8.25	255.02	8,619.2	-292.2	-1,092.2	-172.2	0.00	0.00	0.00	
8,800.0	8.25	255.02	8,718.1	-295.9	-1,106.0	-174.4	0.00	0.00	0.00	
8,900.0	8.25	255.02	8,817.1	-299.6	-1,119.9	-176.6	0.00	0.00	0.00	
8,972.6	8.25	255.02	8,888.9	-302.3	-1,130.0	-178.1	0.00	0.00	0.00	
9,000.0	7.70	255.02	8,916.1	-303.3	-1,133.6	-178.7	2.00	-2.00	0.00	
9,100.0	5.70	255.02	9,015.4	-306.3	-1,144.9	-180.5	2.00	-2.00	0.00	
9,200.0	3.70	255.02	9,115.1	-308.5	-1,152.8	-181.7	2.00	-2.00	0.00	
9,300.0	1.70	255.02	9,214.9	-309.7	-1,157.4	-182.5	2.00	-2.00	0.00	
9,385.1	0.00	0.00	9,300.0	-310.0	-1,158.6	-182.7	2.00	-2.00	0.00	
9,400.0	0.00	0.00	9,314.9	-310.0	-1,158.6	-182.7	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,414.9	-310.0	-1,158.6	-182.7	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,514.9	-310.0	-1,158.6	-182.7	0.00	0.00	0.00	
9,615.6	0.00	0.00	9,530.5	-310.0	-1,158.6	-182.7	0.00	0.00	0.00	
9,700.0	10.13	0.26	9,614.5	-302.6	-1,158.6	-175.3	12.00	12.00	0.00	
9,800.0	22.13	0.26	9,710.4	-274.8	-1,158.4	-147.7	12.00	12.00	0.00	
9,900.0	34.13	0.26	9,798.4	-227.8	-1,158.2	-101.0	12.00	12.00	0.00	
10,000.0	46.13	0.26	9,874.7	-163.4	-1,157.9	-37.0	12.00	12.00	0.00	
10,100.0	58.13	0.26	9,936.0	-84.7	-1,157.6	41.3	12.00	12.00	0.00	
10,200.0	70.13	0.26	9,979.6	5.2	-1,157.2	130.5	12.00	12.00	0.00	

