

HIGH CAVEKARST

OCD Artesia

14-376

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014UNORTHODOX
LOCATIONUNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
BHL: NMNM14768

6. If Indian, Allottee or Tribe Name

JES
8-21-141a. Type of work: ☒ DRILL ☐ REENTER

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

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone8. Lease Name and Well No.
Cerf 10 Fed 5H 2 396947

2. Name of Operator Devon Energy Production Company, L.P.

46137 30-015-42617

3a. Address 333 W. Sheridan
Oklahoma City, OK 731023b. Phone No. (include area code)
405-552-655810. Field and Pool, or Exploratory
Avalon; Bone Spring, East (3713)4. Location of Well (Report location clearly and in accordance with any State requirements.)*
At surface NENE, 855' FNL & 105' FEL, A, Sec 9-21S-27E PP: 850' FNL & 470' FWL
At proposed prod. zone NENE, 700' FNL & 330' FEL, A, Sec 10-21S-27E11. Sec., T. R. M. or Blk. and Survey or Area
SHL & PP: Sec 9, T21S, R27 E
BHL: Sec 10, T21S, R27E14. Distance in miles and direction from nearest town or post office*
Approximately 6 miles north of Carlsbad, NM12. County or Parish
Eddy 13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) See attached map

16. No. of acres in lease
280 Acres17. Spacing Unit dedicated to this well
160 Acres

18. Distance from proposed location* to nearest well, drilling, completed, applied for; on this lease, ft. See attached map

19. Proposed Depth
12,873' MD / 7504' TVD20. BLM/BIA Bond No. on file
CO-1104; NBM-00080121. Elevations (Show whether DF, KDB, RT, GL, etc.)
3209.6 GL22. Approximate date work will start*
11/15/201423. Estimated duration
45 Days

24. Attachments Pad drill w/Cerf 10 Fed Com 6H

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature

Linda Good

Name (Printed/Typed)

Linda Good

Date

07/10/2014

Title

Regulatory Compliance Specialist

Approved by (Signature)

Steve Caffey

Name (Printed/Typed)

Office

CARLSBAD FIELD OFFICE

Date

AUG 26 2014

Title

FIELD MANAGER

Application approval 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.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 28 2014

RECEIVED

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
3111 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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-42617		² Pool Code 3713	³ Pool Name Avalon; Bone Spring, East
⁴ Property Code 39694	⁵ Property Name CERF 10 FED		⁶ Well Number 5H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.		⁹ Elevation 3209.7

¹⁰ Surface Location

UT or lot no.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
A	9	21 S	27 E		855	NORTH	105	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UT or lot no.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
A	10	21 S	27 E		700	NORTH	330	EAST	LEA

¹² Dedicated Acres 160.00	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.

Project Area

Lease Line

Completion Interval

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.

17: 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.

Linda Good 7/8/2014
Signature Date

Linda Good
Printed Name

linda.good@dvn.com
E-mail Address

18: 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.

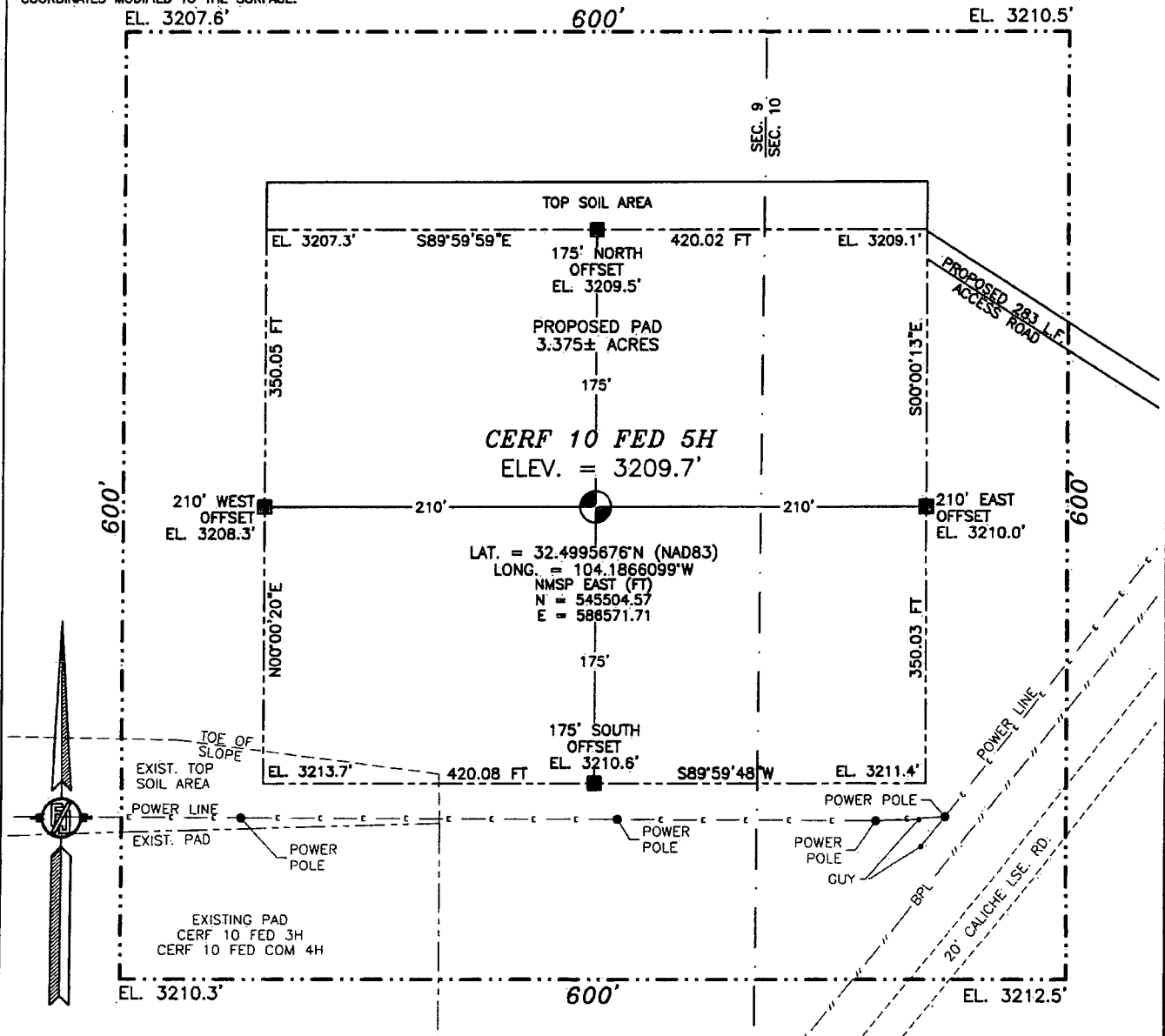
MARCH 6, 2014
Date of Survey

[Signature]
Signature and Seal of Professional Surveyor

Certificate Number: **FEILLOON E. JARAMILLO PLS 12797**
SURVEY NO. 2427A

**SECTION 9, TOWNSHIP 21 SOUTH, RANGE 27 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.



0 10 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ILLINOIS CAMP ROAD (CR 206) AND RAINS ROAD (CR 600) GO EAST ON CR 600 PAST RAMBO BOOSTER STA. 2.2 MILES TO ROAD INTERSECTION ON CALICHE ROAD GO EAST ON CALICHE ROAD, ROAD BENDS NORTHEAST 0.25 MILES SITE IS ON LEFT PROPOSED PAD LIES NORTHEAST OF EXIST. PAD FOR CERF 10 FED 3H AND COM 4H.

**DEVON ENERGY PRODUCTION COMPANY, L.P.
CERF 10 FED 5H**

**LOCATED 855 FT. FROM THE NORTH LINE
AND 105 FT. FROM THE EAST LINE OF
SECTION 9, TOWNSHIP 21 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO**

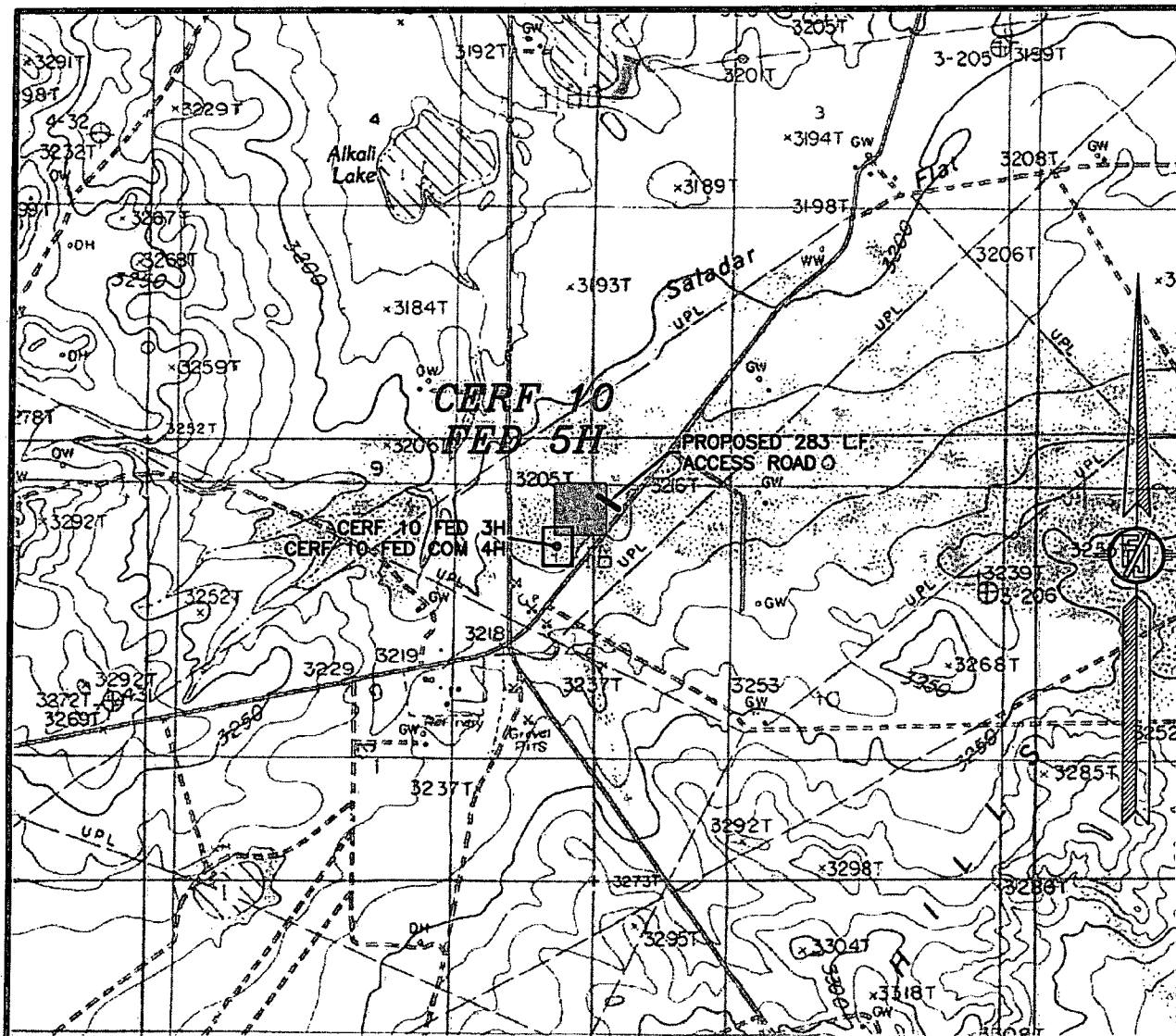
MARCH 6, 2014

SURVEY NO. 2427A

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

DO NOT COPY FROM

SECTION 9, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
CARLSBAD EAST

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
CERF 10 FED 5H

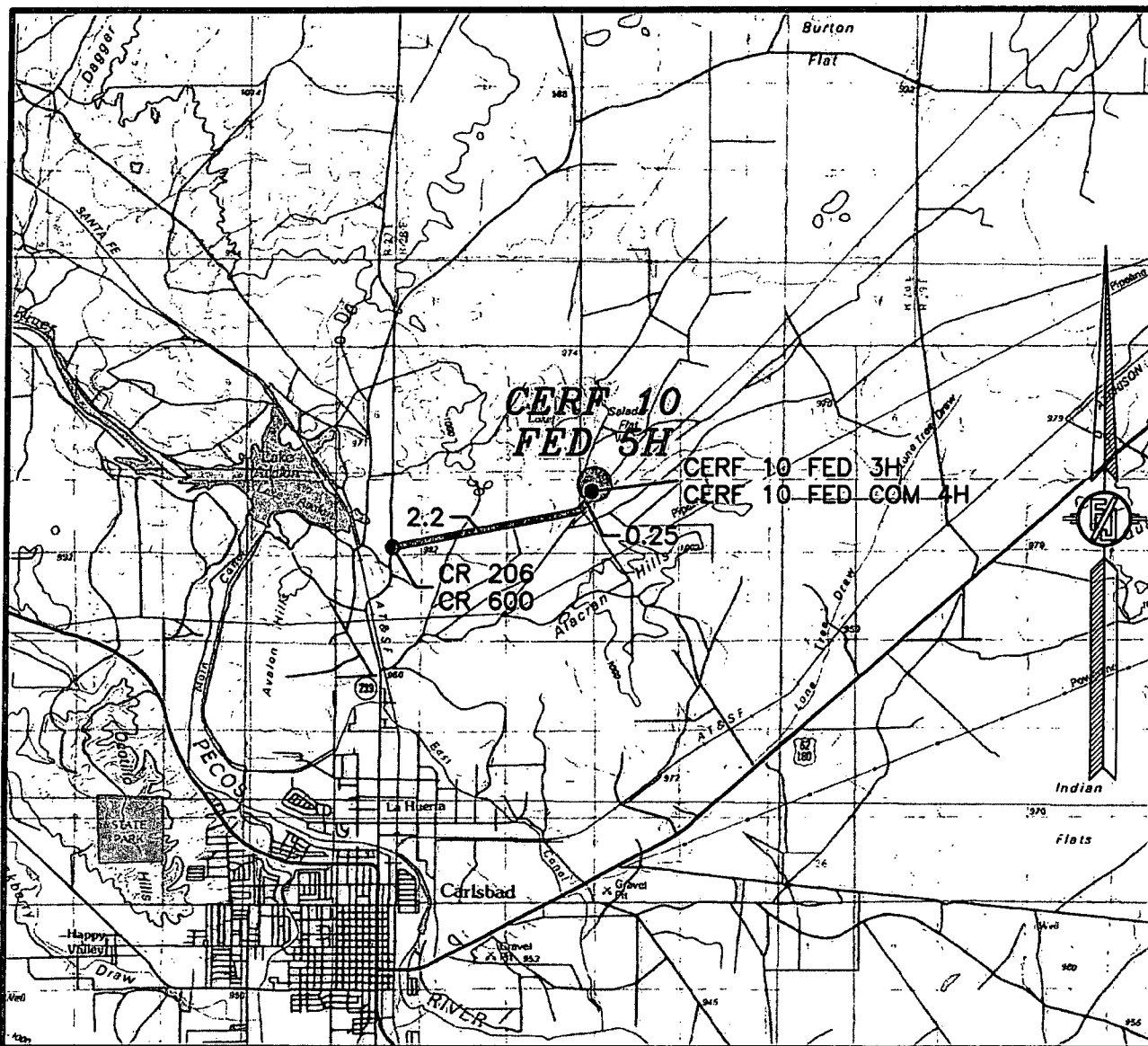
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RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MARCH 6, 2014

SURVEY NO. 2427A

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

SECTION 9, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ILLINOIS CAMP ROAD (CR 206) AND RAINS ROAD (CR 600) GO EAST ON CR 600 PAST RAMBO BOOSTER STA. 2.2 MILES TO ROAD INTERSECTION ON CALICHE ROAD GO EAST ON CALICHE ROAD, ROAD BENDS NORTHEAST 0.25 MILES SITE IS ON LEFT PROPOSED PAD LIES NORTHEAST OF EXIST. PAD FOR CERF 10 FED 3H AND COM 4H.

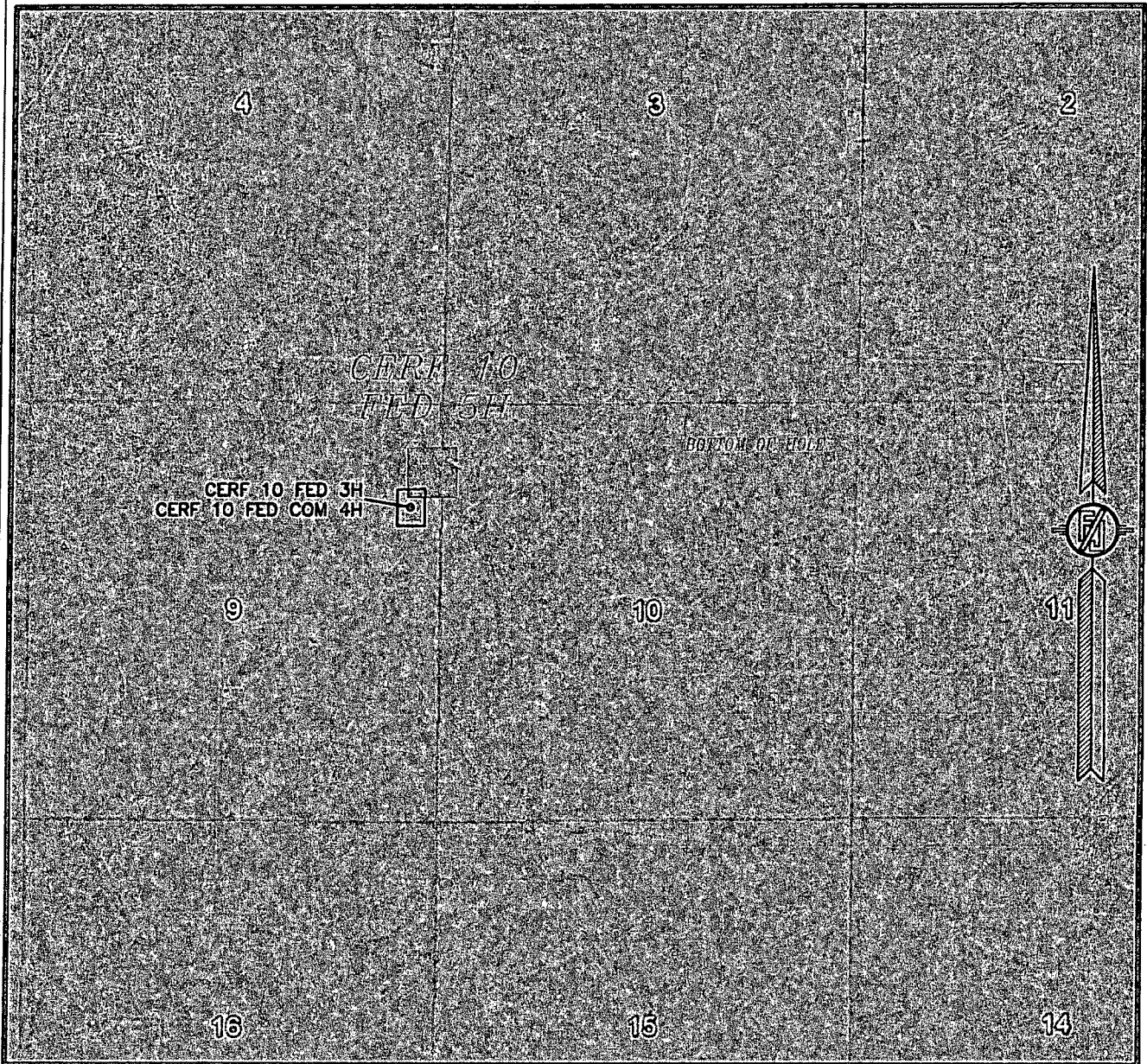
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RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MARCH 6, 2014

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 SURVEY NO. 2427A CARLSBAD, NEW MEXICO

SECTION 9, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
APRIL 2013

DEVON ENERGY PRODUCTION COMPANY, L.P.
CERF 10 FED 5H

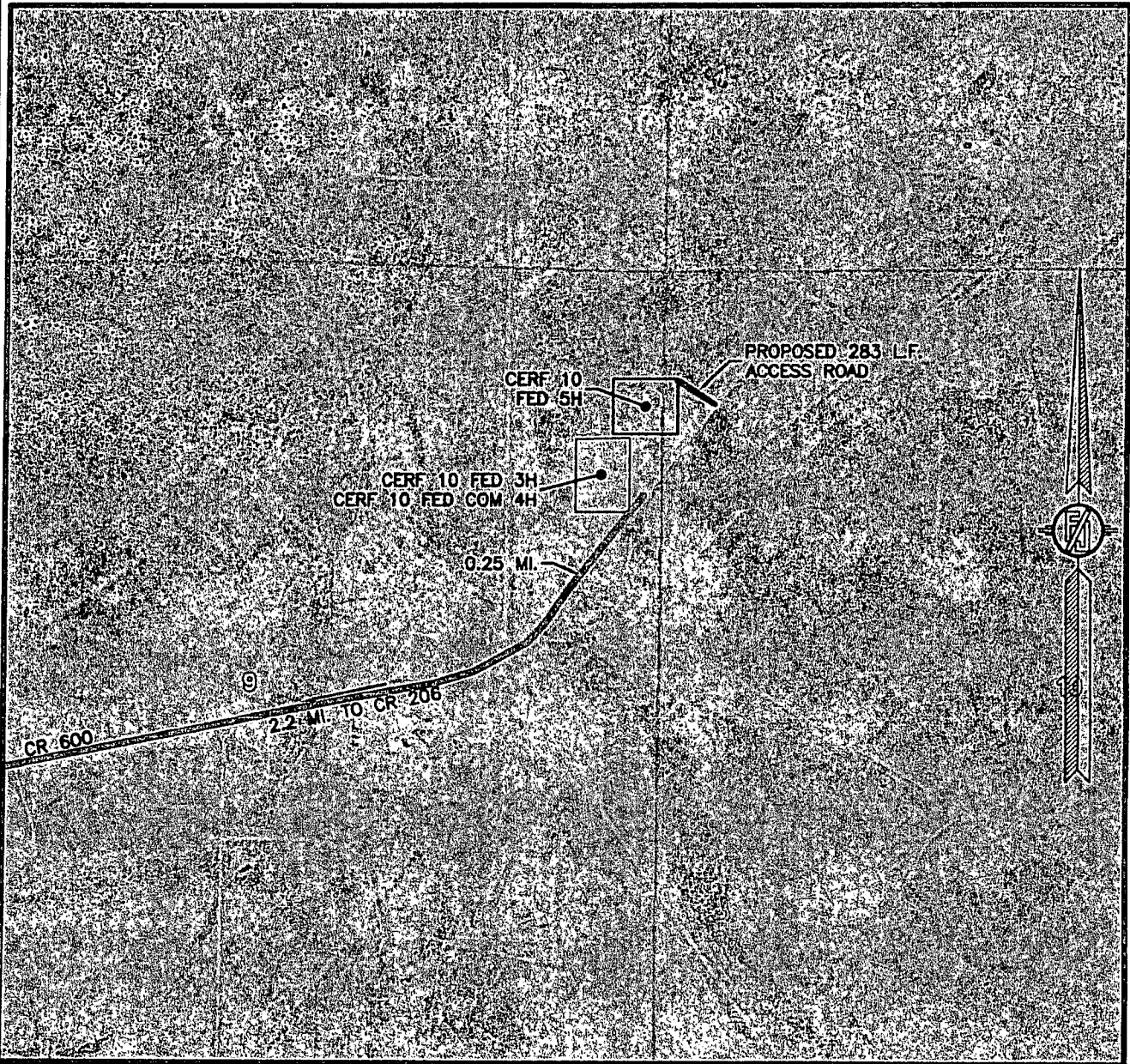
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EDDY COUNTY, STATE OF NEW MEXICO

MARCH 6, 2014

SURVEY NO. 2427A

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

SECTION 9, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 AERIAL ACCESS ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 APRIL 2013

DEVON ENERGY PRODUCTION COMPANY, L.P.
 CERF 10 FED 5H

LOCATED 855 FT. FROM THE NORTH LINE
 AND 105 FT. FROM THE EAST LINE OF
 SECTION 9, TOWNSHIP 21 SOUTH,
 RANGE 27 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MARCH 6, 2014

SURVEY NO. 2427A

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

**Flowline Route from
Cerf 10 Fed Com 5H to
Cerf 10 Fed 3H, 4H Battery**

Cerf 10 Fed 5H
Approximate Length: 950 ft

Cerf 10 Fed Com 3H, 4H Battery

21S-
27E

NEW
MEXICO

EDDY
COUNTY

Cerf 10 Fed Com 6H



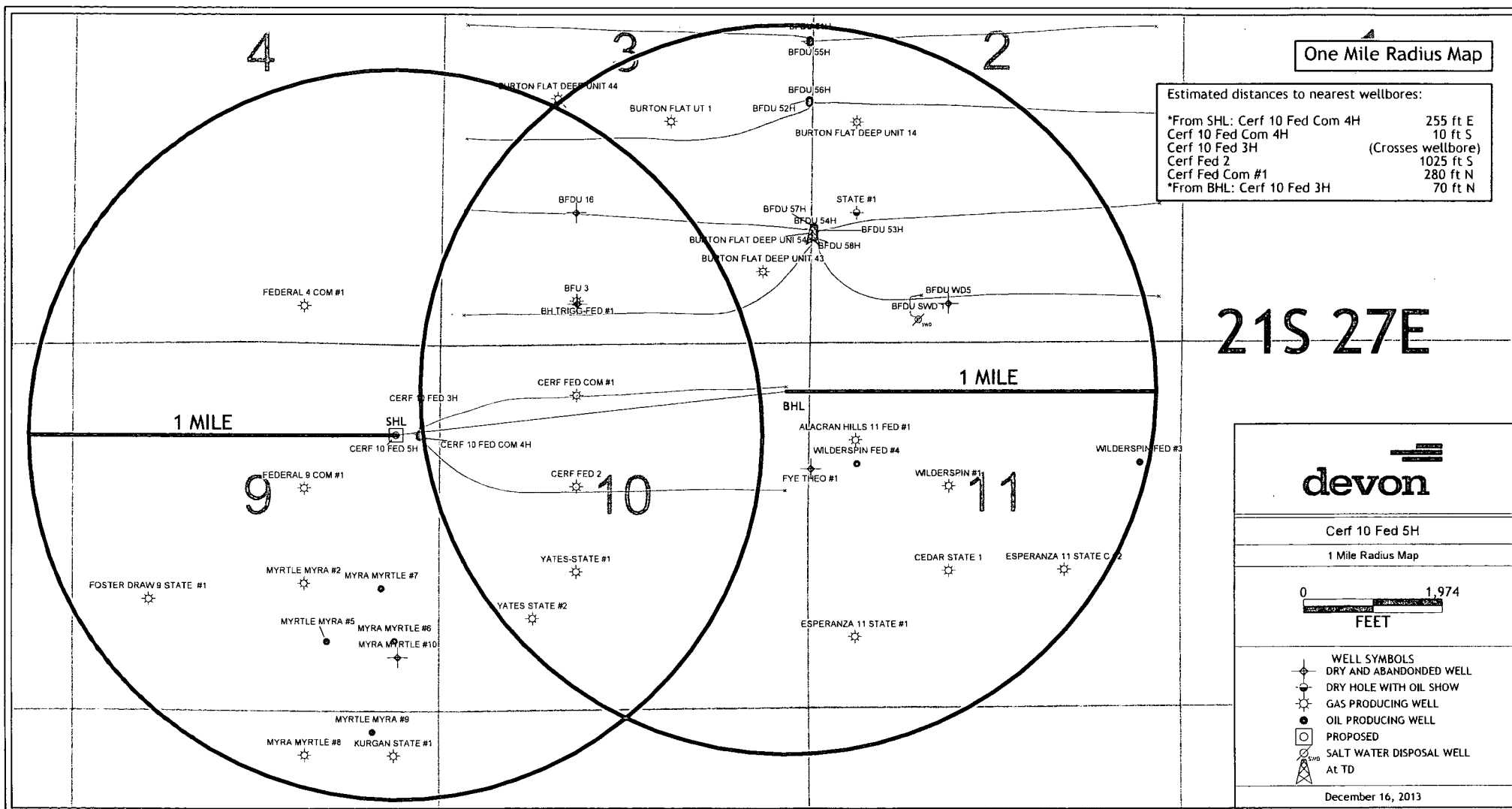
Flowline will be buried within pad ROW.
The 3" buried Poly flowline will be operated
at a pressure of 250 psi or less. The line will carry a mixture
of oil, water, and gas.

0 150 300 600
Feet

This map is for illustrative purposes only and is
neither a legally recorded map nor a survey
and is not intended to be used as one. Devon
makes no warranty, representation, or
guarantee of any kind regarding this map.

Legend

-  Counties
-  Townships
-  Sections
-  Flowline



REVISED DRILLING PROGRAM

Devon Energy Production Company, L.P.
Cerf 10 Fed 5H

1. **Geologic Name of Surface Formation: Rustler**
2. **Estimated Tops of Geological Markers & Depths of Anticipated FW, Oil, or Gas:**

a. Fresh water	140	Water
b. Salt	190	Barren
c. Base of Salt	384	barren
d. Transil	384	Water
e. Yates	489	Oil
f. Seven Rivers	729	Water
g. Capitan	874	Water
h. Base of Capitan	2454	Water
i. Delaware	2654	Oil
j. Lower Brushy Canyon	4855	Oil
k. Bone Spring Lime	5105	Barren
l. Avalon Sand	5255	Oil/Gas
m. 1st Bone Spring Sand	6370	Oil
n. 2nd Bone Spring Lime	6445	Barren
o. 2nd Bone Spring Sand	7090	Oil
p. 3rd Bone Spring Lime	7563	Barren

Total Depths	7505	TVD	12313	MD
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3. Pressure Control Equipment:

The BOP system used to drill the 17-1/2" hole will consist of a **20" 2M** Annular preventer. The BOP system will be tested as a **2M** system per BLM Onshore Oil and Gas Order 2 prior to drilling out the casing shoe.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the first and second intermediate hole sections. The BOP system will be tested as a **3M** system per BLM Onshore Oil and Gas Order 2 prior to drilling out the casing shoes.

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. The same choke manifold will be used for both the 20" annular and the 13-5/8" BOP system.

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

4. Casing Program:

See
COA

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
26"	0 - 175'	20"	0 - 175'	94	BTC	J-55	5.95	24.15	85.23
17-1/2"	175-750'	13-3/8"	0-750'	68	BTC	J-55	5.00	8.85	22.35
12-1/4"	750-2825'	9-5/8"	0-2825'	40	LTC	J-55	1.94	2.99	4.60
8-3/4"	2825-12313'	5-1/2"	0-12313'	17	BTC	P-110	2.44	3.03	3.76

Casing Notes:

- All casing is new and API approved

Maximum Lateral TVD: 7505'

COAST GUARD
BUREAU OF OIL & GAS

5. Proposed mud Circulations System:

Depth	Mud Weight	Viscosity	Fluid Loss	Type System
0-175'	8.4-9.6	30-34	N/C	FW
175-750'	10.0-10.2	28-32	N/C	Brine
750-2825'	8.6-9.0	28-32	N/C	FW
2825-12313'	8.6-9.0	28-32	N/C	FW

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.

6. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
20" Surface Casing	460	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
13-3/8" Intermediate	690	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	460	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
9-5/8" Intermediate 2-Stage Option See COA	460	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
	220	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
	DV Tool @ 800ft					
	220	14.8	6.34	1.33	Tail	Class C Cement + 63.5% Fresh Water
5-1/2" Production Casing Single Stage	710	10.4	15.24	2.91	Lead	Tuned Light Blend + 2 lb/sk Kol-Seal + 0.125 lb/sk Pol-E-Flake + 0.2 lb/sk HR-800 + 70.1% Fresh Water
	1400	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

See COA

5-1/2" Production Casing 2-Stage Option	320	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
	1400	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 @ 5000ft					
	560	11.9	12.89	2.26	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 + 76.4% Fresh Water
	120	14.8	6.32	1.33	Tail	Class C Cement + 0.2% HR-800 + 63.5% Fresh Water

TOC for all Strings:

Surface @ 0'

1st Intermediate @ 0'

2nd Intermediate @ 0'

Production @ *2325' See COA must tie back 50' above Captain Reef*

Notes:

- Cement volumes Surface 100%, 1st Intermediate 75%, 2nd Intermediate 50%, Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and/or caliper log data
- If severe loss circulation is encountered while drilling the Intermediate and/or the production wellbores, a DV tool will be installed a minimum of 50' below the previous casing shoe and of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately.

7. Logging, Coring, and Testing Program:

- Drill stem tests will be based on geological sample shows.
 - If a drill stem test is anticipated, a procedure, equipment to be used, and safety measures will be provided via sundry notice to the BLM.
 - Resistivity and porosity logs are planned below the intermediate casing point. Stated logs run will be named in the Completion Report and submitted to the BLM.
 - No coring program is planned
- e. Additional Testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows, and drill stem tests.

8. Potential Hazards:

- No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area, and none is anticipated to be encountered. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation being used to drill this well. Estimated BHP: 3377 psi, and estimated BHT: 122 degrees.

