

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018Carlsbad Field Office
Lease Serial No. NMNM114992
Indian Allotment or Tribe Name**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		7. If Unit or CA/Agreement, Name and/or No.
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY Contact: REBECCA DEAL Email: Rebecca.Deal@devn.com		8. Well Name and No. <u>Jayhawk 7-6 Fed 82H</u> FIGHTING OKRA 18-19 FED 2H
3a. Address 333 WEST SHERIDAN AVENUE OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-228-8429	9. API Well No. <u>30-025-43991</u>
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 18 T26S R34E NENW 330FNL 1665FWL 32.049789 N Lat, 103.512161 W Lon		10. Field and Pool or Exploratory Area WC025G09S253336D-UPPER WC
		11. County or Parish, State LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon respectfully requests the following changes to the original APD:

Name change from Jayhawk 7-6 Fed 82H to Fighting Okra 18-19 Fed 2H.

BHL location change from 330 FNL & 1284 FWL, Sec. 6-26S-34E to 330 FSL & 960 FWL, Sec. 19-26S-34E

See attached revised C-102, Drilling and Directional Plan

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct. Electronic Submission #392456 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION COMPANY, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 11/07/2017 (18PP0217SE)	
Name (Printed/Typed) REBECCA DEAL	Title REGULATORY COMPLIANCE PROFESSI
Signature (Electronic Submission)	Date 10/19/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>MUSTAFA HAQUE</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>01/02/2018</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Hobbs

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.

(Instructions on page 2)

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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 30-025-43991	² Pool Code 98094	³ Pool Name WC-025 G-09 S253336D; UPPER WOLFCAMP
⁴ Property Code 319566 315691	⁵ Property Name FIGHTING OKRA 18-19 FED	
⁶ Well Number 2H	⁷ Elevation 3371.0	
⁸ GRID No. 6137	⁹ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	

¹⁰ Surface Location

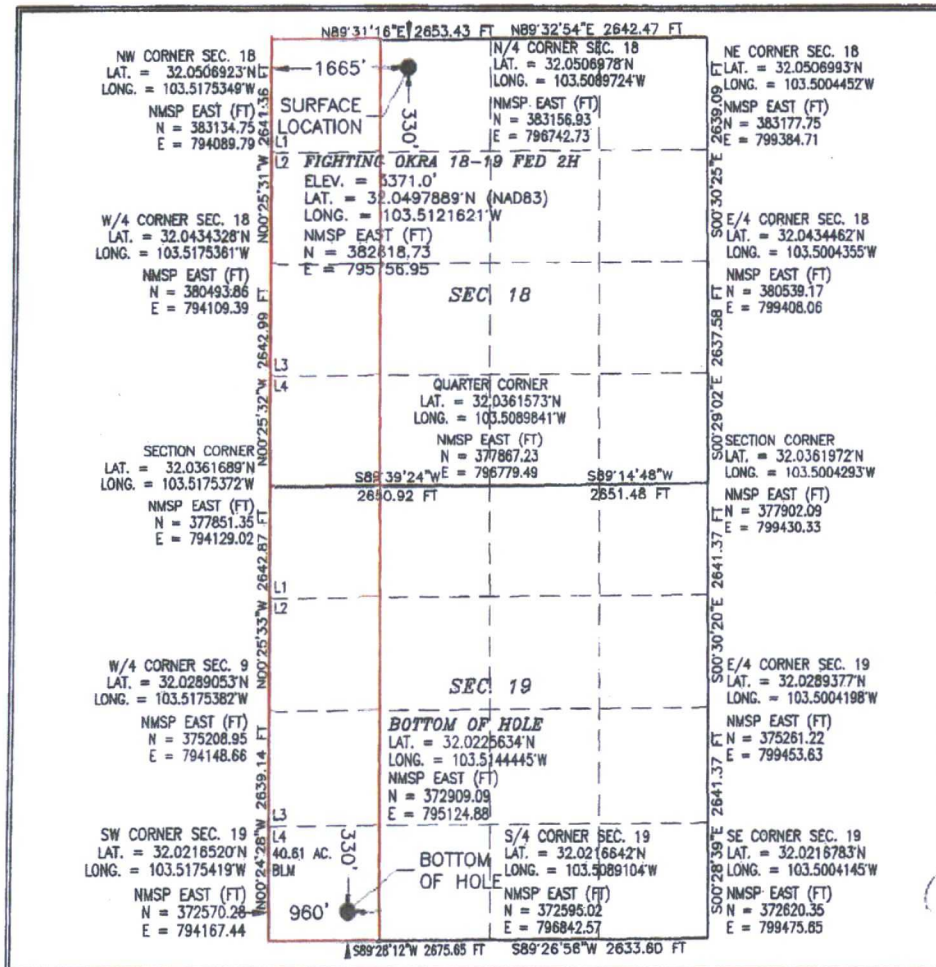
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	18	26 S	34 E		330	NORTH	1665	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
X 10	19	26 S	34 E		330	SOUTH	960	WEST	LEA

¹² Dedicated Acres 323.96	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.



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.

Signature: *Rebecca Deal* Date: **9/15/2017**

Rebecca Deal, Regulatory Analyst

Printed Name

rebecca.deal@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.

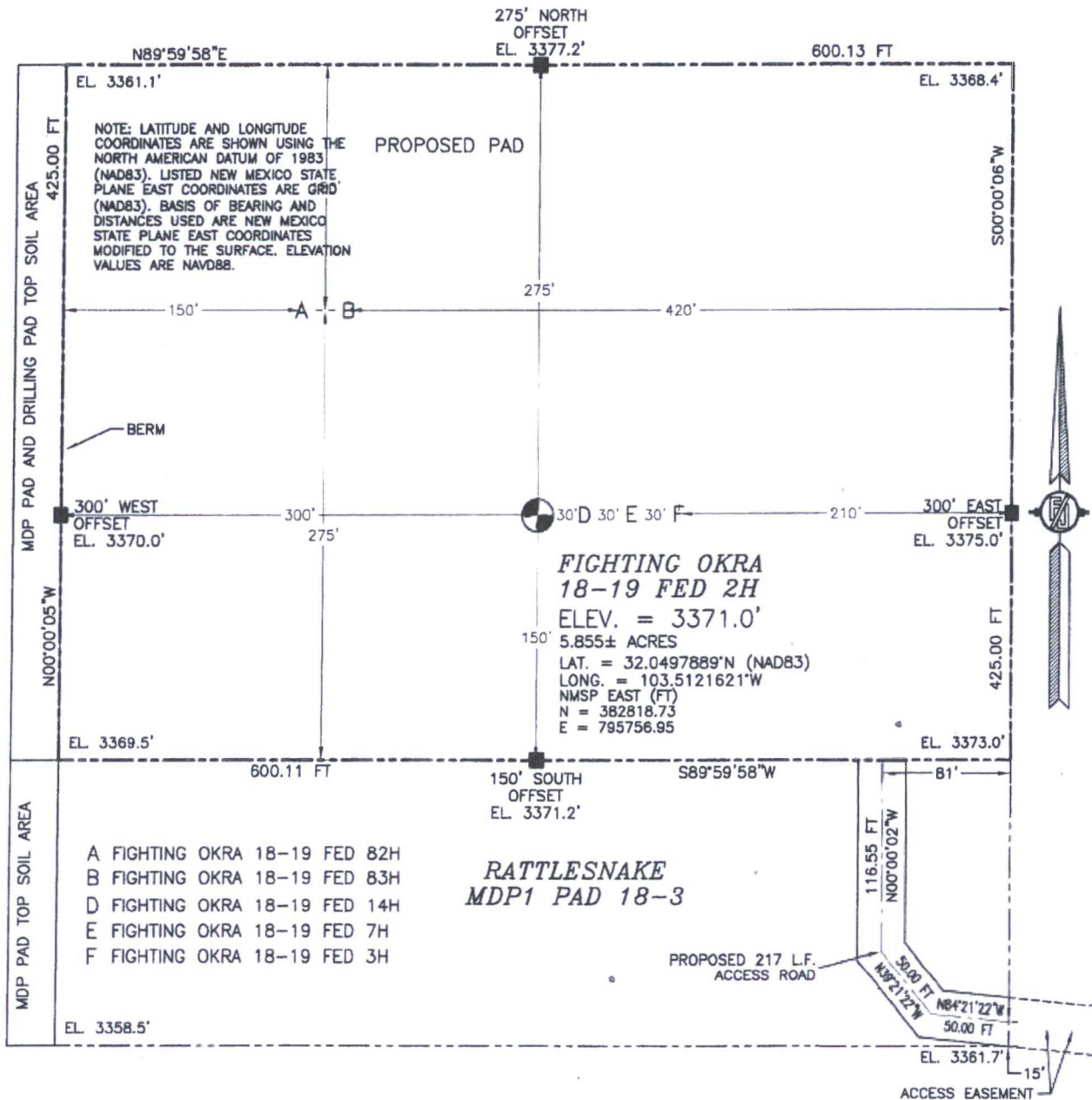
AUGUST 30, 2017

Date of Survey

Signature and Seal of Professional Surveyor
Certificate Number: **TRICKON F. JARAMILLO, PLS 12797**

SURVEY NO. 4811D

SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP



RATTLESNAKE
MDP1 PAD 18-3

FIGHTING OKRA
18-19 FED 2H
ELEV. = 3371.0'

5.855± ACRES
LAT. = 32.0497889°N (NAD83)
LONG. = 103.5121621°W
NMSP EAST (FT)
N = 382818.73
E = 795756.95

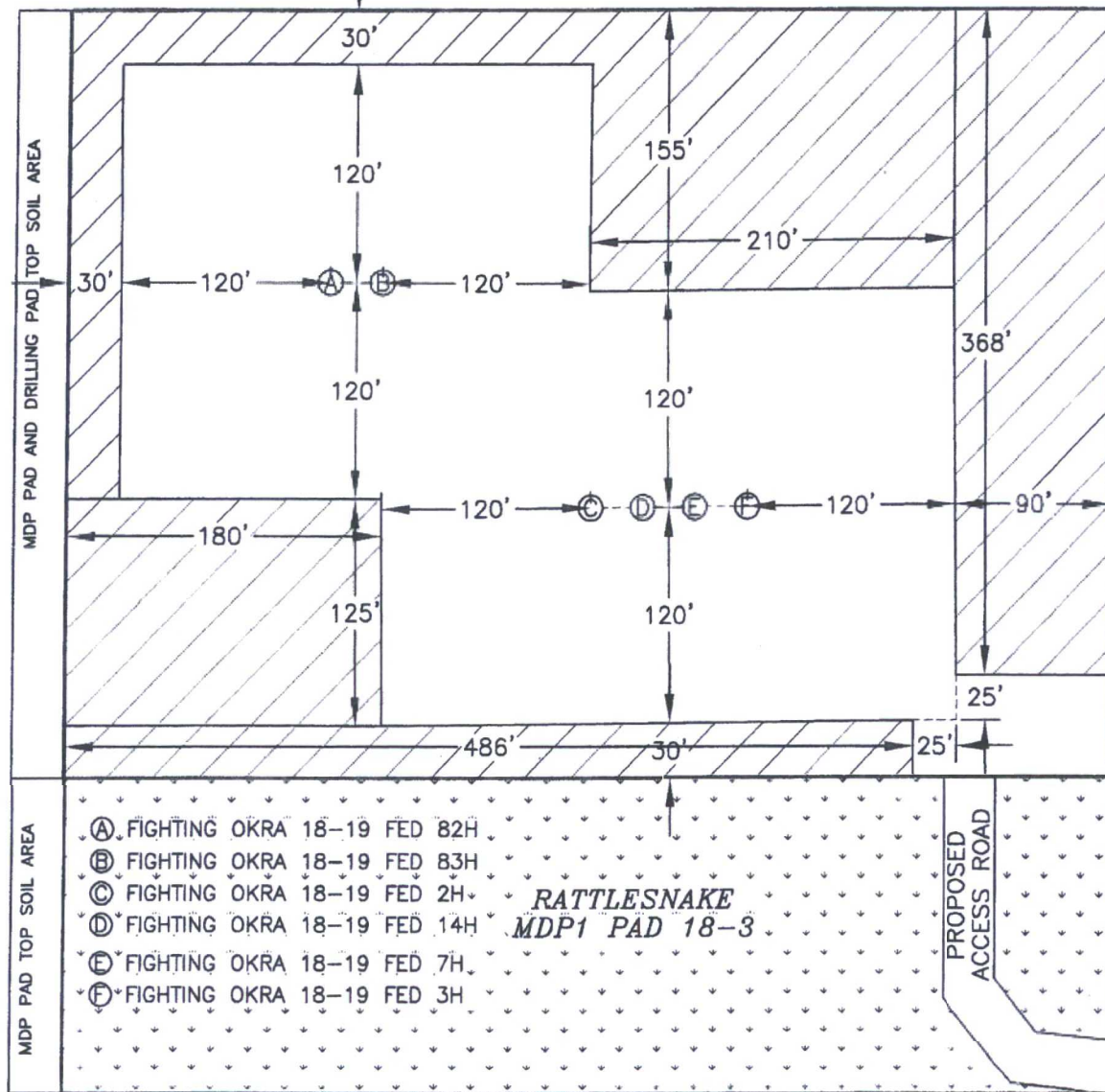
DEVON ENERGY PRODUCTION COMPANY, L.P.
FIGHTING OKRA 18-19 FED 2H
LOCATED 330 FT. FROM THE NORTH LINE
AND 1665 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2017

SURVEY NO. 4811D

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

SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



DENOTES INTERIM PAD RECLAMATION AREA

DENOTES GRADING SITE RECLAMATION AREA

010 50 100 200
SCALE 1" = 100'

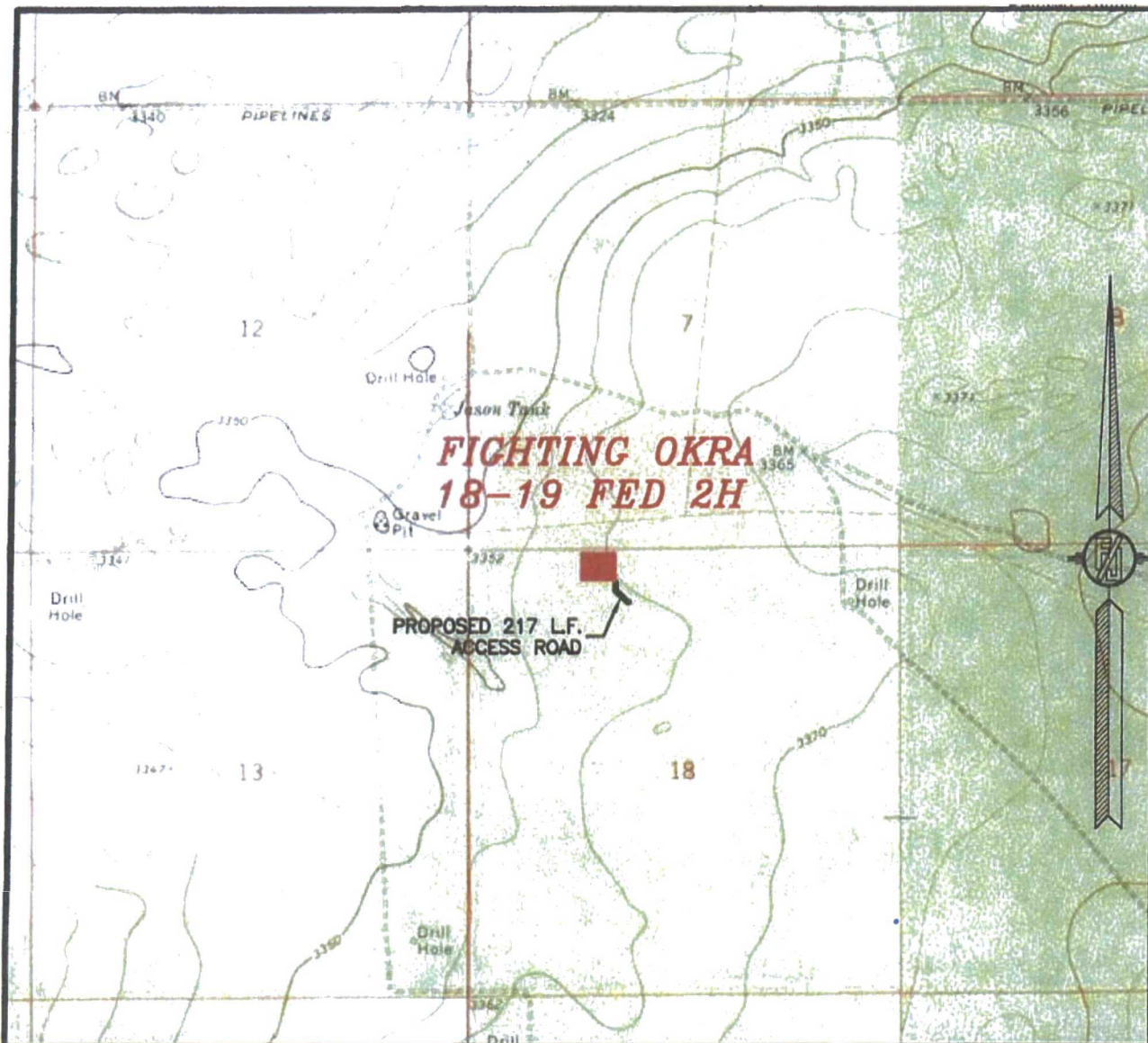
3.047± ACRES INTERIM PAD RECLAMATION AREA
2.264± ACRES GRADING SITE RECLAMATION AREA
2.958± ACRES NON-RECLAIMED AREA
8.269± ACRES RATTLESNAKE MDP1 PAD 18-3

DEVON ENERGY PRODUCTION COMPANY, L.P.
FIGHTING OKRA 18-19 FED 2H
LOCATED 330 FT. FROM THE NORTH LINE
AND 1665 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2017 SURVEY NO. 4811D

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

SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS EAST

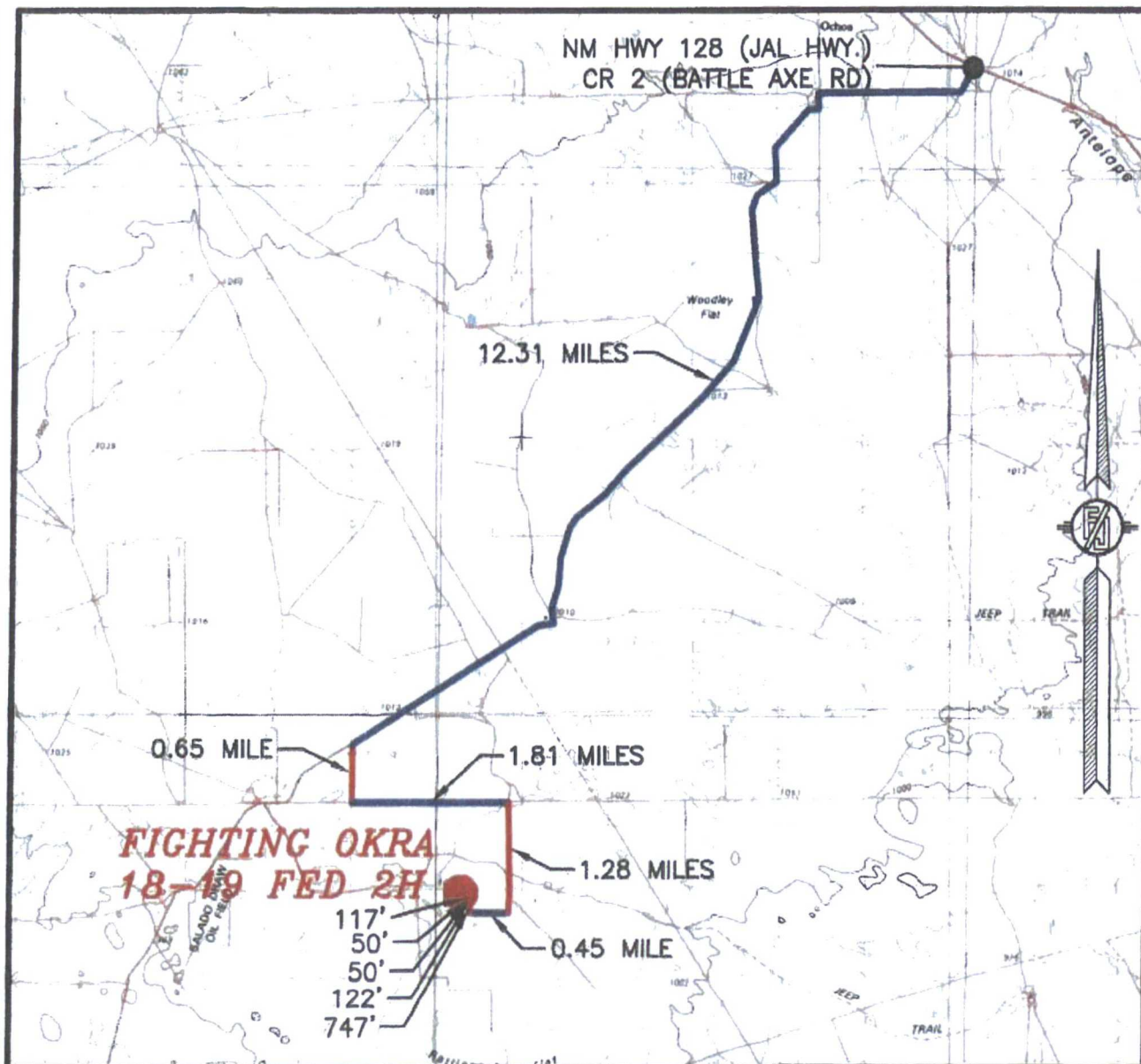
NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
FIGHTING OKRA 18-19 FED 2H
LOCATED 330 FT. FROM THE NORTH LINE
AND 1665 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2017

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341 SURVEY NO. 4811D

SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF NM HWY 128 (JAL HWY) AND CR 2 (BATTLE AXE ROAD) GO SOUTH ON BATTLE AXE ROAD 12.31 MILES, TURN LEFT ON A CALICHE LEASE ROAD GO SOUTH 0.65 MILE TO PIPELINE ROAD TURN LEFT GO EAST 1.81 MILES TURN RIGHT AT CALICHE LEASE ROAD GO SOUTH 1.28 MILES TO A PROPOSED ROAD SURVEY, FOLLOW ROAD SURVEY WEST 0.45 MILE, THEN NORTH 747', THEN WEST 122' TO THE SOUTHWEST CORNER OF RATTLESNAKE MDP1 PAD 18-3, THEN FOLLOW ROAD FLAGS WEST 50' THEN NORTHWEST 50' THEN 117' NORTH TO SOUTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

FIGHTING OKRA 18-19 FED 2H

LOCATED 330 FT. FROM THE NORTH LINE

AND 1665 FT. FROM THE WEST LINE OF

SECTION 18, TOWNSHIP 26 SOUTH,

RANGE 34 EAST, N.M.P.M.

LEA COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2017

SURVEY NO. 4811D

MADRON SURVEYING, INC. 301 SOUTH CANAL

(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2015

DEVON ENERGY PRODUCTION COMPANY, L.P.
FIGHTING OKRA 18-19 FED 2H
LOCATED 330 FT. FROM THE NORTH LINE
AND 1665 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2017

SURVEY NO. 4811D

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

SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOV. 2015

DEVON ENERGY PRODUCTION COMPANY, L.P.
FIGHTING OKRA 18-19 FED 2H
LOCATED 330 FT. FROM THE NORTH LINE
AND 1665 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

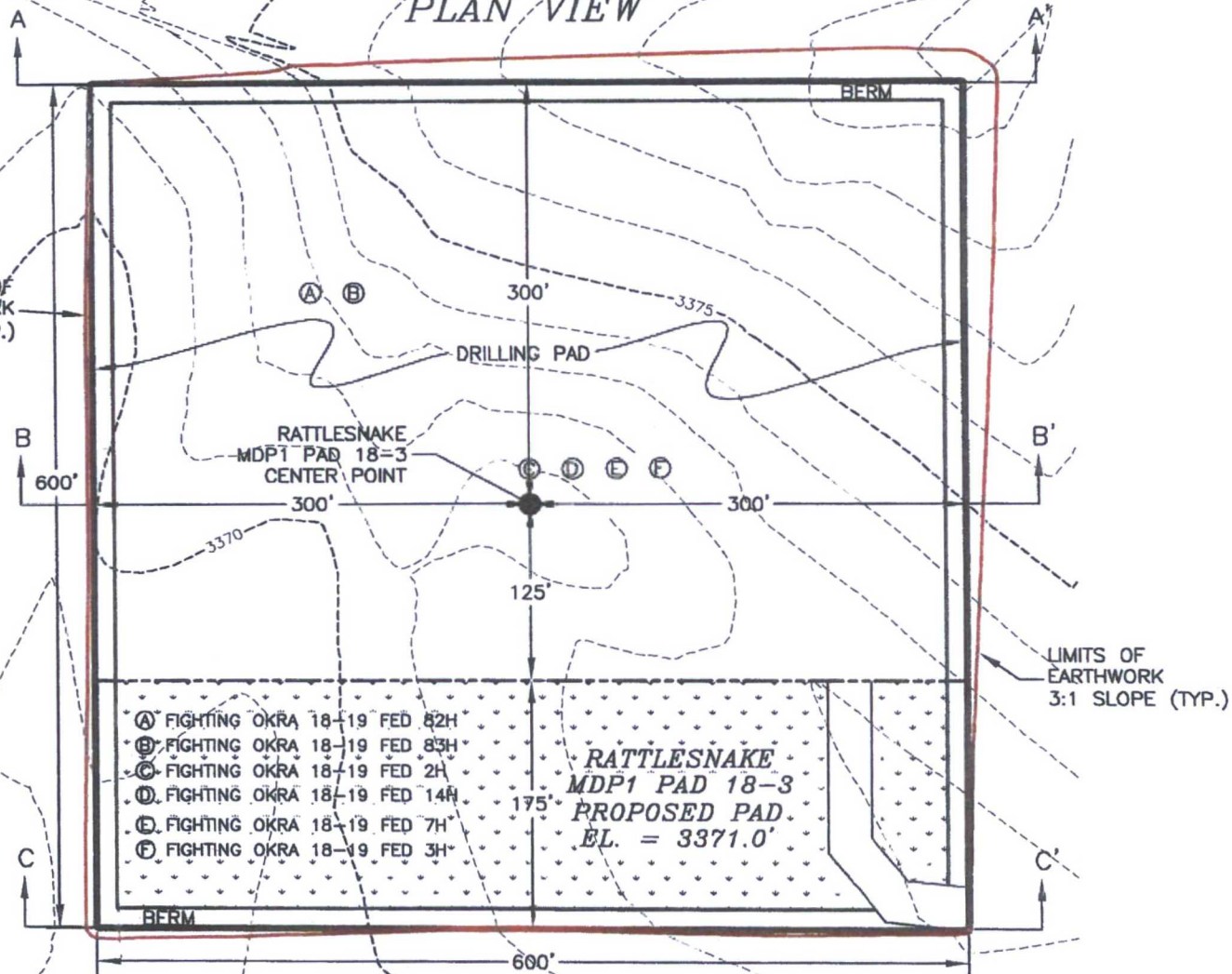
AUGUST 30, 2017

SURVEY NO. 4811D

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

PLAN VIEW

LIMITS OF
EARTHWORK
3:1 SLOPE (TYP.)



