

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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. NMNM54290
6. If Indian, Allottee or Tribe Name
7. If Unit or CA/Agreement, Name and/or No.
8. Well Name and No. NORTH BRUSHY DRAW FEDERAL 35 4H
9. API Well No. 30-015-42290-00-X1
10. Field and Pool, or Exploratory CORRAL CANYON
11. County or Parish, and State EDDY COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	
2. Name of Operator RKI EXPLORATION & PROD LLC	
Contact: JODY NOERDLINGER E-Mail: JNOERDLINGER@RKIXP.COM	
3a. Address 210 PARK AVE SUITE 900 OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-996-0577
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 35 T25S R29E SESW 175FSL 2365FWL 32.044602 N Lat, 103.572154 W Lon	

12. CHECK 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	☐ Fracture Treat	☐ 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

RKI Exploration and Production requests a name change, a formation change, and a drilling change regarding casing requirements for the subject well. This well is scheduled to spud Nov. 10, 2014.

Name Change:
The subject well name should be "North Brushy Draw Federal Com 35-4H."

Formation Change:
The proposed producing formation is the Wolfcamp, with a TVD of 10,440 ft and BHL of 600 ft
FNL/1,980 ft FWL.

Drilling Change:
9 5/8 in intermediate casing string will be set into the Bone Spring at 7,238 ft.

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 07 2014
Accepted for record
SEE ATTACHED FOR RECEIVED
CONDITIONS OF APPROVAL

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

Electronic Submission #274736 verified by the BLM Well Information System
For RKI EXPLORATION & PROD LLC, sent to the Carlsbad
Committed to AFMSS for processing by CHRISTOPHER WALLS on 10/30/2014 (15CRW0021SE)

Name (Printed/Typed) JODY NOERDLINGER

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 10/29/2014

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

APPROVED
OCT 31 2014
/s/ Chris Walls
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD 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.

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

Additional data for EC transaction #274736 that would not fit on the form

32. Additional remarks, continued

No 7 in intermediate casing will be run.

Hole size change: drill an 8 1/2 in curve/lateral.

A 5 1/2 in 23 lb P-110 production casing string will be run from TD to surface instead of running a 4 1/2 in by 5 1/2 in tapered casing string.

The proposed revised drilling plan and a revised location plat showing the new BHL are attached.

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) 748-0720
DISTRICT III
1000 Rio Brazos Rd., Artesia, 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
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-42290	Pool Code 13354-98099	Pool Name UNDESIGNATED WOLFCAMP
Property Code 313864	Property Name NORTH BRUSHY DRAW FEDERAL COM 35	Well Number 4H
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION	Elevation 2997'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	35	25 S	29 E		175	SOUTH	2365	WEST	EDDY

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
C	35	25 S	29 E		600	NORTH	1980	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
320			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NW COR SEC 35 NMSP-E (NAD 83) N (Y) = 397973.5 E (X) = 655831.6 LAT. = 32°05'36.84" N LONG. = 103°57'49.00" W 1980' 600' LAST TAKE 660' FNL 1980' FWL NMSP-E (NAD 83) Y = 397319.0' N X = 657813.5' E	NORTH BRUSHY DRAW FEDERAL COM 35 4H BHL NMSP-E (NAD 83) N (Y) = 397379.0' E (X) = 657813.3' LAT. = 32°05'30.90" N LONG. = 103°57'25.98" W NMSP-E (NAD 27) N (Y) = 397321.0' E (X) = 616628.1' LAT. = 32.091791659°N LONG. = 103.956732674°W Dedicated Acreage = 320 acres W 1/2 of Section 35	NE COR SEC 35 NMSP-E (NAD 83) N (Y) = 397988.3 E (X) = 661140.7 LAT. = 32°05'36.81" N LONG. = 103°57'47.27" W
SW COR SEC 35 NMSP-E (NAD 83) N (Y) = 392663.4 E (X) = 655847.1 LAT. = 32°04'44.30" N LONG. = 103°57'49.02" W 2365' 175' FIRST TAKE 660' FSL 1980' FWL NMSP-E (NAD 83) Y = 393329.6' N X = 657825.2' E	NORTH BRUSHY DRAW FEDERAL COM 35 4H SHL NMSP-E (NAD 83) N (Y) = 392845.9' E (X) = 658211.3' LAT. = 32°04'46.02" N LONG. = 103°57'21.54" W NMSP-E (NAD 27) N (Y) = 392788.0' E (X) = 617026.0' LAT. = 32.0793265°N LONG. = 103.9554992°W	SE COR SEC 35 NMSP-E (NAD 83) N (Y) = 392680.8 E (X) = 661164.4 LAT. = 32°04'44.28" N LONG. = 103°56'47.21" W

