

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION

ARTESIA DISTRICT

NMOC D
MAR 28 2017

Artesia

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.*5. Lease Serial No.
NMNM113962

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
SALT FORK 3-4 FEDERAL COM 1H9. API Well No.
30-015-4366510. Field and Pool or Exploratory Area
LEO;BONE SPRING, SOUTH11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
APACHE CORPORATIONContact: SORINA FLORES
E-Mail: sorina.flores@apachecorp.com3a. Address
303 VETERANS AIRPARK LANE SUITE 3000
MIDLAND, TX 797053b. Phone No. (include area code)
Ph: 432-818-11674. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 3 T19S R30E Mer NMP NESW 2364FSL 2258FWL
32.688512 N Lat, 103.960549 W Lon**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 Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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 REQUESTS CHANGE TO DRILLING PLAN AS LISTED BELOW:

TVD: 8630' LP: 8465' MD: 15494.52'

CSG PROGRAM (NEW):

HOLE INTERVAL CSG SZ WT GRADE CONN COLLAPSE BURST TENSION

17-1/2' 0-415' 13-3/8" 48# H-40 STC 5.19 1.44 2.06

12-1/4" 0-3950' 9-5/8" 36# J-55 LTC 1.79 1.43 1.87

8-3/4" 0-7892' 7" 26# P-110 BTC 1.64 1.18 2.89

8-3/4" 7821'-8901' 5-1/2" 17# P-110 BTC 1.83 1.26 2.61

8-1/2" 8901 - 15494.52 5-1/2" 17# P-110 BTC 1.83 1.26 2.61

**Well is located in SOP but not R-111-P; first 2 strings cemented to surf & 3rd string cmt tied back.

Accepted for record - NMOC D

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #362325 verified by the BLM Well Information System
For APACHE CORPORATION, sent to the Carlsbad
Committed to AFMSS for processing by DEBORAH MCKINNEY on 01/19/2017 ()

Name (Printed/Typed) SORINA FLORES

Title SUBMITTING CONTACT

Signature (Electronic Submission)

Date 12/29/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

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

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)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

Additional data for EC transaction #362325 that would not fit on the form

32. Additional remarks, continued

CMT PROGRAM (NEW):

Surf Lead: 370sx Cl C w/1% CaCl₂ (12hr - 1000psi; 24hr - 1800psi)

14.8# 1.33yld 6.32gal/sk 500# comp strength hrs: 7

Interm Lead: 720sx 35/65 Poz C w/6% gel, 5% salt, 1# Kolseal, 0.125# CF (12hr - 325psi; 24hr - 649psi)

12.9# 1.8yld 9.36gal/sk 500# comp strength hrs: 18

Tail: 200sx 14.8# 1.33yld 6.31gal/sk 500# comp strength hrs: 7

Cl C w/0.2% retarder (12hr - 966psi; 24hr - 1442psi)

Prod Lead: 265sx 50/50 PozH, 10% gel, 5% salt (12hr-47psi; 24hr-284psi)

11.9# 2.32yld 13.08gal/sk 500# comp strength hrs: 72

Tail: 1600sx TXI light w/0.3% fluid loss, 0.2% retarder

(12hr-28psi; 24hr-1193psi) 12.8# 1.44yld 7.56gal/sk

500# comp strength hrs: 18

**Prod csg string TOC: 3450' 20% OH excess **If water flow or lost circ 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. TD of 12-1/4" @ +/- 3950'.

CONTINGENCY: Interm 1st stage contingency:

Lead: 330sx 35/65 Poz C w/6% gel, 5% salt, 1lb/sk kolseal, 0.125#/sk CF

(12hr-325psi; 24hr-649psi) 12.9# 1.8yld 9.36gal/sx 500# comp strength hrs: 18

Tail: 200sx Cl C w/0.2% retarder (12hr-966psi; 24hr-1442psi)

14.8# 1.33yld 6.31gal/sx ECP/DVT: +/- 1820'

Interm 2nd stage contingency:

Lead: 250sx 35/65 Poz C w/6% gel, 5% salt (12hr-325psi; 24hr-649psi)

