Form 3160-3
(June 2015)

OCD – HOBBS
06/25/2020
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FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM097153

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
VACA DRAW 9418 10 FEDERAL 21H [317432]

2. Name of Operator
BTA OIL PRODUCERS LLC [260297]

9. API Well No. 30-025-47392

3a. Address
104 S. Pecos Midland TX 79701

3b. Phone No. *(include area code)*
(432)682-3753

10. Field and Pool, or Exploratory
JOHNSON RANCH / WOLFCAMP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWSW / 420 FSL / 1305 FWL / LAT 32.138968 / LONG -103.564561
At proposed prod. zone NWNW / 50 FNL / 990 FWL / LAT 32.152198 / LONG -103.565564

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 10 / T25S / R33E / NMP

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

12. County or Parish
LEA

13. State
NM

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

16. No of acres in lease
640

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1260 feet

19. Proposed Depth
12658 feet / 17547 feet

20. BLM/BIA Bond No. in file
FED: NMB001711

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3388 feet

22. Approximate date work will start*
08/27/2019

23. Estimated duration
30 days

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)

Name *(Printed/Typed)*
Sammy Hajar / Ph: (432)682-3753

Date
03/27/2019

Title
Regulatory Analyst

Approved by *(Signature)*
(Electronic Submission)

Name *(Printed/Typed)*
Cody Layton / Ph: (575)234-5959

Date
06/24/2020

Title
Assistant Field Manager Lands & Minerals

Office
CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 06/24/2020

SL

APPROVED WITH CONDITIONS

KZ
07/07/2020

Approval Date: 06/24/2020

(Continued on page 2)

*(Instructions on page 2)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**BTA OIL PRODUCERS LLC**
LEASE NO.:	**NMNM097153**
WELL NAME & NO.:	VACA DRAW 9418 10 FEDERAL 21H
SURFACE HOLE FOOTAGE:	420'/S & 1305'/W
BOTTOM HOLE FOOTAGE	50'/N & 990'/W
LOCATION:	Section 10, T.25 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	○ Multibowl	◉ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☐ 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 **1,155** feet (a minimum of **25 feet (Lea 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing, which shall be set at approximately **12,035** feet is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

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.

3. The minimum required fill of cement behind the **5 1/2 X 5** 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.

Option 1:

a. 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.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

Option 2:

1. 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 **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 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.

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)

☒ 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 2nd 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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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: The flex line must meet the requirements of API 16C. 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

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.

OTA06042020

Operator Certification Data Report

06/25/2020

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:** 03/27/2019

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: 104 South Pecos

City: Midland **State:** TX **Zip:** 79701

Phone: (432)682-3753

Email address: neaton@btaoil.com

APD ID: 10400040353 **Submission Date:** 03/27/2019

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400040353 **Tie to previous NOS?** **Submission Date:** 03/27/2019

BLM Office: CARLSBAD **User:** Sammy Hajar **Title:** Regulatory Analyst

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM097153 **Lease Acres:** 640

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** BTA OIL PRODUCERS LLC

Operator letter of designation:

Operator Info

Operator Organization Name: BTA OIL PRODUCERS LLC

Operator Address: 104 S. Pecos **Zip:** 79701

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)682-3753

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Master Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** JOHNSON RANCH **Pool Name:** WOLFCAMP

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

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

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?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** VACA DRAW 9418 10 FEDERAL **Number:** 20-23

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 22 Miles **Distance to nearest well:** 1260 FT **Distance to lease line:** 420 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: Vaca_Draw_9418_10_Federal_21H_c102_20190327083339.pdf

Well work start Date: 08/27/2019 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NGVD29

Survey number: **Reference Datum:**

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	420	FSL	1305	FWL	25S	33E	10	Aliquot SWSW	32.138968	-103.564561	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 097153	3388	0	0	
KOP Leg #1	330	FSL	990	FWL	25S	33E	10	Aliquot SWSW	32.138721	-103.565581	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 097153	-8697	12103	12085	
PPP Leg #1-1	330	FSL	990	FWL	25S	33E	10	Aliquot SWSW	32.138721	-103.565581	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 097153	-8915	12326	12303	

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

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?
EXIT Leg #1	330	FNL	990	FWL	25S	33E	10	Aliquot NWNW	32.151428	-103.565565	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 097153	-9270	17267	12658	
BHL Leg #1	50	FNL	990	FWL	25S	33E	10	Aliquot NWNW	32.152198	-103.565564	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 097153	-9270	17547	12658	

APD ID: 10400040353 **Submission Date:** 03/27/2019

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
427487	QUATERNARY	3388	0	0	ALLUVIUM	NONE	N
427485	RUSTLER	2284	1104	1104		NONE	N
427490	TOP SALT	1926	1462	1462		NONE	N
427492	BASE OF SALT	-1396	4784	4784		NONE	N
427491	DELAWARE	-1645	5033	5033		NATURAL GAS, OIL	N
427495	BELL CANYON	-1665	5053	5053		NATURAL GAS, OIL	N
427496	CHERRY CANYON	-2949	6337	6337		NATURAL GAS, OIL	N
427497	BRUSHY CANYON	-4244	7632	7632		NATURAL GAS, OIL	N
427493	BONE SPRING	-5792	9180	9180		NATURAL GAS, OIL	N
427498	FIRST BONE SPRING SAND	-6567	9955	9955		NATURAL GAS, OIL	N
427499	BONE SPRING 2ND	-7344	10732	10732		NATURAL GAS, OIL	N
427500	BONE SPRING 3RD	-8346	11734	11734		NATURAL GAS, OIL	N
427494	WOLFCAMP	-8915	12303	12303		NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Pressure Rating (PSI): 10M **Rating Depth:** 14000

Equipment: The blowout preventer equipment (BOP) shown in Exhibit A will consist of a (10M system) double ram type (10,000 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 BOP's 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 10M 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 10,000 psi WP rating. The 5M annular on the 10M system will be tested to 100% of rated working pressure.
Requesting Variance? YES

Variance request: A Choke Hose Variance is requested. See attached test chart and spec. 5M annular variance requested.

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 driller's log. All BOP's and associated equipment will be tested as per BLM drilling Operations Order No. 2.
Choke Diagram Attachment:

Choke_Hose___Test_Chart_and_Specs_20181129153440.pdf

10M_choke_mannifold_20181129153440.pdf

BOP Diagram Attachment:

5M_annular_well_control_plan_for_BLM_20181129153535.docx

10M_annular_variance__20190205150746.pdf

BLM_10M_BOP_with_5M_annular_20190205150734.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	1155	0	1155			1155	J-55	40.5	ST&C	3.2	6.3	DRY	9	DRY	13.4
2	PRODUCTION	6.75	5.5	NEW	API	Y	0	11850	0	11831			11850	P-110	20	BUTT	1.3	1.4	DRY	2.8	DRY	2.7
3	INTERMEDIATE	9.875	7.625	NEW	API	N	0	12054	0	12035			12054	P-110	29.7	BUTT	1.7	1.6	DRY	2.7	DRY	2.6
4	PRODUCTION	6.75	5.0	NEW	API	Y	11850	17547	12031	12658			5697	P-110	18	BUTT	1.5	1.5	DRY	2.8	DRY	2.5

Casing Attachments

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_21H_Casing_Assumption_20190327131324.JPG

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

Inspection Document:

Spec Document:

Tapered String Spec:

vaca_draw_20H_5.5_tapered_string_spec_20190326100134.JPG

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_21H_Casing_Assumption_20190327131330.JPG

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_21H_Casing_Assumption_20190327131336.JPG

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

vaca_draw_20H_5_tapered_string_spec_20190326100325.JPG

Casing Design Assumptions and Worksheet(s):

Vaca_Draw_21H_Casing_Assumption_20190327131343.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	910	565	1.8	13.5	1017	100	Class C	2% CaCl2
SURFACE	Tail		910	1155	200	1.34	14.8	268	100	Class C	2% CaCl2
INTERMEDIATE	Lead		0	4580	735	2.19	12.7	1609.65	50	Class C	0.5% CaCl2
INTERMEDIATE	Tail		4580	5010	150	1.33	14.8	199.5	50	Class C	1% CaCl2
INTERMEDIATE	Lead	5010	5010	11500	2075	2.64	10.5	5478	15	Class H	0.5% CaCl2
INTERMEDIATE	Tail		11500	12054	400	1.19	15.6	476	15	Class H	1% CaCl2
PRODUCTION	Lead		10945	11850	0	0	0	0		n/a	n/a
PRODUCTION	Lead		11850	17547	620	1.27	14.8	787.4	10	Class H	0.1% Fluid Loss

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

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	1155	OTHER : FW Spud	8.3	8.4							
1155	12035	OTHER : DBE	9	9.4							
12035	12658	OIL-BASED MUD	11	14							

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:

CBL,GR,MUDLOG

Coring operation description for the well:

None planned

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 9215 **Anticipated Surface Pressure:** 6430.24

Anticipated Bottom Hole Temperature(F): 183

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Plan_20181129153648.pdf

H2S_Equipment_Schematic_20181129153733.pdf

BTA_Oil_Producers_LLC___EMERGENCY_CALL_LIST_20190205154800.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Vaca_Draw__21H_directional_plan_20190327132536.pdf

Vaca_Draw__21H_wall_plot_20190327132537.pdf

Vaca_Draw_9418_10_Federal_21H_Gas_Capture_Plan_20190327132550.pdf

Other proposed operations facets description:

A variance is requested for a Multi Bowl Wellhead. See the attached schematic and running procedure. *All strings will be kept 1/3 full while running.

Other proposed operations facets attachment:

Other Variance attachment:

Casing_Head_Running_Procedure_20181129153916.pdf

Multi_Bowl_Diagram__3_STRING_10_34_SOW_20190903080202.pdf

Continental

ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 599/ 2014
	Page: 16 / 176

Rig 94 Asset 24455

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE

CERT. N°: 1592

PURCHASER:	ContiTech Oil & Marine Corp.	P.O. N°:	4500461753
CONTITECH ORDER N°:	539225	HOSE TYPE:	3" ID Choke & Kill Hose
HOSE SERIAL N°:	68547	NOMINAL / ACTUAL LENGTH:	7,62 m / 7,66 m

W.P.	68,9	MPa	10000	psi	T.P. 103,4	MPa	15000	psi

Duration: 60 min.

Pressure test with water at ambient temperature

See attachment. (1 page)

→ 10 Min.

↑ 50 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	2574	5533	AISI 4130	A1582N H8672
4 1/16" 10K API Swivel Flange end			AISI 4130	58855
Hub			AISI 4130	A1199N A1423N

Not Designed For Well Testing **API Spec 16 C**

Fire Rated **Temperature rate:"B"**

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

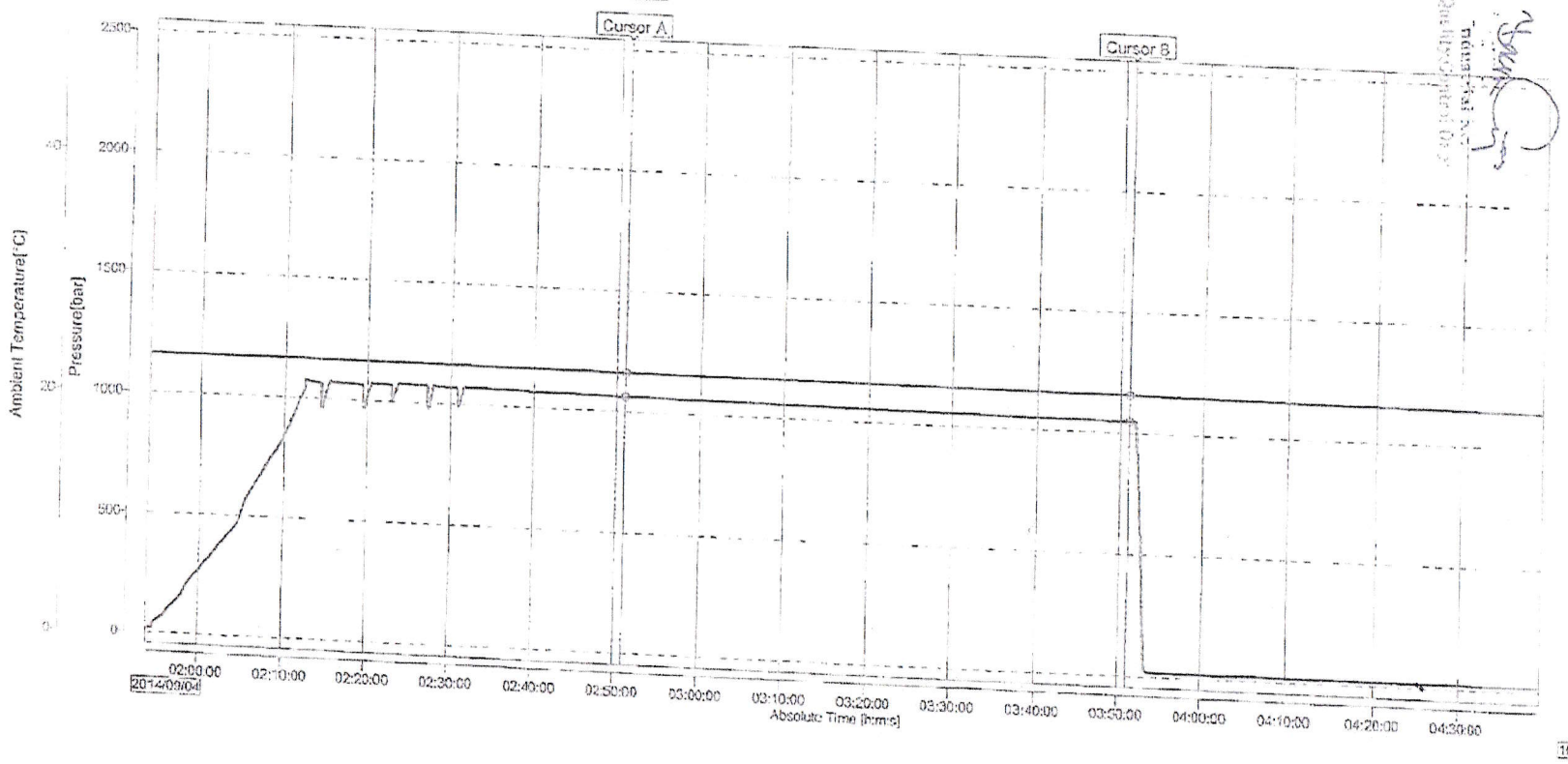
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

Date:	Inspector	Quality Control
04. September 2014.		ContiTech Rubber Industrial Kft. Quality Control Dept.

