

NM OIL CONSERVATION ARTESIA DISTRICT

State of New Mexico

AUG 18 2015

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

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) 748-9720
District III
1000 Rio Brazos Road, Aztec, 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

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43303		² Pool Code 96217	³ Pool Name Willow Lake; Bone Spring, Southeast
⁴ Property Code	⁵ Property Name COTTONTAIL 16 STATE		⁶ Well Number 3H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.		⁹ Elevation 3002.4

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	25 S	29 E		220	SOUTH	630	WEST	EDDY

¹¹ 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
D	16	25 S	29 E		330	NORTH	660	WEST	EDDY

¹² Dedicated Acres 160 ac	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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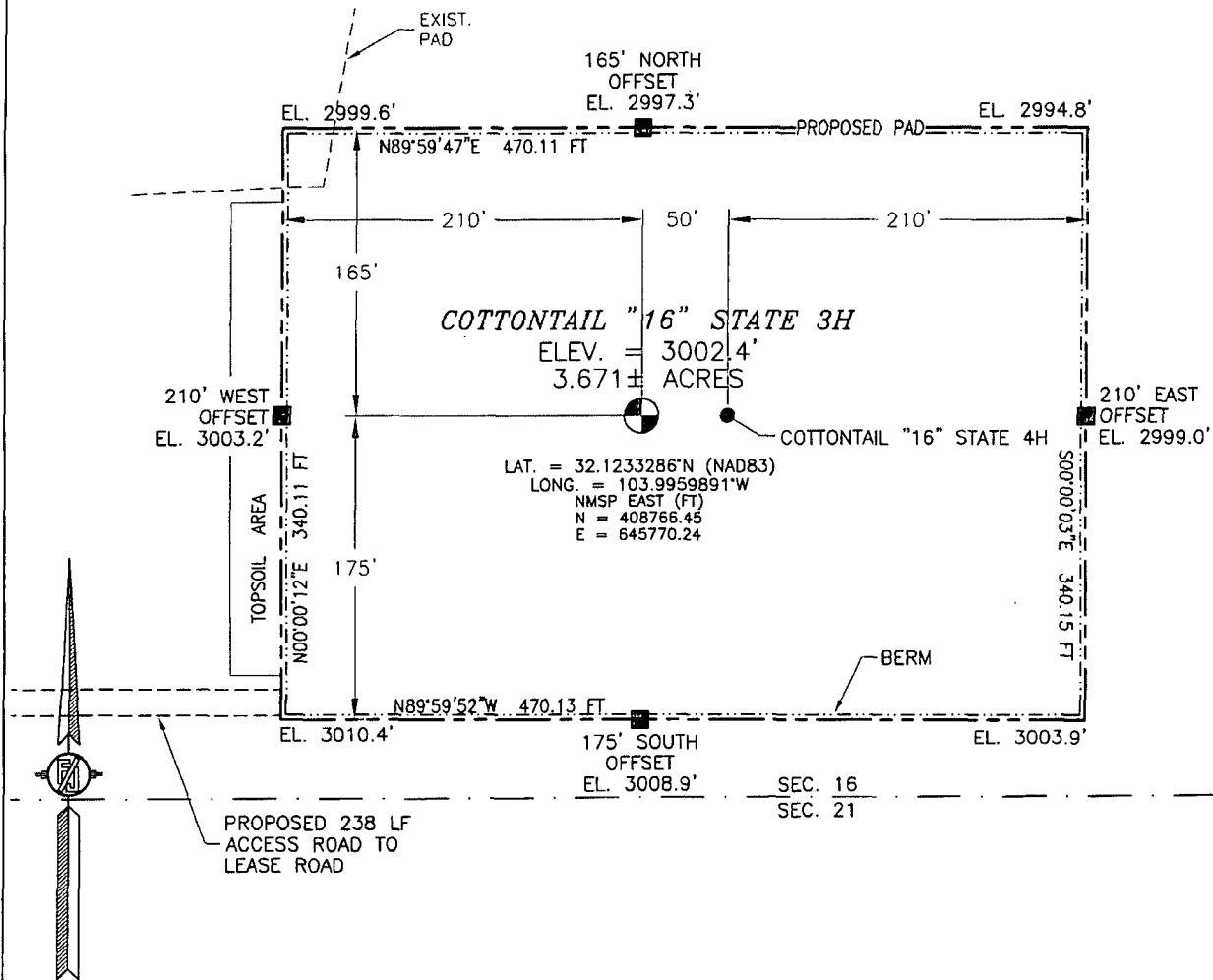
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

N89°45'43"E 2656.76 FT N89°45'32"E 2654.55 FT 660' 330' 630' 100°19'34"W 2654.40 FT 100°20'13"W 2656.94 FT 100°21'56"E 2654.42 FT 100°22'40"E 2655.54 FT			16" 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 a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Trina C. Couch</i> 8/17/15 Signature Date Trina C. Couch, Regulatory Analyst Printed Name trina.couch@dvn.com E-mail Address		
NW CORNER SEC. 16 LAT. = 32.1373193°N LONG. = 103.9980676°W NMSP EAST (FT) N = 413853.94 E = 645110.93 W Q CORNER SEC. 16 LAT. = 32.1300242°N LONG. = 103.9980455°W NMSP EAST (FT) N = 411200.17 E = 645126.04 COTTONTAIL "16" STATE 3H ELEV. = 3002.4' LAT. = 32.1233286°N (NAD83) LONG. = 103.9959891°W NMSP EAST (FT) N = 408766.45 E = 645770.24 SW CORNER SEC. 16 LAT. = 32.1227221°N LONG. = 103.9980217°W NMSP EAST (FT) N = 408543.86 E = 645141.67			NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. S Q CORNER SEC. 16 LAT. = 32.1227291°N LONG. = 103.9894392°W NMSP EAST (FT) N = 408554.79 E = 647798.63 SE CORNER SEC. 16 LAT. = 32.1227403°N LONG. = 103.9808569°W NMSP EAST (FT) N = 408567.46 E = 650455.48		
100°19'34"W 2654.40 FT 100°20'13"W 2656.94 FT 100°21'56"E 2654.42 FT 100°22'40"E 2655.54 FT			16" SURVEYOR 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. FILIMON F. JARAMILLO JULY 13, 2015 Date of Survey Signature and Seal of Public Surveyor Certificate Number: FILIMON F. JARAMILLO, PLS 12797 SURVEY NO. 4117		

8/18/15

SECTION 16, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF US HIGHWAY 285 AND LONGHORN ROAD GO EAST ON LONGHORN ROAD ACROSS THE PECOS RIVER TO THE FIRST ROAD ON LEFT APPROX. 4.3 MILES, TURN NORTHEAST GO APPROX. 1.8 MILES TO A LEASE ROAD ON LEFT (NORTH), TURN NORTH ON LEASE ROAD GO APPROX. 3.0 MILES TO A LEASE ROAD ON LEFT (WEST), TURN WEST GO APPROX. 1.0 MILE, TURN RIGHT (NORTH) GO NORTH APPROX. 400' TO ROAD LATH ON RIGHT (EAST) GO EAST APPROX. 238' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTONTAIL "16" STATE 3H

LOCATED 220 FT. FROM THE SOUTH LINE
AND 630 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 25 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

