

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.***SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM130329
2. Name of Operator DEVON ENERGY PRODUCTION CO		6. If Indian, Allottee or Tribe Name
Contact: TRINA C COUCH Email: trina.couch@dev.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 333 WEST SHERIDAN AVE OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-228-7203	8. Well Name and No. MERLYN 27 22 FED 1H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 34 T21S R31E NENW 1165FNL 2385FWL 32.439120 N Lat, 103.766543 W Lon		9. API Well No. 30-015-42385-00-X1
		10. Field and Pool, or Exploratory LOST TANK
		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 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.)

Devon Energy Production Company, L.P. respectfully requests to change to a mixed intermediate casing string with 36" down to 3400' instead of just 40" all the way. Devon would also like to add a uni-head wellhead.

Please note that there is a new directional plan that shows us landing before the hardline but we will still not perforate or complete any hole before we cross into the 330' hardline on the North side of Sec. 27.

Please see the following attachments:
Drilling Plan
Directional Survey
Wellhead Schematics

Accepted for record

NMOCDC
11-9-14SEE ATTACHED FOR
CONDITIONS OF APPROVALNM OIL CONSERVATION
ARTESIA DISTRICT

NOV 07 2014

RECEIVED

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #274437 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION CO LP, sent to the Carlsbad Committed to AFMSS for processing by JENNIFER MASON on 11/04/2014 (15JAM0054SE)	
Name (Printed/Typed) TRINA C COUCH	Title REGULATORY ASSOCIATE
Signature (Electronic Submission)	Date 10/28/2014
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
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 #274437 that would not fit on the form

32. Additional remarks, continued

Thank you

REVISED Casing Merlyn 27-22 Fed 1H

1. Pressure Control Equipment

See COA
The BOP system used to drill the 12-1/4" and 8-3/4" holes will consist of a **13-5/8" 3M** BOP system Triple Ram and Annular preventer. The BOP System will be installed and tested prior to drilling out each casing shoe. The BOP system used to drill the 12-1/4" and 8-3/4" holes will be tested as per BLM Onshore Oil and Gas Order 2 as a **3M** system prior to drilling out of the casing shoe.

Devon proposes using a multi-bowl wellhead assembly (FMC Uni-head). 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 3000 (3M) psi.

- Wellhead will be installed by FMC's representatives.
- If the welding is performed by a third party, the FMC's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- FMC representative will install the test plug for the initial BOP test.
- FMC will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 70% of burst or 1500 psi, whichever is greater, as per Onshore Order #2.

After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the FMC Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

After running the 9-5/8" intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the FMC Uni-head.

The pipe rams will be operated and checked as per BLM Onshore Oil and Gas Order No. 2. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

See COA
Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); **if an H&P rig or Scan Texas rig drills this well. Otherwise no flex line is needed.** The line will be kept as straight as possible with minimal turns.

Auxiliary Well Control and Monitoring Equipment:

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

REVISED Casing Merlyn 27-22 Fed 1H

2. Casing Program:

See COA

per sundry

Hole Size (in)	Hole Interval (ft)	Casing OD (in)	Casing Interval (ft)	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2	0 to 750	13 3/8	0 to 750	48	STC	H-40	2.19	4.93	8.94
12 1/4	750 to 4110	9 5/8	0 to 3400	40	LTC	J-55	1.15	1.66	1.97
12 1/4	750 to 4110	9 5/8	3400 to 4110	40	LTC	J-55	1.20	1.85	3.16
8 3/4	4110 to 19199	5 1/2	0 to 19199	17	DWC/C	P-110RY	2.02	2.88	1.67

19,199 per directional plan

Casing Notes:

- The surface fresh water sands will be protected by setting 13-3/8" casing at 750' (minimum of 25 ft into the Rustler) and circulating cement back to surface.
- The salt section will be isolated by setting 9-5/8" casing at 4110 ft.
- The 5-1/2" production casing will be run to total depth and have a DV Stage Tool at least 50' into open hole, to isolate the lower Delaware Formation.
- All casing is new and API approved

Maximum Lateral TVD: 8352'

3. Proposed mud Circulations System:

See COA

Depth	Mud Weight	Viscosity	Fluid Loss	Type System
0 to 750	8.4 - 9.0	30 - 34	N/C	Water/Gel
0 to 4110	10.0 - 10.2	28	N/C	Brine
0 to 19199	8.4-9.0	28 - 29	NC - 40	Fresh Water

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

Cementing Table:

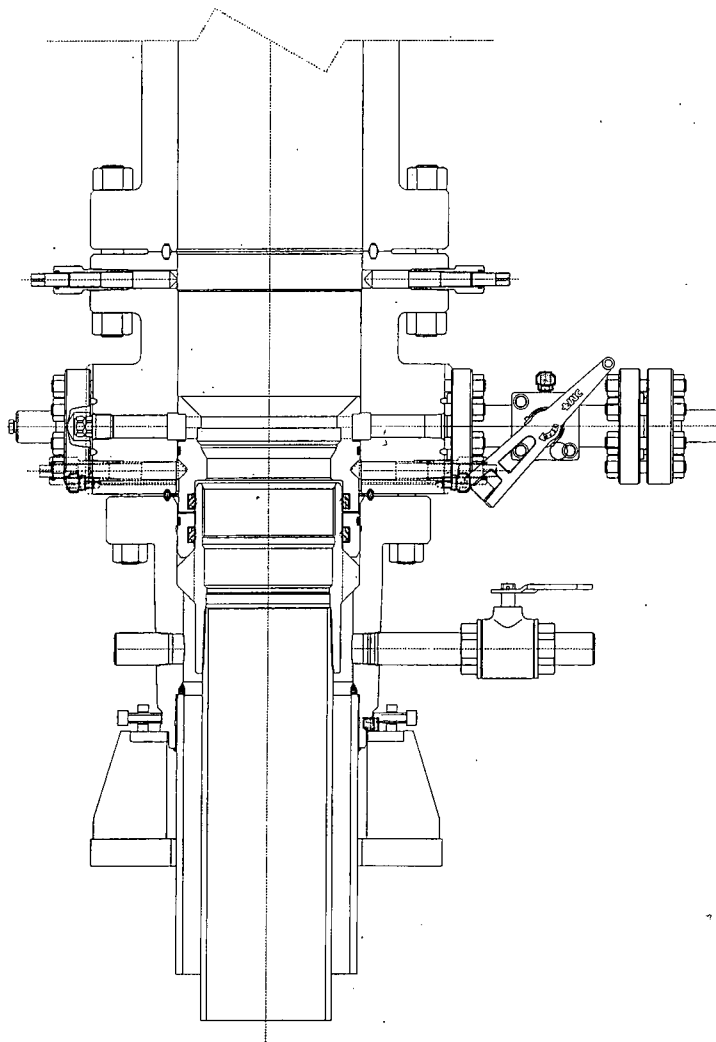
String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface	820	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
9-5/8" Intermediate	860	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
5-1/2" Production Casing	690	12.5	10.86	1.96	Lead	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	2550	14.5	5.38	1.22	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
	DV Tool at least 50' into open hole below previous casing.					
	320	11.0	15.23	3.17	Lead	Tuned Light Blend + 0.125 lb/sk Pol-E-Flake + 76.3% Fresh Water
	285	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water

TOC for all Strings:

Surface @ 0'
 Intermediate @ 0'
 Production (2 Stg) @ Stage 1 = 4200'
 Stage 2 = Surface

Notes:

- Cement volumes based on at least: Surface 75%, Intermediate 50%, Production 25% excess
- The 5-1/2" production casing will have a DV Stage Tool at 4200 ft to isolate the lower Delaware Formation. Stage 2 above the DV Stage Tool will circulate cement to surface.
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data



PRIMARY MODE

DEVON ENERGY

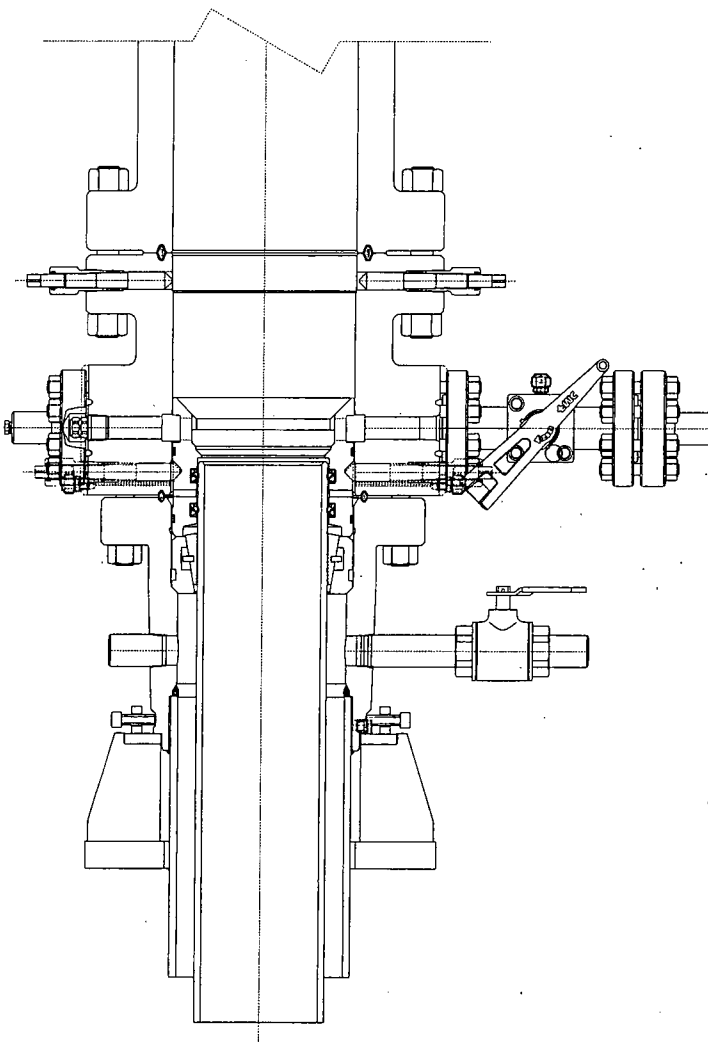
ARTESIA
S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