12.9# 1.8yld 9.36gal/sx 500# comp strength hrs: 18

Tail: 200sx Cl C (12hr-1000psi; 24hr-1600psi) 14.8# 1.33yld 6.31gal/sx

BOP: 13-5/8" BOP Installed & tested before 12-1/4" hole (annular)-50% WP 2M

13-5/8" BOP installed & tested before 8-3/4" hole

(annular, blind ram, pipe ram) tested to 50% WP 3M

MUD PROGRAM: 0-surf shoe: FW Wt: 8.4-8.6 Visc: 28-32 Wtr loss: NC

Surf shoe-Int shoe: Brine Wt: 9.8-10.5 Visc: 28-32 Wtr loss: NC

Int shoe-8901'MD: FW/Brine Wt: 8.4-9.5 visc: 28-32 Wtr loss: NC

8901'MD-TD: BM Wt: 8.4-9.5 Visc: 35-50 Wtr loss: NC

ADDITIONAL LOGS: Mud Log INTERVAL: Int. shoe to TD **Surf csg will be pre-set**

Apache Salt Fork 3-4 Federal Com #1H Rev0 JP 06Oct16 Proposal

Geodetic Report

(Non-Def Plan)

Report Date:	October 06, 2016 - 09:12 AM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Apache	Vertical Section Azimuth:	266.783 ° (Grid North)
Field:	NM Eddy County (NAD 27)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Apache Salt Fork 3-4 Federal Com #1H / Apache Salt Fork 3-4 Federal Com #1H	TVD Reference Datum:	RKB
Well:	Apache Salt Fork 3-4 Federal Com #1H	TVD Reference Elevation:	3430.000 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3410.000 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	7.586 °
Survey Name:	Apache Salt Fork 3-4 Federal Com #1H Rev0 JP 06Oct16	Total Gravity Field Strength:	998.5148mgn (9.80665 Based)
Survey Date:	August 11, 2016	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	114.135 ° / 7274.546 ft / 6.182 / 0.859	Total Magnetic Field Strength:	48379.779 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	60.605 °
Location Lat / Long:	N 32° 41' 18.64502", W 103° 57' 37.97827"	Declination Date:	October 06, 2016
Location Grid N/E Y/X:	N 614393.400 ftUS, E 614689.500 ftUS	Magnetic Declination Model:	HDGM 2016
CRS Grid Convergence Angle:	0.2013 °	North Reference:	Grid North
Grid Scale Factor:	0.99992415	Grid Convergence Used:	0.2013 °
Version / Patch:	2.9.365.0	Total Corr Mag North->Grid North:	7.3850 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (NS ° ' '')	Longitude (EW ° ' '')
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	100.00	0.00	246.60	100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	200.00	0.00	246.60	200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	300.00	0.00	246.60	300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	400.00	0.00	246.60	400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Rustler	417.00	0.00	246.60	417.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
13 3/8" Casing	425.00	0.00	246.60	425.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	500.00	0.00	246.60	500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	600.00	0.00	246.60	600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Top Salt	603.00	0.00	246.60	603.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	700.00	0.00	246.60	700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	800.00	0.00	246.60	800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	900.00	0.00	246.60	900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1000.00	0.00	246.60	1000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1100.00	0.00	246.60	1100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1200.00	0.00	246.60	1200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1300.00	0.00	246.60	1300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1400.00	0.00	246.60	1400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1500.00	0.00	246.60	1500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1600.00	0.00	246.60	1600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1700.00	0.00	246.60	1700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Base Salt	1767.00	0.00	246.60	1767.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1800.00	0.00	246.60	1800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	1900.00	0.00	246.60	1900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Yates	1912.00	0.00	246.60	1912.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2000.00	0.00	246.60	2000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2100.00	0.00	246.60	2100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Seven Rivers	2180.00	0.00	246.60	2180.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2200.00	0.00	246.60	2200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2300.00	0.00	246.60	2300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2400.00	0.00	246.60	2400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2500.00	0.00	246.60	2500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2600.00	0.00	246.60	2600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2700.00	0.00	246.60	2700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2800.00	0.00	246.60	2800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Queen	2893.00	0.00	246.60	2893.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	2900.00	0.00	246.60	2900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3000.00	0.00	246.60	3000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3100.00	0.00	246.60	3100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3200.00	0.00	246.60	3200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
9 5/8" Casing	3250.00	0.00	246.60	3250.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3300.00	0.00	246.60	3300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3400.00	0.00	246.60	3400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3500.00	0.00	246.60	3500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Capitan Reef	3562.00	0.00	246.60	3562.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3600.00	0.00	246.60	3600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3700.00	0.00	246.60	3700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3800.00	0.00	246.60	3800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Cherry Canyon	3828.00	0.00	246.60	3828.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	3900.00	0.00	246.60	3900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4000.00	0.00	246.60	4000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4100.00	0.00	246.60	4100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4200.00	0.00	246.60	4200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4300.00	0.00	246.60	4300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4400.00	0.00	246.60	4400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4500.00	0.00	246.60	4500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Delaware	4598.00	0.00	246.60	4598.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4600.00	0.00	246.60	4600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4700.00	0.00	246.60	4700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4800.00	0.00	246.60	4800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	4900.00	0.00	246.60	4900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5000.00	0.00	246.60	5000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5100.00	0.00	246.60	5100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5200.00	0.00	246.60	5200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5300.00	0.00	246.60	5300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5400.00	0.00	246.60	5400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5500.00	0.00	246.60	5500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5600.00	0.00	246.60	5600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5700.00	0.00	246.60	5700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
	5800.00	0.00	246.60	5800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98
Bone Spring	5847.00	0.00	246.60	5847.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65	W 103 57 37.98