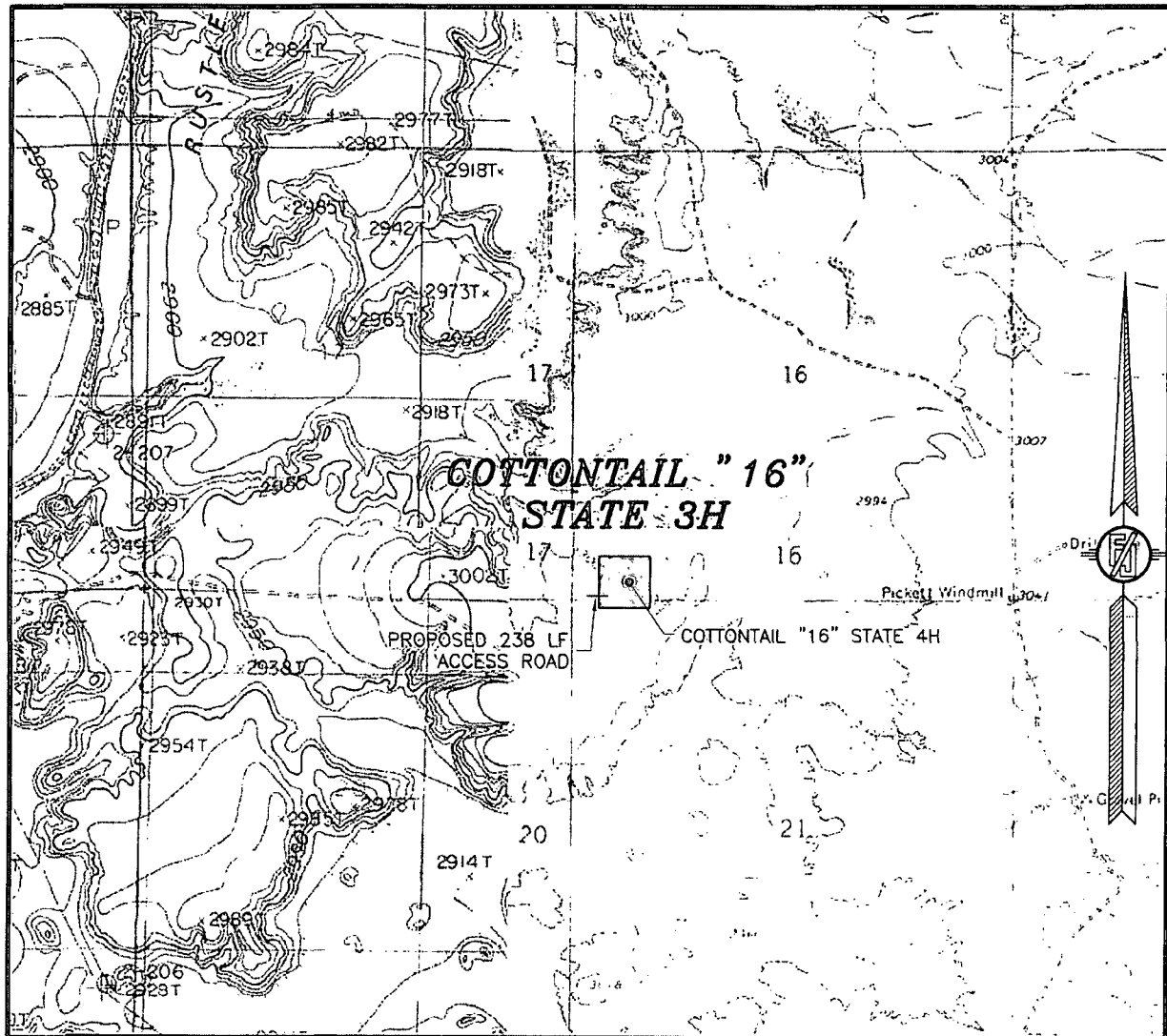
JULY 13, 2015

SURVEY NO. 4117

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 16, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LOCATION VERIFICATION MAP



USGS QUAD MAP:
 ROSS RANCH

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTONTAIL "16" STATE 3H

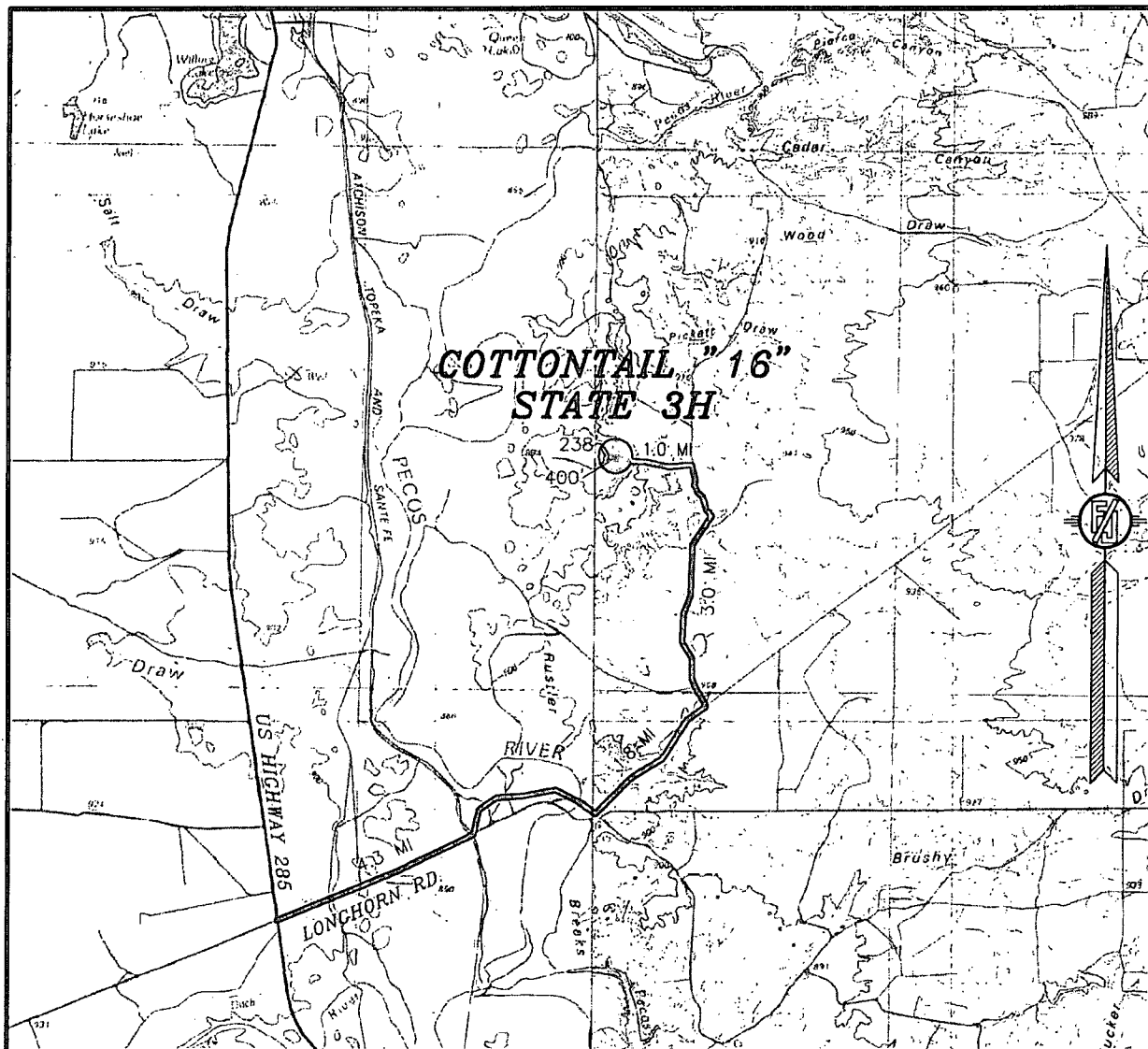
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JULY 13, 2015

SURVEY NO. 4117

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 16, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTONTAIL "16" STATE 3H

LOCATED 220 FT. FROM THE SOUTH LINE

AND 630 FT. FROM THE WEST LINE OF

SECTION 16, TOWNSHIP 25 SOUTH,

RANGE 29 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

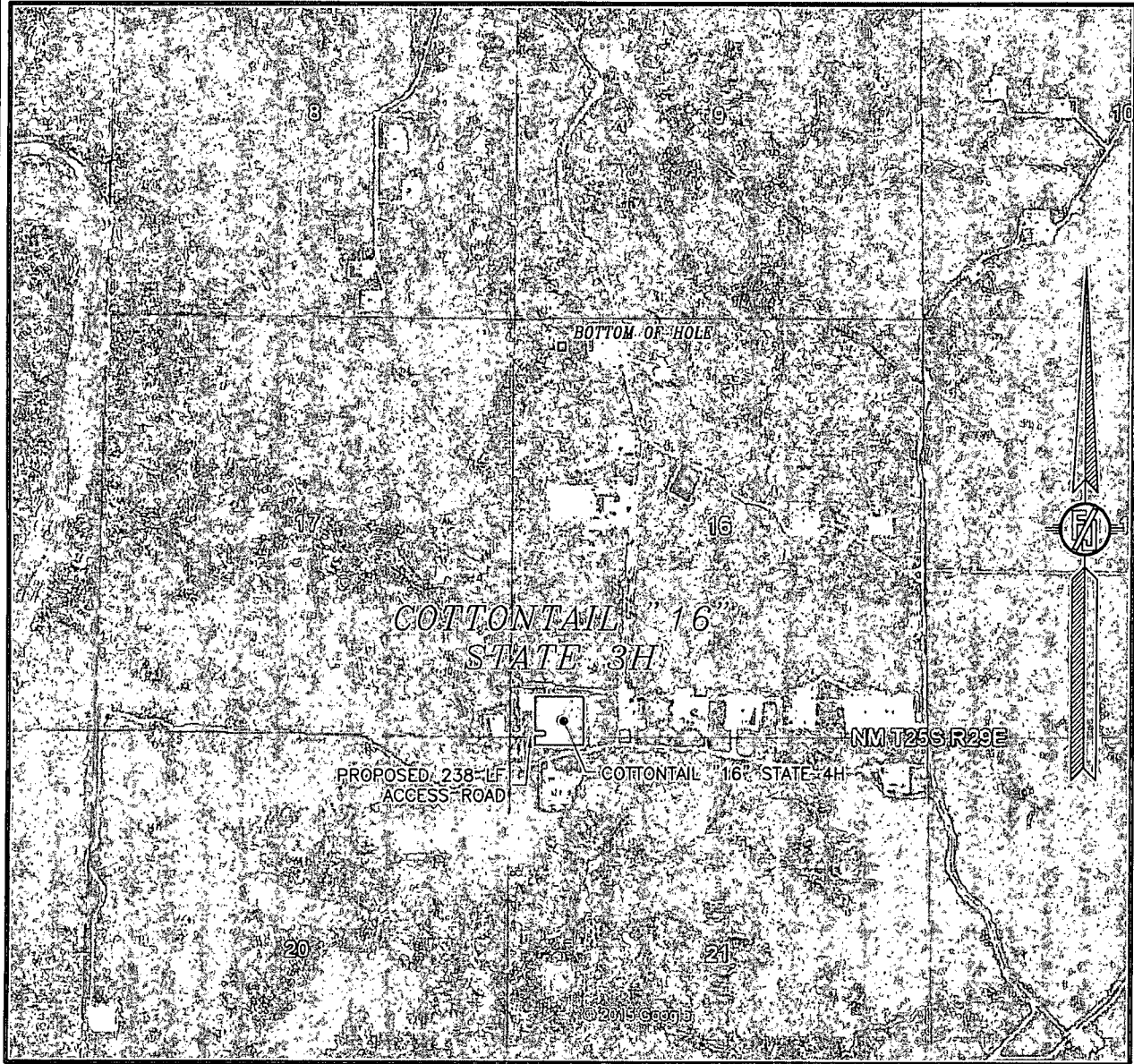
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LOCATION.