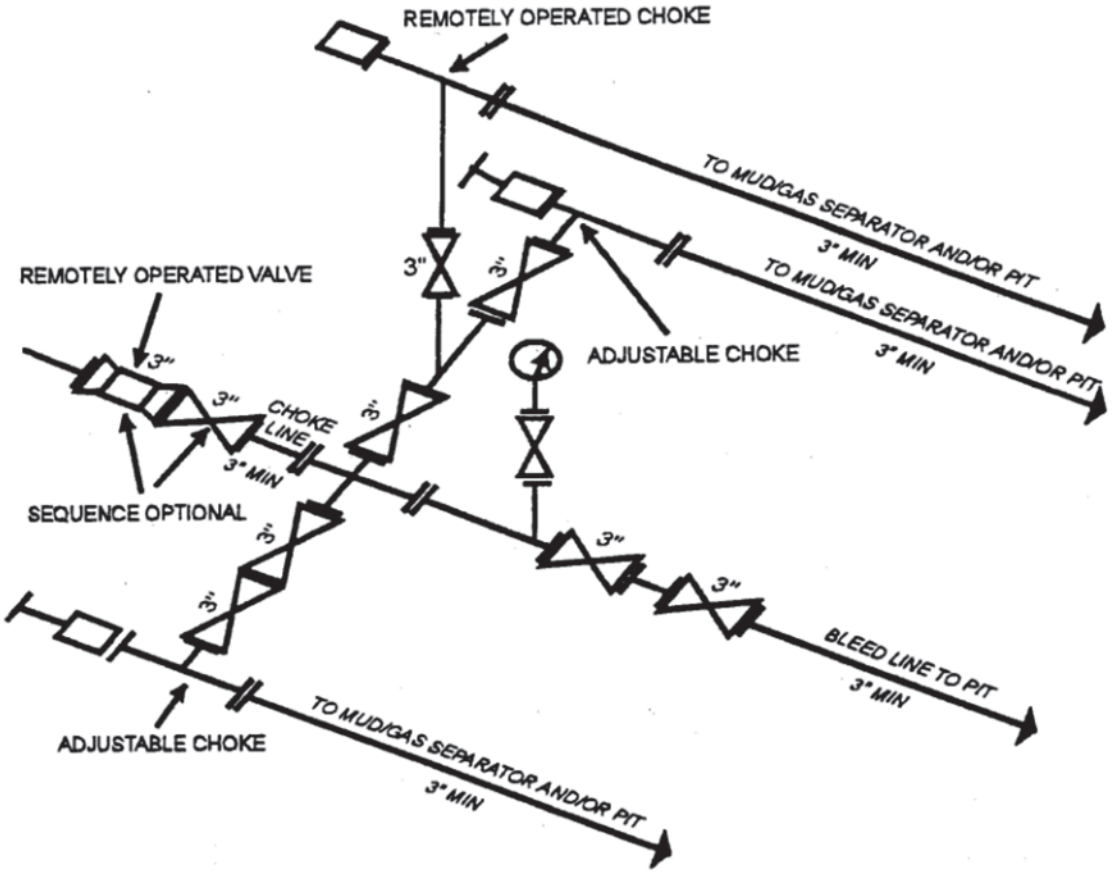
File Name	: 000220_68543,68545+547.GEV,....,000236_68543,68545+547.GEV
File Message	: 68543,68545,68547
Device Type	: GX10
Serial No.	: S5P606399
Data Count	: 9946
Print Group	: Press-Temp
Print Range	: 2014/09/04 01:53:54.000 - 2014/09/04 04:39:39.000
Comment	:

Sampling Int.	: 1.000 sec
Start Time	: 2014/09/04 01:53:54.000
Stop Time	: 2014/09/04 04:39:39.000

	Cursor A	Cursor B	Difference
Data No.	3432	7032	3600
Absolute Time	2014/09/04 02:51:06.000	2014/09/04 03:51:06.000	01:00:00.000
Tag Comment	Value A	Value B	Value B-A
Pressure[bar]	1062.96	1048.57	-14.39
Ambient Temperature[°C]	23.24	23.14	-0.10



ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No. 1588, 1590, 1592



10M AND 15M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

[53 FR 49661, Dec. 9, 1988 and 54 FR 39528, Sept. 27, 1989]

Well control plan for 10M BOPE with 5M annular

Drilling

1. Sound alarm (alert crew).
2. Space out drill string.
3. Shut down pumps (stop pumps and rotary).
4. Shut-in Well with annular with HCR and choke in closed position.
5. Confirm shut-in.
6. Notify tool pusher/company representative.
7. Read and record the following:

a. SIDPP & SICP

b. Time of shut in

c. Pit gain

8. Regroup and identify forward plan. If pressure has increased to 2500 psi, confirm spacing and close the upper variable bore rams.
9. Prepare for well kill operation.

Tripping

1. Sound alarm (alert rig crew)
2. Stab full opening safety valve and close valve
3. Sapce out drill string
4. Shut in the well with the annular with HCR and choke in closed position
5. Confirm shut in
6. Notify tool pusher/company representative
7. Read and record the following

a. Time of shut in

b. SIDPP and SICP

c. Pit gain

8. If pressure has increased to 2500 psi, confirm spacing and close the upper most variable bore ram.
9. Prepare for well kill operation.

While Running Casing

1. Sound alarm (alert rig crew)
2. Stab crossover and full opening safety valve and close valve
3. Space out casing string
4. Shut in well with annular with HCR and choke in closed position
5. Confirm shut in
6. Notify tool pusher/company representative
7. Read and record the following:

a. SIDPP & SICP

b. Pit gain

c. Time

8. If pressure has increased to 2500 psi, confirm spacing and close the upper most variable bore ram.
9. Prepare for well kill operation.

No Pipe In Hole (Open Hole)

1. Sound alarm (alert rig crew)

2. Shut in blind rams with HCR and choke in closed position
3. Confirm shut in
4. Notify tool pusher/company representative
5. Read and record the following:
   a. SICP
   b. Pit gain
   c. Time
6. Prepare for well kill operation

Pulling BHA thru Stack

1. Prior to pulling last joint of drill pipe thru the stack
   a. Perform flow check, if flowing:
      a.i. Sound Alarm (alert crew)
      a.ii. Stab full opening safety valve and close valve
      a.iii. Space out drill string
      a.iv. Shut in using upper most VBR, choke and HCR in closed positon
      a.v. Confirm shut in
      a.vi. Notify tool pusher/company representative.
      a.vii. Read and record the following:
         a.vii.1. SIDPP and SICP
         a.vii.2. Pit gain
         a.vii.3. Time
      a.viii. Prepare for well kill operation
2. With BHA in the stack:
   a. If possible pull BHA clear of stack
      a.i. Follow ‘open hole’ procedure above
   b. If unable to pull BHA clear of stack
      b.i. Stab crossover with full opening safety valve, close valve.
      b.ii. Space out
      b.iii. Shut in using upper most VBR. HCR and choke in closed position.
      b.iv. Confirm shut in
      b.v. Notify tool pusher/company rep
      b.vi. Read and record the following:
         b.vi.1. SIDPP and SICP
         b.vi.2. Pit gain
         b.vi.3. Time
      b.vii. Prepare for well kill operation

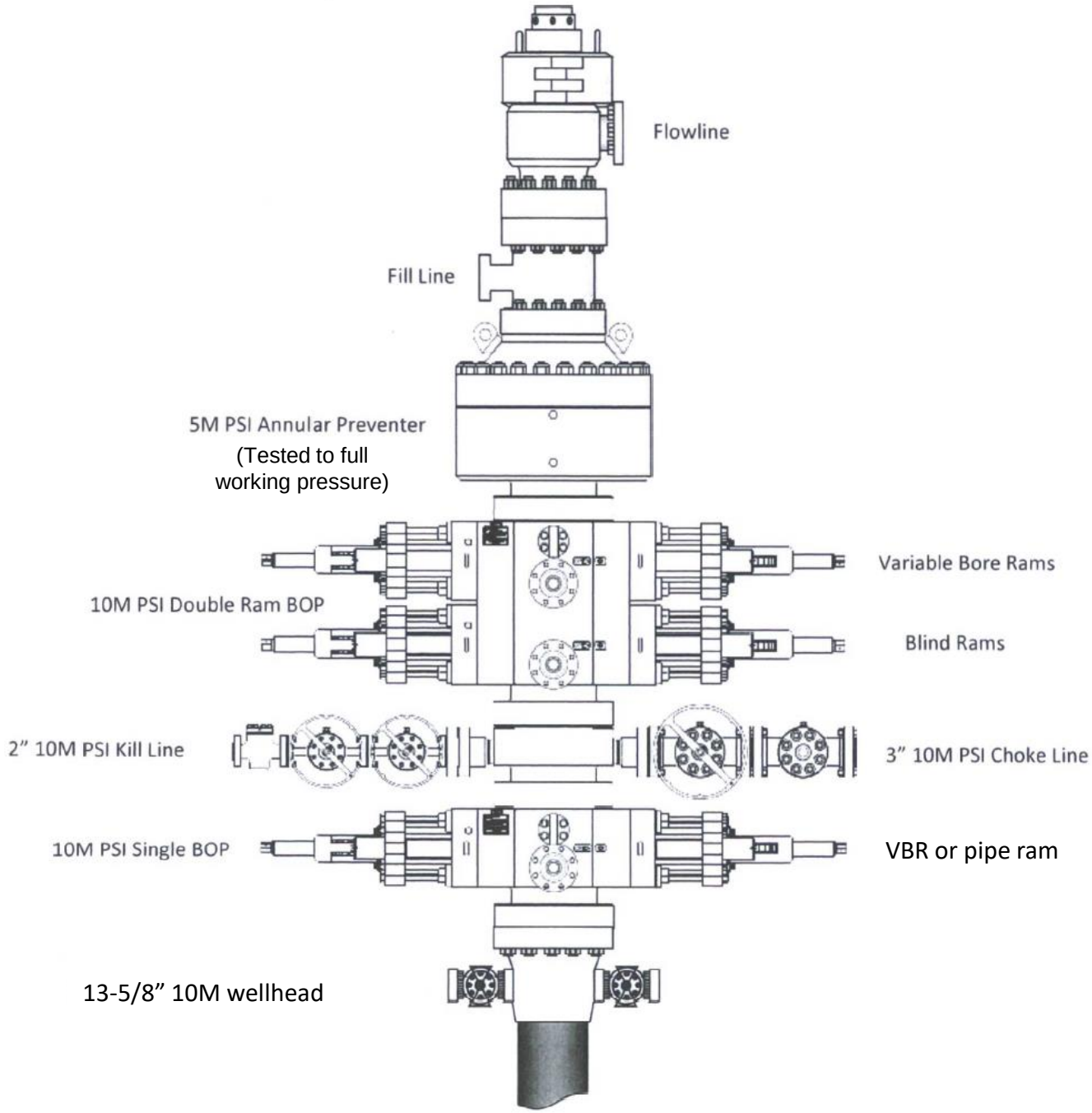
Drilling component and preventer compatibility table for 10M approval

The following table outlines the drilling and production liner components for Wolfcamp targets requiring 10M BOPE approval. Variance is requested to utilize a 5M annular preventer in 6-1/8" hole as all components can be covered using 10M rated VBR's (variable bore rams). 5M annular on the 10M system will be tested to 100% of rated working pressure.

