

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 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.
2. Name of Operator		9. API Well No. <b>30-015-49549</b>
3a. Address	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)

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.<br>2. A Drilling Plan.<br>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).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

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.

(Continued on page 2)

\*(Instructions on page 2)



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, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-015-49549</b>	<sup>2</sup> Pool Code <b>96721</b>	<sup>3</sup> Pool Name <b>LAGUNA SALADO ; BONE SPRING</b>
<sup>4</sup> Property Code <b>328285</b>	<sup>5</sup> Property Name <b>HARROUN RANCH 20702 20-17 FEDERAL COM</b>	
<sup>7</sup> OGRID No. <b>260297</b>	<sup>8</sup> Operator Name <b>BTA OIL PRODUCERS, LLC</b>	<sup>6</sup> Well Number <b>13H</b>
		<sup>9</sup> Elevation <b>3020'</b>

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	29	23S	29E		220	NORTH	970	EAST	EDDY

<sup>11</sup> 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
A	17	23S	29E		50	NORTH	660	EAST	EDDY

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
320			

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.

	<p><b>CORNER COORDINATES</b> NAD 83, SPCS NM EAST</p> <p>A - X: 644887.18' / Y: 477508.44' B - X: 644846.54' / Y: 474909.58' C - X: 644823.90' / Y: 472250.71' D - X: 644820.31' / Y: 469591.84' E - X: 644816.72' / Y: 466932.98' F - X: 642158.82' / Y: 468911.59' G - X: 642188.40' / Y: 469577.03' H - X: 642177.97' / Y: 472242.43' I - X: 642206.55' / Y: 474893.42' J - X: 642235.13' / Y: 477544.41'</p>	<p><b>CORNER COORDINATES</b> NAD 27, SPCS NM EAST</p> <p>A - X: 603684.20' / Y: 477508.77' B - X: 603662.49' / Y: 474909.97' C - X: 603640.77' / Y: 472191.16' D - X: 603637.11' / Y: 469532.36' E - X: 603633.45' / Y: 466973.55' F - X: 600975.57' / Y: 468852.19' G - X: 600985.23' / Y: 469517.57' H - X: 600994.68' / Y: 472182.81' I - X: 601023.53' / Y: 474833.84' J - X: 601052.18' / Y: 477484.76'</p>	<p><b>" OPERATOR CERTIFICATION</b> I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>Sammy Hajar</i> Date: 8/16/2021</p> <p>Printed Name: <b>Sammy Hajar</b></p> <p>E-mail Address: <b>SHAJAR@BTAOIL.COM</b></p>
	<p><b>BOTTOM HOLE LOCATION</b> 50' FNL 660' FEL, SECTION 17 NAD 83, SPCS NM EAST X: 644206.70' / Y: 477512.41' LAT: 32.31231518N / LON: 104.00035159W NAD 27, SPCS NM EAST X: 603023.72' / Y: 477452.74' LAT: 32.31219334N / LON: 103.99868904W</p>	<p><b>"SURVEYOR CERTIFICATION</b> 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.</p> <p>AUGUST 16, 2021 Date of Survey</p> <p>Signature and Seal of Professional Surveyor: <i>David W. Myers</i></p> <p>Certificate Number: <b>DAVID W. MYERS 11403</b></p>	
	<p><b>LAST TAKE POINT</b> 100' FNL 660' FEL, SECTION 17 NAD 83, SPCS NM EAST X: 644206.29' / Y: 477482.40' LAT: 32.31217772N / LON: 104.00035341W NAD 27, SPCS NM EAST X: 603023.31' / Y: 477402.73' LAT: 32.31205589N / LON: 103.99868086W</p>		
	<p><b>KICK OFF/FIRST TAKE POINT</b> 100' FSL 660' FEL, SECTION 20 NAD 83, SPCS NM EAST X: 644156.85' / Y: 467027.07' LAT: 32.28349488N / LON: 104.00081825W NAD 27, SPCS NM EAST X: 602973.58' / Y: 466998.24' LAT: 32.28337278N / LON: 104.00012680W</p>		
	<p><b>SURFACE HOLE LOCATION</b> 220' FNL 970' FEL, SECTION 29 NAD 83, SPCS NM EAST X: 643848.27' / Y: 466704.93' LAT: 32.28261034N / LON: 104.00162002W NAD 27, SPCS NM EAST X: 602664.99' / Y: 466645.52' LAT: 32.28248826N / LON: 104.00112858W</p>		

Distances/areas relative to NAD 83 Combined Scale Factor: 0.9997823 Convergence Angle: 00°11'10.610016"

☐ Horizontal Spacing Unit

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

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

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description

Effective May 25, 2021

**I. Operator:** BTA Oil Producers, LLC **OGRID:** 260297 **Date:** 04 / 20 / 2022

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
HARROUN RANCH 20702		A-29-23S-29E	220 FNL, 970 FEL	+/- 800	+/- 2000	+/- 1200
20-17 FEDERAL COM 13H						

**IV. Central Delivery Point Name:** HARROUN RANCH CTB [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
HARROUN RANCH 20702		8/18/2022	9/7/2022	9/21/2022	10/12/2022	11/11/2022
20-17 FEDERAL COM 13H						

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan****EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:


(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.



I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Sammy Hajar
Title: Regulatory Analyst
E-mail Address: SHAJAR@BTAOIL.COM
Date: 4/20/2022
Phone: 432-682-3753

**OIL CONSERVATION DIVISION**  
**(Only applicable when submitted as a standalone form)**

Approved By:
Title:
Approval Date:
Conditions of Approval:

**VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.**

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Separation equipment will allow for adequate retention time to allow gas and liquids to separate.
- Separation equipment will separate all three phases (Oil, Water, and Gas).
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering is selected to be serviced without flow interruptions or the need to release gas from the well.

**VII. Operational Practices: Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F 19.15.27.8 NMAC.**

**Drilling Operations**

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

**Completions/Recompletions Operations**

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

**Production Operations**

- Weekly AVOs will be performed on all facilities that produce more than 60 MCFD.
- Leaking thief hatches and pressure safety valves found during AVOs will be cleaned and properly re-sealed.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All gas lift systems will be optimized to limit the amount of waste.
- All tanks will have automatic gauging equipment installed.

### **Performance Standards**

- Production equipment will be designed to handle maximum anticipated rates and pressure.
- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- All gas will have multiple points of separation to ensure no liquids enter flares, combustors, or gas sales line.
- Weekly AVOs will be performed on all wells and facilities that produce more than 60 MCFD.
- All OOOOa facilities will be filmed with an Optical Gas Imaging Thermographer camera once per month to check for fugitive emissions.