JULY 13, 2015

SURVEY NO. 4117

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 16, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
OCTOBER 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTONTAIL "16" STATE 3H

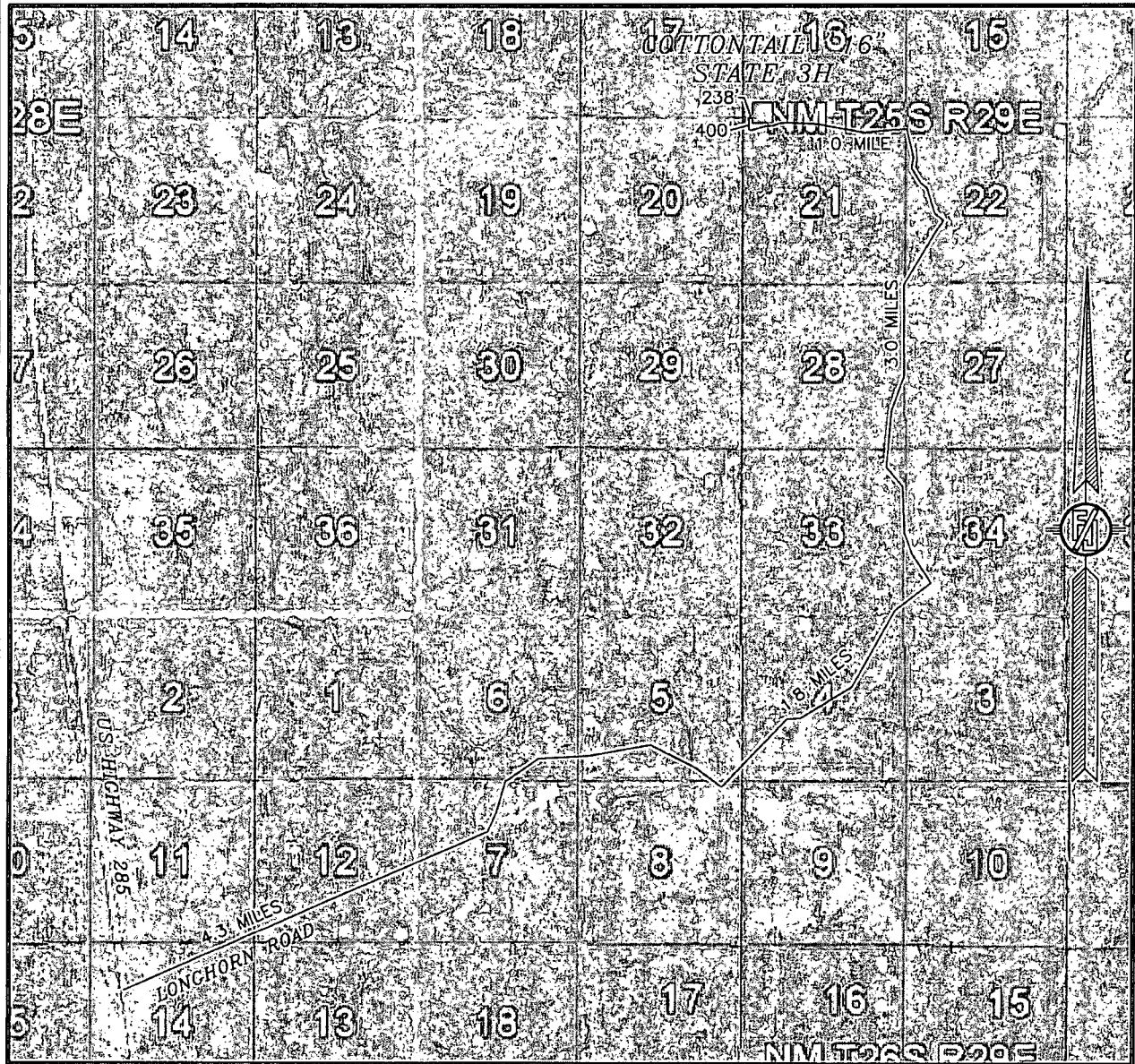
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EDDY COUNTY, STATE OF NEW MEXICO

JULY 13, 2015

SURVEY NO. 4117

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 16, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 OCTOBER 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTONTAIL "16" STATE 3H

LOCATED 220 FT. FROM THE SOUTH LINE
 AND 630 FT. FROM THE WEST LINE OF
 SECTION 16, TOWNSHIP 25 SOUTH,
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 EDDY COUNTY, STATE OF NEW MEXICO

JULY 13, 2015

SURVEY NO. 4117

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

Devon Energy, Cottontail 16 State 3H

1. Geologic Formations

TVD of target	8,670'	Pilot hole depth	N/A
MD at TD:	13,302'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	630		
Top of Salt	1,375		
Base of Salt	2,890		
Delaware	2,890		
Cherry Canyon	3,435		
Brushy Canyon	5,145		
1 st Bone Spring Lime	6,775		
1 st Bone Spring Sand	7,650		
2 nd Bone Spring Lime	7,950		
2 nd Bone Spring Sand	8,500		
Target Top	8,631		
Target Base	8,729		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Devon Energy, Cottontail 16 State 3H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	700'	13.375"	48	H-40	STC	1.83	4.11	15.03
12.25"	0	4,300'	9.625"	40	J-55	BTC	1.15	3.43	4.69
12.25"	4,300'	5,400'	9.625"	40	HCK-55	BTC	1.506	1.41	4.29
8.75"	0	13,302'	5.5"	17	P-110	LTC	1.22	1.51	2.51
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Devon Energy, Cottontail 16 State 3H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	760	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1230	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod Single Stage	390	11.9	12.89	2.31	n/a	Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	1390	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Prod Two Stage	360	11.9	12.89	2.31	n/a	1 st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	1390	14.5	5.31	1.2	25	1 st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV Tool = 5450ft					
	20	11	14.81	2.55	22	2 nd Stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	30	14.8	6.32	1.33	6	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
9-5/8" Intermediate	0'	75%
5-1/2" Production Casing Single Stage Option	5200'	25%
5-1/2" Production Casing Two Stage Option	1 st Stage = 5450' / 2 nd Stage = 5200'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Devon Energy, Cottontail 16 State 3H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using 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. • Wellhead will be installed by wellhead vendor representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • Wellhead 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 0.22 psi/ft 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 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 wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. 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.

Devon Energy, Cottontail 16 State 3H

	Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns
	See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	700'	FW Gel	8.6-8.8	28-34	N/C
700'	5,400'	Saturated Brine	10.0-10.2	28-34	N/C
5,400'	13,302'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

Devon Energy, Cottontail 16 State 3H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4193 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe



DEVON ENERGY
Project: Eddy Co., NM
Site: Cottontail 16 State Pad
Well: #3H
Wellbore: Original Hole
Design: Plan #1