Well Information	
Well name	Cerf.10 Fed 5H
Well Type	Horizontal
Field	
SHL	1290' FNL and 635' FWL Section 9-T21S-R27E
BHL	700' FNL and 330' FWL Section 10-T21S-R27E
Lat/Long	32.4984002 N, 104.1883417 W
API #	30-015
WBS #	
Potash	No
Lease Type	Federal
County	Eddy Co., New Mexico
Elevation (GL)	3,209.6'
Planned Days (Spud-TD)	18
DHC	XXX
Pilot Hole ?	No
Pilot Hole TD	

Rig	Cactus 126
Directional Company	Learn
KOP	6,936
MD at EOC	0
VS @ EOC	513
VS @ TD	5,656
VS Azimuth	89.95°
Planned BUR	12
Lateral Length	12,313
TVD at TD	7,505
TD	12,313

Cementing Requirements		
Casing String	Required TOC	DV Depth
Surface	0	N/A
Intermediate 1	0	N/A
Intermediate 2	0	800'
Production	0	5,000'

Directional Targets				
Points	TVD	MD	Footage Calls	VS
KOP	6,936	6966		48.8
Lateral Heel pt	7422		745 FNL and 330' FWL Sec.10 2	513
Lateral-Toe pt	7,504	12,873	700' FNL and 330' FWL Sec.10 2	5,656

Casing Plan						
Hole Section	Setting Depth	Hole Size	Casing Size	Casing Wt	Casing Grade	Connection
Surface	175'	26"	20"	94#	J-55	BT&C
Intermediate 1	750'	17.5"	13-3/8"	68#	J/K-55	BT&C
Intermediate 2	2,825'	12-25/32"	9-5/8"	40#	J-55	LT&C
Production	6,968'	8-3/4"	5-1/2"	17#	HCP-110	LT&C
	12,313'		5-1/2"	17#	HCP-110	BT&C

MUD PROGRAM FOR SURFACE HOLE					
DEPTH	WEIGHT (ppg)	TYPE	VISC	pH	FLUID LOSS
0-TD	8.4-9.6	FW/Gel	30-34		10 N/C

MUD PROGRAM FOR INTERMEDIATE I HOLE					
DEPTH	WEIGHT	TYPE	VISC	pH	FLUID LOSS
0-TD		10 Brine		28	10 N/C

MUD PROGRAM FOR INTERMEDIATE II HOLE					
DEPTH	WEIGHT	TYPE	VISC	pH	FLUID LOSS
0-TD	8.3-8.6	FW		28	10 N/C

MUD PROGRAM FOR PRODUCTION HOLE					
DEPTH	WEIGHT	TYPE	VISC	pH	FLUID LOSS
0-TD	8.4-9.0	Fresh	28-29	9.5-10.0	NC -40 cc

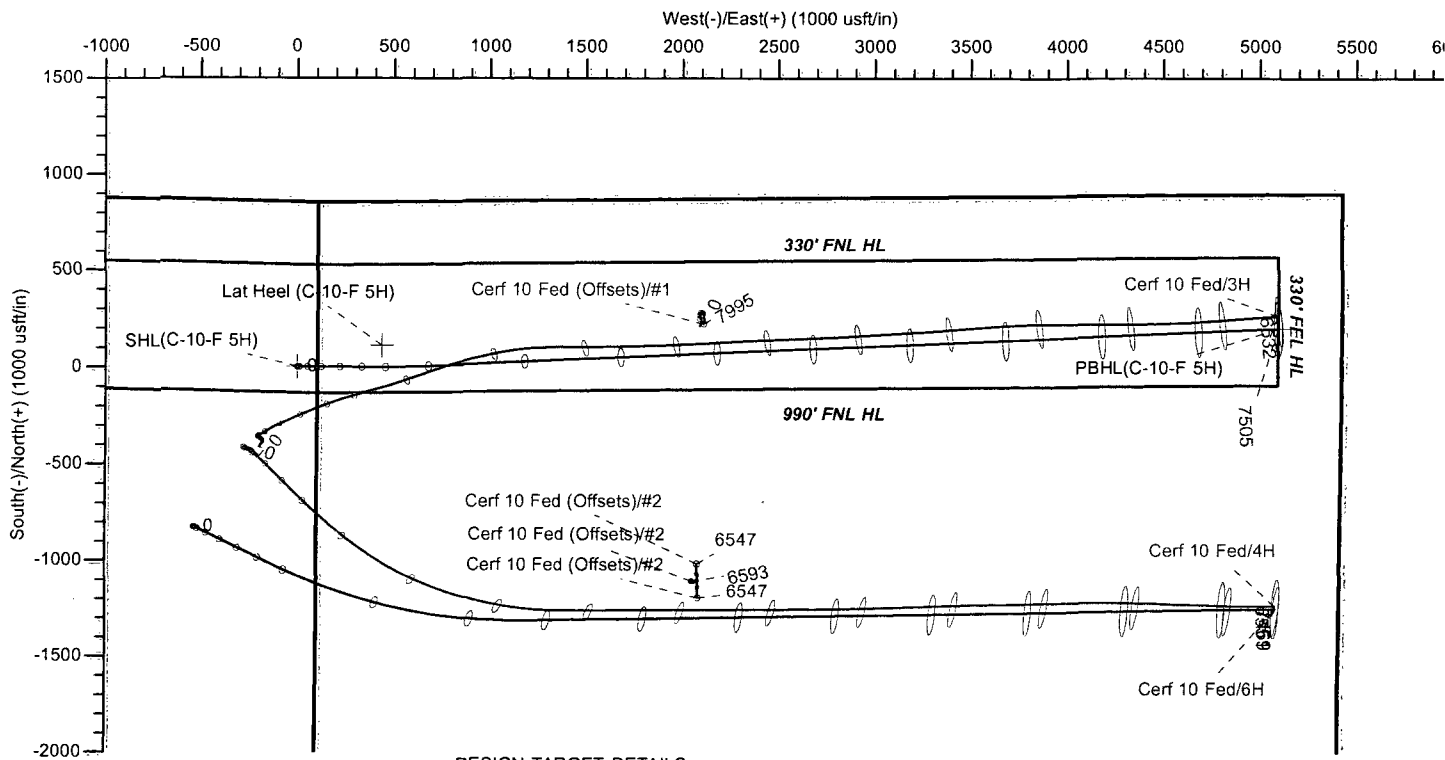
Geology	
Target Formation	MD
2nd Bone Springs Sand	
Rustler	0
Salt	189
Base of Salt	383
Tansil	413
Yates	488
Seven Rivers	728
Captain	873
Base of Captain	2,453
Delaware	2,653
Lower Brushy Canyon	4,854
Bone Spring Lime	5,104
Avalon Sand	5,254
1st Bone Spring Sand	6,389
2nd Bone Spring Lime	6,444
2nd Bone Spring Sand	7,089
2BSSS UPPER Top	7,089
2BSSS UPPER Base	7,199
2BSSS MID Top	7,222
2BSSS MID Base	7,276
2BSSS LOWER Top	7,349
2BSSS LOWER Base	7,478
3rd Bone Spring Lime	7,562

Lease Type County Type
State ew Mexico Horizontal
Federal ew Mexico Vertical

Rig
Cactus 126
H&P 214
H&P 223
H&P 300
H&P 416
McVay 6
McVay 8
McVay 10

Potash
Yes
No

Pilot Hole
Yes without a pilot hole
No



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(C-10-F 5H)	0.00	0.00	0.00	545504.57	586571.71	32° 29' 58.443 N	104° 11' 11.796 W
Lat Heel (C-10-F 5H)	7423.00	110.32	437.43	545614.89	587009.14	32° 29' 59.529 N	104° 11' 6.686 W
PBHL(C-10-F 5H)	7505.00	196.11	5089.70	545700.68	591661.41	32° 30' 0.311 N	104° 10' 12.359 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	6946.00	0.00	0.00	6946.00	0.00	0.00	0.00	0.00	0.00	Start Build 12.00
3	7687.58	88.99	90.28	7423.39	-2.29	469.04	12.00	90.28	468.61	Start DLS 2.00 TFO 90.11
4	7826.58	88.99	87.50	7425.84	0.40	607.98	2.00	-90.04	607.55	
5	12313.27	88.99	87.50	7505.00	196.11	5089.70	0.00	0.00	5093.48	

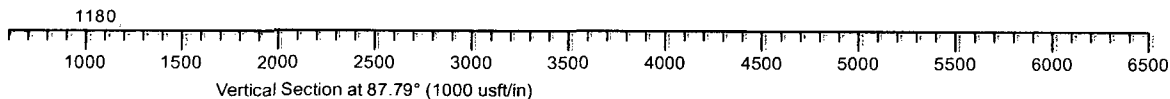
d 12.00

DLS 2.00 TFO 90.11

Start 3930.80 hold at 8399.59 MD

eel (C-10-F 5H)

PBHL(C-10-F 5H)



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

Plan: Plan #1 (5H/OH)
 Cerf 10 Fed
 Created By: Brady Deaver
 Date: 10:05, April 23 2014
 Approved: _____
 Date: _____

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 5H
Company:	DEVON ENERGY	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Project:	Eddy County NM (NAD-83)	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site:	Cerf 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	Cerf 10 Fed		
Site Position:		Northing:	545,089.31 usft
From:	Map	Easting:	586,373.32 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 29' 54.337 N
		Longitude:	104° 11' 14.119 W
		Grid Convergence:	0.08 °

Well	5H		
Well Position	+N-S	415.26 usft	Northing:
	+E-W	198.39 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 29' 58.443 N
		Longitude:	104° 11' 11.796 W
		Ground Level:	3,209.60 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	BGGM2013	12/17/2013	7.70
			Dip Angle
			(°)
			60.26
			Field Strength
			(nT)
			48,442

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			87.79

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,946.00	0.00	0.00	6,946.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,687.58	88.99	90.28	7,423.39	-2.29	469.04	12.00	12.00	0.00	90.28	
7,826.58	88.99	87.50	7,425.84	0.40	607.98	2.00	0.00	-2.00	-90.04	
12,313.27	88.99	87.50	7,505.00	196.11	5,089.70	0.00	0.00	0.00	0.00	PBHL(C-10-F 5H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well: 5H
Company:	DEVON ENERGY	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Project:	Eddy County NM (NAD-83)	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site:	Cert. 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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	
SHL (C-10-F-5H)										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
175.00	0.00	0.00	175.00	0.00	0.00	0.00	0.00	0.00	0.00	
20"										
189.00	0.00	0.00	189.00	0.00	0.00	0.00	0.00	0.00	0.00	
Salt										
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	
383.00	0.00	0.00	383.00	0.00	0.00	0.00	0.00	0.00	0.00	
Base of Salt										
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
413.00	0.00	0.00	413.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tansil										
488.00	0.00	0.00	488.00	0.00	0.00	0.00	0.00	0.00	0.00	
Yates										
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	
728.00	0.00	0.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	
Seven Rivers										
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	
13 3/8"										
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
873.00	0.00	0.00	873.00	0.00	0.00	0.00	0.00	0.00	0.00	
Capitan										
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	
2,453.00	0.00	0.00	2,453.00	0.00	0.00	0.00	0.00	0.00	0.00	
Base of Capitan										
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	
2,653.00	0.00	0.00	2,653.00	0.00	0.00	0.00	0.00	0.00	0.00	
Delaware										
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	
2,825.00	0.00	0.00	2,825.00	0.00	0.00	0.00	0.00	0.00	0.00	

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 5H:
Company:	DEVON ENERGY	TVD Reference:	GE 3209 6' + KB 25' @ 3234 60usft (Cactus 126)
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE 3209 6' + KB 25' @ 3234 60usft (Cactus 126)
Site:	Cert 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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 5/8"									
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
4,854.00	0.00	0.00	4,854.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Brushy Canyon									
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
5,104.00	0.00	0.00	5,104.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring Lime									
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,254.00	0.00	0.00	5,254.00	0.00	0.00	0.00	0.00	0.00	0.00
Avalon Sand									
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
6,369.00	0.00	0.00	6,369.00	0.00	0.00	0.00	0.00	0.00	0.00
1st Bone Spring Sand									
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,444.00	0.00	0.00	6,444.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd Bone Spring Lime									
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

LEAM Drilling Systems LLC

Planning Report

Database:	EDM:5000.1 Single User Db	Local Co-ordinate Reference:	Well 5H
Company:	DEVON ENERGY	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
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Site:	Cert 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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)
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,946.00	0.00	0.00	6,946.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 12.00									
6,950.00	0.48	90.28	6,950.00	0.00	0.02	0.02	12.00	12.00	0.00
6,975.00	3.48	90.28	6,974.98	0.00	0.88	0.88	12.00	12.00	0.00
7,000.00	6.48	90.28	6,999.89	-0.01	3.05	3.05	12.00	12.00	0.00
7,025.00	9.48	90.28	7,024.64	-0.03	6.52	6.51	12.00	12.00	0.00
7,050.00	12.48	90.28	7,049.18	-0.06	11.28	11.27	12.00	12.00	0.00
7,075.00	15.48	90.28	7,073.44	-0.08	17.32	17.30	12.00	12.00	0.00
7,091.64	17.48	90.28	7,089.39	-0.11	22.04	22.02	12.00	12.00	0.00
2nd Bone Spring Sand 2BSSS UPPER Top									
7,100.00	18.48	90.28	7,097.34	-0.12	24.62	24.60	12.00	12.00	0.00
7,125.00	21.48	90.28	7,120.84	-0.16	33.16	33.13	12.00	12.00	0.00
7,150.00	24.48	90.28	7,143.85	-0.21	42.92	42.88	12.00	12.00	0.00
7,175.00	27.48	90.28	7,166.32	-0.26	53.87	53.82	12.00	12.00	0.00
7,200.00	30.48	90.28	7,188.19	-0.32	65.98	65.92	12.00	12.00	0.00
7,202.32	30.76	90.28	7,190.18	-0.33	67.16	67.10	12.00	12.00	0.00
2BSSS UPPER Base									
7,225.00	33.48	90.28	7,209.39	-0.39	79.22	79.15	12.00	12.00	0.00
7,242.20	35.54	90.28	7,223.57	-0.43	88.97	88.88	12.00	12.00	0.00
2BSSS MID Top									
7,250.00	36.48	90.28	7,229.87	-0.46	93.55	93.46	12.00	12.00	0.00
7,275.00	39.48	90.28	7,249.58	-0.53	108.93	108.83	12.00	12.00	0.00
7,300.00	42.48	90.28	7,268.45	-0.61	125.33	125.21	12.00	12.00	0.00
7,313.64	44.12	90.28	7,278.37	-0.66	134.68	134.55	12.00	12.00	0.00
2BSSS MID Base									
7,325.00	45.48	90.28	7,286.44	-0.70	142.68	142.55	12.00	12.00	0.00
7,350.00	48.48	90.28	7,303.49	-0.79	160.96	160.81	12.00	12.00	0.00
7,375.00	51.48	90.28	7,319.56	-0.88	180.10	179.94	12.00	12.00	0.00
7,400.00	54.48	90.28	7,334.61	-0.98	200.06	199.88	12.00	12.00	0.00
7,425.00	57.48	90.28	7,348.60	-1.08	220.78	220.57	12.00	12.00	0.00
7,433.32	58.48	90.28	7,353.01	-1.11	227.83	227.62	12.00	12.00	0.00
2BSSS LOWER Top									
7,450.00	60.48	90.28	7,361.48	-1.18	242.20	241.98	12.00	12.00	0.00
7,475.00	63.48	90.28	7,373.23	-1.29	264.27	264.02	12.00	12.00	0.00
7,500.00	66.48	90.28	7,383.80	-1.40	286.92	286.65	12.00	12.00	0.00
7,525.00	69.48	90.28	7,393.17	-1.52	310.09	309.81	12.00	12.00	0.00
7,550.00	72.48	90.28	7,401.32	-1.63	333.73	333.42	12.00	12.00	0.00
7,575.00	75.48	90.28	7,408.21	-1.75	357.75	357.42	12.00	12.00	0.00
7,600.00	78.48	90.28	7,413.85	-1.87	382.11	381.75	12.00	12.00	0.00
7,625.00	81.48	90.28	7,418.20	-1.99	406.72	406.34	12.00	12.00	0.00
7,650.00	84.48	90.28	7,421.25	-2.11	431.53	431.13	12.00	12.00	0.00
7,655.46	85.14	90.28	7,421.75	-2.14	436.97	436.57	12.00	12.00	0.00
Lat Heel (C:10-F:5H)									
7,675.00	87.48	90.28	7,423.00	-2.23	456.47	456.04	12.00	12.00	0.00
7,687.58	88.99	90.28	7,423.39	-2.29	469.04	468.61	12.00	12.00	0.00
Start DLS 2.00 TFO 90.11									
7,700.00	88.99	90.03	7,423.61	-2.33	481.46	481.01	2.00	0.00	-2.00
7,800.00	88.99	88.03	7,425.37	-0.64	581.42	580.97	2.00	0.00	-2.00
7,826.58	88.99	87.50	7,425.84	0.40	607.98	607.55	2.00	0.00	-2.00
7,900.00	88.99	87.50	7,427.14	3.60	681.32	680.95	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 5H
Company:	DEVON ENERGY	TVD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Project:	Eddy County NM (NAD-83)	MD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site:	Cerf 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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)
8,000.00	88.99	87.50	7,428.90	7.96	781.21	780.93	0.00	0.00	0.00
8,100.00	88.99	87.50	7,430.67	12.33	881.10	880.92	0.00	0.00	0.00
8,200.00	88.99	87.50	7,432.43	16.69	980.98	980.90	0.00	0.00	0.00
8,300.00	88.99	87.50	7,434.19	21.05	1,080.87	1,080.88	0.00	0.00	0.00
8,399.59	88.99	87.50	7,435.95	25.39	1,180.35	1,180.45	0.00	0.00	0.00
Start 3930.80 hold at 8399.59 MD									
8,400.00	88.99	87.50	7,435.96	25.41	1,180.76	1,180.87	0.00	0.00	0.00
8,500.00	88.99	87.50	7,437.72	29.77	1,280.65	1,280.85	0.00	0.00	0.00
8,600.00	88.99	87.50	7,439.49	34.14	1,380.54	1,380.83	0.00	0.00	0.00
8,700.00	88.99	87.50	7,441.25	38.50	1,480.43	1,480.82	0.00	0.00	0.00
8,800.00	88.99	87.50	7,443.02	42.86	1,580.32	1,580.80	0.00	0.00	0.00
8,900.00	88.99	87.50	7,444.78	47.22	1,680.21	1,680.78	0.00	0.00	0.00
9,000.00	88.99	87.50	7,446.54	51.58	1,780.10	1,780.76	0.00	0.00	0.00
9,100.00	88.99	87.50	7,448.31	55.95	1,879.99	1,880.75	0.00	0.00	0.00
9,200.00	88.99	87.50	7,450.07	60.31	1,979.88	1,980.73	0.00	0.00	0.00
9,300.00	88.99	87.50	7,451.84	64.67	2,079.77	2,080.71	0.00	0.00	0.00
9,400.00	88.99	87.50	7,453.60	69.03	2,179.66	2,180.70	0.00	0.00	0.00
9,500.00	88.99	87.50	7,455.37	73.39	2,279.54	2,280.68	0.00	0.00	0.00
9,600.00	88.99	87.50	7,457.13	77.76	2,379.43	2,380.66	0.00	0.00	0.00
9,700.00	88.99	87.50	7,458.89	82.12	2,479.32	2,480.65	0.00	0.00	0.00
9,800.00	88.99	87.50	7,460.66	86.48	2,579.21	2,580.63	0.00	0.00	0.00
9,900.00	88.99	87.50	7,462.42	90.84	2,679.10	2,680.61	0.00	0.00	0.00
10,000.00	88.99	87.50	7,464.19	95.20	2,778.99	2,780.60	0.00	0.00	0.00
10,100.00	88.99	87.50	7,465.95	99.57	2,878.88	2,880.58	0.00	0.00	0.00
10,200.00	88.99	87.50	7,467.72	103.93	2,978.77	2,980.56	0.00	0.00	0.00
10,300.00	88.99	87.50	7,469.48	108.29	3,078.66	3,080.55	0.00	0.00	0.00
10,400.00	88.99	87.50	7,471.24	112.65	3,178.55	3,180.53	0.00	0.00	0.00
10,500.00	88.99	87.50	7,473.01	117.01	3,278.44	3,280.51	0.00	0.00	0.00
10,600.00	88.99	87.50	7,474.77	121.38	3,378.33	3,380.49	0.00	0.00	0.00
10,700.00	88.99	87.50	7,476.54	125.74	3,478.22	3,480.48	0.00	0.00	0.00
10,800.00	88.99	87.50	7,478.30	130.10	3,578.11	3,580.46	0.00	0.00	0.00
10,900.00	88.99	87.50	7,480.07	134.46	3,677.99	3,680.44	0.00	0.00	0.00
11,000.00	88.99	87.50	7,481.83	138.83	3,777.88	3,780.43	0.00	0.00	0.00
11,100.00	88.99	87.50	7,483.59	143.19	3,877.77	3,880.41	0.00	0.00	0.00
11,200.00	88.99	87.50	7,485.36	147.55	3,977.66	3,980.39	0.00	0.00	0.00
11,300.00	88.99	87.50	7,487.12	151.91	4,077.55	4,080.38	0.00	0.00	0.00
11,400.00	88.99	87.50	7,488.89	156.27	4,177.44	4,180.36	0.00	0.00	0.00
11,500.00	88.99	87.50	7,490.65	160.64	4,277.33	4,280.34	0.00	0.00	0.00
11,600.00	88.99	87.50	7,492.42	165.00	4,377.22	4,380.33	0.00	0.00	0.00
11,700.00	88.99	87.50	7,494.18	169.36	4,477.11	4,480.31	0.00	0.00	0.00
11,800.00	88.99	87.50	7,495.94	173.72	4,577.00	4,580.29	0.00	0.00	0.00
11,900.00	88.99	87.50	7,497.71	178.08	4,676.89	4,680.28	0.00	0.00	0.00
12,000.00	88.99	87.50	7,499.47	182.45	4,776.78	4,780.26	0.00	0.00	0.00
12,100.00	88.99	87.50	7,501.24	186.81	4,876.67	4,880.24	0.00	0.00	0.00
12,200.00	88.99	87.50	7,503.00	191.17	4,976.55	4,980.22	0.00	0.00	0.00
12,300.00	88.99	87.50	7,504.77	195.53	5,076.44	5,080.21	0.00	0.00	0.00
12,313.27	88.99	87.50	7,505.00	196.11	5,089.70	5,093.48	0.00	0.00	0.00

PBHL(C-10-F 5H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 5H
Company:	DEVON ENERGY	TVD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Project:	Eddy County NM (NAD-83)	MD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site:	Cert 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
Shape		(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
SHL(C-10-F 5H)		0.00	0.00	0.00	0.00	0.00	545,504.57	586,571.71	32° 29' 58.443 N 104° 11' 11.796 W
- plan hits target center									
- Point									
Lat Heel (C-10-F 5H)		0.00	0.00	7,423.00	110.32	437.43	545,614.89	587,009.15	32° 29' 59.529 N 104° 11' 6.686 W
- plan misses target center by 112.47usft at 7655.46usft MD (7421.75 TVD, -2.14 N, 436.97 E)									
- Point									
PBHL(C-10-F 5H)		0.00	0.00	7,505.00	196.11	5,089.70	545,700.68	591,661.41	32° 30' 0.311 N 104° 10' 12.359 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter	
(usft)	(usft)	Name	(")	(")	
175.00	175.00	20"	20	26	
750.00	750.00	13 3/8"	13-3/8	17-1/2	
2,825.00	2,825.00	9 5/8"	9-5/8	12-1/4	

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
189.00	189.00	Salt		1.01	87.50
383.00	383.00	Base of Salt		1.01	87.50
413.00	413.00	Tansil		1.01	87.50
488.00	488.00	Yates		1.01	87.50
728.00	728.00	Seven Rivers		1.01	87.50
873.00	873.00	Capitan		1.01	87.50
2,453.00	2,453.00	Base of Capitan		1.01	87.50
2,653.00	2,653.00	Delaware		1.01	87.50
4,854.00	4,854.00	Lower Brushy Canyon		1.01	87.50
5,104.00	5,104.00	Bone Spring Lime		1.01	87.50
5,254.00	5,254.00	Avalon Sand		1.01	87.50
6,369.00	6,369.00	1st Bone Spring Sand		1.01	87.50
6,444.00	6,444.00	2nd Bone Spring Lime		1.01	87.50
7,091.64	7,089.39	2nd Bone Spring Sand		1.01	87.50
7,091.64	7,089.39	2BSSS UPPER Top		1.01	87.50
7,202.32	7,190.18	2BSSS UPPER Base		1.01	87.50
7,242.20	7,223.57	2BSSS MID Top		1.01	87.50
7,313.64	7,278.37	2BSSS MID Base		1.01	87.50
7,433.32	7,353.01	2BSSS LOWER Top		1.01	87.50

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 5H
Company:	DEVON ENERGY	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Project:	Eddy County NM (NAD-83)	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site:	Cert 10 Fed	North Reference:	Grid
Well:	5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,946.00	6,946.00	0.00	0.00	Start Build 12.00
7,687.58	7,423.39	-2.29	469.04	Start DLS 2.00 TFO 90.11
8,399.59	7,435.95	25.39	1,180.35	Start 3930.80 hold at 8399.59 MD
12,330.39				TD at 12330.39

DEVON ENERGY

Eddy County, NM (NAD-83)

Cerf 10 Fed

5H

OH

Plan #1

Anticollision Report

23 April, 2014

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM (NAD:83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cerf 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1i Single User Db
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:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool/Program		Date: 4/23/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	12,312.74	Plan #1 (OH)	LEAM MWD-ADJ	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Cerf 10 Fed						
3H - OH - OH	6,364.57	6,502.65	236.44	208.56	8.483	CC, ES, SF
4H - OH - OH	3,869.11	3,871.91	491.08	472.79	26.847	CC
4H - OH - OH	6,032.11	6,037.56	499.02	470.95	17.783	ES
4H - OH - OH	12,313.27	11,797.00	1,723.45	1,496.10	7.580	SF
6H - OH - Plan #1	6,962.04	6,980.66	985.63	954.61	31.770	CC, ES
6H - OH - Plan #1	12,313.27	12,879.89	1,450.43	1,158.89	4.975	SF
Cerf 10 Fed (Offsets)						
#1 - Existing - Existing	9,318.89	7,462.99	183.90	110.38	2,501	CC, ES, SF
#2 - Existing - Existing	9,199.07	6,600.00	1,452.14	1,396.89	26.283	CC
#2 - Existing - Existing	9,200.00	6,600.00	1,452.14	1,396.87	26.273	ES
#2 - Existing - Existing	10,000.00	6,600.00	1,658.37	1,585.69	22.818	SF
#2 - WCS - North - WCS - North	9,232.92	6,554.00	1,411.25	1,354.16	24.721	CC, ES
#2 - WCS - North - WCS - North	10,000.00	6,554.00	1,606.25	1,533.20	21.988	SF
#2 - WCS - South - WCS - South	9,225.13	6,554.00	1,552.52	1,492.33	25.791	CC, ES
#2 - WCS - South - WCS - South	10,100.00	6,554.00	1,782.06	1,702.67	22.448	SF