PRIVATE AND CONFIDENTIAL		REVISIONS	DESCRIPTION			
THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF FMC TECHNOLOGIES AND MAY NOT BE REPRODUCED, USED, DISCLOSED, OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES. THIS DOCUMENT IS ACCEPTED BY RECIPIENT PURSUANT TO AGREEMENT TO THE FOREGOING, AND MUST BE RETURNED UPON DEMAND.		A	05-08-13	DRAWN BY		
		B	1-22-14	K. VU	05-08-13	
		C	5-13-14	DRAFTING REVIEW		
				Z. MARQUEZ	05-08-13	
MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED FMC TECHNOLOGIES' DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON WITHOUT THE PRIOR EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES.				DESIGN REVIEW		DRAWING NUMBER
				K. TAHA	05-08-13	
				APPROVED BY		
				R. HAMILTON	05-08-13	DM100161771-2A

SURFACE WELLHEAD LAYOUT
UNIHEAD, UH-1, SOW,
DEVON ENERGY, ODESSA



CONTINGENCY MODE

DEVON ENERGY

ARTESIA

S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT

F18648

REF: DM100161737

DM100151315

PRIVATE AND CONFIDENTIAL THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF FMC TECHNOLOGIES AND MAY NOT BE REPRODUCED, USED, DISCLOSED, OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES. THIS DOCUMENT IS ACCEPTED BY RECIPIENT PURSUANT TO AGREEMENT TO THE FOREGOING, AND MUST BE RETURNED UPON DEMAND. MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED FMC TECHNOLOGIES' DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON WITHOUT THE PRIOR EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES.	REVISIONS		DESCRIPTION SURFACE WELLHEAD LAYOUT UNIHEAD, UH-1, SOW, DEVON ENERGY, ODESSA	DRAWN BY K. VU DRAFTING REVIEW Z. MARQUEZ DESIGN REVIEW K. TAHA APPROVED BY R. HAMILTON	05-08-13 05-08-13 05-08-13 05-08-13	FMC Technologies DRAWING NUMBER DM100161771-2B
	A	05-08-13				
	B	1-22-14				
	C	5-13-14				

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
 Site: Merlyn 27-22 Fed
 Well: 1H
 Wellbore: OH
 Design: Plan #2



Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 7.15°

Magnetic Field
 Strength: 48348.1snT
 Dip Angle: 60.26°
 Date: 10/14/2014
 Model: BGGM2014

devon

PROJECT DETAILS: Eddy County, NM (NAD-83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