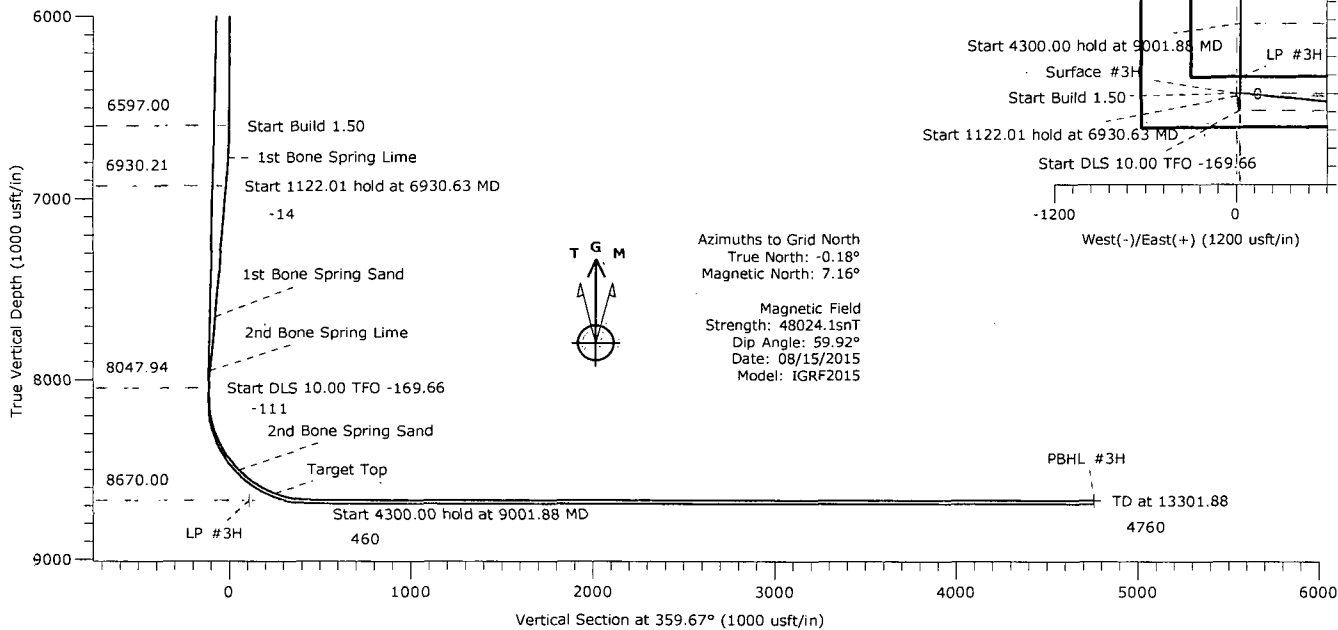
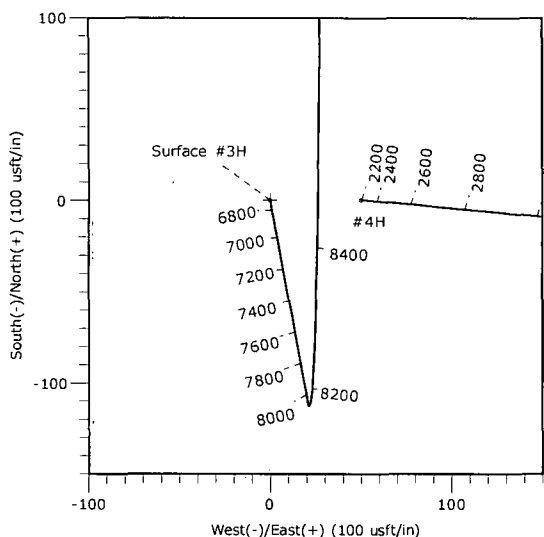
Precision
Directional Services

CASING DETAILS
No casing data is available

LEGEND

- ✕ #4H, Original Hole, Plan #1 V0
- Plan #1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
630.00	630.00	Rustler
1375.00	1375.00	Top of Salt
2890.00	2890.00	Base of Salt
2890.00	2890.00	Delaware
3435.00	3435.00	Cherry Canyon
5145.00	5145.00	Brushy Canyon
6775.00	6775.06	1st Bone Spring Lime
7650.00	7653.18	1st Bone Spring Sand
7950.00	7954.33	2nd Bone Spring Lime
8500.00	8548.77	2nd Bone Spring Sand
8631.00	8789.25	Target Top



Azimuths to Grid North
True North: -0.18°
Magnetic North: 7.16°

Magnetic Field
Strength: 48024.1nT
Dip Angle: 59.92°
Date: 08/15/2015
Model: IGRF2015

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Surface #3H	0.00	0.00	0.00	408766.45	645770.24	32° 7' 23.983 N	103° 59' 45.561 W	Point
LP #3H	8670.00	110.34	29.51	408876.79	645799.75	32° 7' 25.074 N	103° 59' 45.213 W	Point
PBHL #3H	8670.00	4760.31	2.43	413526.76	645772.67	32° 8' 11.091 N	103° 59' 45.359 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6597.00	0.00	0.00	6597.00	0.00	0.00	0.00	0.00	0.00	
3	6930.63	5.00	169.37	6930.21	-14.31	2.69	1.50	169.37	-14.33	
4	8052.64	5.00	169.37	8047.94	-110.51	20.74	0.00	0.00	-110.63	
5	9001.88	90.00	359.67	8670.00	460.38	27.20	10.00	-169.66	460.22	
6	13301.88	90.00	359.67	8670.00	4760.31	2.43	0.00	0.00	4760.22	PBHL #3H

Plan: Plan #1 (#3H Original Hole)
Created By: Michael Cabrera Date: 12/30/2015

PRECISION DIRECTIONAL SERVICES, INC.

713.435.6250

DEVON ENERGY

Eddy Co., NM

Cottontail 16 State Pad

#3H - Slot #3H

Original Hole

Plan: Plan #1

Standard Planning Report

30 July, 2015

Precision Drilling Corporation

Planning Report

Database:	Compass_US	Local Co-ordinate Reference:	Well #3H - Slot #3H
Company:	DEVON ENERGY	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Project:	Eddy Co., NM	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site:	Cottontail 16 State Pad	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Project	Eddy Co., NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Cottontail 16 State Pad			
Site Position:		Northing:	408,766.45 usft	Latitude:	32° 7' 23.983 N
From:	Map	Easting:	645,770.24 usft	Longitude:	103° 59' 45.561 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.18

Well	#3H - Slot #3H					
Well Position	+N/-S	0.00 usft	Northing:	408,766.45 usft	Latitude:	32° 7' 23.983 N
	+E/-W	0.00 usft	Easting:	645,770.24 usft	Longitude:	103° 59' 45.561 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,002.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	08/15/15	7.34	59.92	48,024

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.67

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	
6,597.00	0.00	0.00	6,597.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,930.63	5.00	169.37	6,930.21	-14.31	2.69	1.50	1.50	0.00	169.37	
8,052.64	5.00	169.37	8,047.94	-110.51	20.74	0.00	0.00	0.00	0.00	
9,001.88	90.00	359.67	8,670.00	460.38	27.20	10.00	8.95	-17.88	-169.66	
13,301.88	90.00	359.67	8,670.00	4,760.31	2.43	0.00	0.00	0.00	0.00	PBHL #3H

Precision Drilling Corporation

Planning Report

Database:	Compass_US	Local Co-ordinate Reference:	Well #3H - Slot #3H
Company:	DEVON ENERGY	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Project:	Eddy Co., NM	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site:	Cottontail 16 State Pad	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

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
Surface #3H									
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
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
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
3,900.00	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
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
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
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00

Precision Drilling Corporation

Planning Report

Database:	Compass_US	Local Co-ordinate Reference:	Well #3H - Slot #3H
Company:	DEVON ENERGY	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Project:	Eddy Co., NM	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site:	Cottontail 16 State Pad	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

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)	
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	
6,400.00	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	
6,597.00	0.00	0.00	6,597.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,600.00	0.05	169.37	6,600.00	0.00	0.00	0.00	1.50	1.50	0.00	
6,700.00	1.55	169.37	6,699.99	-1.36	0.26	-1.37	1.50	1.50	0.00	
6,800.00	3.05	169.37	6,799.90	-5.30	0.99	-5.31	1.50	1.50	0.00	
6,900.00	4.55	169.37	6,899.68	-11.81	2.22	-11.82	1.50	1.50	0.00	
6,930.63	5.00	169.37	6,930.21	-14.31	2.69	-14.33	1.50	1.50	0.00	
7,000.00	5.00	169.37	6,999.31	-20.26	3.80	-20.28	0.00	0.00	0.00	
7,100.00	5.00	169.37	7,098.93	-28.83	5.41	-28.86	0.00	0.00	0.00	
7,200.00	5.00	169.37	7,198.55	-37.41	7.02	-37.45	0.00	0.00	0.00	
7,300.00	5.00	169.37	7,298.17	-45.98	8.63	-46.03	0.00	0.00	0.00	
7,400.00	5.00	169.37	7,397.79	-54.55	10.24	-54.61	0.00	0.00	0.00	
7,500.00	5.00	169.37	7,497.41	-63.13	11.85	-63.19	0.00	0.00	0.00	
7,600.00	5.00	169.37	7,597.02	-71.70	13.46	-71.78	0.00	0.00	0.00	
7,700.00	5.00	169.37	7,696.64	-80.27	15.07	-80.36	0.00	0.00	0.00	
7,800.00	5.00	169.37	7,796.26	-88.85	16.68	-88.94	0.00	0.00	0.00	
7,900.00	5.00	169.37	7,895.88	-97.42	18.29	-97.53	0.00	0.00	0.00	
8,000.00	5.00	169.37	7,995.50	-106.00	19.90	-106.11	0.00	0.00	0.00	
8,052.64	5.00	169.37	8,047.94	-110.51	20.74	-110.63	0.00	0.00	0.00	
8,100.00	0.92	101.51	8,095.23	-112.62	21.50	-112.74	10.00	-8.63	-143.30	
8,150.00	4.89	10.21	8,145.17	-110.59	22.27	-110.72	10.00	7.96	-182.61	
8,200.00	9.85	4.84	8,194.74	-104.23	23.01	-104.36	10.00	9.92	-10.73	
8,250.00	14.84	3.06	8,243.57	-93.57	23.71	-93.70	10.00	9.97	-3.57	
8,300.00	19.83	2.16	8,291.28	-78.69	24.37	-78.83	10.00	9.99	-1.80	
8,350.00	24.83	1.61	8,337.52	-59.71	24.99	-59.85	10.00	9.99	-1.10	
8,400.00	29.82	1.24	8,381.93	-36.77	25.55	-36.92	10.00	9.99	-0.75	
8,450.00	34.82	0.96	8,424.17	-10.05	26.06	-10.20	10.00	10.00	-0.55	
8,500.00	39.82	0.75	8,463.92	20.25	26.50	20.10	10.00	10.00	-0.43	
8,550.00	44.82	0.57	8,500.87	53.90	26.89	53.75	10.00	10.00	-0.35	
8,600.00	49.82	0.43	8,534.76	90.65	27.21	90.49	10.00	10.00	-0.29	
8,650.00	54.82	0.30	8,565.31	130.20	27.46	130.04	10.00	10.00	-0.25	
8,689.83	58.80	0.21	8,587.11	163.53	27.61	163.37	10.00	10.00	-0.22	
LP #3H										
8,700.00	59.82	0.19	8,592.31	172.27	27.64	172.11	10.00	10.00	-0.21	
8,750.00	64.82	0.09	8,615.53	216.54	27.75	216.37	10.00	10.00	-0.20	
8,800.00	69.81	360.00	8,634.80	262.65	27.78	262.49	10.00	10.00	-0.18	
8,850.00	74.81	359.91	8,649.99	310.27	27.75	310.11	10.00	10.00	-0.17	
8,900.00	79.81	359.83	8,660.97	359.04	27.64	358.87	10.00	10.00	-0.16	
8,950.00	84.81	359.75	8,667.65	408.57	27.46	408.41	10.00	10.00	-0.16	
9,001.88	90.00	359.67	8,670.00	460.38	27.20	460.22	10.00	10.00	-0.16	
9,100.00	90.00	359.67	8,670.00	558.50	26.63	558.34	0.00	0.00	0.00	

