

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
OCD ArtesiaFORM 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**

| | | |
|--|---|--|
| 1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other | | 5. Lease Serial No. NMNM113962 |
| 2. Name of Operator APACHE CORPORATION | | 6. If Indian, Allottee or Tribe Name |
| Contact: SORINA FLORES E-Mail: sorina.flores@apachecorp.com | | 7. If Unit or CA/Agreement, Name and/or No. |
| 3a. Address 303 VETERANS AIRPARK LANE SUITE 3000 MIDLAND, TX 79705 | 3b. Phone No. (include area code) Ph: 432.818.1167 | 8. Well Name and No. SALT FORK 3 4 FEDERAL COM 2H |
| 4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 3 T19S R30E NESW 2305FSL 2270FWL | | 9. API Well No. 30-015-43666-00-X1 |
| | | 10. Field and Pool or Exploratory Area LEO |
| | | 11. County or Parish, State EDDY COUNTY, NM |

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|--|---|---|--|---|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize | <input type="checkbox"/> Deepen | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Subsequent Report | <input type="checkbox"/> Alter Casing | <input type="checkbox"/> Hydraulic Fracturing | <input type="checkbox"/> Reclamation | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Final Abandonment Notice | <input type="checkbox"/> Casing Repair | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete | <input checked="" type="checkbox"/> Other |
| | <input type="checkbox"/> Change Plans | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon | Drilling Operations |
| | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back | <input type="checkbox"/> 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 recompleat 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.

BLM-CO-1463 NATIONWIDE; NMB000736

Apache respectfully request approval to modify single stage option for prod cmt job. This option will request to pmp scavenger cmt slurry ahead of lead slurry to aid in removal of OBM & contribute to better cmt bond with csg/open hole. Lead slurry volume will be calc to circ to surf. All scavenger slurry is planned to circ out. Apache also respectfully request approval to add an add'l contingency option for prod csg cmt procedure. This option will allow for 2-stage cmt job utilizing DVT - ECP may be placed below DVT. DVT shall be set minimum of 50' below previous csg shoe & minimum of 200' above current shoe. Cmt will be adjusted proportionately based on placement. Please see following update to cmt details for modification to single stage prod cmt job & contingency 2-stage cmt job:

Accepted for record - NMOCD
8-8-17SEE ATTACHED FOR
CONDITIONS OF APPROVALNM OIL CONSERVATION
ARTESIA DISTRICT

| | | | | | |
|--|--|---|--|-----------------|--|
| 14. I hereby certify that the foregoing is true and correct. | | Electronic Submission #383524 verified by the BLM Well Information System For APACHE CORPORATION, sent to the Carlsbad Committed to AFMSS for processing by ZOTA STEVENS on 08/03/2017 (17ZS0005SE) | | AUG 07 2017 | |
| Name (Printed/Typed) SORINA FLORES | | Title SUBMITTING CONTACT | | RECEIVED | |
| Signature (Electronic Submission) | | Date 08/02/2017 | | APPROVED | |
| THIS SPACE FOR FEDERAL OR STATE OFFICE USE | | | | | |
| Approved By (BLM Approver Not Specified) | | Title | | AUG - 2 2017 | |
| 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 Carlsbad | | Date 08/03/2017 | |
| 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 #383524 that would not fit on the form

32. Additional remarks, continued

Prod Casing:

Apache plans to cmt to surf regardless of whether a single stage or 2-stage procedure is implemented.

Old Prod Csg Single Stage Cmt Job:

(20% excess on lead & 20% excess on tail to design for cmt top @ 3450')

Lead: 270sx 50/50 Poz:H, 10% gel, 5% salt(11.9# 2.32yld, 13.08gal/sk)

(12 hr-47 psi; 24 hr-284 psi 500# comp strength hrs: 72)

Tail: 1687sx TXI light w/0.3% fluid loss, 0.2% retarder

(12.8# 1.44yld 7.56gal/sk)

(12 hr-28 psi; 24 hr-1193 psi 500# comp strength hrs: 18)

New Prod Csg Single Stage Cmt Job Modification:

(20% excess on lead & 20% excess on tail to design for lead cmt top at surf)

Scavenger: 100sx 50/50 Poz:H, 10% gel, 0.25% CR-150(11.0# 2.98yld 18.3gal/sk)

(12 hr-1 psi; 24 hr-16 ps 41 hr comp strength: 50 psi)

Lead: 504sx 50/50 Poz:H, 10% gel, 5% salt(11.9# 2.32yld 13.08gal/sx)

(12 hr-47 psi; 24 hr-284 psi 500# comp strength hrs: 72)

Tail: 1687sx TXI light w/0.3% fluid loss, 0.2% retarder(12.8# 1.44yld

7.56gal/sx) (12 hr-28 psi; 24hr-1193 psi 500# comp strength hrs: 18)

New Contingency Prod Csg 2- Stage Cmt Job:

(20% excess on lead & 20% excess on tail for both stages to design for cmt top at surf)

DVT set @ 7200'; If the setting depth changes, cmt volumes will be adjusted proportionately.