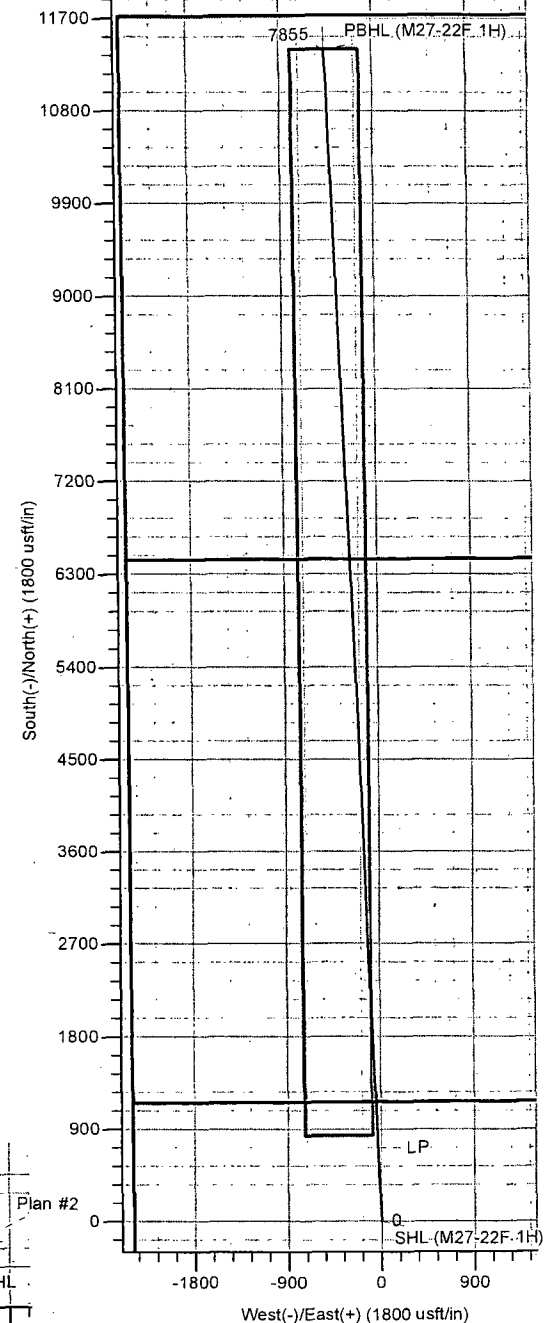
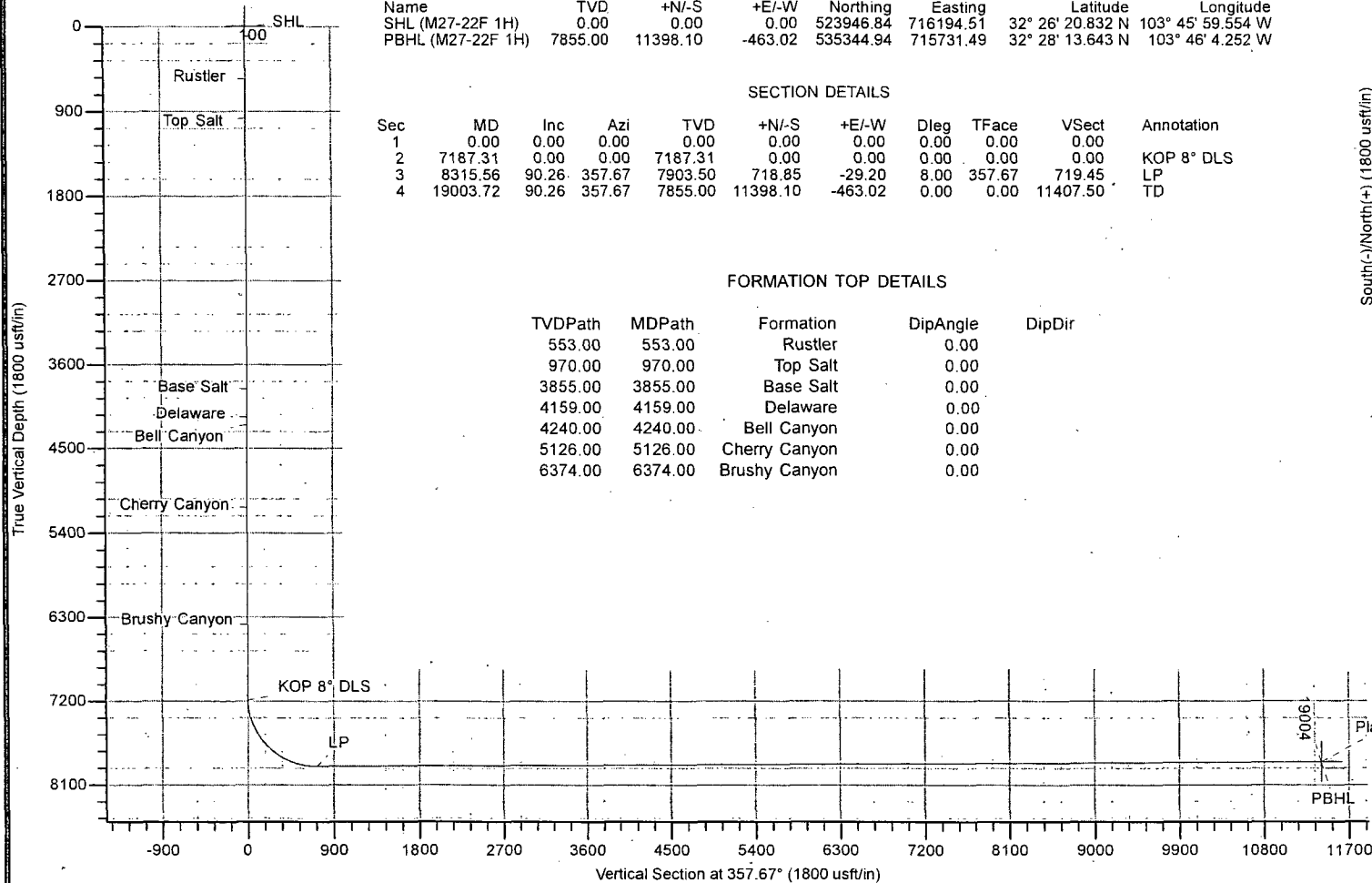
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (M27-22F 1H)	0.00	0.00	0.00	523946.84	716194.51	32° 26' 20.832 N	103° 45' 59.554 W
PBHL (M27-22F 1H)	7855.00	11398.10	-463.02	535344.94	715731.49	32° 28' 13.643 N	103° 46' 4.252 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7187.31	0.00	0.00	7187.31	0.00	0.00	0.00	0.00	0.00	KOP 8° DLS
3	8315.56	90.26	357.67	7903.50	718.85	-29.20	8.00	357.67	719.45	LP
4	19003.72	90.26	357.67	7855.00	11398.10	-463.02	0.00	0.00	11407.50	TD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
553.00	553.00	Rustler	0.00	
970.00	970.00	Top Salt	0.00	
3855.00	3855.00	Base Salt	0.00	
4159.00	4159.00	Delaware	0.00	
4240.00	4240.00	Bell Canyon	0.00	
5126.00	5126.00	Cherry Canyon	0.00	
6374.00	6374.00	Brushy Canyon	0.00	



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #2 (1H/OH)
 Merlyn 27-22 Fed
 Created By: Brady Deaver
 Date: 15:15, October 20 2014
 Approved: _____
 Date: _____

DEVON ENERGY

Eddy County, NM (NAD-83)