Precision Drilling Corporation

Planning Report

Database:	Compass_US	Local Co-ordinate Reference:	Well #3H - Slot #3H
Company:	DEVON ENERGY	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Project:	Eddy Co., NM	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site:	Cottontail 16 State Pad	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

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)
9,200.00	90.00	359.67	8,670.00	658.50	26.06	658.34	0.00	0.00	0.00
9,300.00	90.00	359.67	8,670.00	758.50	25.48	758.34	0.00	0.00	0.00
9,400.00	90.00	359.67	8,670.00	858.49	24.90	858.34	0.00	0.00	0.00
9,500.00	90.00	359.67	8,670.00	958.49	24.33	958.34	0.00	0.00	0.00
9,600.00	90.00	359.67	8,670.00	1,058.49	23.75	1,058.34	0.00	0.00	0.00
9,700.00	90.00	359.67	8,670.00	1,158.49	23.18	1,158.34	0.00	0.00	0.00
9,800.00	90.00	359.67	8,670.00	1,258.49	22.60	1,258.34	0.00	0.00	0.00
9,900.00	90.00	359.67	8,670.00	1,358.49	22.02	1,358.34	0.00	0.00	0.00
10,000.00	90.00	359.67	8,670.00	1,458.48	21.45	1,458.34	0.00	0.00	0.00
10,100.00	90.00	359.67	8,670.00	1,558.48	20.87	1,558.34	0.00	0.00	0.00
10,200.00	90.00	359.67	8,670.00	1,658.48	20.30	1,658.34	0.00	0.00	0.00
10,300.00	90.00	359.67	8,670.00	1,758.48	19.72	1,758.34	0.00	0.00	0.00
10,400.00	90.00	359.67	8,670.00	1,858.48	19.14	1,858.34	0.00	0.00	0.00
10,500.00	90.00	359.67	8,670.00	1,958.48	18.57	1,958.34	0.00	0.00	0.00
10,600.00	90.00	359.67	8,670.00	2,058.47	17.99	2,058.34	0.00	0.00	0.00
10,700.00	90.00	359.67	8,670.00	2,158.47	17.42	2,158.34	0.00	0.00	0.00
10,800.00	90.00	359.67	8,670.00	2,258.47	16.84	2,258.34	0.00	0.00	0.00
10,900.00	90.00	359.67	8,670.00	2,358.47	16.26	2,358.34	0.00	0.00	0.00
11,000.00	90.00	359.67	8,670.00	2,458.47	15.69	2,458.34	0.00	0.00	0.00
11,100.00	90.00	359.67	8,670.00	2,558.47	15.11	2,558.34	0.00	0.00	0.00
11,200.00	90.00	359.67	8,670.00	2,658.46	14.54	2,658.34	0.00	0.00	0.00
11,300.00	90.00	359.67	8,670.00	2,758.46	13.96	2,758.34	0.00	0.00	0.00
11,400.00	90.00	359.67	8,670.00	2,858.46	13.38	2,858.34	0.00	0.00	0.00
11,500.00	90.00	359.67	8,670.00	2,958.46	12.81	2,958.34	0.00	0.00	0.00
11,600.00	90.00	359.67	8,670.00	3,058.46	12.23	3,058.34	0.00	0.00	0.00
11,700.00	90.00	359.67	8,670.00	3,158.46	11.66	3,158.34	0.00	0.00	0.00
11,800.00	90.00	359.67	8,670.00	3,258.45	11.08	3,258.34	0.00	0.00	0.00
11,900.00	90.00	359.67	8,670.00	3,358.45	10.50	3,358.34	0.00	0.00	0.00
12,000.00	90.00	359.67	8,670.00	3,458.45	9.93	3,458.34	0.00	0.00	0.00
12,100.00	90.00	359.67	8,670.00	3,558.45	9.35	3,558.34	0.00	0.00	0.00
12,200.00	90.00	359.67	8,670.00	3,658.45	8.78	3,658.34	0.00	0.00	0.00
12,300.00	90.00	359.67	8,670.00	3,758.45	8.20	3,758.34	0.00	0.00	0.00
12,400.00	90.00	359.67	8,670.00	3,858.44	7.62	3,858.34	0.00	0.00	0.00
12,500.00	90.00	359.67	8,670.00	3,958.44	7.05	3,958.34	0.00	0.00	0.00
12,600.00	90.00	359.67	8,670.00	4,058.44	6.47	4,058.34	0.00	0.00	0.00
12,700.00	90.00	359.67	8,670.00	4,158.44	5.90	4,158.34	0.00	0.00	0.00
12,800.00	90.00	359.67	8,670.00	4,258.44	5.32	4,258.34	0.00	0.00	0.00
12,900.00	90.00	359.67	8,670.00	4,358.44	4.74	4,358.34	0.00	0.00	0.00
13,000.00	90.00	359.67	8,670.00	4,458.43	4.17	4,458.34	0.00	0.00	0.00
13,100.00	90.00	359.67	8,670.00	4,558.43	3.59	4,558.34	0.00	0.00	0.00
13,200.00	90.00	359.67	8,670.00	4,658.43	3.02	4,658.34	0.00	0.00	0.00
13,301.88	90.00	359.67	8,670.00	4,760.31	2.43	4,760.22	0.00	0.00	0.00
PBHL #3H									

Precision Drilling Corporation

Planning Report

Database:	Compass_US	Local Co-ordinate Reference:	Well #3H - Slot #3H
Company:	DEVON ENERGY	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Project:	Eddy Co., NM	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site:	Cottontail 16 State Pad	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Surface #3H	0.00	0.00	0.00	0.00	0.00	408,766.45	645,770.24	32° 7' 23.983 N	103° 59' 45.561 W
- plan hits target center									
- Point									
LP #3H	0.00	0.00	8,670.00	110.34	29.51	408,876.79	645,799.76	32° 7' 25.074 N	103° 59' 45.213 W
- plan misses target center by 98.50usft at 8689.83usft MD (8587.11 TVD, 163.53 N, 27.61 E)									
- Point									
PBHL #3H	0.00	0.00	8,670.00	4,760.31	2.43	413,526.76	645,772.67	32° 8' 11.091 N	103° 59' 45.359 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
630.00	-2,397.00	Rustler		0.00		
1,375.00	-1,652.00	Top of Salt		0.00		
2,890.00	-137.00	Base of Salt		0.00		
2,890.00	-137.00	Delaware		0.00		
3,435.00	408.00	Cherry Canyon		0.00		
5,145.00	2,118.00	Brushy Canyon		0.00		
6,775.06	3,748.00	1st Bone Spring Lime		0.00		
7,653.18	4,623.00	1st Bone Spring Sand		0.00		
7,954.33	4,923.00	2nd Bone Spring Lime		0.00		
8,548.77	5,473.00	2nd Bone Spring Sand		0.00		
8,789.25	5,604.00	Target Top		0.00		