Offset Design													Offset Site Error: 0.00 usft	
Survey Program 68-NS-GYRO-MS 15874-LEAM MWD V11559-Project													Offset Well Error: 0.00 usft	
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)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	2.49	2.49	0.00	0.00	-154.46	-415.26	-198.39	460.22					
100.00	100.00	105.36	105.36	0.08	0.15	-154.46	-414.89	-198.22	459.81	459.57	0.24	1,928.923		
200.00	200.00	206.92	206.92	0.31	0.42	-154.50	-414.28	-197.64	459.03	458.30	0.73	630.387		
300.00	300.00	307.37	307.35	0.53	0.68	-154.51	-413.30	-197.05	457.90	456.68	1.22	376.135		
400.00	400.00	405.86	405.85	0.76	0.94	-154.52	-412.51	-196.59	456.97	455.28	1.69	269.600		
500.00	500.00	505.84	505.82	0.98	1.19	-154.58	-412.10	-195.88	456.30	454.12	2.17	210.041		
600.00	600.00	606.09	606.07	1.21	1.45	-154.61	-411.48	-195.29	455.48	452.82	2.66	171.293		
700.00	700.00	707.24	707.21	1.43	1.72	-154.64	-410.77	-194.69	454.60	451.44	3.15	144.257		
800.00	800.00	808.30	808.27	1.66	1.99	-154.67	-409.77	-193.99	453.40	449.76	3.64	124.452		
900.00	900.00	909.18	909.14	1.88	2.25	-154.69	-408.59	-193.19	452.01	447.88	4.13	109.388		
1,000.00	1,000.00	1,007.49	1,007.44	2.11	2.50	-154.72	-407.48	-192.47	450.68	446.06	4.61	97.721		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	EDM:5000.1 Single User Db
Reference Design:	Plan: #1	Offset-TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed 3H OH OH												Offset Site Error:	0.00 usft
Survey Program: 68-NS-GYRO-MS 5874-LEAM MWD 11559-Project												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		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	Warning
1,100.00	1,100.00	1,107.84	1,107.78	2.33	2.77	-154.79	-406.70	-191.44	449.54	444.44	5.10	88.170	
1,200.00	1,200.00	1,207.89	1,207.82	2.56	3.03	-154.85	-405.81	-190.49	448.33	442.74	5.59	80.240	
1,300.00	1,300.00	1,306.65	1,306.58	2.78	3.29	-154.89	-405.00	-189.76	447.27	441.19	6.07	73.634	
1,400.00	1,400.00	1,406.89	1,406.81	3.01	3.56	-154.91	-404.22	-189.25	446.35	439.79	6.56	68.009	
1,500.00	1,500.00	1,509.09	1,509.00	3.23	3.83	-154.92	-403.02	-188.59	445.01	437.96	7.06	63.063	
1,600.00	1,600.00	1,607.78	1,607.68	3.46	4.09	-154.95	-401.97	-187.89	443.74	436.20	7.54	58.832	
1,700.00	1,700.00	1,708.12	1,708.01	3.68	4.35	-154.99	-400.94	-187.03	442.45	434.42	8.03	55.075	
1,800.00	1,800.00	1,807.45	1,807.34	3.91	4.62	-155.02	-400.01	-186.32	441.31	432.78	8.52	51.784	
1,900.00	1,900.00	1,907.48	1,907.36	4.13	4.88	-155.07	-399.12	-185.52	440.15	431.14	9.01	48.843	
2,000.00	2,000.00	2,007.50	2,007.37	4.35	5.15	-155.13	-398.31	-184.66	439.06	429.56	9.50	46.218	
2,100.00	2,100.00	2,107.42	2,107.29	4.58	5.41	-155.15	-397.32	-184.02	437.89	427.90	9.99	43.841	
2,200.00	2,200.00	2,206.77	2,206.63	4.80	5.67	-155.17	-396.47	-183.42	436.86	426.39	10.48	41.701	
2,300.00	2,300.00	2,306.86	2,306.72	5.03	5.94	-155.20	-395.70	-182.81	435.91	424.94	10.97	39.751	
2,400.00	2,400.00	2,407.41	2,407.25	5.25	6.20	-155.27	-394.94	-181.93	434.86	423.40	11.46	37.962	
2,500.00	2,500.00	2,507.87	2,507.71	5.48	6.46	-155.33	-394.09	-180.97	433.69	421.74	11.94	36.312	
2,600.00	2,600.00	2,608.34	2,608.17	5.70	6.73	-155.34	-392.95	-180.37	432.41	419.98	12.43	34.787	
2,700.00	2,700.00	2,706.75	2,706.57	5.93	6.98	-155.34	-391.88	-179.89	431.22	418.31	12.91	33.398	
2,800.00	2,800.00	2,805.35	2,805.17	6.15	7.24	-155.36	-391.21	-179.48	430.42	417.03	13.39	32.142	
2,900.00	2,900.00	2,905.60	2,905.41	6.38	7.49	-155.33	-390.53	-179.37	429.76	415.90	13.86	30.997	
3,000.00	3,000.00	3,007.47	3,007.28	6.60	7.72	-155.26	-389.44	-179.46	428.83	414.51	14.32	29.939	
3,100.00	3,100.00	3,106.11	3,105.91	6.83	7.92	-155.12	-388.13	-179.99	427.85	413.11	14.74	29.022	
3,200.00	3,200.00	3,204.87	3,204.66	7.05	8.08	-154.95	-387.01	-180.91	427.22	412.08	15.13	28.233	
3,300.00	3,300.00	3,306.48	3,306.26	7.28	8.28	-154.82	-385.95	-181.44	426.49	410.94	15.55	27.419	
3,400.00	3,400.00	3,407.75	3,407.53	7.50	8.51	-154.73	-384.68	-181.61	425.43	409.41	16.01	26.566	
3,500.00	3,500.00	3,508.44	3,508.21	7.73	8.75	-154.59	-383.06	-181.97	424.12	407.65	16.47	25.746	
3,600.00	3,600.00	3,608.46	3,608.21	7.95	8.98	-154.47	-381.43	-182.16	422.74	405.80	16.93	24.963	
3,700.00	3,700.00	3,707.01	3,706.75	8.18	9.22	-154.36	-379.92	-182.39	421.45	404.06	17.39	24.232	
3,800.00	3,800.00	3,804.65	3,804.38	8.40	9.43	-154.26	-379.00	-182.71	420.75	402.92	17.83	23.603	
3,900.00	3,900.00	3,904.94	3,904.66	8.63	9.62	-154.14	-378.24	-183.37	420.35	402.11	18.24	23.045	
4,000.00	4,000.00	4,005.24	4,004.96	8.85	9.81	-153.97	-377.12	-184.15	419.68	401.03	18.66	22.495	
4,100.00	4,100.00	4,103.22	4,102.93	9.07	9.97	-153.81	-376.23	-185.03	419.27	400.22	19.05	22.010	
4,200.00	4,200.00	4,203.34	4,203.04	9.30	10.13	-153.67	-375.74	-185.98	419.25	399.83	19.43	21.582	
4,300.00	4,300.00	4,303.62	4,303.31	9.52	10.29	-153.51	-375.02	-186.91	419.02	399.20	19.82	21.145	
4,400.00	4,400.00	4,405.33	4,405.02	9.75	10.48	-153.32	-374.06	-188.01	418.66	398.43	20.23	20.695	
4,491.43	4,491.43	4,494.15	4,493.83	9.95	10.64	-153.15	-373.17	-188.94	418.27	397.68	20.59	20.312	
4,500.00	4,500.00	4,502.38	4,502.05	9.97	10.65	-153.13	-373.12	-189.04	418.28	397.65	20.63	20.280	
4,600.00	4,600.00	4,602.24	4,601.91	10.20	10.80	-152.93	-372.60	-190.45	418.45	397.45	21.00	19.929	
4,700.00	4,700.00	4,703.05	4,702.70	10.42	10.96	-152.70	-371.88	-191.91	418.48	397.09	21.38	19.571	
4,800.00	4,800.00	4,803.53	4,803.17	10.65	11.14	-152.46	-370.93	-193.44	418.34	396.56	21.78	19.204	
4,900.00	4,900.00	4,902.80	4,902.42	10.87	11.31	-152.21	-370.02	-195.00	418.26	396.08	22.18	18.854	
5,000.00	5,000.00	5,003.43	5,003.03	11.10	11.49	-151.97	-369.13	-196.49	418.17	395.58	22.59	18.510	
5,100.00	5,100.00	5,103.70	5,103.29	11.32	11.69	-151.73	-368.19	-197.99	418.05	395.04	23.01	18.171	
5,200.00	5,200.00	5,205.83	5,205.40	11.55	11.90	-151.47	-366.79	-199.38	417.48	394.04	23.45	17.806	
5,300.00	5,300.00	5,305.01	5,304.56	11.77	12.12	-151.24	-365.46	-200.56	416.88	392.99	23.89	17.450	
5,400.00	5,400.00	5,404.57	5,404.11	12.00	12.34	-151.01	-364.24	-201.80	416.41	392.08	24.33	17.114	
5,500.00	5,500.00	5,505.53	5,505.05	12.22	12.56	-150.77	-363.00	-203.16	415.99	391.22	24.78	16.788	
5,600.00	5,600.00	5,607.74	5,607.25	12.45	12.81	-150.56	-361.41	-203.99	415.03	389.78	25.25	16.437	
5,700.00	5,700.00	5,707.56	5,707.05	12.67	13.06	-150.43	-359.89	-204.20	413.81	388.08	25.73	16.082	
5,800.00	5,800.00	5,807.70	5,807.19	12.90	13.31	-150.41	-358.90	-203.78	412.74	386.54	26.21	15.749	
5,900.00	5,900.00	5,904.57	5,904.05	13.12	13.40	-150.59	-359.02	-202.34	412.12	385.60	26.52	15.541	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM:5000.1 Single User.Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed - 3H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 68-NS-GYRO-MS-5874-LEAM MWD-11559-Project														Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
6,000.00	6,000.00	6,202.04	6,180.38	13.35	13.54	-158.75		-309.88	-120.51	377.12	350.25	26.87	14.034		
6,100.00	6,100.00	6,326.80	6,273.43	13.57	13.88	-170.76		-276.38	-44.96	328.12	300.85	27.26	12.035		
6,200.00	6,200.00	6,417.51	6,327.31	13.80	14.37	174.95		-247.39	21.88	278.00	250.46	27.54	10.095		
6,300.00	6,300.00	6,473.17	6,354.55	14.02	14.80	163.76		-228.41	66.53	243.55	215.82	27.74	8.781		
6,364.57	6,364.57	6,502.65	6,366.97	14.16	15.06	157.31		-218.13	91.21	236.44	208.56	27.87	8.483 CC, ES, SF		
6,400.00	6,400.00	6,513.92	6,371.32	14.24	15.17	154.79		-214.16	100.82	238.74	210.78	27.96	8.539		
6,500.00	6,500.00	6,544.00	6,381.70	14.47	15.48	148.06		-203.88	127.10	268.86	240.64	28.23	9.525		
6,600.00	6,600.00	6,561.51	6,387.05	14.69	15.68	144.23		-198.10	142.74	325.57	297.05	28.51	11.418		
6,700.00	6,700.00	6,580.74	6,392.51	14.92	15.90	140.16		-191.90	160.11	398.11	369.28	28.84	13.807		
6,800.00	6,800.00	6,596.94	6,396.72	15.14	16.10	136.88		-186.75	174.88	479.62	450.45	29.17	16.442		
6,900.00	6,900.00	6,611.26	6,400.14	15.37	16.28	134.10		-182.22	188.02	566.41	536.87	29.54	19.173		
6,946.00	6,946.00	6,617.44	6,401.54	15.47	16.36	132.94		-180.26	193.71	607.52	577.77	29.75	20.423		
6,950.00	6,950.00	6,617.97	6,401.65	15.48	16.37	41.90		-180.10	194.20	611.12	579.67	31.45	19.431		
6,975.00	6,974.98	6,621.60	6,402.45	15.53	16.42	37.48		-178.95	197.55	633.44	602.09	31.36	20.202		
7,000.00	6,999.89	6,625.78	6,403.35	15.58	16.47	33.63		-177.63	201.41	655.45	624.24	31.21	21.001		
7,025.00	7,024.64	6,634.00	6,405.06	15.63	16.58	29.87		-175.04	209.03	677.12	646.10	31.02	21.828		
7,050.00	7,049.18	6,634.00	6,405.06	15.68	16.58	27.55		-175.04	209.03	698.36	667.61	30.75	22.712		
7,075.00	7,073.44	6,634.00	6,405.06	15.73	16.58	25.51		-175.04	209.03	719.24	688.82	30.42	23.645		
7,100.00	7,097.34	6,646.55	6,407.51	15.79	16.75	22.72		-171.11	220.70	739.51	709.45	30.06	24.602		
7,125.00	7,120.84	6,652.65	6,408.63	15.84	16.84	20.82		-169.24	226.39	759.33	729.48	29.85	25.441		
7,150.00	7,143.85	6,664.00	6,410.60	15.90	16.99	18.85		-165.80	237.03	778.64	748.99	29.64	26.266		
7,175.00	7,166.32	6,664.00	6,410.60	15.96	16.99	17.79		-165.80	237.03	797.30	767.93	29.38	27.141		
7,200.00	7,188.19	6,673.62	6,412.15	16.03	17.13	16.36		-162.93	246.07	815.37	786.32	29.05	28.068		
7,225.00	7,209.39	6,681.50	6,413.35	16.10	17.25	15.20		-160.59	253.51	832.80	804.14	28.67	29.053		
7,250.00	7,229.87	6,694.00	6,415.09	16.18	17.43	13.99		-156.91	265.32	849.57	821.35	28.22	30.100		
7,275.00	7,249.58	6,694.00	6,415.09	16.27	17.43	13.40		-156.91	265.32	865.62	837.89	27.72	31.222		
7,300.00	7,268.45	6,707.33	6,416.75	16.37	17.63	12.40		-153.01	277.96	880.91	853.73	27.18	32.410		
7,325.00	7,286.44	6,724.00	6,418.56	16.47	17.89	11.41		-148.17	293.81	895.52	868.93	26.59	33.677		
7,350.00	7,303.49	6,724.00	6,418.56	16.60	17.89	11.03		-148.17	293.81	909.24	883.29	25.95	35.038		
7,375.00	7,319.56	6,735.60	6,419.64	16.73	18.07	10.36		-144.83	304.87	922.22	896.93	25.28	36.479		
7,400.00	7,334.61	6,745.32	6,420.42	16.89	18.22	9.81		-142.05	314.15	934.38	909.80	24.58	38.014		
7,425.00	7,348.60	6,756.00	6,421.16	17.06	18.39	9.29		-139.01	324.36	945.71	921.85	23.86	39.640		
7,450.00	7,361.48	6,764.74	6,421.66	17.25	18.54	8.87		-136.55	332.73	956.19	933.07	23.12	41.358		
7,475.00	7,373.23	6,774.37	6,422.10	17.46	18.69	8.47		-133.88	341.97	965.83	943.45	22.38	43.157		
7,500.00	7,383.80	6,787.00	6,422.51	17.70	18.90	8.04		-130.45	354.12	974.61	952.96	21.65	45.012		
7,525.00	7,393.17	6,787.00	6,422.51	17.95	18.90	7.91		-130.45	354.12	982.55	961.63	20.92	46.958		
7,550.00	7,401.32	6,804.73	6,422.75	18.23	19.20	7.45		-125.70	371.20	989.49	969.22	20.27	48.825		
7,575.00	7,408.21	6,819.00	6,422.68	18.53	19.44	7.10		-121.92	384.96	995.59	975.93	19.66	50.643		
7,600.00	7,413.85	6,819.00	6,422.68	18.84	19.44	7.02		-121.92	384.96	1,000.80	981.71	19.09	52.421		
7,625.00	7,418.20	6,847.73	6,422.12	19.18	19.95	6.48		-114.27	412.65	1,004.78	986.09	18.70	53.740		
7,650.00	7,421.25	6,865.36	6,421.63	19.53	20.26	6.15		-109.50	429.61	1,007.76	989.36	18.40	54.784		
7,675.00	7,423.00	6,883.03	6,421.03	19.90	20.57	5.83		-104.67	446.60	1,009.63	991.40	18.23	55.372		
7,687.58	7,423.39	6,891.94	6,420.68	20.10	20.73	5.68		-102.21	455.16	1,010.16	991.95	18.21	55.472		
7,700.00	7,423.61	6,900.74	6,420.31	20.29	20.88	5.54		-99.77	463.60	1,010.57	992.29	18.28	55.282		
7,800.00	7,425.37	6,992.98	6,415.78	21.96	22.57	4.01		-72.55	551.61	1,014.99	995.98	19.00	53.409		
7,826.58	7,425.84	7,023.68	6,414.26	22.44	23.15	3.49		-62.69	580.64	1,016.31	997.06	19.25	52.794		
7,900.00	7,427.14	7,124.78	6,411.22	23.83	25.10	1.81		-28.85	675.86	1,018.85	998.74	20.11	50.662		
8,000.00	7,428.90	7,235.30	6,410.72	25.87	27.34	0.09		6.27	780.63	1,020.58	999.26	21.32	47.867		
8,100.00	7,430.67	7,328.75	6,410.35	28.02	29.31	-1.10		31.54	870.60	1,022.95	1,000.40	22.55	45.364		
8,200.00	7,432.43	7,434.42	6,409.94	30.27	31.60	-2.21		55.94	973.41	1,025.67	1,001.68	23.99	42.753		
8,300.00	7,434.19	7,533.54	6,410.29	32.60	33.78	-3.04		75.18	1,070.63	1,027.78	1,002.33	25.45	40.387		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2'00 sigma
Reference Wellbore:	OH	Database:	EDM:5000.1:Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed 3H OH OH													Offset Site Error:	0.00 usft
Survey Program: 68-NS-GYRO-MS 5874 LEAM MWD 11559 Project													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum	Separation	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	N/S (usft)	E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
8,400.00	7,435.96	7,641.34	6,409.99	34.99	36.18	-3.60	89.98	1,177.38	1,030.40	1,003.42	26.98	38.186		
8,500.00	7,437.72	7,741.54	6,410.39	37.42	38.44	-3.74	96.99	1,277.32	1,031.93	1,003.55	28.38	36.365		
8,600.00	7,439.49	7,842.26	6,410.24	39.90	40.72	-3.68	100.51	1,377.98	1,033.79	1,004.06	29.72	34.778		
8,700.00	7,441.25	7,931.65	6,409.69	42.40	42.75	-3.48	100.89	1,467.37	1,035.92	1,004.98	30.94	33.480		
8,800.00	7,443.02	8,021.21	6,408.12	44.94	44.81	-3.29	101.49	1,556.91	1,039.22	1,007.05	32.17	32.304		
8,900.00	7,444.78	8,143.41	6,406.31	47.50	47.64	-3.09	103.44	1,679.07	1,042.39	1,008.74	33.65	30.978		
9,000.00	7,446.54	8,283.09	6,410.34	50.08	50.91	-2.97	107.29	1,818.63	1,040.81	1,005.50	35.31	29.479		
9,100.00	7,448.31	8,368.53	6,413.09	52.67	52.92	-2.92	109.95	1,903.98	1,039.30	1,002.71	36.59	28.404		
9,148.60	7,449.17	8,409.12	6,413.95	53.94	53.89	-2.90	111.44	1,944.53	1,039.11	1,001.90	37.22	27.921		
9,200.00	7,450.07	8,452.94	6,414.55	55.28	54.93	-2.90	113.27	1,988.31	1,039.31	1,001.42	37.89	27.430		
9,300.00	7,451.84	8,542.02	6,414.91	57.90	57.05	-2.90	117.23	2,077.31	1,040.66	1,001.42	39.24	26.520		
9,400.00	7,453.60	8,683.09	6,416.21	60.54	60.43	-2.96	124.48	2,218.17	1,041.98	1,000.96	41.03	25.399		
9,500.00	7,455.37	8,803.28	6,422.95	63.18	63.31	-3.04	131.01	2,337.99	1,038.07	995.39	42.68	24.321		
9,600.00	7,457.13	8,887.43	6,427.29	65.83	65.34	-3.05	134.77	2,421.94	1,034.68	990.66	44.03	23.500		
9,700.00	7,458.89	8,988.86	6,431.59	68.49	67.79	-3.03	138.64	2,523.20	1,032.18	986.69	45.49	22.691		
9,800.00	7,460.66	9,069.98	6,434.57	71.15	69.75	-3.03	142.06	2,604.20	1,030.29	983.48	46.81	22.010		
9,850.05	7,461.54	9,110.79	6,435.45	72.49	70.74	-3.02	143.58	2,644.97	1,030.08	982.62	47.47	21.702		
9,900.00	7,462.42	9,152.73	6,436.01	73.82	71.76	-3.00	145.18	2,686.87	1,030.28	982.15	48.13	21.406		
10,000.00	7,464.19	9,291.85	6,439.29	76.50	75.14	-3.03	151.78	2,825.78	1,029.92	979.99	49.93	20.629		
10,100.00	7,465.95	9,388.54	6,443.89	79.18	77.49	-3.13	157.56	2,922.19	1,027.01	975.56	51.45	19.960		
10,200.00	7,467.72	9,480.45	6,447.70	81.86	79.73	-3.25	163.58	3,013.81	1,024.75	971.78	52.97	19.346		
10,300.00	7,469.48	9,577.40	6,451.31	84.55	82.09	-3.39	170.16	3,110.48	1,022.94	968.39	54.55	18.752		
10,400.00	7,471.24	9,668.31	6,454.11	87.24	84.32	-3.49	175.93	3,201.16	1,021.74	965.67	56.07	18.222		
10,451.48	7,472.15	9,712.44	6,455.10	88.63	85.40	-3.53	178.57	3,245.20	1,021.56	964.73	56.82	17.978		
10,500.00	7,473.01	9,756.56	6,455.76	89.94	86.48	-3.57	181.14	3,289.24	1,021.72	964.17	57.55	17.753		
10,600.00	7,474.77	9,896.21	6,461.08	92.63	89.89	-3.81	191.41	3,428.39	1,019.73	960.12	59.61	17.107		
10,700.00	7,476.54	10,035.00	6,471.07	95.33	93.28	-4.13	202.49	3,566.37	1,014.62	952.86	61.77	16.427		
10,800.00	7,478.30	10,115.72	6,477.90	98.04	95.25	-4.29	208.42	3,646.59	1,008.18	944.86	63.32	15.922		
10,900.00	7,480.07	10,204.43	6,483.80	100.74	97.43	-4.41	214.19	3,734.91	1,003.46	938.54	64.92	15.457		
11,000.00	7,481.83	10,290.33	6,488.42	103.45	99.53	-4.42	217.81	3,820.59	999.85	933.50	66.35	15.069		
11,100.00	7,483.59	10,377.69	6,491.62	106.16	101.68	-4.25	218.42	3,907.89	997.67	930.10	67.57	14.765		
11,200.00	7,485.36	10,469.23	6,493.97	108.87	103.93	-4.04	218.69	3,999.40	996.57	927.79	68.77	14.490		
11,300.00	7,487.12	10,567.58	6,495.95	111.58	106.35	-3.79	218.72	4,097.74	996.02	926.04	69.99	14.231		
11,380.52	7,488.54	10,642.63	6,497.39	113.76	108.19	-3.61	218.75	4,172.77	995.68	924.74	70.95	14.035		
11,400.00	7,488.89	10,659.57	6,497.62	114.29	108.61	-3.56	218.78	4,189.71	995.71	924.54	71.17	13.990		
11,500.00	7,490.65	10,751.85	6,498.31	117.01	110.88	-3.35	219.10	4,281.98	996.47	924.10	72.37	13.769		
11,600.00	7,492.42	10,851.14	6,498.72	119.72	113.33	-3.13	219.74	4,381.27	997.61	923.99	73.62	13.551		
11,700.00	7,494.18	10,982.08	6,500.93	122.44	116.56	-2.95	222.33	4,512.15	997.67	922.52	75.15	13.276		
11,800.00	7,495.94	11,092.92	6,505.90	125.16	119.29	-3.00	227.82	4,622.75	994.97	918.18	76.79	12.956		
11,900.00	7,497.71	11,197.79	6,510.84	127.88	121.87	-3.12	234.26	4,727.30	992.14	913.66	78.48	12.642		
12,000.00	7,499.47	11,320.41	6,519.76	130.60	124.89	-3.34	243.05	4,849.27	986.65	906.19	80.46	12.263		
12,100.00	7,501.24	11,408.29	6,526.27	133.32	127.05	-3.53	249.89	4,936.65	981.24	899.10	82.14	11.945		
12,200.00	7,503.00	11,496.48	6,531.38	136.04	129.19	-3.70	256.30	5,024.45	977.37	893.57	83.80	11.663		
12,295.94	7,504.69	11,559.00	6,534.76	138.65	129.19	-3.83	261.09	5,086.70	974.66	889.97	84.69	11.509		
12,300.00	7,504.77	11,559.00	6,534.76	138.77	129.19	-3.83	261.09	5,086.70	974.67	889.95	84.72	11.505		
12,313.27	7,505.00	11,559.00	6,534.76	139.00	129.19	-3.83	261.09	5,086.70	974.81	890.04	84.77	11.499		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H:
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209.6' + KB-25' @ 3234.60usft (Cactus 126)
Reference Site:	Cerf 10 Fed	MD Reference:	GE 3209.6' + KB-25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cerf 10 Fed 4H OH OH												Offset Site Error:	0.00 usft
Survey Program: 109-NS GYRO MS 5873 LEAM MWD 11797-Project												Offset Well Error:	0.00 usft
Measured Reference	Vertical Depth (usft)	Measured Offset	Vertical Depth (usft)	Semi Major Axis Reference	Offset	Highside Toolface	Offset Wellbore Centre	Distance	Between Centres	Between Ellipses	Minimum Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Angle (°)	N-S (usft)	E-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	
0.00	0.00	2.41	2.41	0.00	0.00	-156.86	-465.26	-198.79	505.95				
100.00	100.00	102.79	102.79	0.08	0.11	-156.85	-465.16	-198.93	505.91	505.72	0.19	2,667.973	
200.00	200.00	203.03	203.03	0.31	0.36	-156.80	-464.90	-199.27	505.81	505.14	0.67	755.323	
300.00	300.00	302.93	302.92	0.53	0.63	-156.76	-464.65	-199.57	505.70	504.54	1.16	436.241	
400.00	400.00	403.28	403.28	0.76	0.89	-156.70	-464.32	-200.00	505.57	503.92	1.65	306.398	
500.00	500.00	504.45	504.44	0.98	1.16	-156.58	-463.62	-200.86	505.27	503.13	2.14	235.754	
600.00	600.00	604.90	604.88	1.21	1.43	-156.43	-462.69	-201.82	504.80	502.16	2.63	191.656	
700.00	700.00	704.79	704.76	1.43	1.69	-156.32	-461.90	-202.53	504.36	501.24	3.12	161.601	
800.00	800.00	806.42	806.39	1.66	1.95	-156.23	-461.01	-203.01	503.74	500.13	3.61	139.882	
900.00	900.00	907.64	907.60	1.88	2.20	-156.13	-459.77	-203.41	502.78	498.70	4.08	123.165	
1,000.00	1,000.00	1,007.26	1,007.22	2.11	2.44	-156.06	-458.58	-203.57	501.76	497.21	4.55	110.278	
1,100.00	1,100.00	1,106.54	1,106.49	2.33	2.69	-155.98	-457.49	-203.89	500.88	495.86	5.03	99.666	
1,200.00	1,200.00	1,205.98	1,205.92	2.56	2.95	-155.87	-456.42	-204.43	500.12	494.61	5.51	90.749	
1,300.00	1,300.00	1,305.64	1,305.57	2.78	3.22	-155.76	-455.43	-205.02	499.46	493.46	6.00	83.250	
1,386.52	1,386.52	1,388.99	1,388.92	2.98	3.42	-155.66	-454.73	-205.68	499.08	492.69	6.40	78.033	
1,400.00	1,400.00	1,401.67	1,401.60	3.01	3.45	-155.65	-454.69	-205.79	499.09	492.64	6.45	77.322	
1,500.00	1,500.00	1,499.08	1,499.00	3.23	3.65	-155.54	-454.79	-206.84	499.63	492.75	6.88	72.638	
1,600.00	1,600.00	1,598.79	1,598.71	3.46	3.85	-155.42	-454.99	-208.14	500.35	493.05	7.30	68.522	
1,700.00	1,700.00	1,700.07	1,699.97	3.68	4.07	-155.28	-455.08	-209.51	501.00	493.25	7.75	64.672	
1,800.00	1,800.00	1,806.82	1,806.72	3.91	4.33	-155.12	-454.39	-210.75	500.90	492.67	8.23	60.849	
1,900.00	1,900.00	1,907.76	1,907.64	4.13	4.59	-154.94	-452.82	-211.74	499.91	491.19	8.72	57.339	
2,000.00	2,000.00	2,007.13	2,006.99	4.35	4.85	-154.76	-451.24	-212.75	498.90	489.70	9.20	54.214	
2,100.00	2,100.00	2,102.98	2,102.83	4.58	5.10	-154.60	-450.23	-213.82	498.42	488.75	9.68	51.504	
2,200.00	2,200.00	2,203.20	2,203.04	4.80	5.36	-154.44	-449.55	-215.03	498.33	488.16	10.16	49.030	
2,300.00	2,300.00	2,304.09	2,303.92	5.03	5.63	-154.27	-448.72	-216.24	498.11	487.46	10.65	46.754	
2,400.00	2,400.00	2,405.14	2,404.95	5.25	5.90	-154.11	-447.73	-217.35	497.71	486.56	11.15	44.654	
2,500.00	2,500.00	2,506.47	2,506.27	5.48	6.16	-153.95	-446.53	-218.32	497.06	485.43	11.64	42.713	
2,600.00	2,600.00	2,606.99	2,606.78	5.70	6.42	-153.78	-445.12	-219.20	496.18	484.06	12.12	40.924	
2,700.00	2,700.00	2,705.59	2,705.36	5.93	6.68	-153.61	-443.77	-220.20	495.41	482.80	12.61	39.293	
2,800.00	2,800.00	2,803.68	2,803.45	6.15	6.94	-153.43	-442.75	-221.39	495.02	481.93	13.09	37.813	
2,900.00	2,900.00	2,903.23	2,902.98	6.38	7.20	-153.24	-441.89	-222.86	494.91	481.33	13.58	36.453	
3,000.00	3,000.00	3,005.34	3,005.07	6.60	7.47	-153.04	-440.90	-224.22	494.65	480.58	14.07	35.158	
3,100.00	3,100.00	3,107.62	3,107.34	6.83	7.74	-152.86	-439.45	-225.25	493.84	479.28	14.56	33.916	
3,200.00	3,200.00	3,207.57	3,207.28	7.05	8.00	-152.69	-437.86	-226.05	492.79	477.75	15.04	32.758	
3,300.00	3,300.00	3,304.68	3,304.37	7.28	8.25	-152.50	-436.46	-227.17	492.04	476.52	15.52	31.702	
3,400.00	3,400.00	3,403.68	3,403.35	7.50	8.51	-152.25	-435.26	-228.97	491.81	475.80	16.01	30.728	
3,500.00	3,500.00	3,503.70	3,503.34	7.73	8.77	-152.02	-434.15	-230.66	491.62	475.13	16.49	29.808	
3,600.00	3,600.00	3,603.71	3,603.34	7.95	9.04	-151.84	-433.24	-231.96	491.43	474.45	16.98	28.939	
3,700.00	3,700.00	3,703.82	3,703.44	8.18	9.30	-151.67	-432.37	-233.15	491.23	473.76	17.47	28.117	
3,800.00	3,800.00	3,803.06	3,802.67	8.40	9.56	-151.50	-431.60	-234.31	491.10	473.14	17.96	27.349	
3,869.11	3,869.11	3,871.91	3,871.51	8.56	9.74	-151.38	-431.08	-235.23	491.08	472.79	18.29	26.847 CC	
3,900.00	3,900.00	3,902.57	3,902.17	8.63	9.82	-151.32	-430.84	-235.68	491.08	472.64	18.44	26.630	
4,000.00	4,000.00	4,000.72	4,000.30	8.85	10.07	-151.13	-430.23	-237.25	491.31	472.40	18.92	25.974	
4,100.00	4,100.00	4,098.37	4,097.93	9.07	10.31	-150.87	-429.74	-239.51	492.00	472.61	19.38	25.385	
4,200.00	4,200.00	4,197.25	4,196.77	9.30	10.55	-150.57	-429.40	-242.22	493.04	473.20	19.84	24.845	
4,300.00	4,300.00	4,297.61	4,297.09	9.52	10.80	-150.27	-429.10	-245.08	494.19	473.88	20.31	24.331	
4,400.00	4,400.00	4,399.34	4,398.77	9.75	11.05	-149.95	-428.53	-247.89	495.07	474.29	20.79	23.816	
4,500.00	4,500.00	4,500.13	4,499.53	9.97	11.30	-149.69	-427.92	-250.19	495.70	474.44	21.27	23.309	
4,600.00	4,600.00	4,600.65	4,600.03	10.20	11.56	-149.43	-427.28	-252.37	496.25	474.51	21.75	22.818	
4,700.00	4,700.00	4,700.73	4,700.08	10.42	11.82	-149.16	-426.45	-254.60	496.68	474.45	22.23	22.342	
4,800.00	4,800.00	4,798.48	4,797.80	10.65	12.07	-148.90	-425.79	-256.90	497.31	474.61	22.70	21.904	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site:	Cerf 10 Fed	MD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2:00 sigma
Reference Wellbore:	OH	Database:	EDM/5000-1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cerf 10 Fed - 4H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 109-NS-GYRO-MS15873-LEAM MWD 11797-Project												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)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,900.00	4,897.11	4,896.40	10.87	12.31	-148.60	-425.42	-259.72	498.47	475.29	23.17	21.510	
5,000.00	5,000.00	4,999.80	4,999.05	11.10	12.57	-148.29	-424.92	-262.55	499.50	475.84	23.66	21.115	
5,100.00	5,100.00	5,101.72	5,100.93	11.32	12.84	-147.99	-423.91	-264.97	499.91	475.77	24.15	20.704	
5,200.00	5,200.00	5,203.37	5,202.55	11.55	13.11	-147.70	-422.67	-267.23	500.06	475.42	24.64	20.295	
5,239.16	5,239.16	5,242.40	5,241.56	11.64	13.21	-147.58	-422.09	-268.12	500.04	475.21	24.83	20.138	
5,300.00	5,300.00	5,302.13	5,301.27	11.77	13.37	-147.39	-421.28	-269.50	500.11	474.99	25.13	19.905	
5,400.00	5,400.00	5,401.22	5,400.32	12.00	13.63	-147.10	-420.16	-271.85	500.44	474.83	25.61	19.540	
5,500.00	5,500.00	5,499.20	5,498.26	12.22	13.89	-146.78	-419.16	-274.49	501.05	474.96	26.09	19.204	
5,600.00	5,600.00	5,601.27	5,600.29	12.45	14.15	-146.45	-418.10	-277.31	501.71	475.12	26.58	18.874	
5,700.00	5,700.00	5,706.30	5,705.30	12.67	14.42	-146.21	-416.85	-278.91	501.56	474.49	27.07	18.527	
5,800.00	5,800.00	5,807.11	5,806.11	12.90	14.61	-146.15	-416.02	-279.03	500.94	473.46	27.48	18.227	
5,900.00	5,900.00	5,907.52	5,906.49	13.12	14.64	-146.29	-415.98	-277.53	500.08	472.34	27.74	18.026	
6,000.00	6,000.00	6,008.92	6,006.94	13.35	14.65	-147.70	-421.95	-266.71	499.20	471.22	27.98	17.841	
6,032.11	6,032.11	6,037.56	6,034.51	13.42	14.65	-148.59	-425.91	-260.03	499.02	470.95	28.06	17.783 ES	
6,100.00	6,100.00	6,089.90	6,083.20	13.57	14.67	-150.78	-436.32	-244.02	500.29	472.05	28.23	17.719	
6,200.00	6,200.00	6,156.00	6,141.71	13.80	14.72	-154.26	-454.01	-218.93	507.68	479.20	28.49	17.822	
6,300.00	6,300.00	6,212.55	6,189.09	14.02	14.79	-157.63	-473.11	-194.73	524.02	495.28	28.74	18.234	
6,400.00	6,400.00	6,251.00	6,219.57	14.24	14.87	-160.06	-488.75	-177.28	551.12	522.13	28.99	19.012	
6,500.00	6,500.00	6,301.37	6,256.91	14.47	15.00	-163.37	-512.21	-152.97	588.23	558.97	29.26	20.101	
6,600.00	6,600.00	6,344.00	6,286.27	14.69	15.15	-166.21	-534.05	-131.12	634.30	604.75	29.55	21.466	
6,700.00	6,700.00	6,376.00	6,306.46	14.92	15.29	-168.36	-551.70	-113.68	688.53	658.69	29.84	23.075	
6,800.00	6,800.00	6,396.62	6,318.44	15.14	15.40	-169.76	-563.62	-101.86	749.84	719.72	30.12	24.897	
6,900.00	6,900.00	6,419.37	6,330.67	15.37	15.53	-171.30	-577.17	-88.30	817.19	786.74	30.45	26.838	
6,946.00	6,946.00	6,429.03	6,335.57	15.47	15.59	-171.96	-583.04	-82.38	849.87	819.27	30.61	27.769	
6,950.00	6,950.00	6,439.00	6,340.42	15.48	15.66	96.60	-589.14	-76.18	852.88	821.98	30.90	27.601	
6,975.00	6,974.98	6,439.00	6,340.42	15.53	15.66	93.43	-589.14	-76.18	871.05	840.15	30.91	28.181	
7,000.00	6,999.89	6,439.00	6,340.42	15.58	15.66	90.11	-589.14	-76.18	889.61	858.70	30.91	28.777	
7,025.00	7,024.64	6,439.00	6,340.42	15.63	15.66	86.66	-589.14	-76.18	908.48	877.56	30.92	29.386	
7,050.00	7,049.18	6,451.47	6,346.24	15.68	15.75	82.60	-596.86	-68.29	927.37	896.43	30.94	29.971	
7,075.00	7,073.44	6,457.20	6,348.81	15.73	15.79	78.90	-600.43	-64.63	946.41	915.49	30.93	30.600	
7,100.00	7,097.34	6,470.00	6,354.34	15.79	15.88	75.07	-608.48	-56.35	965.55	934.65	30.90	31.247	
7,125.00	7,120.84	6,470.00	6,354.34	15.84	15.88	71.73	-608.48	-56.35	984.51	953.70	30.81	31.954	
7,150.00	7,143.85	6,470.00	6,354.34	15.90	15.88	68.44	-608.48	-56.35	1,003.48	972.76	30.71	32.673	
7,175.00	7,166.32	6,481.22	6,358.94	15.96	15.97	65.16	-615.60	-49.00	1,022.23	991.46	30.77	33.219	
7,200.00	7,188.19	6,487.49	6,361.42	16.03	16.02	62.14	-619.60	-44.85	1,040.82	1,010.03	30.79	33.807	
7,225.00	7,209.39	6,502.00	6,366.86	16.10	16.14	59.32	-628.91	-35.15	1,059.26	1,028.51	30.75	34.449	
7,250.00	7,229.87	6,502.00	6,366.86	16.18	16.14	56.68	-628.91	-35.15	1,077.24	1,046.58	30.66	35.137	
7,275.00	7,249.58	6,502.00	6,366.86	16.27	16.14	54.19	-628.91	-35.15	1,095.01	1,064.50	30.51	35.892	
7,300.00	7,268.45	6,512.66	6,370.62	16.37	16.24	51.98	-635.81	-27.95	1,112.37	1,082.06	30.31	36.701	
7,325.00	7,286.44	6,518.92	6,372.74	16.47	16.29	49.91	-639.89	-23.69	1,129.37	1,099.32	30.05	37.578	
7,350.00	7,303.49	6,533.00	6,377.22	16.60	16.42	48.15	-649.12	-14.06	1,146.03	1,116.26	29.77	38.499	
7,375.00	7,319.56	6,533.00	6,377.22	16.73	16.42	46.31	-649.12	-14.06	1,162.09	1,132.67	29.42	39.506	
7,400.00	7,334.61	6,533.00	6,377.22	16.89	16.42	44.59	-649.12	-14.06	1,177.77	1,148.74	29.02	40.582	
7,425.00	7,348.60	6,544.60	6,380.66	17.06	16.54	43.26	-656.78	-6.06	1,192.88	1,164.23	28.65	41.635	
7,450.00	7,361.48	6,551.20	6,382.51	17.25	16.60	41.95	-661.17	-1.48	1,207.50	1,179.25	28.25	42.745	
7,475.00	7,373.23	6,565.00	6,386.14	17.46	16.74	40.95	-670.38	8.13	1,221.62	1,193.73	27.89	43.801	
7,500.00	7,383.80	6,565.00	6,386.14	17.70	16.74	39.71	-670.38	8.13	1,235.06	1,207.59	27.46	44.973	
7,525.00	7,393.17	6,565.00	6,386.14	17.95	16.74	38.57	-670.38	8.13	1,248.00	1,220.95	27.05	46.144	
7,550.00	7,401.32	6,578.31	6,389.33	18.23	16.88	37.88	-679.30	17.47	1,260.25	1,233.47	26.78	47.059	
7,575.00	7,408.21	6,585.28	6,390.89	18.53	16.96	37.11	-683.98	22.39	1,271.91	1,245.40	26.51	47.977	

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

LEAM Drilling Systems LLC

Anticollision Report

Company	DEVON ENERGY	Local Co-ordinate Reference	Well 5H
Project	Eddy County, NM (NAD-83)	TVD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site	Cert 10 Fed	MD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error	0.00 usft	North Reference	Grid
Reference Well	5H	Survey Calculation Method	Minimum Curvature
Well Error	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database	EDM 5000.1 Single User Db
Reference Design	Plan #1	Offset TVD Reference	Offset Datum

Offset Design										Cert 10 Fed 54H OH OH		Offset Site Error		0.00 usft
Survey Program: 109-NS-GYRO-MS-5873-LEAM-MWD-11797-Project												Offset Well Error		0.00 usft
Reference		Offset		Semi Major Axis				Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	N-S (usft)	E-W (usft)	(usft)	(usft)	(usft)			
7,600.00	7,413.85	6,597.00	6,393.32	18.84	17.09	36.56	-691.88	30.71	1,282.95	1,256.60	26.35	48.680		
7,625.00	7,418.20	6,597.00	6,393.32	19.18	17.09	35.75	-691.88	30.71	1,293.30	1,267.15	26.14	49.467		
7,650.00	7,421.25	6,597.00	6,393.32	19.53	17.09	35.02	-691.88	30.71	1,303.08	1,277.07	26.01	50.108		
7,675.00	7,423.00	6,612.93	6,396.23	19.90	17.27	34.81	-702.60	42.12	1,312.02	1,285.86	26.16	50.146		
7,687.58	7,423.39	6,616.39	6,396.80	20.10	17.32	34.60	-704.93	44.62	1,316.30	1,290.09	26.22	50.210		
7,700.00	7,423.61	6,628.00	6,398.55	20.29	17.45	34.87	-712.74	53.03	1,320.57	1,294.11	26.46	49.916		
7,800.00	7,425.37	6,643.79	6,400.50	21.96	17.65	34.70	-723.37	64.54	1,358.23	1,330.85	27.38	49.605		
7,826.58	7,425.84	6,655.00	6,401.57	22.44	17.79	34.83	-730.94	72.74	1,369.45	1,341.71	27.74	49.368		
7,900.00	7,427.14	6,674.86	6,402.98	23.83	18.05	35.39	-744.29	87.37	1,402.12	1,373.27	28.85	48.602		
8,000.00	7,428.90	6,729.26	6,405.13	25.87	18.81	36.82	-780.36	128.04	1,449.52	1,418.64	30.88	46.945		
8,100.00	7,430.67	6,799.97	6,406.43	28.02	19.86	38.55	-826.74	181.39	1,499.20	1,465.93	33.27	45.061		
8,200.00	7,432.43	6,957.62	6,408.07	30.27	22.46	41.94	-924.69	304.86	1,548.41	1,511.34	37.07	41.770		
8,300.00	7,434.19	7,227.89	6,408.73	32.60	27.56	46.26	-1,066.91	534.30	1,593.40	1,550.76	42.64	37.369		
8,400.00	7,435.96	7,446.68	6,406.32	34.99	32.06	48.55	-1,153.43	735.10	1,628.92	1,580.89	48.03	33.914		
8,500.00	7,437.72	7,810.19	6,401.67	37.42	39.81	50.69	-1,242.76	1,086.89	1,653.86	1,596.61	57.25	28.889		
8,600.00	7,439.49	8,098.93	6,404.86	39.90	45.96	51.40	-1,264.94	1,374.43	1,662.25	1,597.29	64.96	25.590		
8,700.00	7,441.25	8,191.27	6,403.90	42.40	47.92	51.41	-1,264.48	1,466.76	1,667.04	1,598.36	68.68	24.273		
8,800.00	7,443.02	8,303.07	6,401.65	44.94	50.33	51.39	-1,264.16	1,578.54	1,672.65	1,599.86	72.79	22.980		
8,900.00	7,444.78	8,438.85	6,402.77	47.50	53.30	51.46	-1,262.95	1,714.30	1,675.86	1,598.40	77.46	21.635		
9,000.00	7,446.54	8,522.00	6,404.10	50.08	55.14	51.52	-1,262.48	1,797.44	1,678.92	1,597.76	81.16	20.686		
9,100.00	7,448.31	8,593.24	6,404.35	52.67	56.75	51.57	-1,262.60	1,868.68	1,683.32	1,598.68	84.84	19.888		
9,200.00	7,450.07	8,735.61	6,405.23	55.28	59.97	51.64	-1,262.14	2,011.03	1,687.18	1,597.63	89.55	18.841		
9,300.00	7,451.84	8,810.89	6,405.77	57.90	61.68	51.68	-1,261.60	2,086.30	1,690.66	1,597.51	93.14	18.151		
9,400.00	7,453.60	8,963.30	6,409.78	60.54	65.18	51.84	-1,260.80	2,238.65	1,693.08	1,594.69	98.39	17.207		
9,500.00	7,455.37	9,077.65	6,416.27	63.18	67.83	52.04	-1,259.99	2,352.81	1,693.52	1,590.53	102.99	16.444		
9,600.00	7,457.13	9,156.52	6,420.61	65.83	69.66	52.19	-1,259.55	2,431.55	1,694.25	1,587.41	106.84	15.858		
9,700.00	7,458.89	9,280.00	6,426.54	68.49	72.55	52.38	-1,258.72	2,554.89	1,695.37	1,583.71	111.66	15.183		
9,800.00	7,460.66	9,373.00	6,430.88	71.15	74.72	52.49	-1,256.87	2,647.78	1,695.61	1,579.81	115.80	14.643		
9,900.00	7,462.42	9,440.18	6,432.69	73.82	76.30	52.56	-1,255.94	2,714.92	1,697.17	1,577.80	119.38	14.217		
10,000.00	7,464.19	9,534.00	6,434.24	76.50	78.52	52.62	-1,255.17	2,808.72	1,700.04	1,576.54	123.50	13.766		
10,100.00	7,465.95	9,711.81	6,441.36	79.18	82.71	52.78	-1,250.20	2,986.29	1,699.45	1,570.00	129.44	13.129		
10,200.00	7,467.72	9,795.33	6,445.54	81.86	84.68	52.87	-1,247.18	3,069.65	1,698.09	1,564.67	133.42	12.728		
10,300.00	7,469.48	9,927.23	6,451.85	84.55	87.81	53.00	-1,242.72	3,201.31	1,697.27	1,558.82	138.45	12.259		
10,400.00	7,471.24	10,011.45	6,457.54	87.24	89.81	53.13	-1,239.64	3,285.29	1,694.86	1,552.33	142.53	11.891		
10,500.00	7,473.01	10,093.58	6,462.14	89.94	91.77	53.24	-1,237.21	3,367.25	1,693.68	1,547.12	146.55	11.557		
10,600.00	7,474.77	10,194.07	6,467.19	92.63	94.17	53.36	-1,234.65	3,467.59	1,693.17	1,542.18	150.99	11.214		
10,700.00	7,476.54	10,283.15	6,471.75	95.33	96.31	53.48	-1,232.33	3,556.52	1,692.60	1,537.41	155.19	10.906		
10,706.33	7,476.65	10,288.28	6,471.98	95.50	96.44	53.48	-1,232.21	3,561.64	1,692.60	1,537.15	155.45	10.889		
10,800.00	7,478.30	10,364.10	6,475.02	98.04	98.26	53.56	-1,230.66	3,637.38	1,693.09	1,533.89	159.20	10.635		
10,900.00	7,480.07	10,481.44	6,479.27	100.74	101.10	53.69	-1,228.71	3,754.63	1,694.26	1,530.24	164.02	10.330		
11,000.00	7,481.83	10,582.49	6,483.91	103.45	103.54	53.80	-1,226.07	3,855.54	1,693.99	1,525.49	168.50	10.053		
11,003.88	7,481.90	10,585.99	6,484.06	103.55	103.62	53.80	-1,225.98	3,859.03	1,693.99	1,525.33	168.67	10.043		
11,100.00	7,483.59	10,668.31	6,487.43	106.16	105.61	53.89	-1,224.19	3,941.26	1,694.36	1,521.71	172.65	9.814		
11,200.00	7,485.36	10,815.27	6,497.14	108.87	109.17	54.17	-1,221.93	4,087.84	1,693.79	1,515.38	178.42	9.494		
11,300.00	7,487.12	10,885.00	6,503.35	111.58	110.86	54.35	-1,221.27	4,157.30	1,692.49	1,510.05	182.44	9.277		
11,343.11	7,487.88	10,924.50	6,506.56	112.75	111.83	54.45	-1,221.15	4,196.67	1,692.33	1,507.91	184.42	9.176		
11,400.00	7,488.89	10,964.69	6,509.52	114.29	112.81	54.55	-1,221.30	4,236.75	1,692.65	1,505.93	186.72	9.065		
11,500.00	7,490.65	11,032.71	6,513.72	117.01	114.47	54.71	-1,222.13	4,304.63	1,694.66	1,503.96	190.70	8.887		
11,600.00	7,492.42	11,114.71	6,517.53	119.72	116.49	54.88	-1,224.06	4,386.52	1,698.43	1,503.43	195.00	8.710		
11,700.00	7,494.18	11,200.57	6,521.95	122.44	118.60	55.09	-1,226.67	4,472.22	1,702.59	1,503.12	199.47	8.536		
11,800.00	7,495.94	11,271.49	6,524.31	125.16	120.35	55.23	-1,229.46	4,543.04	1,708.46	1,504.94	203.51	8.395		