**Microsoft**  
Planning Report

<b>Database:</b>	Old	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #7H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #7H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,300.0	82.13	0.26	10,003.5	102.1	-1,156.7	226.8	12.00	12.00	0.00	
10,365.6	90.00	0.26	10,008.0	167.5	-1,156.4	291.8	12.00	12.00	0.00	
10,400.0	90.00	0.26	10,008.0	201.9	-1,156.3	325.9	0.00	0.00	0.00	
10,500.0	90.00	0.26	10,008.0	301.9	-1,155.8	425.3	0.00	0.00	0.00	
10,600.0	90.00	0.26	10,008.0	401.9	-1,155.3	524.7	0.00	0.00	0.00	
10,700.0	90.00	0.26	10,008.0	501.9	-1,154.9	624.0	0.00	0.00	0.00	
10,800.0	90.00	0.26	10,008.0	601.9	-1,154.4	723.4	0.00	0.00	0.00	
10,900.0	90.00	0.26	10,008.0	701.9	-1,154.0	822.7	0.00	0.00	0.00	
11,000.0	90.00	0.26	10,008.0	801.8	-1,153.5	922.1	0.00	0.00	0.00	
11,100.0	90.00	0.26	10,008.0	901.8	-1,153.1	1,021.5	0.00	0.00	0.00	
11,200.0	90.00	0.26	10,008.0	1,001.8	-1,152.6	1,120.8	0.00	0.00	0.00	
11,300.0	90.00	0.26	10,008.0	1,101.8	-1,152.1	1,220.2	0.00	0.00	0.00	
11,400.0	90.00	0.26	10,008.0	1,201.8	-1,151.7	1,319.5	0.00	0.00	0.00	
11,500.0	90.00	0.26	10,008.0	1,301.8	-1,151.2	1,418.9	0.00	0.00	0.00	
11,600.0	90.00	0.26	10,008.0	1,401.8	-1,150.8	1,518.3	0.00	0.00	0.00	
11,700.0	90.00	0.26	10,008.0	1,501.8	-1,150.3	1,617.6	0.00	0.00	0.00	
11,800.0	90.00	0.26	10,008.0	1,601.8	-1,149.9	1,717.0	0.00	0.00	0.00	
11,900.0	90.00	0.26	10,008.0	1,701.8	-1,149.4	1,816.3	0.00	0.00	0.00	
12,000.0	90.00	0.26	10,008.0	1,801.8	-1,148.9	1,915.7	0.00	0.00	0.00	
12,100.0	90.00	0.26	10,008.0	1,901.8	-1,148.5	2,015.1	0.00	0.00	0.00	
12,200.0	90.00	0.26	10,008.0	2,001.8	-1,148.0	2,114.4	0.00	0.00	0.00	
12,300.0	90.00	0.26	10,008.0	2,101.8	-1,147.6	2,213.8	0.00	0.00	0.00	
12,400.0	90.00	0.26	10,008.0	2,201.8	-1,147.1	2,313.2	0.00	0.00	0.00	
12,500.0	90.00	0.26	10,008.0	2,301.8	-1,146.7	2,412.5	0.00	0.00	0.00	
12,600.0	90.00	0.26	10,008.0	2,401.8	-1,146.2	2,511.9	0.00	0.00	0.00	
12,700.0	90.00	0.26	10,008.0	2,501.8	-1,145.7	2,611.2	0.00	0.00	0.00	
12,800.0	90.00	0.26	10,008.0	2,601.8	-1,145.3	2,710.6	0.00	0.00	0.00	
12,900.0	90.00	0.26	10,008.0	2,701.8	-1,144.8	2,810.0	0.00	0.00	0.00	
13,000.0	90.00	0.26	10,008.0	2,801.8	-1,144.4	2,909.3	0.00	0.00	0.00	
13,100.0	90.00	0.26	10,008.0	2,901.8	-1,143.9	3,008.7	0.00	0.00	0.00	
13,200.0	90.00	0.26	10,008.0	3,001.8	-1,143.5	3,108.0	0.00	0.00	0.00	
13,300.0	90.00	0.26	10,008.0	3,101.8	-1,143.0	3,207.4	0.00	0.00	0.00	
13,400.0	90.00	0.26	10,008.0	3,201.8	-1,142.5	3,306.8	0.00	0.00	0.00	
13,500.0	90.00	0.26	10,008.0	3,301.8	-1,142.1	3,406.1	0.00	0.00	0.00	
13,600.0	90.00	0.26	10,008.0	3,401.8	-1,141.6	3,505.5	0.00	0.00	0.00	
13,700.0	90.00	0.26	10,008.0	3,501.8	-1,141.2	3,604.8	0.00	0.00	0.00	
13,800.0	90.00	0.26	10,008.0	3,601.8	-1,140.7	3,704.2	0.00	0.00	0.00	
13,900.0	90.00	0.26	10,008.0	3,701.8	-1,140.3	3,803.6	0.00	0.00	0.00	
14,000.0	90.00	0.26	10,008.0	3,801.8	-1,139.8	3,902.9	0.00	0.00	0.00	
14,100.0	90.00	0.26	10,008.0	3,901.8	-1,139.3	4,002.3	0.00	0.00	0.00	
14,200.0	90.00	0.26	10,008.0	4,001.8	-1,138.9	4,101.6	0.00	0.00	0.00	
14,300.0	90.00	0.26	10,008.0	4,101.8	-1,138.4	4,201.0	0.00	0.00	0.00	
14,400.0	90.00	0.26	10,008.0	4,201.8	-1,138.0	4,300.4	0.00	0.00	0.00	
14,500.0	90.00	0.26	10,008.0	4,301.8	-1,137.5	4,399.7	0.00	0.00	0.00	
14,600.0	90.00	0.26	10,008.0	4,401.8	-1,137.1	4,499.1	0.00	0.00	0.00	
14,700.0	90.00	0.26	10,008.0	4,501.8	-1,136.6	4,598.5	0.00	0.00	0.00	
14,800.0	90.00	0.26	10,008.0	4,601.8	-1,136.1	4,697.8	0.00	0.00	0.00	
14,900.0	90.00	0.26	10,008.0	4,701.8	-1,135.7	4,797.2	0.00	0.00	0.00	
15,000.0	90.00	0.26	10,008.0	4,801.8	-1,135.2	4,896.5	0.00	0.00	0.00	
15,100.0	90.00	0.26	10,008.0	4,901.8	-1,134.8	4,995.9	0.00	0.00	0.00	
15,200.0	90.00	0.26	10,008.0	5,001.8	-1,134.3	5,095.3	0.00	0.00	0.00	
15,300.0	90.00	0.26	10,008.0	5,101.8	-1,133.9	5,194.6	0.00	0.00	0.00	
15,400.0	90.00	0.26	10,008.0	5,201.8	-1,133.4	5,294.0	0.00	0.00	0.00	
15,500.0	90.00	0.26	10,008.0	5,301.8	-1,132.9	5,393.3	0.00	0.00	0.00	