Stage 1:

Tail: 1659sx TXI light w/0.3% fluid loss, 0.2% retarder (12.8# 1.44yld

7.56gal/sx) (12 hr-28 psi; 1193 psi 500# comp strength hrs: 18)

Stage 2

Lead: 471sx 50/50 Poz:H, 10% gel, 5% salt (11.9# 2.32yld 13.08gal/sx)

(12 hr-47 psi; 24 hr-284 psi 500# comp strength hrs: 72)

Tail: 100sx Class H w/1.00% FL62, 0.30% FL52, 0.40% CD32, 0.75% EC1, 0.25%

SMS, 0.005 #/sk Static Free, 0.005 gps FP6L (15.6# 1.2yld 5.207 gal/sk)

(12 hr-1533 psi; 24 hr-2041 psi 500# comp strength hrs: 5.3)

PECOS DISTRICT CONDITIONS OF APPROVAL

| | |
|-----------------------|-----------------------------------|
| OPERATOR'S NAME: | Apache Corporation |
| LEASE NO.: | NMNM113962 |
| WELL NAME & NO.: | Salt Fork 3 4 Federal Com 2H |
| SURFACE HOLE FOOTAGE: | 2305'/S & 2270'/W |
| BOTTOM HOLE FOOTAGE: | 660'/S & 330'/W |
| LOCATION: | Section 3, T.19 S., R.30 E., NMPM |
| COUNTY: | Eddy County, New Mexico |

All previous COAs still apply except the following:

A. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.**

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.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

HIGH CAVE/ KARST AREA: A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS.

THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

ON A THREE STRING DESIGN: IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

Risks:

Possibility of water flows in the Salado and in the Artesia Group.

Possibility of lost circulation in the Artesia Group.

Secretary Potash.

1. The 13-3/8 inch surface casing shall be set at approximately 415 feet (in a competent bed of an anhydrite zone, and if salt is encountered, set casing at least 25 feet 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 is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

Option 1:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/ karst and potash.**

Option 2:

Operator has proposed DV tool at depth of 1200 feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 19% - Additional cement may be required.**

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

Option 1:

- ☒ Cement to surface. If cement does not circulate see A.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/ karst and potash.**

Option 2:

Operator has proposed DV tool at depth of 7200 feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

c. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

d. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. 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.
5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

ZS 08032017

PECOS DISTRICT CONDITIONS OF APPROVAL

| | |
|-----------------------|-----------------------------------|
| OPERATOR'S NAME: | Apache Corporation |
| LEASE NO.: | NMNM113962 |
| WELL NAME & NO.: | Salt Fork 3 4 Federal Com 2H |
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Secretary Potash.

1. The **13-3/8** inch surface casing shall be set at approximately 415 feet (in a competent bed of an anhydrite zone, and if salt is encountered, set casing at least 25 feet 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 is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9/5/8** inch intermediate casing is:

Option 1:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/ karst and potash.**

Option 2:

Operator has proposed DV tool at depth of 1200 feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 19% - Additional cement may be required.**

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

Option 1:

- ☒ Cement to surface. If cement does not circulate see A.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/ karst and potash.**

Option 2:

Operator has proposed DV tool at depth of 7200 feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

c. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

d. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. 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.
5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

ZS 08032017

R-111-P Section: 3 strings circ, a casing seal test of 600psi(hydr) for the surface and 1000 for intermediate, <100psi drop in 30min. In a Lesser Prairie-Chicken section.