0 12 60 120 240
SCALE 1" = 120'

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR FIGHTING OKRA 18-19 FED 2H
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES RATTLESNAKE MDP1 PAD 18-3		
CUT	FILL	NET
26793 CU. YD	4287 CU. YD	22506 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

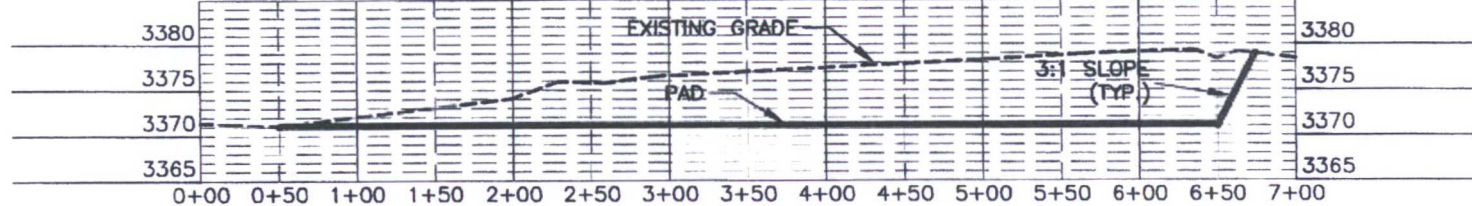
AUGUST 30, 2017

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

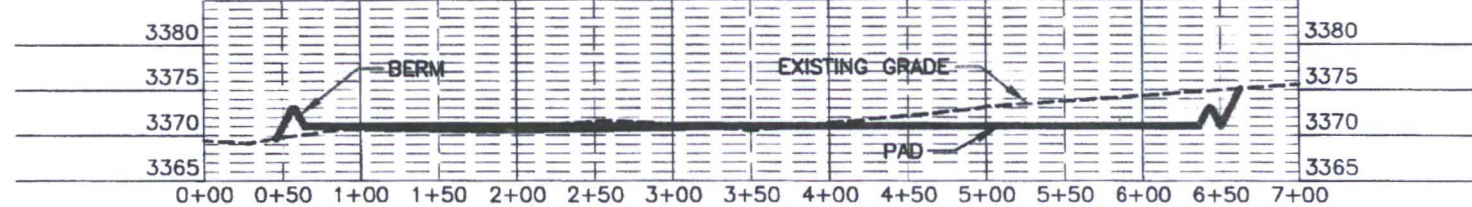
SHEET 1-2
SURVEY NO. 4811D

CROSS-SECTIONS

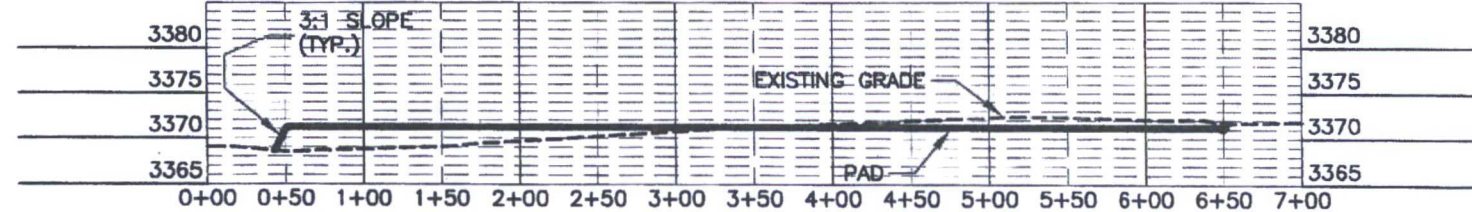
SECTION A-A'



SECTION B-B'



SECTION C-C'



0 12 60 120 240
SCALE 1" = 120' - 1" = 20' VER

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
FOR FIGHTING OKRA 18-19 FED 2H
SECTION 18, TOWNSHIP 26 SOUTH,
RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

EARTHWORK QUANTITIES RATTLESNAKE MDP1 PAD 18-3		
CUT	FILL	NET
26793 CU. YD	4287 CU. YD	22506 CU. YD (CUT)
EARTHWORK QUANTITIES ARE ESTIMATED		

AUGUST 30, 2017

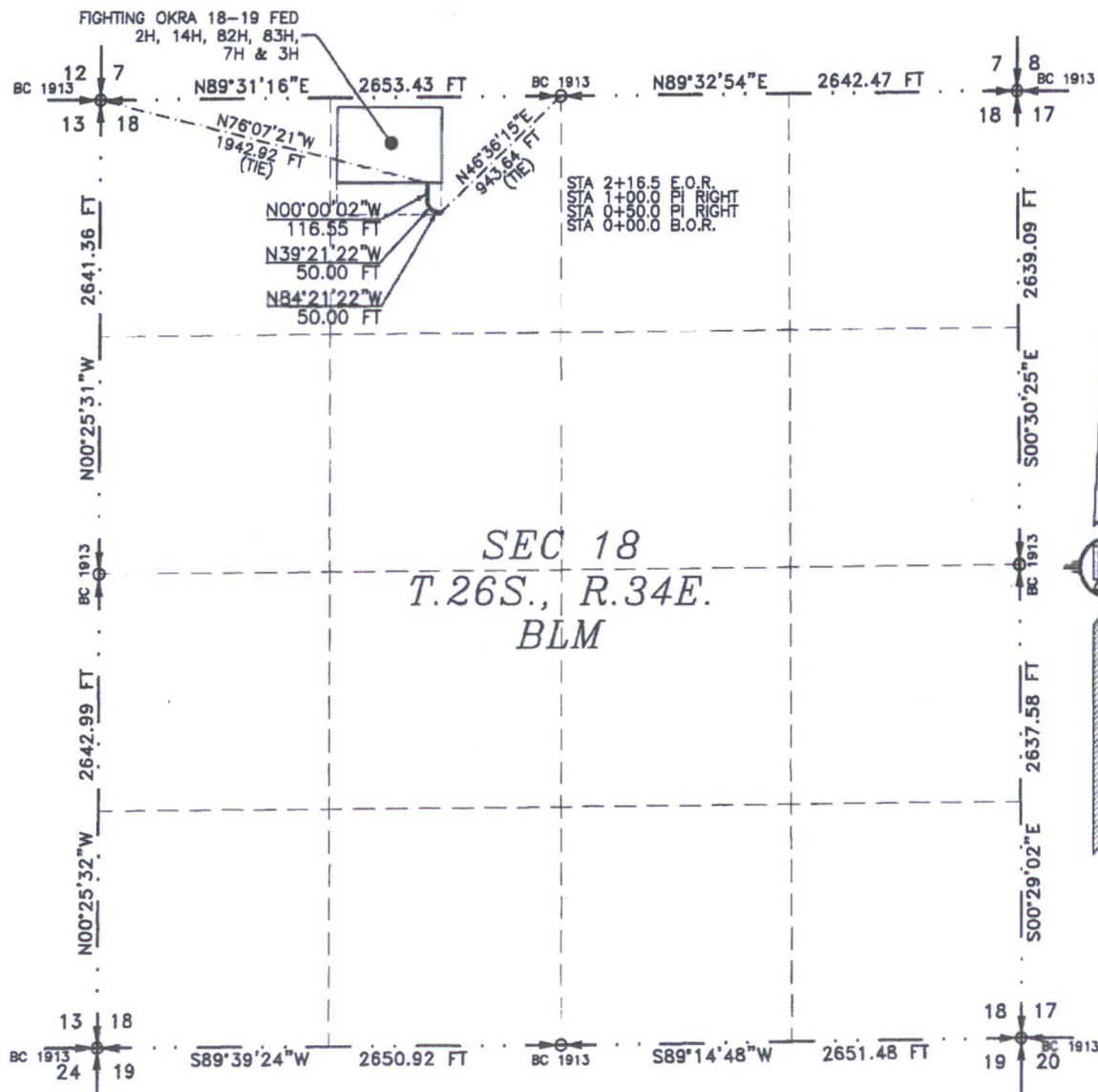
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 2-2
SURVEY NO. 4811D

ACCESS ROAD PLAT

ACCESS ROAD FOR FIGHTING OKRA 18-19 FED 2H, 14H, 82H, 83H, 7H & 3H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AUGUST 30, 2017



SEE NEXT SHEET (2-2) FOR DESCRIPTION

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 30 DAY OF AUGUST 2017.

FILMON F. JARAMILLO, PLS. 12797
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 4811D

GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR FIGHTING OKRA 18-19 FED 2H, 14H, 82H, 83H, 7H & 3H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AUGUST 30, 2017

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS N46°36'15"E, A DISTANCE OF 943.64 FEET;
THENCE N84°21'22"W A DISTANCE OF 50.00 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N39°21'22"W A DISTANCE OF 50.00 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°00'02"W A DISTANCE OF 116.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 18, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M. BEARS N76°07'21"W, A DISTANCE OF 1942.92 FEET;

SAID STRIP OF LAND BEING 216.55 FEET OR 13.12 RODS IN LENGTH, CONTAINING 0.149 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4 216.55 L.F. 13.12 RODS ,0.149 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 30 DAY OF AUGUST 2017.

FILIMON F. JARAMILLO PLS. 12797

301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 4811D

CARLSBAD, NEW MEXICO

Devon Energy, Fighting Okra 18-19 Fed 2H

1. Geologic Formations

TVD of target	12,644'	Pilot hole depth	N/A
MD at TD:	22,563'	Deepest expected fresh water:	794'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
RUSTLER	794		
TOP SALT	1149		
BASE OF SALT	5024		
DELAWARE	5279		
LOWER BRUSHY CANYON 8A	9339		
BONE SPRING LIME	9549		
FIRST BONE SPRING SAND	10444		
2ND BONE SPRING LIME	10674		
BONE SPRING 2ND	11039		
BONE SPRING 3RD	11499		
BONE SPRING 3RD	12119		
WOLFCAMP	12554		
WOLFCAMP	12754		

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

Devon Energy, Fighting Okra 18-19 Fed 2H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
14.75"	0	900'	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	9200'	7.625"	29.7	P110	BTC	1.125	1.25	1.6
8.75"	9200'	12,800'	7.625"	29.7	P110	Flushmax III	1.125	1.25	1.6
6.75"	0	12,600'	5.5"	20	P110	VamTop HT	1.125	1.25	1.6
6.75"	12,600'	22,563'	5.5"	20	P110	Vam SG	1.125	1.25	1.6

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

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

A variance is requested to wave the centralizer requirement for the 7-5/8" flush casing in the 8-3/4" hole and the 5-1/2" SF/Flush casing in the 6-3/4" hole.

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

Devon Energy, Fighting Okra 18-19 Fed 2H

If yes, are there three strings cemented to surface?	
--	--

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	Slurry Description
10-3/4" Surface	529	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
7-5/8" Int	311	9	13.5	3.27	Lead: Tuned Light® Cement
	430	14.5	5.31	1.2	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
7-5/8" Int Two Stage	122	10.9	20.6	3.31	1 st Stage Lead: (50:40:10) Class C: Silicalite: Enhancer 923 + 10% BWOC Bentonite + 0.05% BWOC SA-1015 + 0.3% BWOC HR-800 + 0.2% BWOC FE-2 + 0.125 lb/sk Pol-E-Flake + 0.5 lb/sk D-Air 5000
	430	14.5	5.31	1.2	1 st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	230	10.9	20.6	3.31	2 nd Stage Lead: (50:40:10) Class C: Silicalite: Enhancer 923 + 10% BWOC Bentonite + 0.05% BWOC SA-1015 + 0.3% BWOC HR-800 + 0.2% BWOC FE-2 + 0.125 lb/sk Pol-E-Flake + 0.5 lb/sk D-Air 5000
	30	14.8	6.32	1.33	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	1450	14.8	6.32	1.32	Class C Cement + 0.125 lbs/sack Poly-E-Flake
7-5/8" Intermediate Squeeze	84	9	13.5	3.27	Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake
	430	14.5	5.31	1.2	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Production	750	14.8	6.32	1.33	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

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

Devon Energy, Fighting Okra 18-19 Fed 2H

Casing String	TOC	% Excess
10-3/4" Surface	0'	50%
7-5/8" Intermediate	0'	30%
7-5/8" Intermediate Two Stage Option	1 st Stage = 4900' / 2 nd Stage = 0'	30%
5-1/2" Production Casing	12,600'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	--

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
9-7/8" & 8-3/4"	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
6-3/4"	13-5/8"	10M	Annular (5M)	X	70% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

Devon Energy, Fighting Okra 18-19 Fed 2H

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

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

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi. - Wellhead will be installed by wellhead representatives. - If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - Wellhead representative will install the test plug for the initial BOP test. - Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. - If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. - Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. - Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

Devon Energy, Fighting Okra 18-19 Fed 2H

After running the 10-3/4" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 7-5/8" intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 10M will be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP. Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1000' 900'	FW Gel	8.6-8.8	28-34	N/C
1000'	12,800'	OBM/Cut Brine	8.6-10	34-65	N/C - 6
12,800'	22,563'	Oil Based Mud	9.5-12	45-65	N/C - 6

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

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

Devon Energy, Fighting Okra 18-19 Fed 2H

	Coring? If yes, explain
--	-------------------------

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

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7200 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? Yes

1. In the event the spudder rig is unable to drill the surface holes the drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections with either OBM or cut brine and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Devon Energy, Fighting Okra 18-19 Fed 2H

Will be pre-setting casing? Yes

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill 14 3/4" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10-3/4" surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD ^{BLM} will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD ^{BLM} will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing. *The rig needs to move back in within 90 days of pre-setting surface casing.*

Attachments

☒ Directional Plan

☐ Other, describe

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Fighting Okra 18-19 Fed
Well: 2H
Wellbore: OH
Design: Plan #1

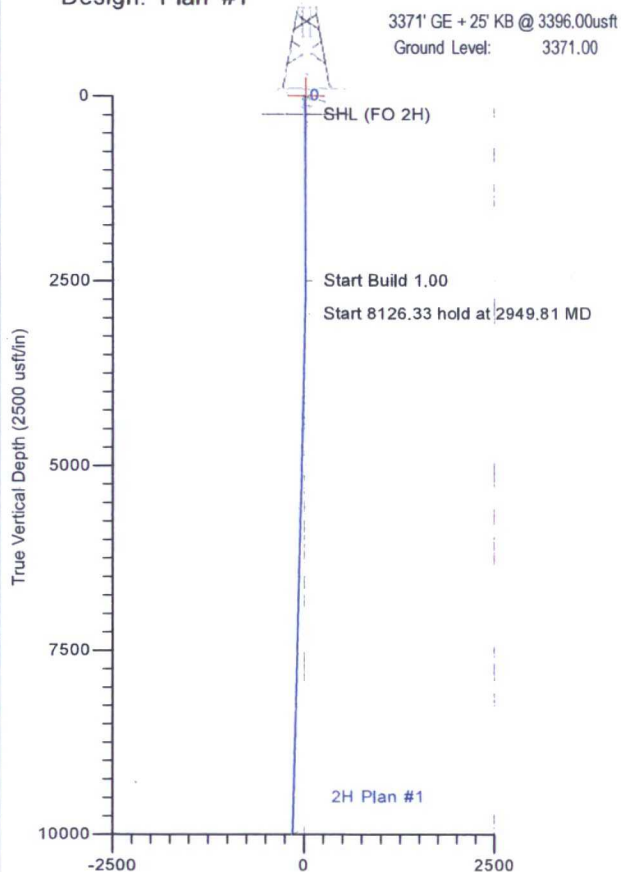


Azimuths to Grid North
True North: -0.44°
Magnetic North: 6.36°

Magnetic Field
Strength: 47891.0snT
Dip Angle: 59.78°
Date: 9/13/2017
Model: HDGM

PROJECT DETAILS: Lea County, NM (NAD-83)

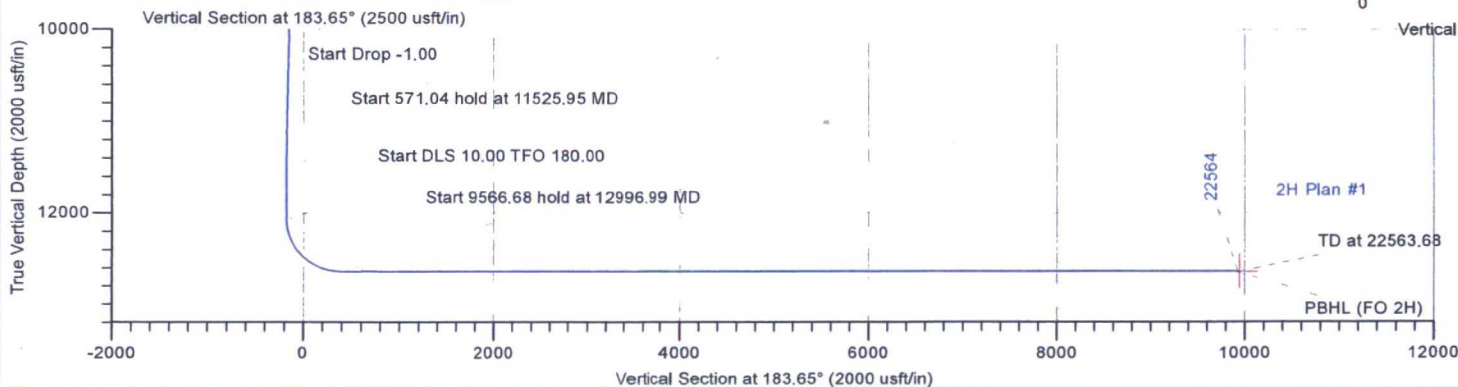
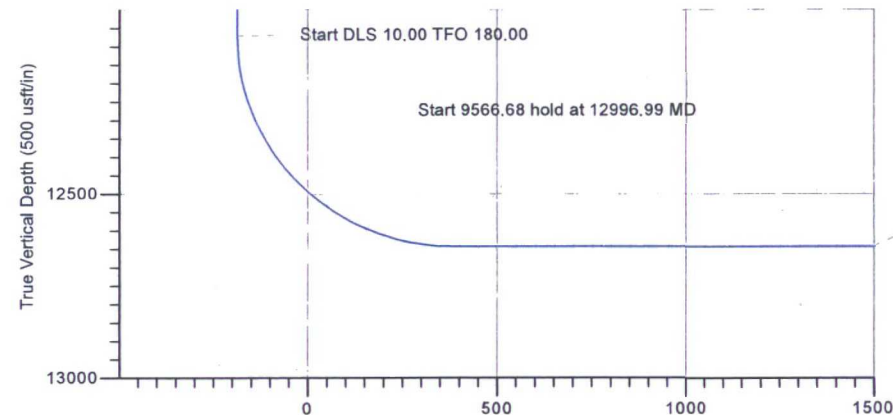
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00
2949.81	4.50	290.00	2949.35	6.03	-16.58	1.00	290.00	-4.97
11076.14	4.50	290.00	11050.65	223.97	-615.49	0.00	0.00	-184.33
11525.95	0.00	0.00	11500.00	230.00	-632.07	1.00	180.00	-189.30
12096.99	0.00	0.00	12071.04	230.00	-632.07	0.00	0.00	-189.30
12996.99	90.00	180.00	12644.00	-342.96	-632.07	10.00	180.00	382.50
22563.68	90.00	180.00	12644.00	-9909.64	-632.07	0.00	0.00	9929.78

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (FO 2H)	12644.00	-9909.64	-632.07	32° 1' 21.2281 N	103° 30' 52.0004 W
SHL (FO 2H)	0.00	0.00	0.00	32° 2' 59.2399 N	103° 30' 43.7837 W



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

Plan: Plan #1 (2H/OH)
Fighting Okra 18-19 Fed
Created By: Dustin Ault
Date: 11:51, September 13 2017
Approved: _____
Date: _____

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Fighting Okra 18-19 Fed
Well: 2H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.44°
Magnetic North: 6.36°

Magnetic Field
Strength: 47891.0snT
Dip Angle: 59.78°
Date: 9/13/2017
Model: HDGM



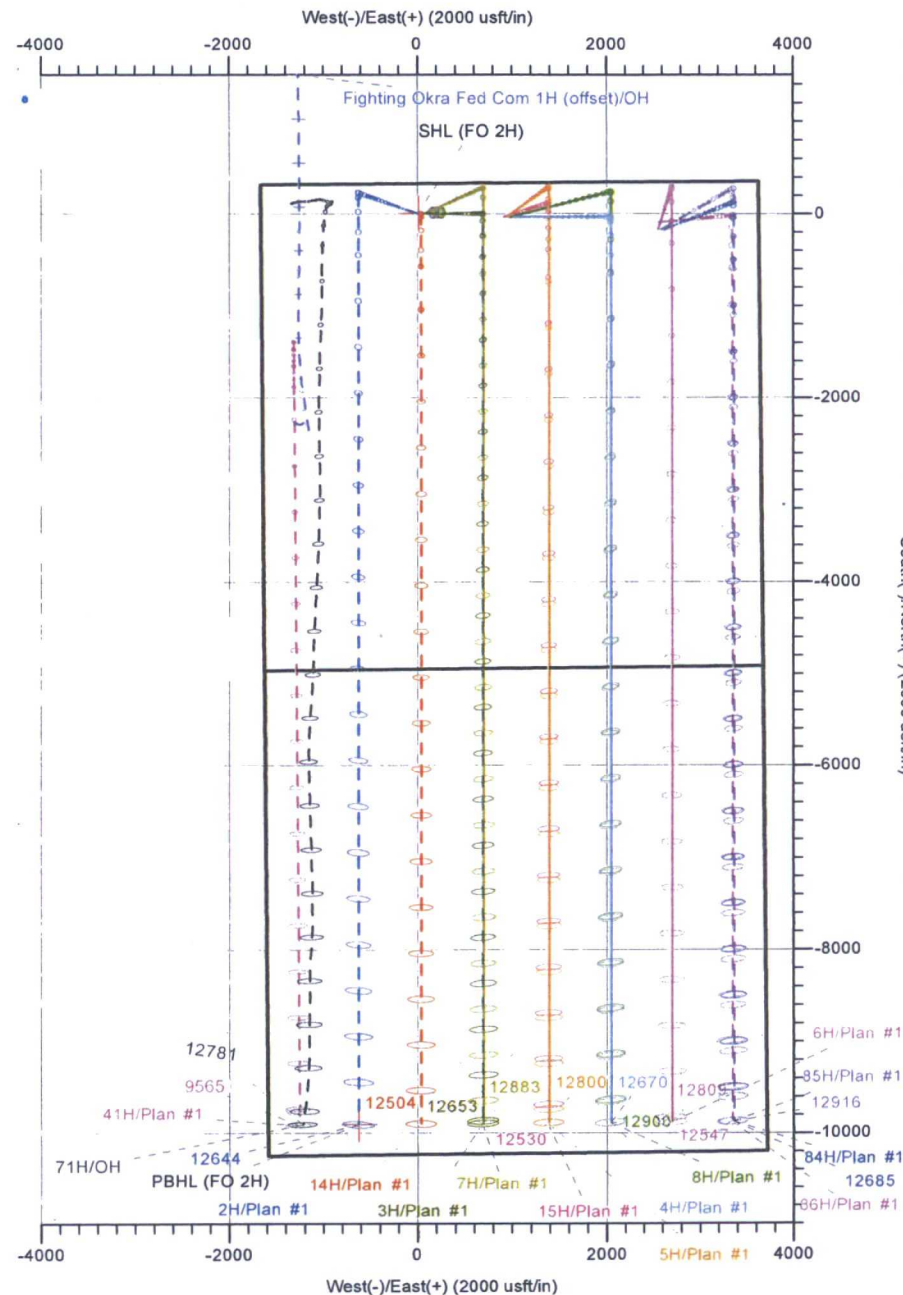
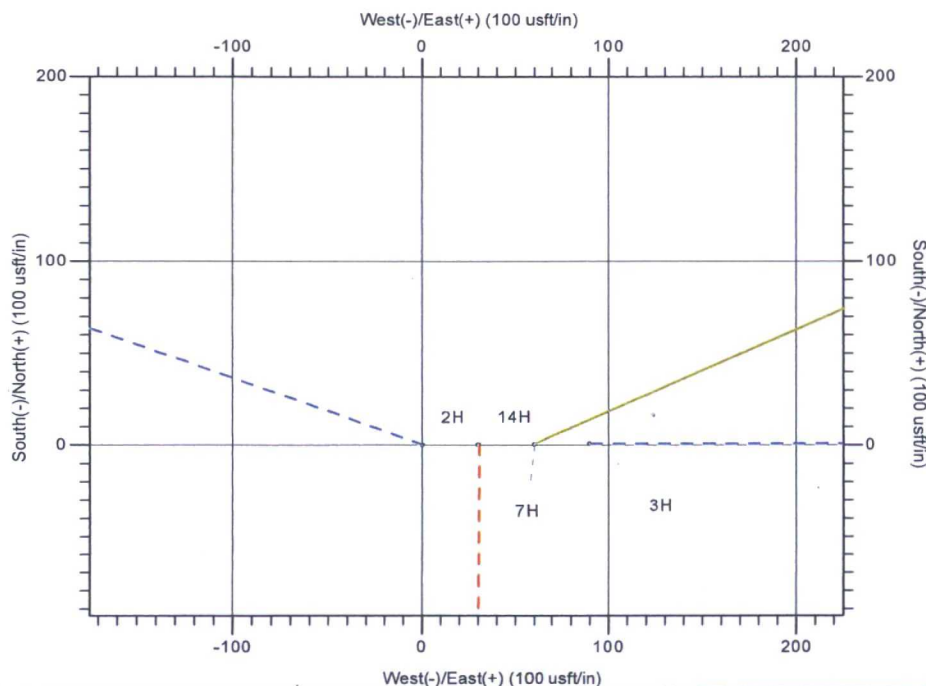
PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (FO 2H)	12644.00	-9909.64	-632.07	372909.09	795124.88	32° 1' 21.2281 N	103° 30' 52.0004 W
SHL (FO 2H)	0.00	0.00	0.00	382818.73	795756.95	32° 2' 59.2399 N	103° 30' 43.7837 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	
2949.81	4.50	290.00	2949.35	6.03	-16.58	1.00	290.00	-4.97	
11076.14	4.50	290.00	11050.65	223.97	-615.49	0.00	0.00	-184.33	
11525.95	0.00	0.00	11500.00	230.00	-632.07	1.00	180.00	-189.30	
12096.99	0.00	0.00	12071.04	230.00	-632.07	0.00	0.00	-189.30	
12996.99	90.00	180.00	12644.00	-342.96	-632.07	10.00	180.00	382.50	
22563.68	90.00	180.00	12644.00	-9909.64	-632.07	0.00	0.00	9929.78	



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

Plan: Plan #1 (2H/OH)
Fighting Okra 18-19 Fed
Created By: Dustin Ault
Date: _____
Approved: _____
Date: 11:53, September 13 2017

Devon Energy

Lea County, NM (NAD-83)

Fighting Okra 18-19 Fed

2H

OH

Plan: Plan #1

Standard Planning Report

13 September, 2017

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Fighting Okra 18-19 Fed
Well: 2H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea 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	Fighting Okra 18-19 Fed		
Site Position:		Northing:	382,937.52 usft
From:	Map	Easting:	794,421.25 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 0.5157 N
		Longitude:	103° 30' 59.2921 W
		Grid Convergence:	0.43 °

Well	2H		
Well Position	+N/-S	-118.79 usft	Northing: 382,818.73 usft
	+E/-W	1,335.70 usft	Easting: 795,756.95 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,383.00 usft
		Latitude:	32° 2' 59.2399 N
		Longitude:	103° 30' 43.7837 W
		Ground Level:	3,371.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	9/13/2017	6.80
			Dip Angle
			59.78
			Field Strength
			47,891

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
			(°)
			183.65

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,949.81	4.50	290.00	2,949.35	6.03	-16.58	1.00	1.00	0.00	290.00	
11,076.14	4.50	290.00	11,050.65	223.97	-615.49	0.00	0.00	0.00	0.00	
11,525.95	0.00	0.00	11,500.00	230.00	-632.07	1.00	-1.00	0.00	180.00	
12,096.99	0.00	0.00	12,071.04	230.00	-632.07	0.00	0.00	0.00	0.00	
12,996.99	90.00	180.00	12,644.00	-342.96	-632.07	10.00	10.00	20.00	180.00	
22,563.68	90.00	180.00	12,644.00	-9,909.64	-632.07	0.00	0.00	0.00	0.00	PBHL (FO 2H)

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Fighting Okra 18-19 Fed
 Well: 2H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well 2H
 3371' GE + 25' KB @ 3396.00usft
 3371' GE + 25' KB @ 3396.00usft
 Grid
 Minimum Curvature

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 (FO 2H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	1.00	290.00	2,599.99	0.30	-0.82	-0.25	1.00	1.00	0.00
2,700.00	2.00	290.00	2,699.96	1.19	-3.28	-0.98	1.00	1.00	0.00
2,800.00	3.00	290.00	2,799.86	2.69	-7.38	-2.21	1.00	1.00	0.00
2,900.00	4.00	290.00	2,899.68	4.77	-13.12	-3.93	1.00	1.00	0.00
2,949.81	4.50	290.00	2,949.35	6.03	-16.58	-4.97	1.00	1.00	0.00
3,000.00	4.50	290.00	2,999.38	7.38	-20.28	-6.07	0.00	0.00	0.00
3,100.00	4.50	290.00	3,099.08	10.06	-27.65	-8.28	0.00	0.00	0.00
3,200.00	4.50	290.00	3,198.77	12.74	-35.02	-10.49	0.00	0.00	0.00
3,300.00	4.50	290.00	3,298.46	15.43	-42.39	-12.70	0.00	0.00	0.00
3,400.00	4.50	290.00	3,398.15	18.11	-49.76	-14.90	0.00	0.00	0.00
3,500.00	4.50	290.00	3,497.84	20.79	-57.13	-17.11	0.00	0.00	0.00
3,600.00	4.50	290.00	3,597.54	23.47	-64.50	-19.32	0.00	0.00	0.00
3,700.00	4.50	290.00	3,697.23	26.15	-71.87	-21.53	0.00	0.00	0.00
3,800.00	4.50	290.00	3,796.92	28.83	-79.24	-23.73	0.00	0.00	0.00
3,900.00	4.50	290.00	3,896.61	31.52	-86.61	-25.94	0.00	0.00	0.00
4,000.00	4.50	290.00	3,996.30	34.20	-93.98	-28.15	0.00	0.00	0.00
4,100.00	4.50	290.00	4,096.00	36.88	-101.35	-30.35	0.00	0.00	0.00
4,200.00	4.50	290.00	4,195.69	39.56	-108.72	-32.56	0.00	0.00	0.00
4,300.00	4.50	290.00	4,295.38	42.24	-116.09	-34.77	0.00	0.00	0.00
4,400.00	4.50	290.00	4,395.07	44.93	-123.46	-36.98	0.00	0.00	0.00
4,500.00	4.50	290.00	4,494.76	47.61	-130.83	-39.18	0.00	0.00	0.00
4,600.00	4.50	290.00	4,594.46	50.29	-138.20	-41.39	0.00	0.00	0.00
4,700.00	4.50	290.00	4,694.15	52.97	-145.57	-43.60	0.00	0.00	0.00
4,800.00	4.50	290.00	4,793.84	55.65	-152.94	-45.80	0.00	0.00	0.00
4,900.00	4.50	290.00	4,893.53	58.33	-160.31	-48.01	0.00	0.00	0.00
5,000.00	4.50	290.00	4,993.22	61.02	-167.68	-50.22	0.00	0.00	0.00
5,100.00	4.50	290.00	5,092.92	63.70	-175.05	-52.43	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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Site: Fighting Okra 18-19 Fed
Well: 2H
Wellbore: OH
Design: Plan #1

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TVD Reference: 3371' GE + 25' KB @ 3396.00usft
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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.00	4.50	290.00	5,192.61	66.38	-182.42	-54.63	0.00	0.00	0.00
5,300.00	4.50	290.00	5,292.30	69.06	-189.79	-56.84	0.00	0.00	0.00
5,400.00	4.50	290.00	5,391.99	71.74	-197.16	-59.05	0.00	0.00	0.00
5,500.00	4.50	290.00	5,491.68	74.43	-204.53	-61.26	0.00	0.00	0.00
5,600.00	4.50	290.00	5,591.38	77.11	-211.90	-63.46	0.00	0.00	0.00
5,700.00	4.50	290.00	5,691.07	79.79	-219.27	-65.67	0.00	0.00	0.00
5,800.00	4.50	290.00	5,790.76	82.47	-226.64	-67.88	0.00	0.00	0.00
5,900.00	4.50	290.00	5,890.45	85.15	-234.01	-70.08	0.00	0.00	0.00
6,000.00	4.50	290.00	5,990.14	87.83	-241.38	-72.29	0.00	0.00	0.00
6,100.00	4.50	290.00	6,089.84	90.52	-248.75	-74.50	0.00	0.00	0.00
6,200.00	4.50	290.00	6,189.53	93.20	-256.12	-76.71	0.00	0.00	0.00
6,300.00	4.50	290.00	6,289.22	95.88	-263.49	-78.91	0.00	0.00	0.00
6,400.00	4.50	290.00	6,388.91	98.56	-270.86	-81.12	0.00	0.00	0.00
6,500.00	4.50	290.00	6,488.60	101.24	-278.23	-83.33	0.00	0.00	0.00
6,600.00	4.50	290.00	6,588.30	103.92	-285.60	-85.53	0.00	0.00	0.00
6,700.00	4.50	290.00	6,687.99	106.61	-292.97	-87.74	0.00	0.00	0.00
6,800.00	4.50	290.00	6,787.68	109.29	-300.34	-89.95	0.00	0.00	0.00
6,900.00	4.50	290.00	6,887.37	111.97	-307.71	-92.16	0.00	0.00	0.00
7,000.00	4.50	290.00	6,987.06	114.65	-315.08	-94.36	0.00	0.00	0.00
7,100.00	4.50	290.00	7,086.76	117.33	-322.45	-96.57	0.00	0.00	0.00
7,200.00	4.50	290.00	7,186.45	120.02	-329.82	-98.78	0.00	0.00	0.00
7,300.00	4.50	290.00	7,286.14	122.70	-337.19	-100.99	0.00	0.00	0.00
7,400.00	4.50	290.00	7,385.83	125.38	-344.56	-103.19	0.00	0.00	0.00
7,500.00	4.50	290.00	7,485.52	128.06	-351.93	-105.40	0.00	0.00	0.00
7,600.00	4.50	290.00	7,585.22	130.74	-359.30	-107.61	0.00	0.00	0.00
7,700.00	4.50	290.00	7,684.91	133.42	-366.67	-109.81	0.00	0.00	0.00
7,800.00	4.50	290.00	7,784.60	136.11	-374.04	-112.02	0.00	0.00	0.00
7,900.00	4.50	290.00	7,884.29	138.79	-381.41	-114.23	0.00	0.00	0.00
8,000.00	4.50	290.00	7,983.98	141.47	-388.78	-116.44	0.00	0.00	0.00
8,100.00	4.50	290.00	8,083.68	144.15	-396.15	-118.64	0.00	0.00	0.00
8,200.00	4.50	290.00	8,183.37	146.83	-403.52	-120.85	0.00	0.00	0.00
8,300.00	4.50	290.00	8,283.06	149.52	-410.89	-123.06	0.00	0.00	0.00
8,400.00	4.50	290.00	8,382.75	152.20	-418.26	-125.26	0.00	0.00	0.00
8,500.00	4.50	290.00	8,482.44	154.88	-425.63	-127.47	0.00	0.00	0.00
8,600.00	4.50	290.00	8,582.14	157.56	-433.00	-129.68	0.00	0.00	0.00
8,700.00	4.50	290.00	8,681.83	160.24	-440.37	-131.89	0.00	0.00	0.00
8,800.00	4.50	290.00	8,781.52	162.92	-447.74	-134.09	0.00	0.00	0.00
8,900.00	4.50	290.00	8,881.21	165.61	-455.11	-136.30	0.00	0.00	0.00
9,000.00	4.50	290.00	8,980.90	168.29	-462.48	-138.51	0.00	0.00	0.00
9,100.00	4.50	290.00	9,080.60	170.97	-469.85	-140.72	0.00	0.00	0.00
9,200.00	4.50	290.00	9,180.29	173.65	-477.22	-142.92	0.00	0.00	0.00
9,300.00	4.50	290.00	9,279.98	176.33	-484.59	-145.13	0.00	0.00	0.00
9,400.00	4.50	290.00	9,379.67	179.01	-491.96	-147.34	0.00	0.00	0.00
9,500.00	4.50	290.00	9,479.36	181.70	-499.33	-149.54	0.00	0.00	0.00
9,600.00	4.50	290.00	9,579.05	184.38	-506.70	-151.75	0.00	0.00	0.00
9,700.00	4.50	290.00	9,678.75	187.06	-514.07	-153.96	0.00	0.00	0.00
9,800.00	4.50	290.00	9,778.44	189.74	-521.44	-156.17	0.00	0.00	0.00
9,900.00	4.50	290.00	9,878.13	192.42	-528.81	-158.37	0.00	0.00	0.00
10,000.00	4.50	290.00	9,977.82	195.11	-536.18	-160.58	0.00	0.00	0.00
10,100.00	4.50	290.00	10,077.51	197.79	-543.55	-162.79	0.00	0.00	0.00
10,200.00	4.50	290.00	10,177.21	200.47	-550.92	-164.99	0.00	0.00	0.00
10,300.00	4.50	290.00	10,276.90	203.15	-558.29	-167.20	0.00	0.00	0.00
10,400.00	4.50	290.00	10,376.59	205.83	-565.66	-169.41	0.00	0.00	0.00
10,500.00	4.50	290.00	10,476.28	208.51	-573.03	-171.62	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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 Well: 2H
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 Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
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 Survey Calculation Method: Minimum Curvature

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)
10,600.00	4.50	290.00	10,575.97	211.20	-580.40	-173.82	0.00	0.00	0.00
10,700.00	4.50	290.00	10,675.67	213.88	-587.76	-176.03	0.00	0.00	0.00
10,800.00	4.50	290.00	10,775.36	216.56	-595.13	-178.24	0.00	0.00	0.00
10,900.00	4.50	290.00	10,875.05	219.24	-602.50	-180.45	0.00	0.00	0.00
11,000.00	4.50	290.00	10,974.74	221.92	-609.87	-182.65	0.00	0.00	0.00
11,076.14	4.50	290.00	11,050.65	223.97	-615.49	-184.33	0.00	0.00	0.00
11,100.00	4.26	290.00	11,074.44	224.59	-617.20	-184.85	1.00	-1.00	0.00
11,200.00	3.26	290.00	11,174.22	226.83	-623.36	-186.69	1.00	-1.00	0.00
11,300.00	2.26	290.00	11,274.10	228.48	-627.88	-188.05	1.00	-1.00	0.00
11,400.00	1.26	290.00	11,374.06	229.53	-630.77	-188.91	1.00	-1.00	0.00
11,500.00	0.26	290.00	11,474.05	229.98	-632.01	-189.28	1.00	-1.00	0.00
11,525.95	0.00	0.00	11,500.00	230.00	-632.07	-189.30	1.00	-1.00	0.00
11,600.00	0.00	0.00	11,574.05	230.00	-632.07	-189.30	0.00	0.00	0.00
11,700.00	0.00	0.00	11,674.05	230.00	-632.07	-189.30	0.00	0.00	0.00
11,800.00	0.00	0.00	11,774.05	230.00	-632.07	-189.30	0.00	0.00	0.00
11,900.00	0.00	0.00	11,874.05	230.00	-632.07	-189.30	0.00	0.00	0.00
12,000.00	0.00	0.00	11,974.05	230.00	-632.07	-189.30	0.00	0.00	0.00
12,096.99	0.00	0.00	12,071.04	230.00	-632.07	-189.30	0.00	0.00	0.00
12,100.00	0.30	180.00	12,074.05	229.99	-632.07	-189.29	10.00	10.00	0.00
12,150.00	5.30	180.00	12,123.97	227.55	-632.07	-186.85	10.00	10.00	0.00
12,200.00	10.30	180.00	12,173.49	220.77	-632.07	-180.08	10.00	10.00	0.00
12,250.00	15.30	180.00	12,222.23	209.69	-632.07	-169.03	10.00	10.00	0.00
12,300.00	20.30	180.00	12,269.83	194.41	-632.07	-153.78	10.00	10.00	0.00
12,350.00	25.30	180.00	12,315.90	175.04	-632.07	-134.45	10.00	10.00	0.00
12,400.00	30.30	180.00	12,360.12	151.73	-632.07	-111.19	10.00	10.00	0.00
12,450.00	35.30	180.00	12,402.13	124.65	-632.07	-84.16	10.00	10.00	0.00
12,500.00	40.30	180.00	12,441.63	94.02	-632.07	-53.59	10.00	10.00	0.00
12,550.00	45.30	180.00	12,478.30	60.05	-632.07	-19.70	10.00	10.00	0.00
12,600.00	50.30	180.00	12,511.88	23.02	-632.07	17.26	10.00	10.00	0.00
12,650.00	55.30	180.00	12,542.10	-16.79	-632.07	56.99	10.00	10.00	0.00
12,700.00	60.30	180.00	12,568.73	-59.09	-632.07	99.20	10.00	10.00	0.00
12,750.00	65.30	180.00	12,591.58	-103.54	-632.07	143.57	10.00	10.00	0.00
12,800.00	70.30	180.00	12,610.47	-149.82	-632.07	189.75	10.00	10.00	0.00
12,850.00	75.30	180.00	12,625.25	-197.57	-632.07	237.40	10.00	10.00	0.00
12,900.00	80.30	180.00	12,635.81	-246.43	-632.07	286.16	10.00	10.00	0.00
12,950.00	85.30	180.00	12,642.07	-296.02	-632.07	335.65	10.00	10.00	0.00
12,996.99	90.00	180.00	12,644.00	-342.96	-632.07	382.50	10.00	10.00	0.00
13,000.00	90.00	180.00	12,644.00	-345.96	-632.07	385.50	0.00	0.00	0.00
13,100.00	90.00	180.00	12,644.00	-445.96	-632.07	485.29	0.00	0.00	0.00
13,200.00	90.00	180.00	12,644.00	-545.96	-632.07	585.09	0.00	0.00	0.00
13,300.00	90.00	180.00	12,644.00	-645.96	-632.07	684.89	0.00	0.00	0.00
13,400.00	90.00	180.00	12,644.00	-745.96	-632.07	784.68	0.00	0.00	0.00
13,500.00	90.00	180.00	12,644.00	-845.96	-632.07	884.48	0.00	0.00	0.00
13,600.00	90.00	180.00	12,644.00	-945.96	-632.07	984.28	0.00	0.00	0.00
13,700.00	90.00	180.00	12,644.00	-1,045.96	-632.07	1,084.08	0.00	0.00	0.00
13,800.00	90.00	180.00	12,644.00	-1,145.96	-632.07	1,183.87	0.00	0.00	0.00
13,900.00	90.00	180.00	12,644.00	-1,245.96	-632.07	1,283.67	0.00	0.00	0.00
14,000.00	90.00	180.00	12,644.00	-1,345.96	-632.07	1,383.47	0.00	0.00	0.00
14,100.00	90.00	180.00	12,644.00	-1,445.96	-632.07	1,483.27	0.00	0.00	0.00
14,200.00	90.00	180.00	12,644.00	-1,545.96	-632.07	1,583.06	0.00	0.00	0.00
14,300.00	90.00	180.00	12,644.00	-1,645.96	-632.07	1,682.86	0.00	0.00	0.00
14,400.00	90.00	180.00	12,644.00	-1,745.96	-632.07	1,782.66	0.00	0.00	0.00
14,500.00	90.00	180.00	12,644.00	-1,845.96	-632.07	1,882.45	0.00	0.00	0.00
14,600.00	90.00	180.00	12,644.00	-1,945.96	-632.07	1,982.25	0.00	0.00	0.00

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14,700.00	90.00	180.00	12,644.00	-2,045.96	-632.07	2,082.05	0.00	0.00	0.00
14,800.00	90.00	180.00	12,644.00	-2,145.96	-632.07	2,181.85	0.00	0.00	0.00
14,900.00	90.00	180.00	12,644.00	-2,245.96	-632.07	2,281.64	0.00	0.00	0.00
15,000.00	90.00	180.00	12,644.00	-2,345.96	-632.07	2,381.44	0.00	0.00	0.00
15,100.00	90.00	180.00	12,644.00	-2,445.96	-632.07	2,481.24	0.00	0.00	0.00
15,200.00	90.00	180.00	12,644.00	-2,545.96	-632.07	2,581.03	0.00	0.00	0.00
15,300.00	90.00	180.00	12,644.00	-2,645.96	-632.07	2,680.83	0.00	0.00	0.00
15,400.00	90.00	180.00	12,644.00	-2,745.96	-632.07	2,780.63	0.00	0.00	0.00
15,500.00	90.00	180.00	12,644.00	-2,845.96	-632.07	2,880.43	0.00	0.00	0.00
15,600.00	90.00	180.00	12,644.00	-2,945.96	-632.07	2,980.22	0.00	0.00	0.00
15,700.00	90.00	180.00	12,644.00	-3,045.96	-632.07	3,080.02	0.00	0.00	0.00
15,800.00	90.00	180.00	12,644.00	-3,145.96	-632.07	3,179.82	0.00	0.00	0.00
15,900.00	90.00	180.00	12,644.00	-3,245.96	-632.07	3,279.62	0.00	0.00	0.00
16,000.00	90.00	180.00	12,644.00	-3,345.96	-632.07	3,379.41	0.00	0.00	0.00
16,100.00	90.00	180.00	12,644.00	-3,445.96	-632.07	3,479.21	0.00	0.00	0.00
16,200.00	90.00	180.00	12,644.00	-3,545.96	-632.07	3,579.01	0.00	0.00	0.00
16,300.00	90.00	180.00	12,644.00	-3,645.96	-632.07	3,678.80	0.00	0.00	0.00
16,400.00	90.00	180.00	12,644.00	-3,745.96	-632.07	3,778.60	0.00	0.00	0.00
16,500.00	90.00	180.00	12,644.00	-3,845.96	-632.07	3,878.40	0.00	0.00	0.00
16,600.00	90.00	180.00	12,644.00	-3,945.96	-632.07	3,978.20	0.00	0.00	0.00
16,700.00	90.00	180.00	12,644.00	-4,045.96	-632.07	4,077.99	0.00	0.00	0.00
16,800.00	90.00	180.00	12,644.00	-4,145.96	-632.07	4,177.79	0.00	0.00	0.00
16,900.00	90.00	180.00	12,644.00	-4,245.96	-632.07	4,277.59	0.00	0.00	0.00
17,000.00	90.00	180.00	12,644.00	-4,345.96	-632.07	4,377.38	0.00	0.00	0.00
17,100.00	90.00	180.00	12,644.00	-4,445.96	-632.07	4,477.18	0.00	0.00	0.00
17,200.00	90.00	180.00	12,644.00	-4,545.96	-632.07	4,576.98	0.00	0.00	0.00
17,300.00	90.00	180.00	12,644.00	-4,645.96	-632.07	4,676.78	0.00	0.00	0.00
17,400.00	90.00	180.00	12,644.00	-4,745.96	-632.07	4,776.57	0.00	0.00	0.00
17,500.00	90.00	180.00	12,644.00	-4,845.96	-632.07	4,876.37	0.00	0.00	0.00
17,600.00	90.00	180.00	12,644.00	-4,945.96	-632.07	4,976.17	0.00	0.00	0.00
17,700.00	90.00	180.00	12,644.00	-5,045.96	-632.07	5,075.96	0.00	0.00	0.00
17,800.00	90.00	180.00	12,644.00	-5,145.96	-632.07	5,175.76	0.00	0.00	0.00
17,900.00	90.00	180.00	12,644.00	-5,245.96	-632.07	5,275.56	0.00	0.00	0.00
18,000.00	90.00	180.00	12,644.00	-5,345.96	-632.07	5,375.36	0.00	0.00	0.00
18,100.00	90.00	180.00	12,644.00	-5,445.96	-632.07	5,475.15	0.00	0.00	0.00
18,200.00	90.00	180.00	12,644.00	-5,545.96	-632.07	5,574.95	0.00	0.00	0.00
18,300.00	90.00	180.00	12,644.00	-5,645.96	-632.07	5,674.75	0.00	0.00	0.00
18,400.00	90.00	180.00	12,644.00	-5,745.96	-632.07	5,774.55	0.00	0.00	0.00
18,500.00	90.00	180.00	12,644.00	-5,845.96	-632.07	5,874.34	0.00	0.00	0.00
18,600.00	90.00	180.00	12,644.00	-5,945.96	-632.07	5,974.14	0.00	0.00	0.00
18,700.00	90.00	180.00	12,644.00	-6,045.96	-632.07	6,073.94	0.00	0.00	0.00
18,800.00	90.00	180.00	12,644.00	-6,145.96	-632.07	6,173.73	0.00	0.00	0.00
18,900.00	90.00	180.00	12,644.00	-6,245.96	-632.07	6,273.53	0.00	0.00	0.00
19,000.00	90.00	180.00	12,644.00	-6,345.96	-632.07	6,373.33	0.00	0.00	0.00
19,100.00	90.00	180.00	12,644.00	-6,445.96	-632.07	6,473.13	0.00	0.00	0.00
19,200.00	90.00	180.00	12,644.00	-6,545.96	-632.07	6,572.92	0.00	0.00	0.00
19,300.00	90.00	180.00	12,644.00	-6,645.96	-632.07	6,672.72	0.00	0.00	0.00
19,400.00	90.00	180.00	12,644.00	-6,745.96	-632.07	6,772.52	0.00	0.00	0.00
19,500.00	90.00	180.00	12,644.00	-6,845.96	-632.07	6,872.31	0.00	0.00	0.00
19,600.00	90.00	180.00	12,644.00	-6,945.96	-632.07	6,972.11	0.00	0.00	0.00
19,700.00	90.00	180.00	12,644.00	-7,045.96	-632.07	7,071.91	0.00	0.00	0.00
19,800.00	90.00	180.00	12,644.00	-7,145.96	-632.07	7,171.71	0.00	0.00	0.00
19,900.00	90.00	180.00	12,644.00	-7,245.96	-632.07	7,271.50	0.00	0.00	0.00
20,000.00	90.00	180.00	12,644.00	-7,345.96	-632.07	7,371.30	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Fighting Okra 18-19 Fed
 Well: 2H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
 MD Reference: 3371' GE + 25' KB @ 3396.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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)
20,100.00	90.00	180.00	12,644.00	-7,445.96	-632.07	7,471.10	0.00	0.00	0.00
20,200.00	90.00	180.00	12,644.00	-7,545.96	-632.07	7,570.89	0.00	0.00	0.00
20,300.00	90.00	180.00	12,644.00	-7,645.96	-632.07	7,670.69	0.00	0.00	0.00
20,400.00	90.00	180.00	12,644.00	-7,745.96	-632.07	7,770.49	0.00	0.00	0.00
20,500.00	90.00	180.00	12,644.00	-7,845.96	-632.07	7,870.29	0.00	0.00	0.00
20,600.00	90.00	180.00	12,644.00	-7,945.96	-632.07	7,970.08	0.00	0.00	0.00
20,700.00	90.00	180.00	12,644.00	-8,045.96	-632.07	8,069.88	0.00	0.00	0.00
20,800.00	90.00	180.00	12,644.00	-8,145.96	-632.07	8,169.68	0.00	0.00	0.00
20,900.00	90.00	180.00	12,644.00	-8,245.96	-632.07	8,269.48	0.00	0.00	0.00
21,000.00	90.00	180.00	12,644.00	-8,345.96	-632.07	8,369.27	0.00	0.00	0.00
21,100.00	90.00	180.00	12,644.00	-8,445.96	-632.07	8,469.07	0.00	0.00	0.00
21,200.00	90.00	180.00	12,644.00	-8,545.96	-632.07	8,568.87	0.00	0.00	0.00
21,300.00	90.00	180.00	12,644.00	-8,645.96	-632.07	8,668.66	0.00	0.00	0.00
21,400.00	90.00	180.00	12,644.00	-8,745.96	-632.07	8,768.46	0.00	0.00	0.00
21,500.00	90.00	180.00	12,644.00	-8,845.96	-632.07	8,868.26	0.00	0.00	0.00
21,600.00	90.00	180.00	12,644.00	-8,945.96	-632.07	8,968.06	0.00	0.00	0.00
21,700.00	90.00	180.00	12,644.00	-9,045.96	-632.07	9,067.85	0.00	0.00	0.00
21,800.00	90.00	180.00	12,644.00	-9,145.96	-632.07	9,167.65	0.00	0.00	0.00
21,900.00	90.00	180.00	12,644.00	-9,245.96	-632.07	9,267.45	0.00	0.00	0.00
22,000.00	90.00	180.00	12,644.00	-9,345.96	-632.07	9,367.24	0.00	0.00	0.00
22,100.00	90.00	180.00	12,644.00	-9,445.96	-632.07	9,467.04	0.00	0.00	0.00
22,200.00	90.00	180.00	12,644.00	-9,545.96	-632.07	9,566.84	0.00	0.00	0.00
22,300.00	90.00	180.00	12,644.00	-9,645.96	-632.07	9,666.64	0.00	0.00	0.00
22,400.00	90.00	180.00	12,644.00	-9,745.96	-632.07	9,766.43	0.00	0.00	0.00
22,500.00	90.00	180.00	12,644.00	-9,845.96	-632.07	9,866.23	0.00	0.00	0.00
22,563.68	90.00	180.00	12,644.00	-9,909.64	-632.07	9,929.78	0.00	0.00	0.00
PBHL (FO 2H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (FO 2H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	382,818.73	795,756.95	32° 2' 59.2399 N	103° 30' 43.7837 W
PBHL (FO 2H) - plan hits target center - Point	0.00	0.00	12,644.00	-9,909.64	-632.07	372,909.09	795,124.88	32° 1' 21.2281 N	103° 30' 52.0004 W

Devon Energy

Lea County, NM (NAD-83)

Fighting Okra 18-19 Fed

2H

OH

Plan #1

Anticollision Report

13 September, 2017

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi 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	9/13/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	22,563.68	Plan #1 (OH)	LEAM MWD+HDGM	MWD+HDGM	

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						
Fighting Okra 18-19 Fed						
14H - OH - Plan #1	2,500.00	2,500.20	30.00	19.04	2.738	CC, ES
14H - OH - Plan #1	22,563.68	22,161.88	674.68	352.79	2.096	SF
15H - OH - Plan #1	2,500.00	2,493.90	910.91	899.96	83.236	CC, ES
15H - OH - Plan #1	22,563.68	22,298.20	2,011.78	1,684.26	6.142	SF
3H - OH - Plan #1	2,500.00	2,501.20	89.98	79.02	8.210	CC, ES
3H - OH - Plan #1	22,563.68	22,329.42	1,319.87	991.44	4.019	SF
41H - OH - Plan #1	9,040.86	9,031.73	1,778.65	1,736.58	42.278	CC, ES
41H - OH - Plan #1	22,563.68	17,877.42	3,142.77	2,992.49	20.913	SF
4H - OH - Plan #1	2,500.00	2,494.00	1,015.74	1,004.80	92.814	CC, ES
4H - OH - Plan #1	22,563.68	22,329.57	2,668.57	2,340.78	8.141	SF
5H - OH - Plan #1	2,500.00	2,494.00	940.87	929.93	85.973	CC, ES
5H - OH - Plan #1	22,563.68	22,746.83	2,014.61	1,686.66	6.143	SF
6H - OH - Plan #1	2,500.00	2,498.00	2,553.72	2,542.77	233.156	CC, ES
6H - OH - Plan #1	22,563.68	22,751.03	3,332.48	3,005.75	10.200	SF
71H - OH - OH	11,383.05	11,355.73	322.58	279.44	7.476	CC
71H - OH - OH	21,800.00	21,817.32	536.67	248.39	1.862	ES
71H - OH - OH	22,000.00	21,994.96	544.35	250.56	1.853	SF
7H - OH - Plan #1	2,500.00	2,500.70	59.99	49.03	5.474	CC, ES
7H - OH - Plan #1	22,563.68	22,848.13	1,341.35	1,016.27	4.126	SF
84H - OH - Plan #1	2,500.00	2,498.50	2,613.56	2,602.61	238.595	CC, ES
84H - OH - Plan #1	22,563.68	22,473.03	3,988.49	3,662.38	12.230	SF
85H - OH - Plan #1	2,500.00	2,498.10	2,583.64	2,572.69	235.883	CC, ES
85H - OH - Plan #1	22,563.68	22,867.23	3,997.54	3,671.48	12.260	SF
86H - OH - Plan #1	2,500.00	2,496.70	2,553.85	2,542.90	233.230	CC, ES
86H - OH - Plan #1	22,563.68	22,181.55	3,969.46	3,642.83	12.153	SF
8H - OH - Plan #1	2,500.00	2,494.20	970.83	959.89	88.706	CC, ES
8H - OH - Plan #1	22,563.68	22,848.63	2,680.68	2,353.47	8.192	SF
Fighting Okra Fed Com 1H (offset) - OH - OH	9,905.66	12,150.32	739.05	651.80	8.470	CC, ES, SF

Offset Design		Fighting Okra 18-19 Fed - 14H - OH - Plan #1								Offset Site Error:		0.00 usft	
Survey Program:		0-LEAM MWD+HDGM								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)		

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 14H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												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	
0.00	0.00	0.20	0.20	0.00	0.00	89.52	0.25	30.00	30.00				
100.00	100.00	100.20	100.20	0.08	0.08	89.52	0.25	30.00	30.00	29.83	0.17	177.495	
200.00	200.00	200.20	200.20	0.31	0.31	89.52	0.25	30.00	30.00	29.38	0.62	48.502	
300.00	300.00	300.20	300.20	0.53	0.53	89.52	0.25	30.00	30.00	28.93	1.07	28.089	
400.00	400.00	400.20	400.20	0.76	0.76	89.52	0.25	30.00	30.00	28.48	1.52	19.768	
500.00	500.00	500.20	500.20	0.98	0.98	89.52	0.25	30.00	30.00	28.03	1.97	15.251	
600.00	600.00	600.20	600.20	1.21	1.21	89.52	0.25	30.00	30.00	27.58	2.42	12.414	
700.00	700.00	700.20	700.20	1.43	1.43	89.52	0.25	30.00	30.00	27.13	2.87	10.467	
800.00	800.00	800.20	800.20	1.66	1.66	89.52	0.25	30.00	30.00	26.69	3.32	9.048	
900.00	900.00	900.20	900.20	1.88	1.88	89.52	0.25	30.00	30.00	26.24	3.77	7.968	
1,000.00	1,000.00	1,000.20	1,000.20	2.11	2.11	89.52	0.25	30.00	30.00	25.79	4.21	7.118	
1,100.00	1,100.00	1,100.20	1,100.20	2.33	2.33	89.52	0.25	30.00	30.00	25.34	4.66	6.432	
1,200.00	1,200.00	1,200.20	1,200.20	2.56	2.56	89.52	0.25	30.00	30.00	24.89	5.11	5.867	
1,300.00	1,300.00	1,300.20	1,300.20	2.78	2.78	89.52	0.25	30.00	30.00	24.44	5.56	5.393	
1,400.00	1,400.00	1,400.20	1,400.20	3.01	3.01	89.52	0.25	30.00	30.00	23.99	6.01	4.989	
1,500.00	1,500.00	1,500.20	1,500.20	3.23	3.23	89.52	0.25	30.00	30.00	23.54	6.46	4.642	
1,600.00	1,600.00	1,600.20	1,600.20	3.46	3.46	89.52	0.25	30.00	30.00	23.09	6.91	4.340	
1,700.00	1,700.00	1,700.20	1,700.20	3.68	3.68	89.52	0.25	30.00	30.00	22.64	7.36	4.075	
1,800.00	1,800.00	1,800.20	1,800.20	3.91	3.91	89.52	0.25	30.00	30.00	22.19	7.81	3.841	
1,900.00	1,900.00	1,900.20	1,900.20	4.13	4.13	89.52	0.25	30.00	30.00	21.74	8.26	3.632	
2,000.00	2,000.00	2,000.20	2,000.20	4.35	4.36	89.52	0.25	30.00	30.00	21.29	8.71	3.444	
2,100.00	2,100.00	2,100.20	2,100.20	4.58	4.58	89.52	0.25	30.00	30.00	20.84	9.16	3.275	
2,200.00	2,200.00	2,200.20	2,200.20	4.80	4.80	89.52	0.25	30.00	30.00	20.39	9.61	3.122	
2,300.00	2,300.00	2,300.20	2,300.20	5.03	5.03	89.52	0.25	30.00	30.00	19.94	10.06	2.983	
2,400.00	2,400.00	2,400.20	2,400.20	5.25	5.25	89.52	0.25	30.00	30.00	19.49	10.51	2.855	
2,500.00	2,500.00	2,500.20	2,500.20	5.48	5.48	89.52	0.25	30.00	30.00	19.04	10.96	2.738 CC, ES	
2,600.00	2,599.99	2,600.19	2,600.19	5.69	5.70	160.09	0.25	30.00	30.82	19.42	11.40	2.704	
2,700.00	2,699.96	2,700.16	2,700.16	5.90	5.93	161.62	0.25	30.00	33.29	21.46	11.83	2.814	
2,800.00	2,799.86	2,800.06	2,800.06	6.11	6.15	163.71	0.25	30.00	37.46	25.20	12.26	3.055	
2,900.00	2,899.68	2,899.88	2,899.88	6.33	6.38	165.96	0.25	30.00	43.35	30.66	12.70	3.415	
2,949.81	2,949.35	2,949.55	2,949.55	6.43	6.49	167.04	0.25	30.00	46.94	34.03	12.91	3.635	
3,000.00	2,999.38	2,999.58	2,999.58	6.54	6.60	168.04	0.25	30.00	50.79	37.65	13.13	3.868	
3,100.00	3,099.08	3,099.28	3,099.28	6.76	6.83	169.63	0.25	30.00	58.48	44.92	13.57	4.311	
3,200.00	3,198.77	3,198.97	3,198.97	6.99	7.05	170.85	0.25	30.00	66.21	52.21	14.00	4.728	
3,300.00	3,298.46	3,298.66	3,298.66	7.21	7.27	171.82	0.25	30.00	73.97	59.53	14.44	5.122	
3,400.00	3,398.15	3,398.35	3,398.35	7.44	7.50	172.60	0.25	30.00	81.74	66.86	14.88	5.493	
3,500.00	3,497.84	3,498.04	3,498.04	7.67	7.72	173.25	0.25	30.00	89.52	74.20	15.32	5.844	
3,600.00	3,597.54	3,597.74	3,597.74	7.90	7.95	173.79	0.25	30.00	97.31	81.55	15.76	6.175	
3,700.00	3,697.23	3,697.43	3,697.43	8.13	8.17	174.25	0.25	30.00	105.11	88.91	16.20	6.488	
3,800.00	3,796.92	3,797.12	3,797.12	8.37	8.39	174.65	0.25	30.00	112.92	96.28	16.64	6.785	
3,900.00	3,896.61	3,896.81	3,896.81	8.60	8.62	175.00	0.25	30.00	120.73	103.64	17.09	7.066	
4,000.00	3,996.30	3,996.50	3,996.50	8.84	8.84	175.30	0.25	30.00	128.55	111.02	17.53	7.333	
4,100.00	4,096.00	4,096.20	4,096.20	9.08	9.07	175.57	0.25	30.00	136.36	118.39	17.97	7.587	
4,200.00	4,195.69	4,195.89	4,195.89	9.31	9.29	175.81	0.25	30.00	144.18	125.77	18.42	7.828	
4,300.00	4,295.38	4,295.58	4,295.58	9.55	9.51	176.03	0.25	30.00	152.01	133.14	18.86	8.058	
4,400.00	4,395.07	4,395.27	4,395.27	9.79	9.74	176.22	0.25	30.00	159.83	140.52	19.31	8.278	
4,500.00	4,494.76	4,494.96	4,494.96	10.04	9.96	176.40	0.25	30.00	167.66	147.90	19.75	8.487	
4,600.00	4,594.46	4,594.66	4,594.66	10.28	10.19	176.56	0.25	30.00	175.49	155.29	20.20	8.687	
4,700.00	4,694.15	4,694.35	4,694.35	10.52	10.41	176.71	0.25	30.00	183.32	162.67	20.65	8.878	
4,800.00	4,793.84	4,794.04	4,794.04	10.76	10.63	176.84	0.25	30.00	191.15	170.05	21.10	9.061	
4,900.00	4,893.53	4,893.73	4,893.73	11.01	10.86	176.97	0.25	30.00	198.98	177.43	21.54	9.236	
5,000.00	4,993.22	4,993.42	4,993.42	11.25	11.08	177.08	0.25	30.00	206.81	184.82	21.99	9.404	