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jody Noerdlinger 10/30/2014
Signature Date

JODY NOERDLINGER

Print Name

JNOERDLINGER@RKIXP.COM

E-mail Address

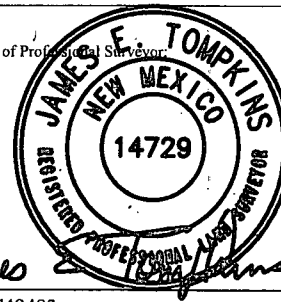
SURVEYORS CERTIFICATION

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.

December 29, 2013

Date of Survey

Signature and Seal of Professional Surveyor



Job No. WTC49483

JAMES E. TOMPKINS 14729

Certificate Number

RKI Exploration & Production, LLC

Well North Brushy Draw Federal Com 35-4H
 Location Surface: 175 FSL 2,365 FWL Sec 35-25S-29E
 Bottom Hole: 600 FNL 1,980 FWL Sec 35-25S-29E
 County Eddy
 State New Mexico

1) The elevation of the unprepared ground is 2,997 feet above sea level.

2) The geologic name of the surface formation is Quaternary - Alluvium.

3) A rotary rig will be utilized to drill the well to 14,243 feet and run casing and cement.
 This equipment will then be rigged down and the well will be completed with a workover rig.

4) Proposed depth is 14,243 feet MD

5) Estimated tops:

	MD	TVD	
Rustler	800	800	
Salado	1,100	1,100	BHP = .44 psi/ft x depth
Lamar Lime	3,118	3,118	1,372 psi
Delaware Top	3,560	3,560	1,566 psi
Bell Canyon Sand	3,560	3,560	Oil 1,566 psi
Cherry Canyon Sand	4,247	4,242	Oil 1,869 psi
Brushy Canyon Sand	5,572	5,554	Oil 2,452 psi
Bone Spring	7,238	7,203	3,185 psi
Bone Spring Sand	9,013	8,970	Oil 3,966 psi
KOP	9,839	9,796	4,329 psi
Landing Point (Wolfcamp)	10,839	10,440	Oil 4,769 psi
TD	14,243	10,440	6,267 psi

6) Casing program:

Hole Size	Top	Bottom	OD Csg	Wt/Grade	Connection	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0	850 600	13 3/8"	54.5#/J-55	ST&C	3.02	14.60	11.10
12 1/4"	0	7,238	9 5/8"	47#/L-80	BT&C	1.49	4.31	3.88
8 1/2"	0	14,243	5-1/2"	23#/P-110	THS 521	2.32	1.61	2.43

Collapse 1.125
 Burst 1.0
 Tension 2.0

7) Cement program:

Surface	17 1/2" hole			
Pipe OD	13 3/8"			
Setting Depth	850 ft			
Annular Volume	0.69462 cf/ft			
Excess	1	100 %		
Lead:	675 sx	1.75 cf/sk	9.13 gal/sk	13.5 ppg
Tail:	200 sx	1.33 cf/sk	6.32 gal/sk	14.8 ppg
Lead: "C" + 4% PF20 (gel) + 2% PF1 (CC) + .125 pps PF29 (CelloFlake) + .4 pps PF46 (antifoam)				
Tail: "C" + 1% PF1 (CC)				

