NM OIL CONSERVATION
ARTESIA DISTRICT
APR 13 2015
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Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM98186

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.
HADAR 10 FED COM 2H

2. Name of Operator
DEVON ENERGY PRODUCTION CO LP
Contact: LINDA GOOD
EMail: linda.good@dvn.com

9. API Well No.
30-015-42346-00-X1

3a. Address
333 WEST SHERIDAN AVE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)
Ph: 405.552.6558

10. Field and Pool, or Exploratory
LUSK

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 11 T19S R31E SWNW 1930FNL 50FWL
32.674993 N Lat, 103.848630 W Lon

11. County or Parish, and State
EDDY COUNTY, NM

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 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 shall 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 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.)

Devon Energy Production Company, L.P. respectfully requests to run a tapered production string of 7" x 5.5" casing to a total depth of 13,961 ft measured depth as long as hole conditions permits. If lost circulation is encountered we will stay as originally planned to run a 5-1/2" production longstring. Casing design requirements are below as well as the cement design for both the 7" x 5-1/2" tapered production string and the 5-1/2" production longstring.

Devon Energy Production Company, L.P. respectfully requests moving the lateral and bottom-hole location 281 ft south of the target in the approved APD, but within the same production box. Please find attached the casing changes, design factors, cement table, and the updated directional well plan.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Accepted for record
NMOCD
4/28/15

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #297300 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION CO LP, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER SANCHEZ on 04/06/2015 (15JAS0296SE)

Name *(Printed/Typed)* LINDA GOOD — Title REGULATORY SPECIALIST

Signature (Electronic Submission) — Date 04/06/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
APR 6 2015
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By — Title — Date

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.

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

Hadar 10 Fed Com 2H– Sundry Request
AAA 4-2-2015: add option for a 7" x 5.5" Combination Production String and move the bottom-hole location from approved APD

Casing Program Changes: 7" x 5.5" Tapered Production String

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
8-3/4"	4300 - 8439	7"	0 - 8439	29#	BTC	P-110
8-3/4"	8439- 13961	5-1/2"	8439- 13961	17#	BTC	P-110

Casing Contingency Option: 5.5 Production Longstring

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
8-3/4"	4300 - 13961	5-1/2"	0 - 13961	17#	BTC	P-110

Note: only new casing will be utilized

MAXIMUM LATERAL TVD **9,064 ft**

Design Factors: 7" x 5.5" Tapered Production String

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
7" 29# P-110 BTC	2.17	2.86	3.90
5-1/2" 17# P-110 BTC	1.76	2.51	5.82

CEMENTING TABLE:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
7" x 5-1/2" Production Casing Single Stage	140	11.8	13.16	2.3	1st Lead	(50:50) Poz (Fly Ash):Premium Plus H + 0.005 lbs/sack Static Free + 0.5% bwoc FL-52 + 0.3% bwoc ASA-301 + 0.005 gps FP-6L + 10% bwoc Bentonite + 130.6% Fresh Water
	285	12.5	11.01	2.01	2nd Lead	(35:65) Poz (Fly Ash):Premium Plus H + 0.005 lbs/sack Static Free + 3% bwow Sodium Chloride + 0.05% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.7% bwoc FL-52 + 0.3% bwoc ASA-301 + 0.005 gps FP-6L + 6% bwoc Bentonite + 105.5% Fresh Water
	1435	14.2	5.76	1.28	Tail	(50:50) Poz (Fly Ash):Premium Plus H + 0.005 lbs/sack Static Free + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.4% bwoc FL-52 + 0.005 gps FP-6L + 0.5% bwoc Sodium Metasilicate + 0.05% bwoc R-21 + 57.2% Fresh Water

TOC for all Strings:

Production @ 3128' (Cement top will tie-back 50' above Capitan Reef at 3178')

Notes:

- Cement volumes Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data
- If lost circulation is encountered while drilling the production wellbore, the 5.5" original production longstring will be used with a DV tool installed a minimum of 50' below the previous casing shoe and of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately.

devon

Hadar 10 Fed Com 2H
Eddy Co, NM

Weatherford

Plan Data for Hadar 10 Fed Com 2H

Plan Point Information:
DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS (DLSU)
0.00	0.00	0.00	0.00	0.00	0.00	610339.65	690523.81	0.00	0.00
8489.00	0.00	0.00	8489.00	0.00	0.00	610339.65	690523.81	0.00	0.00
9034.45	60.00	226.10	8940.09	-180.59	-187.66	610159.06	690336.15	188.60	11.00
9504.19	90.81	269.69	9062.64	-333.40	-597.20	610006.25	689926.61	598.94	11.00
13961.95	90.81	269.69	9000.00	-357.60	-5054.45	609982.05	685469.36	5056.25	0.00

Plan Data for Hadar 10 Fed Com 2H

Slot: Hadar 10 Fed Com 2H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 610339.65USft Latitude: 32°40'37.0"
+E/-W: 0.00USft Easting: 690523.81USft Longitude: -103°50'54.5"
Elevation Above VRD: 3579.00USft

Plan Data for Hadar 10 Fed Com 2H

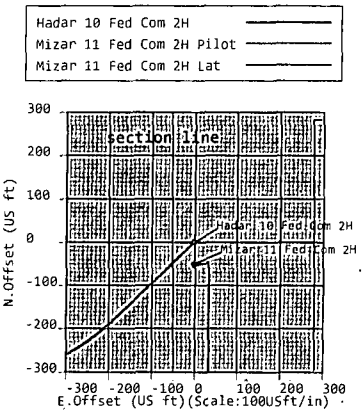
Target Set Information:
Name: Hardar 10 Fed Com 2H
Position offsets from Slot centre