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

LEAM Drilling Systems LLC

Anticollision Report

Company	DEVON ENERGY	Local Co-ordinate Reference	Well 5H
Project	Eddy County, NM (NAD-83)	TVD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site	Cert-10 Fed	MD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error	0.00 usft	North Reference	Grid
Reference Well	5H	Survey Calculation Method	Minimum Curvature
Well Error	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database	EDM 5000.1 Single User Db
Reference Design	Plan #1	Offset TVD Reference	Offset Datum

Offset Design	Cert-10 Fed - 4H - OH - OH											Offset Site Error	0.00 usft
Survey Program	109-NS-GYRO-MS-5873-LEAM MWD-111797-Project											Offset Well Error	0.00 usft
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)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,900.00	7,497.71	11,417.14	6,530.88	127.88	123.94	55.56	-1,234.89	4,688.44	1,713.49	1,503.94	209.55	8.177	
12,000.00	7,499.47	11,533.51	6,537.76	130.60	126.81	55.85	-1,237.85	4,804.57	1,716.83	1,501.95	214.89	7.990	
12,100.00	7,501.24	11,627.41	6,542.71	133.32	129.12	56.05	-1,239.49	4,898.33	1,719.93	1,500.35	219.59	7.833	
12,200.00	7,503.00	11,794.55	6,552.80	136.04	131.73	56.37	-1,238.80	5,065.14	1,720.50	1,495.65	224.85	7.652	
12,211.75	7,503.21	11,797.00	6,552.97	136.36	131.73	56.37	-1,238.76	5,067.58	1,720.46	1,495.33	225.13	7.642	
12,300.00	7,504.77	11,797.00	6,552.97	138.77	131.73	56.37	-1,238.76	5,067.58	1,722.72	1,495.56	227.16	7.584	
12,313.27	7,505.00	11,797.00	6,552.97	139.00	131.73	56.37	-1,238.76	5,067.58	1,723.45	1,496.10	227.35	7.580 SF	

LEAM Drilling Systems LLC

Anticollision Report

Company	DEVON ENERGY	Local Co-ordinate Reference	Well 5H
Project	Eddy County NM (NAD-83)	TVD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site	Cert 10 Fed	MD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error	0.00 usft	North Reference	Grid
Reference Well	5H	Survey Calculation Method	Minimum Curvature
Well Error	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database	EDM 5000.1 Single User Db
Reference Design	Plan #1	Offset TVD Reference	Offset Datum

Offset Design: Cert 10 Fed 5H OH Plan #1												Offset Site Error	0.00 usft
Survey Program: O-LEAM MWD-ADJ												Offset Well Error	0.00 usft
Reference	Offset	Semi Major Axis		Reference	Offset	Highside	Offset Wellbore Centre		Distance	Between	Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	N/S (usft)	E/W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	
0.00	0.00	0.60	0.60	0.00	0.00	-147.02	-827.13	-536.67	985.98				
100.00	100.00	100.60	100.60	0.08	0.09	-147.02	-827.13	-536.67	985.98	985.81	0.17	5,802.505	
200.00	200.00	200.60	200.60	0.31	0.31	-147.02	-827.13	-536.67	985.98	985.36	0.62	1,591.690	
300.00	300.00	300.60	300.60	0.53	0.54	-147.02	-827.13	-536.67	985.98	984.91	1.07	922.350	
400.00	400.00	400.60	400.60	0.76	0.76	-147.02	-827.13	-536.67	985.98	984.46	1.52	649.304	
500.00	500.00	500.60	500.60	0.98	0.98	-147.02	-827.13	-536.67	985.98	984.01	1.97	500.994	
600.00	600.00	600.60	600.60	1.21	1.21	-147.02	-827.13	-536.67	985.98	983.56	2.42	407.837	
700.00	700.00	700.60	700.60	1.43	1.43	-147.02	-827.13	-536.67	985.98	983.11	2.87	343.893	
800.00	800.00	800.60	800.60	1.66	1.66	-147.02	-827.13	-536.67	985.98	982.66	3.32	297.282	
900.00	900.00	900.60	900.60	1.88	1.88	-147.02	-827.13	-536.67	985.98	982.21	3.77	261.799	
1,000.00	1,000.00	1,000.60	1,000.60	2.11	2.11	-147.02	-827.13	-536.67	985.98	981.77	4.22	233.882	
1,100.00	1,100.00	1,100.60	1,100.60	2.33	2.33	-147.02	-827.13	-536.67	985.98	981.32	4.67	211.346	
1,200.00	1,200.00	1,200.60	1,200.60	2.56	2.56	-147.02	-827.13	-536.67	985.98	980.87	5.11	192.771	
1,300.00	1,300.00	1,300.60	1,300.60	2.78	2.78	-147.02	-827.13	-536.67	985.98	980.42	5.56	177.197	
1,400.00	1,400.00	1,400.60	1,400.60	3.01	3.01	-147.02	-827.13	-536.67	985.98	979.97	6.01	163.952	
1,500.00	1,500.00	1,500.60	1,500.60	3.23	3.23	-147.02	-827.13	-536.67	985.98	979.52	6.46	152.549	
1,600.00	1,600.00	1,600.60	1,600.60	3.46	3.46	-147.02	-827.13	-536.67	985.98	979.07	6.91	142.629	
1,700.00	1,700.00	1,700.60	1,700.60	3.68	3.68	-147.02	-827.13	-536.67	985.98	978.62	7.36	133.920	
1,800.00	1,800.00	1,800.60	1,800.60	3.91	3.91	-147.02	-827.13	-536.67	985.98	978.17	7.81	126.214	
1,900.00	1,900.00	1,900.60	1,900.60	4.13	4.13	-147.02	-827.13	-536.67	985.98	977.72	8.26	119.346	
2,000.00	2,000.00	2,000.60	2,000.60	4.35	4.36	-147.02	-827.13	-536.67	985.98	977.27	8.71	113.188	
2,100.00	2,100.00	2,100.60	2,100.60	4.58	4.58	-147.02	-827.13	-536.67	985.98	976.82	9.16	107.633	
2,200.00	2,200.00	2,200.60	2,200.60	4.80	4.81	-147.02	-827.13	-536.67	985.98	976.37	9.61	102.598	
2,300.00	2,300.00	2,300.60	2,300.60	5.03	5.03	-147.02	-827.13	-536.67	985.98	975.92	10.06	98.014	
2,400.00	2,400.00	2,400.60	2,400.60	5.25	5.26	-147.02	-827.13	-536.67	985.98	975.47	10.51	93.821	
2,500.00	2,500.00	2,500.60	2,500.60	5.48	5.48	-147.02	-827.13	-536.67	985.98	975.02	10.96	89.973	
2,600.00	2,600.00	2,600.60	2,600.60	5.70	5.70	-147.02	-827.13	-536.67	985.98	974.57	11.41	86.427	
2,700.00	2,700.00	2,700.60	2,700.60	5.93	5.93	-147.02	-827.13	-536.67	985.98	974.12	11.86	83.151	
2,800.00	2,800.00	2,800.60	2,800.60	6.15	6.15	-147.02	-827.13	-536.67	985.98	973.67	12.31	80.114	
2,900.00	2,900.00	2,900.60	2,900.60	6.38	6.38	-147.02	-827.13	-536.67	985.98	973.22	12.76	77.291	
3,000.00	3,000.00	3,000.60	3,000.60	6.60	6.60	-147.02	-827.13	-536.67	985.98	972.77	13.21	74.660	
3,100.00	3,100.00	3,100.60	3,100.60	6.83	6.83	-147.02	-827.13	-536.67	985.98	972.33	13.66	72.202	
3,200.00	3,200.00	3,200.60	3,200.60	7.05	7.05	-147.02	-827.13	-536.67	985.98	971.88	14.11	69.901	
3,300.00	3,300.00	3,300.60	3,300.60	7.28	7.28	-147.02	-827.13	-536.67	985.98	971.43	14.55	67.742	
3,400.00	3,400.00	3,400.60	3,400.60	7.50	7.50	-147.02	-827.13	-536.67	985.98	970.98	15.00	65.712	
3,500.00	3,500.00	3,500.60	3,500.60	7.73	7.73	-147.02	-827.13	-536.67	985.98	970.53	15.45	63.801	
3,600.00	3,600.00	3,600.60	3,600.60	7.95	7.95	-147.02	-827.13	-536.67	985.98	970.08	15.90	61.998	
3,700.00	3,700.00	3,700.60	3,700.60	8.18	8.18	-147.02	-827.13	-536.67	985.98	969.63	16.35	60.293	
3,800.00	3,800.00	3,800.60	3,800.60	8.40	8.40	-147.02	-827.13	-536.67	985.98	969.18	16.80	58.680	
3,900.00	3,900.00	3,900.60	3,900.60	8.63	8.63	-147.02	-827.13	-536.67	985.98	968.73	17.25	57.151	
4,000.00	4,000.00	4,000.60	4,000.60	8.85	8.85	-147.02	-827.13	-536.67	985.98	968.28	17.70	55.700	
4,100.00	4,100.00	4,100.60	4,100.60	9.07	9.08	-147.02	-827.13	-536.67	985.98	967.83	18.15	54.320	
4,200.00	4,200.00	4,200.60	4,200.60	9.30	9.30	-147.02	-827.13	-536.67	985.98	967.38	18.60	53.008	
4,300.00	4,300.00	4,300.60	4,300.60	9.52	9.53	-147.02	-827.13	-536.67	985.98	966.93	19.05	51.757	
4,400.00	4,400.00	4,400.60	4,400.60	9.75	9.75	-147.02	-827.13	-536.67	985.98	966.48	19.50	50.564	
4,500.00	4,500.00	4,500.60	4,500.60	9.97	9.98	-147.02	-827.13	-536.67	985.98	966.03	19.95	49.424	
4,600.00	4,600.00	4,600.60	4,600.60	10.20	10.20	-147.02	-827.13	-536.67	985.98	965.58	20.40	48.335	
4,700.00	4,700.00	4,700.60	4,700.60	10.42	10.42	-147.02	-827.13	-536.67	985.98	965.13	20.85	47.293	
4,800.00	4,800.00	4,800.60	4,800.60	10.65	10.65	-147.02	-827.13	-536.67	985.98	964.68	21.30	46.295	
4,900.00	4,900.00	4,900.60	4,900.60	10.87	10.87	-147.02	-827.13	-536.67	985.98	964.23	21.75	45.338	
5,000.00	5,000.00	5,000.60	5,000.60	11.10	11.10	-147.02	-827.13	-536.67	985.98	963.78	22.20	44.420	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000M Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design										Offset Site Error:		0.00 usft	
Survey Program: O-LEAM MWD ADJ										Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance		Minimum		Separation	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)		Factor
5,100.00	5,100.00	5,100.60	5,100.60	11.32	11.32	-147.02	-827.13	-536.67	985.98	963.33	22.65	43.538	
5,200.00	5,200.00	5,200.60	5,200.60	11.55	11.55	-147.02	-827.13	-536.67	985.98	962.89	23.10	42.690	
5,300.00	5,300.00	5,300.60	5,300.60	11.77	11.77	-147.02	-827.13	-536.67	985.98	962.44	23.55	41.875	
5,400.00	5,400.00	5,400.60	5,400.60	12.00	12.00	-147.02	-827.13	-536.67	985.98	961.99	24.00	41.091	
5,500.00	5,500.00	5,500.60	5,500.60	12.22	12.22	-147.02	-827.13	-536.67	985.98	961.54	24.44	40.335	
5,600.00	5,600.00	5,600.60	5,600.60	12.45	12.45	-147.02	-827.13	-536.67	985.98	961.09	24.89	39.607	
5,700.00	5,700.00	5,700.60	5,700.60	12.67	12.67	-147.02	-827.13	-536.67	985.98	960.64	25.34	38.904	
5,800.00	5,800.00	5,800.60	5,800.60	12.90	12.90	-147.02	-827.13	-536.67	985.98	960.19	25.79	38.226	
5,900.00	5,900.00	5,900.60	5,900.60	13.12	13.12	-147.02	-827.13	-536.67	985.98	959.74	26.24	37.572	
6,000.00	6,000.00	6,000.60	6,000.60	13.35	13.35	-147.02	-827.13	-536.67	985.98	959.29	26.69	36.939	
6,100.00	6,100.00	6,100.60	6,100.60	13.57	13.57	-147.02	-827.13	-536.67	985.98	958.84	27.14	36.327	
6,200.00	6,200.00	6,200.60	6,200.60	13.80	13.80	-147.02	-827.13	-536.67	985.98	958.39	27.59	35.735	
6,300.00	6,300.00	6,300.60	6,300.60	14.02	14.02	-147.02	-827.13	-536.67	985.98	957.94	28.04	35.162	
6,400.00	6,400.00	6,400.60	6,400.60	14.24	14.25	-147.02	-827.13	-536.67	985.98	957.49	28.49	34.607	
6,500.00	6,500.00	6,500.60	6,500.60	14.47	14.47	-147.02	-827.13	-536.67	985.98	957.04	28.94	34.070	
6,600.00	6,600.00	6,600.60	6,600.60	14.69	14.70	-147.02	-827.13	-536.67	985.98	956.59	29.39	33.549	
6,700.00	6,700.00	6,700.60	6,700.60	14.92	14.92	-147.02	-827.13	-536.67	985.98	956.14	29.84	33.043	
6,800.00	6,800.00	6,800.60	6,800.60	15.14	15.14	-147.02	-827.13	-536.67	985.98	955.69	30.29	32.553	
6,900.00	6,900.00	6,900.60	6,900.60	15.37	15.37	-147.02	-827.13	-536.67	985.98	955.24	30.74	32.077	
6,946.00	6,946.00	6,959.39	6,959.29	15.47	15.49	-147.18	-828.29	-534.28	985.74	954.78	30.96	31.842	
6,950.00	6,950.00	6,964.70	6,964.58	15.48	15.50	122.52	-828.54	-533.75	985.69	954.72	30.97	31.823	
6,962.04	6,962.04	6,980.66	6,980.39	15.50	15.53	122.42	-829.47	-531.84	985.63	954.61	31.02	31.770	CC, ES
6,975.00	6,974.98	6,997.73	6,997.22	15.53	15.56	122.28	-830.71	-529.27	985.70	954.63	31.07	31.723	
7,000.00	6,999.89	7,030.34	7,029.03	15.58	15.62	121.96	-833.81	-522.87	986.22	955.07	31.15	31.660	
7,025.00	7,024.64	7,062.48	7,059.85	15.63	15.69	121.54	-837.79	-514.66	987.25	956.04	31.21	31.629	
7,050.00	7,049.18	7,094.09	7,089.49	15.68	15.75	121.03	-842.57	-504.78	988.80	957.54	31.26	31.628	
7,075.00	7,073.44	7,125.13	7,117.83	15.73	15.82	120.44	-848.09	-493.39	990.89	959.58	31.31	31.652	
7,100.00	7,097.34	7,155.57	7,144.76	15.79	15.90	119.77	-854.27	-480.63	993.50	962.15	31.35	31.695	
7,125.00	7,120.84	7,185.39	7,170.21	15.84	15.98	119.03	-861.03	-466.66	996.65	965.26	31.39	31.752	
7,150.00	7,143.85	7,214.57	7,194.13	15.90	16.06	118.20	-868.31	-451.63	1,000.33	968.89	31.44	31.816	
7,175.00	7,166.32	7,243.11	7,216.50	15.96	16.16	117.31	-876.04	-435.68	1,004.54	973.03	31.51	31.881	
7,200.00	7,188.19	7,271.01	7,237.31	16.03	16.27	116.34	-884.13	-418.96	1,009.28	977.68	31.60	31.940	
7,225.00	7,209.39	7,298.29	7,256.57	16.10	16.38	115.31	-892.55	-401.58	1,014.54	982.82	31.72	31.987	
7,250.00	7,229.87	7,324.95	7,274.30	16.18	16.52	114.22	-901.23	-383.66	1,020.31	988.45	31.87	32.017	
7,275.00	7,249.58	7,351.03	7,290.54	16.27	16.66	113.06	-910.12	-365.30	1,026.59	994.53	32.06	32.024	
7,300.00	7,268.45	7,376.54	7,305.32	16.37	16.82	111.85	-919.18	-346.60	1,033.34	1,001.05	32.29	32.006	
7,325.00	7,286.44	7,401.51	7,318.70	16.47	17.00	110.58	-928.37	-327.62	1,040.56	1,008.00	32.56	31.960	
7,350.00	7,303.49	7,425.96	7,330.72	16.60	17.19	109.26	-937.65	-308.45	1,048.22	1,015.35	32.88	31.885	
7,375.00	7,319.56	7,449.94	7,341.42	16.73	17.39	107.88	-947.00	-289.14	1,056.31	1,023.07	33.24	31.781	
7,400.00	7,334.61	7,473.48	7,350.87	16.89	17.61	106.46	-956.39	-269.75	1,064.80	1,031.15	33.64	31.651	
7,425.00	7,348.60	7,496.59	7,359.11	17.06	17.85	105.00	-965.81	-250.31	1,073.65	1,039.56	34.09	31.495	
7,450.00	7,361.48	7,519.32	7,366.18	17.25	18.10	103.50	-975.22	-230.88	1,082.85	1,048.28	34.57	31.319	
7,475.00	7,373.23	7,541.69	7,372.13	17.46	18.36	101.96	-984.62	-211.46	1,092.37	1,057.27	35.09	31.126	
7,500.00	7,383.80	7,563.74	7,376.99	17.70	18.63	100.39	-993.99	-192.11	1,102.16	1,066.52	35.65	30.920	
7,525.00	7,393.17	7,585.50	7,380.82	17.95	18.91	98.80	-1,003.33	-172.83	1,112.21	1,075.99	36.22	30.706	
7,550.00	7,401.32	7,607.00	7,383.64	18.23	19.20	97.19	-1,012.62	-153.65	1,122.48	1,085.66	36.82	30.487	
7,575.00	7,408.21	7,628.26	7,385.48	18.53	19.50	95.56	-1,021.85	-134.59	1,132.94	1,095.51	37.43	30.268	
7,600.00	7,413.85	7,649.32	7,386.37	18.84	19.81	93.93	-1,031.02	-115.66	1,143.55	1,105.50	38.06	30.050	
7,625.00	7,418.20	7,684.99	7,386.94	19.18	20.36	92.21	-1,046.39	-83.47	1,154.15	1,115.26	38.89	29.676	
7,650.00	7,421.25	7,722.98	7,387.54	19.53	20.99	90.62	-1,062.31	-48.99	1,164.52	1,124.72	39.80	29.262	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed - 6H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD ADJ												Offset Well Error:	0.00 usft
Reference	Vertical	Measured	Vertical	Semi Major Axis		Highside	Offset Wellbore Centre		Distance		Minimum	Separation	Warning
Depth	Depth	Depth	Depth	Reference	Offset	Toolface	N/S	E/W	Centres	Ellipses	Separation	Factor	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
7,675.00	7,423.00	7,761.58	7,388.16	19.90	21.66	89.20	-1,078.03	-13.73	1,174.60	1,133.86	40.73	28.836	
7,687.58	7,423.39	7,781.22	7,388.48	20.10	22.00	88.55	-1,085.83	4.28	1,179.55	1,138.34	41.21	28.622	
7,700.00	7,423.61	7,800.68	7,388.79	20.29	22.34	88.57	-1,093.46	22.19	1,184.38	1,142.70	41.68	28.418	
7,800.00	7,425.37	7,960.27	7,391.36	21.96	25.48	88.66	-1,151.30	170.88	1,222.20	1,176.27	45.93	26.611	
7,826.58	7,425.84	8,003.53	7,392.07	22.44	26.38	88.68	-1,165.55	211.72	1,231.93	1,184.79	47.13	26.137	
7,900.00	7,427.14	8,125.43	7,394.05	23.83	29.05	88.72	-1,202.35	327.91	1,257.13	1,206.18	50.95	24.674	
8,000.00	7,428.90	8,297.27	7,396.86	25.87	33.01	88.77	-1,245.77	494.12	1,286.60	1,229.92	56.68	22.700	
8,100.00	7,430.67	8,474.99	7,399.76	28.02	37.27	88.80	-1,280.11	668.43	1,310.20	1,247.24	62.95	20.813	
8,200.00	7,432.43	8,657.45	7,402.73	30.27	41.74	88.82	-1,304.05	849.26	1,327.64	1,258.00	69.64	19.065	
8,300.00	7,434.19	8,843.33	7,405.74	32.60	46.35	88.83	-1,316.55	1,034.66	1,338.72	1,262.08	76.63	17.469	
8,400.00	7,435.96	9,012.08	7,408.44	34.99	50.54	88.83	-1,317.55	1,203.37	1,343.45	1,260.11	83.34	16.121	
8,500.00	7,437.72	9,112.04	7,410.03	37.42	53.04	88.82	-1,315.90	1,303.31	1,346.16	1,257.81	88.36	15.235	
8,600.00	7,439.49	9,212.01	7,411.62	39.90	55.57	88.82	-1,314.25	1,403.24	1,348.88	1,255.45	93.43	14.437	
8,700.00	7,441.25	9,311.97	7,413.21	42.40	58.11	88.81	-1,312.60	1,503.18	1,351.60	1,253.04	98.56	13.714	
8,800.00	7,443.02	9,411.93	7,414.80	44.94	60.67	88.81	-1,310.95	1,603.12	1,354.31	1,250.59	103.72	13.057	
8,900.00	7,444.78	9,511.90	7,416.39	47.50	63.25	88.80	-1,309.30	1,703.05	1,357.03	1,248.11	108.92	12.459	
9,000.00	7,446.54	9,611.86	7,417.98	50.08	65.85	88.80	-1,307.66	1,802.99	1,359.75	1,245.60	114.14	11.912	
9,100.00	7,448.31	9,711.82	7,419.57	52.67	68.45	88.79	-1,306.01	1,902.93	1,362.46	1,243.07	119.40	11.411	
9,200.00	7,450.07	9,811.79	7,421.16	55.28	71.07	88.79	-1,304.36	2,002.86	1,365.18	1,240.51	124.67	10.951	
9,300.00	7,451.84	9,911.75	7,422.76	57.90	73.69	88.78	-1,302.71	2,102.80	1,367.90	1,237.94	129.96	10.526	
9,400.00	7,453.60	10,011.71	7,424.35	60.54	76.33	88.78	-1,301.06	2,202.74	1,370.61	1,235.35	135.26	10.133	
9,500.00	7,455.37	10,111.68	7,425.94	63.18	78.97	88.77	-1,299.41	2,302.67	1,373.33	1,232.74	140.59	9.769	
9,600.00	7,457.13	10,211.64	7,427.53	65.83	81.62	88.77	-1,297.76	2,402.61	1,376.05	1,230.13	145.92	9.430	
9,700.00	7,458.89	10,311.60	7,429.12	68.49	84.27	88.76	-1,296.11	2,502.55	1,378.76	1,227.50	151.27	9.115	
9,800.00	7,460.66	10,411.56	7,430.71	71.15	86.93	88.76	-1,294.46	2,602.48	1,381.48	1,224.86	156.62	8.821	
9,900.00	7,462.42	10,511.53	7,432.30	73.82	89.60	88.76	-1,292.82	2,702.42	1,384.20	1,222.21	161.99	8.545	
10,000.00	7,464.19	10,611.49	7,433.89	76.50	92.27	88.75	-1,291.17	2,802.36	1,386.91	1,219.55	167.36	8.287	
10,100.00	7,465.95	10,711.45	7,435.48	79.18	94.95	88.75	-1,289.52	2,902.29	1,389.63	1,216.89	172.74	8.045	
10,200.00	7,467.72	10,811.42	7,437.08	81.86	97.63	88.74	-1,287.87	3,002.23	1,392.35	1,214.22	178.13	7.817	
10,300.00	7,469.48	10,911.38	7,438.67	84.55	100.31	88.74	-1,286.22	3,102.17	1,395.06	1,211.54	183.52	7.602	
10,400.00	7,471.24	11,011.34	7,440.26	87.24	103.00	88.73	-1,284.57	3,202.10	1,397.78	1,208.86	188.92	7.399	
10,500.00	7,473.01	11,111.31	7,441.85	89.94	105.69	88.73	-1,282.92	3,302.04	1,400.50	1,206.17	194.32	7.207	
10,600.00	7,474.77	11,211.27	7,443.44	92.63	108.38	88.72	-1,281.27	3,401.98	1,403.21	1,203.48	199.73	7.025	
10,700.00	7,476.54	11,311.23	7,445.03	95.33	111.08	88.72	-1,279.62	3,501.91	1,405.93	1,200.78	205.15	6.853	
10,800.00	7,478.30	11,411.19	7,446.62	98.04	113.78	88.71	-1,277.98	3,601.85	1,408.65	1,198.08	210.56	6.690	
10,900.00	7,480.07	11,511.16	7,448.21	100.74	116.48	88.71	-1,276.33	3,701.79	1,411.36	1,195.38	215.99	6.535	
11,000.00	7,481.83	11,611.12	7,449.80	103.45	119.18	88.70	-1,274.68	3,801.72	1,414.08	1,192.67	221.41	6.387	
11,100.00	7,483.59	11,711.08	7,451.40	106.16	121.89	88.70	-1,273.03	3,901.66	1,416.80	1,189.96	226.84	6.246	
11,200.00	7,485.36	11,811.05	7,452.99	108.87	124.59	88.70	-1,271.38	4,001.60	1,419.51	1,187.25	232.27	6.112	
11,300.00	7,487.12	11,911.01	7,454.58	111.58	127.30	88.69	-1,269.73	4,101.54	1,422.23	1,184.53	237.70	5.983	
11,400.00	7,488.89	12,010.97	7,456.17	114.29	130.01	88.69	-1,268.08	4,201.47	1,424.95	1,181.81	243.14	5.861	
11,500.00	7,490.65	12,110.94	7,457.76	117.01	132.72	88.68	-1,266.43	4,301.41	1,427.66	1,179.09	248.58	5.743	
11,600.00	7,492.42	12,210.90	7,459.35	119.72	135.44	88.68	-1,264.78	4,401.35	1,430.38	1,176.37	254.02	5.631	
11,700.00	7,494.18	12,310.86	7,460.94	122.44	138.15	88.67	-1,263.14	4,501.28	1,433.10	1,173.64	259.46	5.523	
11,800.00	7,495.94	12,410.82	7,462.53	125.16	140.87	88.67	-1,261.49	4,601.22	1,435.82	1,170.91	264.90	5.420	
11,900.00	7,497.71	12,510.79	7,464.13	127.88	143.59	88.67	-1,259.84	4,701.16	1,438.53	1,168.18	270.35	5.321	
12,000.00	7,499.47	12,610.75	7,465.72	130.60	146.31	88.66	-1,258.19	4,801.09	1,441.25	1,165.45	275.80	5.226	
12,100.00	7,501.24	12,710.71	7,467.31	133.32	149.03	88.66	-1,256.54	4,901.03	1,443.97	1,162.72	281.25	5.134	
12,200.00	7,503.00	12,810.68	7,468.90	136.04	151.75	88.65	-1,254.89	5,000.97	1,446.68	1,159.99	286.70	5.046	
12,300.00	7,504.77	12,910.64	7,470.50	138.77	154.47	88.65	-1,253.25	5,100.91	1,449.39	1,157.26	292.15	4.977	
12,313.27	7,505.00	12,910.64	7,470.00	139.00	153.63	88.65	-1,253.75	5,070.16	1,450.43	1,158.89	291.54	4.975 SF	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed - 6H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning					
Measured Vertical	Measured Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)				

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6 + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6 + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2:00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed (Offsets) - #1 Existing Existing												Offset Site Error:	0.00 usft
Survey Program: 100-MS GYRO-MS												Offset Well Error:	0.00 usft
Reference	Vertical	Measured	Vertical	Semi Major Axis	Offset	Highside	Offset Wellbore Centre	Distance	Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)		
0.00	0.00	2.32	2.32	0.00	0.00	84.24	210.60	2,086.77	2,097.37				
100.00	100.00	100.00	100.00	0.08	0.10	84.24	210.57	2,086.86	2,097.46	2,097.27	0.18	N/A	
200.00	200.00	200.00	200.00	0.31	0.34	84.24	210.57	2,086.98	2,097.58	2,096.93	0.65	3,247.457	
300.00	300.00	298.45	298.45	0.53	0.58	84.24	210.60	2,087.11	2,097.71	2,096.59	1.12	1,878.843	
400.00	400.00	392.61	392.61	0.76	0.83	84.24	210.62	2,087.41	2,098.03	2,096.44	1.59	1,320.064	
500.00	500.00	489.16	489.16	0.98	1.09	84.24	210.74	2,087.94	2,098.59	2,096.52	2.07	1,014.198	
600.00	600.00	594.36	594.35	1.21	1.36	84.23	210.98	2,088.47	2,099.12	2,096.55	2.56	818.428	
700.00	700.00	692.81	692.80	1.43	1.61	84.22	211.27	2,088.85	2,099.53	2,096.49	3.04	690.661	
800.00	800.00	790.14	790.14	1.66	1.86	84.22	211.58	2,089.32	2,100.05	2,096.53	3.52	597.010	
900.00	900.00	890.58	890.57	1.88	2.12	84.21	211.91	2,089.88	2,100.63	2,096.62	4.01	524.476	
1,000.00	1,000.00	992.92	992.91	2.11	2.37	84.19	212.55	2,090.34	2,101.14	2,096.66	4.48	469.273	
1,100.00	1,100.00	1,095.97	1,095.95	2.33	2.59	84.17	213.60	2,090.62	2,101.52	2,096.59	4.93	426.597	
1,200.00	1,200.00	1,198.02	1,198.00	2.56	2.81	84.13	214.88	2,090.76	2,101.78	2,096.41	5.36	391.815	
1,300.00	1,300.00	1,292.87	1,292.83	2.78	3.02	84.09	216.29	2,090.93	2,102.10	2,096.31	5.80	362.659	
1,400.00	1,400.00	1,383.87	1,383.82	3.01	3.23	84.05	217.81	2,091.37	2,102.77	2,096.53	6.24	337.061	
1,500.00	1,500.00	1,479.52	1,479.45	3.23	3.47	84.01	219.55	2,092.16	2,103.78	2,097.07	6.70	313.834	
1,600.00	1,600.00	1,573.86	1,573.77	3.46	3.72	83.97	221.21	2,093.14	2,104.99	2,097.82	7.17	293.500	
1,700.00	1,700.00	1,670.73	1,670.62	3.68	3.97	83.93	222.75	2,094.39	2,106.44	2,098.79	7.65	275.295	
1,800.00	1,800.00	1,768.90	1,768.77	3.91	4.23	83.90	224.12	2,095.78	2,108.00	2,099.86	8.14	259.098	
1,900.00	1,900.00	1,867.79	1,867.65	4.13	4.49	83.87	225.22	2,097.28	2,109.62	2,101.00	8.62	244.695	
2,000.00	2,000.00	1,973.95	1,973.79	4.35	4.77	83.84	226.36	2,098.81	2,111.18	2,102.05	9.13	231.337	
2,100.00	2,100.00	2,080.65	2,080.47	4.58	5.05	83.81	227.63	2,099.94	2,112.36	2,102.73	9.63	219.293	
2,200.00	2,200.00	2,184.84	2,184.65	4.80	5.33	83.79	228.71	2,100.80	2,113.29	2,103.16	10.13	208.574	
2,300.00	2,300.00	2,282.89	2,282.69	5.03	5.59	83.76	229.66	2,101.55	2,114.16	2,103.54	10.62	199.154	
2,400.00	2,400.00	2,380.22	2,380.02	5.25	5.85	83.74	230.52	2,102.44	2,115.15	2,104.06	11.10	190.589	
2,500.00	2,500.00	2,480.29	2,480.08	5.48	6.11	83.73	231.27	2,103.43	2,116.22	2,104.64	11.59	182.637	
2,600.00	2,600.00	2,584.86	2,584.64	5.70	6.39	83.71	231.94	2,104.37	2,117.19	2,105.10	12.09	175.150	
2,700.00	2,700.00	2,682.87	2,682.65	5.93	6.65	83.70	232.53	2,105.15	2,118.05	2,105.48	12.57	168.478	
2,800.00	2,800.00	2,785.67	2,785.44	6.15	6.91	83.69	233.03	2,106.02	2,118.94	2,105.88	13.06	162.223	
2,900.00	2,900.00	2,884.92	2,884.69	6.38	7.16	83.68	233.33	2,106.79	2,119.74	2,106.20	13.54	156.547	
3,000.00	3,000.00	2,986.56	2,986.33	6.60	7.43	83.67	233.72	2,107.57	2,120.55	2,106.52	14.03	151.153	
3,100.00	3,100.00	3,092.58	3,092.34	6.83	7.71	83.66	234.13	2,108.19	2,121.18	2,106.65	14.53	145.973	
3,200.00	3,200.00	3,193.77	3,193.54	7.05	7.97	83.65	234.71	2,108.57	2,121.62	2,106.60	15.02	141.273	
3,300.00	3,300.00	3,294.84	3,294.60	7.28	8.23	83.63	235.35	2,108.90	2,122.01	2,106.51	15.50	136.892	
3,400.00	3,400.00	3,402.10	3,401.86	7.50	8.48	83.62	235.98	2,109.05	2,122.21	2,106.23	15.98	132.817	
3,500.00	3,500.00	3,504.76	3,504.52	7.73	8.69	83.59	236.74	2,108.92	2,122.17	2,105.76	16.41	129.302	
3,600.00	3,600.00	3,604.67	3,604.42	7.95	8.89	83.57	237.62	2,108.73	2,122.07	2,105.24	16.84	126.041	
3,700.00	3,700.00	3,704.13	3,703.87	8.18	9.09	83.54	238.57	2,108.54	2,121.99	2,104.73	17.27	122.904	
3,800.00	3,800.00	3,808.76	3,808.50	8.40	9.30	83.51	239.74	2,108.21	2,121.81	2,104.11	17.70	119.875	
3,900.00	3,900.00	3,909.23	3,908.96	8.63	9.50	83.48	240.91	2,107.78	2,121.51	2,103.39	18.12	117.090	
4,000.00	4,000.00	4,010.19	4,009.92	8.85	9.69	83.45	242.00	2,107.31	2,121.17	2,102.64	18.54	114.431	
4,100.00	4,100.00	4,108.78	4,108.49	9.07	9.88	83.42	243.09	2,106.86	2,120.85	2,101.90	18.95	111.890	
4,200.00	4,200.00	4,207.04	4,206.75	9.30	10.09	83.38	244.34	2,106.48	2,120.61	2,101.23	19.38	109.398	
4,300.00	4,300.00	4,310.39	4,310.08	9.52	10.31	83.34	245.96	2,106.00	2,120.33	2,100.50	19.83	106.930	
4,400.00	4,400.00	4,413.54	4,413.22	9.75	10.52	83.29	247.69	2,105.33	2,119.87	2,099.61	20.27	104.593	
4,500.00	4,500.00	4,510.48	4,510.14	9.97	10.72	83.25	249.25	2,104.71	2,119.43	2,098.74	20.70	102.412	
4,600.00	4,600.00	4,607.20	4,606.85	10.20	10.94	83.20	250.83	2,104.25	2,119.15	2,098.02	21.13	100.279	
4,700.00	4,700.00	4,708.40	4,708.03	10.42	11.17	83.15	252.65	2,103.79	2,118.92	2,097.33	21.59	98.162	
4,800.00	4,800.00	4,808.86	4,808.47	10.65	11.39	83.10	254.58	2,103.27	2,118.63	2,096.59	22.04	96.133	
4,900.00	4,900.00	4,905.94	4,905.53	10.87	11.62	83.05	256.47	2,102.83	2,118.42	2,095.93	22.49	94.205	
4,997.17	4,997.17	5,000.00	4,999.57	11.09	11.84	83.00	258.24	2,102.54	2,118.34	2,095.41	22.93	92.385	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset/TVD Reference:	Offset Datum