Merlyn 27-22 Fed

1H

OH

Plan: Plan #2

Standard Planning Report

20 October, 2014

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000:1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	Cactus 105 3480.8' GL + 28' RKB @ 3508.80usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 105 3480.8' GL + 28' RKB @ 3508.80usft
Site:	Merlyn 27-22 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Project:	Eddy County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Merlyn 27-22 Fed		
Site Position:		Northing:	523,946.84 usft
From:	Map	Easting:	716,194.51 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 26' 20.832 N
		Longitude:	103° 45' 59.554 W
		Grid Convergence:	0.30 °

Well:	1H, Brushy Canyon					
Well Position	+N/-S	0.00 usft	Northing:	523,946.84 usft	Latitude:	32° 26' 20.832 N
	+E/-W	0.00 usft	Easting:	716,194.51 usft	Longitude:	103° 45' 59.554 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,480.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/14/2014	7.45	60.26	48,348

Design:		Plan #2		
Audit Notes:				
Version:		Phase:	PLAN	Tie On Depth: 0.00
Vertical Section	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	357.67

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,187.31	0.00	0.00	7,187.31	0.00	0.00	0.00	0.00	0.00	0.00	
8,315.56	90.26	357.67	7,903.50	718.85	-29.20	8.00	8.00	0.00	357.67	
19,003.73	90.26	357.67	7,855.00	11,398.10	-463.02	0.00	0.00	0.00	0.00	PBHL (M27-22F 1H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	Cactus 105 3480.8' GL + 28' RKB @ 3508.80usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 105 3480.8' GL + 28' RKB @ 3508.80usft
Site:	Merlyn 27-22 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (M27-22F 1H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
553.00	0.00	0.00	553.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
970.00	0.00	0.00	970.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,855.00	0.00	0.00	3,855.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,159.00	0.00	0.00	4,159.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
Site:	Merlyn 27-22 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,240.00	0.00	0.00	4,240.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,126.00	0.00	0.00	5,126.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,374.00	0.00	0.00	6,374.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,187.31	0.00	0.00	7,187.31	0.00	0.00	0.00	0.00	0.00	0.00
KOP 8° DLS									
7,200.00	1.02	357.67	7,200.00	0.11	0.00	0.11	8.00	8.00	0.00
7,250.00	5.02	357.67	7,249.92	2.74	-0.11	2.74	8.00	8.00	0.00
7,300.00	9.02	357.67	7,299.54	8.84	-0.36	8.85	8.00	8.00	0.00
7,350.00	13.02	357.67	7,348.60	18.38	-0.75	18.40	8.00	8.00	0.00
7,400.00	17.02	357.67	7,396.89	31.32	-1.27	31.35	8.00	8.00	0.00
7,450.00	21.02	357.67	7,444.15	47.60	-1.93	47.64	8.00	8.00	0.00
7,500.00	25.02	357.67	7,490.16	67.13	-2.73	67.18	8.00	8.00	0.00
7,550.00	29.02	357.67	7,534.70	89.81	-3.65	89.89	8.00	8.00	0.00
7,600.00	33.02	357.67	7,577.54	115.55	-4.69	115.65	8.00	8.00	0.00
7,650.00	37.02	357.67	7,618.48	144.21	-5.86	144.33	8.00	8.00	0.00
7,700.00	41.02	357.67	7,657.32	175.66	-7.14	175.80	8.00	8.00	0.00
7,750.00	45.02	357.67	7,693.87	209.73	-8.52	209.90	8.00	8.00	0.00
7,800.00	49.02	357.67	7,727.96	246.27	-10.00	246.47	8.00	8.00	0.00
7,850.00	53.02	357.67	7,759.41	285.09	-11.58	285.33	8.00	8.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
Site:	Merlyn 27-22 Fed.	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)
7,900.00	57.02	357.67	7,788.07	326.02	-13.24	326.29	8.00	8.00	0.00
7,950.00	61.02	357.67	7,813.80	368.84	-14.98	369.14	8.00	8.00	0.00
8,000.00	65.02	357.67	7,836.49	413.35	-16.79	413.69	8.00	8.00	0.00
8,050.00	69.02	357.67	7,856.01	459.33	-18.66	459.71	8.00	8.00	0.00
8,100.00	73.02	357.67	7,872.27	506.56	-20.58	506.98	8.00	8.00	0.00
8,150.00	77.02	357.67	7,885.20	554.81	-22.54	555.27	8.00	8.00	0.00
8,200.00	81.02	357.67	7,894.72	603.85	-24.53	604.35	8.00	8.00	0.00
8,250.00	85.02	357.67	7,900.80	653.43	-26.54	653.96	8.00	8.00	0.00
8,300.00	89.02	357.67	7,903.40	703.31	-28.57	703.89	8.00	8.00	0.00
8,315.56	90.26	357.67	7,903.50	718.85	-29.20	719.45	8.00	8.00	0.00
LP									