DEVON ENERGY

Eddy Co., NM

Cottontail 16 State Pad

#3H

Original Hole

Plan #1

Anticollision Report

30 July, 2015

Precision Drilling Corporation

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well #3H - Slot #3H
Project:	Eddy Co., NM	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Reference Site:	Cottontail 16 State Pad	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Hole	Database:	Compass_US
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 2,000.00 us
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program		Date	07/29/15		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	13,301.24	Plan #1 (Original Hole)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary		Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Site Name	Offset Well - Wellbore - Design						
	Cottontail 16 State Pad						
	#4H - Original Hole - Plan #1	2,116.67	2,116.67	50.01	35.28	3.396 CC	
	#4H - Original Hole - Plan #1	2,200.00	2,199.22	50.47	35.16	3.295 ES, SF	

Offset Design Cottontail 16 State Pad - #4H - Original Hole - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	89.81	0.17	50.01	50.01				
100.00	100.00	100.00	100.00	0.13	0.13	89.81	0.17	50.01	50.01	49.74	0.27	186.013	
200.00	200.00	200.00	200.00	0.49	0.49	89.81	0.17	50.01	50.01	49.02	0.99	50.731	
300.00	300.00	300.00	300.00	0.85	0.85	89.81	0.17	50.01	50.01	48.31	1.70	29.370	
400.00	400.00	400.00	400.00	1.21	1.21	89.81	0.17	50.01	50.01	47.59	2.42	20.668	
500.00	500.00	500.00	500.00	1.57	1.57	89.81	0.17	50.01	50.01	46.87	3.14	15.944	
600.00	600.00	600.00	600.00	1.93	1.93	89.81	0.17	50.01	50.01	46.16	3.85	12.978	
700.00	700.00	700.00	700.00	2.29	2.29	89.81	0.17	50.01	50.01	45.44	4.57	10.942	
800.00	800.00	800.00	800.00	2.64	2.64	89.81	0.17	50.01	50.01	44.72	5.29	9.458	
900.00	900.00	900.00	900.00	3.00	3.00	89.81	0.17	50.01	50.01	44.01	6.00	8.329	
1,000.00	1,000.00	1,000.00	1,000.00	3.36	3.36	89.81	0.17	50.01	50.01	43.29	6.72	7.441	
1,100.00	1,100.00	1,100.00	1,100.00	3.72	3.72	89.81	0.17	50.01	50.01	42.57	7.44	6.723	
1,200.00	1,200.00	1,200.00	1,200.00	4.08	4.08	89.81	0.17	50.01	50.01	41.86	8.16	6.132	
1,300.00	1,300.00	1,300.00	1,300.00	4.44	4.44	89.81	0.17	50.01	50.01	41.14	8.87	5.637	
1,400.00	1,400.00	1,400.00	1,400.00	4.79	4.79	89.81	0.17	50.01	50.01	40.42	9.59	5.215	
1,500.00	1,500.00	1,500.00	1,500.00	5.15	5.15	89.81	0.17	50.01	50.01	39.70	10.31	4.853	
1,600.00	1,600.00	1,600.00	1,600.00	5.51	5.51	89.81	0.17	50.01	50.01	38.99	11.02	4.537	
1,700.00	1,700.00	1,700.00	1,700.00	5.87	5.87	89.81	0.17	50.01	50.01	38.27	11.74	4.260	
1,800.00	1,800.00	1,800.00	1,800.00	6.23	6.23	89.81	0.17	50.01	50.01	37.55	12.46	4.015	
1,900.00	1,900.00	1,900.00	1,900.00	6.59	6.59	89.81	0.17	50.01	50.01	36.84	13.17	3.796	
2,000.00	2,000.00	2,000.00	2,000.00	6.95	6.95	89.81	0.17	50.01	50.01	36.12	13.89	3.600	
2,100.00	2,100.00	2,100.00	2,100.00	7.30	7.30	89.81	0.17	50.01	50.01	35.40	14.61	3.424	
2,116.67	2,116.67	2,116.67	2,116.67	7.36	7.36	89.81	0.17	50.01	50.01	35.28	14.73	3.396 CC	
2,200.00	2,200.00	2,199.22	2,199.22	7.66	7.65	89.85	0.13	50.47	50.47	35.16	15.32	3.295 ES, SF	
2,300.00	2,300.00	2,297.85	2,297.81	8.02	7.99	90.14	-0.13	53.26	53.30	37.29	16.01	3.329	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Precision Drilling Corporation

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well #3H - Slot #3H
Project:	Eddy Co., NM	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Reference Site:	Cottontail 16 State Pad	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Hole	Database:	Compass_US
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Cottontail 16 State Pad - #4H - Original Hole - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-MWD-HGRF														
Reference		Offset		Semi Major Axis			Distance			Minimum Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor			
2,400.00	2,400.00	2,396.27	2,396.08	8.38	8.33	90.60	-0.61	58.57	58.70	42.00	16.70	3.514		
2,500.00	2,500.00	2,494.35	2,493.84	8.74	8.67	91.14	-1.32	66.37	66.66	49.27	17.40	3.832		
2,600.00	2,600.00	2,591.96	2,590.91	9.10	9.01	91.69	-2.26	76.61	77.18	59.09	18.09	4.266		
2,700.00	2,700.00	2,688.98	2,687.10	9.45	9.36	92.19	-3.41	89.23	90.22	71.44	18.78	4.803		
2,800.00	2,800.00	2,785.30	2,782.23	9.81	9.72	92.63	-4.78	104.16	105.78	86.30	19.47	5.432		
2,900.00	2,900.00	2,880.79	2,876.16	10.17	10.09	92.99	-6.35	121.32	123.81	103.64	20.16	6.141		
3,000.00	3,000.00	2,976.70	2,970.06	10.53	10.47	93.30	-8.12	140.73	144.11	123.26	20.85	6.911		
3,100.00	3,100.00	3,074.52	3,065.74	10.89	10.88	93.54	-9.97	160.98	164.88	143.33	21.55	7.652		
3,200.00	3,200.00	3,172.33	3,161.42	11.25	11.29	93.73	-11.82	181.22	185.66	163.41	22.25	8.345		
3,300.00	3,300.00	3,270.15	3,257.10	11.61	11.71	93.88	-13.67	201.47	206.44	183.49	22.95	8.995		
3,400.00	3,400.00	3,367.97	3,352.78	11.96	12.14	94.00	-15.52	221.72	227.22	203.57	23.65	9.606		
3,500.00	3,500.00	3,465.78	3,448.46	12.32	12.58	94.11	-17.37	241.96	248.00	223.64	24.36	10.181		
3,600.00	3,600.00	3,563.60	3,544.14	12.68	13.02	94.19	-19.22	262.21	268.78	243.72	25.07	10.723		
3,700.00	3,700.00	3,661.41	3,639.82	13.04	13.47	94.27	-21.07	282.46	289.56	263.79	25.77	11.235		
3,800.00	3,800.00	3,759.23	3,735.50	13.40	13.93	94.33	-22.92	302.70	310.34	283.86	26.48	11.718		
3,900.00	3,900.00	3,857.05	3,831.18	13.76	14.39	94.39	-24.78	322.95	331.13	303.93	27.20	12.176		
4,000.00	4,000.00	3,954.86	3,926.86	14.11	14.85	94.44	-26.63	343.20	351.91	324.00	27.91	12.609		
4,100.00	4,100.00	4,052.68	4,022.54	14.47	15.32	94.48	-28.48	363.44	372.69	344.07	28.62	13.021		
4,200.00	4,200.00	4,150.49	4,118.22	14.83	15.79	94.52	-30.33	383.69	393.48	364.14	29.34	13.412		
4,300.00	4,300.00	4,248.31	4,213.90	15.19	16.26	94.55	-32.18	403.93	414.26	384.21	30.05	13.784		
4,400.00	4,400.00	4,346.13	4,309.58	15.55	16.74	94.59	-34.03	424.18	435.04	404.27	30.77	14.138		
4,500.00	4,500.00	4,443.94	4,405.26	15.91	17.22	94.62	-35.88	444.43	455.83	424.34	31.49	14.476		
4,600.00	4,600.00	4,541.76	4,500.94	16.27	17.70	94.64	-37.73	464.67	476.61	444.40	32.21	14.798		
4,700.00	4,700.00	4,639.57	4,596.62	16.62	18.19	94.67	-39.58	484.92	497.39	464.47	32.93	15.106		
4,800.00	4,800.00	4,737.39	4,692.30	16.98	18.68	94.69	-41.43	505.17	518.18	484.53	33.65	15.400		
4,900.00	4,900.00	4,835.21	4,787.98	17.34	19.17	94.71	-43.28	525.41	538.96	504.59	34.37	15.682		
5,000.00	5,000.00	4,933.02	4,883.66	17.70	19.66	94.73	-45.13	545.66	559.75	524.66	35.09	15.952		
5,100.00	5,100.00	5,030.84	4,979.34	18.06	20.15	94.75	-46.98	565.91	580.53	544.72	35.81	16.211		
5,200.00	5,200.00	5,128.66	5,075.02	18.42	20.64	94.76	-48.83	586.15	601.31	564.78	36.53	16.459		
5,300.00	5,300.00	5,226.47	5,170.70	18.77	21.14	94.78	-50.68	606.40	622.10	584.84	37.26	16.697		
5,400.00	5,400.00	5,324.29	5,266.38	19.13	21.64	94.79	-52.53	626.65	642.88	604.90	37.98	16.926		
5,500.00	5,500.00	5,422.10	5,362.06	19.49	22.14	94.81	-54.38	646.89	663.67	624.96	38.71	17.146		
5,600.00	5,600.00	5,519.92	5,457.74	19.85	22.64	94.82	-56.23	667.14	684.45	645.02	39.43	17.358		
5,700.00	5,700.00	5,617.74	5,553.42	20.21	23.14	94.83	-58.08	687.39	705.24	665.08	40.16	17.563		
5,800.00	5,800.00	5,715.55	5,649.10	20.57	23.64	94.84	-59.93	707.63	726.02	685.14	40.88	17.759		
5,900.00	5,900.00	5,813.37	5,744.78	20.93	24.14	94.85	-61.78	727.88	746.80	705.20	41.61	17.949		
6,000.00	6,000.00	5,911.18	5,840.46	21.28	24.65	94.86	-63.63	748.12	767.59	725.26	42.33	18.132		
6,100.00	6,100.00	6,009.00	5,936.14	21.64	25.15	94.87	-65.48	768.37	788.37	745.31	43.06	18.309		
6,200.00	6,200.00	6,106.82	6,031.82	22.00	25.66	94.88	-67.33	788.62	809.16	765.37	43.79	18.479		
6,300.00	6,300.00	6,204.63	6,127.50	22.36	26.16	94.89	-69.18	808.86	829.94	785.43	44.51	18.644		
6,400.00	6,400.00	6,302.45	6,223.18	22.72	26.67	94.90	-71.04	829.11	850.73	805.48	45.24	18.804		
6,500.00	6,500.00	6,400.27	6,318.86	23.08	27.18	94.90	-72.89	849.36	871.51	825.54	45.97	18.958		
6,600.00	6,600.00	6,498.08	6,414.54	23.43	27.68	-74.45	-74.74	869.60	892.30	845.72	46.57	19.160		
6,700.00	6,699.99	6,595.96	6,510.29	23.76	28.19	-74.23	-76.59	889.86	912.71	865.44	47.28	19.306		
6,800.00	6,799.90	6,693.93	6,606.11	24.08	28.70	-74.17	-78.44	910.14	932.44	884.46	47.98	19.433		
6,900.00	6,899.68	6,791.90	6,701.94	24.40	29.21	-74.26	-80.29	930.42	951.50	902.81	48.69	19.542		
7,000.00	6,999.31	6,889.84	6,797.75	24.73	29.72	-74.66	-82.15	950.69	970.08	920.70	49.39	19.643		
7,100.00	7,098.93	6,987.78	6,893.55	25.05	30.24	-75.12	-84.00	970.96	988.69	938.61	50.08	19.742		
7,200.00	7,198.55	7,085.72	6,989.35	25.38	30.75	-75.57	-85.85	991.24	1,007.37	956.59	50.78	19.838		
7,300.00	7,298.17	7,183.66	7,085.15	25.71	31.26	-76.00	-87.71	1,011.51	1,026.10	974.62	51.48	19.931		
7,400.00	7,397.79	7,281.60	7,180.95	26.04	31.77	-76.42	-89.56	1,031.78	1,044.89	992.70	52.19	20.022		
7,500.00	7,497.41	7,379.54	7,276.75	26.37	32.29	-76.82	-91.41	1,052.05	1,063.73	1,010.83	52.89	20.111		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Precision Drilling Corporation