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (NS ° ' '')	Longitude (EW ° ' '')
	5900.00	0.00	246.60	5900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6000.00	0.00	246.60	6000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6100.00	0.00	246.60	6100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6200.00	0.00	246.60	6200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6300.00	0.00	246.60	6300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6400.00	0.00	246.60	6400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6500.00	0.00	246.60	6500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6600.00	0.00	246.60	6600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6700.00	0.00	246.60	6700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6800.00	0.00	246.60	6800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	6900.00	0.00	246.60	6900.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7000.00	0.00	246.60	7000.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7100.00	0.00	246.60	7100.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7200.00	0.00	246.60	7200.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7300.00	0.00	246.60	7300.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7400.00	0.00	246.60	7400.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
1st Bone Spring Sand	7454.00	0.00	246.60	7454.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7500.00	0.00	246.60	7500.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7600.00	0.00	246.60	7600.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7700.00	0.00	246.60	7700.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
2nd Bone Spring Carb	7736.00	0.00	246.60	7736.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7800.00	0.00	246.60	7800.00	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
Build 10" DLS	7892.11	0.00	246.60	7892.11	0.00	0.00	0.00	0.00	614393.40	614689.50	N 32 41 18.65 W	103 57 37.98
	7900.00	0.79	246.60	7900.00	0.05	-0.02	-0.05	10.00	614393.38	614689.45	N 32 41 18.64 W	103 57 37.98
	8000.00	10.79	246.60	7999.38	9.51	-4.02	-9.30	10.00	614393.38	614689.21	N 32 41 18.61 W	103 57 38.09
	8100.00	20.79	246.60	8095.47	35.01	-14.81	-34.24	10.00	614378.59	614655.27	N 32 41 18.50 W	103 57 38.38
	8200.00	30.79	246.60	8185.39	75.79	-32.07	-74.11	10.00	614361.33	614615.39	N 32 41 18.33 W	103 57 38.85
	8300.00	40.79	246.60	8266.41	130.61	-55.27	-127.71	10.00	614338.14	614561.80	N 32 41 18.10 W	103 57 39.47
2nd Bone Spring Sand	8348.86	45.68	246.60	8302.00	162.02	-68.56	-158.42	10.00	614324.85	614531.09	N 32 41 17.97 W	103 57 39.83
	8400.00	50.79	246.60	8336.05	197.81	-83.70	-193.41	10.00	614309.71	614496.10	N 32 41 17.82 W	103 57 40.24
	8500.00	60.79	246.60	8392.20	275.33	-116.50	-269.21	10.00	614276.91	614420.31	N 32 41 17.50 W	103 57 41.13
	8600.00	70.79	246.60	8433.16	360.82	-152.67	-352.81	10.00	614240.74	614336.72	N 32 41 17.15 W	103 57 42.11
	8700.00	80.79	246.60	8457.68	451.69	-191.13	-441.66	10.00	614202.29	614247.87	N 32 41 16.77 W	103 57 43.15
	8800.00	90.79	246.60	8465.01	545.18	-230.88	-533.08	10.00	614162.74	614156.47	N 32 41 16.38 W	103 57 44.22
LP, Tum 3" DLS	8801.11	90.90	246.60	8465.00	546.22	-231.12	-534.09	10.00	614162.29	614155.45	N 32 41 16.38 W	103 57 44.24
	8900.00	90.91	249.57	8463.44	639.87	-268.03	-625.82	3.00	614125.40	614063.73	N 32 41 16.01 W	103 57 45.31
	9000.00	90.91	252.57	8461.85	736.11	-300.46	-720.38	3.00	614092.96	613969.17	N 32 41 15.70 W	103 57 46.42
	9100.00	90.92	255.57	8460.25	833.63	-327.91	-816.52	3.00	614065.52	613873.05	N 32 41 15.43 W	103 57 47.55
	9200.00	90.92	258.57	8458.65	932.17	-350.28	-913.96	3.00	614043.15	613775.61	N 32 41 15.21 W	103 57 48.69
	9300.00	90.92	261.57	8457.05	1031.46	-367.52	-1012.44	3.00	614025.90	613677.14	N 32 41 15.04 W	103 57 49.84
	9400.00	90.91	264.57	8455.45	1131.23	-379.59	-1111.68	3.00	614013.84	613577.91	N 32 41 14.93 W	103 57 51.00