Top of cement: Surface

Intermediate	12 1/4" hole			
Pipe OD	9-5/8"			
Setting Depth	7,238 ft			
Annular Volume	0.31318 cf/ft	0.3627 cf/ft	850 ft	
Excess	0.5	50 %		
DV Tool Depth	5500 ft			
Stage 1				
Lead:	552 sx	1.48 cf/sk	7.58 gal/sk	13.0 ppg
Lead: PVL + 1.3% PF44 + 5% PF174 + .5% PF606 + .35% PF813 + .1% PF153 + .4 pps PF46				
Top of cement: DV tool				
Stage 2				
Lead:	1,489 sx	1.89 cf/sk	10.06 gal/sk	12.9 ppg
Tail:	175 sx	1.33 cf/sk	6.32 gal/sk	14.8 ppg
Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + .2% PF13 + .125 ps PF29 + .4 pps PF46				
Tail: "C" + .2% PF13				

Top of cement: Surface ft

Production	8-1/2" hole			
Pipe OD	5- 1/2"			
Setting Depth	14,243 ft			
Annular Volume	0.2291 cf/ft			
Excess	0.32			
Lead:	1,214 sx	1.87 cf/sk	9.52 gal/sk	13.0 ppg
Lead: AcidSolid PVL + 5% PF174 + .7% PF606 + .2% PF153 + .5% PF13 + 30% PF151 + .4 pps PF46				
Top of cement: 6,738 ft				

8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram type (5,000 psi WP) preventer, a bag-type annular preventer (5,000 psi WP), and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and pipe rams (sized to accommodate the drill pipe size being utilized) on bottom. A 13 3/8" SOW x 13 5/8" SM casing head will be installed on the 13 3/8" casing and utilized until total depth is reached. All BOP and associated equipment will be tested to 5,000 psi and the annular will be tested to ~~1,500 psi~~ ²⁵⁰⁰ after setting 13-3/8" casing string & 7" casing string. The 13 3/8" and 9 5/8" casing will be tested to .22 psi per ft of casing string length or 1500 psi whichever is greater, but not to exceed 70% of the minimum yield.

The 9 5/8" casing will be hung in the casing head and the stack will not be nipped down at this point.

The stack will not be isolated and tested after running the 9 5/8" casing, but will be tested along with the 9 5/8" casing. Pipe rams will be operated and checked each 24 hour period and each time the drill string is out of the hole.

These function test will be documented on the daily driller's log.

A drilling spool or blowout preventer with 2 side outlets (choke side shall be 3" minimum diameter, kill side shall be at least 2" diameter).

2 kill line valves, one of which will be a check valve.

2 chokes on the manifold along with a pressure gauge.

Upper kelly cock valve with handle available.

Safety valve and subs to fit all drill string connections in use.

All BOP equipment connections subjected to pressure will be flanged, welded, or clamped.

Fill up line above the upper most preventer.

9) Mud program:

Top	Bottom	Mud Wt.	Vis	PV	YP	Fluid Loss.	Type System
0	850	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Water
850	3,118	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
3,118	7,238	8.9 to 9.5	40 to 45	5 - 8	20 - 30	<40	WBM
7,238	14,243	10.5 to 12.5	36 to 40	6 - 10	8 - 14	8 - 12	Cut Brine

10) Logging, coring, and testing program:

No drill stem test are planned

KOP to intermediate: CNL, Caliper, GR, DLL,

Intermediate to surface: CNL, GR

No coring is planned

11) Potential hazards:

No abnormal pressure or temperature is expected. No H2S is known to exist in the area.

Lost circulation can occur in, lost circulation material will be on location and readily available if needed.