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well #3H - Slot #3H
Project:	Eddy Co., NM	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Reference Site:	Cottontail 16 State Pad	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Hole	Database:	Compass_US
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
Cottontail 16 State Pad - #4H - Original Hole - Plan #1														Offset Well Error:	0.00 usft
Survey Program: 0-MWD+IGRF															
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
7,600.00	7,597.02	7,477.47	7,372.54	26.71	32.80	-77.21	-93.26	1,072.32	1,082.61	1,029.01	53.60	20.197			
7,700.00	7,696.64	7,575.41	7,468.34	27.05	33.31	-77.59	-95.12	1,092.60	1,101.55	1,047.23	54.31	20.281			
7,800.00	7,796.26	7,673.35	7,564.14	27.38	33.83	-77.95	-96.97	1,112.87	1,120.53	1,065.50	55.03	20.363			
7,900.00	7,895.88	7,771.29	7,659.94	27.72	34.34	-78.30	-98.82	1,133.14	1,139.55	1,083.80	55.74	20.442			
8,000.00	7,995.50	7,869.23	7,755.74	28.07	34.86	-78.64	-100.67	1,153.41	1,158.61	1,102.14	56.46	20.520			
8,100.00	8,095.23	7,967.24	7,851.61	28.41	35.37	-11.97	-102.53	1,173.70	1,177.72	1,120.51	57.20	20.588			
8,200.00	8,194.74	8,064.73	7,946.97	28.75	35.89	83.17	-104.37	1,193.88	1,196.80	1,138.82	57.98	20.642			
8,300.00	8,291.28	8,158.96	8,039.15	29.07	36.38	85.11	-106.16	1,213.38	1,215.76	1,157.06	58.70	20.711			
8,400.00	8,381.93	8,248.24	8,126.48	29.36	36.85	85.83	-107.78	1,231.86	1,235.11	1,175.75	59.35	20.810			
8,500.00	8,463.92	8,352.13	8,227.61	29.65	37.38	86.64	-98.81	1,253.20	1,254.91	1,194.91	60.00	20.916			
8,600.00	8,534.76	8,469.90	8,338.19	29.95	37.91	87.48	-66.32	1,276.39	1,274.26	1,213.61	60.65	21.011			
8,700.00	8,592.31	8,606.36	8,455.04	30.29	38.44	88.48	-0.82	1,300.71	1,292.10	1,230.75	61.35	21.063			
8,800.00	8,634.80	8,766.26	8,568.14	30.68	38.94	89.58	109.04	1,323.98	1,306.97	1,244.82	62.15	21.029			
8,900.00	8,660.97	8,950.81	8,656.04	31.13	39.44	90.51	269.43	1,341.62	1,317.04	1,253.87	63.17	20.849			
9,000.00	8,670.00	9,151.74	8,690.00	31.64	40.01	90.87	466.34	1,347.63	1,320.60	1,256.08	64.52	20.467			
9,100.00	8,670.00	9,251.74	8,690.00	32.22	40.36	90.87	566.33	1,347.04	1,320.58	1,254.91	65.67	20.108			
9,200.00	8,670.00	9,351.74	8,690.00	32.91	40.79	90.87	666.33	1,346.45	1,320.57	1,253.55	67.01	19.706			
9,300.00	8,670.00	9,451.74	8,690.00	33.70	41.31	90.87	766.33	1,345.85	1,320.55	1,252.01	68.54	19.266			
9,400.00	8,670.00	9,551.74	8,690.00	34.57	41.92	90.87	866.33	1,345.26	1,320.53	1,250.28	70.25	18.798			
9,500.00	8,670.00	9,651.74	8,690.00	35.53	42.61	90.87	966.33	1,344.67	1,320.51	1,248.39	72.12	18.310			
9,600.00	8,670.00	9,751.74	8,690.00	36.56	43.38	90.87	1,066.33	1,344.07	1,320.50	1,246.35	74.14	17.810			
9,700.00	8,670.00	9,851.74	8,690.00	37.66	44.23	90.87	1,166.32	1,343.48	1,320.48	1,244.17	76.31	17.305			
9,800.00	8,670.00	9,951.74	8,690.00	38.83	45.15	90.87	1,266.32	1,342.89	1,320.46	1,241.87	78.60	16.801			
9,900.00	8,670.00	10,051.74	8,690.00	40.05	46.14	90.87	1,366.32	1,342.29	1,320.44	1,239.44	81.00	16.301			
10,000.00	8,670.00	10,151.74	8,690.00	41.33	47.20	90.87	1,466.32	1,341.70	1,320.43	1,236.91	83.52	15.810			
10,100.00	8,670.00	10,251.74	8,690.00	42.66	48.32	90.87	1,566.32	1,341.11	1,320.41	1,234.28	86.13	15.330			
10,200.00	8,670.00	10,351.74	8,690.00	44.02	49.49	90.87	1,666.32	1,340.51	1,320.39	1,231.56	88.83	14.864			
10,300.00	8,670.00	10,451.74	8,690.00	45.43	50.71	90.87	1,766.31	1,339.92	1,320.37	1,228.76	91.62	14.412			
10,400.00	8,670.00	10,551.74	8,690.00	46.88	51.97	90.87	1,866.31	1,339.33	1,320.36	1,225.88	94.48	13.976			
10,500.00	8,670.00	10,651.74	8,690.00	48.36	53.28	90.87	1,966.31	1,338.73	1,320.34	1,222.94	97.40	13.556			
10,600.00	8,670.00	10,751.74	8,690.00	49.87	54.63	90.87	2,066.31	1,338.14	1,320.32	1,219.93	100.39	13.152			
10,700.00	8,670.00	10,851.74	8,690.00	51.40	56.01	90.87	2,166.31	1,337.55	1,320.30	1,216.87	103.43	12.765			
10,800.00	8,670.00	10,951.74	8,690.00	52.96	57.43	90.87	2,266.30	1,336.95	1,320.29	1,213.76	106.53	12.394			
10,900.00	8,670.00	11,051.74	8,690.00	54.55	58.87	90.87	2,366.30	1,336.36	1,320.27	1,210.60	109.67	12.039			
11,000.00	8,670.00	11,151.74	8,690.00	56.15	60.35	90.87	2,466.30	1,335.77	1,320.25	1,207.40	112.85	11.699			
11,100.00	8,670.00	11,251.74	8,690.00	57.78	61.85	90.87	2,566.30	1,335.17	1,320.24	1,204.16	116.08	11.374			
11,200.00	8,670.00	11,351.74	8,690.00	59.42	63.37	90.87	2,666.30	1,334.58	1,320.22	1,200.88	119.34	11.063			
11,300.00	8,670.00	11,451.74	8,690.00	61.08	64.91	90.87	2,766.30	1,333.99	1,320.20	1,197.56	122.64	10.765			
11,400.00	8,670.00	11,551.74	8,690.00	62.75	66.48	90.87	2,866.29	1,333.39	1,320.18	1,194.22	125.96	10.481			
11,500.00	8,670.00	11,651.74	8,690.00	64.44	68.06	90.87	2,966.29	1,332.80	1,320.17	1,190.85	129.32	10.209			
11,600.00	8,670.00	11,751.74	8,690.00	66.14	69.67	90.87	3,066.29	1,332.21	1,320.15	1,187.45	132.70	9.949			
11,700.00	8,670.00	11,851.74	8,690.00	67.85	71.28	90.87	3,166.29	1,331.61	1,320.13	1,184.03	136.10	9.700			
11,800.00	8,670.00	11,951.74	8,690.00	69.57	72.92	90.87	3,266.29	1,331.02	1,320.11	1,180.58	139.53	9.461			
11,900.00	8,670.00	12,051.74	8,690.00	71.31	74.56	90.87	3,366.29	1,330.42	1,320.10	1,177.12	142.98	9.233			
12,000.00	8,670.00	12,151.74	8,690.00	73.05	76.22	90.87	3,466.28	1,329.83	1,320.08	1,173.63	146.45	9.014			
12,100.00	8,670.00	12,251.74	8,690.00	74.80	77.90	90.87	3,566.28	1,329.24	1,320.06	1,170.13	149.93	8.804			
12,200.00	8,670.00	12,351.74	8,690.00	76.56	79.58	90.87	3,666.28	1,328.64	1,320.04	1,166.61	153.44	8.603			
12,300.00	8,670.00	12,451.74	8,690.00	78.32	81.28	90.87	3,766.28	1,328.05	1,320.03	1,163.07	156.96	8.410			
12,400.00	8,670.00	12,551.74	8,690.00	80.10	82.98	90.87	3,866.28	1,327.46	1,320.01	1,159.52	160.49	8.225			
12,500.00	8,670.00	12,651.74	8,690.00	81.88	84.69	90.87	3,966.27	1,326.86	1,319.99	1,155.95	164.04	8.047			
12,600.00	8,670.00	12,751.74	8,690.00	83.66	86.42	90.87	4,066.27	1,326.27	1,319.97	1,152.37	167.60	7.876			
12,700.00	8,670.00	12,851.74	8,690.00	85.46	88.15	90.87	4,166.27	1,325.68	1,319.96	1,148.78	171.17	7.711			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Precision Drilling Corporation