8,400.00	90.26	357.67	7,903.12	803.22	-32.63	803.89	0.00	0.00	0.00
8,500.00	90.26	357.67	7,902.66	903.14	-36.69	903.88	0.00	0.00	0.00
8,600.00	90.26	357.67	7,902.21	1,003.06	-40.75	1,003.88	0.00	0.00	0.00
8,700.00	90.26	357.67	7,901.76	1,102.97	-44.81	1,103.88	0.00	0.00	0.00
8,800.00	90.26	357.67	7,901.30	1,202.89	-48.86	1,203.88	0.00	0.00	0.00
8,900.00	90.26	357.67	7,900.85	1,302.81	-52.92	1,303.88	0.00	0.00	0.00
9,000.00	90.26	357.67	7,900.40	1,402.72	-56.98	1,403.88	0.00	0.00	0.00
9,100.00	90.26	357.67	7,899.94	1,502.64	-61.04	1,503.88	0.00	0.00	0.00
9,200.00	90.26	357.67	7,899.49	1,602.56	-65.10	1,603.88	0.00	0.00	0.00
9,300.00	90.26	357.67	7,899.03	1,702.47	-69.16	1,703.88	0.00	0.00	0.00
9,400.00	90.26	357.67	7,898.58	1,802.39	-73.22	1,803.87	0.00	0.00	0.00
9,500.00	90.26	357.67	7,898.13	1,902.30	-77.28	1,903.87	0.00	0.00	0.00
9,600.00	90.26	357.67	7,897.67	2,002.22	-81.34	2,003.87	0.00	0.00	0.00
9,700.00	90.26	357.67	7,897.22	2,102.14	-85.39	2,103.87	0.00	0.00	0.00
9,800.00	90.26	357.67	7,896.77	2,202.05	-89.45	2,203.87	0.00	0.00	0.00
9,900.00	90.26	357.67	7,896.31	2,301.97	-93.51	2,303.87	0.00	0.00	0.00
10,000.00	90.26	357.67	7,895.86	2,401.89	-97.57	2,403.87	0.00	0.00	0.00
10,100.00	90.26	357.67	7,895.40	2,501.80	-101.63	2,503.87	0.00	0.00	0.00
10,200.00	90.26	357.67	7,894.95	2,601.72	-105.69	2,603.87	0.00	0.00	0.00
10,300.00	90.26	357.67	7,894.50	2,701.64	-109.75	2,703.87	0.00	0.00	0.00
10,400.00	90.26	357.67	7,894.04	2,801.55	-113.81	2,803.86	0.00	0.00	0.00
10,500.00	90.26	357.67	7,893.59	2,901.47	-117.87	2,903.86	0.00	0.00	0.00
10,600.00	90.26	357.67	7,893.13	3,001.39	-121.92	3,003.86	0.00	0.00	0.00
10,700.00	90.26	357.67	7,892.68	3,101.30	-125.98	3,103.86	0.00	0.00	0.00
10,800.00	90.26	357.67	7,892.23	3,201.22	-130.04	3,203.86	0.00	0.00	0.00
10,900.00	90.26	357.67	7,891.77	3,301.14	-134.10	3,303.86	0.00	0.00	0.00
11,000.00	90.26	357.67	7,891.32	3,401.05	-138.16	3,403.86	0.00	0.00	0.00
11,100.00	90.26	357.67	7,890.87	3,500.97	-142.22	3,503.86	0.00	0.00	0.00
11,200.00	90.26	357.67	7,890.41	3,600.89	-146.28	3,603.86	0.00	0.00	0.00
11,300.00	90.26	357.67	7,889.96	3,700.80	-150.34	3,703.86	0.00	0.00	0.00
11,400.00	90.26	357.67	7,889.50	3,800.72	-154.39	3,803.85	0.00	0.00	0.00
11,500.00	90.26	357.67	7,889.05	3,900.64	-158.45	3,903.85	0.00	0.00	0.00
11,600.00	90.26	357.67	7,888.60	4,000.55	-162.51	4,003.85	0.00	0.00	0.00
11,700.00	90.26	357.67	7,888.14	4,100.47	-166.57	4,103.85	0.00	0.00	0.00
11,800.00	90.26	357.67	7,887.69	4,200.39	-170.63	4,203.85	0.00	0.00	0.00
11,900.00	90.26	357.67	7,887.24	4,300.30	-174.69	4,303.85	0.00	0.00	0.00
12,000.00	90.26	357.67	7,886.78	4,400.22	-178.75	4,403.85	0.00	0.00	0.00
12,100.00	90.26	357.67	7,886.33	4,500.14	-182.81	4,503.85	0.00	0.00	0.00
12,200.00	90.26	357.67	7,885.87	4,600.05	-186.87	4,603.85	0.00	0.00	0.00
12,300.00	90.26	357.67	7,885.42	4,699.97	-190.92	4,703.85	0.00	0.00	0.00
12,400.00	90.26	357.67	7,884.97	4,799.89	-194.98	4,803.84	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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Company:	DEVON ENERGY	TVD Reference:	Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
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Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,500.00	90.26	357.67	7,884.51	4,899.80	-199.04	4,903.84	0.00	0.00	0.00
12,600.00	90.26	357.67	7,884.06	4,999.72	-203.10	5,003.84	0.00	0.00	0.00
12,700.00	90.26	357.67	7,883.61	5,099.63	-207.16	5,103.84	0.00	0.00	0.00
12,800.00	90.26	357.67	7,883.15	5,199.55	-211.22	5,203.84	0.00	0.00	0.00
12,900.00	90.26	357.67	7,882.70	5,299.47	-215.28	5,303.84	0.00	0.00	0.00
13,000.00	90.26	357.67	7,882.24	5,399.38	-219.34	5,403.84	0.00	0.00	0.00
13,100.00	90.26	357.67	7,881.79	5,499.30	-223.40	5,503.84	0.00	0.00	0.00
13,200.00	90.26	357.67	7,881.34	5,599.22	-227.45	5,603.84	0.00	0.00	0.00
13,300.00	90.26	357.67	7,880.88	5,699.13	-231.51	5,703.83	0.00	0.00	0.00
13,400.00	90.26	357.67	7,880.43	5,799.05	-235.57	5,803.83	0.00	0.00	0.00
13,500.00	90.26	357.67	7,879.98	5,898.97	-239.63	5,903.83	0.00	0.00	0.00
13,600.00	90.26	357.67	7,879.52	5,998.88	-243.69	6,003.83	0.00	0.00	0.00
13,700.00	90.26	357.67	7,879.07	6,098.80	-247.75	6,103.83	0.00	0.00	0.00
13,800.00	90.26	357.67	7,878.61	6,198.72	-251.81	6,203.83	0.00	0.00	0.00
13,900.00	90.26	357.67	7,878.16	6,298.63	-255.87	6,303.83	0.00	0.00	0.00
14,000.00	90.26	357.67	7,877.71	6,398.55	-259.93	6,403.83	0.00	0.00	0.00
14,100.00	90.26	357.67	7,877.25	6,498.47	-263.98	6,503.83	0.00	0.00	0.00
14,200.00	90.26	357.67	7,876.80	6,598.38	-268.04	6,603.83	0.00	0.00	0.00
14,300.00	90.26	357.67	7,876.34	6,698.30	-272.10	6,703.82	0.00	0.00	0.00
14,400.00	90.26	357.67	7,875.89	6,798.22	-276.16	6,803.82	0.00	0.00	0.00
14,500.00	90.26	357.67	7,875.44	6,898.13	-280.22	6,903.82	0.00	0.00	0.00
14,600.00	90.26	357.67	7,874.98	6,998.05	-284.28	7,003.82	0.00	0.00	0.00
14,700.00	90.26	357.67	7,874.53	7,097.97	-288.34	7,103.82	0.00	0.00	0.00
14,800.00	90.26	357.67	7,874.08	7,197.88	-292.40	7,203.82	0.00	0.00	0.00
14,900.00	90.26	357.67	7,873.62	7,297.80	-296.46	7,303.82	0.00	0.00	0.00
15,000.00	90.26	357.67	7,873.17	7,397.72	-300.51	7,403.82	0.00	0.00	0.00
15,100.00	90.26	357.67	7,872.71	7,497.63	-304.57	7,503.82	0.00	0.00	0.00
15,200.00	90.26	357.67	7,872.26	7,597.55	-308.63	7,603.82	0.00	0.00	0.00
15,300.00	90.26	357.67	7,871.81	7,697.47	-312.69	7,703.81	0.00	0.00	0.00
15,400.00	90.26	357.67	7,871.35	7,797.38	-316.75	7,803.81	0.00	0.00	0.00
15,500.00	90.26	357.67	7,870.90	7,897.30	-320.81	7,903.81	0.00	0.00	0.00
15,600.00	90.26	357.67	7,870.45	7,997.22	-324.87	8,003.81	0.00	0.00	0.00
15,700.00	90.26	357.67	7,869.99	8,097.13	-328.93	8,103.81	0.00	0.00	0.00
15,800.00	90.26	357.67	7,869.54	8,197.05	-332.99	8,203.81	0.00	0.00	0.00
15,900.00	90.26	357.67	7,869.08	8,296.97	-337.04	8,303.81	0.00	0.00	0.00
16,000.00	90.26	357.67	7,868.63	8,396.88	-341.10	8,403.81	0.00	0.00	0.00
16,100.00	90.26	357.67	7,868.18	8,496.80	-345.16	8,503.81	0.00	0.00	0.00
16,200.00	90.26	357.67	7,867.72	8,596.71	-349.22	8,603.80	0.00	0.00	0.00
16,300.00	90.26	357.67	7,867.27	8,696.63	-353.28	8,703.80	0.00	0.00	0.00
16,400.00	90.26	357.67	7,866.82	8,796.55	-357.34	8,803.80	0.00	0.00	0.00
16,500.00	90.26	357.67	7,866.36	8,896.46	-361.40	8,903.80	0.00	0.00	0.00
16,600.00	90.26	357.67	7,865.91	8,996.38	-365.46	9,003.80	0.00	0.00	0.00
16,700.00	90.26	357.67	7,865.45	9,096.30	-369.51	9,103.80	0.00	0.00	0.00
16,800.00	90.26	357.67	7,865.00	9,196.21	-373.57	9,203.80	0.00	0.00	0.00
16,900.00	90.26	357.67	7,864.55	9,296.13	-377.63	9,303.80	0.00	0.00	0.00
17,000.00	90.26	357.67	7,864.09	9,396.05	-381.69	9,403.80	0.00	0.00	0.00
17,100.00	90.26	357.67	7,863.64	9,495.96	-385.75	9,503.80	0.00	0.00	0.00
17,200.00	90.26	357.67	7,863.19	9,595.88	-389.81	9,603.79	0.00	0.00	0.00
17,300.00	90.26	357.67	7,862.73	9,695.80	-393.87	9,703.79	0.00	0.00	0.00
17,400.00	90.26	357.67	7,862.28	9,795.71	-397.93	9,803.79	0.00	0.00	0.00
17,500.00	90.26	357.67	7,861.82	9,895.63	-401.99	9,903.79	0.00	0.00	0.00
17,600.00	90.26	357.67	7,861.37	9,995.55	-406.04	10,003.79	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	Cactus 105 3480.8' GL + 28' RKB @ 3508.80usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 105 3480.8' GL + 28' RKB @ 3508.80usft
Site:	Merlyn 27-22 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
17,700.00	90.26	357.67	7,860.92	10,095.46	-410.10	10,103.79	0.00	0.00	0.00	
17,800.00	90.26	357.67	7,860.46	10,195.38	-414.16	10,203.79	0.00	0.00	0.00	
17,900.00	90.26	357.67	7,860.01	10,295.30	-418.22	10,303.79	0.00	0.00	0.00	
18,000.00	90.26	357.67	7,859.55	10,395.21	-422.28	10,403.79	0.00	0.00	0.00	
18,100.00	90.26	357.67	7,859.10	10,495.13	-426.34	10,503.79	0.00	0.00	0.00	
18,200.00	90.26	357.67	7,858.65	10,595.05	-430.40	10,603.78	0.00	0.00	0.00	
18,300.00	90.26	357.67	7,858.19	10,694.96	-434.46	10,703.78	0.00	0.00	0.00	
18,400.00	90.26	357.67	7,857.74	10,794.88	-438.52	10,803.78	0.00	0.00	0.00	
18,500.00	90.26	357.67	7,857.29	10,894.80	-442.57	10,903.78	0.00	0.00	0.00	
18,600.00	90.26	357.67	7,856.83	10,994.71	-446.63	11,003.78	0.00	0.00	0.00	
18,700.00	90.26	357.67	7,856.38	11,094.63	-450.69	11,103.78	0.00	0.00	0.00	
18,800.00	90.26	357.67	7,855.92	11,194.55	-454.75	11,203.78	0.00	0.00	0.00	
18,900.00	90.26	357.67	7,855.47	11,294.46	-458.81	11,303.78	0.00	0.00	0.00	
19,003.73	90.26	357.67	7,855.00	11,398.10	-463.02	11,407.50	0.00	0.00	0.00	
TD: PBHL (M27-22F 1H)										

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
Shape									Latitude Longitude
SHL (M27-22F 1H)	- plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	523,946.84	716,194.51	32° 26' 20.832 N 103° 45' 59.554 W
PBHL (M27-22F 1H)	- plan hits target center - Point	-0.26	358.19	7,855.00	11,398.10	-463.02	535,344.94	715,731.49	32° 28' 13.643 N 103° 46' 4.252 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
553.00	553.00	Rustler		0.00		
970.00	970.00	Top Salt		0.00		
3,855.00	3,855.00	Base Salt		0.00		
4,159.00	4,159.00	Delaware		0.00		
4,240.00	4,240.00	Bell Canyon		0.00		
5,126.00	5,126.00	Cherry Canyon		0.00		
6,374.00	6,374.00	Brushy Canyon		0.00		

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	ITVD Reference:	Cactus 105' 3480.8' GL + 28' RKB @ 3508.80usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 105' 3480.8' GL + 28' RKB @ 3508.80usft
Site:	Merlyn 27-22 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,187.31	7,187.31	0.00	0.00	KOP 8° DLS
8,315.56	7,903.50	718.85	-29.20	LP
19,003.73	7,855.00	11,398.10	-463.02	TD

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Devon Energy Production
LEASE NO.:	NMNM-130329
WELL NAME & NO.:	Merlyn 27-22 Fed 1H
SURFACE HOLE FOOTAGE:	1165' FNL & 2385' FWL
BOTTOM HOLE FOOTAGE:	0330' FNL & 1980' FWL Sec. 22, T. 21 S., R 31 E.
LOCATION:	Section 34, T. 21 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-42385

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. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, 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) 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.

R-111-P-Potash

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Delaware and Bone Spring.

1. The 13-3/8 inch surface casing shall be set at approximately 650 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.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- ☒ 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 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 **5-1/2** inch production casing is:

Operator has proposed DV tool at depth of 4160'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

- 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. **Excess calculates to 19% - Additional cement will be required.**
- b. 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.

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. **Operator has proposed a multi-bowl wellhead assembly. 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 3000 (3M) psi.**
 - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
 - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
 - c. **Manufacturer representative shall install the test plug for the initial BOP test.**
 - d. **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.**

4. 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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