Offset Design											Cert 10 Fed (Offsets) - #1 - Existing - Existing		Offset Site Error: 0.00 usft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning				
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between	Between	Minimum	Separation			
Depth	Depth	Depth	Depth			Toolface	+N-S	+E-W	Centres	Ellipses	Separation			
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
5,000.00	5,000.00	5,002.69	5,002.26	11.10	11.85	83.00	258.29	2,102.54	2,118.34	2,095.40	22.94	92.333		
5,100.00	5,100.00	5,100.00	5,099.56	11.32	12.09	82.95	260.00	2,102.44	2,118.45	2,095.05	23.41	90.505		
5,200.00	5,200.00	5,192.30	5,191.85	11.55	12.33	82.91	261.40	2,102.60	2,118.81	2,094.94	23.87	88.769		
5,300.00	5,300.00	5,292.78	5,292.32	11.77	12.59	82.88	262.78	2,102.93	2,119.31	2,094.95	24.36	87.014		
5,400.00	5,400.00	5,386.31	5,385.83	12.00	12.84	82.84	264.15	2,103.34	2,119.92	2,095.10	24.83	85.391		
5,500.00	5,500.00	5,489.85	5,489.37	12.22	13.11	82.80	265.74	2,103.90	2,120.66	2,095.34	25.32	83.744		
5,600.00	5,600.00	5,592.26	5,591.76	12.45	13.38	82.76	267.32	2,104.27	2,121.21	2,095.39	25.82	82.166		
5,700.00	5,700.00	5,698.72	5,698.21	12.67	13.65	82.72	268.80	2,104.47	2,121.57	2,095.25	26.32	80.621		
5,800.00	5,800.00	5,806.08	5,805.55	12.90	13.92	82.67	270.64	2,104.25	2,121.58	2,094.78	26.80	79.150		
5,900.00	5,900.00	5,907.00	5,906.45	13.12	14.16	82.61	272.85	2,103.82	2,121.44	2,094.17	27.27	77.792		
6,000.00	6,000.00	6,025.25	6,024.67	13.35	14.41	82.55	274.96	2,102.75	2,120.77	2,093.02	27.75	76.436		
6,100.00	6,100.00	6,133.23	6,132.63	13.57	14.60	82.51	276.39	2,101.20	2,119.51	2,091.36	28.16	75.273		
6,200.00	6,200.00	6,235.80	6,235.19	13.80	14.73	82.48	277.10	2,099.52	2,117.98	2,089.46	28.52	74.265		
6,300.00	6,300.00	6,333.70	6,333.08	14.02	14.83	82.47	277.22	2,098.04	2,116.50	2,087.66	28.84	73.392		
6,400.00	6,400.00	6,432.39	6,431.76	14.24	14.90	82.47	277.08	2,096.62	2,115.06	2,085.92	29.14	72.588		
6,500.00	6,500.00	6,528.16	6,527.51	14.47	14.96	82.48	276.74	2,095.42	2,113.76	2,084.34	29.42	71.854		
6,600.00	6,600.00	6,624.26	6,623.61	14.69	14.98	82.51	275.50	2,094.54	2,112.69	2,083.02	29.67	71.211		
6,700.00	6,700.00	6,725.00	6,724.32	14.92	14.99	82.56	273.51	2,093.77	2,111.67	2,081.77	29.90	70.624		
6,800.00	6,800.00	6,827.54	6,826.83	15.14	15.00	82.63	270.78	2,093.01	2,110.59	2,080.45	30.14	70.033		
6,900.00	6,900.00	6,930.92	6,930.14	15.37	15.02	82.72	267.38	2,092.13	2,109.33	2,078.95	30.38	69.434		
6,946.00	6,946.00	6,976.80	6,975.99	15.47	15.03	82.76	265.79	2,091.73	2,108.73	2,078.23	30.49	69.159		
6,950.00	6,950.00	6,980.79	6,979.98	15.48	15.03	-7.52	265.65	2,091.69	2,108.66	2,078.15	30.51	69.123		
6,975.00	6,974.98	7,005.32	7,004.49	15.53	15.03	-7.52	264.79	2,091.48	2,107.47	2,076.96	30.51	69.065		
7,000.00	6,999.89	7,028.47	7,027.64	15.58	15.04	-7.54	263.99	2,091.29	2,105.01	2,074.56	30.45	69.131		
7,025.00	7,024.64	7,051.49	7,050.64	15.63	15.04	-7.59	263.21	2,091.12	2,101.28	2,070.97	30.31	69.321		
7,050.00	7,049.18	7,074.30	7,073.44	15.68	15.05	-7.67	262.46	2,090.96	2,096.30	2,066.20	30.10	69.640		
7,075.00	7,073.44	7,100.00	7,099.12	15.73	15.05	-7.78	261.63	2,090.81	2,090.07	2,060.25	29.82	70.086		
7,100.00	7,097.34	7,119.37	7,118.48	15.79	15.06	-7.91	261.01	2,090.71	2,082.61	2,053.14	29.47	70.668		
7,125.00	7,120.84	7,141.54	7,140.63	15.84	15.07	-8.07	260.30	2,090.60	2,073.94	2,044.88	29.05	71.385		
7,150.00	7,143.85	7,163.26	7,162.35	15.90	15.07	-8.27	259.61	2,090.51	2,064.07	2,035.50	28.57	72.247		
7,175.00	7,166.32	7,184.48	7,183.55	15.96	15.08	-8.51	258.93	2,090.44	2,053.05	2,025.03	28.02	73.260		
7,200.00	7,188.19	7,205.44	7,204.51	16.03	15.09	-8.79	258.26	2,090.38	2,040.89	2,013.47	27.42	74.430		
7,225.00	7,209.39	7,226.68	7,225.73	16.10	15.09	-9.12	257.58	2,090.32	2,027.62	2,000.86	26.76	75.761		
7,250.00	7,229.87	7,247.19	7,246.23	16.18	15.10	-9.50	256.90	2,090.26	2,013.28	1,987.22	26.06	77.263		
7,275.00	7,249.58	7,266.91	7,265.95	16.27	15.11	-9.95	256.24	2,090.21	1,997.89	1,972.59	25.31	78.941		
7,300.00	7,268.45	7,285.80	7,284.82	16.37	15.11	-10.47	255.59	2,090.16	1,981.52	1,956.99	24.53	80.794		
7,325.00	7,286.44	7,300.00	7,299.01	16.47	15.12	-11.06	255.10	2,090.12	1,964.19	1,940.48	23.72	82.823		
7,350.00	7,303.49	7,318.79	7,317.79	16.60	15.13	-11.78	254.44	2,090.09	1,945.97	1,923.07	22.90	84.982		
7,375.00	7,319.56	7,333.30	7,332.29	16.73	15.13	-12.61	253.92	2,090.07	1,926.92	1,904.83	22.08	87.255		
7,400.00	7,334.61	7,346.91	7,345.89	16.89	15.14	-13.60	253.43	2,090.07	1,907.07	1,885.78	21.30	89.554		
7,425.00	7,348.60	7,359.59	7,358.56	17.06	15.14	-14.78	252.97	2,090.07	1,886.49	1,865.93	20.56	91.740		
7,450.00	7,361.48	7,371.29	7,370.26	17.25	15.15	-16.20	252.55	2,090.09	1,865.23	1,845.31	19.93	93.592		
7,475.00	7,373.23	7,381.99	7,380.95	17.46	15.15	-17.95	252.16	2,090.11	1,843.35	1,823.90	19.45	94.775		
7,500.00	7,383.80	7,391.65	7,390.60	17.70	15.16	-20.12	251.80	2,090.13	1,820.91	1,801.70	19.20	94.817		
7,525.00	7,393.17	7,400.00	7,398.95	17.95	15.16	-22.87	251.49	2,090.16	1,797.96	1,778.66	19.30	93.154		
7,550.00	7,401.32	7,407.66	7,406.60	18.23	15.17	-26.44	251.20	2,090.18	1,774.56	1,754.67	19.89	89.209		
7,575.00	7,408.21	7,413.98	7,412.91	18.53	15.17	-31.17	250.97	2,090.21	1,750.79	1,729.64	21.16	82.750		
7,600.00	7,413.85	7,419.17	7,418.10	18.84	15.17	-37.59	250.77	2,090.23	1,726.71	1,703.40	23.30	74.093		
7,625.00	7,418.20	7,423.21	7,422.14	19.18	15.17	-46.48	250.62	2,090.25	1,702.37	1,675.91	26.47	64.315		
7,650.00	7,421.25	7,426.09	7,425.02	19.53	15.18	-58.77	250.51	2,090.26	1,677.86	1,647.43	30.43	55.135		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25" @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed (Offsets) - #1 - Existing - Existing											Offset Site Error: 0.00 usft		
Survey Program: 100-NS-GYRO-MS											Offset Well Error: 0.00 usft		
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)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,675.00	7,423.00	7,427.80	7,426.73	19.90	15.18	-74.87	250.44	2,090.27	1,653.23	1,619.17	34.06	48.539	
7,687.58	7,423.39	7,428.22	7,427.14	20.10	15.18	-84.04	250.43	2,090.27	1,640.81	1,605.69	35.12	46.714	
7,700.00	7,423.61	7,428.47	7,427.40	20.29	15.18	-83.93	250.42	2,090.28	1,628.55	1,593.24	35.31	46.122	
7,800.00	7,425.37	7,430.50	7,429.43	21.96	15.18	-82.81	250.34	2,090.29	1,529.59	1,492.70	36.90	41.457	
7,826.58	7,425.84	7,431.02	7,429.95	22.44	15.18	-82.42	250.32	2,090.29	1,503.23	1,465.89	37.34	40.258	
7,900.00	7,427.14	7,432.46	7,431.38	23.83	15.18	-82.86	250.26	2,090.30	1,430.41	1,391.65	38.75	36.910	
8,000.00	7,428.90	7,434.44	7,433.36	25.87	15.18	-83.46	250.19	2,090.31	1,331.32	1,290.51	40.82	32.616	
8,100.00	7,430.67	7,436.45	7,435.37	28.02	15.18	-84.07	250.11	2,090.32	1,232.38	1,189.38	43.00	28.657	
8,200.00	7,432.43	7,438.48	7,437.39	30.27	15.18	-84.69	250.03	2,090.33	1,133.62	1,088.34	45.29	25.032	
8,300.00	7,434.19	7,440.53	7,439.45	32.80	15.18	-85.32	249.95	2,090.34	1,035.10	987.46	47.64	21.726	
8,400.00	7,435.96	7,442.61	7,441.52	34.99	15.18	-85.95	249.87	2,090.36	936.88	886.82	50.06	18.715	
8,500.00	7,437.72	7,444.71	7,443.63	37.42	15.19	-86.61	249.79	2,090.37	839.08	786.56	52.53	15.975	
8,600.00	7,439.49	7,446.85	7,445.76	39.90	15.19	-87.26	249.71	2,090.38	741.86	686.83	55.03	13.482	
8,700.00	7,441.25	7,449.00	7,447.91	42.40	15.19	-87.93	249.62	2,090.40	645.48	587.93	57.56	11.215	
8,800.00	7,443.02	7,451.19	7,450.10	44.94	15.19	-88.61	249.54	2,090.41	550.39	490.28	60.11	9.156	
8,900.00	7,444.78	7,453.40	7,452.31	47.50	15.19	-89.30	249.45	2,090.43	457.38	394.70	62.68	7.297	
9,000.00	7,446.54	7,455.64	7,454.55	50.08	15.19	-89.99	249.36	2,090.44	368.05	302.79	65.26	5.640	
9,100.00	7,448.31	7,457.92	7,456.82	52.67	15.19	-90.70	249.27	2,090.46	285.85	218.00	67.85	4.213	
9,200.00	7,450.07	7,460.22	7,459.12	55.28	15.19	-91.42	249.18	2,090.47	218.97	148.53	70.44	3.109	
9,300.00	7,451.84	7,462.55	7,461.45	57.90	15.19	-92.14	249.09	2,090.49	184.87	111.84	73.03	2.531	
9,318.89	7,452.17	7,462.99	7,461.89	58.40	15.19	-92.28	249.07	2,090.49	183.90	110.38	73.53	2.501	CC, ES, SF
9,400.00	7,453.60	7,464.91	7,463.81	60.54	15.20	-92.88	249.00	2,090.51	200.99	125.36	75.62	2.658	
9,500.00	7,455.37	7,467.30	7,466.20	63.18	15.20	-93.62	248.90	2,090.53	258.07	179.87	78.21	3.300	
9,600.00	7,457.13	7,469.73	7,468.62	65.83	15.20	-94.38	248.81	2,090.55	335.85	255.07	80.78	4.158	
9,700.00	7,458.89	7,472.18	7,471.08	68.49	15.20	-95.14	248.71	2,090.56	423.06	339.72	83.34	5.076	
9,800.00	7,460.66	7,474.67	7,473.56	71.15	15.20	-95.92	248.61	2,090.59	514.93	429.04	85.89	5.995	
9,900.00	7,462.42	7,477.20	7,476.09	73.82	15.20	-96.70	248.51	2,090.61	609.35	520.93	88.42	6.891	
10,000.00	7,464.19	7,479.76	7,478.64	76.50	15.20	-97.49	248.41	2,090.63	705.31	614.37	90.93	7.756	
10,100.00	7,465.95	7,482.35	7,481.24	79.18	15.21	-98.29	248.30	2,090.65	802.24	708.82	93.42	8.587	
10,200.00	7,467.72	7,484.98	7,483.87	81.86	15.21	-99.10	248.20	2,090.67	899.84	803.96	95.89	9.385	
10,300.00	7,469.48	7,487.65	7,486.53	84.55	15.21	-99.92	248.09	2,090.70	997.91	899.59	98.32	10.150	
10,400.00	7,471.24	7,490.36	7,489.23	87.24	15.21	-100.74	247.98	2,090.72	1,096.32	995.60	100.73	10.884	
10,500.00	7,473.01	7,493.10	7,491.98	89.94	15.21	-101.58	247.87	2,090.75	1,194.99	1,091.89	103.10	11.591	
10,600.00	7,474.77	7,495.89	7,494.76	92.63	15.21	-102.42	247.75	2,090.77	1,293.86	1,188.42	105.44	12.271	
10,700.00	7,476.54	7,498.71	7,497.58	95.33	15.21	-103.27	247.64	2,090.80	1,392.88	1,285.15	107.74	12.928	
10,800.00	7,478.30	7,501.86	7,500.72	98.04	15.22	-104.21	247.51	2,090.83	1,492.03	1,382.07	109.96	13.569	
10,900.00	7,480.07	7,505.36	7,504.22	100.74	15.22	-105.25	247.37	2,090.87	1,591.28	1,479.19	112.09	14.197	
11,000.00	7,481.83	7,509.02	7,507.88	103.45	15.22	-106.33	247.22	2,090.91	1,690.62	1,576.47	114.14	14.811	
11,100.00	7,483.59	7,512.84	7,511.69	106.16	15.22	-107.45	247.06	2,090.96	1,790.02	1,673.91	116.11	15.416	
11,200.00	7,485.36	7,516.83	7,515.68	108.87	15.23	-108.60	246.90	2,091.00	1,889.48	1,771.49	117.99	16.014	
11,300.00	7,487.12	7,521.01	7,519.86	111.58	15.23	-109.79	246.72	2,091.06	1,988.99	1,869.22	119.76	16.608	
11,400.00	7,488.89	7,525.40	7,524.24	114.29	15.23	-111.03	246.54	2,091.12	2,088.53	1,967.11	121.43	17.200	
11,500.00	7,490.65	7,529.99	7,528.83	117.01	15.24	-112.30	246.35	2,091.18	2,188.12	2,065.15	122.97	17.794	
11,600.00	7,492.42	7,534.82	7,533.66	119.72	15.24	-113.62	246.15	2,091.26	2,287.73	2,163.36	124.37	18.394	
11,700.00	7,494.18	7,539.90	7,538.73	122.44	15.24	-114.98	245.94	2,091.34	2,387.37	2,261.74	125.64	19.002	
11,800.00	7,495.94	7,545.25	7,544.08	125.16	15.25	-116.39	245.72	2,091.43	2,487.03	2,360.29	126.74	19.623	
11,900.00	7,497.71	7,550.89	7,549.71	127.88	15.25	-117.84	245.48	2,091.53	2,586.71	2,459.04	127.68	20.260	
12,000.00	7,499.47	7,556.85	7,555.66	130.60	15.25	-119.33	245.23	2,091.64	2,686.41	2,557.98	128.43	20.917	
12,100.00	7,501.24	7,563.15	7,561.95	133.32	15.26	-120.87	244.97	2,091.76	2,786.12	2,657.13	129.00	21.599	
12,200.00	7,503.00	7,569.82	7,568.62	136.04	15.26	-122.45	244.69	2,091.90	2,885.85	2,756.49	129.35	22.310	
12,300.00	7,504.77	7,576.90	7,575.69	138.77	15.27	-124.07	244.39	2,092.05	2,985.58	2,856.09	129.49	23.057	

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

LEAM Drilling Systems LLC

Anticollision Report

Company	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project	Eddy County NM (NAD-83)	TVD Reference:	GE 3209 6' + KB 25" @ 3234 60usft (Cactus 126)
Reference Site	Cert. 10 Fed	MD Reference:	GE 3209 6' + KB 25" @ 3234 60usft (Cactus 126)
Site Error	0.00'usft	North Reference:	Grid
Reference Well	5H	Survey Calculation Method:	Minimum Curvature
Well Error	0.00'usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Cert. 10 Fed (Offsets)		#1 Existing Existing		Offset Site Error		0.00 usft	
Survey Program												100-NS-GYRO-MS				Offset Well Error		0.00 usft	
Reference		Offset		Semi Major Axis		Distance													
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning						
Depth	Depth	Depth	Depth			Toolface	N-S	E-W	Centres	Ellipses	Separation	Factor							
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)								
12,313.27	7,505.00	7,577.87	7,576.66	139.00	15.27	-124.29	244.35	2,092.07	2,998.81	2,869.43	129.38	23.178							

LEAM Drilling Systems LLC

Anticollision Report

Company	DEVON ENERGY	Local Co-ordinate Reference	Well 5H
Project	Eddy County, NM (NAD-83)	TVD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus-126)
Reference Site	Cerf 10 Fed.	MD Reference	GE 3209.6' + KB 25" @ 3234.60usft (Cactus-126)
Site Error	0.00 usft	North Reference	Grid
Reference Well	5H	Survey Calculation Method	Minimum Curvature
Well Error	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database	EDM 5000-1 Single User Db
Reference Design	Plan #1	Offset TVD Reference	Offset Datum

Offset Design: Cerf 10 Fed (Offsets) #2 Existing Existing												Offset Site Error	0.00 usft
Survey Program: 100-NS-GYRO-MS												Offset Well Error	0.00 usft
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)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	5.92	5.92	0.00	0.01	118.12	-1,109.55	2,075.98	2,353.89				
100.00	100.00	100.00	100.00	0.08	0.11	118.12	-1,109.58	2,076.16	2,354.07	2,353.87	0.20	N/A	
200.00	200.00	200.96	200.95	0.31	0.37	118.12	-1,109.51	2,076.52	2,354.36	2,353.68	0.68	3,466.727	
300.00	300.00	300.48	300.48	0.53	0.63	118.11	-1,109.31	2,076.91	2,354.60	2,353.44	1.16	2,029.695	
400.00	400.00	402.21	402.20	0.76	0.89	118.10	-1,109.16	2,077.23	2,354.81	2,353.16	1.65	1,425.072	
500.00	500.00	500.25	500.24	0.98	1.13	118.10	-1,109.18	2,077.47	2,355.03	2,352.91	2.12	1,111.786	
600.00	600.00	603.63	603.63	1.21	1.38	118.10	-1,109.27	2,077.64	2,355.22	2,352.64	2.59	910.565	
700.00	700.00	706.07	706.07	1.43	1.54	118.10	-1,109.30	2,077.69	2,355.28	2,352.31	2.97	792.404	
800.00	800.00	801.53	801.53	1.66	1.68	118.10	-1,109.45	2,077.73	2,355.39	2,352.06	3.33	706.746	
900.00	900.00	902.10	902.09	1.88	1.87	118.11	-1,109.76	2,077.79	2,355.59	2,351.83	3.75	627.452	
1,000.00	1,000.00	1,005.93	1,005.93	2.11	2.05	118.11	-1,110.02	2,077.76	2,355.68	2,351.52	4.16	566.141	
1,100.00	1,100.00	1,104.45	1,104.44	2.33	2.23	118.12	-1,110.23	2,077.71	2,355.74	2,351.17	4.56	516.087	
1,200.00	1,200.00	1,208.24	1,208.23	2.56	2.41	118.12	-1,110.45	2,077.59	2,355.74	2,350.77	4.97	474.279	
1,300.00	1,300.00	1,308.98	1,308.98	2.78	2.52	118.13	-1,110.51	2,077.46	2,355.64	2,350.35	5.30	444.668	
1,400.00	1,400.00	1,411.61	1,411.60	3.01	2.59	118.13	-1,110.39	2,077.35	2,355.50	2,349.90	5.60	420.799	
1,500.00	1,500.00	1,519.29	1,519.28	3.23	2.69	118.12	-1,110.03	2,077.01	2,355.05	2,349.13	5.92	397.731	
1,600.00	1,600.00	1,614.05	1,614.04	3.46	2.80	118.11	-1,109.60	2,076.78	2,354.63	2,348.38	6.25	376.506	
1,700.00	1,700.00	1,712.77	1,712.76	3.68	2.93	118.11	-1,109.14	2,076.66	2,354.31	2,347.70	6.61	356.065	
1,758.92	1,758.92	1,765.33	1,765.32	3.81	3.02	118.10	-1,108.95	2,076.68	2,354.23	2,347.40	6.83	344.678	
1,800.00	1,800.00	1,800.00	1,799.99	3.91	3.07	118.10	-1,108.87	2,076.76	2,354.27	2,347.29	6.98	337.330	
1,900.00	1,900.00	1,896.79	1,896.78	4.13	3.26	118.09	-1,108.78	2,077.13	2,354.56	2,347.17	7.39	318.470	
2,000.00	2,000.00	1,995.13	1,995.12	4.35	3.47	118.09	-1,108.77	2,077.63	2,355.01	2,347.18	7.82	301.006	
2,100.00	2,100.00	2,100.00	2,099.99	4.58	3.69	118.08	-1,108.68	2,078.11	2,355.36	2,347.09	8.27	284.771	
2,200.00	2,200.00	2,197.07	2,197.05	4.80	3.90	118.07	-1,108.56	2,078.51	2,355.67	2,346.96	8.71	270.542	
2,300.00	2,300.00	2,302.13	2,302.12	5.03	4.14	118.07	-1,108.48	2,078.90	2,355.97	2,346.80	9.17	256.978	
2,400.00	2,400.00	2,405.78	2,405.77	5.25	4.36	118.06	-1,108.36	2,079.08	2,356.06	2,346.45	9.62	245.023	
2,500.00	2,500.00	2,502.45	2,502.43	5.48	4.57	118.06	-1,108.18	2,079.29	2,356.16	2,346.11	10.05	234.463	
2,600.00	2,600.00	2,608.21	2,608.20	5.70	4.79	118.05	-1,107.92	2,079.47	2,356.20	2,345.71	10.49	224.524	
2,700.00	2,700.00	2,708.58	2,708.56	5.93	4.98	118.04	-1,107.67	2,079.50	2,356.11	2,345.20	10.91	216.015	
2,800.00	2,800.00	2,806.78	2,806.76	6.15	5.12	118.04	-1,107.58	2,079.50	2,356.07	2,344.79	11.28	208.952	
2,900.00	2,900.00	2,911.10	2,911.08	6.38	5.24	118.04	-1,107.61	2,079.34	2,355.95	2,344.33	11.61	202.871	
3,000.00	3,000.00	3,009.61	3,009.60	6.60	5.35	118.05	-1,107.69	2,079.12	2,355.79	2,343.84	11.95	197.175	
3,100.00	3,100.00	3,113.60	3,113.58	6.83	5.47	118.05	-1,107.80	2,078.80	2,355.57	2,343.27	12.30	191.529	
3,200.00	3,200.00	3,215.12	3,215.10	7.05	5.60	118.06	-1,107.93	2,078.32	2,355.21	2,342.55	12.66	186.090	
3,300.00	3,300.00	3,312.40	3,312.38	7.28	5.74	118.07	-1,108.13	2,077.90	2,354.93	2,341.91	13.02	180.902	
3,400.00	3,400.00	3,418.14	3,418.12	7.50	5.90	118.08	-1,108.27	2,077.31	2,354.49	2,341.09	13.40	175.703	
3,500.00	3,500.00	3,511.30	3,511.28	7.73	6.05	118.09	-1,108.52	2,076.85	2,354.17	2,340.40	13.77	170.943	
3,600.00	3,600.00	3,619.86	3,619.83	7.95	6.22	118.10	-1,108.78	2,076.19	2,353.75	2,339.57	14.17	166.053	
3,700.00	3,700.00	3,720.99	3,720.96	8.18	6.40	118.12	-1,109.07	2,075.38	2,353.18	2,338.61	14.57	161.493	
3,800.00	3,800.00	3,828.05	3,828.01	8.40	6.58	118.14	-1,109.54	2,074.19	2,352.41	2,337.42	14.99	156.979	
3,900.00	3,900.00	3,931.66	3,931.61	8.63	6.77	118.17	-1,110.01	2,072.71	2,351.36	2,335.96	15.40	152.690	
4,000.00	4,000.00	4,030.36	4,030.30	8.85	6.96	118.20	-1,110.55	2,071.30	2,350.36	2,334.55	15.81	148.664	
4,100.00	4,100.00	4,134.72	4,134.64	9.07	7.16	118.23	-1,111.04	2,069.71	2,349.23	2,333.00	16.24	144.692	
4,200.00	4,200.00	4,235.17	4,235.08	9.30	7.36	118.26	-1,111.65	2,067.97	2,348.00	2,331.34	16.66	140.941	
4,300.00	4,300.00	4,336.69	4,336.58	9.52	7.56	118.29	-1,112.29	2,066.25	2,346.81	2,329.72	17.09	137.328	
4,400.00	4,400.00	4,442.50	4,442.38	9.75	7.78	118.33	-1,112.81	2,064.21	2,345.34	2,327.81	17.53	133.779	
4,500.00	4,500.00	4,539.86	4,539.71	9.97	7.99	118.36	-1,113.27	2,062.30	2,343.83	2,325.88	17.96	130.506	
4,600.00	4,600.00	4,636.23	4,636.07	10.20	8.19	118.39	-1,113.63	2,060.66	2,342.51	2,324.13	18.39	127.388	
4,700.00	4,700.00	4,739.19	4,739.01	10.42	8.41	118.42	-1,114.13	2,058.89	2,341.23	2,322.40	18.83	124.303	
4,800.00	4,800.00	4,844.46	4,844.26	10.65	8.64	118.45	-1,114.39	2,056.89	2,339.68	2,320.39	19.29	121.299	
4,900.00	4,900.00	4,945.80	4,945.58	10.87	8.86	118.47	-1,114.50	2,054.95	2,338.04	2,318.31	19.73	118.474	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209 6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209 6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM, 5000:1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design		Cert 10 Fed (Offsets) - #2 Existing Existing										Offset Site Error	0.00 usft
Survey Program		100-NS GYRO-MS										Offset Well Error	0.00 usft
Measured Depth (usft)	Vertical Reference Depth (usft)	Measured Depth (usft)	Vertical Offset Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Footface (usft)	Offset Wellbore Centre N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.00	5,000.00	5,048.32	5,048.09	11.10	9.09	118.49	-1,114.27	2,053.05	2,336.32	2,316.13	20.18	115.751	
5,100.00	5,100.00	5,152.07	5,151.82	11.32	9.32	118.51	-1,114.07	2,050.98	2,334.46	2,313.83	20.64	113.115	
5,200.00	5,200.00	5,254.90	5,254.62	11.55	9.54	118.53	-1,113.66	2,048.83	2,332.44	2,311.34	21.09	110.587	
5,300.00	5,300.00	5,350.97	5,350.67	11.77	9.76	118.55	-1,113.39	2,046.75	2,330.40	2,308.87	21.53	108.226	
5,400.00	5,400.00	5,442.37	5,442.05	12.00	9.97	118.57	-1,113.49	2,044.90	2,328.68	2,306.71	21.97	106.009	
5,500.00	5,500.00	5,533.55	5,533.22	12.22	10.18	118.59	-1,113.54	2,043.49	2,327.35	2,304.95	22.40	103.888	
5,600.00	5,600.00	5,626.67	5,626.33	12.45	10.40	118.60	-1,113.53	2,042.45	2,326.36	2,303.52	22.84	101.849	
5,700.00	5,700.00	5,722.48	5,722.14	12.67	10.60	118.60	-1,113.25	2,041.77	2,325.59	2,302.32	23.27	99.919	
5,800.00	5,800.00	5,819.32	5,818.98	12.90	10.79	118.59	-1,112.63	2,041.45	2,324.99	2,301.31	23.68	98.173	
5,900.00	5,900.00	5,918.45	5,918.10	13.12	10.94	118.56	-1,111.21	2,041.63	2,324.47	2,300.41	24.06	96.599	
6,000.00	6,000.00	6,015.88	6,015.51	13.35	11.08	118.52	-1,109.62	2,041.96	2,323.99	2,299.56	24.43	95.131	
6,071.42	6,071.42	6,078.20	6,077.82	13.51	11.17	118.50	-1,108.83	2,042.24	2,323.85	2,299.17	24.68	94.174	
6,100.00	6,100.00	6,103.63	6,103.26	13.57	11.21	118.49	-1,108.59	2,042.40	2,323.87	2,299.09	24.77	93.799	
6,200.00	6,200.00	6,200.00	6,199.62	13.80	11.33	118.48	-1,108.07	2,042.81	2,323.99	2,298.87	25.12	92.516	
6,300.00	6,300.00	6,282.17	6,281.79	14.02	11.42	118.47	-1,108.13	2,043.31	2,324.58	2,299.14	25.44	91.378	
6,400.00	6,400.00	6,382.55	6,382.16	14.24	11.53	118.47	-1,108.61	2,044.37	2,325.74	2,299.96	25.78	90.226	
6,500.00	6,500.00	6,492.74	6,492.36	14.47	11.68	118.48	-1,109.33	2,045.03	2,326.57	2,300.43	26.15	88.979	
6,600.00	6,600.00	6,594.38	6,593.99	14.69	11.84	118.49	-1,110.21	2,045.19	2,327.13	2,300.60	26.53	87.710	
6,700.00	6,700.00	6,600.00	6,599.61	14.92	11.85	118.50	-1,110.26	2,045.20	2,329.57	2,302.81	26.77	87.036	
6,800.00	6,800.00	6,600.00	6,599.61	15.14	11.85	118.50	-1,110.26	2,045.20	2,336.30	2,309.31	26.99	86.560	
6,900.00	6,900.00	6,600.00	6,599.61	15.37	11.85	118.50	-1,110.26	2,045.20	2,347.26	2,320.05	27.22	86.248	
6,946.00	6,946.00	6,600.00	6,599.61	15.47	11.85	118.50	-1,110.26	2,045.20	2,353.72	2,326.40	27.32	86.158	
6,950.00	6,950.00	6,600.00	6,599.61	15.48	11.85	28.18	-1,110.26	2,045.20	2,354.30	2,326.98	27.32	86.160	
6,975.00	6,974.98	6,600.00	6,599.61	15.53	11.85	28.00	-1,110.26	2,045.20	2,357.47	2,330.13	27.34	86.239	
7,000.00	6,999.89	6,600.00	6,599.61	15.58	11.85	27.87	-1,110.26	2,045.20	2,359.75	2,332.45	27.30	86.448	
7,025.00	7,024.64	6,600.00	6,599.61	15.63	11.85	27.80	-1,110.26	2,045.20	2,361.13	2,333.93	27.21	86.789	
7,050.00	7,049.18	6,600.00	6,599.61	15.68	11.85	27.77	-1,110.26	2,045.20	2,361.63	2,334.56	27.06	87.263	
7,075.00	7,073.44	6,600.00	6,599.61	15.73	11.85	27.79	-1,110.26	2,045.20	2,361.23	2,334.36	26.87	87.869	
7,100.00	7,097.34	6,600.00	6,599.61	15.79	11.85	27.86	-1,110.26	2,045.20	2,359.94	2,333.30	26.63	88.606	
7,125.00	7,120.84	6,600.00	6,599.61	15.84	11.85	27.99	-1,110.26	2,045.20	2,357.75	2,331.40	26.35	89.474	
7,150.00	7,143.85	6,600.00	6,599.61	15.90	11.85	28.16	-1,110.26	2,045.20	2,354.68	2,328.66	26.03	90.468	
7,175.00	7,166.32	6,600.00	6,599.61	15.96	11.85	28.39	-1,110.26	2,045.20	2,350.73	2,325.06	25.67	91.584	
7,200.00	7,188.19	6,600.00	6,599.61	16.03	11.85	28.67	-1,110.26	2,045.20	2,345.90	2,320.63	25.28	92.812	
7,225.00	7,209.39	6,600.00	6,599.61	16.10	11.85	29.01	-1,110.26	2,045.20	2,340.21	2,315.35	24.86	94.140	
7,250.00	7,229.87	6,600.00	6,599.61	16.18	11.85	29.41	-1,110.26	2,045.20	2,333.65	2,309.23	24.42	95.550	
7,275.00	7,249.58	6,600.00	6,599.61	16.27	11.85	29.87	-1,110.26	2,045.20	2,326.25	2,302.27	23.98	97.017	
7,300.00	7,268.45	6,600.00	6,599.61	16.37	11.85	30.39	-1,110.26	2,045.20	2,318.01	2,294.48	23.53	98.506	
7,325.00	7,286.44	6,600.00	6,599.61	16.47	11.85	30.99	-1,110.26	2,045.20	2,308.95	2,285.86	23.10	99.974	
7,350.00	7,303.49	6,600.00	6,599.61	16.60	11.85	31.66	-1,110.26	2,045.20	2,299.08	2,276.40	22.68	101.364	
7,375.00	7,319.56	6,600.00	6,599.61	16.73	11.85	32.41	-1,110.26	2,045.20	2,288.43	2,266.12	22.30	102.606	
7,400.00	7,334.61	6,600.00	6,599.61	16.89	11.85	33.24	-1,110.26	2,045.20	2,277.00	2,255.02	21.97	103.618	
7,425.00	7,348.60	6,600.00	6,599.61	17.06	11.85	34.17	-1,110.26	2,045.20	2,264.82	2,243.11	21.71	104.309	
7,450.00	7,361.48	6,600.00	6,599.61	17.25	11.85	35.20	-1,110.26	2,045.20	2,251.91	2,230.38	21.53	104.584	
7,475.00	7,373.23	6,600.00	6,599.61	17.46	11.85	36.34	-1,110.26	2,045.20	2,238.29	2,216.84	21.45	104.353	
7,500.00	7,383.80	6,600.00	6,599.61	17.70	11.85	37.60	-1,110.26	2,045.20	2,223.99	2,202.51	21.48	103.541	
7,525.00	7,393.17	6,600.00	6,599.61	17.95	11.85	38.99	-1,110.26	2,045.20	2,209.04	2,187.40	21.63	102.105	
7,550.00	7,401.32	6,600.00	6,599.61	18.23	11.85	40.52	-1,110.26	2,045.20	2,193.45	2,171.53	21.93	100.037	
7,575.00	7,408.21	6,600.00	6,599.61	18.53	11.85	42.20	-1,110.26	2,045.20	2,177.27	2,154.91	22.36	97.374	
7,600.00	7,413.85	6,600.00	6,599.61	18.84	11.85	44.05	-1,110.26	2,045.20	2,160.52	2,137.59	22.94	94.192	
7,625.00	7,418.20	6,600.00	6,599.61	19.18	11.85	46.08	-1,110.26	2,045.20	2,143.24	2,119.59	23.66	90.601	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209'6" + KB 25' @ 3234'60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209'6" + KB 25' @ 3234'60usft (Cactus 126)
Site Error:	0'00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0'00 usft	Output errors are at:	2'00' sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed (Offsets) - #2 Existing Existing												Offset Site Error:	0.00 usft
Survey Program: 100-NS GYRO MS												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
7,650.00	7,421.25	6,600.00	6,599.61	19.53	11.85	48.31		-1,110.26	2,045.20	2,125.46	2,100.95	24.51	86.730
7,675.00	7,423.00	6,600.00	6,599.61	19.90	11.85	50.75		-1,110.26	2,045.20	2,107.22	2,081.74	25.48	82.712
7,687.58	7,423.39	6,600.00	6,599.61	20.10	11.85	52.05		-1,110.26	2,045.20	2,097.87	2,071.87	26.00	80.674
7,700.00	7,423.61	6,600.00	6,599.61	20.29	11.85	52.23		-1,110.26	2,045.20	2,088.63	2,062.42	26.21	79.694
7,800.00	7,425.37	6,600.00	6,599.61	21.96	11.85	53.52		-1,110.26	2,045.20	2,016.53	1,988.60	27.93	72.194
7,826.58	7,425.84	6,600.00	6,599.61	22.44	11.85	53.83		-1,110.26	2,045.20	1,998.11	1,969.70	28.41	70.323
7,900.00	7,427.14	6,600.00	6,599.61	23.83	11.85	53.83		-1,110.26	2,045.20	1,948.41	1,918.87	29.54	65.949
8,000.00	7,428.90	6,600.00	6,599.61	25.87	11.85	53.83		-1,110.26	2,045.20	1,883.21	1,852.01	31.20	60.361
8,100.00	7,430.67	6,600.00	6,599.61	28.02	11.85	53.83		-1,110.26	2,045.20	1,821.17	1,788.22	32.96	55.262
8,200.00	7,432.43	6,600.00	6,599.61	30.27	11.85	53.83		-1,110.26	2,045.20	1,762.63	1,727.84	34.79	50.663
8,300.00	7,434.19	6,600.00	6,599.61	32.60	11.85	53.83		-1,110.26	2,045.20	1,707.94	1,671.24	36.69	46.549
8,400.00	7,435.96	6,600.00	6,599.61	34.99	11.85	53.83		-1,110.26	2,045.20	1,657.48	1,618.83	38.64	42.893
8,500.00	7,437.72	6,600.00	6,599.61	37.42	11.85	53.83		-1,110.26	2,045.20	1,611.65	1,571.02	40.63	39.662
8,600.00	7,439.49	6,600.00	6,599.61	39.90	11.85	53.83		-1,110.26	2,045.20	1,570.86	1,528.20	42.66	36.822
8,700.00	7,441.25	6,600.00	6,599.61	42.40	11.85	53.83		-1,110.26	2,045.20	1,535.51	1,490.79	44.71	34.340
8,800.00	7,443.02	6,600.00	6,599.61	44.94	11.85	53.83		-1,110.26	2,045.20	1,505.98	1,459.19	46.79	32.185
8,900.00	7,444.78	6,600.00	6,599.61	47.50	11.85	53.83		-1,110.26	2,045.20	1,482.62	1,433.73	48.89	30.326
9,000.00	7,446.54	6,600.00	6,599.61	50.08	11.85	53.83		-1,110.26	2,045.20	1,465.72	1,414.72	51.00	28.738
9,100.00	7,448.31	6,600.00	6,599.61	52.67	11.85	53.83		-1,110.26	2,045.20	1,455.52	1,402.39	53.13	27.395
9,199.07	7,450.06	6,600.00	6,599.61	55.26	11.85	53.83		-1,110.26	2,045.20	1,452.14	1,396.89	55.25	26.283 CC
9,200.00	7,450.07	6,600.00	6,599.61	55.28	11.85	53.83		-1,110.26	2,045.20	1,452.14	1,396.87	55.27	26.273 ES
9,300.00	7,451.84	6,600.00	6,599.61	57.90	11.85	53.83		-1,110.26	2,045.20	1,455.64	1,398.22	57.42	25.351
9,400.00	7,453.60	6,600.00	6,599.61	60.54	11.85	53.83		-1,110.26	2,045.20	1,465.98	1,406.40	59.58	24.605
9,500.00	7,455.37	6,600.00	6,599.61	63.18	11.85	53.83		-1,110.26	2,045.20	1,482.99	1,421.25	61.75	24.017
9,600.00	7,457.13	6,600.00	6,599.61	65.83	11.85	53.83		-1,110.26	2,045.20	1,506.47	1,442.55	63.92	23.567
9,700.00	7,458.89	6,600.00	6,599.61	68.49	11.85	53.83		-1,110.26	2,045.20	1,536.11	1,470.01	66.10	23.238
9,800.00	7,460.66	6,600.00	6,599.61	71.15	11.85	53.83		-1,110.26	2,045.20	1,571.57	1,503.28	68.29	23.013
9,900.00	7,462.42	6,600.00	6,599.61	73.82	11.85	53.83		-1,110.26	2,045.20	1,612.46	1,541.97	70.48	22.878
10,000.00	7,464.19	6,600.00	6,599.61	76.50	11.85	53.83		-1,110.26	2,045.20	1,658.37	1,585.69	72.68	22.818 SF
10,100.00	7,465.95	6,600.00	6,599.61	79.18	11.85	53.83		-1,110.26	2,045.20	1,708.91	1,634.04	74.88	22.823
10,200.00	7,467.72	6,600.00	6,599.61	81.86	11.85	53.83		-1,110.26	2,045.20	1,763.68	1,686.60	77.08	22.881
10,300.00	7,469.48	6,600.00	6,599.61	84.55	11.85	53.83		-1,110.26	2,045.20	1,822.29	1,743.01	79.29	22.983
10,400.00	7,471.24	6,600.00	6,599.61	87.24	11.85	53.83		-1,110.26	2,045.20	1,884.39	1,802.90	81.50	23.122
10,500.00	7,473.01	6,600.00	6,599.61	89.94	11.85	53.83		-1,110.26	2,045.20	1,949.65	1,865.94	83.71	23.290
10,600.00	7,474.77	6,600.00	6,599.61	92.63	11.85	53.83		-1,110.26	2,045.20	2,017.75	1,931.82	85.93	23.483
10,700.00	7,476.54	6,600.00	6,599.61	95.33	11.85	53.83		-1,110.26	2,045.20	2,088.42	2,000.28	88.14	23.694
10,800.00	7,478.30	6,600.00	6,599.61	98.04	11.85	53.83		-1,110.26	2,045.20	2,161.41	2,071.05	90.36	23.920
10,900.00	7,480.07	6,600.00	6,599.61	100.74	11.85	53.83		-1,110.26	2,045.20	2,236.49	2,143.90	92.58	24.157
11,000.00	7,481.83	6,600.00	6,599.61	103.45	11.85	53.83		-1,110.26	2,045.20	2,313.45	2,218.65	94.81	24.402
11,100.00	7,483.59	6,600.00	6,599.61	106.16	11.85	53.83		-1,110.26	2,045.20	2,392.12	2,295.09	97.03	24.653
11,200.00	7,485.36	6,600.00	6,599.61	108.87	11.85	53.83		-1,110.26	2,045.20	2,472.33	2,373.08	99.26	24.909
11,300.00	7,487.12	6,600.00	6,599.61	111.58	11.85	53.83		-1,110.26	2,045.20	2,553.94	2,452.46	101.48	25.166
11,400.00	7,488.89	6,600.00	6,599.61	114.29	11.85	53.83		-1,110.26	2,045.20	2,636.82	2,533.10	103.71	25.425
11,500.00	7,490.65	6,600.00	6,599.61	117.01	11.85	53.83		-1,110.26	2,045.20	2,720.84	2,614.90	105.94	25.683
11,600.00	7,492.42	6,600.00	6,599.61	119.72	11.85	53.83		-1,110.26	2,045.20	2,805.92	2,697.74	108.17	25.939
11,700.00	7,494.18	6,600.00	6,599.61	122.44	11.85	53.83		-1,110.26	2,045.20	2,891.95	2,781.54	110.40	26.194
11,800.00	7,495.94	6,600.00	6,599.61	125.16	11.85	53.83		-1,110.26	2,045.20	2,978.85	2,866.21	112.64	26.446
11,900.00	7,497.71	6,600.00	6,599.61	127.88	11.85	53.83		-1,110.26	2,045.20	3,066.55	2,951.68	114.87	26.696
12,000.00	7,499.47	6,600.00	6,599.61	130.60	11.85	53.83		-1,110.26	2,045.20	3,154.98	3,037.88	117.11	26.941
12,100.00	7,501.24	6,600.00	6,599.61	133.32	11.85	53.83		-1,110.26	2,045.20	3,244.09	3,124.75	119.34	27.183
12,200.00	7,503.00	6,600.00	6,599.61	136.04	11.85	53.83		-1,110.26	2,045.20	3,333.81	3,212.23	121.58	27.421