6-1/8" hole section – 10M BOPE requirement (13-5/8" BOP)			
Component	**OD**	**Preventer**	**RWP**
Drill pipe	4"	3.5"-5.5" VBR	10M
HWDP	4"	3.5"-5.5" VBR	10M
Jars	5"	3.5"-5.5" VBR	10M
DC's and NMDC's	4-3/4"	3.5"-5.5" VBR	10M
Mud motor	5"	3.5"-5.5" VBR	10M
Casing	4-1/2"	3.5"-5.5" VBR	10M
Open hole	NA	Blind rams	10M

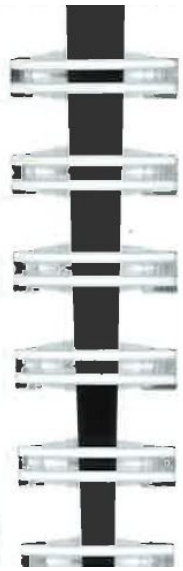
12-1/4" & 8-3/4" hole sections – 5M BOPE requirement (13-5/8" BOP)			
Component	**OD**	**Preventer**	**RWP**
Drill pipe	5"	3.5"-5.5" VBR or 5" pipe rams	10M
HWDP	5"	3.5"-5.5" VBR or 5" pipe rams	10M
Jars	6-1/4"	Annular	5M
DC's and NMDC's	7"-8"	Annular	5M
Mud motor	7"-8"	Annular	5M
Casing	9-5/8" & 7"	Annular	5M
Open hole	NA	Blind rams	10M

13-5/8” 10M PSI BOP Stack



DIMENSIONS AND

Size O.D. In.	Grade	Wt. Per Ft. With Cplg., Lb.	Inside Dia. In.	Thread & Cplg.		Extreme Line		** Collapse Resistance PSI
				Drift Dia. In.	O.D. of Cplg. In.	Drift Dia. In.	O.D. of Box In.	
5½	T-95	29.70	4.376	4.251	—	—	—	17,430
	T-95	32.60	4.250	4.125	—	—	—	19,140
	T-95	35.30	4.126	4.001	—	—	—	20,760
	T-95	38.00	4.000	3.875	—	—	—	22,380
	T-95	40.50	3.876	3.751	—	—	—	23,920
	T-95	43.10	3.750	3.625	—	—	—	25,400
	HCP-110✦	17.00	4.892	4.767	—	—	—	8,580
	P-110	17.00	4.892	4.767	6.050	4.653	5.860	7,460
	P-110	20.00	4.778	4.653	6.050	4.653	5.860	11,080
	P-110	23.00	4.670	4.545	6.050	4.545	5.860	14,520
	P-110*	26.00	4.548	—	—	4.423	5.656‡	17,390
	HCQ-125✦	17.00	4.892	4.767	—	—	—	8,580
	Q-125✦	17.00	4.892	4.767	—	—	—	7,890
	Q-125✦	20.00	4.778	4.653	—	—	—	12,080
	Q-125	23.00	4.670	4.545	—	—	—	16,070
	Q-125✦	26.00	4.548	4.423	—	—	—	19,770
	LS-140✦	17.00	4.892	4.767	—	—	—	8,580
	LS-140✦	20.00	4.778	4.653	—	—	—	12,950
	LS-140✦	23.00	4.670	4.545	—	—	—	17,500
	V-150	20.00	4.778	4.653	—	—	—	13,460
	V-150*	20.00	4.778	4.653	6.050	—	—	13,480
	V-150*	23.00	4.670	4.545	6.050	—	—	18,390
	V-150*	26.00	4.548	4.423	6.050	—	—	23,720



STRENGTHS OF CASING

Internal Yield Pressure PSI**				** Body Yield Strgth. 1,000 Lbs.	Joint Strength - 1000 Lbs.**			
Plain End or Ext. Line	Round Thread		Buttress Thd.		Threaded & Cplg. Joint			Ext. Line Joint
	Short	Long			Round Thread		Buttress Thd.	
					Short	Long		
16,990	—	—	—	828	—	—	—	—
18,810	—	—	—	909	—	—	—	—
20,770	—	—	—	987	—	—	—	—
22,670	—	—	—	1,063	—	—	—	—
24,540	—	—	—	1,136	—	—	—	—
26,450	—	—	—	1,208	—	—	—	—
10,640	—	10,640	10,640	546	—	445	568	—
10,640	—	10,640	10,640	546	—	445	568	620
12,640	—	12,640	12,360	641	—	548	667	654
14,520	—	13,580	12,360	729	—	643	724	722
16,660	—	—	—	—	569†	393††	564‡	892‡‡
12,090	—	12,090	12,090	620	—	481	620	—
12,090	—	12,090	12,090	620	—	481	620	—
14,360	—	14,360	14,050	729	—	592	728	—
16,510	—	15,430	14,050	829	—	694	782	—
18,930	—	15,430	14,050	939	—	808	782	—
13,540	—	13,540	13,540	695	—	534	890	—
16,080	—	16,080	15,740	816	—	657	810	—
18,490	—	17,290	15,740	928	—	771	869	—
17,230	—	17,230	16,860	874		701	865	—
—	—	17,230	16,860	874	—	701	908	—
—	—	18,520	16,860	994	—	823	910	—
—	—	22,720	—	—	—	—	—	722‡
11,870	—	9,880	8,990	617				

DIMENSIONS AND

Size O.D. In.	Grade	Wt. Per Ft. With Cplg., Lb.	Inside Dia. In.	Thread & Cplg.		Extreme Line		Collapse Resistance PSI
				Drift Dia. In.	O.D. of Cplg. In.	Drift Dia. In.	O.D. of Box In.	
5	C-75*	20.30	4.184	—	—	4.059	5.094	11,240
	C-75*	23.20	4.044	—	—	3.919	5.094‡	12,970
	HCL-80+	15.00	4.408	4.283	—	—	—	9,380
	HCL-80+	18.00	4.276	4.151	—	—	—	11,880
	HCL-80+	23.20	4.044	3.919	—	—	—	15,820
	HCN-80+	15.00	4.408	4.283	—	—	—	9,360
	HCN-80+	18.00	4.276	4.151	—	—	—	11,880
	HCN-80+	23.20	4.044	3.919	—	—	—	15,820
	L-80	15.00	4.408	4.283	—	—	—	7,250
	L-80	24.10	4.000	3.875	—	—	—	14,400
	L-80	18.00	4.276	4.151	—	—	—	10,500
	L-80	21.40	4.126	4.001	—	—	—	12,760
	L-80	23.20	4.044	3.919	—	—	—	13,830
	N-80	15.00	4.408	4.283	5.563	4.151	5.360	7,250
	N-80	18.00	4.276	4.151	5.563	4.151	5.360	10,490
	N-80	20.30	4.184	—	—	4.059	5.250	11,990
	N-80	23.20	4.044	—	—	3.919	5.094‡	13,830
	N-80	21.40	4.126	4.001	—	—	—	12,760
	N-80	24.10	4.000	3.875	—	—	—	14,400
	C-90	15.00	4.408	4.233	—	—	—	7,840
	C-90	18.00	4.276	4.151	—	—	—	11,530
	C-90	21.40	4.126	4.001	—	—	—	14,360
	C-90	23.20	4.044	3.919	—	—	—	15,560
	C-90	24.10	4.000	3.875	—	—	—	16,200
	C-95	15.00	4.408	4.283	5.563	4.151	5.360	8,090
	C-95	18.00	4.276	4.151	5.563	4.151	5.360	12,010
	C-95	20.30	4.184	—	—	4.059	5.250	14,250
	C-95	23.20	4.044	—	—	3.919	5.094‡	16,430
	C-95	21.40	4.126	4.001	—	—	—	15,160
	C-95	24.10	4.000	3.875	—	—	—	17,100
	S-95+	15.00	4.408	4.283	—	—	—	9,380
	S-95+	18.00	4.276	4.151	—	—	—	12,030
	S-95+	23.20	4.044	3.919	—	—	—	16,430
	T-95	15.00	4.408	4.283	—	—	—	8,110
	T-95	18.00	4.276	4.151	—	—	—	12,030
	T-95	21.40	4.126	4.001	—	—	—	15,160
	T-95	23.20	4.044	3.919	—	—	—	16,430
	T-95	24.10	4.000	3.875	—	—	—	17,100
	P-110	15.00	4.408	4.283	5.563	4.151	5.360	8,830
	P-110	18.00	4.276	4.151	5.563	4.151	5.360	13,450
	P-110	20.30	4.184	—	—	4.059	5.094‡	16,490

NO. 203

STRENGTHS OF CASING

Plain End or Ext. Line	Internal Yield Pressure PSI** Round Thread Short	Round Thread Long	Buttress Thd.	Body Yield Strgth. 1,000 Lbs.	Joint Strength - 1000 Lbs.** Threaded & Cplg. Joint Round Thread Short	Round Thread Long	Buttress Thd.	Ext. Line Joint
10,710	—	—	—	—	369†	—	—	529‡‡
12,550	—	—	—	—	369†	—	—	529‡‡
8,290	—	8,290	8,290	—	—	311	408	—
10,140	—	10,140	9,910	422	—	396	492	—
13,380	—	10,810	9,910	543	—	540	516	—
8,290	—	8,290	8,290	350	—	311	408	—
10,140	—	10,140	9,910	422	—	396	492	—
13,380	—	10,810	9,910	543	—	540	537	—
8,290	—	8,290	8,290	350	—	295	379	—
14,000	—	10,810	9,910	566	—	538	510	—
10,140	—	10,140	9,910	422	—	377	457	—
12,240	—	10,810	9,910	501	—	466	510	—
13,380	—	10,810	9,910	543	—	513	510	—
8,290	—	8,290	8,290	350	—	311	396	437
10,140	—	10,140	9,910	422	—	396	477	469
11,420	—	—	—	—	388†	284††	363‡	556‡‡
13,380	—	—	—	—	388†	284††	363‡	556‡‡
12,240	—	10,810	9,910	501	—	490	537	—
14,000	—	10,810	9,910	566	—	558	537	—
9,320	—	9,320	9,320	394	—	311	404	—
11,400	—	11,400	11,150	475	—	396	484	—
13,770	—	12,170	11,150	564	—	490	537	—
15,060	—	12,170	11,150	611	—	540	537	—
15,750	—	12,170	11,150	636	—	567	537	—
9,840	—	9,840	9,840	416	—	326	424	459
12,040	—	12,040	11,770	501	—	416	512	493
13,560	—	—	—	—	—	—	—	584‡‡
15,890	—	—	—	—	—	—	—	584‡‡
14,530	—	12,840	11,770	595	—	515	563	—
16,630	—	12,840	11,770	672	—	595	563	—
9,840	—	9,840	9,840	416	—	342	441	—
12,040	—	12,040	11,770	501	—	436	532	—
15,890	—	12,840	11,770	645	—	594	590	—
9,840	—	9,840	9,840	416	—	326	424	—
12,040	—	12,040	11,770	501	—	416	512	—
14,530	—	12,840	11,770	595	—	515	563	—
15,890	—	12,840	11,770	645	—	567	563	—
16,630	—	12,840	11,770	672	—	595	563	—
11,400	—	11,400	11,400	481	—	388	503	547
13,940	—	13,940	13,620	580	—	495	606	587
15,710	—	—	—	—	495†	—	—	—

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Vaca Draw 9418 10 Fed #21H (WUMD)
TVD: 12658
MD: 17547

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1155	0	1155	No	40.5	J-55	STC	3.2	6.3	13.4	9.0	Dry	8.3
9 7/8	7 5/8	0	12054	0	12035	No	29.7	P110	Buttress	1.7	1.6	2.6	2.7	Dry	9.4
6 3/4	5 1/2	0	11850	0	11831	Yes	20	P110	Buttress	1.3	1.4	2.7	2.8	Dry	14
6 3/4	5	11850	17547	12031	12658	Yes	18	P110	Buttress	1.5	1.5	2.5	2.8	Dry	14

***7 5/8" has DV Tool @ 5010'**

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Vaca Draw 9418 10 Fed #21H (WUMD)
TVD: 12658
MD: 17547

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1155	0	1155	No	40.5	J-55	STC	3.2	6.3	13.4	9.0	Dry	8.3
9 7/8	7 5/8	0	12054	0	12035	No	29.7	P110	Buttress	1.7	1.6	2.6	2.7	Dry	9.4
6 3/4	5 1/2	0	11850	0	11831	Yes	20	P110	Buttress	1.3	1.4	2.7	2.8	Dry	14
6 3/4	5	11850	17547	12031	12658	Yes	18	P110	Buttress	1.5	1.5	2.5	2.8	Dry	14

***7 5/8" has DV Tool @ 5010'**

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Vaca Draw 9418 10 Fed #21H (WUMD)
TVD: 12658
MD: 17547

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1155	0	1155	No	40.5	J-55	STC	3.2	6.3	13.4	9.0	Dry	8.3
9 7/8	7 5/8	0	12054	0	12035	No	29.7	P110	Buttress	1.7	1.6	2.6	2.7	Dry	9.4
6 3/4	5 1/2	0	11850	0	11831	Yes	20	P110	Buttress	1.3	1.4	2.7	2.8	Dry	14
6 3/4	5	11850	17547	12031	12658	Yes	18	P110	Buttress	1.5	1.5	2.5	2.8	Dry	14

***7 5/8" has DV Tool @ 5010'**

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Vaca Draw 9418 10 Fed #21H (WUMD)
TVD: 12658
MD: 17547

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1155	0	1155	No	40.5	J-55	STC	3.2	6.3	13.4	9.0	Dry	8.3
9 7/8	7 5/8	0	12054	0	12035	No	29.7	P110	Buttress	1.7	1.6	2.6	2.7	Dry	9.4
6 3/4	5 1/2	0	11850	0	11831	Yes	20	P110	Buttress	1.3	1.4	2.7	2.8	Dry	14
6 3/4	5	11850	17547	12031	12658	Yes	18	P110	Buttress	1.5	1.5	2.5	2.8	Dry	14

***7 5/8" has DV Tool @ 5010'**

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_2S).
b. The proper use and maintenance of personal protective equipment and life support systems.
c. The proper use of H_2S 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 H2S 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_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S 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_2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H_2S 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 H2S. If H2S greater than 100 ppm is encountered in the gas stream we will shut in and install H2S 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. H2S 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.