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 14H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
5,100.00	5,092.92	5,093.12	5,093.12	11.50	11.31	177.19	0.25	30.00	214.64	192.20	22.44	9.566		
5,200.00	5,192.61	5,192.81	5,192.81	11.74	11.53	177.29	0.25	30.00	222.48	199.59	22.89	9.720		
5,300.00	5,292.30	5,292.50	5,292.50	11.99	11.76	177.38	0.25	30.00	230.31	206.97	23.34	9.869		
5,400.00	5,391.99	5,392.19	5,392.19	12.24	11.98	177.47	0.25	30.00	238.15	214.36	23.79	10.012		
5,500.00	5,491.68	5,491.88	5,491.88	12.48	12.20	177.55	0.25	30.00	245.98	221.75	24.23	10.150		
5,600.00	5,591.38	5,591.58	5,591.58	12.73	12.43	177.62	0.25	30.00	253.82	229.13	24.68	10.283		
5,700.00	5,691.07	5,691.27	5,691.27	12.98	12.65	177.69	0.25	30.00	261.65	236.52	25.13	10.410		
5,800.00	5,790.76	5,790.96	5,790.96	13.23	12.88	177.76	0.25	30.00	269.49	243.91	25.58	10.534		
5,900.00	5,890.45	5,890.65	5,890.65	13.48	13.10	177.82	0.25	30.00	277.33	251.29	26.03	10.653		
6,000.00	5,990.14	5,990.34	5,990.34	13.72	13.32	177.88	0.25	30.00	285.16	258.68	26.48	10.767		
6,100.00	6,089.84	6,090.04	6,090.04	13.97	13.55	177.94	0.25	30.00	293.00	266.07	26.93	10.878		
6,200.00	6,189.53	6,189.73	6,189.73	14.22	13.77	177.99	0.25	30.00	300.84	273.45	27.39	10.986		
6,300.00	6,289.22	6,289.42	6,289.42	14.47	14.00	178.05	0.25	30.00	308.68	280.84	27.84	11.089		
6,400.00	6,388.91	6,389.11	6,389.11	14.72	14.22	178.09	0.25	30.00	316.51	288.23	28.29	11.189		
6,500.00	6,488.60	6,488.80	6,488.80	14.97	14.44	178.14	0.25	30.00	324.35	295.62	28.74	11.287		
6,600.00	6,588.30	6,588.50	6,588.50	15.22	14.67	178.18	0.25	30.00	332.19	303.00	29.19	11.381		
6,700.00	6,687.99	6,688.19	6,688.19	15.47	14.89	178.23	0.25	30.00	340.03	310.39	29.64	11.472		
6,800.00	6,787.68	6,787.88	6,787.88	15.72	15.12	178.27	0.25	30.00	347.87	317.78	30.09	11.560		
6,900.00	6,887.37	6,887.57	6,887.57	15.98	15.34	178.30	0.25	30.00	355.71	325.17	30.54	11.646		
7,000.00	6,987.06	6,987.26	6,987.26	16.23	15.56	178.34	0.25	30.00	363.55	332.55	31.00	11.729		
7,100.00	7,086.76	7,086.96	7,086.96	16.48	15.79	178.38	0.25	30.00	371.39	339.94	31.45	11.810		
7,200.00	7,186.45	7,186.65	7,186.65	16.73	16.01	178.41	0.25	30.00	379.23	347.33	31.90	11.888		
7,300.00	7,286.14	7,286.34	7,286.34	16.98	16.24	178.44	0.25	30.00	387.07	354.72	32.35	11.965		
7,400.00	7,385.83	7,386.03	7,386.03	17.23	16.46	178.47	0.25	30.00	394.91	362.10	32.80	12.039		
7,500.00	7,485.52	7,485.72	7,485.72	17.49	16.68	178.50	0.25	30.00	402.75	369.49	33.26	12.111		
7,600.00	7,585.22	7,585.42	7,585.42	17.74	16.91	178.53	0.25	30.00	410.59	376.88	33.71	12.181		
7,700.00	7,684.91	7,685.11	7,685.11	17.99	17.13	178.56	0.25	30.00	418.43	384.27	34.16	12.249		
7,800.00	7,784.60	7,784.80	7,784.80	18.24	17.36	178.59	0.25	30.00	426.27	391.65	34.61	12.315		
7,900.00	7,884.29	7,884.49	7,884.49	18.50	17.58	178.61	0.25	30.00	434.11	399.04	35.07	12.380		
8,000.00	7,983.98	7,984.18	7,984.18	18.75	17.81	178.64	0.25	30.00	441.95	406.43	35.52	12.443		
8,100.00	8,083.68	8,083.88	8,083.88	19.00	18.03	178.66	0.25	30.00	449.79	413.82	35.97	12.504		
8,200.00	8,183.37	8,183.57	8,183.57	19.25	18.25	178.68	0.25	30.00	457.63	421.20	36.42	12.564		
8,300.00	8,283.06	8,283.26	8,283.26	19.51	18.48	178.70	0.25	30.00	465.47	428.59	36.88	12.622		
8,400.00	8,382.75	8,382.95	8,382.95	19.76	18.70	178.73	0.25	30.00	473.31	435.98	37.33	12.679		
8,500.00	8,482.44	8,482.64	8,482.64	20.01	18.93	178.75	0.25	30.00	481.15	443.37	37.78	12.735		
8,600.00	8,582.14	8,582.34	8,582.34	20.27	19.15	178.77	0.25	30.00	488.99	450.76	38.24	12.789		
8,700.00	8,681.83	8,682.03	8,682.03	20.52	19.37	178.79	0.25	30.00	496.83	458.14	38.69	12.842		
8,800.00	8,781.52	8,781.72	8,781.72	20.77	19.60	178.80	0.25	30.00	504.67	465.53	39.14	12.893		
8,900.00	8,881.21	8,881.41	8,881.41	21.03	19.82	178.82	0.25	30.00	512.51	472.92	39.60	12.944		
9,000.00	8,980.90	8,981.10	8,981.10	21.28	20.05	178.84	0.25	30.00	520.36	480.31	40.05	12.993		
9,100.00	9,080.60	9,080.80	9,080.80	21.54	20.27	178.86	0.25	30.00	528.20	487.69	40.50	13.041		
9,200.00	9,180.29	9,180.49	9,180.49	21.79	20.49	178.87	0.25	30.00	536.04	495.08	40.96	13.088		
9,300.00	9,279.98	9,280.18	9,280.18	22.04	20.72	178.89	0.25	30.00	543.88	502.47	41.41	13.134		
9,400.00	9,379.67	9,379.87	9,379.87	22.30	20.94	178.91	0.25	30.00	551.72	509.86	41.86	13.179		
9,500.00	9,479.36	9,479.56	9,479.56	22.55	21.17	178.92	0.25	30.00	559.56	517.24	42.32	13.223		
9,600.00	9,579.05	9,579.25	9,579.25	22.81	21.39	178.94	0.25	30.00	567.40	524.63	42.77	13.266		
9,700.00	9,678.75	9,678.95	9,678.95	23.06	21.61	178.95	0.25	30.00	575.24	532.02	43.23	13.308		
9,800.00	9,778.44	9,778.64	9,778.64	23.31	21.84	178.97	0.25	30.00	583.09	539.41	43.68	13.349		
9,900.00	9,878.13	9,878.33	9,878.33	23.57	22.06	178.98	0.25	30.00	590.93	546.79	44.13	13.390		
10,000.00	9,977.82	9,978.02	9,978.02	23.82	22.29	178.99	0.25	30.00	598.77	554.18	44.59	13.429		
10,100.00	10,077.51	10,077.71	10,077.71	24.08	22.51	179.01	0.25	30.00	606.61	561.57	45.04	13.468		
10,200.00	10,177.21	10,177.41	10,177.41	24.33	22.73	179.02	0.25	30.00	614.45	568.96	45.50	13.506		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 14H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E/W (usft)						
10,300.00	10,276.90	10,277.10	10,277.10	24.59	22.96	179.03	0.25	30.00	622.29	576.34	45.95	13.543		
10,400.00	10,376.59	10,376.79	10,376.79	24.84	23.18	179.04	0.25	30.00	630.13	583.73	46.40	13.580		
10,500.00	10,476.28	10,476.48	10,476.48	25.10	23.41	179.05	0.25	30.00	637.98	591.12	46.86	13.615		
10,600.00	10,575.97	10,576.17	10,576.17	25.35	23.63	179.07	0.25	30.00	645.82	598.51	47.31	13.650		
10,700.00	10,675.67	10,675.87	10,675.87	25.61	23.86	179.08	0.25	30.00	653.66	605.89	47.77	13.685		
10,800.00	10,775.36	10,775.56	10,775.56	25.86	24.08	179.09	0.25	30.00	661.50	613.28	48.22	13.718		
10,900.00	10,875.05	10,875.25	10,875.25	26.12	24.30	179.10	0.25	30.00	669.34	620.67	48.67	13.751		
11,000.00	10,974.74	10,974.94	10,974.94	26.37	24.53	179.11	0.25	30.00	677.18	628.06	49.13	13.784		
11,076.14	11,050.65	11,050.85	11,050.85	26.57	24.70	179.12	0.25	30.00	683.16	633.68	49.48	13.808		
11,100.00	11,074.44	11,074.64	11,074.64	26.62	24.75	179.12	0.25	30.00	684.98	635.40	49.58	13.816		
11,200.00	11,174.22	11,174.42	11,174.42	26.81	24.98	179.13	0.25	30.00	691.53	641.55	49.98	13.836		
11,300.00	11,274.10	11,274.30	11,274.30	26.99	25.20	179.14	0.25	30.00	696.35	645.96	50.38	13.821		
11,400.00	11,374.06	11,374.26	11,374.26	27.17	25.42	179.14	0.25	30.00	699.42	648.63	50.78	13.772		
11,500.00	11,474.05	11,474.25	11,474.25	27.33	25.65	179.14	0.25	30.00	700.74	649.56	51.18	13.691		
11,525.95	11,500.00	11,500.20	11,500.20	27.38	25.71	109.14	0.25	30.00	700.80	649.51	51.29	13.664		
11,600.00	11,574.05	11,574.25	11,574.25	27.51	25.87	109.14	0.25	30.00	700.80	649.20	51.60	13.582		
11,700.00	11,674.05	11,674.25	11,674.25	27.71	26.10	109.14	0.25	30.00	700.80	648.77	52.03	13.468		
11,800.00	11,774.05	11,774.25	11,774.25	27.91	26.32	109.14	0.25	30.00	700.80	648.33	52.47	13.357		
11,900.00	11,874.05	11,874.25	11,874.25	28.11	26.55	109.14	0.25	30.00	700.80	647.90	52.90	13.247		
11,901.38	11,875.43	11,875.63	11,875.63	28.11	26.55	109.14	0.25	30.00	700.80	647.89	52.91	13.246		
12,000.00	11,974.05	11,961.95	11,961.94	28.31	26.73	109.20	-0.58	30.00	701.18	647.90	53.28	13.160		
12,096.99	12,071.04	12,030.44	12,029.94	28.50	26.85	109.80	-8.35	29.97	704.85	651.32	53.53	13.167		
12,100.00	12,074.05	12,032.52	12,031.99	28.51	26.85	-70.16	-8.71	29.96	705.02	651.49	53.54	13.169		
12,150.00	12,123.97	12,067.16	12,065.88	28.59	26.91	-69.48	-15.84	29.94	707.73	654.11	53.62	13.198		
12,200.00	12,173.49	12,100.00	12,097.56	28.67	26.96	-68.94	-24.48	29.90	710.03	656.35	53.68	13.227		
12,250.00	12,222.23	12,135.95	12,131.61	28.73	27.02	-68.48	-36.00	29.85	711.87	658.13	53.74	13.246		
12,300.00	12,269.83	12,170.18	12,163.30	28.79	27.08	-68.16	-48.94	29.80	713.22	659.44	53.78	13.263		
12,350.00	12,315.90	12,200.00	12,190.23	28.85	27.12	-67.97	-61.73	29.75	714.08	660.32	53.76	13.282		
12,400.00	12,360.12	12,238.46	12,223.92	28.90	27.18	-67.87	-80.26	29.68	714.38	660.56	53.82	13.274		
12,450.00	12,402.13	12,272.57	12,252.71	28.94	27.23	-67.90	-98.56	29.60	714.16	660.33	53.83	13.267		
12,500.00	12,441.63	12,300.00	12,275.02	28.98	27.27	-68.03	-114.50	29.54	713.46	659.68	53.78	13.266		
12,550.00	12,478.30	12,340.90	12,306.83	29.02	27.34	-68.33	-140.20	29.44	712.15	658.28	53.88	13.218		
12,600.00	12,511.88	12,375.17	12,332.01	29.06	27.40	-68.72	-163.43	29.34	710.39	656.47	53.92	13.174		
12,650.00	12,542.10	12,409.55	12,355.83	29.09	27.47	-69.22	-188.22	29.24	708.16	654.17	53.99	13.116		
12,700.00	12,568.73	12,450.00	12,381.90	29.14	27.56	-69.91	-219.14	29.12	705.53	651.38	54.15	13.029		
12,750.00	12,591.58	12,478.80	12,399.09	29.19	27.63	-70.58	-242.24	29.03	702.43	648.20	54.23	12.953		
12,800.00	12,610.47	12,513.74	12,418.36	29.25	27.72	-71.43	-271.38	28.91	699.04	644.63	54.41	12.848		
12,850.00	12,625.25	12,550.00	12,436.44	29.33	27.82	-72.41	-302.80	28.78	695.36	640.72	54.64	12.727		
12,900.00	12,635.81	12,584.46	12,451.75	29.43	27.93	-73.45	-333.66	28.66	691.47	636.57	54.90	12.595		
12,950.00	12,642.07	12,620.32	12,465.69	29.54	28.05	-74.61	-366.71	28.53	687.44	632.22	55.22	12.450		
12,996.99	12,644.00	12,650.00	12,475.63	29.68	28.15	-75.68	-394.66	28.41	683.61	628.10	55.52	12.313		
13,000.00	12,644.00	12,656.60	12,477.65	29.69	28.18	-75.85	-400.95	28.39	683.35	627.77	55.58	12.295		
13,100.00	12,644.00	12,732.33	12,495.52	30.04	28.47	-77.31	-474.48	28.09	677.30	620.93	56.37	12.014		
13,200.00	12,644.00	12,810.16	12,503.62	30.48	28.82	-77.97	-551.83	27.86	674.76	617.58	57.18	11.801		
13,245.50	12,644.00	12,849.80	12,504.00	30.71	29.01	-78.01	-591.47	27.85	674.65	617.05	57.59	11.714		
13,300.00	12,644.00	12,904.30	12,504.00	31.00	29.29	-78.01	-645.96	27.85	674.65	616.49	58.16	11.601		
13,400.00	12,644.00	13,004.30	12,504.00	31.61	29.88	-78.01	-745.96	27.85	674.65	615.32	59.33	11.372		
13,500.00	12,644.00	13,104.30	12,504.00	32.29	30.54	-78.01	-845.96	27.85	674.65	614.00	60.65	11.124		
13,600.00	12,644.00	13,204.30	12,504.00	33.04	31.27	-78.01	-945.96	27.85	674.65	612.54	62.10	10.863		
13,700.00	12,644.00	13,304.30	12,504.00	33.85	32.06	-78.01	-1,045.96	27.85	674.65	610.96	63.69	10.593		
13,800.00	12,644.00	13,404.30	12,504.00	34.72	32.92	-78.01	-1,145.96	27.85	674.65	609.25	65.40	10.316		
13,900.00	12,644.00	13,504.30	12,504.00	35.64	33.84	-78.01	-1,245.96	27.85	674.65	607.44	67.21	10.038		

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LEAM Drilling Systems LLC

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Well Error: 0.00 usft
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Reference Design: Plan #1

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Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,000.00	12,644.00	13,604.30	12,504.00	36.62	34.81	-78.01	-1,345.96	27.85	674.65	605.52	69.13	9.759	
14,100.00	12,644.00	13,704.30	12,504.00	37.64	35.82	-78.01	-1,445.96	27.85	674.65	603.51	71.14	9.483	
14,200.00	12,644.00	13,804.30	12,504.00	38.70	36.88	-78.01	-1,545.96	27.85	674.65	601.41	73.24	9.212	
14,300.00	12,644.00	13,904.30	12,504.00	39.80	37.99	-78.01	-1,645.96	27.85	674.65	599.23	75.41	8.946	
14,400.00	12,644.00	14,004.30	12,504.00	40.94	39.12	-78.01	-1,745.96	27.85	674.65	596.99	77.66	8.687	
14,500.00	12,644.00	14,104.30	12,504.00	42.11	40.30	-78.01	-1,845.96	27.85	674.65	594.67	79.97	8.436	
14,600.00	12,644.00	14,204.30	12,504.00	43.30	41.50	-78.01	-1,945.96	27.85	674.65	592.30	82.35	8.193	
14,700.00	12,644.00	14,304.30	12,504.00	44.53	42.74	-78.01	-2,045.96	27.85	674.65	589.87	84.78	7.958	
14,800.00	12,644.00	14,404.30	12,504.00	45.78	44.00	-78.01	-2,145.96	27.85	674.65	587.39	87.26	7.732	
14,900.00	12,644.00	14,504.30	12,504.00	47.06	45.28	-78.01	-2,245.96	27.85	674.65	584.87	89.78	7.514	
15,000.00	12,644.00	14,604.30	12,504.00	48.36	46.58	-78.01	-2,345.96	27.85	674.65	582.30	92.35	7.305	
15,100.00	12,644.00	14,704.30	12,504.00	49.67	47.91	-78.01	-2,445.96	27.85	674.65	579.69	94.96	7.105	
15,200.00	12,644.00	14,804.30	12,504.00	51.01	49.25	-78.01	-2,545.96	27.85	674.65	577.05	97.60	6.912	
15,300.00	12,644.00	14,904.30	12,504.00	52.36	50.61	-78.01	-2,645.96	27.85	674.65	574.37	100.28	6.728	
15,400.00	12,644.00	15,004.30	12,504.00	53.73	51.99	-78.01	-2,745.96	27.85	674.65	571.66	102.99	6.551	
15,500.00	12,644.00	15,104.30	12,504.00	55.11	53.38	-78.01	-2,845.96	27.85	674.65	568.92	105.72	6.381	
15,600.00	12,644.00	15,204.30	12,504.00	56.51	54.79	-78.01	-2,945.96	27.85	674.65	566.16	108.49	6.219	
15,700.00	12,644.00	15,304.30	12,504.00	57.92	56.21	-78.01	-3,045.96	27.85	674.65	563.38	111.27	6.063	
15,800.00	12,644.00	15,404.30	12,504.00	59.34	57.63	-78.01	-3,145.96	27.85	674.65	560.57	114.08	5.914	
15,900.00	12,644.00	15,504.30	12,504.00	60.77	59.07	-78.01	-3,245.96	27.85	674.65	557.74	116.91	5.771	
16,000.00	12,644.00	15,604.30	12,504.00	62.21	60.52	-78.01	-3,345.96	27.85	674.65	554.89	119.76	5.633	
16,100.00	12,644.00	15,704.30	12,504.00	63.66	61.98	-78.01	-3,445.96	27.85	674.65	552.02	122.63	5.502	
16,200.00	12,644.00	15,804.30	12,504.00	65.12	63.45	-78.01	-3,545.96	27.85	674.65	549.14	125.51	5.375	
16,300.00	12,644.00	15,904.30	12,504.00	66.58	64.92	-78.01	-3,645.96	27.85	674.65	546.24	128.41	5.254	
16,400.00	12,644.00	16,004.30	12,504.00	68.06	66.41	-78.01	-3,745.96	27.85	674.65	543.33	131.32	5.137	
16,500.00	12,644.00	16,104.30	12,504.00	69.54	67.90	-78.01	-3,845.96	27.85	674.65	540.40	134.25	5.025	
16,600.00	12,644.00	16,204.30	12,504.00	71.03	69.39	-78.01	-3,945.96	27.85	674.65	537.46	137.19	4.918	
16,700.00	12,644.00	16,304.30	12,504.00	72.52	70.89	-78.01	-4,045.96	27.85	674.65	534.51	140.14	4.814	
16,800.00	12,644.00	16,404.30	12,504.00	74.02	72.40	-78.01	-4,145.96	27.85	674.65	531.54	143.10	4.714	
16,900.00	12,644.00	16,504.30	12,504.00	75.53	73.91	-78.01	-4,245.96	27.85	674.65	528.57	146.08	4.618	
17,000.00	12,644.00	16,604.30	12,504.00	77.04	75.43	-78.01	-4,345.96	27.85	674.65	525.59	149.06	4.526	
17,100.00	12,644.00	16,704.30	12,504.00	78.56	76.96	-78.01	-4,445.96	27.85	674.65	522.59	152.06	4.437	
17,200.00	12,644.00	16,804.30	12,504.00	80.08	78.48	-78.01	-4,545.96	27.85	674.65	519.59	155.06	4.351	
17,300.00	12,644.00	16,904.30	12,504.00	81.60	80.02	-78.01	-4,645.96	27.85	674.65	516.58	158.07	4.268	
17,400.00	12,644.00	17,004.30	12,504.00	83.13	81.55	-78.01	-4,745.96	27.85	674.65	513.56	161.08	4.188	
17,500.00	12,644.00	17,104.30	12,504.00	84.67	83.09	-78.01	-4,845.96	27.85	674.65	510.54	164.11	4.111	
17,600.00	12,644.00	17,204.30	12,504.00	86.20	84.63	-78.01	-4,945.96	27.85	674.65	507.51	167.14	4.036	
17,700.00	12,644.00	17,304.30	12,504.00	87.75	86.18	-78.01	-5,045.96	27.85	674.65	504.47	170.18	3.964	
17,800.00	12,644.00	17,404.30	12,504.00	89.29	87.73	-78.01	-5,145.96	27.85	674.65	501.42	173.23	3.895	
17,900.00	12,644.00	17,504.30	12,504.00	90.84	89.28	-78.01	-5,245.96	27.85	674.65	498.37	176.28	3.827	
18,000.00	12,644.00	17,604.30	12,504.00	92.39	90.84	-78.01	-5,345.96	27.85	674.65	495.32	179.33	3.762	
18,100.00	12,644.00	17,704.30	12,504.00	93.94	92.40	-78.01	-5,445.96	27.85	674.65	492.25	182.40	3.699	
18,200.00	12,644.00	17,804.30	12,504.00	95.50	93.96	-78.01	-5,545.96	27.85	674.65	489.19	185.46	3.638	
18,300.00	12,644.00	17,904.30	12,504.00	97.05	95.52	-78.01	-5,645.96	27.85	674.65	486.11	188.53	3.578	
18,400.00	12,644.00	18,004.30	12,504.00	98.61	97.09	-78.01	-5,745.96	27.85	674.65	483.04	191.61	3.521	
18,500.00	12,644.00	18,104.30	12,504.00	100.18	98.65	-78.01	-5,845.96	27.85	674.65	479.96	194.69	3.465	
18,600.00	12,644.00	18,204.30	12,504.00	101.74	100.22	-78.01	-5,945.96	27.85	674.65	476.87	197.78	3.411	
18,700.00	12,644.00	18,304.30	12,504.00	103.31	101.80	-78.01	-6,045.96	27.85	674.65	473.78	200.87	3.359	
18,800.00	12,644.00	18,404.30	12,504.00	104.88	103.37	-78.01	-6,145.96	27.85	674.65	470.69	203.96	3.308	
18,900.00	12,644.00	18,504.30	12,504.00	106.45	104.95	-78.01	-6,245.96	27.85	674.65	467.59	207.05	3.258	
19,000.00	12,644.00	18,604.30	12,504.00	108.02	106.52	-78.01	-6,345.96	27.85	674.65	464.49	210.15	3.210	
19,100.00	12,644.00	18,704.30	12,504.00	109.60	108.10	-78.01	-6,445.96	27.85	674.65	461.39	213.26	3.164	