	9500.00	90.90	267.57	8453.87	1231.20	-386.44	-1211.42	3.00	614006.99	613478.17	N 32 41 14.86 W	103 57 52.17
Hold to TD	9575.60	90.90	269.84	8452.68	1306.74	-388.15	-1286.99	3.00	614005.28	613402.61	N 32 41 14.85 W	103 57 53.05
	9600.00	90.90	269.84	8452.30	1331.10	-388.22	-1311.39	0.00	614005.21	613378.22	N 32 41 14.85 W	103 57 53.34
	9700.00	90.90	269.84	8450.73	1430.95	-388.51	-1411.37	0.00	614004.92	613278.24	N 32 41 14.85 W	103 57 54.51
	9800.00	90.90	269.84	8449.17	1530.79	-388.79	-1511.36	0.00	614004.64	613178.26	N 32 41 14.85 W	103 57 55.68
	9900.00	90.90	269.84	8447.60	1630.64	-389.07	-1611.35	0.00	614004.36	613078.28	N 32 41 14.85 W	103 57 56.85
	10000.00	90.90	269.84	8446.04	1730.49	-389.36	-1711.33	0.00	614004.07	612978.30	N 32 41 14.85 W	103 57 58.02
	10100.00	90.90	269.84	8444.47	1830.33	-389.64	-1811.32	0.00	614003.79	612878.32	N 32 41 14.85 W	103 57 59.19
	10200.00	90.90	269.84	8442.90	1930.18	-389.92	-1911.31	0.00	614003.51	612778.34	N 32 41 14.85 W	103 58 0.36
	10300.00	90.90	269.84	8441.34	2030.02	-390.21	-2011.30	0.00	614003.22	612678.36	N 32 41 14.85 W	103 58 1.53
	10400.00	90.90	269.84	8439.77	2129.87	-390.49	-2111.28	0.00	614002.94	612578.38	N 32 41 14.85 W	103 58 2.70
	10500.00	90.90	269.84	8438.21	2229.71	-390.77	-2211.27	0.00	614002.66	612478.40	N 32 41 14.85 W	103 58 3.87
	10600.00	90.90	269.84	8436.64	2329.56	-391.06	-2311.26	0.00	614002.37	612378.42	N 32 41 14.86 W	103 58 5.04
	10700.00	90.90	269.84	8435.08	2429.41	-391.34	-2411.25	0.00	614002.09	612278.44	N 32 41 14.86 W	103 58 6.21
	10800.00	90.90	269.84	8433.51	2529.25	-391.62	-2511.23	0.00	614001.81	612178.46	N 32 41 14.86 W	103 58 7.38
	10900.00	90.90	269.84	8431.94	2629.10	-391.91	-2611.22	0.00	614001.52	612078.48	N 32 41 14.86 W	103 58 8.55
	11000.00	90.90	269.84	8430.38	2728.94	-392.19	-2711.21	0.00	614001.24	611978.50	N 32 41 14.86 W	103 58 9.72
	11100.00	90.90	269.84	8428.81	2828.79	-392.47	-2811.20	0.00	614000.96	611878.52	N 32 41 14.86 W	103 58 10.89
	11200.00	90.90	269.84	8427.25	2928.63	-392.76	-2911.18	0.00	614000.67	611778.54	N 32 41 14.86 W	103 58 12.06
	11300.00	90.90	269.84	8425.68	3028.48	-393.04	-3011.17	0.00	614000.39	611678.56	N 32 41 14.86 W	103 58 13.23
	11400.00	90.90	269.84	8424.11	3128.33	-393.32	-3111.16	0.00	614000.11	611578.59	N 32 41 14.86 W	103 58 14.40
	11500.00	90.90	269.84	8422.55	3228.17	-393.61	-3211.14	0.00	613999.82	611478.61	N 32 41 14.86 W	103 58 15.57
	11600.00	90.90	269.84	8420.98	3328.02	-393.89	-3311.13	0.00	613999.54	611378.63	N 32 41 14.86 W	103 58 16.74
	11700.00	90.90	269.84	8419.42	3427.86	-394.18	-3411.12	0.00	613999.26	611278.65	N 32 41 14.86 W	103 58 17.90
	11800.00	90.90	269.84	8417.85	3527.71	-394.46	-3511.11	0.00	613998.97	611178.67	N 32 41 14.86 W	103 58 19.07
	11900.00	90.90	269.84	8416.28	3627.55	-394.74	-3611.09	0.00	613998.69	611078.69	N 32 41 14.86 W	103 58 20.24
	12000.00	90.90	269.84	8414.72	3727.40	-395.03	-3711.08	0.00	613998.41	610978.71	N 32 41 14.86 W	103 58 21.41
	12100.00	90.90	269.84	8413.15	3827.25	-395.31	-3811.07	0.00	613998.12	610878.73	N 32 41 14.86 W	103 58 22.58
	12200.00	90.90	269.84	8411.59	3927.09	-395.59	-3911.06	0.00	613997.84	610778.75	N 32 41 14.86 W	103 58 23.75
	12300.00	90.90	269.84	8410.02	4026.94	-395.88	-4011.04	0.00	613997.55	610678.77	N 32 41 14.86 W	103 58 24.92
	12400.00	90.90	269.84	8408.46	4126.78	-396.16	-4111.03	0.00	613997.27	610578.79	N 32 41 14.87 W	103 58 26.09
	12500.00	90.90	269.84	8406.89	4226.63	-396.44	-4211.02	0.00	613996.99	610478.81	N 32 41 14.87 W	103 58 27.26
	12600.00	90.90	269.84	8405.32	4326.47	-396.73	-4311.01	0.00	613996.70	610378.83	N 32 41 14.87 W	103 58 28.43
	12700.00	90.90	269.84	8403.76	4426.32	-397.01	-4410.99	0.00	613996.42	610278.85	N 32 41 14.87 W	103 58 29.60
	12800.00	90.90	269.84	8402.19	4526.17	-397.29	-4510.98	0.00	613996.14	610178.87	N 32 41 14.87 W	103 58 30.77
	12900.00	90.90	269.84	8400.63	4626.01	-397.58	-4610.97	0.00	613995.85	610078.89	N 32 41 14.87 W	103 58 31.94