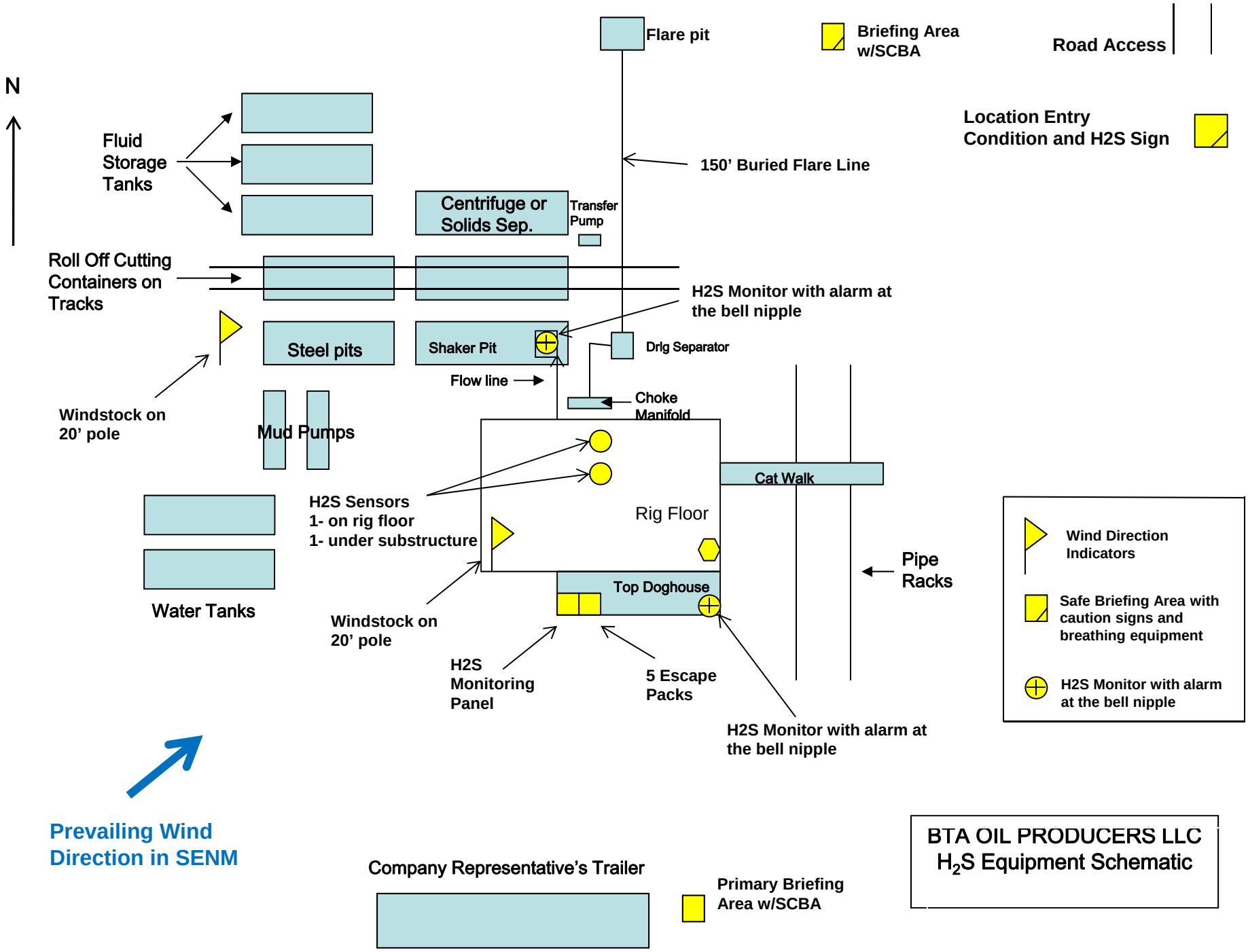
W A R N I N G

YOU ARE ENTERING AN H_2S 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


N
Flare pit
Briefing Area w/SCBA
Road Access
Location Entry Condition and H2S Sign
Fluid Storage Tanks
150' Buried Flare Line
Centrifuge or Solids Sep.
Transfer Pump
Roll Off Cutting Containers on Tracks
H2S Monitor with alarm at the bell nipple
Steel pits
Shaker Pit
Drlg Separator
Flow line
Choke Manifold
Windstock on 20' pole
Mud Pumps
Cat Walk
H2S Sensors
1- on rig floor
1- under substructure
Rig Floor
Pipe Racks
Water Tanks
Top Doghouse
Windstock on 20' pole
H2S Monitoring Panel
5 Escape Packs
H2S Monitor with alarm at the bell nipple
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
Company Representative's Trailer
Primary Briefing Area w/SCBA
BTA OIL PRODUCERS LLC
H_2S Equipment Schematic

EMERGENCY CALL LIST

	OFFICE	MOBILE
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

	OFFICE
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

BTA Oil Producers, LLC

Lea County, NM (NAD 83)
Vaca Draw Sec 10, T25S, R33E
Vaca Draw #21H

Wellbore #1

Plan: Design #1

Standard Planning Report - Geographic

25 March, 2019

Database:	Old	**Local Co-ordinate Reference:**	Well Vaca Draw #21H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3388.0usft
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL @ 3388.0usft
Site:	Vaca Draw Sec 10, T25S, R33E	**North Reference:**	Grid
Well:	Vaca Draw #21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Lea County, NM (NAD 83), Lea County, NM

Map System:	US State Plane 1983	**System Datum:**	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site Vaca Draw Sec 10, T25S, R33E

Site Position:		**Northing:**	419,812.34 usft	**Latitude:**	32° 9' 6.483 N
From:	Map	**Easting:**	779,596.21 usft	**Longitude:**	103° 33' 48.478 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.41 °

Well Vaca Draw #21H

Well Position	**+N/-S**	0.0 usft	**Northing:**	415,141.40 usft	**Latitude:**	32° 8' 20.284 N
	+E/-W	0.0 usft	**Easting:**	779,290.60 usft	**Longitude:**	103° 33' 52.421 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,388.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	7.74	60.16	48,742.70446698

Design Design #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	355.90

Plan Survey Tool Program **Date** 3/25/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	17,546.9	Design #1 (Wellbore #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	
6,773.2	0.00	0.00	6,773.2	0.0	0.0	0.00	0.00	0.00	0.00	
7,023.2	5.00	225.92	7,022.9	-7.6	-7.8	2.00	2.00	0.00	225.92	
11,803.8	5.00	225.92	11,785.3	-297.4	-307.2	0.00	0.00	0.00	0.00	
12,053.8	0.00	0.00	12,035.0	-305.0	-315.0	2.00	-2.00	0.00	180.00	
12,103.9	0.00	0.00	12,085.0	-305.0	-315.0	0.00	0.00	0.00	0.00	
13,003.9	90.00	359.67	12,658.0	267.9	-318.3	10.00	10.00	0.00	359.67	
17,546.9	90.00	359.67	12,658.0	4,810.9	-344.6	0.00	0.00	0.00	0.00	Vaca Draw #21H

Database:	Old	**Local Co-ordinate Reference:**	Well Vaca Draw #21H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3388.0usft
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL @ 3388.0usft
Site:	Vaca Draw Sec 10, T25S, R33E	**North Reference:**	Grid
Well:	Vaca Draw #21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
100.0	0.00	0.00	100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
200.0	0.00	0.00	200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
300.0	0.00	0.00	300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
400.0	0.00	0.00	400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
500.0	0.00	0.00	500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
600.0	0.00	0.00	600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
700.0	0.00	0.00	700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
800.0	0.00	0.00	800.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
900.0	0.00	0.00	900.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,300.0	0.00	0.00	5,300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,400.0	0.00	0.00	5,400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W

Database:	Old	**Local Co-ordinate Reference:**	Well Vaca Draw #21H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3388.0usft
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL @ 3388.0usft
Site:	Vaca Draw Sec 10, T25S, R33E	**North Reference:**	Grid
Well:	Vaca Draw #21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
5,500.0	0.00	0.00	5,500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,600.0	0.00	0.00	5,600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,700.0	0.00	0.00	5,700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,800.0	0.00	0.00	5,800.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
5,900.0	0.00	0.00	5,900.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,000.0	0.00	0.00	6,000.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,100.0	0.00	0.00	6,100.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,200.0	0.00	0.00	6,200.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,300.0	0.00	0.00	6,300.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,400.0	0.00	0.00	6,400.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,500.0	0.00	0.00	6,500.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,600.0	0.00	0.00	6,600.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,700.0	0.00	0.00	6,700.0	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,773.2	0.00	0.00	6,773.2	0.0	0.0	415,141.40	779,290.60	32° 8' 20.284 N	103° 33' 52.421 W
6,800.0	0.54	225.92	6,800.0	-0.1	-0.1	415,141.31	779,290.51	32° 8' 20.283 N	103° 33' 52.422 W
6,900.0	2.54	225.92	6,900.0	-2.0	-2.0	415,139.45	779,288.58	32° 8' 20.265 N	103° 33' 52.445 W
7,000.0	4.54	225.92	6,999.8	-6.2	-6.4	415,135.16	779,284.15	32° 8' 20.223 N	103° 33' 52.497 W
7,023.2	5.00	225.92	7,022.9	-7.6	-7.8	415,133.82	779,282.77	32° 8' 20.210 N	103° 33' 52.513 W
7,100.0	5.00	225.92	7,099.4	-12.2	-12.6	415,129.16	779,277.96	32° 8' 20.164 N	103° 33' 52.569 W
7,200.0	5.00	225.92	7,199.0	-18.3	-18.9	415,123.10	779,271.69	32° 8' 20.104 N	103° 33' 52.643 W
7,300.0	5.00	225.92	7,298.6	-24.4	-25.2	415,117.03	779,265.43	32° 8' 20.045 N	103° 33' 52.716 W
7,400.0	5.00	225.92	7,398.2	-30.4	-31.4	415,110.97	779,259.17	32° 8' 19.985 N	103° 33' 52.789 W
7,500.0	5.00	225.92	7,497.9	-36.5	-37.7	415,104.91	779,252.91	32° 8' 19.926 N	103° 33' 52.862 W
7,600.0	5.00	225.92	7,597.5	-42.6	-43.9	415,098.85	779,246.65	32° 8' 19.866 N	103° 33' 52.936 W
7,700.0	5.00	225.92	7,697.1	-48.6	-50.2	415,092.78	779,240.39	32° 8' 19.807 N	103° 33' 53.009 W
7,800.0	5.00	225.92	7,796.7	-54.7	-56.5	415,086.72	779,234.13	32° 8' 19.747 N	103° 33' 53.082 W
7,900.0	5.00	225.92	7,896.3	-60.7	-62.7	415,080.66	779,227.87	32° 8' 19.687 N	103° 33' 53.156 W
8,000.0	5.00	225.92	7,996.0	-66.8	-69.0	415,074.60	779,221.60	32° 8' 19.628 N	103° 33' 53.229 W
8,100.0	5.00	225.92	8,095.6	-72.9	-75.3	415,068.53	779,215.34	32° 8' 19.568 N	103° 33' 53.302 W
8,200.0	5.00	225.92	8,195.2	-78.9	-81.5	415,062.47	779,209.08	32° 8' 19.509 N	103° 33' 53.376 W
8,300.0	5.00	225.92	8,294.8	-85.0	-87.8	415,056.41	779,202.82	32° 8' 19.449 N	103° 33' 53.449 W
8,400.0	5.00	225.92	8,394.4	-91.1	-94.0	415,050.35	779,196.56	32° 8' 19.390 N	103° 33' 53.522 W
8,500.0	5.00	225.92	8,494.1	-97.1	-100.3	415,044.28	779,190.30	32° 8' 19.330 N	103° 33' 53.596 W
8,600.0	5.00	225.92	8,593.7	-103.2	-106.6	415,038.22	779,184.04	32° 8' 19.271 N	103° 33' 53.669 W
8,700.0	5.00	225.92	8,693.3	-109.2	-112.8	415,032.16	779,177.78	32° 8' 19.211 N	103° 33' 53.742 W
8,800.0	5.00	225.92	8,792.9	-115.3	-119.1	415,026.10	779,171.51	32° 8' 19.152 N	103° 33' 53.816 W
8,900.0	5.00	225.92	8,892.5	-121.4	-125.3	415,020.03	779,165.25	32° 8' 19.092 N	103° 33' 53.889 W
9,000.0	5.00	225.92	8,992.2	-127.4	-131.6	415,013.97	779,158.99	32° 8' 19.032 N	103° 33' 53.962 W
9,100.0	5.00	225.92	9,091.8	-133.5	-137.9	415,007.91	779,152.73	32° 8' 18.973 N	103° 33' 54.036 W
9,200.0	5.00	225.92	9,191.4	-139.6	-144.1	415,001.85	779,146.47	32° 8' 18.913 N	103° 33' 54.109 W
9,300.0	5.00	225.92	9,291.0	-145.6	-150.4	414,995.78	779,140.21	32° 8' 18.854 N	103° 33' 54.182 W
9,400.0	5.00	225.92	9,390.6	-151.7	-156.7	414,989.72	779,133.95	32° 8' 18.794 N	103° 33' 54.256 W
9,500.0	5.00	225.92	9,490.3	-157.7	-162.9	414,983.66	779,127.69	32° 8' 18.735 N	103° 33' 54.329 W
9,600.0	5.00	225.92	9,589.9	-163.8	-169.2	414,977.60	779,121.42	32° 8' 18.675 N	103° 33' 54.402 W
9,700.0	5.00	225.92	9,689.5	-169.9	-175.4	414,971.53	779,115.16	32° 8' 18.616 N	103° 33' 54.476 W
9,800.0	5.00	225.92	9,789.1	-175.9	-181.7	414,965.47	779,108.90	32° 8' 18.556 N	103° 33' 54.549 W
9,900.0	5.00	225.92	9,888.7	-182.0	-188.0	414,959.41	779,102.64	32° 8' 18.497 N	103° 33' 54.622 W
10,000.0	5.00	225.92	9,988.4	-188.1	-194.2	414,953.35	779,096.38	32° 8' 18.437 N	103° 33' 54.695 W
10,100.0	5.00	225.92	10,088.0	-194.1	-200.5	414,947.28	779,090.12	32° 8' 18.377 N	103° 33' 54.769 W
10,200.0	5.00	225.92	10,187.6	-200.2	-206.7	414,941.22	779,083.86	32° 8' 18.318 N	103° 33' 54.842 W
10,300.0	5.00	225.92	10,287.2	-206.2	-213.0	414,935.16	779,077.60	32° 8' 18.258 N	103° 33' 54.915 W
10,400.0	5.00	225.92	10,386.8	-212.3	-219.3	414,929.10	779,071.33	32° 8' 18.199 N	103° 33' 54.989 W
10,500.0	5.00	225.92	10,486.5	-218.4	-225.5	414,923.03	779,065.07	32° 8' 18.139 N	103° 33' 55.062 W
10,600.0	5.00	225.92	10,586.1	-224.4	-231.8	414,916.97	779,058.81	32° 8' 18.080 N	103° 33' 55.135 W
10,700.0	5.00	225.92	10,685.7	-230.5	-238.1	414,910.91	779,052.55	32° 8' 18.020 N	103° 33' 55.209 W