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 14H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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	
19,200.00	12,644.00	18,804.30	12,504.00	111.18	109.68	-78.01	-6,545.96	27.85	674.65	458.28	216.36	3.118		
19,300.00	12,644.00	18,904.30	12,504.00	112.75	111.27	-78.01	-6,645.96	27.85	674.65	455.17	219.47	3.074		
19,400.00	12,644.00	19,004.30	12,504.00	114.33	112.85	-78.01	-6,745.96	27.85	674.65	452.06	222.59	3.031		
19,500.00	12,644.00	19,104.30	12,504.00	115.92	114.44	-78.01	-6,845.96	27.85	674.65	448.95	225.70	2.989		
19,600.00	12,644.00	19,204.30	12,504.00	117.50	116.02	-78.01	-6,945.96	27.85	674.65	445.83	228.82	2.948		
19,700.00	12,644.00	19,304.30	12,504.00	119.08	117.61	-78.01	-7,045.96	27.85	674.65	442.71	231.94	2.909		
19,800.00	12,644.00	19,404.30	12,504.00	120.67	119.20	-78.01	-7,145.96	27.85	674.65	439.59	235.06	2.870		
19,900.00	12,644.00	19,504.30	12,504.00	122.26	120.79	-78.01	-7,245.96	27.85	674.65	436.46	238.19	2.832		
20,000.00	12,644.00	19,604.30	12,504.00	123.84	122.38	-78.01	-7,345.96	27.85	674.65	433.33	241.32	2.796		
20,100.00	12,644.00	19,704.30	12,504.00	125.43	123.97	-78.01	-7,445.96	27.85	674.65	430.20	244.45	2.760		
20,200.00	12,644.00	19,804.30	12,504.00	127.02	125.57	-78.01	-7,545.96	27.85	674.65	427.07	247.58	2.725		
20,300.00	12,644.00	19,904.30	12,504.00	128.62	127.16	-78.01	-7,645.96	27.85	674.65	423.94	250.71	2.691		
20,400.00	12,644.00	20,004.30	12,504.00	130.21	128.76	-78.01	-7,745.96	27.85	674.65	420.80	253.85	2.658		
20,500.00	12,644.00	20,104.30	12,504.00	131.80	130.35	-78.01	-7,845.96	27.85	674.65	417.66	256.98	2.625		
20,600.00	12,644.00	20,204.30	12,504.00	133.40	131.95	-78.01	-7,945.96	27.85	674.65	414.52	260.12	2.594		
20,700.00	12,644.00	20,304.30	12,504.00	134.99	133.55	-78.01	-8,045.96	27.85	674.65	411.38	263.27	2.563		
20,800.00	12,644.00	20,404.30	12,504.00	136.59	135.15	-78.01	-8,145.96	27.85	674.65	408.24	266.41	2.532		
20,900.00	12,644.00	20,504.30	12,504.00	138.19	136.75	-78.01	-8,245.96	27.85	674.65	405.10	269.55	2.503		
21,000.00	12,644.00	20,604.30	12,504.00	139.78	138.35	-78.01	-8,345.96	27.85	674.65	401.95	272.70	2.474		
21,100.00	12,644.00	20,704.30	12,504.00	141.38	139.95	-78.01	-8,445.96	27.85	674.65	398.80	275.85	2.446		
21,200.00	12,644.00	20,804.30	12,504.00	142.98	141.56	-78.01	-8,545.96	27.85	674.65	395.65	279.00	2.418		
21,300.00	12,644.00	20,904.30	12,504.00	144.58	143.16	-78.01	-8,645.96	27.85	674.65	392.50	282.15	2.391		
21,400.00	12,644.00	21,004.30	12,504.00	146.19	144.76	-78.01	-8,745.96	27.85	674.65	389.35	285.30	2.365		
21,500.00	12,644.00	21,104.30	12,504.00	147.79	146.37	-78.01	-8,845.96	27.85	674.65	386.20	288.45	2.339		
21,600.00	12,644.00	21,204.30	12,504.00	149.39	147.97	-78.01	-8,945.96	27.85	674.65	383.04	291.61	2.314		
21,700.00	12,644.00	21,304.30	12,504.00	150.99	149.58	-78.01	-9,045.96	27.85	674.65	379.89	294.76	2.289		
21,800.00	12,644.00	21,404.30	12,504.00	152.60	151.19	-78.01	-9,145.96	27.85	674.65	376.73	297.92	2.265		
21,900.00	12,644.00	21,504.30	12,504.00	154.20	152.79	-78.01	-9,245.96	27.85	674.65	373.57	301.08	2.241		
22,000.00	12,644.00	21,604.30	12,504.00	155.81	154.40	-78.01	-9,345.96	27.85	674.65	370.41	304.24	2.218		
22,100.00	12,644.00	21,704.30	12,504.00	157.41	156.01	-78.01	-9,445.96	27.85	674.65	367.25	307.40	2.195		
22,200.00	12,644.00	21,804.30	12,504.00	159.02	157.62	-78.01	-9,545.96	27.85	674.65	364.09	310.56	2.172		
22,300.00	12,644.00	21,904.30	12,504.00	160.63	159.23	-78.01	-9,645.96	27.85	674.65	360.93	313.72	2.150		
22,400.00	12,644.00	22,004.30	12,504.00	162.24	160.84	-78.01	-9,745.96	27.85	674.65	357.76	316.89	2.129		
22,500.00	12,644.00	22,104.30	12,504.00	163.84	162.45	-78.01	-9,845.96	27.85	674.65	354.60	320.05	2.108		
22,556.15	12,644.00	22,160.45	12,504.00	164.75	163.35	-78.01	-9,902.12	27.85	674.65	352.82	321.83	2.096		
22,563.68	12,644.00	22,161.88	12,504.00	164.87	163.37	-78.01	-9,903.54	27.85	674.68	352.79	321.89	2.096 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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 15H - OH - Plan #1											Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	92.35	-37.38	910.14	910.93			
100.00	100.00	93.90	93.90	0.08	0.08	92.35	-37.38	910.14	910.91	0.16	5,573.575	
200.00	200.00	193.90	193.90	0.31	0.30	92.35	-37.38	910.14	910.91	0.60	1,507.136	
300.00	300.00	293.90	293.90	0.53	0.52	92.35	-37.38	910.14	910.91	1.05	864.297	
400.00	400.00	393.90	393.90	0.76	0.74	92.35	-37.38	910.14	910.91	1.50	605.874	
500.00	500.00	493.90	493.90	0.98	0.97	92.35	-37.38	910.14	910.91	1.95	466.416	
600.00	600.00	593.90	593.90	1.21	1.19	92.35	-37.38	910.14	910.91	2.40	379.146	
700.00	700.00	693.90	693.90	1.43	1.42	92.35	-37.38	910.14	910.91	2.85	319.386	
800.00	800.00	793.90	793.90	1.66	1.64	92.35	-37.38	910.14	910.91	3.30	275.900	
900.00	900.00	893.90	893.90	1.88	1.87	92.35	-37.38	910.14	910.91	3.75	242.836	
1,000.00	1,000.00	993.90	993.90	2.11	2.09	92.35	-37.38	910.14	910.91	4.20	216.849	
1,100.00	1,100.00	1,093.90	1,093.90	2.33	2.32	92.35	-37.38	910.14	910.91	4.65	195.886	
1,200.00	1,200.00	1,193.90	1,193.90	2.56	2.54	92.35	-37.38	910.14	910.91	5.10	178.619	
1,300.00	1,300.00	1,293.90	1,293.90	2.78	2.77	92.35	-37.38	910.14	910.91	5.55	164.150	
1,400.00	1,400.00	1,393.90	1,393.90	3.01	2.99	92.35	-37.38	910.14	910.91	6.00	151.849	
1,500.00	1,500.00	1,493.90	1,493.90	3.23	3.22	92.35	-37.38	910.14	910.91	6.45	141.263	
1,600.00	1,600.00	1,593.90	1,593.90	3.46	3.44	92.35	-37.38	910.14	910.91	6.90	132.057	
1,700.00	1,700.00	1,693.90	1,693.90	3.68	3.67	92.35	-37.38	910.14	910.91	7.35	123.977	
1,800.00	1,800.00	1,793.90	1,793.90	3.91	3.89	92.35	-37.38	910.14	910.91	7.80	116.829	
1,900.00	1,900.00	1,893.90	1,893.90	4.13	4.12	92.35	-37.38	910.14	910.91	8.25	110.461	
2,000.00	2,000.00	1,993.90	1,993.90	4.35	4.34	92.35	-37.38	910.14	910.91	8.70	104.750	
2,100.00	2,100.00	2,093.90	2,093.90	4.58	4.57	92.35	-37.38	910.14	910.91	9.15	99.602	
2,200.00	2,200.00	2,193.90	2,193.90	4.80	4.79	92.35	-37.38	910.14	910.91	9.60	94.935	
2,300.00	2,300.00	2,293.90	2,293.90	5.03	5.02	92.35	-37.38	910.14	910.91	10.04	90.687	
2,400.00	2,400.00	2,393.90	2,393.90	5.25	5.24	92.35	-37.38	910.14	910.91	10.49	86.802	
2,500.00	2,500.00	2,493.90	2,493.90	5.48	5.46	92.35	-37.38	910.14	910.91	10.94	83.236 CC, ES	
2,600.00	2,599.99	2,593.89	2,593.89	5.69	5.69	162.37	-37.38	910.14	911.74	11.38	80.092	
2,700.00	2,699.96	2,693.86	2,693.86	5.90	5.91	162.41	-37.38	910.14	914.23	11.82	77.378	
2,800.00	2,799.86	2,793.76	2,793.76	6.11	6.14	162.48	-37.38	910.14	918.39	12.25	74.984	
2,900.00	2,899.68	2,893.58	2,893.58	6.33	6.36	162.58	-37.38	910.14	924.22	12.68	72.877	
2,949.81	2,949.35	2,943.25	2,943.25	6.43	6.47	162.64	-37.38	910.14	927.74	12.90	71.926	
3,000.00	2,999.38	2,993.28	2,993.28	6.54	6.59	162.71	-37.38	910.14	931.50	13.12	71.015	
3,100.00	3,099.08	3,092.98	3,092.98	6.76	6.81	162.85	-37.38	910.14	938.99	13.55	69.287	
3,200.00	3,198.77	3,192.67	3,192.67	6.99	7.04	162.99	-37.38	910.14	946.49	13.99	67.659	
3,300.00	3,298.46	3,292.36	3,292.36	7.21	7.26	163.13	-37.38	910.14	953.99	14.43	66.126	
3,400.00	3,398.15	3,392.05	3,392.05	7.44	7.48	163.26	-37.38	910.14	961.50	14.87	64.678	
3,500.00	3,497.84	3,491.74	3,491.74	7.67	7.71	163.40	-37.38	910.14	969.02	15.31	63.309	
3,600.00	3,597.54	3,591.44	3,591.44	7.90	7.93	163.53	-37.38	910.14	976.54	15.75	62.014	
3,700.00	3,697.23	3,691.13	3,691.13	8.13	8.16	163.66	-37.38	910.14	984.06	16.19	60.787	
3,800.00	3,796.92	3,790.82	3,790.82	8.37	8.38	163.79	-37.38	910.14	991.60	16.63	59.622	
3,900.00	3,896.61	3,890.51	3,890.51	8.60	8.60	163.91	-37.38	910.14	999.13	17.07	58.515	
4,000.00	3,996.30	3,990.20	3,990.20	8.84	8.83	164.04	-37.38	910.14	1,006.67	17.52	57.463	
4,100.00	4,096.00	4,077.22	4,077.22	9.08	9.02	164.13	-37.22	910.64	1,014.78	17.92	56.617	
4,200.00	4,195.69	4,162.67	4,162.65	9.31	9.19	164.20	-36.67	912.34	1,024.26	18.31	55.926	
4,300.00	4,295.38	4,247.89	4,247.81	9.55	9.37	164.23	-35.74	915.24	1,035.11	18.70	55.354	
4,400.00	4,395.07	4,332.84	4,332.65	9.79	9.55	164.24	-34.42	919.34	1,047.33	19.08	54.886	
4,500.00	4,494.76	4,421.46	4,421.09	10.04	9.74	164.23	-32.65	924.83	1,060.86	19.47	54.476	
4,600.00	4,594.46	4,520.49	4,519.88	10.28	9.95	164.20	-30.57	931.31	1,074.75	19.90	54.004	
4,700.00	4,694.15	4,619.52	4,618.68	10.52	10.16	164.18	-28.48	937.79	1,088.64	20.33	53.547	
4,800.00	4,793.84	4,718.55	4,717.47	10.76	10.37	164.16	-26.40	944.28	1,102.52	20.76	53.106	
4,900.00	4,893.53	4,817.58	4,816.27	11.01	10.59	164.13	-24.31	950.76	1,116.41	21.19	52.680	
5,000.00	4,993.22	4,916.61	4,915.06	11.25	10.81	164.11	-22.23	957.24	1,130.30	21.63	52.268	

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 15H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														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			
5,100.00	5,092.92	5,015.64	5,013.86	11.50	11.02	164.09	-20.14	963.73	1,144.19	1,122.13	22.06	51.869			
5,200.00	5,192.61	5,114.67	5,112.65	11.74	11.24	164.07	-18.06	970.21	1,158.08	1,135.58	22.49	51.483			
5,300.00	5,292.30	5,213.70	5,211.45	11.99	11.46	164.05	-15.97	976.69	1,171.96	1,149.03	22.93	51.110			
5,400.00	5,391.99	5,312.73	5,310.25	12.24	11.68	164.03	-13.88	983.17	1,185.85	1,162.48	23.37	50.748			
5,500.00	5,491.68	5,411.76	5,409.04	12.48	11.91	164.01	-11.80	989.66	1,199.74	1,175.94	23.81	50.398			
5,600.00	5,591.38	5,510.79	5,507.84	12.73	12.13	163.99	-9.71	996.14	1,213.63	1,189.39	24.24	50.059			
5,700.00	5,691.07	5,609.82	5,606.63	12.98	12.36	163.97	-7.63	1,002.62	1,227.52	1,202.83	24.68	49.730			
5,800.00	5,790.76	5,708.85	5,705.43	13.23	12.58	163.95	-5.54	1,009.11	1,241.41	1,216.28	25.12	49.411			
5,900.00	5,890.45	5,807.88	5,804.22	13.48	12.81	163.93	-3.46	1,015.59	1,255.30	1,229.73	25.57	49.102			
6,000.00	5,990.14	5,906.91	5,903.02	13.72	13.03	163.92	-1.37	1,022.07	1,269.19	1,243.18	26.01	48.802			
6,100.00	6,089.84	6,005.94	6,001.82	13.97	13.26	163.90	0.72	1,028.56	1,283.08	1,256.63	26.45	48.510			
6,200.00	6,189.53	6,104.97	6,100.61	14.22	13.49	163.88	2.80	1,035.04	1,296.96	1,270.07	26.89	48.227			
6,300.00	6,289.22	6,204.00	6,199.41	14.47	13.72	163.87	4.89	1,041.52	1,310.85	1,283.52	27.34	47.953			
6,400.00	6,388.91	6,303.03	6,298.20	14.72	13.95	163.85	6.97	1,048.00	1,324.74	1,296.96	27.78	47.686			
6,500.00	6,488.60	6,402.06	6,397.00	14.97	14.18	163.83	9.06	1,054.49	1,338.63	1,310.41	28.23	47.426			
6,600.00	6,588.30	6,501.09	6,495.79	15.22	14.41	163.82	11.14	1,060.97	1,352.52	1,323.85	28.67	47.174			
6,700.00	6,687.99	6,600.12	6,594.59	15.47	14.64	163.80	13.23	1,067.45	1,366.41	1,337.30	29.12	46.928			
6,800.00	6,787.68	6,699.15	6,693.38	15.72	14.87	163.79	15.31	1,073.94	1,380.30	1,350.74	29.56	46.690			
6,900.00	6,887.37	6,798.18	6,792.18	15.98	15.10	163.77	17.40	1,080.42	1,394.19	1,364.18	30.01	46.457			
7,000.00	6,987.06	6,897.21	6,890.98	16.23	15.33	163.76	19.49	1,086.90	1,408.08	1,377.63	30.46	46.231			
7,100.00	7,086.76	6,996.24	6,989.77	16.48	15.57	163.75	21.57	1,093.38	1,421.97	1,391.07	30.91	46.010			
7,200.00	7,186.45	7,095.27	7,088.57	16.73	15.80	163.73	23.66	1,099.87	1,435.87	1,404.51	31.35	45.796			
7,300.00	7,286.14	7,194.30	7,187.36	16.98	16.04	163.72	25.74	1,106.35	1,449.76	1,417.95	31.80	45.587			
7,400.00	7,385.83	7,293.33	7,286.16	17.23	16.27	163.71	27.83	1,112.83	1,463.65	1,431.40	32.25	45.383			
7,500.00	7,485.52	7,392.36	7,384.95	17.49	16.50	163.69	29.91	1,119.32	1,477.54	1,444.84	32.70	45.184			
7,600.00	7,585.22	7,491.39	7,483.75	17.74	16.74	163.68	32.00	1,125.80	1,491.43	1,458.28	33.15	44.990			
7,700.00	7,684.91	7,590.42	7,582.54	17.99	16.97	163.67	34.08	1,132.28	1,505.32	1,471.72	33.60	44.801			
7,800.00	7,784.60	7,689.45	7,681.34	18.24	17.21	163.66	36.17	1,138.76	1,519.21	1,485.16	34.05	44.616			
7,900.00	7,884.29	7,788.48	7,780.14	18.50	17.45	163.64	38.26	1,145.25	1,533.10	1,498.60	34.50	44.436			
8,000.00	7,983.98	7,887.51	7,878.93	18.75	17.68	163.63	40.34	1,151.73	1,546.99	1,512.04	34.95	44.260			
8,100.00	8,083.68	7,986.54	7,977.73	19.00	17.92	163.62	42.43	1,158.21	1,560.88	1,525.48	35.40	44.088			
8,200.00	8,183.37	8,085.57	8,076.52	19.25	18.16	163.61	44.51	1,164.70	1,574.77	1,538.92	35.86	43.920			
8,300.00	8,283.06	8,184.60	8,175.32	19.51	18.39	163.60	46.60	1,171.18	1,588.67	1,552.36	36.31	43.756			
8,400.00	8,382.75	8,283.63	8,274.11	19.76	18.63	163.59	48.68	1,177.66	1,602.56	1,565.80	36.76	43.596			
8,500.00	8,482.44	8,382.66	8,372.91	20.01	18.87	163.58	50.77	1,184.14	1,616.45	1,579.24	37.21	43.439			
8,600.00	8,582.14	8,481.69	8,471.70	20.27	19.11	163.56	52.86	1,190.63	1,630.34	1,592.67	37.66	43.286			
8,700.00	8,681.83	8,580.72	8,570.50	20.52	19.34	163.55	54.94	1,197.11	1,644.23	1,606.11	38.12	43.136			
8,800.00	8,781.52	8,679.75	8,669.30	20.77	19.58	163.54	57.03	1,203.59	1,658.12	1,619.55	38.57	42.989			
8,900.00	8,881.21	8,778.78	8,768.09	21.03	19.82	163.53	59.11	1,210.08	1,672.01	1,632.99	39.02	42.846			
9,000.00	8,980.90	8,877.81	8,866.89	21.28	20.06	163.52	61.20	1,216.56	1,685.91	1,646.43	39.48	42.705			
9,100.00	9,080.60	8,976.84	8,965.68	21.54	20.30	163.51	63.28	1,223.04	1,699.80	1,659.87	39.93	42.568			
9,200.00	9,180.29	9,075.87	9,064.48	21.79	20.54	163.50	65.37	1,229.53	1,713.69	1,673.30	40.39	42.433			
9,300.00	9,279.98	9,174.90	9,163.27	22.04	20.78	163.50	67.45	1,236.01	1,727.58	1,686.74	40.84	42.301			
9,400.00	9,379.67	9,273.93	9,262.07	22.30	21.02	163.49	69.54	1,242.49	1,741.47	1,700.18	41.29	42.172			
9,500.00	9,479.36	9,372.96	9,360.86	22.55	21.26	163.48	71.63	1,248.97	1,755.36	1,713.61	41.75	42.045			
9,600.00	9,579.05	9,471.99	9,459.66	22.81	21.50	163.47	73.71	1,255.46	1,769.26	1,727.05	42.20	41.921			
9,700.00	9,678.75	9,571.02	9,558.46	23.06	21.74	163.46	75.80	1,261.94	1,783.15	1,740.49	42.66	41.800			
9,800.00	9,778.44	9,670.05	9,657.25	23.31	21.98	163.45	77.88	1,268.42	1,797.04	1,753.92	43.11	41.681			
9,900.00	9,878.13	9,769.08	9,756.05	23.57	22.22	163.44	79.97	1,274.91	1,810.93	1,767.36	43.57	41.564			
10,000.00	9,977.82	9,868.11	9,854.84	23.82	22.46	163.43	82.05	1,281.39	1,824.82	1,780.80	44.03	41.449			
10,100.00	10,077.51	9,967.14	9,953.64	24.08	22.70	163.42	84.14	1,287.87	1,838.72	1,794.23	44.48	41.337			
10,200.00	10,177.21	10,066.17	10,052.43	24.33	22.94	163.42	86.23	1,294.35	1,852.61	1,807.67	44.94	41.226			

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 15H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
10,300.00	10,276.90	10,165.20	10,151.23	24.59	23.18	163.41	88.31	1,300.84	1,866.50	1,821.11	45.39	41.118		
10,400.00	10,376.59	10,264.23	10,250.02	24.84	23.42	163.40	90.40	1,307.32	1,880.39	1,834.54	45.85	41.012		
10,500.00	10,476.28	10,363.26	10,348.82	25.10	23.66	163.39	92.48	1,313.80	1,894.28	1,847.98	46.31	40.907		
10,600.00	10,575.97	10,462.29	10,447.62	25.35	23.90	163.38	94.57	1,320.29	1,908.18	1,861.41	46.76	40.805		
10,700.00	10,675.67	10,561.32	10,546.41	25.61	24.14	163.38	96.65	1,326.77	1,922.07	1,874.85	47.22	40.704		
10,800.00	10,775.36	10,660.35	10,645.21	25.86	24.39	163.37	98.74	1,333.25	1,935.96	1,888.28	47.68	40.605		
10,900.00	10,875.05	10,759.38	10,744.00	26.12	24.63	163.36	100.82	1,339.73	1,949.85	1,901.72	48.13	40.508		
11,000.00	10,974.74	10,858.41	10,842.80	26.37	24.87	163.35	102.91	1,346.22	1,963.75	1,915.15	48.59	40.413		
11,076.14	11,050.65	10,933.81	10,918.02	26.57	25.05	163.35	104.50	1,351.15	1,974.32	1,925.38	48.94	40.342		
11,100.00	11,074.44	10,957.45	10,941.60	26.82	25.11	163.36	105.00	1,352.70	1,977.59	1,928.55	49.04	40.323		
11,200.00	11,174.22	11,056.64	11,040.56	26.81	25.35	163.38	107.08	1,359.19	1,990.26	1,940.81	49.45	40.246		
11,300.00	11,274.10	11,172.34	11,156.00	26.99	25.62	163.37	109.45	1,366.56	2,001.13	1,951.23	49.90	40.101		
11,400.00	11,374.06	11,320.36	11,303.84	27.17	25.90	163.36	111.59	1,373.20	2,008.46	1,958.07	50.39	39.855		
11,500.00	11,474.05	11,468.89	11,452.34	27.33	26.17	163.35	112.56	1,376.21	2,011.72	1,960.86	50.86	39.556		
11,525.95	11,500.00	11,507.48	11,490.93	27.38	26.24	93.34	112.62	1,376.39	2,011.89	1,960.92	50.98	39.468		
11,600.00	11,574.05	11,584.50	11,567.95	27.51	26.38	93.34	112.62	1,376.40	2,011.90	1,960.63	51.27	39.241		
11,700.00	11,674.05	11,684.50	11,667.95	27.71	26.59	93.34	112.62	1,376.40	2,011.90	1,960.21	51.69	38.922		
11,800.00	11,774.05	11,784.50	11,767.95	27.91	26.80	93.34	112.62	1,376.40	2,011.90	1,959.78	52.11	38.606		
11,900.00	11,874.05	11,884.50	11,867.95	28.11	27.01	93.34	112.62	1,376.40	2,011.90	1,959.36	52.54	38.295		
11,909.89	11,883.94	11,894.39	11,877.84	28.13	27.03	93.34	112.62	1,376.40	2,011.90	1,959.32	52.58	38.265		
12,000.00	11,974.05	11,981.62	11,965.07	28.31	27.21	93.35	112.45	1,376.40	2,011.91	1,958.96	52.95	37.996		
12,096.99	12,071.04	12,061.28	12,044.31	28.50	27.34	93.56	104.98	1,376.40	2,012.46	1,959.18	53.28	37.768		
12,100.00	12,074.05	12,063.71	12,046.71	28.51	27.34	-86.42	104.58	1,376.40	2,012.49	1,959.20	53.29	37.762		
12,150.00	12,123.97	12,100.00	12,082.28	28.59	27.40	-86.21	97.39	1,376.40	2,013.00	1,959.57	53.43	37.675		
12,200.00	12,173.49	12,143.81	12,124.50	28.67	27.47	-86.00	85.73	1,376.40	2,013.46	1,959.90	53.57	37.589		
12,250.00	12,222.23	12,183.45	12,161.83	28.73	27.52	-85.82	72.44	1,376.40	2,013.89	1,960.21	53.68	37.516		
12,300.00	12,269.83	12,222.87	12,197.95	28.79	27.58	-85.67	56.69	1,376.40	2,014.26	1,960.47	53.79	37.449		
12,350.00	12,315.90	12,262.10	12,232.75	28.85	27.63	-85.55	38.58	1,376.40	2,014.57	1,960.69	53.88	37.387		
12,400.00	12,360.12	12,300.00	12,265.11	28.90	27.67	-85.46	18.87	1,376.40	2,014.82	1,960.85	53.98	37.328		
12,450.00	12,402.13	12,340.19	12,297.93	28.94	27.72	-85.39	-4.32	1,376.40	2,015.00	1,960.93	54.07	37.267		
12,500.00	12,441.63	12,379.11	12,328.08	28.98	27.77	-85.35	-28.92	1,376.40	2,015.10	1,960.93	54.16	37.203		
12,550.00	12,478.30	12,418.01	12,356.48	29.02	27.81	-85.35	-55.50	1,376.40	2,015.12	1,960.85	54.26	37.135		
12,600.00	12,511.88	12,456.92	12,383.02	29.06	27.86	-85.37	-83.94	1,376.40	2,015.06	1,960.69	54.37	37.059		
12,650.00	12,542.10	12,500.00	12,410.07	29.09	27.92	-85.42	-117.45	1,376.40	2,014.93	1,960.42	54.51	36.966		
12,700.00	12,568.73	12,534.91	12,430.10	29.14	27.97	-85.50	-146.04	1,376.40	2,014.72	1,960.07	54.64	36.871		
12,750.00	12,591.58	12,574.07	12,450.44	29.19	28.03	-85.60	-179.49	1,376.40	2,014.44	1,959.63	54.81	36.754		
12,800.00	12,610.47	12,613.38	12,468.52	29.25	28.10	-85.74	-214.39	1,376.40	2,014.09	1,959.10	55.00	36.622		
12,850.00	12,625.25	12,650.00	12,483.18	29.33	28.17	-85.89	-247.94	1,376.40	2,013.70	1,958.49	55.20	36.478		
12,900.00	12,635.81	12,692.65	12,497.50	29.43	28.27	-86.09	-288.10	1,376.40	2,013.25	1,957.79	55.46	36.303		
12,950.00	12,642.07	12,732.68	12,508.19	29.54	28.37	-86.30	-326.67	1,376.40	2,012.76	1,957.03	55.73	36.116		
12,996.99	12,644.00	12,770.61	12,515.81	29.68	28.48	-86.52	-363.82	1,376.40	2,012.29	1,956.27	56.01	35.925		
13,000.00	12,644.00	12,773.05	12,516.22	29.69	28.49	-86.53	-366.23	1,376.40	2,012.25	1,956.22	56.03	35.912		
13,100.00	12,644.00	12,855.60	12,523.87	30.04	28.77	-86.75	-448.35	1,376.40	2,011.71	1,954.98	56.73	35.463		
13,138.93	12,644.00	12,892.14	12,524.00	30.20	28.92	-86.75	-484.89	1,376.40	2,011.70	1,954.64	57.06	35.255		
13,200.00	12,644.00	12,953.22	12,524.00	30.48	29.19	-86.75	-545.96	1,376.40	2,011.70	1,954.06	57.64	34.904		
13,300.00	12,644.00	13,053.22	12,524.00	31.00	29.70	-86.75	-645.96	1,376.40	2,011.70	1,952.99	58.71	34.265		
13,400.00	12,644.00	13,153.22	12,524.00	31.61	30.28	-86.75	-745.96	1,376.40	2,011.70	1,951.75	59.94	33.559		
13,500.00	12,644.00	13,253.22	12,524.00	32.29	30.95	-86.75	-845.96	1,376.40	2,011.70	1,950.37	61.33	32.803		
13,600.00	12,644.00	13,353.22	12,524.00	33.04	31.68	-86.75	-945.96	1,376.40	2,011.70	1,948.85	62.85	32.008		
13,700.00	12,644.00	13,453.22	12,524.00	33.85	32.48	-86.75	-1,045.96	1,376.40	2,011.70	1,947.20	64.50	31.189		
13,800.00	12,644.00	13,553.22	12,524.00	34.72	33.34	-86.75	-1,145.96	1,376.40	2,011.70	1,945.42	66.27	30.355		
13,900.00	12,644.00	13,653.22	12,524.00	35.64	34.26	-86.75	-1,245.96	1,376.40	2,011.70	1,943.54	68.15	29.517		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 15H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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)	Separation Factor			
14,000.00	12,644.00	13,753.22	12,524.00	36.62	35.23	-86.75	-1,345.96	1,376.40	2,011.70	1,941.56	70.14	28.682		
14,100.00	12,644.00	13,853.22	12,524.00	37.64	36.24	-86.75	-1,445.96	1,376.40	2,011.70	1,939.48	72.21	27.857		
14,200.00	12,644.00	13,953.22	12,524.00	38.70	37.30	-86.75	-1,545.96	1,376.40	2,011.70	1,937.32	74.38	27.048		
14,300.00	12,644.00	14,053.22	12,524.00	39.80	38.41	-86.75	-1,645.96	1,376.40	2,011.70	1,935.08	76.62	26.257		
14,400.00	12,644.00	14,153.22	12,524.00	40.94	39.54	-86.75	-1,745.96	1,376.40	2,011.70	1,932.77	78.93	25.488		
14,500.00	12,644.00	14,253.22	12,524.00	42.11	40.71	-86.75	-1,845.96	1,376.40	2,011.70	1,930.39	81.31	24.743		
14,600.00	12,644.00	14,353.22	12,524.00	43.30	41.92	-86.75	-1,945.96	1,376.40	2,011.70	1,927.95	83.74	24.022		
14,700.00	12,644.00	14,453.22	12,524.00	44.53	43.15	-86.75	-2,045.96	1,376.40	2,011.70	1,925.46	86.23	23.328		
14,800.00	12,644.00	14,553.22	12,524.00	45.78	44.41	-86.75	-2,145.96	1,376.40	2,011.70	1,922.92	88.78	22.660		
14,900.00	12,644.00	14,653.22	12,524.00	47.06	45.69	-86.75	-2,245.96	1,376.40	2,011.70	1,920.33	91.36	22.019		
15,000.00	12,644.00	14,753.22	12,524.00	48.36	46.99	-86.75	-2,345.96	1,376.40	2,011.70	1,917.70	93.99	21.402		
15,100.00	12,644.00	14,853.22	12,524.00	49.67	48.31	-86.75	-2,445.96	1,376.40	2,011.70	1,915.03	96.66	20.812		
15,200.00	12,644.00	14,953.22	12,524.00	51.01	49.65	-86.75	-2,545.96	1,376.40	2,011.70	1,912.33	99.37	20.245		
15,300.00	12,644.00	15,053.22	12,524.00	52.36	51.01	-86.75	-2,645.96	1,376.40	2,011.70	1,909.59	102.10	19.702		
15,400.00	12,644.00	15,153.22	12,524.00	53.73	52.39	-86.75	-2,745.96	1,376.40	2,011.70	1,906.83	104.87	19.183		
15,500.00	12,644.00	15,253.22	12,524.00	55.11	53.78	-86.75	-2,845.96	1,376.40	2,011.70	1,904.03	107.67	18.685		
15,600.00	12,644.00	15,353.22	12,524.00	56.51	55.18	-86.75	-2,945.96	1,376.40	2,011.70	1,901.21	110.49	18.208		
15,700.00	12,644.00	15,453.22	12,524.00	57.92	56.59	-86.75	-3,045.96	1,376.40	2,011.70	1,898.37	113.33	17.750		
15,800.00	12,644.00	15,553.22	12,524.00	59.34	58.02	-86.75	-3,145.96	1,376.40	2,011.70	1,895.50	116.20	17.313		
15,900.00	12,644.00	15,653.22	12,524.00	60.77	59.46	-86.75	-3,245.96	1,376.40	2,011.70	1,892.61	119.09	16.893		
16,000.00	12,644.00	15,753.22	12,524.00	62.21	60.90	-86.75	-3,345.96	1,376.40	2,011.70	1,889.70	121.99	16.490		
16,100.00	12,644.00	15,853.22	12,524.00	63.66	62.36	-86.75	-3,445.96	1,376.40	2,011.70	1,886.78	124.92	16.104		
16,200.00	12,644.00	15,953.22	12,524.00	65.12	63.83	-86.75	-3,545.96	1,376.40	2,011.70	1,883.84	127.86	15.734		
16,300.00	12,644.00	16,053.22	12,524.00	66.58	65.30	-86.75	-3,645.96	1,376.40	2,011.70	1,880.88	130.81	15.378		
16,400.00	12,644.00	16,153.22	12,524.00	68.06	66.78	-86.75	-3,745.96	1,376.40	2,011.70	1,877.91	133.78	15.037		
16,500.00	12,644.00	16,253.22	12,524.00	69.54	68.27	-86.75	-3,845.96	1,376.40	2,011.70	1,874.93	136.77	14.709		
16,600.00	12,644.00	16,353.22	12,524.00	71.03	69.76	-86.75	-3,945.96	1,376.40	2,011.70	1,871.93	139.76	14.394		
16,700.00	12,644.00	16,453.22	12,524.00	72.52	71.26	-86.75	-4,045.96	1,376.40	2,011.70	1,868.93	142.77	14.090		
16,800.00	12,644.00	16,553.22	12,524.00	74.02	72.77	-86.75	-4,145.96	1,376.40	2,011.70	1,865.91	145.79	13.799		
16,900.00	12,644.00	16,653.22	12,524.00	75.53	74.28	-86.75	-4,245.96	1,376.40	2,011.70	1,862.88	148.82	13.518		
17,000.00	12,644.00	16,753.22	12,524.00	77.04	75.79	-86.75	-4,345.96	1,376.40	2,011.70	1,859.84	151.86	13.247		
17,100.00	12,644.00	16,853.22	12,524.00	78.56	77.32	-86.75	-4,445.96	1,376.40	2,011.70	1,856.79	154.91	12.986		
17,200.00	12,644.00	16,953.22	12,524.00	80.08	78.84	-86.75	-4,545.96	1,376.40	2,011.70	1,853.73	157.96	12.735		
17,300.00	12,644.00	17,053.22	12,524.00	81.60	80.37	-86.75	-4,645.96	1,376.40	2,011.70	1,850.67	161.03	12.493		
17,400.00	12,644.00	17,153.22	12,524.00	83.13	81.91	-86.75	-4,745.96	1,376.40	2,011.70	1,847.59	164.10	12.259		
17,500.00	12,644.00	17,253.22	12,524.00	84.67	83.44	-86.75	-4,845.96	1,376.40	2,011.70	1,844.51	167.18	12.033		
17,600.00	12,644.00	17,353.22	12,524.00	86.20	84.99	-86.75	-4,945.96	1,376.40	2,011.70	1,841.43	170.27	11.815		
17,700.00	12,644.00	17,453.22	12,524.00	87.75	86.53	-86.75	-5,045.96	1,376.40	2,011.70	1,838.33	173.36	11.604		
17,800.00	12,644.00	17,553.22	12,524.00	89.29	88.08	-86.75	-5,145.96	1,376.40	2,011.70	1,835.23	176.46	11.400		
17,900.00	12,644.00	17,653.22	12,524.00	90.84	89.63	-86.75	-5,245.96	1,376.40	2,011.70	1,832.13	179.57	11.203		
18,000.00	12,644.00	17,753.22	12,524.00	92.39	91.18	-86.75	-5,345.96	1,376.40	2,011.70	1,829.02	182.68	11.012		
18,100.00	12,644.00	17,853.22	12,524.00	93.94	92.74	-86.75	-5,445.96	1,376.40	2,011.70	1,825.90	185.80	10.827		
18,200.00	12,644.00	17,953.22	12,524.00	95.50	94.30	-86.75	-5,545.96	1,376.40	2,011.70	1,822.78	188.92	10.649		
18,300.00	12,644.00	18,053.22	12,524.00	97.05	95.86	-86.75	-5,645.96	1,376.40	2,011.70	1,819.65	192.04	10.475		
18,400.00	12,644.00	18,153.22	12,524.00	98.61	97.43	-86.75	-5,745.96	1,376.40	2,011.70	1,816.52	195.17	10.307		
18,500.00	12,644.00	18,253.22	12,524.00	100.18	98.99	-86.75	-5,845.96	1,376.40	2,011.70	1,813.39	198.31	10.144		
18,600.00	12,644.00	18,353.22	12,524.00	101.74	100.56	-86.75	-5,945.96	1,376.40	2,011.70	1,810.25	201.45	9.986		
18,700.00	12,644.00	18,453.22	12,524.00	103.31	102.13	-86.75	-6,045.96	1,376.40	2,011.70	1,807.11	204.59	9.833		
18,800.00	12,644.00	18,553.22	12,524.00	104.88	103.71	-86.75	-6,145.96	1,376.40	2,011.70	1,803.96	207.74	9.684		
18,900.00	12,644.00	18,653.22	12,524.00	106.45	105.28	-86.75	-6,245.96	1,376.40	2,011.70	1,800.81	210.89	9.539		
19,000.00	12,644.00	18,753.22	12,524.00	108.02	106.86	-86.75	-6,345.96	1,376.40	2,011.70	1,797.65	214.04	9.399		
19,100.00	12,644.00	18,853.22	12,524.00	109.60	108.44	-86.75	-6,445.96	1,376.40	2,011.70	1,794.50	217.20	9.262		

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 15H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														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)	Separation (usft)	Factor			
19,200.00	12,644.00	18,953.22	12,524.00	111.18	110.02	-86.75	-6,545.96	1,376.40	2,011.70	1,791.34	220.36	9.129			
19,300.00	12,644.00	19,053.22	12,524.00	112.75	111.60	-86.75	-6,645.96	1,376.40	2,011.70	1,788.17	223.52	9.000			
19,400.00	12,644.00	19,153.22	12,524.00	114.33	113.18	-86.75	-6,745.96	1,376.40	2,011.70	1,785.01	226.69	8.874			
19,500.00	12,644.00	19,253.22	12,524.00	115.92	114.76	-86.75	-6,845.96	1,376.40	2,011.70	1,781.84	229.86	8.752			
19,600.00	12,644.00	19,353.22	12,524.00	117.50	116.35	-86.75	-6,945.96	1,376.40	2,011.70	1,778.67	233.03	8.633			
19,700.00	12,644.00	19,453.22	12,524.00	119.08	117.94	-86.75	-7,045.96	1,376.40	2,011.70	1,775.49	236.20	8.517			
19,800.00	12,644.00	19,553.22	12,524.00	120.67	119.53	-86.75	-7,145.96	1,376.40	2,011.70	1,772.32	239.38	8.404			
19,900.00	12,644.00	19,653.22	12,524.00	122.26	121.11	-86.75	-7,245.96	1,376.40	2,011.70	1,769.14	242.56	8.294			
20,000.00	12,644.00	19,753.22	12,524.00	123.84	122.71	-86.75	-7,345.96	1,376.40	2,011.70	1,765.96	245.74	8.186			
20,100.00	12,644.00	19,853.22	12,524.00	125.43	124.30	-86.75	-7,445.96	1,376.40	2,011.70	1,762.77	248.92	8.082			
20,200.00	12,644.00	19,953.22	12,524.00	127.02	125.89	-86.75	-7,545.96	1,376.40	2,011.70	1,759.59	252.11	7.979			
20,300.00	12,644.00	20,053.22	12,524.00	128.62	127.48	-86.75	-7,645.96	1,376.40	2,011.70	1,756.40	255.30	7.880			
20,400.00	12,644.00	20,153.22	12,524.00	130.21	129.08	-86.75	-7,745.96	1,376.40	2,011.70	1,753.21	258.48	7.783			
20,500.00	12,644.00	20,253.22	12,524.00	131.80	130.68	-86.75	-7,845.96	1,376.40	2,011.70	1,750.02	261.68	7.688			
20,600.00	12,644.00	20,353.22	12,524.00	133.40	132.27	-86.75	-7,945.96	1,376.40	2,011.70	1,746.83	264.87	7.595			
20,700.00	12,644.00	20,453.22	12,524.00	134.99	133.87	-86.75	-8,045.96	1,376.40	2,011.70	1,743.63	268.06	7.505			
20,800.00	12,644.00	20,553.22	12,524.00	136.59	135.47	-86.75	-8,145.96	1,376.40	2,011.70	1,740.44	271.26	7.416			
20,900.00	12,644.00	20,653.22	12,524.00	138.19	137.07	-86.75	-8,245.96	1,376.40	2,011.70	1,737.24	274.46	7.330			
21,000.00	12,644.00	20,753.22	12,524.00	139.78	138.67	-86.75	-8,345.96	1,376.40	2,011.70	1,734.04	277.66	7.245			
21,100.00	12,644.00	20,853.22	12,524.00	141.38	140.27	-86.75	-8,445.96	1,376.40	2,011.70	1,730.84	280.86	7.163			
21,200.00	12,644.00	20,953.22	12,524.00	142.98	141.87	-86.75	-8,545.96	1,376.40	2,011.70	1,727.64	284.06	7.082			
21,300.00	12,644.00	21,053.22	12,524.00	144.58	143.47	-86.75	-8,645.96	1,376.40	2,011.70	1,724.43	287.26	7.003			
21,400.00	12,644.00	21,153.22	12,524.00	146.19	145.08	-86.75	-8,745.96	1,376.40	2,011.70	1,721.23	290.47	6.926			
21,500.00	12,644.00	21,253.22	12,524.00	147.79	146.68	-86.75	-8,845.96	1,376.40	2,011.70	1,718.02	293.68	6.850			
21,600.00	12,644.00	21,353.22	12,524.00	149.39	148.29	-86.75	-8,945.96	1,376.40	2,011.70	1,714.81	296.88	6.776			
21,700.00	12,644.00	21,453.22	12,524.00	150.99	149.89	-86.75	-9,045.96	1,376.40	2,011.70	1,711.60	300.09	6.704			
21,800.00	12,644.00	21,553.22	12,524.00	152.60	151.50	-86.75	-9,145.96	1,376.40	2,011.70	1,708.39	303.30	6.633			
21,900.00	12,644.00	21,653.22	12,524.00	154.20	153.10	-86.75	-9,245.96	1,376.40	2,011.70	1,705.18	306.51	6.563			
22,000.00	12,644.00	21,753.22	12,524.00	155.81	154.71	-86.75	-9,345.96	1,376.40	2,011.70	1,701.97	309.73	6.495			
22,100.00	12,644.00	21,853.22	12,524.00	157.41	156.32	-86.75	-9,445.96	1,376.40	2,011.70	1,698.76	312.94	6.428			
22,200.00	12,644.00	21,953.22	12,524.00	159.02	157.93	-86.75	-9,545.96	1,376.40	2,011.70	1,695.54	316.15	6.363			
22,300.00	12,644.00	22,053.22	12,524.00	160.63	159.54	-86.75	-9,645.96	1,376.40	2,011.70	1,692.33	319.37	6.299			
22,400.00	12,644.00	22,153.22	12,524.00	162.24	161.15	-86.75	-9,745.96	1,376.40	2,011.70	1,689.11	322.59	6.236			
22,500.00	12,644.00	22,253.22	12,524.00	163.84	162.76	-86.75	-9,845.96	1,376.40	2,011.70	1,685.89	325.80	6.175			
22,543.22	12,644.00	22,296.43	12,524.00	164.54	163.45	-86.75	-9,889.18	1,376.40	2,011.70	1,684.50	327.19	6.148			
22,563.68	12,644.00	22,298.20	12,524.00	164.87	163.48	-86.75	-9,890.95	1,376.40	2,011.78	1,684.26	327.52	6.142 SF			

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 3H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)										
0.00	0.00	1.20	1.20	0.00	0.00	89.52	0.75	89.98	89.98						
100.00	100.00	101.20	101.20	0.08	0.09	89.52	0.75	89.98	89.98	89.81	0.17	525.382			
200.00	200.00	201.20	201.20	0.31	0.31	89.52	0.75	89.98	89.98	89.36	0.62	144.946			
300.00	300.00	301.20	301.20	0.53	0.54	89.52	0.75	89.98	89.98	88.91	1.07	84.070			
400.00	400.00	401.20	401.20	0.76	0.76	89.52	0.75	89.98	89.98	88.46	1.52	59.205			
500.00	500.00	501.20	501.20	0.98	0.99	89.52	0.75	89.98	89.98	88.01	1.97	45.691			
600.00	600.00	601.20	601.20	1.21	1.21	89.52	0.75	89.98	89.98	87.56	2.42	37.200			
700.00	700.00	701.20	701.20	1.43	1.44	89.52	0.75	89.98	89.98	87.11	2.87	31.370			
800.00	800.00	801.20	801.20	1.66	1.66	89.52	0.75	89.98	89.98	86.67	3.32	27.120			
900.00	900.00	901.20	901.20	1.88	1.89	89.52	0.75	89.98	89.98	86.22	3.77	23.884			
1,000.00	1,000.00	1,001.20	1,001.20	2.11	2.11	89.52	0.75	89.98	89.98	85.77	4.22	21.338			
1,100.00	1,100.00	1,101.20	1,101.20	2.33	2.33	89.52	0.75	89.98	89.98	85.32	4.67	19.282			
1,200.00	1,200.00	1,201.20	1,201.20	2.56	2.56	89.52	0.75	89.98	89.98	84.87	5.12	17.588			
1,300.00	1,300.00	1,301.20	1,301.20	2.78	2.78	89.52	0.75	89.98	89.98	84.42	5.57	16.168			
1,400.00	1,400.00	1,401.20	1,401.20	3.01	3.01	89.52	0.75	89.98	89.98	83.97	6.02	14.959			
1,500.00	1,500.00	1,501.20	1,501.20	3.23	3.23	89.52	0.75	89.98	89.98	83.52	6.46	13.919			
1,600.00	1,600.00	1,601.20	1,601.20	3.46	3.46	89.52	0.75	89.98	89.98	83.07	6.91	13.014			
1,700.00	1,700.00	1,701.20	1,701.20	3.68	3.68	89.52	0.75	89.98	89.98	82.62	7.36	12.220			
1,800.00	1,800.00	1,801.20	1,801.20	3.91	3.91	89.52	0.75	89.98	89.98	82.17	7.81	11.517			
1,900.00	1,900.00	1,901.20	1,901.20	4.13	4.13	89.52	0.75	89.98	89.98	81.72	8.26	10.890			
2,000.00	2,000.00	2,001.20	2,001.20	4.35	4.36	89.52	0.75	89.98	89.98	81.27	8.71	10.328			
2,100.00	2,100.00	2,101.20	2,101.20	4.58	4.58	89.52	0.75	89.98	89.98	80.82	9.16	9.821			
2,200.00	2,200.00	2,201.20	2,201.20	4.80	4.81	89.52	0.75	89.98	89.98	80.37	9.61	9.362			
2,300.00	2,300.00	2,301.20	2,301.20	5.03	5.03	89.52	0.75	89.98	89.98	79.92	10.06	8.944			
2,400.00	2,400.00	2,401.20	2,401.20	5.25	5.26	89.52	0.75	89.98	89.98	79.47	10.51	8.561			
2,500.00	2,500.00	2,501.20	2,501.20	5.48	5.48	89.52	0.75	89.98	89.98	79.02	10.96	8.210 CC, ES			
2,600.00	2,599.99	2,601.19	2,601.19	5.69	5.71	159.72	0.75	89.98	90.80	79.40	11.40	7.965			
2,700.00	2,699.96	2,701.16	2,701.16	5.90	5.93	160.27	0.75	89.98	93.26	81.43	11.83	7.882			
2,800.00	2,799.86	2,801.06	2,801.06	6.11	6.16	161.12	0.75	89.98	97.38	85.11	12.26	7.940			
2,900.00	2,899.68	2,900.88	2,900.88	6.33	6.38	162.20	0.75	89.98	103.17	90.48	12.70	8.125			
2,949.81	2,949.35	2,950.55	2,950.55	6.43	6.49	162.79	0.75	89.98	106.69	93.78	12.92	8.261			
3,000.00	2,999.38	3,000.00	3,000.00	6.54	6.60	163.39	0.75	89.98	110.46	97.33	13.13	8.412			
3,100.00	3,099.08	3,098.25	3,098.24	6.76	6.81	164.43	0.75	90.82	118.86	105.31	13.55	8.773			
3,200.00	3,198.77	3,195.62	3,195.58	6.99	7.00	165.26	0.75	93.32	128.98	115.03	13.95	9.248			
3,300.00	3,298.46	3,292.64	3,292.51	7.21	7.20	165.90	0.75	97.45	140.79	126.45	14.34	9.817			
3,400.00	3,398.15	3,389.24	3,388.94	7.44	7.40	166.37	0.75	103.20	154.29	139.56	14.73	10.472			
3,500.00	3,497.84	3,486.34	3,485.77	7.67	7.60	166.70	0.75	110.51	169.36	154.23	15.13	11.192			
3,600.00	3,597.54	3,585.14	3,584.26	7.90	7.81	166.97	0.75	118.31	184.79	169.24	15.55	11.885			
3,700.00	3,697.23	3,683.94	3,682.75	8.13	8.02	167.20	0.75	126.11	200.22	184.26	15.97	12.541			
3,800.00	3,796.92	3,782.74	3,781.24	8.37	8.23	167.40	0.75	133.91	215.66	199.27	16.39	13.162			
3,900.00	3,896.61	3,881.54	3,879.73	8.60	8.45	167.57	0.75	141.71	231.10	214.29	16.81	13.750			
4,000.00	3,996.30	3,980.34	3,978.22	8.84	8.67	167.71	0.75	149.51	246.54	229.31	17.23	14.308			
4,100.00	4,096.00	4,079.14	4,076.71	9.08	8.89	167.85	0.75	157.31	261.98	244.32	17.66	14.837			
4,200.00	4,195.69	4,177.93	4,175.20	9.31	9.11	167.96	0.75	165.12	277.42	259.34	18.08	15.341			
4,300.00	4,295.38	4,276.73	4,273.69	9.55	9.33	168.07	0.75	172.92	292.87	274.35	18.51	15.820			
4,400.00	4,395.07	4,375.53	4,372.18	9.79	9.56	168.16	0.75	180.72	308.31	289.37	18.94	16.276			
4,500.00	4,494.76	4,474.33	4,470.67	10.04	9.78	168.24	0.75	188.52	323.76	304.38	19.37	16.711			
4,600.00	4,594.46	4,573.13	4,569.16	10.28	10.01	168.32	0.75	196.32	339.20	319.40	19.81	17.125			
4,700.00	4,694.15	4,671.93	4,667.65	10.52	10.24	168.39	0.75	204.12	354.65	334.41	20.24	17.521			
4,800.00	4,793.84	4,770.73	4,766.14	10.76	10.47	168.46	0.75	211.92	370.10	349.42	20.68	17.900			
4,900.00	4,893.53	4,869.53	4,864.63	11.01	10.70	168.52	0.75	219.72	385.55	364.43	21.11	18.262			
5,000.00	4,993.22	4,968.33	4,963.12	11.25	10.94	168.57	0.75	227.52	400.99	379.44	21.55	18.609			