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

Anticollision Report

Offset Design													Offset Site Error:	
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	
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)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
12,300.00	7,504.77	6,600.00	6,599.61	138.77	11.85	53.83	-1,110.26	2,045.20	3,424.10	3,300.29	123.81	27.655		
12,313.27	7,505.00	6,600.00	6,599.61	139.00	11.85	53.83	-1,110.26	2,045.20	3,436.12	3,312.12	124.00	27.710		

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cerr 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2:00 sigma
Reference Wellbore:	OH	Database:	EDM:5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cerr 10 Fed (Offsets) #2 WCS North WCS North													Offset Site Error:	0.00 usft
Survey Program: 490-NS-GYRO-MS													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi-Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	6.46	6.46	0.00	0.01	118.12		-1,109.55	2,075.97	2,353.89				
100.00	100.00	107.46	107.46	0.08	0.14	118.12		-1,109.50	2,075.97	2,353.86	2,353.64	0.22	N/A	
200.00	200.00	208.46	208.46	0.31	0.27	118.12		-1,109.36	2,075.97	2,353.80	2,353.22	0.58	4,077.439	
300.00	300.00	309.46	309.46	0.53	0.40	118.11		-1,109.13	2,075.97	2,353.69	2,352.76	0.93	2,525.442	
400.00	400.00	410.45	410.45	0.76	0.53	118.11		-1,108.80	2,075.97	2,353.54	2,352.25	1.29	1,829.117	
500.00	500.00	512.32	512.32	0.98	0.69	118.10		-1,108.38	2,075.97	2,353.34	2,351.67	1.67	1,406.599	
600.00	600.00	616.07	616.07	1.21	0.97	118.08		-1,107.60	2,075.97	2,352.99	2,350.81	2.17	1,082.693	
700.00	700.00	716.07	716.06	1.43	1.23	118.06		-1,106.73	2,075.97	2,352.58	2,349.91	2.66	883.266	
800.00	800.00	816.06	816.05	1.66	1.50	118.04		-1,105.86	2,075.97	2,352.17	2,349.01	3.15	745.839	
900.00	900.00	916.06	916.04	1.88	1.76	118.03		-1,104.98	2,075.97	2,351.76	2,348.11	3.64	645.388	
1,000.00	1,000.00	1,016.06	1,016.04	2.11	2.03	118.01		-1,104.11	2,075.97	2,351.35	2,347.21	4.13	568.759	
1,100.00	1,100.00	1,116.89	1,116.86	2.33	2.30	117.99		-1,103.20	2,075.97	2,350.92	2,346.29	4.63	508.129	
1,200.00	1,200.00	1,217.85	1,217.83	2.56	2.56	117.97		-1,102.20	2,075.97	2,350.46	2,345.34	5.12	459.124	
1,300.00	1,300.00	1,318.82	1,318.78	2.78	2.83	117.94		-1,101.11	2,075.97	2,349.95	2,344.34	5.61	418.718	
1,400.00	1,400.00	1,419.78	1,419.74	3.01	3.10	117.92		-1,099.93	2,075.97	2,349.40	2,343.30	6.11	384.829	
1,500.00	1,500.00	1,520.74	1,520.69	3.23	3.37	117.89		-1,098.66	2,075.97	2,348.81	2,342.22	6.60	355.997	
1,600.00	1,600.00	1,618.99	1,618.93	3.46	3.63	117.86		-1,097.45	2,075.97	2,348.24	2,341.15	7.08	331.511	
1,700.00	1,700.00	1,716.97	1,716.91	3.68	3.89	117.84		-1,096.42	2,075.97	2,347.75	2,340.18	7.57	310.208	
1,800.00	1,800.00	1,814.95	1,814.88	3.91	4.15	117.82		-1,095.57	2,075.97	2,347.34	2,339.29	8.05	291.481	
1,900.00	1,900.00	1,912.93	1,912.86	4.13	4.41	117.81		-1,094.90	2,075.97	2,347.02	2,338.49	8.54	274.890	
2,000.00	2,000.00	2,011.25	2,011.18	4.35	4.67	117.80		-1,094.41	2,075.97	2,346.79	2,337.77	9.02	260.067	
2,100.00	2,100.00	2,111.24	2,111.17	4.58	4.94	117.79		-1,093.97	2,075.97	2,346.59	2,337.07	9.51	246.646	
2,200.00	2,200.00	2,211.24	2,211.17	4.80	5.20	117.78		-1,093.53	2,075.97	2,346.38	2,336.38	10.00	234.540	
2,300.00	2,300.00	2,311.24	2,311.17	5.03	5.47	117.77		-1,093.10	2,075.97	2,346.18	2,335.68	10.49	223.565	
2,400.00	2,400.00	2,411.24	2,411.17	5.25	5.73	117.76		-1,092.66	2,075.97	2,345.98	2,334.99	10.98	213.569	
2,500.00	2,500.00	2,511.24	2,511.17	5.48	6.00	117.75		-1,092.23	2,075.97	2,345.77	2,334.30	11.47	204.428	
2,600.00	2,600.00	2,611.24	2,611.16	5.70	6.26	117.74		-1,091.79	2,075.97	2,345.57	2,333.60	11.97	196.035	
2,700.00	2,700.00	2,711.24	2,711.16	5.93	6.53	117.73		-1,091.35	2,075.97	2,345.37	2,332.91	12.46	188.303	
2,800.00	2,800.00	2,811.24	2,811.16	6.15	6.79	117.72		-1,090.92	2,075.97	2,345.16	2,332.22	12.95	181.157	
2,900.00	2,900.00	2,911.72	2,911.64	6.38	7.06	117.71		-1,090.47	2,075.97	2,344.96	2,331.52	13.44	174.515	
3,000.00	3,000.00	3,012.66	3,012.58	6.60	7.33	117.70		-1,089.94	2,075.97	2,344.71	2,330.78	13.93	168.325	
3,100.00	3,100.00	3,113.60	3,113.52	6.83	7.60	117.69		-1,089.32	2,075.97	2,344.43	2,330.01	14.42	162.555	
3,200.00	3,200.00	3,214.54	3,214.45	7.05	7.86	117.67		-1,088.62	2,075.97	2,344.10	2,329.19	14.92	157.163	
3,300.00	3,300.00	3,315.47	3,315.39	7.28	8.13	117.65		-1,087.83	2,075.97	2,343.74	2,328.33	15.41	152.114	
3,400.00	3,400.00	3,416.42	3,416.33	7.50	8.40	117.64		-1,086.95	2,075.97	2,343.34	2,327.44	15.90	147.374	
3,500.00	3,500.00	3,517.37	3,517.27	7.73	8.67	117.61		-1,085.99	2,075.97	2,342.89	2,326.50	16.39	142.917	
3,600.00	3,600.00	3,618.32	3,618.22	7.95	8.94	117.59		-1,084.93	2,075.97	2,342.41	2,325.52	16.89	138.718	
3,700.00	3,700.00	3,719.27	3,719.16	8.18	9.20	117.57		-1,083.79	2,075.97	2,341.89	2,324.51	17.38	134.755	
3,800.00	3,800.00	3,820.22	3,820.10	8.40	9.47	117.54		-1,082.55	2,075.97	2,341.32	2,323.45	17.87	131.008	
3,900.00	3,900.00	3,921.24	3,921.12	8.63	9.74	117.51		-1,081.23	2,075.97	2,340.71	2,322.35	18.36	127.458	
4,000.00	4,000.00	4,022.35	4,022.22	8.85	10.01	117.48		-1,079.80	2,075.97	2,340.06	2,321.20	18.86	124.090	
4,100.00	4,100.00	4,123.45	4,123.31	9.07	10.28	117.45		-1,078.27	2,075.97	2,339.36	2,320.01	19.35	120.891	
4,200.00	4,200.00	4,224.55	4,224.40	9.30	10.55	117.41		-1,076.63	2,075.97	2,338.62	2,318.77	19.84	117.849	
4,300.00	4,300.00	4,325.88	4,325.70	9.52	10.82	117.37		-1,074.88	2,075.97	2,337.82	2,317.48	20.34	114.948	
4,400.00	4,400.00	4,427.77	4,427.58	9.75	11.09	117.33		-1,072.96	2,075.97	2,336.96	2,316.12	20.83	112.174	
4,500.00	4,500.00	4,529.66	4,529.44	9.97	11.36	117.29		-1,070.86	2,075.97	2,336.01	2,314.68	21.33	109.525	
4,600.00	4,600.00	4,631.53	4,631.29	10.20	11.63	117.24		-1,068.58	2,075.97	2,334.98	2,313.16	21.82	106.992	
4,700.00	4,700.00	4,733.40	4,733.13	10.42	11.90	117.18		-1,066.11	2,075.97	2,333.88	2,311.56	22.32	104.568	
4,800.00	4,800.00	4,834.55	4,834.25	10.65	12.17	117.13		-1,063.50	2,075.97	2,332.70	2,309.89	22.81	102.255	
4,900.00	4,900.00	4,934.52	4,934.18	10.87	12.43	117.07		-1,060.88	2,075.97	2,331.51	2,308.20	23.30	100.053	
5,000.00	5,000.00	5,034.48	5,034.11	11.10	12.70	117.01		-1,058.27	2,075.97	2,330.32	2,306.52	23.79	97.941	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County NM (NAD:83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cerr 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0'00" usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0'00" usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM: 5000-1 Single User Db
Reference Design:	Plan #1	Offset-TVD Reference:	Offset Datum

Offset Design: Cerr 10 Fed (Offsets) - #2 - WCS - North - WCS - North											Offset Site Error: 0.00 usft	
Survey Program: 490-NS-GYRO-MS											Offset Well Error: 0.00 usft	
Reference				Offset		Semi-Major Axis		Distance				
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between	Between	Minimum	Separation	Warning
Depth	Depth	Depth	Depth			Toolface	N-S	E-W	Centres	Ellipses	Separation	Factor
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
5,100.00	5,100.00	5,134.45	5,134.04	11.32	12.97	116.95	-1,055.65	2,075.97	2,329.13	2,304.84	24.28	95.915
5,200.00	5,200.00	5,234.41	5,233.97	11.55	13.23	116.90	-1,053.03	2,075.97	2,327.94	2,303.17	24.77	93.969
5,300.00	5,300.00	5,334.81	5,334.34	11.77	13.50	116.84	-1,050.40	2,075.97	2,326.75	2,301.49	25.26	92.095
5,400.00	5,400.00	5,435.74	5,435.23	12.00	13.77	116.78	-1,047.87	2,075.97	2,325.53	2,299.78	25.76	90.285
5,500.00	5,500.00	5,536.67	5,536.11	12.22	14.04	116.72	-1,044.84	2,075.97	2,324.27	2,298.02	26.25	88.542
5,600.00	5,600.00	5,637.59	5,636.99	12.45	14.30	116.65	-1,041.93	2,075.97	2,322.98	2,296.23	26.74	86.862
5,700.00	5,700.00	5,738.50	5,737.86	12.67	14.57	116.59	-1,038.92	2,075.97	2,321.64	2,294.41	27.24	85.242
5,800.00	5,800.00	5,837.90	5,837.22	12.90	14.84	116.52	-1,035.92	2,075.97	2,320.29	2,292.57	27.72	83.690
5,900.00	5,900.00	5,936.68	5,935.95	13.12	15.10	116.46	-1,033.04	2,075.97	2,318.99	2,290.78	28.21	82.199
6,000.00	6,000.00	6,035.47	6,034.70	13.35	15.36	116.39	-1,030.27	2,075.97	2,317.74	2,289.04	28.70	80.760
6,100.00	6,100.00	6,134.26	6,133.46	13.57	15.63	116.34	-1,027.61	2,075.97	2,316.55	2,287.36	29.19	79.372
6,200.00	6,200.00	6,230.41	6,229.58	13.80	15.88	116.28	-1,025.24	2,075.97	2,315.45	2,285.79	29.67	78.050
6,300.00	6,300.00	6,326.18	6,325.33	14.02	16.14	116.24	-1,023.27	2,075.97	2,314.55	2,284.40	30.15	76.780
6,400.00	6,400.00	6,421.96	6,421.10	14.24	16.39	116.20	-1,021.70	2,075.97	2,313.82	2,283.19	30.62	75.555
6,500.00	6,500.00	6,517.76	6,516.89	14.47	16.65	116.18	-1,020.52	2,075.97	2,313.27	2,282.17	31.10	74.374
6,546.73	6,546.73	6,554.00	6,553.13	14.57	16.74	116.17	-1,020.17	2,075.97	2,313.10	2,281.79	31.30	73.890
6,600.00	6,600.00	6,554.00	6,553.13	14.69	16.74	116.17	-1,020.17	2,075.97	2,313.71	2,282.29	31.42	73.628
6,700.00	6,700.00	6,554.00	6,553.13	14.92	16.74	116.17	-1,020.17	2,075.97	2,318.17	2,286.52	31.65	73.246
6,800.00	6,800.00	6,554.00	6,553.13	15.14	16.74	116.17	-1,020.17	2,075.97	2,326.92	2,295.05	31.87	73.004
6,900.00	6,900.00	6,554.00	6,553.13	15.37	16.74	116.17	-1,020.17	2,075.97	2,339.92	2,307.82	32.10	72.898
6,946.00	6,946.00	6,554.00	6,553.13	15.47	16.74	116.17	-1,020.17	2,075.97	2,347.31	2,315.10	32.20	72.893
6,950.00	6,950.00	6,554.00	6,553.13	15.48	16.74	25.85	-1,020.17	2,075.97	2,347.97	2,315.76	32.22	72.877
6,975.00	6,974.98	6,554.00	6,553.13	15.53	16.74	25.66	-1,020.17	2,075.97	2,351.63	2,319.41	32.22	72.988
7,000.00	6,999.89	6,554.00	6,553.13	15.58	16.74	25.52	-1,020.17	2,075.97	2,354.38	2,322.22	32.16	73.219
7,025.00	7,024.64	6,554.00	6,553.13	15.63	16.74	25.42	-1,020.17	2,075.97	2,356.21	2,324.19	32.03	73.573
7,050.00	7,049.18	6,554.00	6,553.13	15.68	16.74	25.38	-1,020.17	2,075.97	2,357.13	2,325.30	31.83	74.051
7,075.00	7,073.44	6,554.00	6,553.13	15.73	16.74	25.38	-1,020.17	2,075.97	2,357.13	2,325.56	31.57	74.655
7,100.00	7,097.34	6,554.00	6,553.13	15.79	16.74	25.42	-1,020.17	2,075.97	2,356.21	2,324.96	31.26	75.386
7,125.00	7,120.84	6,554.00	6,553.13	15.84	16.74	25.52	-1,020.17	2,075.97	2,354.38	2,323.50	30.88	76.245
7,150.00	7,143.85	6,554.00	6,553.13	15.90	16.74	25.66	-1,020.17	2,075.97	2,351.64	2,321.19	30.45	77.233
7,175.00	7,166.32	6,554.00	6,553.13	15.96	16.74	25.85	-1,020.17	2,075.97	2,347.98	2,318.01	29.97	78.349
7,200.00	7,188.19	6,554.00	6,553.13	16.03	16.74	26.10	-1,020.17	2,075.97	2,343.42	2,313.98	29.44	79.589
7,225.00	7,209.39	6,554.00	6,553.13	16.10	16.74	26.39	-1,020.17	2,075.97	2,337.97	2,309.09	28.88	80.948
7,250.00	7,229.87	6,554.00	6,553.13	16.18	16.74	26.75	-1,020.17	2,075.97	2,331.63	2,303.34	28.29	82.416
7,275.00	7,249.58	6,554.00	6,553.13	16.27	16.74	27.16	-1,020.17	2,075.97	2,324.42	2,296.74	27.68	83.978
7,300.00	7,268.45	6,554.00	6,553.13	16.37	16.74	27.63	-1,020.17	2,075.97	2,316.34	2,289.28	27.06	85.611
7,325.00	7,286.44	6,554.00	6,553.13	16.47	16.74	28.17	-1,020.17	2,075.97	2,307.40	2,280.97	26.44	87.280
7,350.00	7,303.49	6,554.00	6,553.13	16.60	16.74	28.77	-1,020.17	2,075.97	2,297.63	2,271.80	25.83	88.942
7,375.00	7,319.56	6,554.00	6,553.13	16.73	16.74	29.45	-1,020.17	2,075.97	2,287.04	2,261.78	25.26	90.536
7,400.00	7,334.61	6,554.00	6,553.13	16.89	16.74	30.22	-1,020.17	2,075.97	2,275.65	2,250.91	24.74	91.985
7,425.00	7,348.60	6,554.00	6,553.13	17.06	16.74	31.07	-1,020.17	2,075.97	2,263.47	2,239.18	24.29	93.198
7,450.00	7,361.48	6,554.00	6,553.13	17.25	16.74	32.02	-1,020.17	2,075.97	2,250.53	2,226.61	23.92	94.069
7,475.00	7,373.23	6,554.00	6,553.13	17.46	16.74	33.08	-1,020.17	2,075.97	2,236.85	2,213.18	23.67	94.487
7,500.00	7,383.80	6,554.00	6,553.13	17.70	16.74	34.25	-1,020.17	2,075.97	2,222.45	2,198.90	23.56	94.348
7,525.00	7,393.17	6,554.00	6,553.13	17.95	16.74	35.55	-1,020.17	2,075.97	2,207.37	2,183.77	23.59	93.567
7,550.00	7,401.32	6,554.00	6,553.13	18.23	16.74	36.99	-1,020.17	2,075.97	2,191.62	2,167.82	23.80	92.100
7,575.00	7,408.21	6,554.00	6,553.13	18.53	16.74	38.58	-1,020.17	2,075.97	2,175.23	2,151.05	24.18	89.950
7,600.00	7,413.85	6,554.00	6,553.13	18.84	16.74	40.35	-1,020.17	2,075.97	2,158.25	2,133.49	24.76	87.174
7,625.00	7,418.20	6,554.00	6,553.13	19.18	16.74	42.30	-1,020.17	2,075.97	2,140.69	2,115.17	25.52	83.876
7,650.00	7,421.25	6,554.00	6,553.13	19.53	16.74	44.46	-1,020.17	2,075.97	2,122.60	2,096.13	26.47	80.194

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 5H
Project:	Eddy County NM (NAD:83)	TVD Reference:	GE 3209'6" + KB 25" @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209'6" + KB 25" @ 3234.60usft (Cactus 126)
Site Error:	0:00 usft	North Reference:	Gnd
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0:00 usft	Output errors are at:	2:00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed (Offsets) #2 WCS North WCS North													Offset Site Error:
Survey Program: 490-NS-GYRO-MS													Offset Well Error:
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 Footprint (ft)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,675.00	7,423.00	6,554.00	6,553.13	19.90	16.74	46.85	-1,020.17	2,075.97	2,104.01	2,076.43	27.58	76.279	
7,687.58	7,423.39	6,554.00	6,553.13	20.10	16.74	48.14	-1,020.17	2,075.97	2,094.48	2,066.28	28.20	74.268	
7,700.00	7,423.61	6,554.00	6,553.13	20.29	16.74	48.34	-1,020.17	2,075.97	2,085.05	2,056.62	28.42	73.362	
7,800.00	7,425.37	6,554.00	6,553.13	21.96	16.74	49.81	-1,020.17	2,075.97	2,011.26	1,981.00	30.26	66.470	
7,826.58	7,425.84	6,554.00	6,553.13	22.44	16.74	50.16	-1,020.17	2,075.97	1,992.34	1,961.57	30.77	64.760	
7,900.00	7,427.14	6,554.00	6,553.13	23.83	16.74	50.16	-1,020.17	2,075.97	1,941.21	1,909.37	31.84	60.962	
8,000.00	7,428.90	6,554.00	6,553.13	25.87	16.74	50.16	-1,020.17	2,075.97	1,873.96	1,840.54	33.42	56.072	
8,100.00	7,430.67	6,554.00	6,553.13	28.02	16.74	50.16	-1,020.17	2,075.97	1,809.73	1,774.64	35.10	51.566	
8,200.00	7,432.43	6,554.00	6,553.13	30.27	16.74	50.16	-1,020.17	2,075.97	1,748.87	1,712.02	36.85	47.462	
8,300.00	7,434.19	6,554.00	6,553.13	32.60	16.74	50.16	-1,020.17	2,075.97	1,691.74	1,653.07	38.66	43.758	
8,400.00	7,435.96	6,554.00	6,553.13	34.99	16.74	50.16	-1,020.17	2,075.97	1,638.71	1,598.19	40.52	40.438	
8,500.00	7,437.72	6,554.00	6,553.13	37.42	16.74	50.16	-1,020.17	2,075.97	1,590.22	1,547.79	42.43	37.482	
8,600.00	7,439.49	6,554.00	6,553.13	39.90	16.74	50.16	-1,020.17	2,075.97	1,546.68	1,502.32	44.36	34.865	
8,700.00	7,441.25	6,554.00	6,553.13	42.40	16.74	50.16	-1,020.17	2,075.97	1,508.52	1,462.20	46.32	32.565	
8,800.00	7,443.02	6,554.00	6,553.13	44.94	16.74	50.16	-1,020.17	2,075.97	1,476.16	1,427.85	48.31	30.557	
8,900.00	7,444.78	6,554.00	6,553.13	47.50	16.74	50.16	-1,020.17	2,075.97	1,449.99	1,399.67	50.31	28.820	
9,000.00	7,446.54	6,554.00	6,553.13	50.08	16.74	50.16	-1,020.17	2,075.97	1,430.34	1,378.01	52.33	27.332	
9,100.00	7,448.31	6,554.00	6,553.13	52.67	16.74	50.16	-1,020.17	2,075.97	1,417.50	1,363.13	54.36	26.074	
9,200.00	7,450.07	6,554.00	6,553.13	55.28	16.74	50.16	-1,020.17	2,075.97	1,411.63	1,355.22	56.41	25.024	
9,232.92	7,450.65	6,554.00	6,553.13	56.15	16.74	50.16	-1,020.17	2,075.97	1,411.25	1,354.16	57.09	24.721 CC, ES	
9,300.00	7,451.84	6,554.00	6,553.13	57.90	16.74	50.16	-1,020.17	2,075.97	1,412.84	1,354.38	58.47	24.165	
9,400.00	7,453.60	6,554.00	6,553.13	60.54	16.74	50.16	-1,020.17	2,075.97	1,421.10	1,360.58	60.53	23.478	
9,500.00	7,455.37	6,554.00	6,553.13	63.18	16.74	50.16	-1,020.17	2,075.97	1,436.30	1,373.70	62.60	22.943	
9,600.00	7,457.13	6,554.00	6,553.13	65.83	16.74	50.16	-1,020.17	2,075.97	1,458.21	1,393.53	64.68	22.545	
9,700.00	7,458.89	6,554.00	6,553.13	68.49	16.74	50.16	-1,020.17	2,075.97	1,486.53	1,419.77	66.77	22.265	
9,800.00	7,460.66	6,554.00	6,553.13	71.15	16.74	50.16	-1,020.17	2,075.97	1,520.92	1,452.07	68.86	22.089	
9,900.00	7,462.42	6,554.00	6,553.13	73.82	16.74	50.16	-1,020.17	2,075.97	1,560.97	1,490.02	70.95	22.001	
10,000.00	7,464.19	6,554.00	6,553.13	76.50	16.74	50.16	-1,020.17	2,075.97	1,606.25	1,533.20	73.05	21.988 SF	
10,100.00	7,465.95	6,554.00	6,553.13	79.18	16.74	50.16	-1,020.17	2,075.97	1,656.34	1,581.18	75.15	22.039	
10,200.00	7,467.72	6,554.00	6,553.13	81.86	16.74	50.16	-1,020.17	2,075.97	1,710.81	1,633.55	77.26	22.144	
10,300.00	7,469.48	6,554.00	6,553.13	84.55	16.74	50.16	-1,020.17	2,075.97	1,769.26	1,689.89	79.37	22.291	
10,400.00	7,471.24	6,554.00	6,553.13	87.24	16.74	50.16	-1,020.17	2,075.97	1,831.31	1,749.83	81.48	22.475	
10,500.00	7,473.01	6,554.00	6,553.13	89.94	16.74	50.16	-1,020.17	2,075.97	1,896.60	1,813.01	83.60	22.687	
10,600.00	7,474.77	6,554.00	6,553.13	92.63	16.74	50.16	-1,020.17	2,075.97	1,964.82	1,879.11	85.72	22.923	
10,700.00	7,476.54	6,554.00	6,553.13	95.33	16.74	50.16	-1,020.17	2,075.97	2,035.67	1,947.83	87.83	23.176	
10,800.00	7,478.30	6,554.00	6,553.13	98.04	16.74	50.16	-1,020.17	2,075.97	2,108.88	2,018.92	89.96	23.443	
10,900.00	7,480.07	6,554.00	6,553.13	100.74	16.74	50.16	-1,020.17	2,075.97	2,184.21	2,092.13	92.08	23.721	
11,000.00	7,481.83	6,554.00	6,553.13	103.45	16.74	50.16	-1,020.17	2,075.97	2,261.46	2,167.25	94.21	24.006	
11,100.00	7,483.59	6,554.00	6,553.13	106.16	16.74	50.16	-1,020.17	2,075.97	2,340.43	2,244.10	96.33	24.295	
11,200.00	7,485.36	6,554.00	6,553.13	108.87	16.74	50.16	-1,020.17	2,075.97	2,420.95	2,322.49	98.46	24.588	
11,300.00	7,487.12	6,554.00	6,553.13	111.58	16.74	50.16	-1,020.17	2,075.97	2,502.88	2,402.29	100.59	24.882	
11,400.00	7,488.89	6,554.00	6,553.13	114.29	16.74	50.16	-1,020.17	2,075.97	2,586.09	2,483.37	102.72	25.176	
11,500.00	7,490.65	6,554.00	6,553.13	117.01	16.74	50.16	-1,020.17	2,075.97	2,670.44	2,565.59	104.85	25.468	
11,600.00	7,492.42	6,554.00	6,553.13	119.72	16.74	50.16	-1,020.17	2,075.97	2,755.84	2,648.86	106.99	25.759	
11,700.00	7,494.18	6,554.00	6,553.13	122.44	16.74	50.16	-1,020.17	2,075.97	2,842.20	2,733.08	109.12	26.046	
11,800.00	7,495.94	6,554.00	6,553.13	125.16	16.74	50.16	-1,020.17	2,075.97	2,929.42	2,818.17	111.26	26.331	
11,900.00	7,497.71	6,554.00	6,553.13	127.88	16.74	50.16	-1,020.17	2,075.97	3,017.44	2,904.05	113.39	26.611	
12,000.00	7,499.47	6,554.00	6,553.13	130.60	16.74	50.16	-1,020.17	2,075.97	3,106.18	2,990.65	115.53	26.887	
12,100.00	7,501.24	6,554.00	6,553.13	133.32	16.74	50.16	-1,020.17	2,075.97	3,195.58	3,077.92	117.67	27.158	
12,200.00	7,503.00	6,554.00	6,553.13	136.04	16.74	50.16	-1,020.17	2,075.97	3,285.60	3,165.80	119.80	27.425	
12,300.00	7,504.77	6,554.00	6,553.13	138.77	16.74	50.16	-1,020.17	2,075.97	3,376.18	3,254.24	121.94	27.686	