### **Measurement & Estimation**

- All volume that is flared and vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- All meters will be calibrated at regular intervals according to meter manufacturer recommendations.
- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

### **VIII. Best Management Practices: Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.**

- During downhole well maintenance, BTA will use best management practices to vent as minimally as possible.
- Prior to the commencement of any maintenance, the tank or vessel will be isolated from the rest of the facilities.
- All valves upstream of the equipment will be closed and isolated.
- After equipment has been isolated, the equipment will be blown down to as low a pressure as possible into the collection system.
- If the equipment being maintained cannot be relieved into the collection system, it shall be released to a tank where the vapor can either be captured or combusted if possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.





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

# Drilling Plan Data Report

04/20/2022

APD ID: 10400079378

Submission Date: 08/20/2021

Highlighted data  
reflects the most  
recent changes

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH 20702 20-17 FEDERAL  
COM

Well Number: 13H

[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
6884108	QUATERNARY	3020	0	0	ALLUVIUM	NONE	N
6884109	RUSTLER	2795	225	225	ANHYDRITE	NONE	N
6884110	TOP SALT	2450	570	570	SALT	NONE	N
6884111	BASE OF SALT	395	2625	2625	SALT	NONE	N
6884112	DELAWARE	100	2920	2920	LIMESTONE	NATURAL GAS, OIL	N
6884121	BELL CANYON	65	2955	2955	SANDSTONE	NATURAL GAS, OIL	N
6884114	CHERRY CANYON	-725	3745	3745	SANDSTONE	NATURAL GAS, OIL	N
6884115	BRUSHY CANYON	-1965	4985	4985	SANDSTONE	NATURAL GAS, OIL	N
6884116	BONE SPRING LIME	-3610	6630	6630	LIMESTONE	NATURAL GAS, OIL	N
6884117	FIRST BONE SPRING SAND	-4620	7640	7640	SANDSTONE	NATURAL GAS, OIL	N
6884118	BONE SPRING 2ND	-5380	8400	8400	SANDSTONE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

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 13-3/8" 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:**

**Operator Name:** BTA OIL PRODUCERS LLC**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL COM**Well Number:** 13H

**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	17.5	13.375	NEW	API	N	0	450	0	450	3020	2570	450	J-55	54.5	ST&C	5.8	14.1	DRY	21	DRY	34.8
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2920	0	2900	3018	120	2920	J-55	40	LT&C	1.7	2.6	DRY	4.5	DRY	5.4
3	PRODUCTION	8.75	5.5	NEW	API	N	0	19038	0	8725	3018	-5705	19038	P-110	17	BUTT	1.7	2.5	DRY	1.8	DRY	1.7

**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\_13H\_Casing\_Assumption\_20210820094239.JPG

**Operator Name:** BTA OIL PRODUCERS LLC**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL  
COM**Well Number:** 13H**Casing Attachments****Casing ID:** 2      **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):****Casing ID:** 3      **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):****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	115	95	1.73	13.5	164.35	100	Class C	2% CaCl2
SURFACE	Tail		115	450	340	1.35	14.8	459	100	Class C	2% CaCl2
INTERMEDIATE	Lead		0	2365	700	2.46	12.8	1722	100	Class C	0.5% CaCl2
INTERMEDIATE	Tail		2365	2920	200	1.34	14.8	268	25	Class C	1% CaCl2
PRODUCTION	Lead		1920	9465	750	3.9	10.5	2925	60	25% Poz 75% Class C	0.4% Fluid Loss

**Operator Name:** BTA OIL PRODUCERS LLC**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL  
COM**Well Number:** 13H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		9465	19038	2420	1.25	14.4	3025	25	Class H	0.2% LT Retarder

### 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	450	OTHER : FW SPUD	8.3	8.4							
450	2900	OTHER : BRINE	10	10							
2900	8725	OTHER : CUT BRINE	8.7	9.4							

**Operator Name:** BTA OIL PRODUCERS LLC

**Well Name:** HARROUN RANCH 20702 20-17 FEDERAL COM      **Well Number:** 13H

## 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

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 4265

**Anticipated Surface Pressure:** 2345

**Anticipated Bottom Hole Temperature(F):** 149

**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\_13H\_directional\_plan\_20210820100834.pdf

Harroun\_Ranch\_13H\_Wall\_plot\_20210820100834.pdf

NGMP\_\_\_Harroun\_13H\_20210820100843.pdf

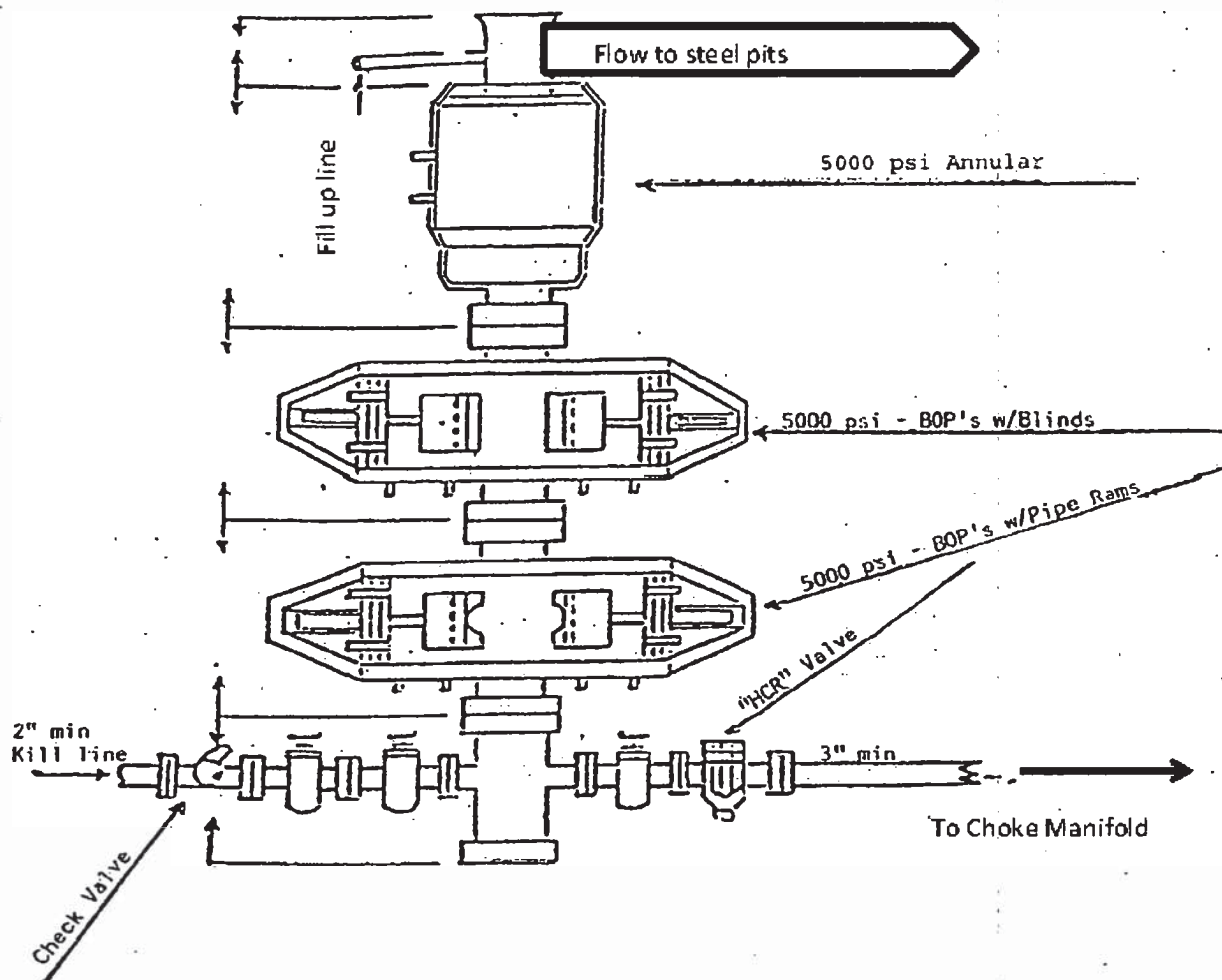
**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

**Other Variance attachment:**

Multi\_Bowl\_Diagram\_13\_38\_x\_9\_58\_x\_5\_12\_20210805133601.pdf

## 13-5/8" 5,000 PSI BOP





# **BTA Oil Producers, LLC**

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

**Harroun Ranch**

**Harroun Ranch #13H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report - Geographic**

**20 August, 2021**

**Microsoft**  
Planning Report - Geographic

<b>Database:</b>	EDM16	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #13H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #13H	<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

Well	Harroun Ranch #13H					
Well Position	+N/-S	0.0 usft	Northing:	466,704.93 usft	Latitude:	32° 16' 57.397 N
	+E/-W	0.0 usft	Easting:	643,848.27 usft	Longitude:	104° 0' 5.832 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,020.0 usft
Grid Convergence:		0.18 °				

<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	48,783.61636587

<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	1.90

<b>Plan Survey Tool Program</b>	<b>Date</b>	8/5/2021		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	19,038.4 Design #1 (Wellbore #1)		

**Microsoft**  
Planning Report - Geographic

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<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #13H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Plan Sections										
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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	8.00	44.09	998.7	20.0	19.4	2.00	2.00	0.00	44.09	
3,800.6	8.00	44.09	3,772.1	300.0	290.6	0.00	0.00	0.00	0.00	
4,200.6	0.00	0.00	4,170.8	320.0	310.0	2.00	-2.00	0.00	180.00	
8,227.4	0.00	0.00	8,197.5	320.0	310.0	0.00	0.00	0.00	0.00	
8,277.4	0.00	0.00	8,247.5	320.0	310.0	0.00	0.00	0.00	0.00	
9,027.4	90.00	0.26	8,725.0	797.5	312.2	12.00	12.00	0.00	0.26	
19,038.4	90.00	0.26	8,725.0	10,808.3	358.5	0.00	0.00	0.00	0.00	Harroun Ranch #13H

**Microsoft**  
Planning Report - Geographic

<b>Database:</b>	EDM16	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #13H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #13H	<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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
100.0	0.00	0.00	100.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
200.0	0.00	0.00	200.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
300.0	0.00	0.00	300.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
400.0	0.00	0.00	400.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
500.0	0.00	0.00	500.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
600.0	0.00	0.00	600.0	0.0	0.0	466,704.93	643,848.27	32° 16' 57.397 N	104° 0' 5.832 W	
700.0	2.00	44.09	700.0	1.3	1.2	466,706.18	643,849.49	32° 16' 57.410 N	104° 0' 5.818 W	
800.0	4.00	44.09	799.8	5.0	4.9	466,709.94	643,853.13	32° 16' 57.447 N	104° 0' 5.775 W	
900.0	6.00	44.09	899.5	11.3	10.9	466,716.20	643,859.19	32° 16' 57.508 N	104° 0' 5.704 W	
1,000.0	8.00	44.09	998.7	20.0	19.4	466,724.95	643,867.67	32° 16' 57.595 N	104° 0' 5.605 W	
1,100.0	8.00	44.09	1,097.7	30.0	29.1	466,734.95	643,877.35	32° 16' 57.693 N	104° 0' 5.492 W	
1,200.0	8.00	44.09	1,196.8	40.0	38.8	466,744.94	643,887.04	32° 16' 57.792 N	104° 0' 5.379 W	
1,300.0	8.00	44.09	1,295.8	50.0	48.4	466,754.94	643,896.72	32° 16' 57.891 N	104° 0' 5.266 W	
1,400.0	8.00	44.09	1,394.8	60.0	58.1	466,764.93	643,906.40	32° 16' 57.989 N	104° 0' 5.153 W	
1,500.0	8.00	44.09	1,493.8	70.0	67.8	466,774.93	643,916.09	32° 16' 58.088 N	104° 0' 5.040 W	
1,600.0	8.00	44.09	1,592.9	80.0	77.5	466,784.92	643,925.77	32° 16' 58.186 N	104° 0' 4.926 W	
1,700.0	8.00	44.09	1,691.9	90.0	87.2	466,794.92	643,935.45	32° 16' 58.285 N	104° 0' 4.813 W	
1,800.0	8.00	44.09	1,790.9	100.0	96.9	466,804.91	643,945.13	32° 16' 58.384 N	104° 0' 4.700 W	
1,900.0	8.00	44.09	1,889.9	110.0	106.6	466,814.91	643,954.82	32° 16' 58.482 N	104° 0' 4.587 W	
2,000.0	8.00	44.09	1,989.0	120.0	116.2	466,824.91	643,964.50	32° 16' 58.581 N	104° 0' 4.474 W	
2,100.0	8.00	44.09	2,088.0	130.0	125.9	466,834.90	643,974.18	32° 16' 58.679 N	104° 0' 4.361 W	
2,200.0	8.00	44.09	2,187.0	140.0	135.6	466,844.90	643,983.87	32° 16' 58.778 N	104° 0' 4.247 W	
2,300.0	8.00	44.09	2,286.1	150.0	145.3	466,854.89	643,993.55	32° 16' 58.877 N	104° 0' 4.134 W	
2,400.0	8.00	44.09	2,385.1	160.0	155.0	466,864.89	644,003.23	32° 16' 58.975 N	104° 0' 4.021 W	
2,500.0	8.00	44.09	2,484.1	170.0	164.7	466,874.88	644,012.91	32° 16' 59.074 N	104° 0' 3.908 W	
2,600.0	8.00	44.09	2,583.1	180.0	174.3	466,884.88	644,022.60	32° 16' 59.173 N	104° 0' 3.795 W	
2,700.0	8.00	44.09	2,682.2	190.0	184.0	466,894.87	644,032.28	32° 16' 59.271 N	104° 0' 3.682 W	
2,800.0	8.00	44.09	2,781.2	200.0	193.7	466,904.87	644,041.96	32° 16' 59.370 N	104° 0' 3.569 W	
2,900.0	8.00	44.09	2,880.2	209.9	203.4	466,914.86	644,051.65	32° 16' 59.468 N	104° 0' 3.455 W	
3,000.0	8.00	44.09	2,979.2	219.9	213.1	466,924.86	644,061.33	32° 16' 59.567 N	104° 0' 3.342 W	
3,100.0	8.00	44.09	3,078.3	229.9	222.8	466,934.85	644,071.01	32° 16' 59.666 N	104° 0' 3.229 W	
3,200.0	8.00	44.09	3,177.3	239.9	232.4	466,944.85	644,080.69	32° 16' 59.764 N	104° 0' 3.116 W	
3,300.0	8.00	44.09	3,276.3	249.9	242.1	466,954.84	644,090.38	32° 16' 59.863 N	104° 0' 3.003 W	
3,400.0	8.00	44.09	3,375.3	259.9	251.8	466,964.84	644,100.06	32° 16' 59.961 N	104° 0' 2.890 W	
3,500.0	8.00	44.09	3,474.4	269.9	261.5	466,974.83	644,109.74	32° 17' 0.060 N	104° 0' 2.776 W	
3,600.0	8.00	44.09	3,573.4	279.9	271.2	466,984.83	644,119.43	32° 17' 0.159 N	104° 0' 2.663 W	
3,700.0	8.00	44.09	3,672.4	289.9	280.9	466,994.82	644,129.11	32° 17' 0.257 N	104° 0' 2.550 W	
3,800.0	8.00	44.09	3,771.5	299.9	290.5	467,004.82	644,138.79	32° 17' 0.356 N	104° 0' 2.437 W	
3,800.6	8.00	44.09	3,772.1	300.0	290.6	467,004.88	644,138.85	32° 17' 0.357 N	104° 0' 2.436 W	
3,900.0	6.01	44.09	3,870.7	308.7	299.0	467,013.59	644,147.28	32° 17' 0.442 N	104° 0' 2.338 W	
4,000.0	4.01	44.09	3,970.3	315.0	305.1	467,019.86	644,153.36	32° 17' 0.504 N	104° 0' 2.267 W	
4,100.0	2.01	44.09	4,070.2	318.7	308.8	467,023.64	644,157.02	32° 17' 0.542 N	104° 0' 2.224 W	
4,200.0	0.01	44.09	4,170.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,200.6	0.00	0.00	4,170.8	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,300.0	0.00	0.00	4,270.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,400.0	0.00	0.00	4,370.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,500.0	0.00	0.00	4,470.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,600.0	0.00	0.00	4,570.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,700.0	0.00	0.00	4,670.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,800.0	0.00	0.00	4,770.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
4,900.0	0.00	0.00	4,870.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,000.0	0.00	0.00	4,970.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,100.0	0.00	0.00	5,070.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,200.0	0.00	0.00	5,170.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	

**Microsoft**  
Planning Report - Geographic

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<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #13H	<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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,300.0	0.00	0.00	5,270.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,400.0	0.00	0.00	5,370.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,500.0	0.00	0.00	5,470.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,600.0	0.00	0.00	5,570.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,700.0	0.00	0.00	5,670.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,800.0	0.00	0.00	5,770.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
5,900.0	0.00	0.00	5,870.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,000.0	0.00	0.00	5,970.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,100.0	0.00	0.00	6,070.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,200.0	0.00	0.00	6,170.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,300.0	0.00	0.00	6,270.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,400.0	0.00	0.00	6,370.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,500.0	0.00	0.00	6,470.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,600.0	0.00	0.00	6,570.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,700.0	0.00	0.00	6,670.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,800.0	0.00	0.00	6,770.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
6,900.0	0.00	0.00	6,870.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,000.0	0.00	0.00	6,970.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,100.0	0.00	0.00	7,070.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,200.0	0.00	0.00	7,170.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,300.0	0.00	0.00	7,270.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,400.0	0.00	0.00	7,370.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,500.0	0.00	0.00	7,470.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,600.0	0.00	0.00	7,570.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,700.0	0.00	0.00	7,670.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,800.0	0.00	0.00	7,770.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
7,900.0	0.00	0.00	7,870.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
8,000.0	0.00	0.00	7,970.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
8,100.0	0.00	0.00	8,070.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
8,200.0	0.00	0.00	8,170.1	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
8,227.4	0.00	0.00	8,197.5	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
8,277.4	0.00	0.00	8,247.5	320.0	310.0	467,024.91	644,158.25	32° 17' 0.554 N	104° 0' 2.210 W	
8,300.0	2.71	0.26	8,270.1	320.5	310.0	467,025.44	644,158.25	32° 17' 0.559 N	104° 0' 2.209 W	
8,400.0	14.71	0.26	8,368.8	335.7	310.1	467,040.56	644,158.32	32° 17' 0.709 N	104° 0' 2.208 W	
8,500.0	26.71	0.26	8,462.2	371.0	310.2	467,075.86	644,158.49	32° 17' 1.058 N	104° 0' 2.205 W	
8,600.0	38.71	0.26	8,546.2	424.9	310.5	467,129.80	644,158.73	32° 17' 1.592 N	104° 0' 2.200 W	
8,700.0	50.71	0.26	8,617.1	495.1	310.8	467,200.02	644,159.06	32° 17' 2.287 N	104° 0' 2.194 W	
8,800.0	62.71	0.26	8,671.9	578.6	311.2	467,283.46	644,159.44	32° 17' 3.113 N	104° 0' 2.186 W	
8,900.0	74.71	0.26	8,708.1	671.6	311.6	467,376.46	644,159.87	32° 17' 4.033 N	104° 0' 2.178 W	
9,000.0	86.71	0.26	8,724.2	770.1	312.1	467,474.96	644,160.33	32° 17' 5.008 N	104° 0' 2.169 W	
9,027.4	90.00	0.26	8,725.0	797.5	312.2	467,502.33	644,160.46	32° 17' 5.278 N	104° 0' 2.167 W	
9,100.0	90.00	0.26	8,725.0	870.1	312.5	467,574.93	644,160.79	32° 17' 5.997 N	104° 0' 2.160 W	
9,200.0	90.00	0.26	8,725.0	970.1	313.0	467,674.92	644,161.25	32° 17' 6.986 N	104° 0' 2.151 W	
9,300.0	90.00	0.26	8,725.0	1,070.1	313.5	467,774.92	644,161.72	32° 17' 7.976 N	104° 0' 2.142 W	
9,400.0	90.00	0.26	8,725.0	1,170.1	313.9	467,874.91	644,162.18	32° 17' 8.965 N	104° 0' 2.133 W	
9,500.0	90.00	0.26	8,725.0	1,270.1	314.4	467,974.90	644,162.64	32° 17' 9.955 N	104° 0' 2.124 W	
9,600.0	90.00	0.26	8,725.0	1,370.1	314.9	468,074.89	644,163.10	32° 17' 10.944 N	104° 0' 2.115 W	
9,700.0	90.00	0.26	8,725.0	1,470.1	315.3	468,174.88	644,163.56	32° 17' 11.934 N	104° 0' 2.106 W	
9,800.0	90.00	0.26	8,725.0	1,570.1	315.8	468,274.87	644,164.03	32° 17' 12.923 N	104° 0' 2.097 W	
9,900.0	90.00	0.26	8,725.0	1,670.1	316.2	468,374.86	644,164.49	32° 17' 13.913 N	104° 0' 2.088 W	
10,000.0	90.00	0.26	8,725.0	1,770.1	316.7	468,474.85	644,164.95	32° 17' 14.902 N	104° 0' 2.079 W	
10,100.0	90.00	0.26	8,725.0	1,870.1	317.2	468,574.84	644,165.41	32° 17' 15.892 N	104° 0' 2.070 W	
10,200.0	90.00	0.26	8,725.0	1,970.1	317.6	468,674.83	644,165.87	32° 17' 16.881 N	104° 0' 2.061 W	
10,300.0	90.00	0.26	8,725.0	2,070.1	318.1	468,774.83	644,166.33	32° 17' 17.871 N	104° 0' 2.052 W	
10,400.0	90.00	0.26	8,725.0	2,170.1	318.5	468,874.82	644,166.80	32° 17' 18.860 N	104° 0' 2.043 W	