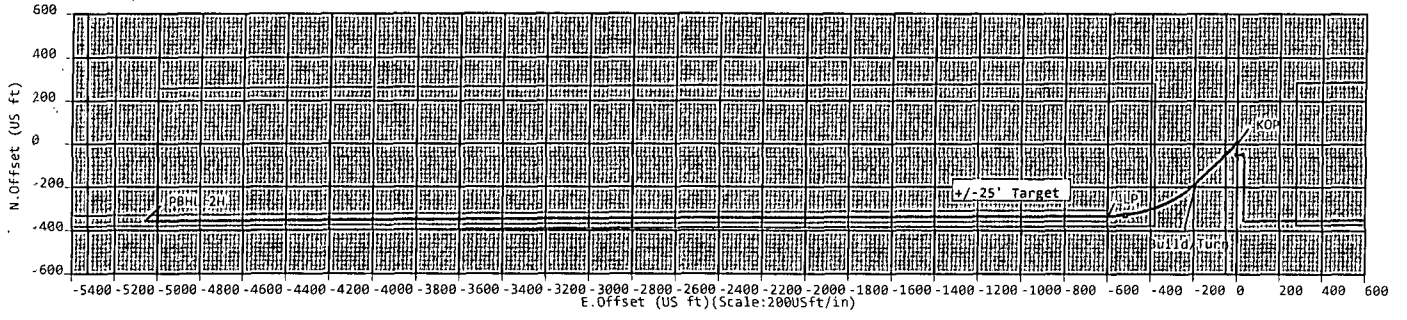
Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	Shape	Comment
Lp Tgt	9064.00	-333.05	-512.41	610006.60	690011.40	Cuboid	
PBHL 2H	9000.00	-357.60	-5054.45	609982.05	685469.36	Cuboid	

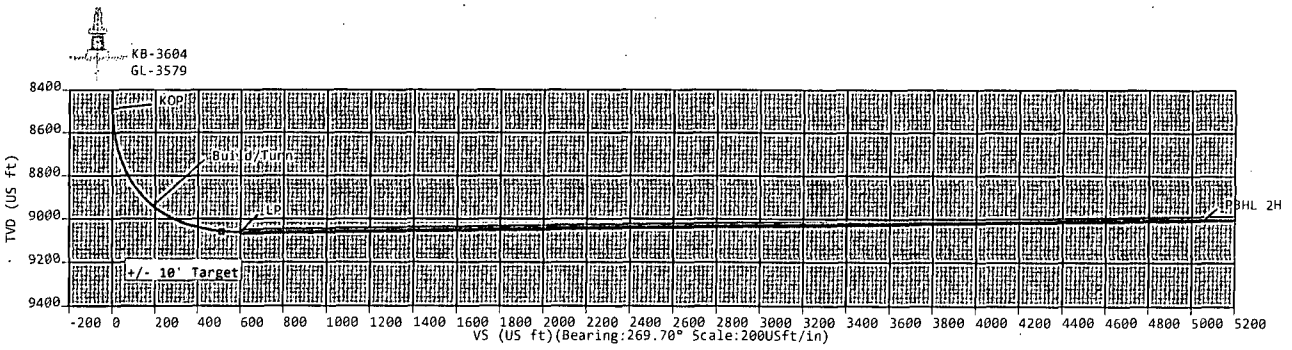
Plan Data for Hadar 10 Fed Com 2H

Well: Hadar 10 Fed Com 2H
Type: Main-Well
File Number:
Plan Folder: P1 Plan: P1:V3.
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 269.70°
+E/-W: 0.00USft
Magnetic Parameters:

Model:	Field Strength:	Declination:	Dip:	Date:
BGGM	48450(nT)	7.47°	60.46°	2015-03-30







Sign Off: Russell Joyner

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company, L.P.
LEASE NO.:	NMNM-98186
WELL NAME & NO.:	Hadar 10 Fed Com 2H
SURFACE HOLE FOOTAGE:	1930' FNL & 0050' FWL
BOTTOM HOLE FOOTAGE	1980' FNL & 0340' FWL Sec. 10, T. 19 S., R 31 E.
LOCATION:	Section 11, T. 19 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-42346

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)

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

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Yates** 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. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe.**

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 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.

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

Capitan Reef
Possibility of water flows in the Artesia Group and Capitan Reef.
Possibility of lost circulation in the Artesia Group Red Beds, Rustler, Captain Reef, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **745** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, 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.

Special Capitan Reef requirements:

If any lost circulation occurs below the Base of the Salt, the operator shall do the following:

- **Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.**

- **Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.**

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at approximately **4300** feet, is:

Operator has proposed DV tool at depth of 2600', 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, 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 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 Capitan Reef.**

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 **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 3178'). Operator shall provide method of verification. **Excess calculates to 22% - Additional cement will be required.**

Contingency Production Casing/Cement Plan:

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

Operator has proposed DV tool at depth of 4350', 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.

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 should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 3178'). Operator shall provide method of verification. **Excess calculates to 5% - Additional cement will be required.**

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. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. 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.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. 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**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    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.

JAM 040615