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 3H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E-W (usft)						
5,100.00	5,092.92	5,067.12	5,061.61	11.50	11.17	168.62	0.75	235.32	416.44	394.45	21.99	18.941		
5,200.00	5,192.61	5,165.92	5,160.10	11.74	11.40	168.67	0.75	243.12	431.89	409.46	22.43	19.259		
5,300.00	5,292.30	5,264.72	5,258.59	11.99	11.64	168.71	0.75	250.92	447.34	424.47	22.87	19.564		
5,400.00	5,391.99	5,363.52	5,357.08	12.24	11.88	168.75	0.75	258.72	462.79	439.48	23.31	19.857		
5,500.00	5,491.68	5,462.32	5,455.57	12.48	12.11	168.79	0.75	266.52	478.24	454.49	23.75	20.139		
5,600.00	5,591.38	5,561.12	5,554.07	12.73	12.35	168.83	0.75	274.32	493.69	469.50	24.19	20.410		
5,700.00	5,691.07	5,659.92	5,652.56	12.98	12.59	168.86	0.75	282.12	509.14	484.51	24.63	20.671		
5,800.00	5,790.76	5,758.72	5,751.05	13.23	12.83	168.89	0.75	289.93	524.59	499.51	25.07	20.922		
5,900.00	5,890.45	5,857.52	5,849.54	13.48	13.07	168.92	0.75	297.73	540.04	514.52	25.52	21.163		
6,000.00	5,990.14	5,956.31	5,948.03	13.72	13.31	168.95	0.75	305.53	555.49	529.53	25.96	21.396		
6,100.00	6,089.84	6,055.11	6,046.52	13.97	13.55	168.98	0.75	313.33	570.94	544.53	26.41	21.621		
6,200.00	6,189.53	6,153.91	6,145.01	14.22	13.79	169.00	0.75	321.13	586.39	559.54	26.85	21.838		
6,300.00	6,289.22	6,252.71	6,243.50	14.47	14.03	169.03	0.75	328.93	601.84	574.54	27.30	22.047		
6,400.00	6,388.91	6,351.51	6,341.99	14.72	14.27	169.05	0.75	336.73	617.29	589.55	27.74	22.250		
6,500.00	6,488.60	6,450.31	6,440.48	14.97	14.52	169.07	0.75	344.53	632.74	604.55	28.19	22.445		
6,600.00	6,588.30	6,549.11	6,538.97	15.22	14.76	169.09	0.75	352.33	648.19	619.55	28.64	22.634		
6,700.00	6,687.99	6,647.91	6,637.46	15.47	15.00	169.11	0.75	360.13	663.64	634.56	29.09	22.817		
6,800.00	6,787.68	6,746.70	6,735.95	15.72	15.25	169.13	0.75	367.93	679.09	649.56	29.53	22.994		
6,900.00	6,887.37	6,845.50	6,834.44	15.98	15.49	169.15	0.75	375.73	694.54	664.56	29.98	23.166		
7,000.00	6,987.06	6,944.30	6,932.93	16.23	15.74	169.17	0.75	383.53	710.00	679.57	30.43	23.332		
7,100.00	7,086.76	7,043.10	7,031.42	16.48	15.98	169.18	0.75	391.33	725.45	694.57	30.88	23.493		
7,200.00	7,186.45	7,141.90	7,129.91	16.73	16.23	169.20	0.75	399.13	740.90	709.57	31.33	23.649		
7,300.00	7,286.14	7,240.70	7,228.40	16.98	16.47	169.21	0.75	406.93	756.35	724.57	31.78	23.801		
7,400.00	7,385.83	7,339.50	7,326.89	17.23	16.72	169.23	0.75	414.74	771.80	739.57	32.23	23.948		
7,500.00	7,485.52	7,438.30	7,425.38	17.49	16.96	169.24	0.75	422.54	787.25	754.57	32.68	24.091		
7,600.00	7,585.22	7,537.10	7,523.87	17.74	17.21	169.25	0.75	430.34	802.70	769.57	33.13	24.230		
7,700.00	7,684.91	7,635.89	7,622.37	17.99	17.46	169.27	0.75	438.14	818.15	784.57	33.58	24.364		
7,800.00	7,784.60	7,734.69	7,720.86	18.24	17.70	169.28	0.75	445.94	833.61	799.58	34.03	24.495		
7,900.00	7,884.29	7,833.49	7,819.35	18.50	17.95	169.29	0.75	453.74	849.06	814.58	34.48	24.623		
8,000.00	7,983.98	7,932.29	7,917.84	18.75	18.20	169.30	0.75	461.54	864.51	829.58	34.93	24.747		
8,100.00	8,083.68	8,031.09	8,016.33	19.00	18.44	169.31	0.75	469.34	879.96	844.57	35.39	24.867		
8,200.00	8,183.37	8,129.89	8,114.82	19.25	18.69	169.33	0.75	477.14	895.41	859.57	35.84	24.985		
8,300.00	8,283.06	8,228.69	8,213.31	19.51	18.94	169.34	0.75	484.94	910.86	874.57	36.29	25.099		
8,400.00	8,382.75	8,327.49	8,311.80	19.76	19.19	169.35	0.75	492.74	926.32	889.57	36.74	25.210		
8,500.00	8,482.44	8,426.29	8,410.29	20.01	19.43	169.36	0.75	500.54	941.77	904.57	37.20	25.319		
8,600.00	8,582.14	8,525.08	8,508.78	20.27	19.68	169.37	0.75	508.34	957.22	919.57	37.65	25.424		
8,700.00	8,681.83	8,623.88	8,607.27	20.52	19.93	169.37	0.75	516.14	972.67	934.57	38.10	25.527		
8,800.00	8,781.52	8,722.68	8,705.76	20.77	20.18	169.38	0.75	523.94	988.12	949.57	38.56	25.628		
8,900.00	8,881.21	8,821.48	8,804.25	21.03	20.43	169.39	0.75	531.75	1,003.58	964.56	39.01	25.726		
9,000.00	8,980.90	8,920.28	8,902.74	21.28	20.68	169.40	0.75	539.55	1,019.03	979.56	39.46	25.822		
9,100.00	9,080.60	9,019.08	9,001.23	21.54	20.93	169.41	0.75	547.35	1,034.48	994.56	39.92	25.915		
9,200.00	9,180.29	9,117.88	9,099.72	21.79	21.18	169.42	0.75	555.15	1,049.93	1,009.56	40.37	26.006		
9,300.00	9,279.98	9,216.68	9,198.21	22.04	21.43	169.42	0.75	562.95	1,065.38	1,024.56	40.83	26.095		
9,400.00	9,379.67	9,315.48	9,296.70	22.30	21.68	169.43	0.75	570.75	1,080.83	1,039.55	41.28	26.182		
9,500.00	9,479.36	9,414.27	9,395.19	22.55	21.92	169.44	0.75	578.55	1,096.29	1,054.55	41.74	26.267		
9,600.00	9,579.05	9,513.07	9,493.68	22.81	22.17	169.44	0.75	586.35	1,111.74	1,069.55	42.19	26.350		
9,700.00	9,678.75	9,611.87	9,592.17	23.06	22.42	169.45	0.75	594.15	1,127.19	1,084.54	42.65	26.431		
9,800.00	9,778.44	9,710.67	9,690.66	23.31	22.67	169.46	0.75	601.95	1,142.64	1,099.54	43.10	26.510		
9,900.00	9,878.13	9,809.47	9,789.16	23.57	22.92	169.46	0.75	609.75	1,158.09	1,114.54	43.56	26.587		
10,000.00	9,977.82	9,908.27	9,887.65	23.82	23.17	169.47	0.75	617.55	1,173.55	1,129.53	44.01	26.663		
10,100.00	10,077.51	10,007.07	9,986.14	24.08	23.42	169.48	0.75	625.35	1,189.00	1,144.53	44.47	26.737		
10,200.00	10,177.21	10,105.87	10,084.63	24.33	23.68	169.48	0.75	633.15	1,204.45	1,159.52	44.93	26.810		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 3H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,300.00	10,276.90	10,204.67	10,183.12	24.59	23.93	169.49	0.75	640.95	1,219.90	1,174.52	45.38	26.881		
10,400.00	10,376.59	10,303.46	10,281.61	24.84	24.18	169.49	0.75	648.75	1,235.35	1,189.52	45.84	26.950		
10,500.00	10,476.28	10,402.26	10,380.10	25.10	24.43	169.50	0.75	656.56	1,250.81	1,204.51	46.29	27.018		
10,600.00	10,575.97	10,501.06	10,478.59	25.35	24.68	169.50	0.75	664.36	1,266.26	1,219.51	46.75	27.085		
10,700.00	10,675.67	10,600.22	10,585.42	25.61	24.94	169.51	0.75	672.69	1,281.61	1,234.38	47.23	27.134		
10,800.00	10,775.36	10,735.50	10,712.46	25.86	25.18	169.53	0.75	680.49	1,295.34	1,247.60	47.74	27.133		
10,900.00	10,875.05	10,863.49	10,840.35	26.12	25.42	169.58	0.75	685.49	1,306.88	1,258.65	48.23	27.095		
11,000.00	10,974.74	10,992.06	10,968.90	26.37	25.64	169.64	0.75	687.63	1,316.23	1,267.53	48.71	27.022		
11,076.14	11,050.65	11,075.01	11,051.85	26.57	25.79	169.69	0.75	687.71	1,322.17	1,273.13	49.05	26.958		
11,100.00	11,074.44	11,098.80	11,075.64	26.62	25.84	169.71	0.75	687.71	1,323.97	1,274.83	49.14	26.942		
11,200.00	11,174.22	11,198.58	11,175.42	26.81	26.03	169.77	0.75	687.71	1,330.42	1,280.89	49.53	26.862		
11,300.00	11,274.10	11,298.47	11,275.30	26.99	26.23	169.82	0.75	687.71	1,335.16	1,285.24	49.91	26.749		
11,400.00	11,374.06	11,398.42	11,375.26	27.17	26.43	169.85	0.75	687.71	1,338.18	1,287.88	50.30	26.605		
11,500.00	11,474.05	11,498.41	11,475.25	27.33	26.63	169.86	0.75	687.71	1,339.48	1,288.80	50.68	26.430		
11,525.95	11,500.00	11,524.36	11,501.20	27.38	26.68	99.85	0.75	687.71	1,339.54	1,288.76	50.78	26.379		
11,600.00	11,574.05	11,598.41	11,575.25	27.51	26.83	99.85	0.75	687.71	1,339.54	1,288.46	51.08	26.225		
11,700.00	11,674.05	11,698.41	11,675.25	27.71	27.03	99.85	0.75	687.71	1,339.54	1,288.05	51.50	26.012		
11,800.00	11,774.05	11,798.41	11,775.25	27.91	27.23	99.85	0.75	687.71	1,339.54	1,287.63	51.92	25.803		
11,900.00	11,874.05	11,898.41	11,875.25	28.11	27.43	99.85	0.75	687.71	1,339.54	1,287.21	52.33	25.596		
12,000.00	11,974.05	11,998.41	11,975.25	28.31	27.63	99.85	0.75	687.71	1,339.54	1,286.79	52.75	25.393		
12,096.99	12,071.04	12,095.40	12,072.24	28.50	27.82	99.85	0.75	687.71	1,339.54	1,286.38	53.16	25.199		
12,100.00	12,074.05	12,098.41	12,075.25	28.51	27.83	-80.15	0.75	687.71	1,339.54	1,286.37	53.17	25.193		
12,150.00	12,123.97	12,135.79	12,112.61	28.59	27.90	-80.20	-0.12	687.71	1,339.33	1,286.00	53.33	25.113		
12,200.00	12,173.49	12,171.56	12,148.24	28.67	27.97	-80.32	-3.20	687.71	1,338.91	1,285.44	53.47	25.039		
12,250.00	12,222.23	12,207.41	12,183.69	28.73	28.03	-80.50	-8.52	687.71	1,338.29	1,284.68	53.61	24.966		
12,300.00	12,269.83	12,250.00	12,225.27	28.79	28.11	-80.76	-17.70	687.71	1,337.50	1,283.75	53.74	24.886		
12,350.00	12,315.90	12,279.52	12,253.64	28.85	28.16	-81.01	-25.86	687.71	1,336.49	1,282.65	53.84	24.822		
12,400.00	12,360.12	12,315.85	12,287.90	28.90	28.23	-81.35	-37.90	687.71	1,335.35	1,281.40	53.96	24.749		
12,450.00	12,402.13	12,350.00	12,319.37	28.94	28.29	-81.72	-51.17	687.71	1,334.08	1,280.02	54.06	24.677		
12,500.00	12,441.63	12,389.24	12,354.47	28.98	28.37	-82.18	-68.70	687.71	1,332.71	1,278.52	54.18	24.596		
12,550.00	12,478.30	12,426.40	12,386.52	29.02	28.44	-82.67	-87.48	687.71	1,331.25	1,276.95	54.31	24.514		
12,600.00	12,511.88	12,463.93	12,417.60	29.06	28.51	-83.20	-108.52	687.71	1,329.75	1,275.31	54.44	24.426		
12,650.00	12,542.10	12,500.00	12,446.10	29.09	28.58	-83.74	-130.61	687.71	1,328.24	1,273.66	54.58	24.334		
12,700.00	12,568.73	12,540.35	12,476.27	29.14	28.66	-84.37	-157.39	687.71	1,326.75	1,271.99	54.76	24.228		
12,750.00	12,591.58	12,579.36	12,503.58	29.19	28.75	-85.01	-185.24	687.71	1,325.31	1,270.36	54.95	24.117		
12,800.00	12,610.47	12,619.00	12,529.32	29.25	28.84	-85.68	-215.37	687.71	1,323.97	1,268.80	55.17	23.997		
12,850.00	12,625.25	12,659.35	12,553.31	29.33	28.94	-86.38	-247.80	687.71	1,322.76	1,267.34	55.42	23.869		
12,900.00	12,635.81	12,700.00	12,575.12	29.43	29.04	-87.09	-282.10	687.71	1,321.71	1,266.02	55.69	23.734		
12,950.00	12,642.07	12,742.58	12,595.30	29.54	29.17	-87.84	-319.58	687.71	1,320.86	1,264.87	56.00	23.588		
12,996.99	12,644.00	12,783.05	12,611.85	29.68	29.29	-88.55	-356.51	687.71	1,320.27	1,263.96	56.31	23.446		
13,000.00	12,644.00	12,785.68	12,612.83	29.69	29.30	-88.60	-358.94	687.71	1,320.24	1,263.91	56.33	23.437		
13,100.00	12,644.00	12,878.07	12,640.17	30.04	29.64	-89.78	-447.09	687.71	1,319.79	1,262.68	57.11	23.110		
13,126.21	12,644.00	12,903.65	12,645.20	30.14	29.74	-90.00	-472.17	687.71	1,319.78	1,262.43	57.35	23.013		
13,200.00	12,644.00	12,977.57	12,653.38	30.48	30.08	-90.36	-545.58	687.71	1,319.81	1,261.75	58.05	22.734		
13,300.00	12,644.00	13,077.96	12,654.00	31.00	30.59	-90.38	-645.96	687.71	1,319.81	1,260.66	59.15	22.312		
13,400.00	12,644.00	13,177.96	12,654.00	31.61	31.18	-90.38	-745.96	687.71	1,319.81	1,259.41	60.40	21.852		
13,500.00	12,644.00	13,277.96	12,654.00	32.29	31.84	-90.38	-845.96	687.71	1,319.81	1,258.02	61.79	21.359		
13,600.00	12,644.00	13,377.96	12,654.00	33.04	32.57	-90.38	-945.96	687.71	1,319.81	1,256.49	63.32	20.842		
13,700.00	12,644.00	13,477.96	12,654.00	33.85	33.37	-90.38	-1,045.96	687.71	1,319.81	1,254.82	64.99	20.309		
13,800.00	12,644.00	13,577.96	12,654.00	34.72	34.22	-90.38	-1,145.96	687.71	1,319.81	1,253.04	66.76	19.768		
13,900.00	12,644.00	13,677.96	12,654.00	35.64	35.13	-90.38	-1,245.96	687.71	1,319.81	1,251.16	68.65	19.224		
14,000.00	12,644.00	13,777.96	12,654.00	36.62	36.09	-90.38	-1,345.96	687.71	1,319.81	1,249.17	70.64	18.683		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 3H - OH - Plan #1														Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM														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		
14,100.00	12,644.00	13,877.96	12,654.00	37.64	37.10	-90.38	-1,445.96	687.71	1,319.81	1,247.08	72.73	18.148		
14,200.00	12,644.00	13,977.96	12,654.00	38.70	38.15	-90.38	-1,545.96	687.71	1,319.81	1,244.92	74.89	17.622		
14,300.00	12,644.00	14,077.96	12,654.00	39.80	39.24	-90.38	-1,645.96	687.71	1,319.81	1,242.67	77.14	17.110		
14,400.00	12,644.00	14,177.96	12,654.00	40.94	40.36	-90.38	-1,745.96	687.71	1,319.81	1,240.35	79.45	16.611		
14,500.00	12,644.00	14,277.96	12,654.00	42.11	41.52	-90.38	-1,845.96	687.71	1,319.81	1,237.97	81.84	16.128		
14,600.00	12,644.00	14,377.96	12,654.00	43.30	42.72	-90.38	-1,945.96	687.71	1,319.81	1,235.53	84.28	15.660		
14,700.00	12,644.00	14,477.96	12,654.00	44.53	43.94	-90.38	-2,045.96	687.71	1,319.81	1,233.04	86.77	15.210		
14,800.00	12,644.00	14,577.96	12,654.00	45.78	45.18	-90.38	-2,145.96	687.71	1,319.81	1,230.49	89.32	14.777		
14,900.00	12,644.00	14,677.96	12,654.00	47.06	46.45	-90.38	-2,245.96	687.71	1,319.81	1,227.90	91.91	14.360		
15,000.00	12,644.00	14,777.96	12,654.00	48.36	47.75	-90.38	-2,345.96	687.71	1,319.81	1,225.27	94.54	13.960		
15,100.00	12,644.00	14,877.96	12,654.00	49.67	49.06	-90.38	-2,445.96	687.71	1,319.81	1,222.60	97.21	13.577		
15,200.00	12,644.00	14,977.96	12,654.00	51.01	50.39	-90.38	-2,545.96	687.71	1,319.81	1,219.89	99.92	13.209		
15,300.00	12,644.00	15,077.96	12,654.00	52.36	51.74	-90.38	-2,645.96	687.71	1,319.81	1,217.15	102.66	12.856		
15,400.00	12,644.00	15,177.96	12,654.00	53.73	53.11	-90.38	-2,745.96	687.71	1,319.81	1,214.38	105.43	12.518		
15,500.00	12,644.00	15,277.96	12,654.00	55.11	54.49	-90.38	-2,845.96	687.71	1,319.81	1,211.58	108.23	12.195		
15,600.00	12,644.00	15,377.96	12,654.00	56.51	55.88	-90.38	-2,945.96	687.71	1,319.81	1,208.76	111.05	11.885		
15,700.00	12,644.00	15,477.96	12,654.00	57.92	57.29	-90.38	-3,045.96	687.71	1,319.81	1,205.91	113.90	11.588		
15,800.00	12,644.00	15,577.96	12,654.00	59.34	58.70	-90.38	-3,145.96	687.71	1,319.81	1,203.04	116.77	11.303		
15,900.00	12,644.00	15,677.96	12,654.00	60.77	60.13	-90.38	-3,245.96	687.71	1,319.81	1,200.15	119.66	11.030		
16,000.00	12,644.00	15,777.96	12,654.00	62.21	61.57	-90.38	-3,345.96	687.71	1,319.81	1,197.24	122.57	10.768		
16,100.00	12,644.00	15,877.96	12,654.00	63.66	63.02	-90.38	-3,445.96	687.71	1,319.81	1,194.32	125.49	10.517		
16,200.00	12,644.00	15,977.96	12,654.00	65.12	64.48	-90.38	-3,545.96	687.71	1,319.81	1,191.37	128.44	10.276		
16,300.00	12,644.00	16,077.96	12,654.00	66.58	65.94	-90.38	-3,645.96	687.71	1,319.81	1,188.42	131.39	10.045		
16,400.00	12,644.00	16,177.96	12,654.00	68.06	67.42	-90.38	-3,745.96	687.71	1,319.81	1,185.44	134.37	9.822		
16,500.00	12,644.00	16,277.96	12,654.00	69.54	68.90	-90.38	-3,845.96	687.71	1,319.81	1,182.46	137.35	9.609		
16,600.00	12,644.00	16,377.96	12,654.00	71.03	70.39	-90.38	-3,945.96	687.71	1,319.81	1,179.46	140.35	9.404		
16,700.00	12,644.00	16,477.96	12,654.00	72.52	71.88	-90.38	-4,045.96	687.71	1,319.81	1,176.45	143.36	9.206		
16,800.00	12,644.00	16,577.96	12,654.00	74.02	73.38	-90.38	-4,145.96	687.71	1,319.81	1,173.42	146.38	9.016		
16,900.00	12,644.00	16,677.96	12,654.00	75.53	74.89	-90.38	-4,245.96	687.71	1,319.81	1,170.39	149.42	8.833		
17,000.00	12,644.00	16,777.96	12,654.00	77.04	76.40	-90.38	-4,345.96	687.71	1,319.81	1,167.35	152.46	8.657		
17,100.00	12,644.00	16,877.96	12,654.00	78.56	77.91	-90.38	-4,445.96	687.71	1,319.81	1,164.30	155.51	8.487		
17,200.00	12,644.00	16,977.96	12,654.00	80.08	79.43	-90.38	-4,545.96	687.71	1,319.81	1,161.24	158.57	8.323		
17,300.00	12,644.00	17,077.96	12,654.00	81.60	80.96	-90.38	-4,645.96	687.71	1,319.81	1,158.17	161.64	8.165		
17,400.00	12,644.00	17,177.96	12,654.00	83.13	82.49	-90.38	-4,745.96	687.71	1,319.81	1,155.10	164.71	8.013		
17,500.00	12,644.00	17,277.96	12,654.00	84.67	84.02	-90.38	-4,845.96	687.71	1,319.81	1,152.01	167.80	7.866		
17,600.00	12,644.00	17,377.96	12,654.00	86.20	85.56	-90.38	-4,945.96	687.71	1,319.81	1,148.92	170.89	7.723		
17,700.00	12,644.00	17,477.96	12,654.00	87.75	87.10	-90.38	-5,045.96	687.71	1,319.81	1,145.83	173.98	7.586		
17,800.00	12,644.00	17,577.96	12,654.00	89.29	88.64	-90.38	-5,145.96	687.71	1,319.81	1,142.72	177.09	7.453		
17,900.00	12,644.00	17,677.96	12,654.00	90.84	90.19	-90.38	-5,245.96	687.71	1,319.81	1,139.62	180.19	7.324		
18,000.00	12,644.00	17,777.96	12,654.00	92.39	91.74	-90.38	-5,345.96	687.71	1,319.81	1,136.50	183.31	7.200		
18,100.00	12,644.00	17,877.96	12,654.00	93.94	93.29	-90.38	-5,445.96	687.71	1,319.81	1,133.38	186.43	7.079		
18,200.00	12,644.00	17,977.96	12,654.00	95.50	94.85	-90.38	-5,545.96	687.71	1,319.81	1,130.26	189.55	6.963		
18,300.00	12,644.00	18,077.96	12,654.00	97.05	96.41	-90.38	-5,645.96	687.71	1,319.81	1,127.13	192.68	6.850		
18,400.00	12,644.00	18,177.96	12,654.00	98.61	97.97	-90.38	-5,745.96	687.71	1,319.81	1,123.99	195.81	6.740		
18,500.00	12,644.00	18,277.96	12,654.00	100.18	99.53	-90.38	-5,845.96	687.71	1,319.81	1,120.86	198.95	6.634		
18,600.00	12,644.00	18,377.96	12,654.00	101.74	101.10	-90.38	-5,945.96	687.71	1,319.81	1,117.71	202.10	6.531		
18,700.00	12,644.00	18,477.96	12,654.00	103.31	102.67	-90.38	-6,045.96	687.71	1,319.81	1,114.57	205.24	6.431		
18,800.00	12,644.00	18,577.96	12,654.00	104.88	104.24	-90.38	-6,145.96	687.71	1,319.81	1,111.42	208.39	6.333		
18,900.00	12,644.00	18,677.96	12,654.00	106.45	105.81	-90.38	-6,245.96	687.71	1,319.81	1,108.26	211.54	6.239		
19,000.00	12,644.00	18,777.96	12,654.00	108.02	107.38	-90.38	-6,345.96	687.71	1,319.81	1,105.11	214.70	6.147		
19,100.00	12,644.00	18,877.96	12,654.00	109.60	108.96	-90.38	-6,445.96	687.71	1,319.81	1,101.95	217.86	6.058		
19,200.00	12,644.00	18,977.96	12,654.00	111.18	110.53	-90.38	-6,545.96	687.71	1,319.81	1,098.78	221.03	5.971		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 3H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
19,300.00	12,644.00	19,077.96	12,654.00	112.75	112.11	-90.38	-6,645.96	687.71	1,319.81	1,095.62	224.19	5.887		
19,400.00	12,644.00	19,177.96	12,654.00	114.33	113.69	-90.38	-6,745.96	687.71	1,319.81	1,092.45	227.36	5.805		
19,500.00	12,644.00	19,277.96	12,654.00	115.92	115.27	-90.38	-6,845.96	687.71	1,319.81	1,089.28	230.53	5.725		
19,600.00	12,644.00	19,377.96	12,654.00	117.50	116.86	-90.38	-6,945.96	687.71	1,319.81	1,086.10	233.71	5.647		
19,700.00	12,644.00	19,477.96	12,654.00	119.08	118.44	-90.38	-7,045.96	687.71	1,319.81	1,082.92	236.89	5.572		
19,800.00	12,644.00	19,577.96	12,654.00	120.67	120.03	-90.38	-7,145.96	687.71	1,319.81	1,079.74	240.07	5.496		
19,900.00	12,644.00	19,677.96	12,654.00	122.26	121.61	-90.38	-7,245.96	687.71	1,319.81	1,076.56	243.25	5.426		
20,000.00	12,644.00	19,777.96	12,654.00	123.84	123.20	-90.38	-7,345.96	687.71	1,319.81	1,073.38	246.43	5.356		
20,100.00	12,644.00	19,877.96	12,654.00	125.43	124.79	-90.38	-7,445.96	687.71	1,319.81	1,070.19	249.62	5.287		
20,200.00	12,644.00	19,977.96	12,654.00	127.02	126.38	-90.38	-7,545.96	687.71	1,319.81	1,067.00	252.81	5.221		
20,300.00	12,644.00	20,077.96	12,654.00	128.62	127.97	-90.38	-7,645.96	687.71	1,319.81	1,063.81	256.00	5.156		
20,400.00	12,644.00	20,177.96	12,654.00	130.21	129.57	-90.38	-7,745.96	687.71	1,319.81	1,060.62	259.19	5.092		
20,500.00	12,644.00	20,277.96	12,654.00	131.80	131.16	-90.38	-7,845.96	687.71	1,319.81	1,057.42	262.39	5.030		
20,600.00	12,644.00	20,377.96	12,654.00	133.40	132.76	-90.38	-7,945.96	687.71	1,319.81	1,054.23	265.58	4.970		
20,700.00	12,644.00	20,477.96	12,654.00	134.99	134.35	-90.38	-8,045.96	687.71	1,319.81	1,051.03	268.78	4.910		
20,800.00	12,644.00	20,577.96	12,654.00	136.59	135.95	-90.38	-8,145.96	687.71	1,319.81	1,047.83	271.98	4.853		
20,900.00	12,644.00	20,677.96	12,654.00	138.19	137.55	-90.38	-8,245.96	687.71	1,319.81	1,044.63	275.18	4.796		
21,000.00	12,644.00	20,777.96	12,654.00	139.78	139.14	-90.38	-8,345.96	687.71	1,319.81	1,041.43	278.38	4.741		
21,100.00	12,644.00	20,877.96	12,654.00	141.38	140.74	-90.38	-8,445.96	687.71	1,319.81	1,038.22	281.59	4.687		
21,200.00	12,644.00	20,977.96	12,654.00	142.98	142.34	-90.38	-8,545.96	687.71	1,319.81	1,035.02	284.79	4.634		
21,300.00	12,644.00	21,077.96	12,654.00	144.58	143.94	-90.38	-8,645.96	687.71	1,319.81	1,031.81	288.00	4.583		
21,400.00	12,644.00	21,177.96	12,654.00	146.19	145.55	-90.38	-8,745.96	687.71	1,319.81	1,028.60	291.21	4.532		
21,500.00	12,644.00	21,277.96	12,654.00	147.79	147.15	-90.38	-8,845.96	687.71	1,319.81	1,025.39	294.42	4.483		
21,600.00	12,644.00	21,377.96	12,654.00	149.39	148.75	-90.38	-8,945.96	687.71	1,319.81	1,022.18	297.63	4.434		
21,700.00	12,644.00	21,477.96	12,654.00	150.99	150.36	-90.38	-9,045.96	687.71	1,319.81	1,018.97	300.84	4.387		
21,800.00	12,644.00	21,577.96	12,654.00	152.60	151.96	-90.38	-9,145.96	687.71	1,319.81	1,015.75	304.06	4.341		
21,900.00	12,644.00	21,677.96	12,654.00	154.20	153.56	-90.38	-9,245.96	687.71	1,319.81	1,012.54	307.27	4.295		
22,000.00	12,644.00	21,777.96	12,654.00	155.81	155.17	-90.38	-9,345.96	687.71	1,319.81	1,009.32	310.49	4.251		
22,100.00	12,644.00	21,877.96	12,654.00	157.41	156.78	-90.38	-9,445.96	687.71	1,319.81	1,006.10	313.71	4.207		
22,200.00	12,644.00	21,977.96	12,654.00	159.02	158.38	-90.38	-9,545.96	687.71	1,319.81	1,002.89	316.92	4.164		
22,300.00	12,644.00	22,077.96	12,654.00	160.63	159.99	-90.38	-9,645.96	687.71	1,319.81	999.67	320.14	4.123		
22,400.00	12,644.00	22,177.96	12,654.00	162.24	161.60	-90.38	-9,745.96	687.71	1,319.81	996.45	323.36	4.082		
22,500.00	12,644.00	22,277.96	12,654.00	163.84	163.21	-90.38	-9,845.96	687.71	1,319.81	993.23	326.58	4.041		
22,502.04	12,644.00	22,280.00	12,654.00	163.88	163.24	-90.38	-9,848.01	687.71	1,319.81	993.16	326.65	4.040		
22,563.68	12,644.00	22,329.42	12,654.00	164.87	164.03	-90.38	-9,897.43	687.71	1,319.87	991.44	328.42	4.019 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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 41H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													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		
0.00	0.00	0.00	0.00	0.00	0.00	-146.05	-1,960.81	-1,320.30	2,363.90					
100.00	100.00	94.00	94.00	0.08	0.07	-146.05	-1,960.81	-1,320.30	2,363.89	2,363.73	0.16	N/A		
200.00	200.00	194.00	194.00	0.31	0.29	-146.05	-1,960.81	-1,320.30	2,363.89	2,363.29	0.60	3,964.977		
300.00	300.00	294.00	294.00	0.53	0.51	-146.05	-1,960.81	-1,320.30	2,363.89	2,362.84	1.05	2,260.528		
400.00	400.00	394.00	394.00	0.76	0.74	-146.05	-1,960.81	-1,320.30	2,363.89	2,362.39	1.50	1,580.925		
500.00	500.00	494.00	494.00	0.98	0.96	-146.05	-1,960.81	-1,320.30	2,363.89	2,361.94	1.94	1,215.499		
600.00	600.00	594.00	594.00	1.21	1.19	-146.05	-1,960.81	-1,320.30	2,363.89	2,361.49	2.39	987.290		
700.00	700.00	694.00	694.00	1.43	1.41	-146.05	-1,960.81	-1,320.30	2,363.89	2,361.04	2.84	831.227		
800.00	800.00	794.00	794.00	1.66	1.64	-146.05	-1,960.81	-1,320.30	2,363.89	2,360.59	3.29	717.769		
900.00	900.00	894.00	894.00	1.88	1.86	-146.05	-1,960.81	-1,320.30	2,363.89	2,360.15	3.74	631.563		
1,000.00	1,000.00	994.00	994.00	2.11	2.09	-146.05	-1,960.81	-1,320.30	2,363.89	2,359.70	4.19	563.844		
1,100.00	1,100.00	1,094.00	1,094.00	2.33	2.31	-146.05	-1,960.81	-1,320.30	2,363.89	2,359.25	4.64	509.241		
1,200.00	1,200.00	1,194.00	1,194.00	2.56	2.53	-146.05	-1,960.81	-1,320.30	2,363.89	2,358.80	5.09	464.280		
1,300.00	1,300.00	1,294.00	1,294.00	2.78	2.76	-146.05	-1,960.81	-1,320.30	2,363.89	2,358.35	5.54	426.614		
1,400.00	1,400.00	1,394.00	1,394.00	3.01	2.98	-146.05	-1,960.81	-1,320.30	2,363.89	2,357.90	5.99	394.601		
1,500.00	1,500.00	1,494.00	1,494.00	3.23	3.21	-146.05	-1,960.81	-1,320.30	2,363.89	2,357.45	6.44	367.057		
1,600.00	1,600.00	1,594.00	1,594.00	3.46	3.43	-146.05	-1,960.81	-1,320.30	2,363.89	2,357.00	6.89	343.108		
1,700.00	1,700.00	1,694.00	1,694.00	3.68	3.66	-146.05	-1,960.81	-1,320.30	2,363.89	2,356.55	7.34	322.092		
1,800.00	1,800.00	1,794.00	1,794.00	3.91	3.88	-146.05	-1,960.81	-1,320.30	2,363.89	2,356.10	7.79	303.502		
1,900.00	1,900.00	1,894.00	1,894.00	4.13	4.11	-146.05	-1,960.81	-1,320.30	2,363.89	2,355.65	8.24	286.941		
2,000.00	2,000.00	1,994.00	1,994.00	4.35	4.33	-146.05	-1,960.81	-1,320.30	2,363.89	2,355.20	8.69	272.094		
2,100.00	2,100.00	2,094.00	2,094.00	4.58	4.56	-146.05	-1,960.81	-1,320.30	2,363.89	2,354.75	9.14	258.707		
2,200.00	2,200.00	2,194.00	2,194.00	4.80	4.78	-146.05	-1,960.81	-1,320.30	2,363.89	2,354.30	9.59	246.577		
2,300.00	2,300.00	2,294.00	2,294.00	5.03	5.01	-146.05	-1,960.81	-1,320.30	2,363.89	2,353.85	10.04	235.532		
2,400.00	2,400.00	2,394.00	2,394.00	5.25	5.23	-146.05	-1,960.81	-1,320.30	2,363.89	2,353.40	10.49	225.435		
2,500.00	2,500.00	2,494.00	2,494.00	5.48	5.46	-146.05	-1,960.81	-1,320.30	2,363.89	2,352.95	10.94	216.168		
2,600.00	2,599.99	2,593.99	2,593.99	5.69	5.68	-76.06	-1,960.81	-1,320.30	2,363.88	2,352.30	11.38	207.783		
2,700.00	2,699.96	2,693.96	2,693.96	5.90	5.91	-76.13	-1,960.81	-1,320.30	2,363.05	2,351.24	11.81	200.122		
2,800.00	2,799.86	2,793.86	2,793.86	6.11	6.13	-76.24	-1,960.81	-1,320.30	2,362.01	2,349.76	12.24	192.934		
2,900.00	2,899.68	2,893.68	2,893.68	6.33	6.36	-76.40	-1,960.81	-1,320.30	2,360.56	2,347.88	12.68	186.167		
2,949.81	2,949.35	2,943.35	2,943.35	6.43	6.47	-76.50	-1,960.81	-1,320.30	2,359.69	2,346.79	12.90	182.939		
3,000.00	2,999.38	2,993.38	2,993.38	6.54	6.58	-76.59	-1,960.81	-1,320.30	2,358.77	2,345.65	13.12	179.781		
3,100.00	3,099.08	3,093.08	3,093.08	6.76	6.80	-76.78	-1,960.81	-1,320.30	2,356.96	2,343.40	13.56	173.771		
3,200.00	3,198.77	3,192.77	3,192.77	6.99	7.03	-76.96	-1,960.81	-1,320.30	2,355.18	2,341.17	14.01	168.115		
3,300.00	3,298.46	3,292.46	3,292.46	7.21	7.25	-77.15	-1,960.81	-1,320.30	2,353.41	2,338.96	14.46	162.783		
3,400.00	3,398.15	3,392.15	3,392.15	7.44	7.48	-77.33	-1,960.81	-1,320.30	2,351.68	2,336.77	14.91	157.752		
3,500.00	3,497.84	3,491.84	3,491.84	7.67	7.70	-77.52	-1,960.81	-1,320.30	2,349.96	2,334.60	15.36	152.998		
3,600.00	3,597.54	3,591.54	3,591.54	7.90	7.92	-77.70	-1,960.81	-1,320.30	2,348.28	2,332.46	15.81	148.502		
3,700.00	3,697.23	3,691.23	3,691.23	8.13	8.15	-77.89	-1,960.81	-1,320.30	2,346.61	2,330.35	16.27	144.244		
3,800.00	3,796.92	3,790.92	3,790.92	8.37	8.37	-78.08	-1,960.81	-1,320.30	2,344.98	2,328.25	16.73	140.207		
3,900.00	3,896.61	3,890.61	3,890.61	8.60	8.60	-78.26	-1,960.81	-1,320.30	2,343.36	2,326.18	17.18	136.375		
4,000.00	3,996.30	3,990.30	3,990.30	8.84	8.82	-78.45	-1,960.81	-1,320.30	2,341.78	2,324.13	17.64	132.734		
4,100.00	4,096.00	4,090.00	4,090.00	9.08	9.04	-78.64	-1,960.81	-1,320.30	2,340.21	2,322.11	18.10	129.271		
4,200.00	4,195.69	4,189.69	4,189.69	9.31	9.27	-78.83	-1,960.81	-1,320.30	2,338.68	2,320.11	18.56	125.974		
4,300.00	4,295.38	4,289.38	4,289.38	9.55	9.49	-79.02	-1,960.81	-1,320.30	2,337.17	2,318.14	19.03	122.832		
4,400.00	4,395.07	4,389.07	4,389.07	9.79	9.72	-79.20	-1,960.81	-1,320.30	2,335.68	2,316.19	19.49	119.834		
4,500.00	4,494.76	4,488.76	4,488.76	10.04	9.94	-79.39	-1,960.81	-1,320.30	2,334.22	2,314.26	19.96	116.972		
4,600.00	4,594.46	4,792.81	4,792.30	10.28	10.62	-79.78	-1,945.86	-1,320.41	2,328.90	2,308.10	20.80	111.956		
4,700.00	4,694.15	4,955.15	4,953.37	10.52	10.99	-79.83	-1,925.62	-1,320.56	2,316.41	2,295.06	21.35	108.486		
4,800.00	4,793.84	5,054.32	5,051.64	10.76	11.21	-79.86	-1,912.39	-1,320.66	2,303.55	2,281.73	21.82	105.582		
4,900.00	4,893.53	5,153.48	5,149.92	11.01	11.44	-79.88	-1,899.16	-1,320.75	2,290.69	2,268.40	22.29	102.790		
5,000.00	4,993.22	5,252.65	5,248.20	11.25	11.67	-79.90	-1,885.93	-1,320.85	2,277.83	2,255.07	22.75	100.104		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 41H - OH - Plan #1													Offset Site Error:	0.00 ush
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 ush
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.92	5,351.81	5,346.48	11.50	11.91	-79.92	-1,872.69	-1,320.95	2,264.97	2,241.74	23.23	97.520		
5,200.00	5,192.81	5,450.98	5,444.76	11.74	12.15	-79.95	-1,859.46	-1,321.04	2,252.11	2,228.41	23.70	95.031		
5,300.00	5,292.30	5,550.14	5,543.04	11.99	12.39	-79.97	-1,846.23	-1,321.14	2,239.25	2,215.07	24.17	92.633		
5,400.00	5,391.99	5,649.31	5,641.32	12.24	12.64	-79.99	-1,833.00	-1,321.24	2,226.39	2,201.74	24.65	90.321		
5,500.00	5,491.68	5,748.48	5,739.60	12.48	12.88	-80.02	-1,819.77	-1,321.33	2,213.53	2,188.40	25.13	88.092		
5,600.00	5,591.38	5,847.64	5,837.88	12.73	13.13	-80.04	-1,806.54	-1,321.43	2,200.67	2,175.06	25.61	85.942		
5,700.00	5,691.07	5,946.81	5,936.15	12.98	13.39	-80.06	-1,793.31	-1,321.53	2,187.81	2,161.72	26.09	83.866		
5,800.00	5,790.76	6,045.97	6,034.43	13.23	13.64	-80.09	-1,780.08	-1,321.63	2,174.95	2,148.38	26.57	81.862		
5,900.00	5,890.45	6,145.14	6,132.71	13.48	13.90	-80.11	-1,766.84	-1,321.72	2,162.09	2,135.04	27.05	79.925		
6,000.00	5,990.14	6,244.30	6,230.99	13.72	14.15	-80.14	-1,753.61	-1,321.82	2,149.24	2,121.70	27.54	78.054		
6,100.00	6,089.84	6,343.47	6,329.27	13.97	14.41	-80.16	-1,740.38	-1,321.92	2,136.38	2,108.36	28.02	76.244		
6,200.00	6,189.53	6,442.63	6,427.55	14.22	14.68	-80.19	-1,727.15	-1,322.01	2,123.52	2,095.02	28.51	74.493		
6,300.00	6,289.22	6,541.80	6,525.83	14.47	14.94	-80.21	-1,713.92	-1,322.11	2,110.67	2,081.67	28.99	72.798		
6,400.00	6,388.91	6,640.97	6,624.11	14.72	15.20	-80.24	-1,700.69	-1,322.21	2,097.81	2,068.33	29.48	71.157		
6,500.00	6,488.60	6,740.13	6,722.39	14.97	15.47	-80.27	-1,687.46	-1,322.31	2,084.95	2,054.98	29.97	69.568		
6,600.00	6,588.30	6,839.30	6,820.66	15.22	15.74	-80.29	-1,674.22	-1,322.40	2,072.10	2,041.64	30.46	68.028		
6,700.00	6,687.99	6,938.46	6,918.94	15.47	16.00	-80.32	-1,660.99	-1,322.50	2,059.25	2,028.30	30.95	66.535		
6,800.00	6,787.68	7,037.63	7,017.22	15.72	16.27	-80.35	-1,647.76	-1,322.60	2,046.39	2,014.95	31.44	65.087		
6,900.00	6,887.37	7,136.79	7,115.50	15.98	16.54	-80.38	-1,634.53	-1,322.69	2,033.54	2,001.61	31.93	63.682		
7,000.00	6,987.06	7,235.96	7,213.78	16.23	16.82	-80.40	-1,621.30	-1,322.79	2,020.69	1,988.26	32.43	62.318		
7,100.00	7,086.76	7,335.13	7,312.06	16.48	17.09	-80.43	-1,608.07	-1,322.89	2,007.83	1,974.91	32.92	60.994		
7,200.00	7,186.45	7,434.29	7,410.34	16.73	17.36	-80.46	-1,594.84	-1,322.99	1,994.98	1,961.57	33.41	59.708		
7,300.00	7,286.14	7,533.46	7,508.62	16.98	17.64	-80.49	-1,581.61	-1,323.08	1,982.13	1,948.22	33.91	58.459		
7,400.00	7,385.83	7,632.62	7,606.90	17.23	17.91	-80.52	-1,568.37	-1,323.18	1,969.28	1,934.88	34.40	57.244		
7,500.00	7,485.52	7,731.79	7,705.17	17.49	18.19	-80.55	-1,555.14	-1,323.28	1,956.43	1,921.53	34.90	56.063		
7,600.00	7,585.22	7,830.95	7,803.45	17.74	18.47	-80.58	-1,541.91	-1,323.37	1,943.58	1,908.19	35.39	54.915		
7,700.00	7,684.91	7,930.12	7,901.73	17.99	18.74	-80.61	-1,528.68	-1,323.47	1,930.73	1,894.84	35.89	53.797		
7,800.00	7,784.60	8,029.28	8,000.01	18.24	19.02	-80.64	-1,515.45	-1,323.57	1,917.88	1,881.49	36.39	52.710		
7,900.00	7,884.29	8,128.45	8,098.29	18.50	19.30	-80.68	-1,502.22	-1,323.67	1,905.03	1,868.15	36.88	51.650		
8,000.00	7,983.98	8,227.62	8,196.57	18.75	19.58	-80.71	-1,488.99	-1,323.76	1,892.18	1,854.80	37.38	50.619		
8,100.00	8,083.68	8,326.78	8,294.85	19.00	19.86	-80.74	-1,475.75	-1,323.86	1,879.34	1,841.46	37.88	49.614		
8,200.00	8,183.37	8,425.95	8,393.13	19.25	20.15	-80.77	-1,462.52	-1,323.96	1,866.49	1,828.11	38.38	48.635		
8,300.00	8,283.06	8,525.11	8,491.41	19.51	20.43	-80.81	-1,449.29	-1,324.05	1,853.65	1,814.77	38.88	47.680		
8,400.00	8,382.75	8,624.28	8,589.68	19.76	20.71	-80.84	-1,436.06	-1,324.15	1,840.80	1,801.42	39.38	46.749		
8,500.00	8,482.44	8,723.44	8,687.96	20.01	20.99	-80.88	-1,422.83	-1,324.25	1,827.96	1,788.08	39.88	45.842		
8,600.00	8,582.14	8,822.61	8,786.24	20.27	21.28	-80.91	-1,409.60	-1,324.34	1,815.11	1,774.74	40.38	44.956		
8,700.00	8,681.83	8,921.77	8,884.52	20.52	21.56	-80.95	-1,396.37	-1,324.44	1,802.27	1,761.39	40.88	44.091		
8,800.00	8,781.52	9,020.94	8,942.49	20.77	21.84	-80.96	-1,383.14	-1,324.47	1,789.84	1,749.55	41.29	43.370		
8,900.00	8,881.21	9,120.10	9,042.30	21.03	22.14	-81.02	-1,369.91	-1,324.50	1,777.41	1,737.12	41.67	42.782		
9,000.00	8,980.90	9,219.27	9,142.11	21.28	22.44	-81.06	-1,356.68	-1,324.50	1,765.00	1,724.70	41.96	42.394		
9,100.00	9,080.60	9,318.44	9,239.28	21.54	22.74	-81.10	-1,343.45	-1,324.50	1,752.59	1,712.29	42.21	42.151		
9,200.00	9,180.29	9,417.61	9,338.45	21.79	23.04	-81.14	-1,330.22	-1,324.50	1,740.18	1,700.00	42.39	42.079		
9,300.00	9,279.98	9,516.78	9,437.62	22.04	23.34	-81.18	-1,316.99	-1,324.50	1,727.77	1,687.61	42.52	42.156		
9,400.00	9,379.67	9,615.95	9,536.79	22.30	23.64	-81.22	-1,303.76	-1,324.50	1,715.36	1,675.20	42.59	42.380		
9,500.00	9,479.36	9,715.12	9,635.96	22.55	23.94	-81.26	-1,290.53	-1,324.50	1,702.95	1,662.79	42.60	42.763		
9,600.00	9,579.05	9,814.29	9,735.13	22.81	24.24	-81.30	-1,277.30	-1,324.50	1,690.54	1,650.38	42.58	43.271		
9,700.00	9,678.75	9,913.46	9,834.30	23.06	24.54	-81.34	-1,264.07	-1,324.50	1,678.13	1,637.97	42.49	43.935		
9,800.00	9,778.44	10,012.63	9,933.47	23.31	24.84	-81.38	-1,250.84	-1,324.50	1,665.72	1,625.56	42.38	44.720		
9,900.00	9,878.13	10,111.80	10,032.64	23.57	25.14	-81.42	-1,237.61	-1,324.50	1,653.31	1,613.15	42.24	45.628		
10,000.00	9,977.82	10,210.97	10,131.81	23.82	25.44	-81.46	-1,224.38	-1,324.50	1,640.90	1,600.74	42.04	46.692		
10,100.00	10,077.51	10,310.14	10,230.98	24.08	25.74	-81.50	-1,211.15	-1,324.50	1,628.49	1,588.33	41.88	47.792		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 41H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,200.00	10,177.21	9,300.00	9,251.71	24.33	21.87	-82.71	-1,453.18	-1,324.02	2,043.95	2,002.45	41.50	49.254	
10,300.00	10,276.90	9,350.00	9,294.95	24.59	21.83	-83.17	-1,478.27	-1,323.84	2,089.43	2,047.96	41.48	50.377	
10,400.00	10,376.59	9,350.00	9,294.95	24.84	21.83	-83.17	-1,478.27	-1,323.84	2,137.30	2,096.23	41.07	52.037	
10,500.00	10,476.28	9,350.00	9,294.95	25.10	21.83	-83.17	-1,478.27	-1,323.84	2,188.69	2,148.03	40.66	53.826	
10,600.00	10,575.97	9,400.00	9,335.83	25.35	21.78	-83.67	-1,507.03	-1,323.63	2,242.28	2,201.62	40.65	55.155	
10,700.00	10,675.67	9,400.00	9,335.83	25.61	21.78	-83.67	-1,507.03	-1,323.63	2,298.29	2,258.03	40.26	57.088	
10,800.00	10,775.36	9,400.00	9,335.83	25.86	21.78	-83.67	-1,507.03	-1,323.63	2,357.22	2,317.34	39.87	59.117	
10,900.00	10,875.05	9,450.00	9,374.05	26.12	21.72	-84.19	-1,539.24	-1,323.39	2,418.05	2,378.15	39.90	60.603	
11,000.00	10,974.74	9,450.00	9,374.05	26.37	21.72	-84.19	-1,539.24	-1,323.39	2,480.70	2,441.15	39.55	62.725	
11,076.14	11,050.65	9,450.00	9,374.05	26.57	21.72	-84.19	-1,539.24	-1,323.39	2,530.01	2,490.71	39.29	64.386	
11,100.00	11,074.44	9,450.00	9,374.05	26.62	21.72	-84.40	-1,539.24	-1,323.39	2,545.73	2,506.52	39.21	64.921	
11,200.00	11,174.22	9,473.71	9,391.16	26.81	21.69	-85.54	-1,555.65	-1,323.27	2,612.49	2,573.44	39.05	66.909	
11,300.00	11,274.10	9,500.00	9,409.31	26.99	21.66	-86.74	-1,574.66	-1,323.13	2,681.37	2,642.46	38.91	68.905	
11,400.00	11,374.06	9,500.00	9,409.31	27.17	21.66	-87.73	-1,574.66	-1,323.13	2,751.57	2,712.96	38.61	71.270	
11,500.00	11,474.05	9,500.00	9,409.31	27.33	21.66	-88.76	-1,574.66	-1,323.13	2,823.60	2,785.28	38.33	73.673	
11,525.95	11,500.00	9,500.00	9,409.31	27.38	21.66	-159.05	-1,574.66	-1,323.13	2,842.58	2,804.32	38.26	74.300	
11,600.00	11,574.05	9,521.27	9,423.35	27.51	21.63	-159.22	-1,590.63	-1,323.02	2,896.86	2,858.63	38.23	75.776	
11,700.00	11,674.05	9,550.00	9,441.36	27.71	21.60	-159.45	-1,613.02	-1,322.85	2,971.87	2,933.66	38.21	77.768	
11,800.00	11,774.05	9,550.00	9,441.36	27.91	21.60	-159.45	-1,613.02	-1,322.85	3,047.52	3,009.49	38.03	80.138	
11,900.00	11,874.05	9,550.00	9,441.36	28.11	21.60	-159.45	-1,613.02	-1,322.85	3,124.53	3,086.66	37.87	82.508	
12,000.00	11,974.05	9,550.00	9,441.36	28.31	21.60	-159.45	-1,613.02	-1,322.85	3,202.82	3,165.08	37.74	84.871	
12,096.99	12,071.04	9,550.00	9,441.36	28.50	21.60	-159.45	-1,613.02	-1,322.85	3,279.88	3,242.24	37.63	87.151	
12,100.00	12,074.05	9,550.00	9,441.36	28.51	21.60	20.41	-1,613.02	-1,322.85	3,282.28	3,244.65	37.63	87.222	
12,150.00	12,123.97	9,574.95	9,456.07	28.59	21.57	18.22	-1,633.17	-1,322.70	3,320.39	3,282.67	37.71	88.043	
12,200.00	12,173.49	9,600.00	9,469.94	28.67	21.54	16.53	-1,654.02	-1,322.55	3,356.84	3,319.07	37.77	88.872	
12,250.00	12,222.23	9,600.00	9,469.94	28.73	21.54	15.31	-1,654.02	-1,322.55	3,390.03	3,352.37	37.67	90.005	
12,300.00	12,269.83	9,600.00	9,469.94	28.79	21.54	14.33	-1,654.02	-1,322.55	3,420.42	3,382.87	37.54	91.103	
12,350.00	12,315.90	9,600.00	9,469.94	28.85	21.54	13.54	-1,654.02	-1,322.55	3,447.84	3,410.43	37.41	92.160	
12,400.00	12,360.12	9,600.00	9,469.94	28.90	21.54	12.90	-1,654.02	-1,322.55	3,472.17	3,434.91	37.27	93.171	
12,450.00	12,402.13	9,600.00	9,469.94	28.94	21.54	12.39	-1,654.02	-1,322.55	3,493.29	3,456.17	37.11	94.128	
12,500.00	12,441.63	9,600.00	9,469.94	28.98	21.54	11.99	-1,654.02	-1,322.55	3,511.08	3,474.13	36.95	95.024	
12,550.00	12,478.30	9,623.39	9,482.06	29.02	21.52	11.66	-1,674.02	-1,322.40	3,524.93	3,488.03	36.90	95.515	
12,600.00	12,511.88	9,650.00	9,494.84	29.06	21.50	11.42	-1,697.36	-1,322.23	3,535.88	3,499.01	36.87	95.906	
12,650.00	12,542.10	9,650.00	9,494.84	29.09	21.50	11.29	-1,697.36	-1,322.23	3,542.59	3,505.90	36.69	96.558	
12,700.00	12,568.73	9,650.00	9,494.84	29.14	21.50	11.23	-1,697.36	-1,322.23	3,545.74	3,509.23	36.51	97.119	
12,750.00	12,591.58	9,650.00	9,494.84	29.19	21.50	11.24	-1,697.36	-1,322.23	3,545.32	3,508.99	36.33	97.583	
12,800.00	12,610.47	9,650.00	9,494.84	29.25	21.50	11.31	-1,697.36	-1,322.23	3,541.33	3,505.17	36.16	97.941	
12,850.00	12,625.25	9,650.00	9,494.84	29.33	21.50	11.47	-1,697.36	-1,322.23	3,533.78	3,497.79	35.99	98.189	
12,900.00	12,635.81	9,672.44	9,504.76	29.43	21.49	11.71	-1,717.49	-1,322.09	3,522.22	3,486.29	35.94	98.016	
12,950.00	12,642.07	9,700.00	9,515.86	29.54	21.47	12.06	-1,742.71	-1,321.90	3,507.78	3,471.87	35.91	97.685	
12,996.99	12,644.00	9,700.00	9,515.86	29.68	21.47	12.46	-1,742.71	-1,321.90	3,490.40	3,454.63	35.77	97.577	
13,000.00	12,644.00	9,700.00	9,515.86	29.69	21.47	12.46	-1,742.71	-1,321.90	3,489.20	3,453.43	35.77	97.559	
13,100.00	12,644.00	9,700.00	9,515.86	30.04	21.47	12.46	-1,742.71	-1,321.90	3,450.38	3,414.89	35.49	97.211	
13,200.00	12,644.00	9,700.00	9,515.86	30.48	21.47	12.46	-1,742.71	-1,321.90	3,414.06	3,378.78	35.28	96.767	
13,300.00	12,644.00	9,726.45	9,525.36	31.00	21.47	12.49	-1,767.39	-1,321.72	3,379.60	3,344.37	35.23	95.916	
13,400.00	12,644.00	9,750.00	9,532.86	31.61	21.46	12.52	-1,789.71	-1,321.56	3,347.64	3,312.41	35.23	95.018	
13,500.00	12,644.00	9,750.00	9,532.86	32.29	21.46	12.52	-1,789.71	-1,321.56	3,317.82	3,282.62	35.21	94.232	
13,600.00	12,644.00	9,750.00	9,532.86	33.04	21.46	12.52	-1,789.71	-1,321.56	3,290.78	3,255.51	35.26	93.323	
13,700.00	12,644.00	9,800.00	9,545.69	33.85	21.47	12.56	-1,838.02	-1,321.20	3,265.68	3,230.15	35.53	91.926	
13,800.00	12,644.00	9,800.00	9,545.69	34.72	21.47	12.56	-1,838.02	-1,321.20	3,242.87	3,207.16	35.72	90.794	
13,900.00	12,644.00	9,800.00	9,545.69	35.64	21.47	12.56	-1,838.02	-1,321.20	3,223.01	3,187.03	35.99	89.557	
14,000.00	12,644.00	9,850.00	9,554.26	36.62	21.51	12.59	-1,887.26	-1,320.84	3,205.75	3,169.33	36.42	88.021	