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

Anticollision Report

Offset Design: Cerf-10-Fed-(Offsets) - #2 - WCS - North - WCS - North											Offset Site Error: 0.00 usft	
Survey Program: 490-NS-GYRO-MS											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance						
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between	Between	Minimum	Separation	Warning
Depth	Depth	Depth	Depth			Toolface	N/S	Centres	Ellipses	Separation	Factor	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)		
12,313.27	7,505.00	6,554.00	6,553.13	139.00	16.74	50.16	-1,020.17	2,075.97	3,388.24	3,266.12	122.12	27.744

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	200' sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed (Offsets) - #2 - WCS - South - WCS - South														Offset Site Error
Survey Program: 490 NS GYRO MS														Offset Well Error
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Semi-Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	6.34	6.34	0.00	0.01	118.12	-1,109.55	2,075.97	2,353.89					
100.00	100.00	105.36	105.36	0.08	0.14	118.12	-1,109.60	2,075.97	2,353.91	2,353.69	0.22	N/A		
200.00	200.00	204.38	204.38	0.31	0.26	118.13	-1,109.74	2,075.97	2,353.97	2,353.40	0.57	4,115.162		
300.00	300.00	303.40	303.40	0.53	0.39	118.13	-1,109.96	2,075.97	2,354.08	2,353.16	0.92	2,547.158		
400.00	400.00	402.42	402.42	0.76	0.52	118.14	-1,110.27	2,075.97	2,354.23	2,352.95	1.28	1,844.469		
500.00	500.00	501.02	501.02	0.98	0.66	118.15	-1,110.67	2,075.97	2,354.42	2,352.78	1.64	1,432.930		
600.00	600.00	596.71	596.70	1.21	0.91	118.16	-1,111.34	2,075.97	2,354.75	2,352.62	2.12	1,109.754		
700.00	700.00	696.70	696.69	1.43	1.18	118.18	-1,112.21	2,075.97	2,355.16	2,352.55	2.61	901.638		
800.00	800.00	796.70	796.69	1.66	1.44	118.20	-1,113.08	2,075.97	2,355.57	2,352.47	3.10	759.295		
900.00	900.00	896.69	896.68	1.88	1.71	118.22	-1,113.95	2,075.97	2,355.98	2,352.39	3.59	655.799		
1,000.00	1,000.00	996.69	996.67	2.11	1.98	118.24	-1,114.83	2,075.97	2,356.40	2,352.31	4.08	577.158		
1,100.00	1,100.00	1,096.04	1,096.02	2.33	2.24	118.26	-1,115.71	2,075.97	2,356.82	2,352.25	4.57	515.570		
1,200.00	1,200.00	1,195.07	1,195.05	2.56	2.50	118.28	-1,116.68	2,075.97	2,357.28	2,352.22	5.06	465.961		
1,300.00	1,300.00	1,294.10	1,294.07	2.78	2.77	118.30	-1,117.73	2,075.97	2,357.78	2,352.23	5.55	425.083		
1,400.00	1,400.00	1,393.13	1,393.09	3.01	3.03	118.32	-1,118.86	2,075.97	2,358.33	2,352.29	6.03	390.820		
1,500.00	1,500.00	1,492.15	1,492.11	3.23	3.29	118.35	-1,120.08	2,075.97	2,358.91	2,352.39	6.52	361.687		
1,600.00	1,600.00	1,593.10	1,593.05	3.46	3.56	118.38	-1,121.36	2,075.97	2,359.51	2,352.50	7.01	336.366		
1,700.00	1,700.00	1,695.25	1,695.19	3.68	3.83	118.40	-1,122.48	2,075.97	2,360.03	2,352.52	7.51	314.225		
1,800.00	1,800.00	1,797.40	1,797.33	3.91	4.10	118.42	-1,123.40	2,075.97	2,360.46	2,352.46	8.01	294.815		
1,900.00	1,900.00	1,899.55	1,899.48	4.13	4.37	118.44	-1,124.13	2,075.97	2,360.80	2,352.30	8.50	277.659		
2,000.00	2,000.00	2,001.56	2,001.49	4.35	4.64	118.45	-1,124.66	2,075.97	2,361.05	2,352.05	9.00	262.394		
2,100.00	2,100.00	2,101.56	2,101.49	4.58	4.91	118.46	-1,125.09	2,075.97	2,361.26	2,351.77	9.49	248.859		
2,200.00	2,200.00	2,201.56	2,201.49	4.80	5.18	118.47	-1,125.53	2,075.97	2,361.46	2,351.49	9.98	236.655		
2,300.00	2,300.00	2,301.56	2,301.49	5.03	5.44	118.47	-1,125.97	2,075.97	2,361.67	2,351.20	10.47	225.593		
2,400.00	2,400.00	2,401.56	2,401.49	5.25	5.71	118.48	-1,126.40	2,075.97	2,361.88	2,350.92	10.96	215.521		
2,500.00	2,500.00	2,501.56	2,501.48	5.48	5.97	118.49	-1,126.84	2,075.97	2,362.09	2,350.64	11.45	206.311		
2,600.00	2,600.00	2,601.56	2,601.48	5.70	6.24	118.50	-1,127.27	2,075.97	2,362.30	2,350.36	11.94	197.858		
2,700.00	2,700.00	2,701.56	2,701.48	5.93	6.50	118.51	-1,127.71	2,075.97	2,362.50	2,350.08	12.43	190.071		
2,800.00	2,800.00	2,801.56	2,801.48	6.15	6.77	118.52	-1,128.15	2,075.97	2,362.71	2,349.79	12.92	182.876		
2,900.00	2,900.00	2,901.16	2,901.08	6.38	7.03	118.53	-1,128.59	2,075.97	2,362.92	2,349.52	13.41	176.220		
3,000.00	3,000.00	3,000.20	3,000.12	6.60	7.30	118.54	-1,129.10	2,075.97	2,363.17	2,349.27	13.90	170.054		
3,100.00	3,100.00	3,099.24	3,099.16	6.83	7.56	118.55	-1,129.69	2,075.97	2,363.46	2,349.07	14.38	164.308		
3,200.00	3,200.00	3,198.28	3,198.20	7.05	7.82	118.57	-1,130.37	2,075.97	2,363.78	2,348.91	14.87	158.942		
3,300.00	3,300.00	3,297.32	3,297.23	7.28	8.08	118.58	-1,131.13	2,075.97	2,364.15	2,348.79	15.36	153.919		
3,400.00	3,400.00	3,396.35	3,396.26	7.50	8.35	118.60	-1,131.97	2,075.97	2,364.56	2,348.71	15.85	149.209		
3,500.00	3,500.00	3,495.37	3,495.27	7.73	8.61	118.62	-1,132.90	2,075.97	2,365.01	2,348.67	16.33	144.782		
3,600.00	3,600.00	3,594.38	3,594.28	7.95	8.87	118.64	-1,133.92	2,075.97	2,365.50	2,348.68	16.82	140.614		
3,700.00	3,700.00	3,693.40	3,693.29	8.18	9.14	118.67	-1,135.02	2,075.97	2,366.03	2,348.72	17.31	136.684		
3,800.00	3,800.00	3,792.41	3,792.30	8.40	9.40	118.69	-1,136.21	2,075.97	2,366.61	2,348.81	17.80	132.971		
3,900.00	3,900.00	3,891.38	3,891.26	8.63	9.66	118.72	-1,137.48	2,075.97	2,367.22	2,348.94	18.29	129.460		
4,000.00	4,000.00	3,990.22	3,990.09	8.85	9.92	118.75	-1,138.84	2,075.97	2,367.89	2,349.12	18.77	126.135		
4,100.00	4,100.00	4,089.06	4,088.92	9.07	10.19	118.78	-1,140.31	2,075.97	2,368.60	2,349.34	19.26	122.982		
4,200.00	4,200.00	4,187.90	4,187.74	9.30	10.45	118.81	-1,141.87	2,075.97	2,369.37	2,349.62	19.75	119.986		
4,300.00	4,300.00	4,286.73	4,286.56	9.52	10.71	118.85	-1,143.54	2,075.97	2,370.18	2,349.94	20.23	117.138		
4,400.00	4,400.00	4,384.84	4,384.65	9.75	10.97	118.89	-1,145.32	2,075.97	2,371.05	2,350.33	20.72	114.436		
4,500.00	4,500.00	4,482.86	4,482.65	9.97	11.23	118.93	-1,147.26	2,075.97	2,372.01	2,350.81	21.20	111.864		
4,600.00	4,600.00	4,580.87	4,580.64	10.20	11.49	118.97	-1,149.37	2,075.97	2,373.06	2,351.37	21.69	109.411		
4,700.00	4,700.00	4,678.87	4,678.62	10.42	11.75	119.02	-1,151.65	2,075.97	2,374.18	2,352.01	22.17	107.068		
4,800.00	4,800.00	4,776.87	4,776.58	10.65	12.02	119.07	-1,154.10	2,075.97	2,375.40	2,352.74	22.66	104.830		
4,900.00	4,900.00	4,876.43	4,876.11	10.87	12.28	119.13	-1,156.70	2,075.97	2,376.67	2,353.52	23.15	102.670		
5,000.00	5,000.00	4,976.39	4,976.04	11.10	12.55	119.18	-1,159.32	2,075.97	2,377.94	2,354.30	23.64	100.595		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well: 5H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM: 5000.1 Single User Db
Reference Design:	Plan #1	Offset: TVD Reference:	Offset Datum

Offset Design (Cert 10 Fed) (Offsets) #2 - WCS - South - WCS - South												Offset Site Error:	0.00 usft
Survey Program: 490-NS-GYRO-MS												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N (usft)	Offset Wellbore Centre E (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,100.00	5,076.36	5,075.97	11.32	12.81	119.24	-1,161.94	2,075.97	2,379.22	2,355.09	24.13	98.604	
5,200.00	5,200.00	5,176.33	5,175.91	11.55	13.08	119.29	-1,164.55	2,075.97	2,380.50	2,355.88	24.62	96.692	
5,300.00	5,300.00	5,276.29	5,275.84	11.77	13.34	119.35	-1,167.17	2,075.97	2,381.78	2,356.67	25.11	94.855	
5,400.00	5,400.00	5,375.35	5,374.86	12.00	13.61	119.40	-1,169.80	2,075.97	2,383.08	2,357.49	25.60	93.098	
5,500.00	5,500.00	5,474.25	5,473.72	12.22	13.87	119.46	-1,172.51	2,075.97	2,384.43	2,358.35	26.08	91.410	
5,600.00	5,600.00	5,573.15	5,572.58	12.45	14.13	119.52	-1,175.31	2,075.97	2,385.82	2,359.25	26.57	89.786	
5,700.00	5,700.00	5,672.04	5,671.44	12.67	14.40	119.58	-1,178.19	2,075.97	2,387.27	2,360.21	27.06	88.222	
5,800.00	5,800.00	5,771.01	5,770.35	12.90	14.66	119.64	-1,181.17	2,075.97	2,388.75	2,361.21	27.55	86.714	
5,900.00	5,900.00	5,872.34	5,871.64	13.12	14.93	119.70	-1,184.21	2,075.97	2,390.24	2,362.19	28.04	85.239	
6,000.00	6,000.00	5,973.68	5,972.94	13.35	15.20	119.76	-1,187.12	2,075.97	2,391.66	2,363.13	28.54	83.814	
6,100.00	6,100.00	6,075.03	6,074.25	13.57	15.47	119.82	-1,189.92	2,075.97	2,393.03	2,364.00	29.03	82.435	
6,200.00	6,200.00	6,177.55	6,176.73	13.80	15.74	119.88	-1,192.61	2,075.97	2,394.34	2,364.81	29.53	81.091	
6,300.00	6,300.00	6,282.92	6,282.08	14.02	16.02	119.93	-1,194.99	2,075.97	2,395.47	2,365.44	30.03	79.766	
6,400.00	6,400.00	6,388.31	6,387.45	14.24	16.30	119.97	-1,196.90	2,075.97	2,396.37	2,365.84	30.54	78.478	
6,500.00	6,500.00	6,493.71	6,492.84	14.47	16.58	120.00	-1,198.33	2,075.97	2,397.05	2,366.01	31.04	77.224	
6,600.00	6,600.00	6,554.00	6,553.13	14.69	16.74	120.01	-1,198.93	2,075.97	2,397.91	2,366.48	31.43	76.305	
6,700.00	6,700.00	6,554.00	6,553.13	14.92	16.74	120.01	-1,198.93	2,075.97	2,402.21	2,370.56	31.65	75.899	
6,800.00	6,800.00	6,554.00	6,553.13	15.14	16.74	120.01	-1,198.93	2,075.97	2,410.66	2,378.78	31.87	75.629	
6,900.00	6,900.00	6,554.00	6,553.13	15.37	16.74	120.01	-1,198.93	2,075.97	2,423.20	2,391.10	32.10	75.490	
6,946.00	6,946.00	6,554.00	6,553.13	15.47	16.74	120.01	-1,198.93	2,075.97	2,430.34	2,398.13	32.20	75.469	
6,950.00	6,950.00	6,554.00	6,553.13	15.48	16.74	29.69	-1,198.93	2,075.97	2,430.98	2,398.76	32.22	75.452	
6,975.00	6,974.98	6,554.00	6,553.13	15.53	16.74	29.48	-1,198.93	2,075.97	2,434.51	2,402.28	32.23	75.529	
7,000.00	6,999.89	6,554.00	6,553.13	15.58	16.74	29.32	-1,198.93	2,075.97	2,437.16	2,404.98	32.19	75.722	
7,025.00	7,024.64	6,554.00	6,553.13	15.63	16.74	29.22	-1,198.93	2,075.97	2,438.94	2,406.86	32.08	76.033	
7,050.00	7,049.18	6,554.00	6,553.13	15.68	16.74	29.16	-1,198.93	2,075.97	2,439.82	2,407.91	31.91	76.463	
7,075.00	7,073.44	6,554.00	6,553.13	15.73	16.74	29.16	-1,198.93	2,075.97	2,439.82	2,408.14	31.88	77.010	
7,100.00	7,097.34	6,554.00	6,553.13	15.79	16.74	29.22	-1,198.93	2,075.97	2,438.93	2,407.53	31.40	77.676	
7,125.00	7,120.84	6,554.00	6,553.13	15.84	16.74	29.32	-1,198.93	2,075.97	2,437.16	2,406.09	31.06	78.458	
7,150.00	7,143.85	6,554.00	6,553.13	15.90	16.74	29.48	-1,198.93	2,075.97	2,434.50	2,403.82	30.68	79.354	
7,175.00	7,166.32	6,554.00	6,553.13	15.96	16.74	29.69	-1,198.93	2,075.97	2,430.97	2,400.72	30.25	80.359	
7,200.00	7,188.19	6,554.00	6,553.13	16.03	16.74	29.96	-1,198.93	2,075.97	2,426.56	2,396.78	29.79	81.466	
7,225.00	7,209.39	6,554.00	6,553.13	16.10	16.74	30.28	-1,198.93	2,075.97	2,421.29	2,392.00	29.29	82.663	
7,250.00	7,229.87	6,554.00	6,553.13	16.18	16.74	30.67	-1,198.93	2,075.97	2,415.17	2,386.39	28.77	83.935	
7,275.00	7,249.58	6,554.00	6,553.13	16.27	16.74	31.11	-1,198.93	2,075.97	2,408.20	2,379.95	28.25	85.261	
7,300.00	7,268.45	6,554.00	6,553.13	16.37	16.74	31.63	-1,198.93	2,075.97	2,400.39	2,372.68	27.71	86.610	
7,325.00	7,286.44	6,554.00	6,553.13	16.47	16.74	32.21	-1,198.93	2,075.97	2,391.77	2,364.57	27.20	87.944	
7,350.00	7,303.49	6,554.00	6,553.13	16.60	16.74	32.87	-1,198.93	2,075.97	2,382.34	2,355.63	26.70	89.214	
7,375.00	7,319.56	6,554.00	6,553.13	16.73	16.74	33.60	-1,198.93	2,075.97	2,372.12	2,345.86	26.25	90.359	
7,400.00	7,334.61	6,554.00	6,553.13	16.89	16.74	34.42	-1,198.93	2,075.97	2,361.13	2,335.27	25.86	91.308	
7,425.00	7,348.60	6,554.00	6,553.13	17.06	16.74	35.34	-1,198.93	2,075.97	2,349.38	2,323.84	25.54	91.983	
7,450.00	7,361.48	6,554.00	6,553.13	17.25	16.74	36.35	-1,198.93	2,075.97	2,336.91	2,311.59	25.32	92.302	
7,475.00	7,373.23	6,554.00	6,553.13	17.46	16.74	37.47	-1,198.93	2,075.97	2,323.73	2,298.52	25.21	92.187	
7,500.00	7,383.80	6,554.00	6,553.13	17.70	16.74	38.70	-1,198.93	2,075.97	2,309.87	2,284.64	25.22	91.575	
7,525.00	7,393.17	6,554.00	6,553.13	17.95	16.74	40.06	-1,198.93	2,075.97	2,295.35	2,269.96	25.38	90.428	
7,550.00	7,401.32	6,554.00	6,553.13	18.23	16.74	41.55	-1,198.93	2,075.97	2,280.19	2,254.50	25.70	88.739	
7,575.00	7,408.21	6,554.00	6,553.13	18.53	16.74	43.19	-1,198.93	2,075.97	2,264.44	2,238.28	26.17	86.539	
7,600.00	7,413.85	6,554.00	6,553.13	18.84	16.74	44.99	-1,198.93	2,075.97	2,248.12	2,221.32	26.80	83.892	
7,625.00	7,418.20	6,554.00	6,553.13	19.18	16.74	46.96	-1,198.93	2,075.97	2,231.26	2,203.68	27.58	80.892	
7,650.00	7,421.25	6,554.00	6,553.13	19.53	16.74	49.11	-1,198.93	2,075.97	2,213.90	2,185.39	28.51	77.645	
7,675.00	7,423.00	6,554.00	6,553.13	19.90	16.74	51.46	-1,198.93	2,075.97	2,196.08	2,166.51	29.57	74.266	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	- Well 5H
Project:	Eddy County - NM (NAD-83)	TVD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Reference Site:	Cert 10 Fed	MD Reference:	GE 3209.6' + KB 25' @ 3234.60usft (Cactus 126)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	5H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Cert 10 Fed (Offsets) - #2 - WCS - South - WCS - South												Offset Site Error:	0.00 usft
Survey Program: 490-NS-GYRO-MS												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		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	Warning
7,687.58	7,423.39	6,554.00	6,553.13	20.10	16.74	52.72	-1,198.93	2,075.97	2,186.94	2,156.80	30.14	72.549	
7,700.00	7,423.61	6,554.00	6,553.13	20.29	16.74	52.88	-1,198.93	2,075.97	2,177.91	2,147.55	30.35	71.749	
7,800.00	7,425.37	6,554.00	6,553.13	21.96	16.74	54.10	-1,198.93	2,075.97	2,107.52	2,075.39	32.13	65.602	
7,826.58	7,425.84	6,554.00	6,553.13	22.44	16.74	54.39	-1,198.93	2,075.97	2,089.56	2,056.94	32.62	64.061	
7,900.00	7,427.14	6,554.00	6,553.13	23.83	16.74	54.39	-1,198.93	2,075.97	2,041.15	2,007.39	33.76	60.466	
8,000.00	7,428.90	6,554.00	6,553.13	25.87	16.74	54.39	-1,198.93	2,075.97	1,977.69	1,942.27	35.42	55.831	
8,100.00	7,430.67	6,554.00	6,553.13	28.02	16.74	54.39	-1,198.93	2,075.97	1,917.35	1,880.16	37.19	51.554	
8,200.00	7,432.43	6,554.00	6,553.13	30.27	16.74	54.39	-1,198.93	2,075.97	1,860.43	1,821.39	39.04	47.655	
8,300.00	7,434.19	6,554.00	6,553.13	32.60	16.74	54.39	-1,198.93	2,075.97	1,807.26	1,766.31	40.95	44.131	
8,400.00	7,435.96	6,554.00	6,553.13	34.99	16.74	54.39	-1,198.93	2,075.97	1,758.17	1,715.25	42.92	40.968	
8,500.00	7,437.72	6,554.00	6,553.13	37.42	16.74	54.39	-1,198.93	2,075.97	1,713.52	1,668.59	44.92	38.145	
8,600.00	7,439.49	6,554.00	6,553.13	39.90	16.74	54.39	-1,198.93	2,075.97	1,673.65	1,626.69	46.96	35.640	
8,700.00	7,441.25	6,554.00	6,553.13	42.40	16.74	54.39	-1,198.93	2,075.97	1,638.93	1,589.90	49.03	33.429	
8,800.00	7,443.02	6,554.00	6,553.13	44.94	16.74	54.39	-1,198.93	2,075.97	1,609.68	1,558.56	51.12	31.489	
8,900.00	7,444.78	6,554.00	6,553.13	47.50	16.74	54.39	-1,198.93	2,075.97	1,586.20	1,532.97	53.23	29.800	
9,000.00	7,446.54	6,554.00	6,553.13	50.08	16.74	54.39	-1,198.93	2,075.97	1,568.76	1,513.40	55.36	28.339	
9,100.00	7,448.31	6,554.00	6,553.13	52.67	16.74	54.39	-1,198.93	2,075.97	1,557.56	1,500.06	57.50	27.089	
9,200.00	7,450.07	6,554.00	6,553.13	55.28	16.74	54.39	-1,198.93	2,075.97	1,552.73	1,493.07	59.65	26.030	
9,225.13	7,450.52	6,554.00	6,553.13	55.94	16.74	54.39	-1,198.93	2,075.97	1,552.52	1,492.33	60.20	25.791 CC, ES	
9,300.00	7,451.84	6,554.00	6,553.13	57.90	16.74	54.39	-1,198.93	2,075.97	1,554.33	1,492.51	61.82	25.144	
9,400.00	7,453.60	6,554.00	6,553.13	60.54	16.74	54.39	-1,198.93	2,075.97	1,562.34	1,498.35	63.99	24.416	
9,500.00	7,455.37	6,554.00	6,553.13	63.18	16.74	54.39	-1,198.93	2,075.97	1,576.67	1,510.50	66.17	23.827	
9,600.00	7,457.13	6,554.00	6,553.13	65.83	16.74	54.39	-1,198.93	2,075.97	1,597.14	1,528.78	68.36	23.364	
9,700.00	7,458.89	6,554.00	6,553.13	68.49	16.74	54.39	-1,198.93	2,075.97	1,623.52	1,552.97	70.55	23.011	
9,800.00	7,460.66	6,554.00	6,553.13	71.15	16.74	54.39	-1,198.93	2,075.97	1,655.54	1,582.78	72.76	22.755	
9,900.00	7,462.42	6,554.00	6,553.13	73.82	16.74	54.39	-1,198.93	2,075.97	1,692.86	1,617.90	74.96	22.583	
10,000.00	7,464.19	6,554.00	6,553.13	76.50	16.74	54.39	-1,198.93	2,075.97	1,735.15	1,657.98	77.17	22.484	
10,100.00	7,465.95	6,554.00	6,553.13	79.18	16.74	54.39	-1,198.93	2,075.97	1,782.06	1,702.67	79.39	22.448 SF	
10,200.00	7,467.72	6,554.00	6,553.13	81.86	16.74	54.39	-1,198.93	2,075.97	1,833.22	1,751.62	81.60	22.465	
10,300.00	7,469.48	6,554.00	6,553.13	84.55	16.74	54.39	-1,198.93	2,075.97	1,888.30	1,804.48	83.82	22.527	
10,400.00	7,471.24	6,554.00	6,553.13	87.24	16.74	54.39	-1,198.93	2,075.97	1,946.96	1,860.91	86.05	22.627	
10,500.00	7,473.01	6,554.00	6,553.13	89.94	16.74	54.39	-1,198.93	2,075.97	2,008.89	1,920.61	88.27	22.757	
10,600.00	7,474.77	6,554.00	6,553.13	92.63	16.74	54.39	-1,198.93	2,075.97	2,073.79	1,983.29	90.50	22.914	
10,700.00	7,476.54	6,554.00	6,553.13	95.33	16.74	54.39	-1,198.93	2,075.97	2,141.40	2,048.66	92.73	23.092	
10,800.00	7,478.30	6,554.00	6,553.13	98.04	16.74	54.39	-1,198.93	2,075.97	2,211.46	2,116.49	94.97	23.286	
10,900.00	7,480.07	6,554.00	6,553.13	100.74	16.74	54.39	-1,198.93	2,075.97	2,283.75	2,186.55	97.20	23.495	
11,000.00	7,481.83	6,554.00	6,553.13	103.45	16.74	54.39	-1,198.93	2,075.97	2,358.07	2,258.63	99.44	23.713	
11,100.00	7,483.59	6,554.00	6,553.13	106.16	16.74	54.39	-1,198.93	2,075.97	2,434.23	2,332.55	101.68	23.940	
11,200.00	7,485.36	6,554.00	6,553.13	108.87	16.74	54.39	-1,198.93	2,075.97	2,512.06	2,408.14	103.92	24.173	
11,300.00	7,487.12	6,554.00	6,553.13	111.58	16.74	54.39	-1,198.93	2,075.97	2,591.42	2,485.25	106.16	24.410	
11,400.00	7,488.89	6,554.00	6,553.13	114.29	16.74	54.39	-1,198.93	2,075.97	2,672.15	2,563.75	108.40	24.650	
11,500.00	7,490.65	6,554.00	6,553.13	117.01	16.74	54.39	-1,198.93	2,075.97	2,754.16	2,643.51	110.65	24.891	
11,600.00	7,492.42	6,554.00	6,553.13	119.72	16.74	54.39	-1,198.93	2,075.97	2,837.32	2,724.42	112.89	25.133	
11,700.00	7,494.18	6,554.00	6,553.13	122.44	16.74	54.39	-1,198.93	2,075.97	2,921.53	2,806.39	115.14	25.374	
11,800.00	7,495.94	6,554.00	6,553.13	125.16	16.74	54.39	-1,198.93	2,075.97	3,006.71	2,889.32	117.39	25.614	
11,900.00	7,497.71	6,554.00	6,553.13	127.88	16.74	54.39	-1,198.93	2,075.97	3,092.78	2,973.14	119.63	25.852	
12,000.00	7,499.47	6,554.00	6,553.13	130.60	16.74	54.39	-1,198.93	2,075.97	3,179.66	3,057.78	121.88	26.088	
12,100.00	7,501.24	6,554.00	6,553.13	133.32	16.74	54.39	-1,198.93	2,075.97	3,267.30	3,143.16	124.13	26.321	
12,200.00	7,503.00	6,554.00	6,553.13	136.04	16.74	54.39	-1,198.93	2,075.97	3,355.62	3,229.24	126.38	26.551	
12,300.00	7,504.77	6,554.00	6,553.13	138.77	16.74	54.39	-1,198.93	2,075.97	3,444.59	3,315.95	128.63	26.778	
12,313.27	7,505.00	6,554.00	6,553.13	139.00	16.74	54.39	-1,198.93	2,075.97	3,456.44	3,327.61	128.82	26.831	

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

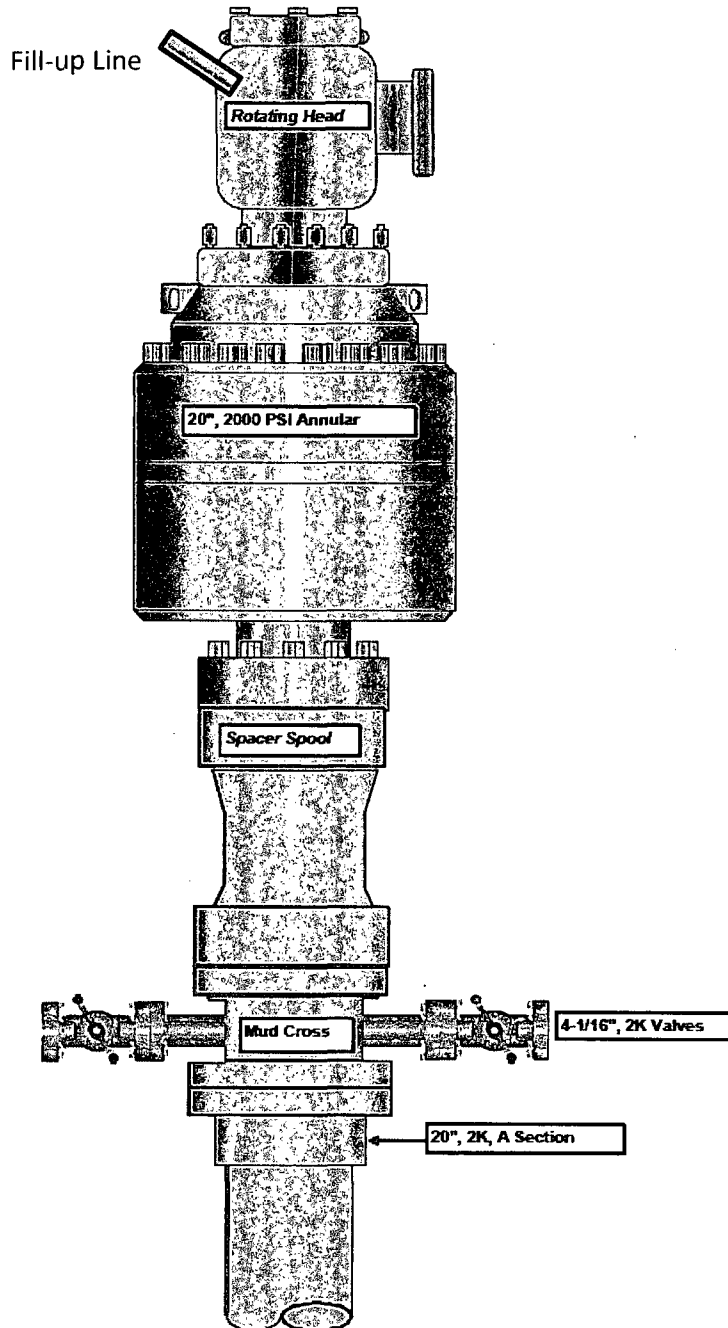
LEAM Drilling Systems LLC

Anticollision Report

Company	DEVON ENERGY	Local Co-ordinate Reference	Well 5H
Project	Eddy County, NM (NAD-83)	TVD Reference	GE 3209 6' + KB 25' @ 3234 60usft (Cactus 126)
Reference Site	Cerr 10 Fed	MD Reference	GE 3209 6' + KB 25' @ 3234 60usft (Cactus 126)
Site Error	0.00 usft	North Reference	Grid
Reference Well	5H	Survey Calculation Method	Minimum Curvature
Well Error	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database	EDM 5000.1 Single User Db
Reference Design	Plan #1	Offset TVD Reference	Offset Datum

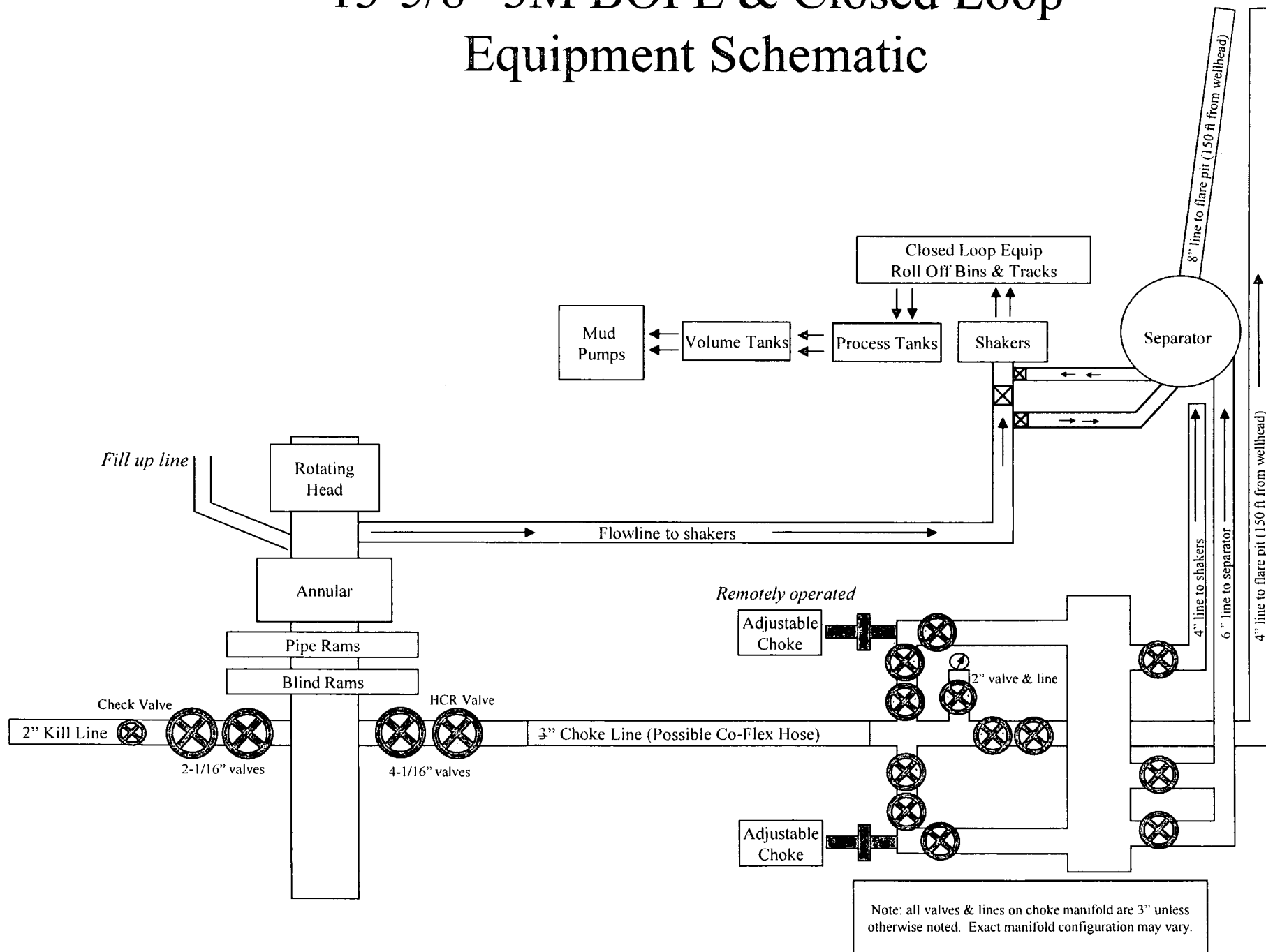
Offset Design	Cerr 10 Fed (Offsets) #2 WCS South WCS South										Offset Site Error	0.00 usft
Survey Program	490 NS GYRO MS										Offset Well Error	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning		
Measured Vertical	Measured Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between	Between	Minimum	Separation	Warning		
Depth	Depth	Depth	Depth	Toolface	N-S	E-W	Centres	Ellipses	Factor			
(usft)	(usft)	(usft)	(usft)	(P)	(usft)	(usft)	(usft)	(usft)				

20" 2K Annular



***The same choke manifold will be used with all BOP's**

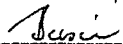
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



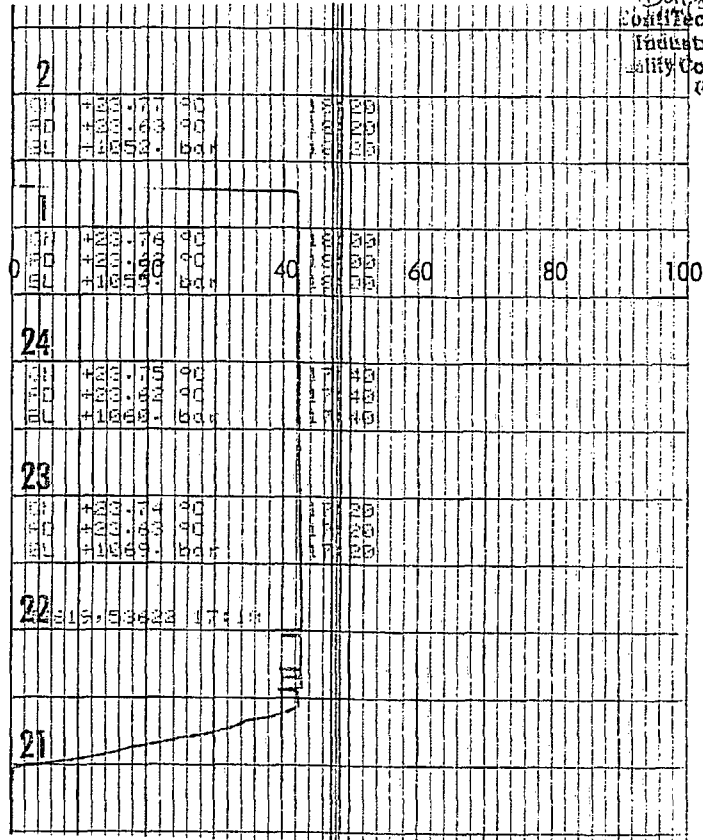
NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
Cerf 10 Fed 5H

1. Drilling Nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated filings will be in operable condition to withstand a minimum of 3000psi working pressure.
4. All fittings will be flanged.
5. A fill bore safety valve tested to a minimum of 3000psi WP with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1713	
PURCHASER: ContiTech Beattie Co.				P.O. N°: 002808	
CONTITECH ORDER N°: 426127		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 53622		NOMINAL / ACTUAL LENGTH: 10,67 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature See attachment. (1 page) ↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with 4 1/16" Flange end		5503 2029		AISI 4130 AISI 4130	
				Heat N° N1590P 27566	
INFOCHIP INSTALLED				API Spec 16 C Temperature rate: "B"	
All metal parts are flawless				Hose conform to NACE MR 01-75	
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date: 25. August. 2008		Inspector		Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept.  	