Database:	Old	**Local Co-ordinate Reference:**	Well Vaca Draw #21H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3388.0usft
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL @ 3388.0usft
Site:	Vaca Draw Sec 10, T25S, R33E	**North Reference:**	Grid
Well:	Vaca Draw #21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
10,800.0	5.00	225.92	10,785.3	-236.6	-244.3	414,904.85	779,046.29	32° 8' 17.961 N	103° 33' 55.282 W
10,900.0	5.00	225.92	10,884.9	-242.6	-250.6	414,898.78	779,040.03	32° 8' 17.901 N	103° 33' 55.355 W
11,000.0	5.00	225.92	10,984.5	-248.7	-256.8	414,892.72	779,033.77	32° 8' 17.841 N	103° 33' 55.429 W
11,100.0	5.00	225.92	11,084.2	-254.7	-263.1	414,886.66	779,027.51	32° 8' 17.782 N	103° 33' 55.502 W
11,200.0	5.00	225.92	11,183.8	-260.8	-269.4	414,880.60	779,021.24	32° 8' 17.722 N	103° 33' 55.575 W
11,300.0	5.00	225.92	11,283.4	-266.9	-275.6	414,874.53	779,014.98	32° 8' 17.663 N	103° 33' 55.649 W
11,400.0	5.00	225.92	11,383.0	-272.9	-281.9	414,868.47	779,008.72	32° 8' 17.603 N	103° 33' 55.722 W
11,500.0	5.00	225.92	11,482.6	-279.0	-288.1	414,862.41	779,002.46	32° 8' 17.544 N	103° 33' 55.795 W
11,600.0	5.00	225.92	11,582.3	-285.1	-294.4	414,856.35	778,996.20	32° 8' 17.484 N	103° 33' 55.869 W
11,700.0	5.00	225.92	11,681.9	-291.1	-300.7	414,850.28	778,989.94	32° 8' 17.425 N	103° 33' 55.942 W
11,800.0	5.00	225.92	11,781.5	-297.2	-306.9	414,844.22	778,983.68	32° 8' 17.365 N	103° 33' 56.015 W
11,803.8	5.00	225.92	11,785.3	-297.4	-307.2	414,843.99	778,983.44	32° 8' 17.363 N	103° 33' 56.018 W
11,900.0	3.08	225.92	11,881.2	-302.1	-312.0	414,839.28	778,978.57	32° 8' 17.317 N	103° 33' 56.075 W
12,000.0	1.08	225.92	11,981.2	-304.6	-314.6	414,836.76	778,975.97	32° 8' 17.292 N	103° 33' 56.105 W
12,053.8	0.00	0.00	12,035.0	-305.0	-315.0	414,836.41	778,975.61	32° 8' 17.288 N	103° 33' 56.110 W
12,100.0	0.00	0.00	12,081.2	-305.0	-315.0	414,836.41	778,975.61	32° 8' 17.288 N	103° 33' 56.110 W
12,103.9	0.00	0.00	12,085.0	-305.0	-315.0	414,836.41	778,975.61	32° 8' 17.288 N	103° 33' 56.110 W
12,200.0	9.61	359.67	12,180.7	-297.0	-315.0	414,844.45	778,975.56	32° 8' 17.368 N	103° 33' 56.110 W
12,300.0	19.61	359.67	12,277.4	-271.8	-315.2	414,869.65	778,975.41	32° 8' 17.617 N	103° 33' 56.109 W
12,400.0	29.61	359.67	12,368.2	-230.2	-315.4	414,911.24	778,975.17	32° 8' 18.029 N	103° 33' 56.109 W
12,500.0	39.61	359.67	12,450.4	-173.4	-315.8	414,967.97	778,974.84	32° 8' 18.590 N	103° 33' 56.108 W
12,600.0	49.61	359.67	12,521.5	-103.3	-316.2	415,038.11	778,974.44	32° 8' 19.284 N	103° 33' 56.107 W
12,700.0	59.61	359.67	12,579.3	-21.9	-316.6	415,119.53	778,973.97	32° 8' 20.090 N	103° 33' 56.105 W
12,800.0	69.61	359.67	12,622.1	68.4	-317.2	415,209.76	778,973.44	32° 8' 20.983 N	103° 33' 56.104 W
12,900.0	79.61	359.67	12,648.6	164.6	-317.7	415,306.04	778,972.89	32° 8' 21.936 N	103° 33' 56.102 W
13,000.0	89.61	359.67	12,658.0	264.1	-318.3	415,405.47	778,972.31	32° 8' 22.920 N	103° 33' 56.101 W
13,003.9	90.00	359.67	12,658.0	267.9	-318.3	415,409.34	778,972.29	32° 8' 22.958 N	103° 33' 56.101 W
13,100.0	90.00	359.67	12,658.0	364.1	-318.9	415,505.47	778,971.73	32° 8' 23.909 N	103° 33' 56.099 W
13,200.0	90.00	359.67	12,658.0	464.1	-319.5	415,605.46	778,971.15	32° 8' 24.899 N	103° 33' 56.098 W
13,300.0	90.00	359.67	12,658.0	564.1	-320.0	415,705.46	778,970.58	32° 8' 25.888 N	103° 33' 56.096 W
13,400.0	90.00	359.67	12,658.0	664.1	-320.6	415,805.46	778,970.00	32° 8' 26.878 N	103° 33' 56.095 W
13,500.0	90.00	359.67	12,658.0	764.1	-321.2	415,905.45	778,969.42	32° 8' 27.867 N	103° 33' 56.093 W
13,600.0	90.00	359.67	12,658.0	864.1	-321.8	416,005.45	778,968.84	32° 8' 28.857 N	103° 33' 56.092 W
13,700.0	90.00	359.67	12,658.0	964.1	-322.3	416,105.44	778,968.26	32° 8' 29.846 N	103° 33' 56.090 W
13,800.0	90.00	359.67	12,658.0	1,064.1	-322.9	416,205.44	778,967.68	32° 8' 30.836 N	103° 33' 56.088 W
13,900.0	90.00	359.67	12,658.0	1,164.1	-323.5	416,305.43	778,967.10	32° 8' 31.825 N	103° 33' 56.087 W
14,000.0	90.00	359.67	12,658.0	1,264.1	-324.1	416,405.43	778,966.52	32° 8' 32.815 N	103° 33' 56.085 W
14,100.0	90.00	359.67	12,658.0	1,364.1	-324.7	416,505.43	778,965.95	32° 8' 33.804 N	103° 33' 56.084 W
14,200.0	90.00	359.67	12,658.0	1,464.1	-325.2	416,605.42	778,965.37	32° 8' 34.794 N	103° 33' 56.082 W
14,300.0	90.00	359.67	12,658.0	1,564.1	-325.8	416,705.42	778,964.79	32° 8' 35.784 N	103° 33' 56.081 W
14,400.0	90.00	359.67	12,658.0	1,664.1	-326.4	416,805.41	778,964.21	32° 8' 36.773 N	103° 33' 56.079 W
14,500.0	90.00	359.67	12,658.0	1,764.1	-327.0	416,905.41	778,963.63	32° 8' 37.763 N	103° 33' 56.077 W
14,600.0	90.00	359.67	12,658.0	1,864.1	-327.6	417,005.40	778,963.05	32° 8' 38.752 N	103° 33' 56.076 W
14,700.0	90.00	359.67	12,658.0	1,964.1	-328.1	417,105.40	778,962.47	32° 8' 39.742 N	103° 33' 56.074 W
14,800.0	90.00	359.67	12,658.0	2,064.0	-328.7	417,205.40	778,961.89	32° 8' 40.731 N	103° 33' 56.073 W
14,900.0	90.00	359.67	12,658.0	2,164.0	-329.3	417,305.39	778,961.32	32° 8' 41.721 N	103° 33' 56.071 W
15,000.0	90.00	359.67	12,658.0	2,264.0	-329.9	417,405.39	778,960.74	32° 8' 42.710 N	103° 33' 56.070 W
15,100.0	90.00	359.67	12,658.0	2,364.0	-330.4	417,505.38	778,960.16	32° 8' 43.700 N	103° 33' 56.068 W
15,200.0	90.00	359.67	12,658.0	2,464.0	-331.0	417,605.38	778,959.58	32° 8' 44.689 N	103° 33' 56.067 W
15,300.0	90.00	359.67	12,658.0	2,564.0	-331.6	417,705.37	778,959.00	32° 8' 45.679 N	103° 33' 56.065 W
15,400.0	90.00	359.67	12,658.0	2,664.0	-332.2	417,805.37	778,958.42	32° 8' 46.668 N	103° 33' 56.063 W
15,500.0	90.00	359.67	12,658.0	2,764.0	-332.8	417,905.37	778,957.84	32° 8' 47.658 N	103° 33' 56.062 W
15,600.0	90.00	359.67	12,658.0	2,864.0	-333.3	418,005.36	778,957.26	32° 8' 48.647 N	103° 33' 56.060 W
15,700.0	90.00	359.67	12,658.0	2,964.0	-333.9	418,105.36	778,956.69	32° 8' 49.637 N	103° 33' 56.059 W
15,800.0	90.00	359.67	12,658.0	3,064.0	-334.5	418,205.35	778,956.11	32° 8' 50.626 N	103° 33' 56.057 W

Database:	Old	**Local Co-ordinate Reference:**	Well Vaca Draw #21H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3388.0usft
Project:	Lea County, NM (NAD 83)	**MD Reference:**	GL @ 3388.0usft
Site:	Vaca Draw Sec 10, T25S, R33E	**North Reference:**	Grid
Well:	Vaca Draw #21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
15,900.0	90.00	359.67	12,658.0	3,164.0	-335.1	418,305.35	778,955.53	32° 8' 51.616 N	103° 33' 56.056 W
16,000.0	90.00	359.67	12,658.0	3,264.0	-335.7	418,405.34	778,954.95	32° 8' 52.605 N	103° 33' 56.054 W
16,100.0	90.00	359.67	12,658.0	3,364.0	-336.2	418,505.34	778,954.37	32° 8' 53.595 N	103° 33' 56.052 W
16,200.0	90.00	359.67	12,658.0	3,464.0	-336.8	418,605.34	778,953.79	32° 8' 54.585 N	103° 33' 56.051 W
16,300.0	90.00	359.67	12,658.0	3,564.0	-337.4	418,705.33	778,953.21	32° 8' 55.574 N	103° 33' 56.049 W
16,400.0	90.00	359.67	12,658.0	3,664.0	-338.0	418,805.33	778,952.64	32° 8' 56.564 N	103° 33' 56.048 W
16,500.0	90.00	359.67	12,658.0	3,764.0	-338.5	418,905.32	778,952.06	32° 8' 57.553 N	103° 33' 56.046 W
16,600.0	90.00	359.67	12,658.0	3,864.0	-339.1	419,005.32	778,951.48	32° 8' 58.543 N	103° 33' 56.045 W
16,700.0	90.00	359.67	12,658.0	3,964.0	-339.7	419,105.31	778,950.90	32° 8' 59.532 N	103° 33' 56.043 W
16,800.0	90.00	359.67	12,658.0	4,064.0	-340.3	419,205.31	778,950.32	32° 9' 0.522 N	103° 33' 56.042 W
16,900.0	90.00	359.67	12,658.0	4,164.0	-340.9	419,305.31	778,949.74	32° 9' 1.511 N	103° 33' 56.040 W
17,000.0	90.00	359.67	12,658.0	4,264.0	-341.4	419,405.30	778,949.16	32° 9' 2.501 N	103° 33' 56.038 W
17,100.0	90.00	359.67	12,658.0	4,364.0	-342.0	419,505.30	778,948.58	32° 9' 3.490 N	103° 33' 56.037 W
17,200.0	90.00	359.67	12,658.0	4,464.0	-342.6	419,605.29	778,948.01	32° 9' 4.480 N	103° 33' 56.035 W
17,300.0	90.00	359.67	12,658.0	4,564.0	-343.2	419,705.29	778,947.43	32° 9' 5.469 N	103° 33' 56.034 W
17,400.0	90.00	359.67	12,658.0	4,664.0	-343.8	419,805.28	778,946.85	32° 9' 6.459 N	103° 33' 56.032 W
17,500.0	90.00	359.67	12,658.0	4,764.0	-344.3	419,905.28	778,946.27	32° 9' 7.448 N	103° 33' 56.031 W
17,546.9	90.00	359.67	12,658.0	4,810.9	-344.6	419,952.20	778,946.00	32° 9' 7.913 N	103° 33' 56.030 W