12) Anticipated start date

ASAP

Duration

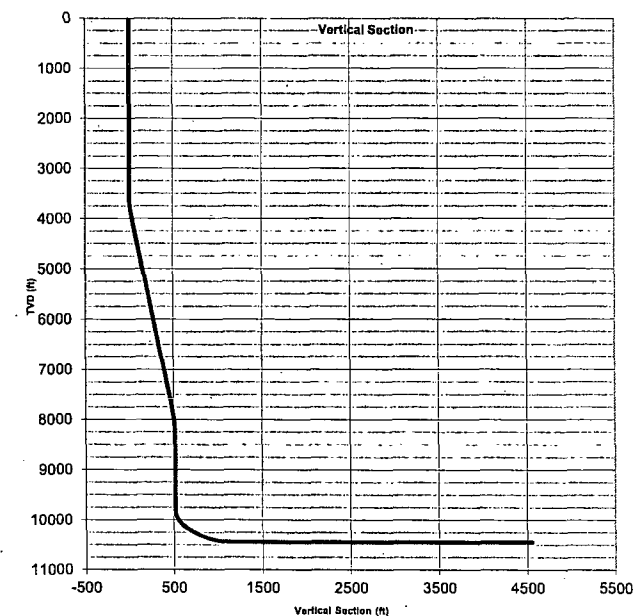
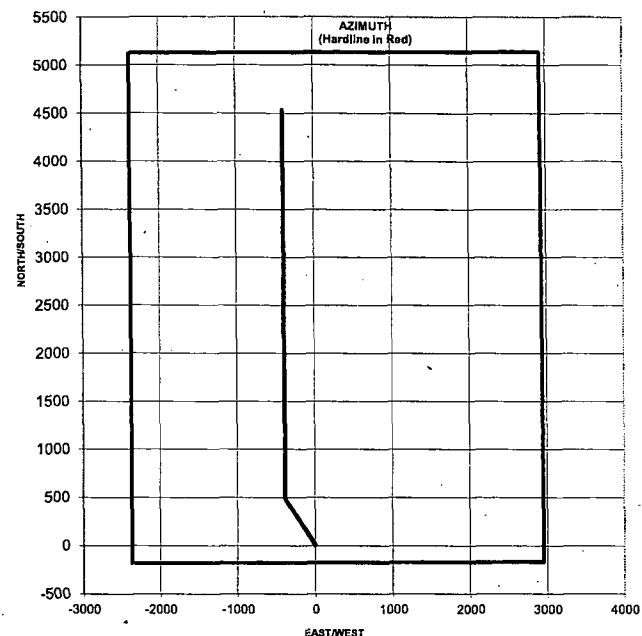
40 days

RKI EXPLORATION
RIG:

WELL: North Brushy Draw Federal Com 35-4H
 LOCATION: 175' FSL & 2365' FWL 35-25S-29E
 BHL: 600' FNL & 1980' FWL 35-25S-29E

Target Direction: 354.98 deg
 North/South Hard Line: 330
 East/West Hard Line: 2,310