**Microsoft**  
Planning Report - Geographic

<b>Database:</b>	EDM16	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #13H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #13H	<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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,500.0	90.00	0.26	8,725.0	2,270.1	319.0	468,974.81	644,167.26	32° 17' 19.850 N	104° 0' 2.034 W	
10,600.0	90.00	0.26	8,725.0	2,370.1	319.5	469,074.80	644,167.72	32° 17' 20.839 N	104° 0' 2.025 W	
10,700.0	90.00	0.26	8,725.0	2,470.1	319.9	469,174.79	644,168.18	32° 17' 21.829 N	104° 0' 2.016 W	
10,800.0	90.00	0.26	8,725.0	2,570.1	320.4	469,274.78	644,168.64	32° 17' 22.818 N	104° 0' 2.007 W	
10,900.0	90.00	0.26	8,725.0	2,670.1	320.9	469,374.77	644,169.11	32° 17' 23.808 N	104° 0' 1.998 W	
11,000.0	90.00	0.26	8,725.0	2,770.1	321.3	469,474.76	644,169.57	32° 17' 24.797 N	104° 0' 1.989 W	
11,100.0	90.00	0.26	8,725.0	2,870.0	321.8	469,574.75	644,170.03	32° 17' 25.787 N	104° 0' 1.980 W	
11,200.0	90.00	0.26	8,725.0	2,970.0	322.2	469,674.75	644,170.49	32° 17' 26.776 N	104° 0' 1.971 W	
11,300.0	90.00	0.26	8,725.0	3,070.0	322.7	469,774.74	644,170.95	32° 17' 27.765 N	104° 0' 1.962 W	
11,400.0	90.00	0.26	8,725.0	3,170.0	323.2	469,874.73	644,171.42	32° 17' 28.755 N	104° 0' 1.953 W	
11,500.0	90.00	0.26	8,725.0	3,270.0	323.6	469,974.72	644,171.88	32° 17' 29.744 N	104° 0' 1.944 W	
11,600.0	90.00	0.26	8,725.0	3,370.0	324.1	470,074.71	644,172.34	32° 17' 30.734 N	104° 0' 1.935 W	
11,700.0	90.00	0.26	8,725.0	3,470.0	324.6	470,174.70	644,172.80	32° 17' 31.723 N	104° 0' 1.926 W	
11,800.0	90.00	0.26	8,725.0	3,570.0	325.0	470,274.69	644,173.26	32° 17' 32.713 N	104° 0' 1.917 W	
11,900.0	90.00	0.26	8,725.0	3,670.0	325.5	470,374.68	644,173.73	32° 17' 33.702 N	104° 0' 1.908 W	
12,000.0	90.00	0.26	8,725.0	3,770.0	325.9	470,474.67	644,174.19	32° 17' 34.692 N	104° 0' 1.899 W	
12,100.0	90.00	0.26	8,725.0	3,870.0	326.4	470,574.66	644,174.65	32° 17' 35.681 N	104° 0' 1.890 W	
12,200.0	90.00	0.26	8,725.0	3,970.0	326.9	470,674.66	644,175.11	32° 17' 36.671 N	104° 0' 1.881 W	
12,300.0	90.00	0.26	8,725.0	4,070.0	327.3	470,774.65	644,175.57	32° 17' 37.660 N	104° 0' 1.872 W	
12,400.0	90.00	0.26	8,725.0	4,170.0	327.8	470,874.64	644,176.04	32° 17' 38.650 N	104° 0' 1.863 W	
12,500.0	90.00	0.26	8,725.0	4,270.0	328.2	470,974.63	644,176.50	32° 17' 39.639 N	104° 0' 1.854 W	
12,600.0	90.00	0.26	8,725.0	4,370.0	328.7	471,074.62	644,176.96	32° 17' 40.629 N	104° 0' 1.845 W	
12,700.0	90.00	0.26	8,725.0	4,470.0	329.2	471,174.61	644,177.42	32° 17' 41.618 N	104° 0' 1.836 W	
12,800.0	90.00	0.26	8,725.0	4,570.0	329.6	471,274.60	644,177.88	32° 17' 42.608 N	104° 0' 1.827 W	
12,900.0	90.00	0.26	8,725.0	4,670.0	330.1	471,374.59	644,178.35	32° 17' 43.597 N	104° 0' 1.818 W	
13,000.0	90.00	0.26	8,725.0	4,770.0	330.6	471,474.58	644,178.81	32° 17' 44.587 N	104° 0' 1.809 W	