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Vaca Draw #21H - plan hits target center - Point	0.00	0.00	12,658.0	4,810.9	-344.6	419,952.20	778,946.00	32° 9' 7.913 N	103° 33' 56.030 W

BTA Oil Producers, LLC

WELL DETAILS: Vaca Draw #21H					
			Ground Level 3388.0		
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	415141.40	779290.60	32° 8' 20.284 N	103° 33' 52.421 W

T G M

Azimuths to Grid North
True North: -0.41°
Magnetic North: 7.33°

Magnetic Field
Strength: 48742.7nT
Dip Angle: 60.16°
Date: 12/31/2009
Model: IGRF200510

SITE DETAILS: Vaca Draw Sec 10, T25S, R33E

Site Centre Northing: 419812.34
Easting: 779596.22

Positional Uncertainity: 0.0
Convergence: 0.41
Local North: Grid

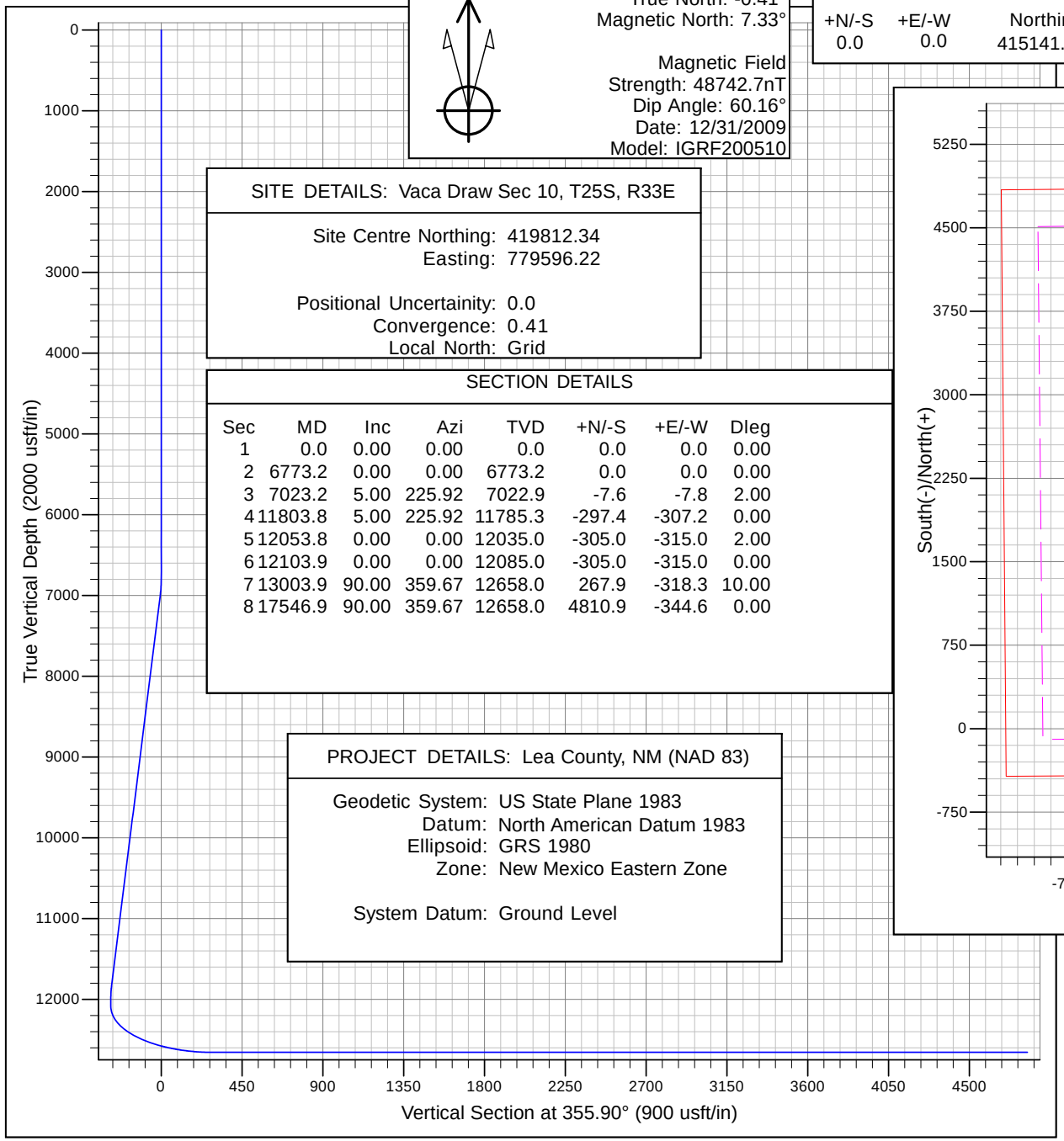
SECTION DETAILS

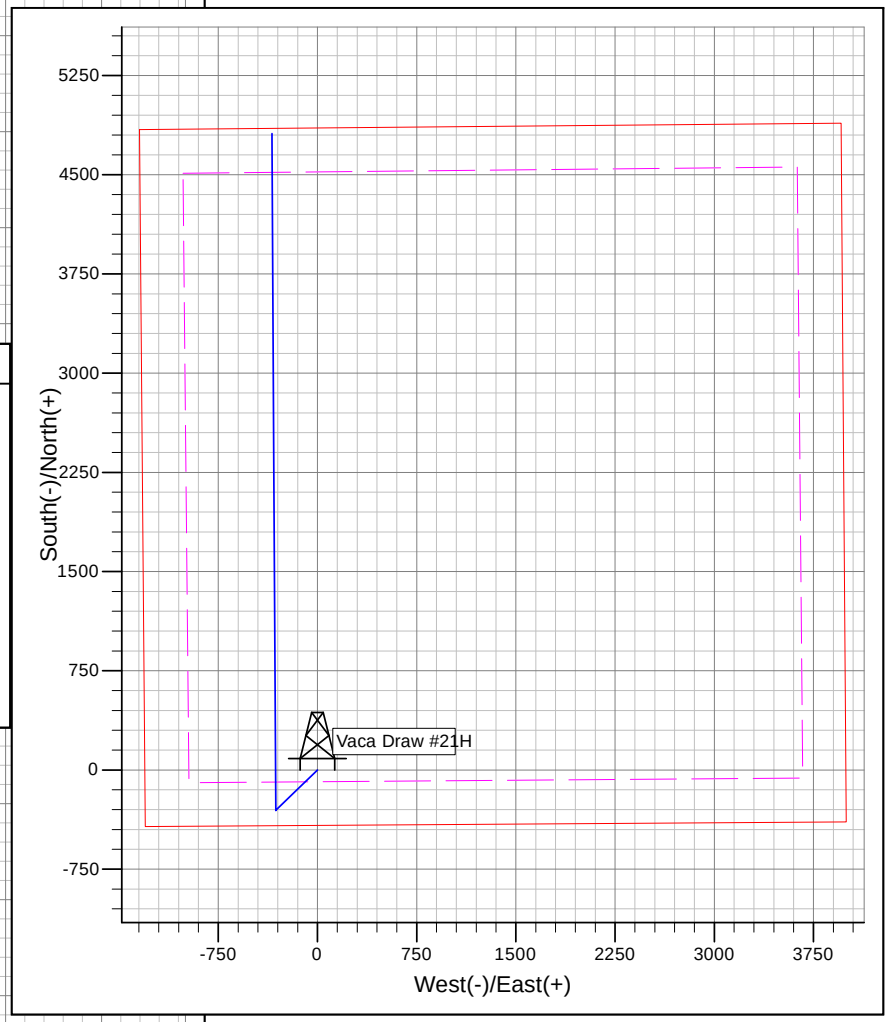
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00
2	6773.2	0.00	0.00	6773.2	0.0	0.0	0.00
3	7023.2	5.00	225.92	7022.9	-7.6	-7.8	2.00
4	11803.8	5.00	225.92	11785.3	-297.4	-307.2	0.00
5	12053.8	0.00	0.00	12035.0	-305.0	-315.0	2.00
6	12103.9	0.00	0.00	12085.0	-305.0	-315.0	0.00
7	13003.9	90.00	359.67	12658.0	267.9	-318.3	10.00
8	17546.9	90.00	359.67	12658.0	4810.9	-344.6	0.00

PROJECT DETAILS: Lea 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





WFT Casing Head (Slip on Weld with O-Ring) Running Procedure

Publication RP-001

October 21, 2010

Weatherford 5-2-GL-GL-WES-00052	**WFT Casing Head (Slip on Weld with O-Ring) Running Procedure**	Approved By:	Reviewed By:	**RP-001**
				Rev 0
		Date: Oct 21, 2010	Date: Oct 21, 2010	

Install the Casing Head

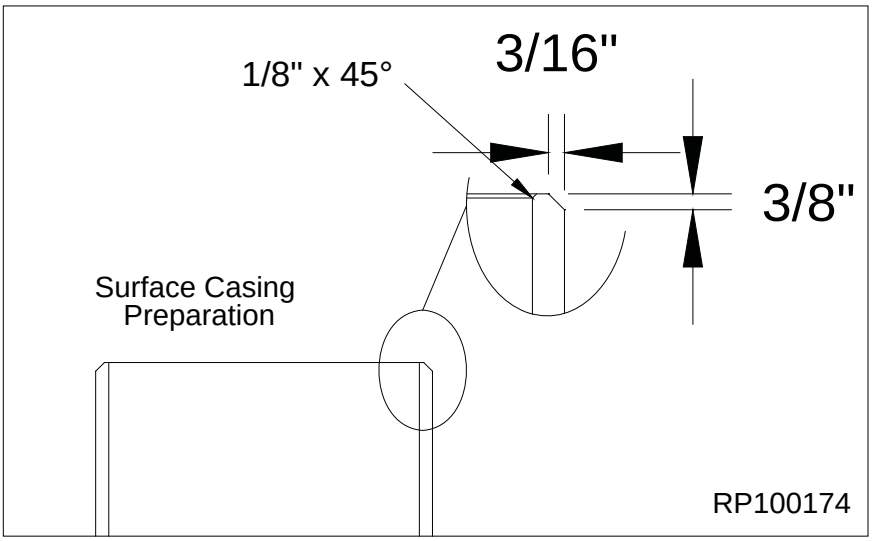
1. Examine the ***WFT Casing Head***. Verify the following:
   - bore is clean and free of debris
   - seal areas, threads and ring grooves are clean and undamaged
   - o-ring is properly installed, clean and undamaged
   - all peripheral equipment is intact and undamaged
2. Measure the pocket depth of the Casing Head and record this dimension.
3. Run the surface casing and cement as required.
4. Determine the required elevation of the Casing Head as required by the Drilling Supervisor.
5. Use the following calulation to determine the correct final cut location of the surface casing.

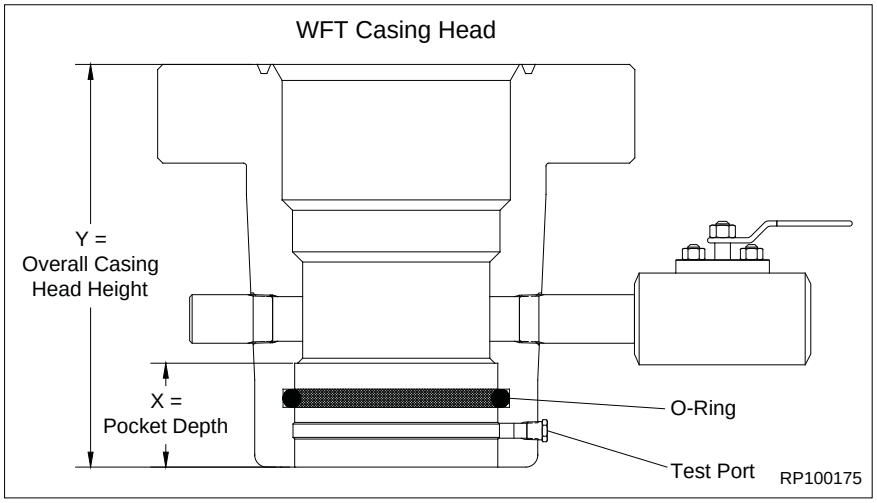
X = Pocket Depth

Y = Overall Casing Head Height

Y - X = Distance from correct elevation point to surface casing cutoff height.