# Microsoft Planning Report

<b>Database:</b>	Old	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #7H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3018.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #7H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,600.0	90.00	0.26	10,008.0	5,401.8	-1,132.5	5,492.7	0.00	0.00	0.00	
15,700.0	90.00	0.26	10,008.0	5,501.8	-1,132.0	5,592.1	0.00	0.00	0.00	
15,800.0	90.00	0.26	10,008.0	5,601.8	-1,131.6	5,691.4	0.00	0.00	0.00	
15,900.0	90.00	0.26	10,008.0	5,701.8	-1,131.1	5,790.8	0.00	0.00	0.00	
16,000.0	90.00	0.26	10,008.0	5,801.8	-1,130.7	5,890.1	0.00	0.00	0.00	
16,100.0	90.00	0.26	10,008.0	5,901.8	-1,130.2	5,989.5	0.00	0.00	0.00	
16,200.0	90.00	0.26	10,008.0	6,001.8	-1,129.7	6,088.9	0.00	0.00	0.00	
16,300.0	90.00	0.26	10,008.0	6,101.8	-1,129.3	6,188.2	0.00	0.00	0.00	
16,400.0	90.00	0.26	10,008.0	6,201.8	-1,128.8	6,287.6	0.00	0.00	0.00	
16,500.0	90.00	0.26	10,008.0	6,301.8	-1,128.4	6,386.9	0.00	0.00	0.00	
16,600.0	90.00	0.26	10,008.0	6,401.8	-1,127.9	6,486.3	0.00	0.00	0.00	
16,700.0	90.00	0.26	10,008.0	6,501.8	-1,127.5	6,585.7	0.00	0.00	0.00	
16,800.0	90.00	0.26	10,008.0	6,601.8	-1,127.0	6,685.0	0.00	0.00	0.00	
16,900.0	90.00	0.26	10,008.0	6,701.8	-1,126.5	6,784.4	0.00	0.00	0.00	
17,000.0	90.00	0.26	10,008.0	6,801.8	-1,126.1	6,883.7	0.00	0.00	0.00	
17,100.0	90.00	0.26	10,008.0	6,901.8	-1,125.6	6,983.1	0.00	0.00	0.00	
17,200.0	90.00	0.26	10,008.0	7,001.8	-1,125.2	7,082.5	0.00	0.00	0.00	
17,300.0	90.00	0.26	10,008.0	7,101.8	-1,124.7	7,181.8	0.00	0.00	0.00	
17,400.0	90.00	0.26	10,008.0	7,201.8	-1,124.3	7,281.2	0.00	0.00	0.00	
17,500.0	90.00	0.26	10,008.0	7,301.8	-1,123.8	7,380.6	0.00	0.00	0.00	
17,600.0	90.00	0.26	10,008.0	7,401.8	-1,123.3	7,479.9	0.00	0.00	0.00	
17,700.0	90.00	0.26	10,008.0	7,501.8	-1,122.9	7,579.3	0.00	0.00	0.00	
17,800.0	90.00	0.26	10,008.0	7,601.8	-1,122.4	7,678.6	0.00	0.00	0.00	
17,900.0	90.00	0.26	10,008.0	7,701.8	-1,122.0	7,778.0	0.00	0.00	0.00	
18,000.0	90.00	0.26	10,008.0	7,801.8	-1,121.5	7,877.4	0.00	0.00	0.00	
18,100.0	90.00	0.26	10,008.0	7,901.8	-1,121.1	7,976.7	0.00	0.00	0.00	
18,200.0	90.00	0.26	10,008.0	8,001.8	-1,120.6	8,076.1	0.00	0.00	0.00	
18,300.0	90.00	0.26	10,008.0	8,101.8	-1,120.1	8,175.4	0.00	0.00	0.00	
18,400.0	90.00	0.26	10,008.0	8,201.8	-1,119.7	8,274.8	0.00	0.00	0.00	
18,500.0	90.00	0.26	10,008.0	8,301.8	-1,119.2	8,374.2	0.00	0.00	0.00	
18,600.0	90.00	0.26	10,008.0	8,401.8	-1,118.8	8,473.5	0.00	0.00	0.00	
18,700.0	90.00	0.26	10,008.0	8,501.8	-1,118.3	8,572.9	0.00	0.00	0.00	
18,800.0	90.00	0.26	10,008.0	8,601.8	-1,117.9	8,672.2	0.00	0.00	0.00	
18,900.0	90.00	0.26	10,008.0	8,701.8	-1,117.4	8,771.6	0.00	0.00	0.00	