HARTMANN &





Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental Contitech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

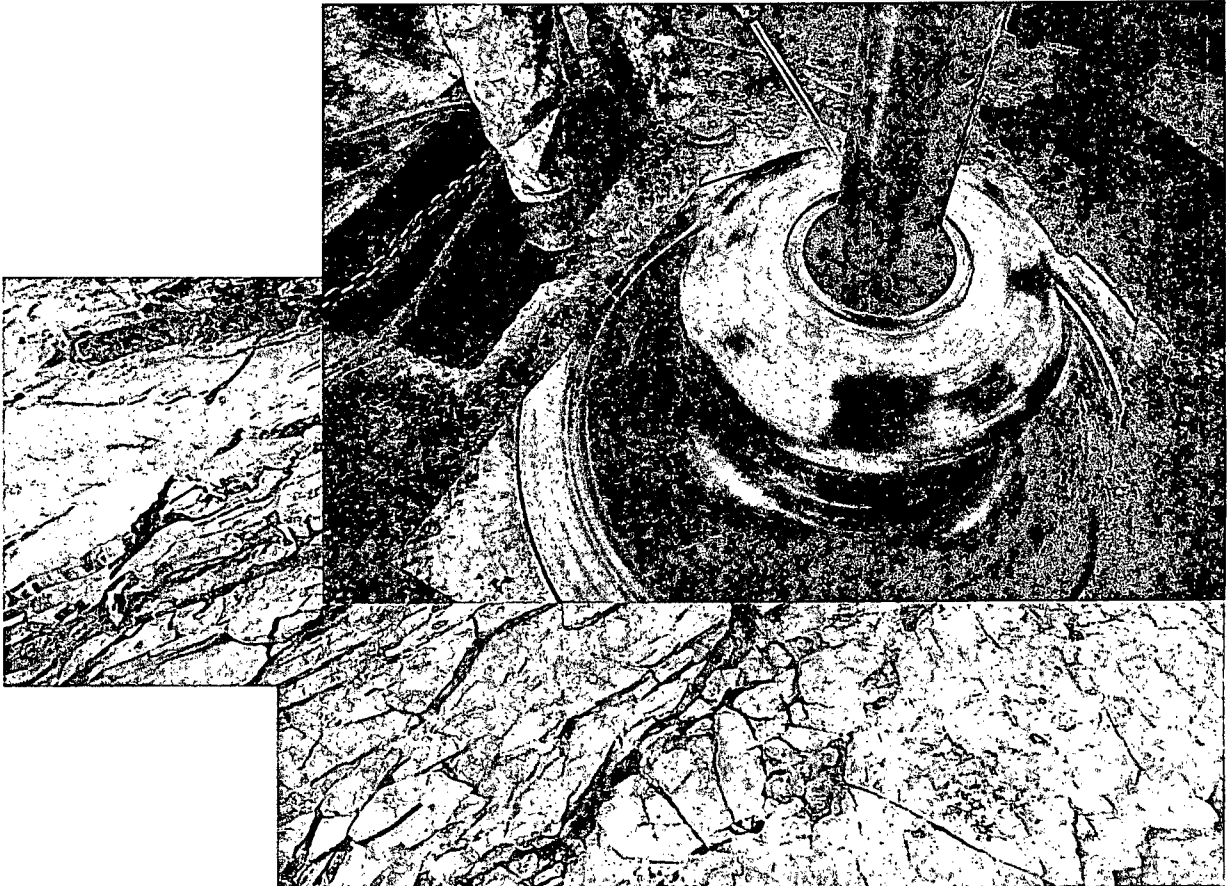
Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com





Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

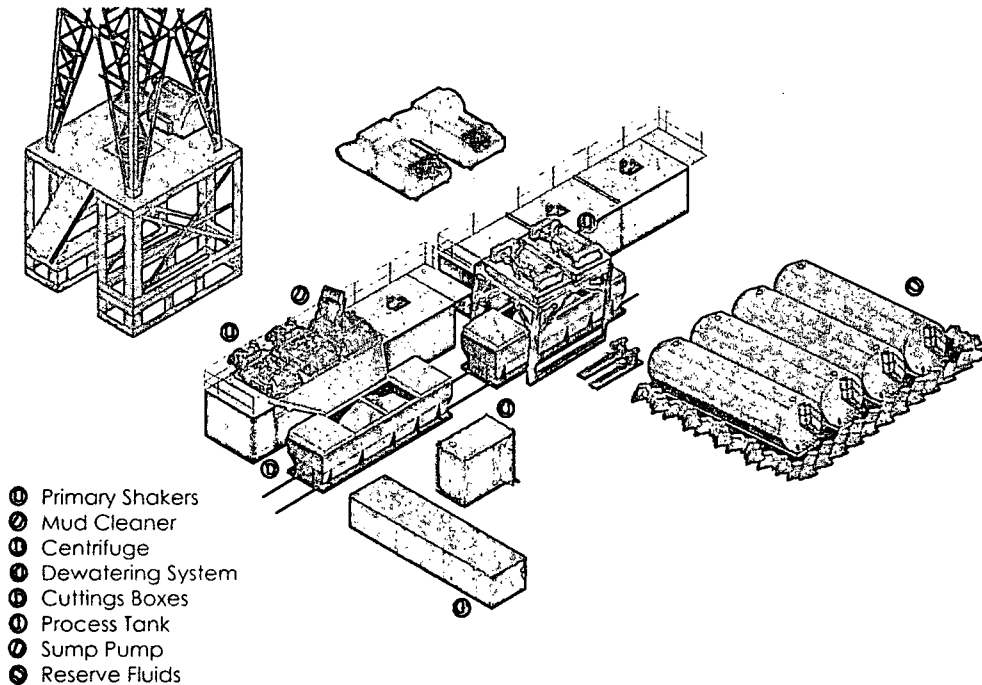
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

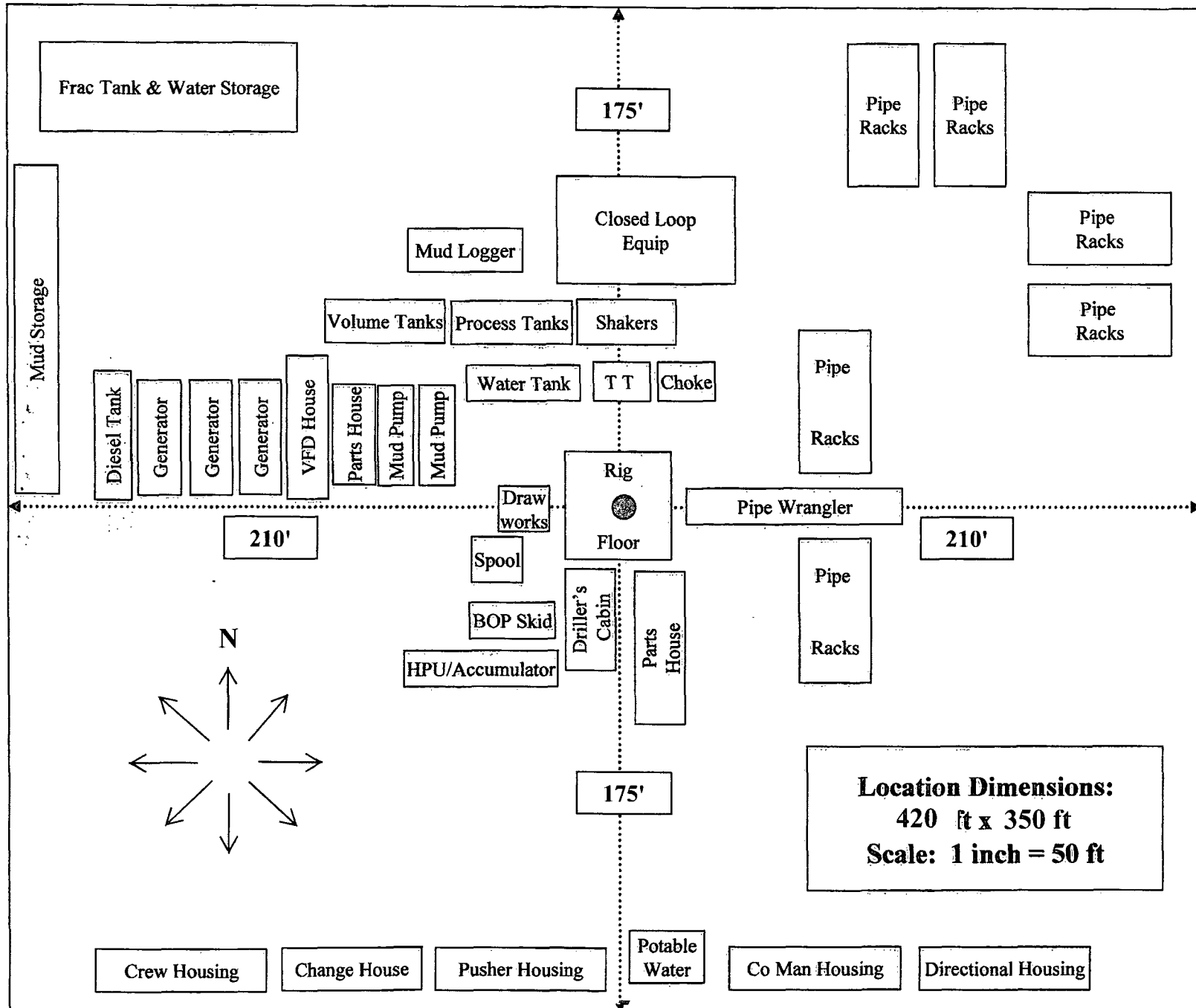
A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

H&P Flex Rig Location Layout

Cerf 10 Fed 5H





**Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015**

Hydrogen Sulfide (H₂S) Contingency Plan

For

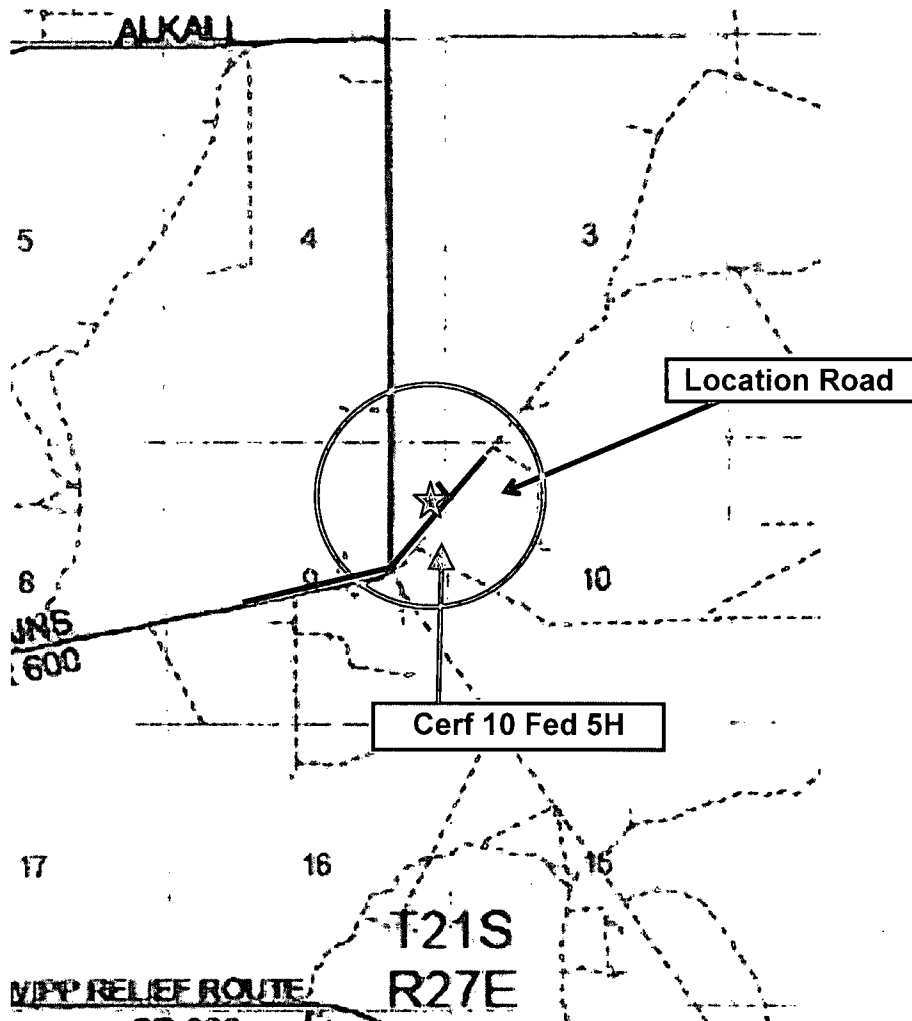
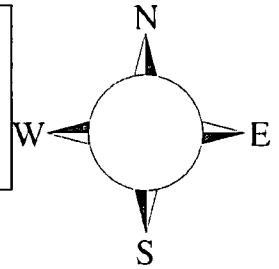
Cerf 10 Fed 5H

**Sec-9, T-21S R-27E
855' FNL & 105 FEL
LAT. = 32.4995676°N (NAD83)
LONG = 104.1866099°W**

Eddy County NM

Cerf 10 Fed 5H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm H₂S = 3000' (Radius of Exposure)
100 ppm H₂S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road, West then Northwest on lease road. Crews should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'
100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H₂S monitors and air packs in order to control the release.**
- **Use the “buddy system” to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
 - **Detection of H₂S, and**
 - **Measures for protection against the gas,**
 - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – (with remotely operated choke)
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

- A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. H₂S detection and monitoring equipment:

- A. Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S levels of 20 PPM are reached. These units are usually capable of detecting SO₂, which is a byproduct of burning H₂S.

4. Visual warning systems:

Controlled
Drilling
Operations Plan

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

5. Mud program:

- A. The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

7. Communication:

- A. Radio communications in company vehicles including cellular telephones and 2-way radio
- B. Land line (telephone) communications at Office

8. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

<u>Artesia (575)</u>	<u>Cellular</u>	<u>Office</u>	<u>Home</u>
Foreman – Robert Bell.....	748-7448	748-0178	746-2991
Asst. Foreman –Tommy Polly.....	748-5290	748-0165	748-2846
Don Mayberry	748-5235	748-0164	746-4945
Montral Walker	390-5182	748-0193	(936) 414-6246
Engineer – Marcos Ortiz.....	(405) 317-0666....	(405) 552-8152	(405) 381-4350

Agency Call List

<u>Lea</u>	<u>Hobbs</u>
<u>County</u>	Lea County Communication Authority
<u>(575)</u>	State Police
	City Police
	Sheriff's Office
	Ambulance.....
	Fire Department.....
	LEPC (Local Emergency Planning Committee).....
	NMOCD
	US Bureau of Land Management.....

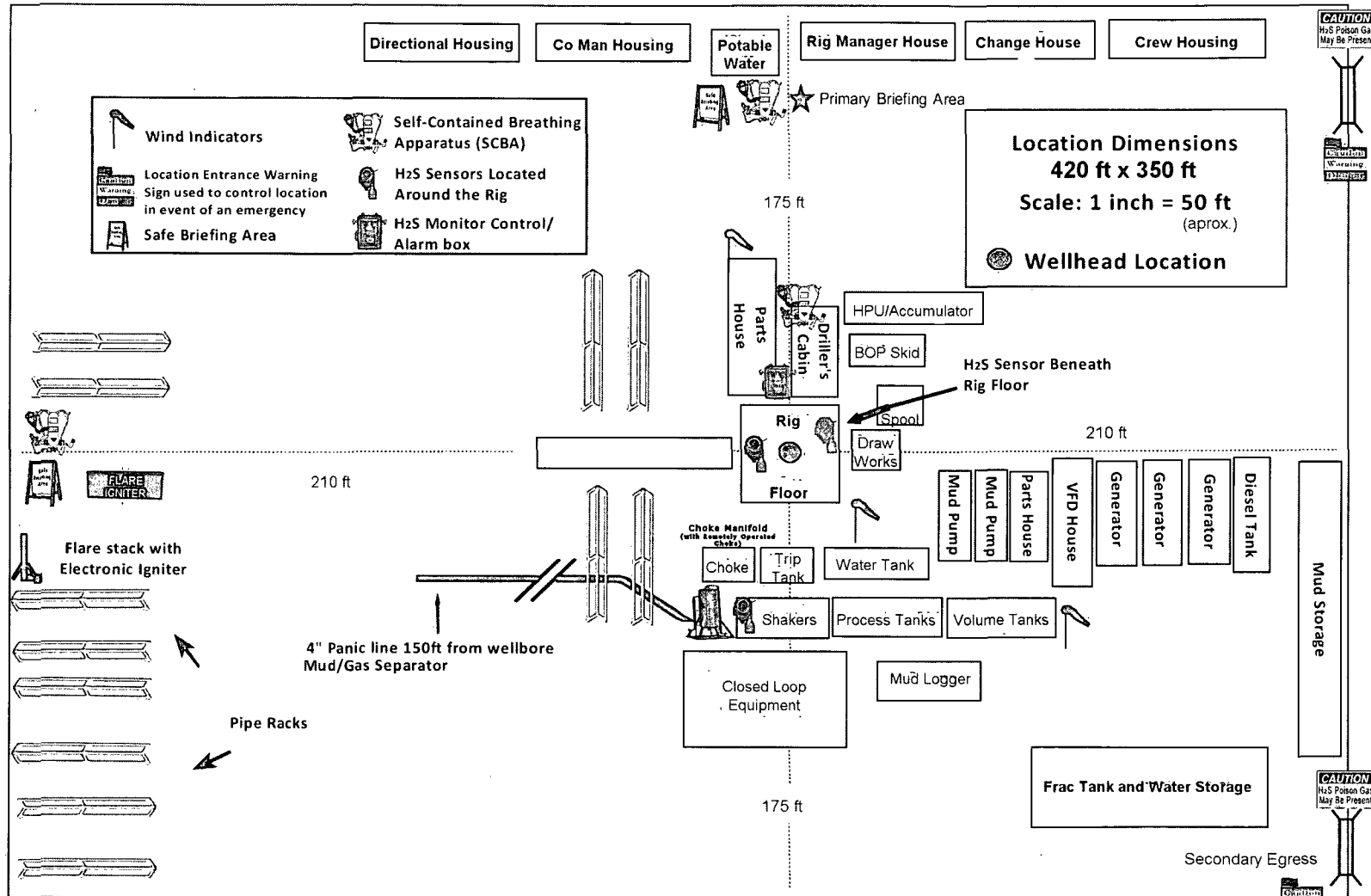
<u>Eddy</u>	<u>Carlsbad</u>
<u>County</u>	State Police
<u>(575)</u>	City Police
	Sheriff's Office
	Ambulance
	Fire Department.....
	LEPC (Local Emergency Planning Committee).....
	US Bureau of Land Management.....
	NM Emergency Response Commission (Santa Fe)
	24 HR
	National Emergency Response Center (Washington, DC)

Emergency Services

	Boots & Coots IWC
	Cudd Pressure Control.....
	Halliburton
	B. J. Services.....
<i>Give</i>	Native Air – Emergency Helicopter – Hobbs.....
<i>GPS</i>	Flight For Life - Lubbock, TX
<i>position:</i>	Aerocare - Lubbock, TX
	Med Flight Air Amb - Albuquerque, NM
	Lifeguard Air Med Svc. Albuquerque, NM

Prepared in conjunction with
Dave Small





Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location


devon

Proposed Interim Site Reclamation

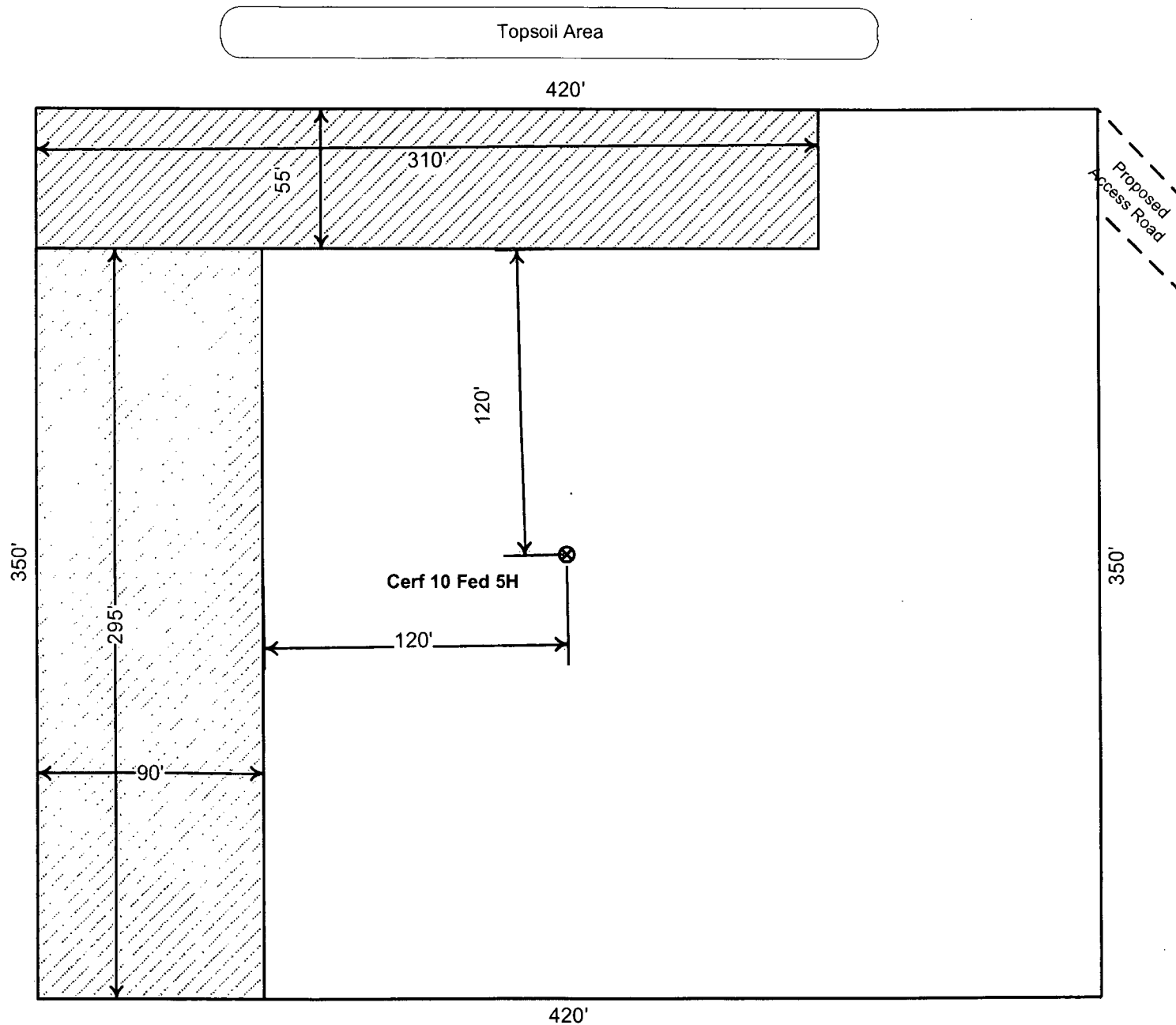
Devon Energy Production Co.
Cert 10 Fed 5H
855' FNL & 105' FEL
Sec. 9-T21S-R27E
Eddy County, NM



Proposed
Reclamation
Area



Scale: 1in = 60ft.



REVISED SURFACE USE PLAN

Devon Energy Production Company, L.P.

Cerf 10 Fed 5H

1. Existing Roads:

- a. The well site and elevation plat for the proposed well are reflected on the "Site Map". The well was staked by Madron Surveying, Inc.
- b. All roads into the location are depicted on the "Location Verification Map". The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.
- c. Directions to Location: From the intersection of Illinois Camp Road (CR 206) and Rains Road (CR 600) go east on Rains Road past Rambo Booster Sta. 2.2 miles to road intersection on caliche road. Go east on caliche road, road bends northeast 0.25 miles, site is on left. West of existing pad for Cerf 10 Fed 3H and Cerf 10 Fed Com 4H.

2. New or Reconstructed Access Roads:

- a. No access road will be constructed or reconstructed. Only existing roads will be utilized.
- b. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. Location of Existing Wells:

The attached "One Mile Radius Map" shows all existing and proposed wells within a one-mile radius of the proposed location.

4. Location of Existing and/or Proposed Production Facilities:

- a. In the event the well is found productive, a tank battery would be utilized and the necessary production will be installed at the well site. The tank battery would be located at Sec. 9, T21S, R27E. Flow lines will be set alongside of the access road where applicable. When said flow lines are needed, a plat and a sundry notice will be filed with your office.
- b. See interim reclamation diagram.
- c. If necessary, the well will be operated by means of an electric prime mover. Electric power poles will be set alongside of the access road, where applicable. If said power poles are needed, a plat and a sundry notice will be filed with your office.
- d. If the well is productive, rehabilitation plans are as follows:
 - i. A closed loop system will be utilized.
 - ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

5. Location and Types of Water Supply:

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads described and depicted on the "Vicinity Map". On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

6. Construction Materials:

Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means caliche will be obtained from the actual well site. Actual amounts will vary for each pad. The procedure below has been approved by BLM personnel:

- a. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
- b. Subsoil is removed and stockpiled within the surveyed well pad.
- c. When caliche is found, material will be stock piled within the pad site to build the location and road.
- d. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- e. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced.
- f. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.

7. Methods of Handling Waste Material:

- a. Drill cuttings will be safely contained in a closed loop system and disposed of properly at a NMOCD approved disposal site.
- b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
- c. The supplier will pick up salts remaining after completion of well, including broken sacks.

- d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
 - e. Remaining drilling fluids will be sent to a closed loop system. Water produced during completion will be put into a closed loop system. Oil and condensate produced will be put into a storage tank and sold.
 - f. Disposal of fluids to be transported by the following companies:
 - i. American Production Service Inc, Odessa TX
 - ii. Gandy Corporation, Lovington NM
 - iii. I & W Inc, Loco Hill NM
 - iv. Jims Water Service of Co Inc, Denver CO
8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.
9. **Well Site Layout**
 - a. The Rig Location Layout attachment shows the proposed well site layout and pad dimensions.
 - b. The Rig Location Layout attachment proposes location of sump pits and living facilities.
 - c. Mud pits in the active circulating system will be steel pits.
 - d. A closed loop system will be utilized.
 - e. If a pit or closed loop system is utilized, Devon will provide a copy of the Design Plan to the BLM.
10. **Plans for Surface Reclamation:**
 - a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
 - b. The location and road will be rehabilitated as recommended by the BLM.
 - c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured; as close as possible, to match the original topography.
 - d. All disturbed areas not needed for active support of production operations will undergo interim reclamation. The portions of the cleared well site not needed for operational and safety purposes will be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Topsoil will be respread over areas not needed for all-weather operations.

11. Surface Ownership

- a. The surface is owned by the US Government and is administered by the Bureau of Land Management. A ROW application has been submitted to the BLM. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
- b. The proposed road routes and the surface location will be restored as directed by the BLM.

12. Other Information:

- a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sage bush, yucca and miscellaneous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
- b. There is no permanent or live water in the general proximity of the location.
- c. There are no dwellings within 2 miles of location.
- d. A Cultural Resources Examination will be completed by Southern New Mexico Archeological Service, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

13. Bond Coverage:

Bond Coverage is Nationwide; Bond # is CO-1104 & NMB-000801.

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

John Parks - Operations Engineer
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 228-5302 (office)
(405) 394-9224 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production, L.P.
LEASE NO.:	NMNM-14768
WELL NAME & NO.:	Cerf 10 Fed 5H
SURFACE HOLE FOOTAGE:	0855' FNL & 0105' FEL
BOTTOM HOLE FOOTAGE	0700' FNL & 0330' FEL Sec. 10, T. 21 S., R 27 E.
LOCATION:	Section 09, T. 21 S., R 27 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Cement Requirements
 - H2S Requirements
 - High Cave/Karst
 - Capitan Reef
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave and Karst

- ** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

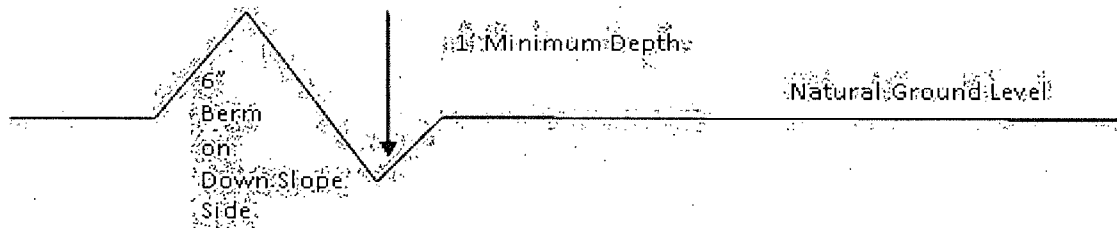
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out sloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

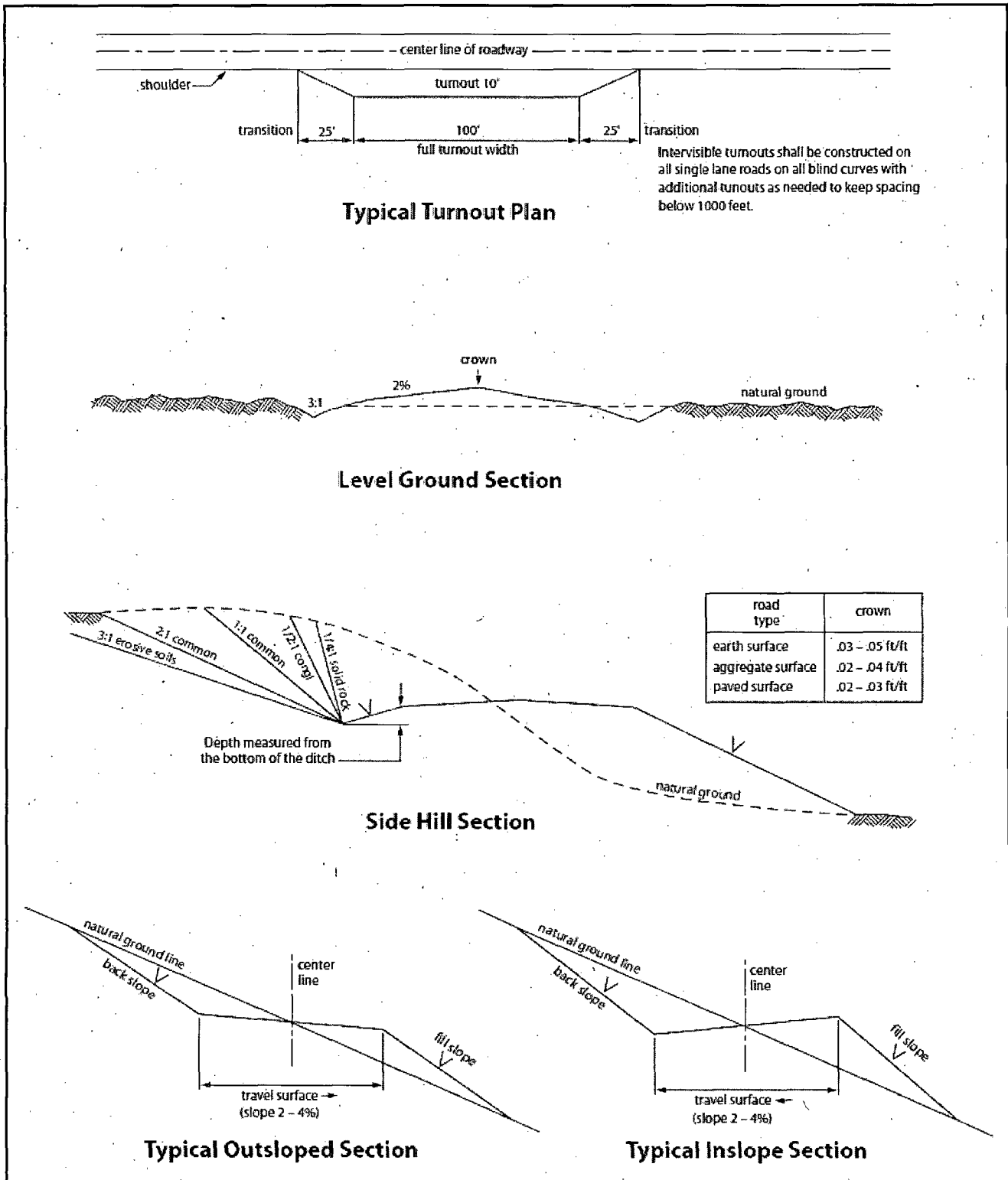


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

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

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size 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.

High Cave/Karst

Capitan Reef

Possibility of water flows in the Artesia Group, Salado, and Queen.

Possibility of lost circulation in the Artesia Group, Salado, Rustler, Delaware, and Capitan Reef.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

1. The 20 inch surface casing shall be set at approximately 175 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 13-3/8 inch 1st 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 cave/karst.**
3. The minimum required fill of cement behind the 9-5/8 inch 2nd intermediate casing, which shall be set at approximately 2750' (in the base of the Capitan Reef) is:

Option #1:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

Option #2:

Operator has proposed DV tool at depth of 800', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Excess calculates to 10% - Additional cement may be required.**

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

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

Option #1:

- ☒ Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 822'). Operator shall provide method of verification.

Option #2:

Operator has proposed DV tool at depth of 5000', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage. **Excess calculates to negative 4% - Additional cement will be required.**

b. Second stage above DV tool:

- ☒ Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 822'). Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8 1st** intermediate casing shoe shall be **3000 (3M)** psi.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. Buried Pipeline

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting

Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:
- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
 - Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
 - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- | | |
|--|--|
| ☐ seed mixture 1 | ☐ seed mixture 3 |
| ☒ seed mixture 2 | ☐ seed mixture 4 |
| ☐ seed mixture 2/LPC | ☐ Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

(Insert Seed Mixture Here)
Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed