Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
JUL 03 2019
RECEIVED

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMLC062269A

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
GHOST RIDER 22-15 FEDERAL COM 201H

2. Name of Operator
APACHE CORPORATION
Contact: SORINA L FLORES
E-Mail: sorina.flores@apachecorp.com

9. API Well No.
30-025-45645-00-X1

3a. Address
303 VETERANS AIRPARK LANE SUITE 3000
MIDLAND, TX 79705

3b. Phone No. (include area code)
Ph: 432.818.1167
Fx: 432.818.1167

10. Field and Pool or Exploratory Area
WILDCAT BONE SPRING

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 22 T24S R32E SESE 400FSL 676FEL
32.196918 N Lat, 103.656166 W Lon

11. County or Parish, State
LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

NMB000736

Apache request the following changes to csg:

OLD: Surf csg- 13-3/8" J55 48# STC, Collapse: 2.78, Burst: 1.7, Body tensile safety factor: 4.02, Joint tensile safety factor: 2.35
NEW: Surf csg - 13-3/8" J55 54.5# BTC, Collapse: 4.45, Burst: 1.7, Body tensile safety factor: 4.34, Joint tensile safety factor: 4.64

OLD: Interm csg - 0-4898' TVD/MD, Collapse: 1.83, Burst: 1.91, Body tensile safety factor: 2.17, Joint tensile safety factor: 1.8
NEW: Interm csg - 0-4800' TVD/MD, Collapse: 1.99, Burst: 1.93,

SEE ATTACHED FOR CONDITIONS OF APPROVAL
Carlsbad Field Office
OCD Hobbs

All Previous COAs Still Apply Except For the Following:

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #466050 verified by the BLM Well Information System
For APACHE CORPORATION, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/21/2019 (19PP1976SE)

Name *(Printed/Typed)* SORINA L FLORES — Title SUPV DRLG SERVICES

Signature (Electronic Submission) — Date 05/20/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JEROMY PORTER — Title PETROLEUM ENGINEER — Date 06/05/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Hobbs

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #466050 that would not fit on the form

32. Additional remarks, continued

Body tensile safety factor: 2.18, Joint tensile safety factor: 1.81

Apache request the following changes to cmt:

OLD: Interm single stage: Lead: 0-3912', 739sx Cl C w/5% Salt, 4% gel,0.1% anti-settling, 0.4#/sk defoamer(2.05yld,12.5ppg,1514.95cu/ft); Tail: 3912-4890', 300sx Cl C w/0.3% retarder(1.33yld,14.8ppg,399cu/ft)

Interm 2 stage cmt job 1st stage: Lead: 2280-3912' 367sx Cl C w/5% Salt, 4% gel, 0.1% anti-settling, 0.4#/sk defoamer(2.05yld, 12.5ppg,752.35 cu/ft) Tail: 3912-4890' w/300sx Cl C w/0.3% retarder(1.33yld,14.8ppg,399cu/ft), Stage tool/ECP 2280', 2nd Stage Lead: 0-1600', 298sx Cl C w/5% salt, 4% gel, 0.1% anti-settling,0.4#/sk defoamer(2.05yld,12.5ppg,610.9cu/ft)) Tail: 1600-2280', 200sx Cl C w/0.3% retarder(1.33yld,14.8ppg,266cu/ft)

NEW: Interm1 csg - 0-3840', 645sx Cl C w/10% CaCl2, 6% gel, 1% MgOx-M, 0.55% retarder(2.32yld,12.7ppg,1496.4cu/ft); Tail: 3840-4800 w/300sx Cl C w/0.3% retarder (1.33yld,14.8ppg,399cu/ft)

Interm 2 stage cmt job 1st stage: Lead: 2280-3840' w/315sx Cl C w/10% CaCl2, 6% gel, 1% MgOx-M, 0.55% retarder (2.32yld,12.7ppg,730.8cu/ft) Tail: 3840-4800' w/300sx Cl C w/0.3% retarder (1.33yld, 14.8ppg,399cu/ft), Stage tool/ECP: 2280', 2nd Stage Lead: 0-1600', 265sx Cl C w/5% salt,4% gel, 0.1% anti-settling, 0.4#/sk defoamer(2.32yld,12.7ppg,614.8cu/ft); Tail: 1600-2280' w/200sx Cl C w/0.3% retarder (1.33yld,14.8ppg,266cu/ft)

OLD: Prod LEAD1: 4690-10062', 515sx TXI lite w/3M beads, 0.5% HP fluid loss, 0.4% anti-settling, 0.35% retarder(3.15yld,10.2ppg,1622.25cu/ft)TAIL: 10062.88-18155' w/1586sx TXI Lite w/0.3% fluid loss, 0.2% retarder (1.42yld, 13.2ppg, 2252.12cu/ft)

NEW: Prod LEAD1: 4600-7500' w/235sx TXI lite w/5% Cacl2, 12% 3M beads,22%3M beads,0.2% fluid loss, 0.1% suspension aid, 0.4% retarder (3.71yld, 9ppg, 871.85cu/ft); LEAD2- 7500-10062', 3101sx TXI lite w/3% CaCl2,1%MgOx-M, 0.15% fluid loss, 0.15% suspension aid, 0.4% retarder(2.54yld,11ppg,787.4cu/ft); TAIL:10062-18155',1545sx w/1.3%CaCl2, 5% MgOx-H, 0.5% fluid loss, 0.1% anti-settling, 0.3% retarder, 0.2% dispersant, 0.4% defoamer (1.46yld, 13.2ppg, 2255.7cu/ft)

Revisions to Operator-Submitted EC Data for Sundry Notice #466050

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMLC062269A	NMLC062269A
Agreement:		
Operator:	APACHE CORPORATION 303 VETERANS AIRPARK LN #1000 MIDLAND, TX 79705 Ph: 432-818-1167	APACHE CORPORATION 303 VETERANS AIRPARK LANE SUITE 3000 MIDLAND, TX 79705 Ph: 432.818.1000 Fx: 432-818-1190
Admin Contact:	SORINA L FLORES SUBMITTING CONTACT E-Mail: sorina.flores@apachecorp.com Ph: 432-818-1167	SORINA L FLORES SUPV DRLG SERVICES E-Mail: sorina.flores@apachecorp.com Ph: 432.818.1167 Fx: 432.818.1167
Tech Contact:	SORINA L FLORES SUBMITTING CONTACT E-Mail: sorina.flores@apachecorp.com Ph: 432-818-1167	SORINA L FLORES SUPV DRLG SERVICES E-Mail: sorina.flores@apachecorp.com Ph: 432.818.1167 Fx: 432.818.1167
Location: State: County:	 NM LEA	 NM LEA
Field/Pool:	TRISTE DRAW; BONESPRING	WILDCAT BONE SPRING
Well/Facility:	GHOST RIDER 22 15 FEDERAL COM 201H Sec 22 T24S R32E Mer NMP SESE 400FSL 676FEL 32.196918 N Lat, 103.656162 W Lon	GHOST RIDER 22-15 FEDERAL COM 201H Sec 22 T24S R32E SESE 400FSL 676FEL 32.196918 N Lat, 103.656166 W Lon

Tail:

Top MD of Segment: [redacted] 3912

Btm MD of Segment: [redacted] 4890

Cmt Type: C

Cmt Additives: 0.3% Retarder

Quantity (sks): 300
Yield (cu/ft/sk): 1.33
Density (lbs/gal): 14.8
Volume (cu/ft): 399
Percent OH Excess: 25%

2 Stage Cement Job

*** DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with 500psi comp strength time for cmt will be onsite for review.**

***If lost circulation is encountered, Apache may 2-stage Interm csg. A DVT may be used in the 9-5/8" csg & ECP may be placed below DVT.**

1st Stage

Lead:

Top MD of Segment: 2280

Btm MD of Segment: [redacted] 3912

Cmt Type: [redacted]

Cmt Additives: 5% Salt + 4% Gel + 0.1% Anti-Settling + 0.4#/sk Defoamer

Quantity (sks): [redacted] 367
Yield (cu/ft/sk): 2.05
Density (lbs/gal): 12.5
Volume (cu/ft): [redacted] 752.35
Percent OH Excess: 25%

Tail:

Top MD of Segment: [redacted] 3912

Btm MD of Segment: [redacted] 4890

Cmt Type: [redacted]

Cmt Additives: 0.3% Retarder

Quantity (sks): 300
Yield (cu/ft/sk): 1.33
Density (lbs/gal): 14.8
Volume (cu/ft): 399
Percent OH Excess: 25%

Stage Tool / ECP Depth: [redacted]

2nd Stage

Lead:

Top MD of Segment: 0

Btm MD of Segment: 1600

Cmt Type: C

Cmt Additives: 5% Salt + 4% Gel + 0.1% Anti-Settling + 0.4#/sk Defoamer [redacted]

Quantity (sks): [redacted] 298

Yield (cu/ft/sk): 2.05 Volume (cu/ft): [redacted] 610.9

Density (lbs/gal): 12.5 Percent OH Excess: 25%

Tail:

Top MD of Segment: [redacted]

Btm MD of Segment: [redacted]

Cmt Type: C

Cmt Additives: 0.3% Retarder

Quantity (sks): 200

Yield (cu/ft/sk): 1.33 Volume (cu/ft): 266

Density (lbs/gal): 14.8 Percent OH Excess: 25%

CEMENT: PRODUCTION - NEW 200' of tieback into intermediate string

Single Stage

Lead 1:

Top MD of Segment: [redacted]

Btm MD of Segment: [redacted]

Cmt Type: TXI Lite

Cmt Additives: [redacted]

Quantity (sks): [redacted]

Yield (cu/ft/sk): Volume (cu/ft): [redacted]

Density (lbs/gal): Percent OH Excess: 20%

Lead 2:

Top MD of Segment: [redacted]

Btm MD of Segment: [redacted]

Cmt Type: TXI Lite

Cmt Additives: [redacted]

Quantity (sks): [redacted]

Yield (cu/ft/sk): [redacted]

Density (lbs/gal): [redacted]

Volume (cu/ft): [redacted]

Percent OH Excess: 20%

Tail:

Top MD of Segment: [redacted]

Btm MD of Segment: [redacted]

Cmt Type: TXI Lite

Cmt Additives: [redacted]

Quantity (sks): [redacted]

Yield (cu/ft/sk): [redacted]

Density (lbs/gal): [redacted]

Volume (cu/ft): [redacted]

Percent OH Excess: 20%

CEMENT: PRODUCTION - OLD 200' of tieback into intermediate string

Single Stage

Lead:

Top MD of Segment: 4690

Btm MD of Segment: 10062.88

Cmt Type: TXI Lite

Cmt Additives: 3M Beads + 0.5% HP Fluid Loss + 0.4% Anti-Settling Agent + 0.35% Retarder

Quantity (sks): 515

Yield (cu/ft/sk): 3.15

Density (lbs/gal): 10.2

Volume (cu/ft): 1622.25

Percent OH Excess: 20%

Tail:

Top MD of Segment: 10062.88

Btm MD of Segment: 18155.52

Cmt Type: TXI Lite

Cmt Additives: 0.3% Fluid Loss + 0.2% Retarder

Quantity (sks):	1586		
Yield (cu/ft/sk):	1.42	Volume (cu/ft):	2252.12
Density (lbs/gal):	13.2	Percent OH Excess:	20%

GHOST RIDER 22-15 FED COM 201H - CMT PLAN- REVISED 5/20/2019
NEW highlighted in YELLOW; Old in Gray

CEMENT: SURFACE

Stage Tool Depth: N/A

Single Stage

Lead:

Top MD of Segment:	0	Btm MD of Segment:	800
Cmt Type:	C	Cmt Additives:	4% Bentonite + 1% CaCl2
Quantity (sks):	410		
Yield (cu/ft/sk):	1.75	Volume (cu/ft):	717.5
Density (lbs/gal):	13.5	Percent OH Excess:	25%

Tail:

Top MD of Segment:	800	Btm MD of Segment:	1100
Cmt Type:	C	Cmt Additives:	1% CaCl2
Quantity (sks):	226		
Yield (cu/ft/sk):	1.33	Volume (cu/ft):	300.58
Density (lbs/gal):	14.8	Percent OH Excess:	25%

CEMENT: INTERMEDIATE

Single Stage

Lead:

Top MD of Segment:	0	Btm MD of Segment:	3912
Cmt Type:	C	Cmt Additives:	5% Salt + 4% Bentonite + 0.1% Anti-Settling + 0.4#/sk Defoamer
Quantity (sks):	[redacted]	739	
Yield (cu/ft/sk):	[redacted]	2.05 Volume (cu/ft):	[redacted] 1514.95
Density (lbs/gal):	[redacted]	12.5 Percent OH Excess:	25%

GHOST RIDER 22-15 FED COM 201H - CSG PLAN - REVISED 5/20/2019
NEW highlighted in YELLOW; Old in Gray

String: **SURFACE**

Hole Size: 17.5

Top Setting Depth (MD):	0	Top Setting Depth (TVD):	0	Btm setting depth (MD):	1100	Btm setting depth (TVD):	1100

Size:	13-3/8"	Grade:	J-55	Weight (lbs/ft):	48	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	STC

Condition (New/Used): New Standard (API/Non-API): API

Tapered String (Y/N)?: N
If yes, need spec attachment

Safety Factors

Collapse Design Safety Factor: 2.78 Burst Design Safety Factor: 1.48

Body Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Body Tensile Design Safety Factor: 4.02

Joint Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Joint Tensile Design Safety Factor: 2.35

String: **INTERMEDIATE**

Hole Size: 12.25

Top Setting Depth (MD):	0	Top Setting Depth (TVD):	0	Btm setting depth (MD):	4890	Btm setting depth (TVD):	4890

Size:	9-5/8"	Grade:	J-55	Weight (lbs/ft):	40	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	LTC

Condition (New/Used): New Standard (API/Non-API): API

Tapered String (Y/N)?: N
If yes, need spec attachment

Safety Factors

Collapse Design Safety Factor: 1.83 Burst Design Safety Factor: 1.91

Body Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Body Tensile Design Safety Factor: [redacted] 2.17

Joint Tensile Design Safety Factor type?: Dry/Buoyant Buoyant
Joint Tensile Design Safety Factor: [redacted] 1.8

String: PRODUCTION

Hole Size: 8.75

Top Setting Depth (MD):	0	Top Setting Depth (TVD):	0	Btm setting depth (MD):	10816	Btm setting depth (TVD):	10508

Size:	5-1/2"	Grade:	P-110	Weight (lbs/ft):	17	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	BTC

Condition (New/Used): New Standard (API/Non-API): API

Hole Size: 8.5

Top Setting Depth (MD):	10816	Top Setting Depth (TVD):	10508	Btm setting depth (MD):	18155	Btm setting depth (TVD):	10437

Size:	5-1/2"	Grade:	P-110	Weight (lbs/ft):	17	Joint (Butt,FJ, LTC,STC, SLH, N/A, Other):	BTC

Condition (New/Used): **New** Standard (API/Non-API): **API**

Safety Factors

Collapse Design Safety Factor: **1.47** Burst Design Safety Factor: **1.25**

Body Tensile Design Safety Factor type?: Dry/Buoyant **Buoyant**
Body Tensile Design Safety Factor: **2.08**

Joint Tensile Design Safety Factor type?: Dry/Buoyant **Buoyant**
Joint Tensile Design Safety Factor: **2.19**

Tapered String (Y/N)?: **N**
If yes, need spec attachment

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**APACHE CORPORATION**
LEASE NO.:	**NMLC062269A**
WELL NAME & NO.:	**GHOST RIDER 22-15 FEDERAL COM 201H**
SURFACE HOLE FOOTAGE:	**400'/S & 676'/E**
BOTTOM HOLE FOOTAGE	**2589'/S & 330'/E**
LOCATION:	**SECTION 22, T24S, R32E, NMP**
COUNTY:	**LEA**

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All Previous COAs Still Apply, Except for the Following:

A. CASING

1. The **13 3/8"** surface casing shall be set at approximately **1,070 feet** (a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
   a. **If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after completing the cement job.
   b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
   c. If cement falls back, remedial cementing will be done prior to drilling out that string.
   d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

Intermediate casing must be kept at least 50% fluid filled to meet BLM minimum Collapse Requirement.

2. The minimum required fill of cement behind the **9 5/8"** intermediate casing is:

Option 1 (Single Stage)

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess cement calculates to 20%, additional cement might be required.**

Option 2 (DV Tool)

Operator has proposed DV tool at depth of **2,280** feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

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"** production casing is:

    - Cement should tie-back at least **200** feet into previous string. Operator shall provide method of verification. **Excess cement calculates to 6%, additional cement might be required.**

B. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

C. SPECIAL REQUIREMENT(S)

Communitization Agreement

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

JJP06052019

GENERAL REQUIREMENTS

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

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

   ☒ Chaves and Roosevelt Counties
   Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
   During office hours call (575) 627-0272.
   After office hours call (575)

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 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 (one log per well pad is acceptable) 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. 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.

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. The results of the test shall be reported to the appropriate BLM office.

   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. 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.

f. 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. This test shall be performed prior to the test at full stack pressure.

g. 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

1. 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.

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