| 13 3/8 | surface csg in a | 17 1/2 | inch hole. | <u>Design Factors</u> | | | | SURFACE | |
|--|------------------|---------|------------|-----------------------|----------|--------------|---------|---------|-----------|
| Segment | #/ft | Grade | Coupling | Joint | Collapse | Burst | Length | Weight | |
| "A" | 48.00 | H 40 | ST&C | 16.16 | 4.15 | 0.8 | 415 | 19,920 | |
| "B" | | | | | | | 0 | 0 | |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 1,030 | | | | Tail Cmt | does | circ to sfc. | Totals: | 415 | 19,920 |
| <u>Comparison of Proposed to Minimum Required Cement Volumes</u> | | | | | | | | | |
| Hole | Annular | 1 Stage | 1 Stage | Min | 1 Stage | Drilling | Calc | Req'd | Min Dist |
| Size | Volume | Cmt Sx | CuFt Cmt | Cu Ft | % Excess | Mud Wt | MASP | BOPE | Hole-Cplg |
| 17 1/2 | 0.6946 | 370 | 492 | 343 | 43 | 8.60 | 1286 | 2M | 1.56 |

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

| 9 5/8 | casing inside the | 13 3/8 | <u>Design Factors</u> | | | | INTERMEDIATE | | |
|---|-------------------|---------|-----------------------|-------|----------------------|----------|------------------|---------------|-----------------|
| Segment | #/ft | Grade | Coupling | Joint | Collapse | Burst | Length | Weight | |
| "A" | 36.00 | J 55 | LT&C | 3.19 | 0.94 | 0.84 | 3,950 | 142,200 | |
| "B" | | | | | | | 0 | 0 | |
| w/8.4#/g mud, 30min Sfc Csg Test psig: | | | | | | | Totals: | 3,950 | 142,200 |
| The cement volume(s) are intended to achieve a top of | | | | 0 | ft from surface or a | | 415 | overlap. | |
| Hole | Annular | 1 Stage | 1 Stage | Min | 1 Stage | Drilling | Calc | Req'd | Min Dist |
| Size | Volume | Cmt Sx | CuFt Cmt | Cu Ft | % Excess | Mud Wt | MASP | BOPE | Hole-Cplg |
| 12 1/4 | 0.3132 | 920 | 1562 | 1282 | 22 | 10.50 | 2310 | 3M | 0.81 |
| Setting Depths for D V Tool(s): | | | | 1820 | | | <u>sum of sx</u> | <u>Σ CuFt</u> | <u>Σ%excess</u> |
| excess cmt by stage % : | | | | 25 | 20 | | 980 | 1576 | 23 |

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.89, b, c, d All > 0.70, OK.

| 7 x 5-1/2 | casing inside the | 9 5/8 | <u>Design Factors</u> | | | | PRODUCTION | | |
|---|-------------------|---------|-----------------------|-------|----------------------|---------------------------------|------------------|---------------|-----------------|
| Segment | #/ft | Grade | Coupling | Body | Collapse | Burst | Length | Weight | |
| "A" | 26.00 | P 110 | BUTT | 3.86 | 1.58 | 2.39 | 7,960 | 206,960 | |
| "B" | 17.00 | P 110 | BUTT | 2.63 | 1.61 | 2.55 | 970 | 16,490 | |
| "C" | 17.00 | P 110 | BUTT | ∞ | 1.79 | 2.55 | 7,089 | 120,510 | |
| "D" | | | | | | | 0 | 0 | |
| w/8.4#/g mud, 30min Sfc Csg Test psig: 1,751 | | | | | | | Totals: | 16,019 | 343,960 |
| B would be: | | | | 65.93 | 1.79 | if it were a vertical wellbore. | | | |
| No Pilot Hole Planned | | | | MTD | Max VTD | Csg VD | Curve KOP | Dogleg° | Severity° |
| | | | | 16019 | 8447 | 8447 | 7960 | 91 | 10 |
| The cement volume(s) are intended to achieve a top of | | | | 3450 | ft from surface or a | | 500 | overlap. | |
| Hole | Annular | 1 Stage | 1 Stage | Min | 1 Stage | Drilling | Calc | Req'd | Min Dist |
| Size | Volume | Cmt Sx | CuFt Cmt | Cu Ft | % Excess | Mud Wt | MASP | BOPE | Hole-Cplg |
| 7 7/8 | 0.0710 | 2291 | 3891 | 946 | 311 | 9.50 | | | 0.91 |
| Setting Depths for D V Tool(s): | | | | 7200 | | | <u>sum of sx</u> | <u>Σ CuFt</u> | <u>Σ%excess</u> |
| % excess cmt by stage: | | | | 278 | 286 | | 2230 | 3602 | 281 |

Class 'H' tail cmt yld > 1.20