6. Lift the riser assembly high enough to rough cut the surface casing a minimum of 12" above the anticipated final cut location, if applicable.
7. Remove the spent portion of surface casing and the riser assembly and set aside.
8. Determine the correct elevation for the wellhead assembly.
9. Rough cut the surface casing a minimum of 12" above the final cut location.
10. Cut the conductor pipe a comfortable level below the final cut location of the surface casing.





11. Final cut the surface casing at the correct elevation.

NOTE: Ensure the cut on the surface casing is level as this will determine the orientation of the remainder of the wellhead equipment.

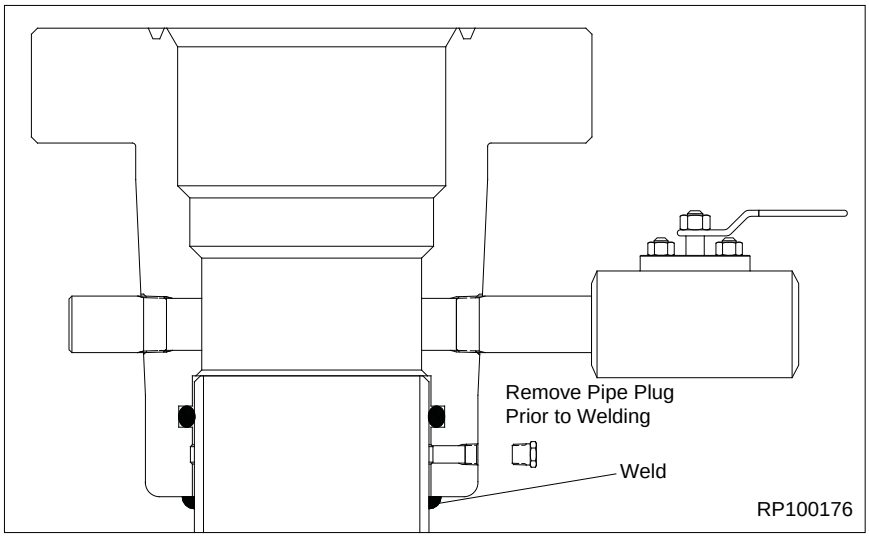
12. Bevel the surface casing with a 3/16" x 3/8" bevel and remove any sharp edges from the OD of the casing.
13. Break a 1/8" x 45° bevel on the ID of the surface casing.

Install the Casing Head

14. Wipe the ID of the o-ring of the Casing Head with a light coat of oil or grease.

NOTE: Excessive oil or grease will prevent a positive seal from forming.

15. Lower the Casing Head over the surface casing stub to a positive stop.
16. Remove the fitting from the test port and set aside.
17. Orient the Casing Head as per the Drilling Superintendents instructions ensuring the face of the Casing Head is level and two holed to the drilling rig substructure.
18. Weld and test the surface casing to the Casing Head as per the ***RECOMMENDED FIELD WELDING PROCEDURE*** located in the back of this manual.
19. Once all welding and testing is completed, replace the fitting into the open port and close the valve on the Casing Head.



Recommended Procedure for Field Welding Pipe to Wellhead Parts for Pressure Seal

1. **Introduction and Scope.** The following recommended procedure has been prepared with particular regard to attaining pressure-tight weld when attaching casing heads, flanges, etc., to casing. Although most of the high strength casing used (such as N-80) is not normally considered field weldable, some success may be obtained by using the following or similar procedures.

   Caution: In some wellheads, the seal weld is also a structural weld and can be subjected to high tensile stresses. Consideration must therefore be given by competent authority to the mechanical properties of the weld and its heat affected zone.

   a. The steels used in wellhead parts and in casing are high strength steels that are susceptible to cracking when welded. It is imperative that the finished weld and adjacent metal be free from cracks. The heat from welding also affects the mechanical properties. This is especially serious if the weld is subjected to service tension stresses.

   b. This procedure is offered only as a recommendation. The responsibility for welding lies with the user and results are largely governed by the welder's skill. Weldability of the several makes and grades of casing varies widely, thus placing added responsibility on the welder. Transporting a qualified welder to the job, rather than using a less-skilled man who may be at hand, will, in most cases, prove economical. The responsible operating representative should ascertain the welder's qualifications and, if necessary, assure himself by instruction or demonstration, that the welder is able to perform the work satisfactorily.

2. **Welding Conditions.** Unfavorable welding conditions must be avoided or minimized in every way possible, as even the most skilled welder cannot successfully weld steels that are susceptible to cracking under adverse working conditions, or when the work is rushed. Work above the welder on the drilling floor should be avoided> The weld should be protected from dripping mud, water, and oil and from wind, rain, or other adverse weather conditions. The drilling mud, water, or other fluids must be lowered in the casing and kept at a low level until the weld has properly cooled. It is the responsibility of the user to provide supervision that will assure favorable working conditions, adequate time, and the necessary cooperation of the rig personnel.

3. **Welding.** The welding should be done by the shielded metal-arc or other approved process.

4. **Filler Metal.** Filler Metals. For root pass, it's recommended to use E6010, E6011 (AC), E6019 or equivalent electrodes. The E7018 or E7018-A1 electrodes may also be used for root pass operations but has the tendency to trap slag in tight grooves. The E6010, E6011 and E6019 offer good penetration and weld deposit ductility with relatively high intrinsic hydrogen content. Since the E7018 and E7018-A1 are less susceptible to hydrogen induced cracking, it is recommended for use as the filler metal for completion of the weld groove after the root pass is completed. The E6010, E6011 (AC), E6019, E7018 and E7018-A1 are classified under one of the following codes AWS A5.1 (latest edition): Mild Steel covered electrodes or the AWS A5.5 (latest edition): Low Alloy Steel Covered Arc-Welding Electrodes. The low hydrogen electrodes, E7018 and E7018-A1, should not be exposed to the atmosphere until ready for use. It's recommended that hydrogen electrodes remain in their sealed containers. When a job arises, the container shall be opened and all unused remaining electrodes to be stored in heat electrode storage ovens. Low hydrogen electrodes exposed to the atmosphere, except water, for more than two hours should be dried 1 to 2 hours at 600ºF to 700 ºF (316ºC to 371 ºC) just before use. It's recommended for any low hydrogen electrode containing water on the surface should be scrapped.

5. **Preparation of Base Metal.** The area to be welded should be dry and free of any paint, grease/oil and dirt. All rust and heat-treat surface scale shall be ground to bright metal before welding.

6. **Preheating.** Prior to any heating, the wellhead member shall be inspected for the presence of any o-rings or other polymeric seals. If any o-rings or seals are identified then preheating requires close monitoring as noted in paragraph 6a. Before applying preheat, the fluid should be bailed out of the casing to a point several inches (>6" or 150 mm) below the weld joint/location. Preheat both the casing and wellhead member for a minimum distance of three (3) inches on each side of the weld joint using a suitable preheating torch in accordance with the temperatures shown below in a and b. The preheat temperature should be checked by the use of heat sensitive crayons. Special attention must be given to preheating the thick sections of wellhead parts to be welded, to insure uniform heating and expansion with respect to the relatively thin casing.

   a. Wellhead members containing o-rings and other polymeric seals have tight limits on the preheat and interpass temperatures. Those temperatures must be controlled at 200ºF to 325ºF or 93 ºC to 160ºC and closely monitored to prevent damage to the o-ring or seals.

   b. Wellhead members not containing o-rings and other polymeric seals should be maintained at a preheat and interpass temperature of 400ºF to 600ºF or 200ºC to 300ºC.

Recommended Procedure for Field Welding Pipe to Wellhead Parts for Pressure Seal (continued)

7. **Welding Technique.** Use a 1/8 or 5/32-inch (3.2 or 4.0 mm) E6010 or E7018 electrode and step weld the first bead (root pass); that, weld approximately 2 to 4 inches (50 to 100 mm) and then move diametrically opposite this point and weld 2 to 4 inches (50 to 100 mm) halfway between the first two welds, move diametrically opposite this weld, and so on until the first pass is completed. This second pass should be made with a 5/32-inch (4.0 mm) low hydrogen electrode of the proper strength and may be continuous. The balance of the welding groove may then be filled with continuous passes without back stepping or lacing, using a 3/16-inch (4.8 mm) low hydrogen electrode. All beads should be stringer beads with good penetration. There should be no undercutting and weld shall be workmanlike in appearance.

   a. Test ports should be open when welding is performed to prevent pressure buildup within the test cavity.

   b. During welding the temperature of the base metal on either side of the weld should be maintained at 200 to 300°F (93 to 149°C).

   c. Care should be taken to insure that the welding cable is properly grounded to the casing, but ground wire should not be welded to the casing or the wellhead. Ground wire should be firmly clamped to the casing, the wellhead, or fixed in position between pipe slips. Bad contact may cause sparking, with resultant hard spots beneath which incipient cracks may develop. The welding cable should not be grounded to the steel derrick, nor to the rotary-table base.

8. **Cleaning.** All slag or flux remaining on any welding bead should be removed before laying the next bead. This also applies to the completed weld.

9. **Defects.** Any cracks or blow holes that appear on any bead should be removed to sound metal by chipping or grinding before depositing the next bead.

10. **Postheating.** Post-heating should be performed at the temperatures shown below and held at that temperature for no less than one hour followed by a slow cooling. The post-heating temperature should be in accordance with the following paragraphs.

    a. Wellhead members containing o-rings and other polymeric seals have tight limits on the post-heating temperatures. Those temperatures must be controlled at 250ºF to 300ºF or 120 ºC to 150ºC and closely monitored to prevent damage to the o-ring or seals.

    b. Wellhead members not containing o-rings and other polymeric seals should be post-heated at a temperature of 400ºF to 600ºF or 200ºC to 300ºC.

11. **Cooling. Rapid cooling must be avoided.** To assure slow cooling, welds should be protected from extreme weather conditions (cold, rain, high winds, etc.) by the use of suitable insulating material. (Specially designed insulating blankets are available at many welding supply stores.) Particular attention should be given to maintaining uniform cooling of the thick sections of the wellhead parts and the relatively thin casing, as the relatively thin casing will pull away from the head or hanger if allowed to cool more rapidly. The welds should cool in air to less than 200°F (93°C) (measured with a heat sensitive crayon) prior to permitting the mud to rise in the casing.

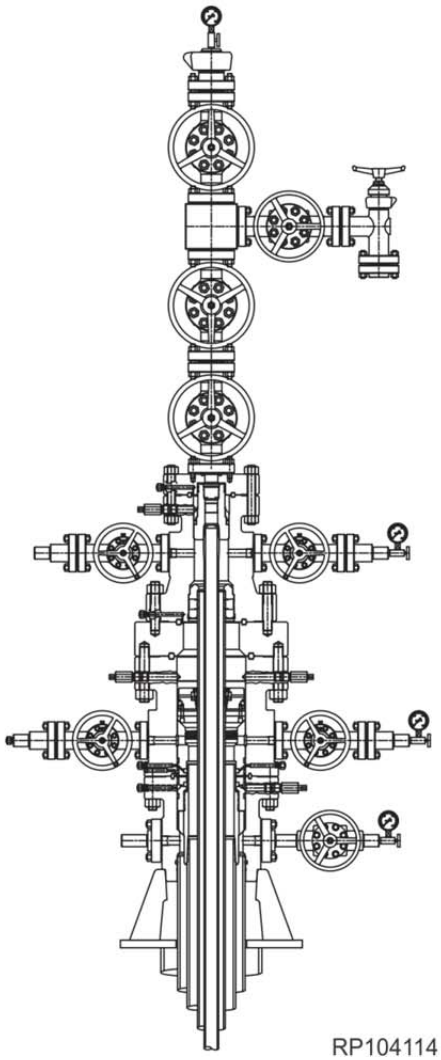
12. **Test the Weld.** After cooling, test the weld. The weld must be cool otherwise the test media will crack the weld. The test pressure should be no more than 80% of the casing collapse pressure.

Test Media	
Acceptable Medias	**Unacceptable Medias**
Water Water Soluable Oil Inert Gas •Nitrogen •Argon Gas	Oxygen Acetylene Hydraulic Oil Motor Oil Brake Fluid

Weatherford®

Wellhead Field Service Manual

WFT-SB Wellhead System Running Procedure



RP104114

Publication: SM-11-1

Release Date: December 2014

Weatherford	Field Service Manual	Prepared By:	Reviewed By:	Approved By:	SM-11-1
		Marion Robertson	Bruce Ross	Manuel Zaragoza	Rev WIP
		Marion Robertson	Bruce Ross	Manuel Zaragoza	Page 1 of 24
5-3-GL-GL-WES-00XXX		Dec 2014	Dec 2014	Dec 2014	

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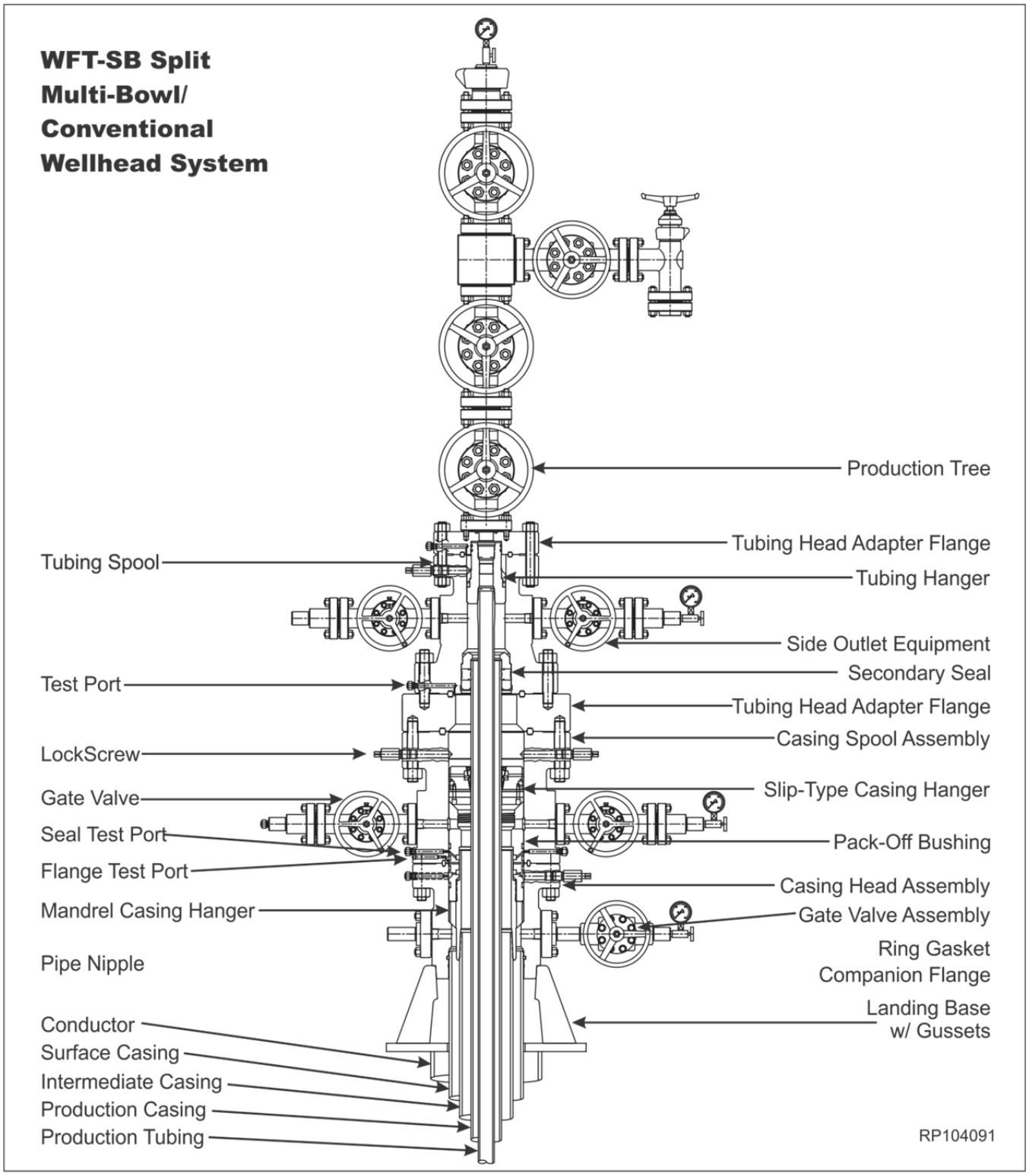
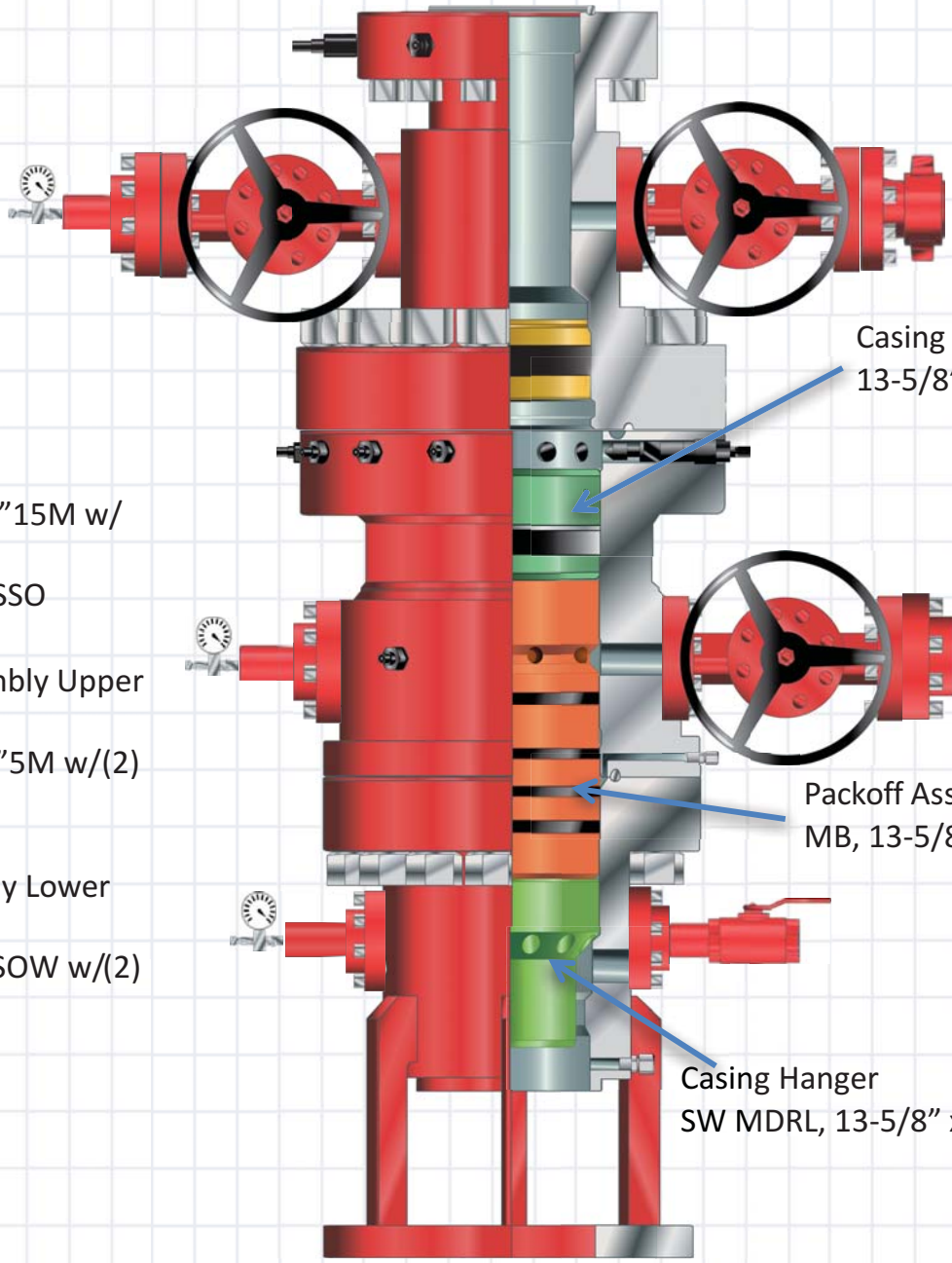

WFT-SB Split
Multi-Bowl/
Conventional
Wellhead System
Production Tree
Tubing Head Adapter Flange
Tubing Spool
Tubing Hanger
Side Outlet Equipment
Secondary Seal
Test Port
Tubing Head Adapter Flange
Casing Spool Assembly
LockScrew
Slip-Type Casing Hanger
Gate Valve
Seal Test Port
Pack-Off Bushing
Flange Test Port
Casing Head Assembly
Mandrel Casing Hanger
Gate Valve Assembly
Ring Gasket
Pipe Nipple
Companion Flange
Landing Base
w/ Gussets
Conductor
Surface Casing
Intermediate Casing
Production Casing
Production Tubing
RP104091

10-3/4" x 7-5/8" x 5-1/2" WH



TubingHead
SW-TCM
13-5/8”10M x 7-1/16”15M w/
5-1/2” PP Seal
w/ (2) 1-13/16”15M SSO

SW-MB Spool Assembly Upper
MBH
13-5/8”10Mx 13-5/8”5M w/(2)
1-13/16" 10MSSO

CasingHead Assembly Lower
MBH
13-5/8”5Mx 10-3/4”SOW w/(2)
2-1/16”5MSSO

SUECO WELLHEAD

McClinton Energy GROUP

APD ID: 10400040353 **Submission Date:** 03/27/2019

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL **Well Number:** 21H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

06/25/2020

APD ID: 10400040353

Submission Date: 03/27/2019

Operator Name: BTA OIL PRODUCERS LLC

Well Name: VACA DRAW 9418 10 FEDERAL

Well Number: 21H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001711

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

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

OCD – HOBBS
06/25/2020
RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-47392	98180	WC-025 G-09 S253309P; UPR WOLFCAMP

Property Code	Property Name	Well Number
317432]	VACA DRAW 9418 10 FEDERAL	21H

OGRID No.	Operator Name	Elevation
260297	BTA OIL PRODUCERS, LLC	3388'

Surface Location

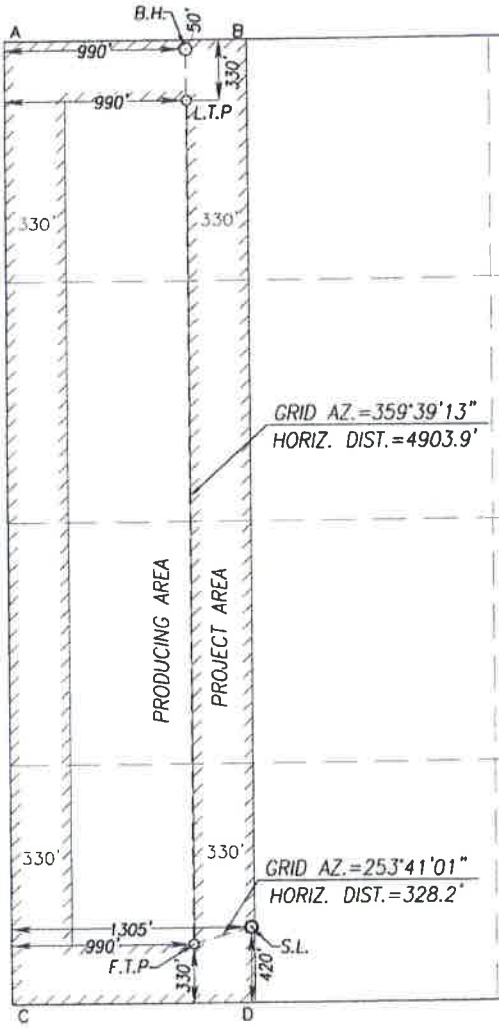
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	10	25-S	33-E		420	SOUTH	1305	WEST	LEA

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
D	10	25-S	33-E		50	NORTH	990	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



BOTTOM HOLE LOCATION
NAD 83 NME
Y= 419952.2 N
X= 778946.0 E
LAT.=32.152198° N
LONG.=103.565564° W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 419894.1 N
X= 7371760.5 E
LAT.=32.152073° N
LONG.=103.565090° W

LAST TAKE POINT
NAD 83 NME
Y= 419672.2 N
X= 778947.7 E
LAT.=32.151428° N
LONG.=103.565565° W

LAST TAKE POINT
NAD 27 NME
Y= 419614.1 N
X= 737762.2 E
LAT.=32.151304° N
LONG.=103.565091° W

CORNER COORDINATES TABLE
NAD 27 NME
A – Y= 419937.5 N, X= 736770.5 E
B – Y= 419946.2 N, X= 738093.6 E
C – Y= 414656.6 N, X= 736802.4 E
D – Y= 414662.9 N, X= 738127.1 E

CORNER COORDINATES TABLE
NAD 83 NME
A – Y= 419995.6 N, X= 777956.0 E
B – Y= 420004.3 N, X= 779279.1 E
C – Y= 414714.6 N, X= 777988.1 E
D – Y= 414720.9 N, X= 779312.8 E

FIRST TAKE POINT
NAD 83 NME
Y= 415049.2 N
X= 778975.7 E
LAT.=32.138721° N
LONG.=103.565581° W

FIRST TAKE POINT
NAD 27 NME
Y= 414991.2 N
X= 737789.9 E
LAT.=32.138596° N
LONG.=103.565108° W

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 415141.4 N
X= 779290.6 E
LAT.=32.138968° N
LONG.=103.564561° W

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 415083.4 N
X= 738104.8 E
LAT.=32.138843° N
LONG.=103.564089° W

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 — Date: 3-14-19

Sammy Hajar
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.

MAY 1, 2018
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL LAND SURVEYOR

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

ACK — JWSC W.O.: 18.11.0530

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

OCD – HOBBS
06/25/2020
RECEIVED

GAS CAPTURE PLAN

Date: 3/14/19

☒ Original
☐ Amended - Reason for Amendment: _____

Operator & OGRID No.: 260297

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
	30-025-47392					
Vaca Draw 9418		Sec 10; 25-S	420 FSL 1305 FWL	100	Flared	Battery Connected
10 Federal 21H		33E				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 (ETP) low/high pressure gathering system located in LEA County, New Mexico. It will require 0 ' of pipeline to 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