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15000.00	90.90	269.84	8367.74	6722.77	-403.53	-6710.70	0.00	613989.90	607979.32	N 32 41 14.88	W 103 58 56.51
	15100.00	90.90	269.84	8366.18	6822.62	-403.81	-6810.69	0.00	613989.62	607879.34	N 32 41 14.88	W 103 58 57.68
	15200.00	90.90	269.84	8364.61	6922.46	-404.10	-6910.68	0.00	613989.33	607779.36	N 32 41 14.88	W 103 58 58.85
	15300.00	90.90	269.84	8363.05	7022.31	-404.38	-7010.68	0.00	613989.05	607679.38	N 32 41 14.88	W 103 59 0.02
	15400.00	90.90	269.84	8361.48	7122.15	-404.66	-7110.65	0.00	613988.77	607579.40	N 32 41 14.88	W 103 59 1.19
Apache Salt Fork 3-4 Federal Com #1H - PBHL	15494.52	90.90	269.84	8360.00	7216.53	-404.93	-7205.16	0.00	613988.50	607484.90	N 32 41 14.88	W 103 59 2.30

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	20.000	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Apache Salt Fork 3-4 Federal Com #1H Rev0 JP 06Oct16
	1	20.000	15494.522	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Apache Salt Fork 3-4 Federal Com #1H Rev0