STATION	SURVEY							
NUMBER	DEPTH	INC	AZMTH	TVD	N-S	E-W	VERT. SECTION	DLS/100
Tie-In								
Rustler	800.0			800				
Salado	1100.0			1100				
Castile	1450.0			1450				
	2000.0			2000				
	2500.0			2500				
	3000.0			3000				
Lamar Lm	3118.0			3118				
	3500.0		321.56	3500				
Delaware T	3560.0	1.2	321.56	3560	0	0	1	2.0
	3600.0	2.0	321.56	3600	1	-1	1	2.0
	3700.0	4.0	321.56	3700	5	-4	6	2.0
	3800.0	6.00	321.56	3799	12	-10	13	2.0
	3900.0	8.10	321.56	3899	22	-17	23	2.1
Cherry Cyn	4247.0	8.10	321.56	4242	60	-48	64	
	5000.0	8.10	321.56	4988	143	-114	153	
	5200.0	8.10	321.56	5186	165	-131	176	
Brushy Cyn	5572.0	8.10	321.56	5554	206	-164	220	
	5800.0	8.10	321.56	5780	232	-184	247	
	6000.0	8.10	321.56	5978	254	-201	270	
	6200.0	8.10	321.56	6176	276	-219	294	
	6400.0	8.10	321.56	6374	298	-236	317	
	6600.0	8.10	321.56	6572	320	-254	341	
	6800.0	8.10	321.56	6770	342	-271	364	
Bonespring Lm	7238.0	8.10	321.56	7203	390	-310	416	
	7900.0	8.10	321.56	7859	463	-368	494	
	8000.0	6.00	321.56	7958	473	-375	504	2.1
	8100.0	4.00	321.56	8058	480	-381	511	2.0
	8200.0	2.00	321.56	8157	484	-384	516	2.0
	8300.0		321.56	8257	485	-385	517	2.0
	8500.0			8457	485	-385	517	
Bonespring Ss	9013.0			8970	485	-385	517	
	9500.0			9457	485	-385	517	
KOP	9839.0		359.82	9796	485	-385	517	
	9939.0	10.00	359.82	9896	494	-385	526	10.0
	10039.0	20.00	359.82	9992	520	-385	552	10.0
	10139.0	30.00	359.82	10083	562	-385	594	10.0
	10239.0	40.00	359.82	10165	619	-386	651	10.0
	10289.0	45.00	359.82	10202	653	-386	684	10.0
	10389.0	45.00	359.82	10272	724	-386	755	
	10439.0	50.00	359.82	10306	761	-386	791	10.0
	10539.0	60.00	359.82	10363	842	-386	873	10.0
	10639.0	70.00	359.82	10406	933	-387	963	10.0
	10739.0	80.00	359.82	10431	1029	-387	1059	10.0
EOC/WFCP	10839.0	90.00	359.82	10440	1129	-387	1158	10.0
	11000.0	90.00	359.82	10440	1290	-388	1319	
	11500.0	90.00	359.82	10440	1790	-389	1817	
	12000.0	90.00	359.82	10440	2290	-391	2315	
	12500.0	90.00	359.82	10440	2790	-393	2814	
	13000.0	90.00	359.82	10440	3290	-394	3312	
	13500.0	90.00	359.82	10440	3790	-396	3810	
	14000.0	90.00	359.82	10440	4290	-397	4308	
TD	14243.0	90.00	359.82	10440	4533	-398	4550	



CONDITIONS OF APPROVAL

OPERATOR'S NAME: RKI EXPLORATION & PRODUCTION LLC

LEASE NO.: NM054290

WELL NAME & NO.: North Brusy Draw Federal 35 - 4H

SURFACE HOLE FOOTAGE: [175] ' F [S] L [2365] ' F [W] L

BOTTOM HOLE FOOTAGE: [230] ' F [N] L [2150] ' F [W] L

LOCATION: Section 035, T025. S., R 029 E., NMPM

COUNTY: Eddy County, New Mexico

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)

☒ **Eddy County**

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

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts 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. 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.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. 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. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

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

High Cave/Karst

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Delaware.

1. The 13-3/8 inch surface casing shall be set at approximately 600 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If salt is encountered, set casing at least 25 feet above the salt.
 - 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:

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 approved top of cement on the next stage.

b. Second stage above DV tool:

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

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, 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:

☒ Cement should tie-back at least 200 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 RP 53 Sec. 17.

2. **Operator has proposed a multi-bowl wellhead assembly that has a weld on head with no o-ring seals. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**
 - a. **Wellhead manufacturer is supplying the test plug/retrieval tool for the operator's third party tester to use during the BOP/BOPE test. Operator shall use the supplied test plug/retrieval tool.**
 - b. **Operator shall install the wear bushing required by the wellhead manufacturer. This wear bushing shall be installed by using the test plug/retrieval tool.**
 - c. **Wellhead manufacturer representative shall be on location when the intermediate casing mandrel is landed. Operator shall submit copy of manufacturer's wellsite report with subsequent report.**
 - d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
 - 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.**
3. **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. **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.

CRW 103014