13,100.0	90.00	0.26	8,725.0	4,870.0	331.0	471,574.58	644,179.27	32° 17' 45.576 N	104° 0' 1.800 W	
13,200.0	90.00	0.26	8,725.0	4,970.0	331.5	471,674.57	644,179.73	32° 17' 46.566 N	104° 0' 1.791 W	
13,300.0	90.00	0.26	8,725.0	5,070.0	331.9	471,774.56	644,180.19	32° 17' 47.555 N	104° 0' 1.782 W	
13,400.0	90.00	0.26	8,725.0	5,170.0	332.4	471,874.55	644,180.66	32° 17' 48.544 N	104° 0' 1.773 W	
13,500.0	90.00	0.26	8,725.0	5,270.0	332.9	471,974.54	644,181.12	32° 17' 49.534 N	104° 0' 1.764 W	
13,600.0	90.00	0.26	8,725.0	5,370.0	333.3	472,074.53	644,181.58	32° 17' 50.523 N	104° 0' 1.755 W	
13,700.0	90.00	0.26	8,725.0	5,470.0	333.8	472,174.52	644,182.04	32° 17' 51.513 N	104° 0' 1.746 W	
13,800.0	90.00	0.26	8,725.0	5,570.0	334.3	472,274.51	644,182.50	32° 17' 52.502 N	104° 0' 1.737 W	
13,900.0	90.00	0.26	8,725.0	5,670.0	334.7	472,374.50	644,182.97	32° 17' 53.492 N	104° 0' 1.728 W	
14,000.0	90.00	0.26	8,725.0	5,770.0	335.2	472,474.49	644,183.43	32° 17' 54.481 N	104° 0' 1.719 W	
14,100.0	90.00	0.26	8,725.0	5,870.0	335.6	472,574.49	644,183.89	32° 17' 55.471 N	104° 0' 1.710 W	
14,200.0	90.00	0.26	8,725.0	5,970.0	336.1	472,674.48	644,184.35	32° 17' 56.460 N	104° 0' 1.701 W	
14,300.0	90.00	0.26	8,725.0	6,070.0	336.6	472,774.47	644,184.81	32° 17' 57.450 N	104° 0' 1.692 W	
14,400.0	90.00	0.26	8,725.0	6,170.0	337.0	472,874.46	644,185.28	32° 17' 58.439 N	104° 0' 1.683 W	
14,500.0	90.00	0.26	8,725.0	6,270.0	337.5	472,974.45	644,185.74	32° 17' 59.429 N	104° 0' 1.674 W	
14,600.0	90.00	0.26	8,725.0	6,370.0	338.0	473,074.44	644,186.20	32° 18' 0.418 N	104° 0' 1.665 W	
14,700.0	90.00	0.26	8,725.0	6,470.0	338.4	473,174.43	644,186.66	32° 18' 1.408 N	104° 0' 1.656 W	
14,800.0	90.00	0.26	8,725.0	6,570.0	338.9	473,274.42	644,187.12	32° 18' 2.397 N	104° 0' 1.647 W	
14,900.0	90.00	0.26	8,725.0	6,670.0	339.3	473,374.41	644,187.59	32° 18' 3.387 N	104° 0' 1.638 W	
15,000.0	90.00	0.26	8,725.0	6,770.0	339.8	473,474.40	644,188.05	32° 18' 4.376 N	104° 0' 1.629 W	
15,100.0	90.00	0.26	8,725.0	6,870.0	340.3	473,574.40	644,188.51	32° 18' 5.366 N	104° 0' 1.620 W	
15,200.0	90.00	0.26	8,725.0	6,970.0	340.7	473,674.39	644,188.97	32° 18' 6.355 N	104° 0' 1.611 W	
15,300.0	90.00	0.26	8,725.0	7,070.0	341.2	473,774.38	644,189.43	32° 18' 7.344 N	104° 0' 1.602 W	
15,400.0	90.00	0.26	8,725.0	7,170.0	341.6	473,874.37	644,189.90	32° 18' 8.334 N	104° 0' 1.593 W	
15,500.0	90.00	0.26	8,725.0	7,270.0	342.1	473,974.36	644,190.36	32° 18' 9.323 N	104° 0' 1.584 W	
15,600.0	90.00	0.26	8,725.0	7,370.0	342.6	474,074.35	644,190.82	32° 18' 10.313 N	104° 0' 1.575 W	
15,700.0	90.00	0.26	8,725.0	7,470.0	343.0	474,174.34	644,191.28	32° 18' 11.302 N	104° 0' 1.566 W	
15,800.0	90.00	0.26	8,725.0	7,570.0	343.5	474,274.33	644,191.74	32° 18' 12.292 N	104° 0' 1.557 W	
15,900.0	90.00	0.26	8,725.0	7,670.0	344.0	474,374.32	644,192.21	32° 18' 13.281 N	104° 0' 1.548 W	



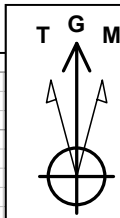
**Microsoft**  
Planning Report - Geographic

<b>Database:</b>	EDM16	<b>Local Co-ordinate Reference:</b>	Well Harroun Ranch #13H
<b>Company:</b>	BTA Oil Producers, LLC	<b>TVD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, NM (NAD 83)	<b>MD Reference:</b>	WELL @ 3020.0usft (Original Well Elev)
<b>Site:</b>	Harroun Ranch	<b>North Reference:</b>	Grid
<b>Well:</b>	Harroun Ranch #13H	<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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
16,000.0	90.00	0.26	8,725.0	7,770.0	344.4	474,474.32	644,192.67	32° 18' 14.271 N	104° 0' 1.539 W	
16,100.0	90.00	0.26	8,725.0	7,870.0	344.9	474,574.31	644,193.13	32° 18' 15.260 N	104° 0' 1.530 W	
16,200.0	90.00	0.26	8,725.0	7,970.0	345.3	474,674.30	644,193.59	32° 18' 16.250 N	104° 0' 1.521 W	
16,300.0	90.00	0.26	8,725.0	8,070.0	345.8	474,774.29	644,194.05	32° 18' 17.239 N	104° 0' 1.512 W	
16,400.0	90.00	0.26	8,725.0	8,170.0	346.3	474,874.28	644,194.52	32° 18' 18.229 N	104° 0' 1.503 W	
16,500.0	90.00	0.26	8,725.0	8,270.0	346.7	474,974.27	644,194.98	32° 18' 19.218 N	104° 0' 1.494 W	
16,600.0	90.00	0.26	8,725.0	8,370.0	347.2	475,074.26	644,195.44	32° 18' 20.208 N	104° 0' 1.485 W	
16,700.0	90.00	0.26	8,725.0	8,470.0	347.7	475,174.25	644,195.90	32° 18' 21.197 N	104° 0' 1.476 W	
16,800.0	90.00	0.26	8,725.0	8,570.0	348.1	475,274.24	644,196.36	32° 18' 22.187 N	104° 0' 1.467 W	
16,900.0	90.00	0.26	8,725.0	8,670.0	348.6	475,374.23	644,196.83	32° 18' 23.176 N	104° 0' 1.458 W	
17,000.0	90.00	0.26	8,725.0	8,770.0	349.0	475,474.23	644,197.29	32° 18' 24.166 N	104° 0' 1.449 W	
17,100.0	90.00	0.26	8,725.0	8,870.0	349.5	475,574.22	644,197.75	32° 18' 25.155 N	104° 0' 1.440 W	
17,200.0	90.00	0.26	8,725.0	8,970.0	350.0	475,674.21	644,198.21	32° 18' 26.144 N	104° 0' 1.431 W	
17,300.0	90.00	0.26	8,725.0	9,070.0	350.4	475,774.20	644,198.67	32° 18' 27.134 N	104° 0' 1.422 W	
17,400.0	90.00	0.26	8,725.0	9,170.0	350.9	475,874.19	644,199.14	32° 18' 28.123 N	104° 0' 1.413 W	
17,500.0	90.00	0.26	8,725.0	9,270.0	351.4	475,974.18	644,199.60	32° 18' 29.113 N	104° 0' 1.404 W	
17,600.0	90.00	0.26	8,725.0	9,370.0	351.8	476,074.17	644,200.06	32° 18' 30.102 N	104° 0' 1.395 W	
17,700.0	90.00	0.26	8,725.0	9,470.0	352.3	476,174.16	644,200.52	32° 18' 31.092 N	104° 0' 1.386 W	
17,800.0	90.00	0.26	8,725.0	9,570.0	352.7	476,274.15	644,200.98	32° 18' 32.081 N	104° 0' 1.377 W	
17,900.0	90.00	0.26	8,725.0	9,670.0	353.2	476,374.15	644,201.45	32° 18' 33.071 N	104° 0' 1.368 W	
18,000.0	90.00	0.26	8,725.0	9,770.0	353.7	476,474.14	644,201.91	32° 18' 34.060 N	104° 0' 1.359 W	
18,100.0	90.00	0.26	8,725.0	9,870.0	354.1	476,574.13	644,202.37	32° 18' 35.050 N	104° 0' 1.350 W	
18,200.0	90.00	0.26	8,725.0	9,970.0	354.6	476,674.12	644,202.83	32° 18' 36.039 N	104° 0' 1.341 W	
18,300.0	90.00	0.26	8,725.0	10,070.0	355.0	476,774.11	644,203.29	32° 18' 37.029 N	104° 0' 1.332 W	
18,400.0	90.00	0.26	8,725.0	10,170.0	355.5	476,874.10	644,203.76	32° 18' 38.018 N	104° 0' 1.323 W	
18,500.0	90.00	0.26	8,725.0	10,270.0	356.0	476,974.09	644,204.22	32° 18' 39.008 N	104° 0' 1.314 W	
18,600.0	90.00	0.26	8,725.0	10,370.0	356.4	477,074.08	644,204.68	32° 18' 39.997 N	104° 0' 1.305 W	
18,700.0	90.00	0.26	8,725.0	10,470.0	356.9	477,174.07	644,205.14	32° 18' 40.987 N	104° 0' 1.296 W	
18,800.0	90.00	0.26	8,725.0	10,570.0	357.4	477,274.06	644,205.60	32° 18' 41.976 N	104° 0' 1.287 W	
18,900.0	90.00	0.26	8,725.0	10,670.0	357.8	477,374.06	644,206.07	32° 18' 42.966 N	104° 0' 1.278 W	
19,000.0	90.00	0.26	8,725.0	10,770.0	358.3	477,474.05	644,206.53	32° 18' 43.955 N	104° 0' 1.269 W	
19,038.4	90.00	0.26	8,725.0	10,808.3	358.5	477,512.41	644,206.70	32° 18' 44.335 N	104° 0' 1.266 W	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Harroun Ranch #13H	0.00	0.00	8,725.0	10,808.3	358.5	477,512.41	644,206.70	32° 18' 44.335 N	104° 0' 1.266 W	
- plan hits target center										
- Point										

# BTA Oil Producers, LLC



Azimuths to Grid North  
 True North:  $-0.18^\circ$   
 Magnetic North:  $7.77^\circ$   
 Magnetic Field  
 Strength: 48783.6nT  
 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

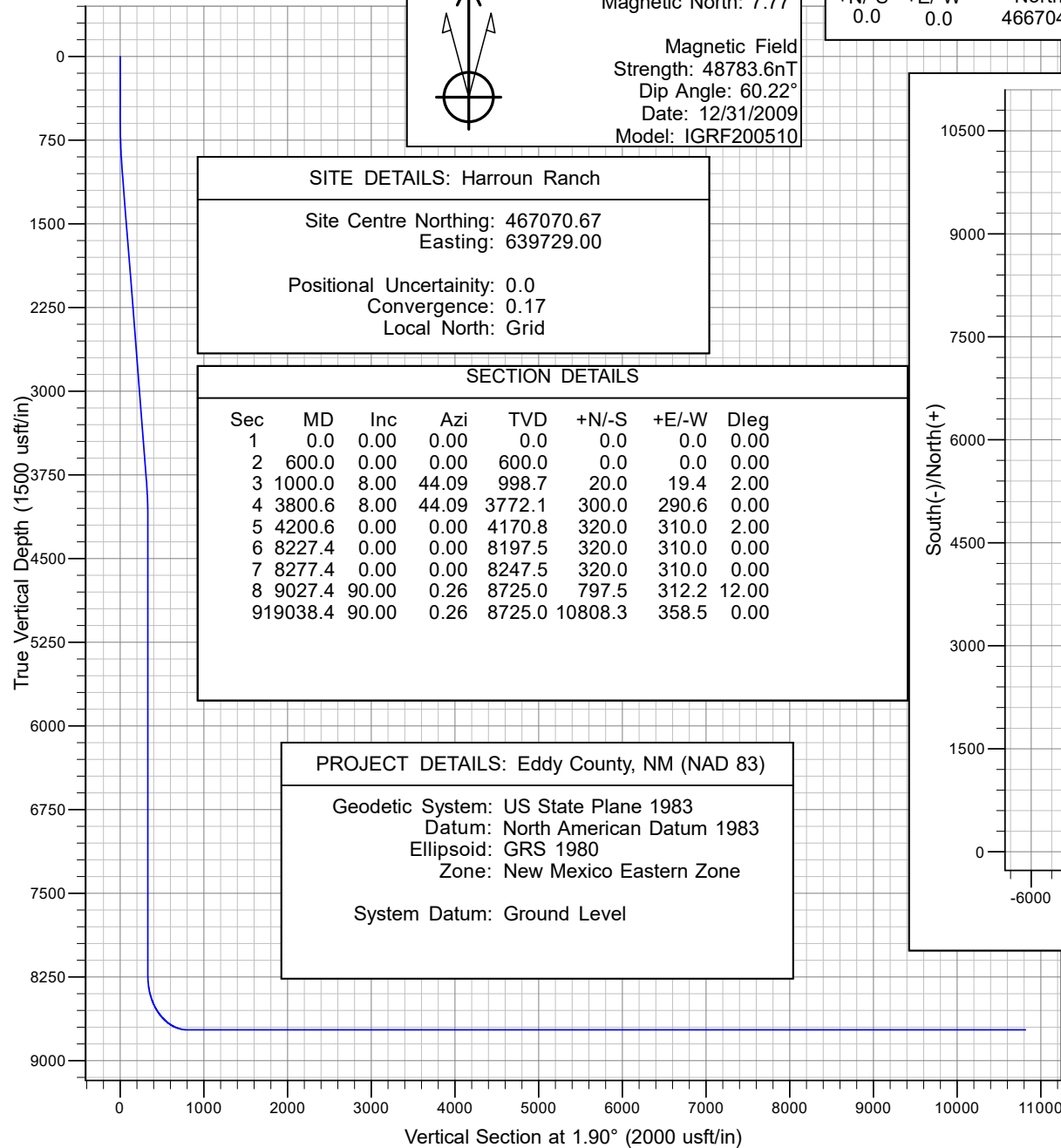
## SECTION DETAILS

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	600.0	0.00	0.00	600.0	0.0	0.0	0.00
3	1000.0	8.00	44.09	998.7	20.0	19.4	2.00
4	3800.6	8.00	44.09	3772.1	300.0	290.6	0.00
5	4200.6	0.00	0.00	4170.8	320.0	310.0	2.00
6	8227.4	0.00	0.00	8197.5	320.0	310.0	0.00
7	8277.4	0.00	0.00	8247.5	320.0	310.0	0.00
8	9027.4	90.00	0.26	8725.0	797.5	312.2	12.00
9	19038.4	90.00	0.26	8725.0	10808.3	358.5	0.00

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

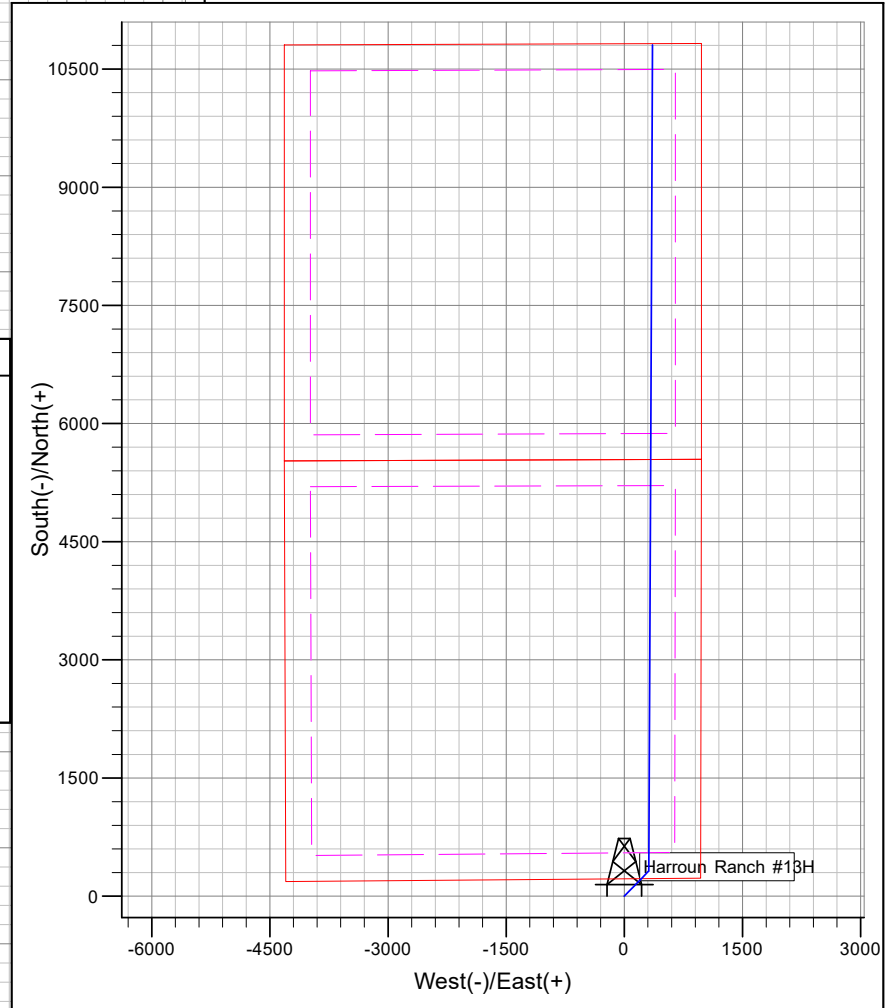
Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone

System Datum: Ground Level



## WELL DETAILS: Harroun Ranch #13H

+N/-S	+E/-W	Northing	Ground Level Easting	3020.0 Latitude	Longitude
0.0	0.0	466704.93	643848.27	32° 16' 57.397 N	104° 0' 5.832 W



## 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 13H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>220'/N &amp; 970'/E</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>50'/N &amp; 660'/E</b>
<b>LOCATION:</b>	<b>Section 29, 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 **13-3/8** inch surface casing shall be set at approximately **970** 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 **9-5/8** inch intermediate casing shall be set at approximately **3,125** feet. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- 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.**
  - ❖ 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).<sup>\*</sup>
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.

**OTA02072022**



## Multi-Bowl System

13-3/8" X 9-5/8" X 5-1/2"

### Tubing Head-TCM-PP

13-5/8"- M X 7-1/16"- M  
w/(2) 1-13/16"- M Gate Valves

7-1/16- M

### Casing Spool- MBS

13-5/8"-5M X 13-5/8"- M  
w/(2) 1-13/16"- M SSO

13-5/8"- M

7" Dbl P Seal

13-5/8" X 7" C-22  
Casing Hanger

### Casing Head- MBS

13-5/8"-5M X 13-3/8" SOW  
w/36" Base Plate

13-5/8"-5M

13-5/8" X 9-5/8" MBS  
Packoff Assembly

13-5/8" X 9-5/8" Mandrel  
Casing Hanger

13-3/8" SOW



**SYENERGY**  
WELLHEAD & FRAC

**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 Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 107198

**CONDITIONS**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 107198
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**CONDITIONS**

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	5/17/2022
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/17/2022
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	5/17/2022
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	5/17/2022
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	5/17/2022