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	417.00	0.00	246.60	417.00	0.00	0.00	0.00	0.00
13 3/8" Casing	425.00	0.00	246.60	425.00	0.00	0.00	0.00	0.00
Top Salt	603.00	0.00	246.60	603.00	0.00	0.00	0.00	0.00
Base Salt	1767.00	0.00	246.60	1767.00	0.00	0.00	0.00	0.00
Yale	1912.00	0.00	246.60	1912.00	0.00	0.00	0.00	0.00
Seven Rivers	2180.00	0.00	246.60	2180.00	0.00	0.00	0.00	0.00
Queen	2893.00	0.00	246.60	2893.00	0.00	0.00	0.00	0.00
9 5/8" Casing	3250.00	0.00	246.60	3250.00	0.00	0.00	0.00	0.00
Capitan Reef	3562.00	0.00	246.60	3562.00	0.00	0.00	0.00	0.00
Cherry Canyon	3828.00	0.00	246.60	3828.00	0.00	0.00	0.00	0.00
Delaware	4598.00	0.00	246.60	4598.00	0.00	0.00	0.00	0.00
Bone Spring	5847.00	0.00	246.60	5847.00	0.00	0.00	0.00	0.00
1st Bone Spring Sand	7454.00	0.00	246.60	7454.00	0.00	0.00	0.00	0.00
2nd Bone Spring Cart	7736.00	0.00	246.60	7736.00	0.00	0.00	0.00	0.00
Build 10' DLS	7892.11	0.00	246.60	7892.11	0.00	0.00	0.00	0.00
2nd Bone Sprng Sand	8348.86	45.68	246.60	8302.00	132.02	-88.56	-158.42	10.00
LP, Turn 3' DLS	8801.11	90.90	246.60	8485.00	546.22	-231.12	-534.09	10.00
Hold to TD	9575.60	90.90	269.84	8452.68	1306.74	-388.15	-1286.99	3.00
Apache Salt Fork 3-4 Federal Com #1H - PBHL	15494.52	90.90	289.84	8380.00	7216.53	-404.93	-7205.16	0.00



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Apache Corporation
LEASE NO.:	NMNM114973
WELL NAME & NO.:	Salt Fork 3 4 Federal Com 1H
SURFACE HOLE FOOTAGE:	2364'/S & 2258'/W
BOTTOM HOLE FOOTAGE	1980'/S & 330'/W
LOCATION:	Section 3, T.19 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-43665

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS 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)

☒ **Lea County**

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

1. A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Queen** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. 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 is located, this does not include the dog house or stairway area.

4. 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.

B. 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. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

**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.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **9/5/8** inch intermediate casing, which shall be set at approximately **3950** feet, 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 1820 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 22% - Additional cement may be required. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/ karst and potash.**

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 **7 X 5-1/2** inch production casing is:

- ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

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.

C. 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 53.
2. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. 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.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
 - c. 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.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - 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 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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

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