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well #3H - Slot #3H
Project:	Eddy Co., NM	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Reference Site:	Cottontail 16 State Pad	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Hole	Database:	Compass_US
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Cottontail 16 State Pad - #4H - Original Hole - Plan #1													Offset Well Error:	0.00 usft
Survey Program: 0-MWD+IGRF														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
12,800.00	8,670.00	12,951.74	8,690.00	87.25	89.89	90.87	4,266.27	1,325.08	1,319.94	1,145.18	174.76	7.553		
12,900.00	8,670.00	13,051.74	8,690.00	89.06	91.63	90.87	4,366.27	1,324.49	1,319.92	1,141.57	178.35	7.401		
13,000.00	8,670.00	13,151.74	8,690.00	90.86	93.39	90.87	4,466.27	1,323.90	1,319.90	1,137.95	181.96	7.254		
13,100.00	8,670.00	13,251.74	8,690.00	92.68	95.15	90.87	4,566.26	1,323.30	1,319.89	1,134.32	185.57	7.113		
13,200.00	8,670.00	13,351.74	8,690.00	94.49	96.91	90.87	4,666.26	1,322.71	1,319.87	1,130.67	189.19	6.976		
13,300.00	8,670.00	13,451.74	8,690.00	96.31	98.68	90.87	4,766.26	1,322.12	1,319.85	1,127.03	192.83	6.845		
13,300.64	8,670.00	13,452.15	8,690.00	96.33	98.69	90.87	4,766.67	1,322.11	1,319.85	1,127.01	192.84	6.844		
13,301.88	8,670.00	13,452.15	8,690.00	96.35	98.69	90.87	4,766.67	1,322.11	1,319.85	1,126.98	192.87	6.843		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

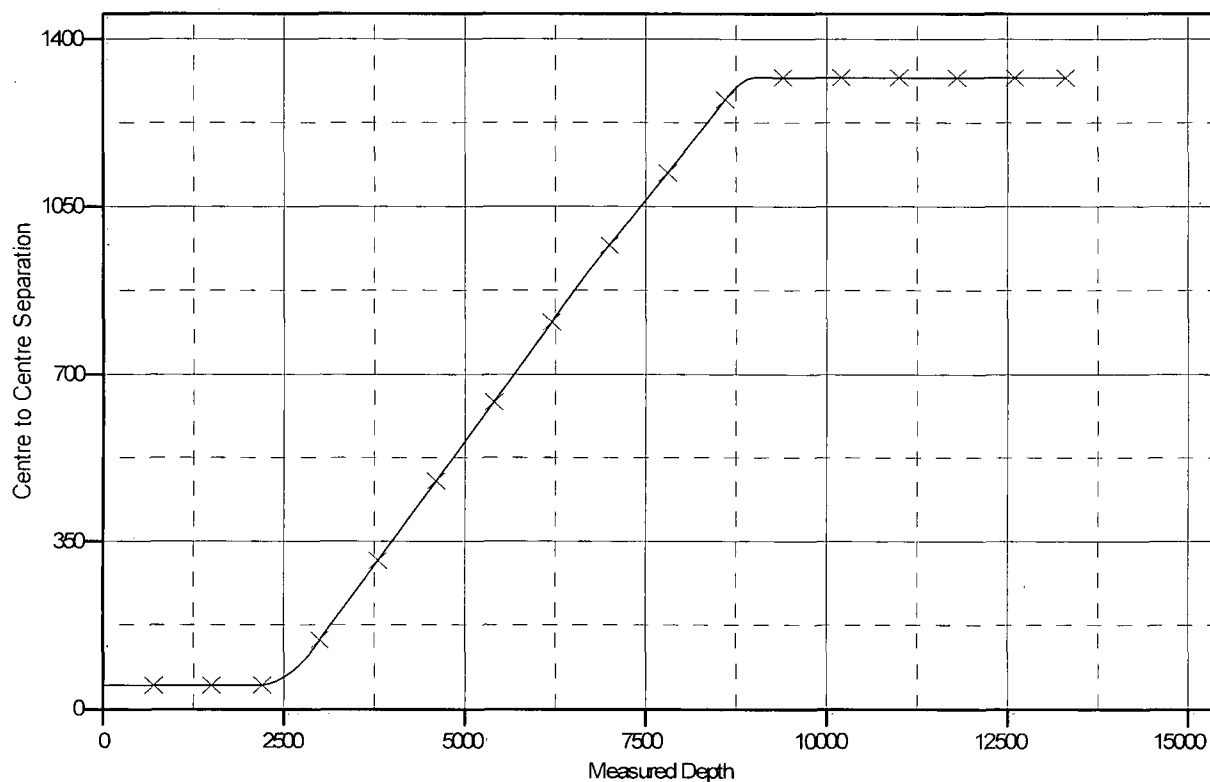
Precision Drilling Corporation

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well #3H - Slot #3H
Project:	Eddy Co., NM	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Reference Site:	Cottontail 16 State Pad	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Hole	Database:	Compass_US
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3002'GL+25'KB @ 3027.00usft (PD608) Coordinates are relative to: #3H - Slot #3H
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W Grid Convergence at Surface is: 0.18°

Ladder Plot



LEGEND

#4H, Original Hole, Plan #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Precision Drilling Corporation
Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well #3H - Slot #3H
Project:	Eddy Co., NM	TVD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Reference Site:	Cottontail 16 State Pad	MD Reference:	3002'GL+25'KB @ 3027.00usft (PD608)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Original Hole	Database:	Compass_US
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3002'GL+25'KB @ 3027.00usft (PD60) Coordinates are relative to: #3H - Slot #3H
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W Grid Convergence at Surface is: 0.18°