19,000.0	90.00	0.26	10,008.0	8,801.8	-1,116.9	8,871.0	0.00	0.00	0.00	
19,100.0	90.00	0.26	10,008.0	8,901.8	-1,116.5	8,970.3	0.00	0.00	0.00	
19,200.0	90.00	0.26	10,008.0	9,001.8	-1,116.0	9,069.7	0.00	0.00	0.00	
19,300.0	90.00	0.26	10,008.0	9,101.8	-1,115.6	9,169.0	0.00	0.00	0.00	
19,400.0	90.00	0.26	10,008.0	9,201.8	-1,115.1	9,268.4	0.00	0.00	0.00	
19,500.0	90.00	0.26	10,008.0	9,301.8	-1,114.7	9,367.8	0.00	0.00	0.00	
19,600.0	90.00	0.26	10,008.0	9,401.8	-1,114.2	9,467.1	0.00	0.00	0.00	
19,700.0	90.00	0.26	10,008.0	9,501.8	-1,113.7	9,566.5	0.00	0.00	0.00	
19,800.0	90.00	0.26	10,008.0	9,601.8	-1,113.3	9,665.9	0.00	0.00	0.00	
19,900.0	90.00	0.26	10,008.0	9,701.8	-1,112.8	9,765.2	0.00	0.00	0.00	
20,000.0	90.00	0.26	10,008.0	9,801.8	-1,112.4	9,864.6	0.00	0.00	0.00	
20,100.0	90.00	0.26	10,008.0	9,901.8	-1,111.9	9,963.9	0.00	0.00	0.00	
20,200.0	90.00	0.26	10,008.0	10,001.8	-1,111.5	10,063.3	0.00	0.00	0.00	
20,300.0	90.00	0.26	10,008.0	10,101.8	-1,111.0	10,162.7	0.00	0.00	0.00	
20,389.1	90.00	0.26	10,008.0	10,190.8	-1,110.6	10,251.1	0.00	0.00	0.00	

**Microsoft**  
Planning Report

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<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #7H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Harroun Ranch #7H BHI	0.00	0.00	10,008.0	10,190.8	-1,110.6	477,449.70	642,885.60	32° 18' 43.754 N	104° 0' 16.663 W
- plan hits target center									
- Point									

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

Submit Original  
to Appropriate  
District Office

**GAS CAPTURE PLAN**

Date: 12/4/2019

Original Operator & OGRID No.: 260297  
 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, recomplete 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
HARROUN RANCH 20702		SEC 20 ; 23S ; 29E	333 FSL 821.4 FEL	2000	Flared	Battery Connected
20-17 FEDERAL COM 7H						To ETP System

**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 Gas Transporter and will be connected to Gas Transporter low/high pressure gathering system located in EDDY County, New Mexico. It will require 0 ' of pipeline to (ETP) connect the facility to low/high pressure gathering system. Operator provides (periodically) to Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Operator and Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Gas Transporter Processing Plant located in Sec.\_\_\_\_, Twn.\_\_\_\_, Rng.\_\_\_\_, \_\_\_\_\_ County, New Mexico. 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 Gas Transporter system at that time. Based on current information, it is Operator'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