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 41H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,100.00	12,644.00	9,850.00	9,554.26	37.84	21.51	12.59	-1,887.26	-1,320.84	3,190.39	3,153.56	36.83	86.627		
14,200.00	12,644.00	9,850.00	9,554.26	38.70	21.51	12.59	-1,887.26	-1,320.84	3,178.10	3,140.79	37.31	85.176		
14,300.00	12,644.00	9,875.26	9,556.95	39.80	21.53	12.60	-1,912.38	-1,320.66	3,168.28	3,130.40	37.88	83.633		
14,400.00	12,644.00	9,900.00	9,558.51	40.94	21.56	12.60	-1,937.07	-1,320.47	3,161.28	3,122.77	38.50	82.103		
14,500.00	12,644.00	9,900.00	9,558.51	42.11	21.56	12.60	-1,937.07	-1,320.47	3,156.81	3,117.64	39.17	80.593		
14,600.00	12,644.00	9,923.75	9,559.00	43.30	21.60	12.60	-1,960.81	-1,320.30	3,155.01	3,115.12	39.89	79.095		
14,700.00	12,644.00	10,013.95	9,559.00	44.53	21.80	12.59	-2,051.01	-1,319.64	3,154.84	3,114.19	40.65	77.606		
14,800.00	12,644.00	10,113.95	9,559.00	45.78	22.12	12.58	-2,151.00	-1,318.90	3,154.68	3,113.21	41.47	76.075		
14,900.00	12,644.00	10,213.95	9,559.00	47.06	22.56	12.56	-2,251.00	-1,318.17	3,154.52	3,112.18	42.34	74.508		
15,000.00	12,644.00	10,313.94	9,559.00	48.36	23.11	12.55	-2,350.99	-1,317.44	3,154.36	3,111.10	43.26	72.920		
15,100.00	12,644.00	10,413.94	9,559.00	49.67	23.76	12.54	-2,450.98	-1,316.70	3,154.20	3,109.98	44.22	71.323		
15,200.00	12,644.00	10,513.94	9,559.00	51.01	24.50	12.52	-2,550.98	-1,315.97	3,154.04	3,108.81	45.23	69.730		
15,300.00	12,644.00	10,613.94	9,559.00	52.36	25.32	12.51	-2,650.98	-1,315.24	3,153.88	3,107.60	46.28	68.148		
15,400.00	12,644.00	10,713.93	9,559.00	53.73	26.22	12.50	-2,750.97	-1,314.50	3,153.72	3,106.36	47.36	66.585		
15,500.00	12,644.00	10,813.93	9,559.00	55.11	27.19	12.48	-2,850.97	-1,313.77	3,153.56	3,105.08	48.48	65.049		
15,600.00	12,644.00	10,913.93	9,559.00	56.51	28.22	12.47	-2,950.96	-1,313.03	3,153.41	3,103.78	49.63	63.542		
15,700.00	12,644.00	11,013.93	9,559.00	57.92	29.31	12.46	-3,050.96	-1,312.30	3,153.25	3,102.45	50.80	62.071		
15,800.00	12,644.00	11,113.92	9,559.00	59.34	30.45	12.44	-3,150.95	-1,311.57	3,153.09	3,101.09	52.00	60.636		
15,900.00	12,644.00	11,213.92	9,559.00	60.77	31.63	12.43	-3,250.94	-1,310.83	3,152.93	3,099.71	53.22	59.241		
16,000.00	12,644.00	11,313.92	9,559.00	62.21	32.84	12.42	-3,350.94	-1,310.10	3,152.77	3,098.31	54.47	57.885		
16,100.00	12,644.00	11,413.92	9,559.00	63.66	34.10	12.41	-3,450.93	-1,309.37	3,152.62	3,096.89	55.73	56.571		
16,200.00	12,644.00	11,513.91	9,559.00	65.12	35.38	12.39	-3,550.93	-1,308.63	3,152.46	3,095.45	57.01	55.297		
16,300.00	12,644.00	11,613.91	9,559.00	66.58	36.70	12.38	-3,650.92	-1,307.90	3,152.30	3,094.00	58.31	54.065		
16,400.00	12,644.00	11,713.91	9,559.00	68.06	38.04	12.37	-3,750.92	-1,307.16	3,152.14	3,092.53	59.62	52.873		
16,500.00	12,644.00	11,813.90	9,559.00	69.54	39.40	12.35	-3,850.91	-1,306.43	3,151.99	3,091.04	60.94	51.720		
16,600.00	12,644.00	11,913.90	9,559.00	71.03	40.78	12.34	-3,950.91	-1,305.70	3,151.83	3,089.55	62.28	50.606		
16,700.00	12,644.00	12,013.90	9,559.00	72.52	42.18	12.33	-4,050.90	-1,304.96	3,151.67	3,088.04	63.63	49.530		
16,800.00	12,644.00	12,113.90	9,559.00	74.02	43.59	12.31	-4,150.90	-1,304.23	3,151.52	3,086.52	64.99	48.490		
16,900.00	12,644.00	12,213.89	9,559.00	75.53	45.02	12.30	-4,250.89	-1,303.50	3,151.36	3,085.00	66.36	47.486		
17,000.00	12,644.00	12,313.89	9,559.00	77.04	46.47	12.29	-4,350.89	-1,302.76	3,151.20	3,083.46	67.75	46.516		
17,100.00	12,644.00	12,413.89	9,559.00	78.56	47.92	12.28	-4,450.88	-1,302.03	3,151.05	3,081.91	69.13	45.579		
17,200.00	12,644.00	12,513.89	9,559.00	80.08	49.39	12.26	-4,550.87	-1,301.29	3,150.89	3,080.36	70.53	44.673		
17,300.00	12,644.00	12,613.88	9,559.00	81.60	50.87	12.25	-4,650.87	-1,300.56	3,150.74	3,078.80	71.94	43.799		
17,400.00	12,644.00	12,713.88	9,559.00	83.13	52.36	12.24	-4,750.86	-1,299.83	3,150.58	3,077.23	73.35	42.953		
17,500.00	12,644.00	12,813.88	9,559.00	84.67	53.85	12.22	-4,850.86	-1,299.09	3,150.43	3,075.66	74.77	42.136		
17,600.00	12,644.00	12,913.87	9,559.00	86.20	55.36	12.21	-4,950.85	-1,298.36	3,150.27	3,074.08	76.19	41.346		
17,700.00	12,644.00	13,013.87	9,559.00	87.75	56.87	12.20	-5,050.85	-1,297.63	3,150.11	3,072.49	77.62	40.582		
17,800.00	12,644.00	13,113.87	9,559.00	89.29	58.39	12.18	-5,150.84	-1,296.89	3,149.96	3,070.90	79.06	39.843		
17,900.00	12,644.00	13,213.87	9,559.00	90.84	59.91	12.17	-5,250.84	-1,296.16	3,149.81	3,069.31	80.50	39.128		
18,000.00	12,644.00	13,313.86	9,559.00	92.39	61.44	12.16	-5,350.83	-1,295.42	3,149.65	3,067.71	81.95	38.436		
18,100.00	12,644.00	13,413.86	9,559.00	93.94	62.98	12.15	-5,450.83	-1,294.69	3,149.50	3,066.10	83.40	37.766		
18,200.00	12,644.00	13,513.86	9,559.00	95.50	64.52	12.13	-5,550.82	-1,293.96	3,149.34	3,064.49	84.85	37.117		
18,300.00	12,644.00	13,613.86	9,559.00	97.05	66.07	12.12	-5,650.82	-1,293.22	3,149.19	3,062.88	86.31	36.488		
18,400.00	12,644.00	13,713.85	9,559.00	98.61	67.62	12.11	-5,750.81	-1,292.49	3,149.03	3,061.26	87.77	35.878		
18,500.00	12,644.00	13,813.85	9,559.00	100.18	69.17	12.09	-5,850.80	-1,291.76	3,148.88	3,059.65	89.23	35.288		
18,600.00	12,644.00	13,913.85	9,559.00	101.74	70.73	12.08	-5,950.80	-1,291.02	3,148.73	3,058.02	90.70	34.715		
18,700.00	12,644.00	14,013.85	9,559.00	103.31	72.29	12.07	-6,050.79	-1,290.29	3,148.57	3,056.40	92.18	34.159		
18,800.00	12,644.00	14,113.84	9,559.00	104.88	73.85	12.05	-6,150.79	-1,289.55	3,148.42	3,054.77	93.65	33.619		
18,900.00	12,644.00	14,213.84	9,559.00	106.45	75.42	12.04	-6,250.78	-1,288.82	3,148.27	3,053.14	95.13	33.095		
19,000.00	12,644.00	14,313.84	9,559.00	108.02	76.99	12.03	-6,350.78	-1,288.09	3,148.11	3,051.51	96.61	32.587		
19,100.00	12,644.00	14,413.83	9,559.00	109.60	78.56	12.01	-6,450.77	-1,287.35	3,147.96	3,049.87	98.09	32.093		
19,200.00	12,644.00	14,513.83	9,559.00	111.18	80.14	12.00	-6,550.77	-1,286.62	3,147.81	3,048.23	99.57	31.613		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 41H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,300.00	12,644.00	14,613.83	9,559.00	112.75	81.71	11.99	-6,850.76	-1,285.89	3,147.66	3,046.59	101.06	31.146		
19,400.00	12,644.00	14,713.83	9,559.00	114.33	83.29	11.98	-6,750.76	-1,285.15	3,147.50	3,044.95	102.55	30.692		
19,500.00	12,644.00	14,813.82	9,559.00	115.92	84.88	11.96	-6,850.75	-1,284.42	3,147.35	3,043.31	104.04	30.251		
19,600.00	12,644.00	14,913.82	9,559.00	117.50	86.46	11.95	-6,950.75	-1,283.68	3,147.20	3,041.67	105.53	29.822		
19,700.00	12,644.00	15,013.82	9,559.00	119.08	88.05	11.94	-7,050.74	-1,282.95	3,147.05	3,040.02	107.03	29.404		
19,800.00	12,644.00	15,113.82	9,559.00	120.67	89.63	11.92	-7,150.73	-1,282.22	3,146.90	3,038.37	108.52	28.997		
19,900.00	12,644.00	15,213.81	9,559.00	122.26	91.22	11.91	-7,250.73	-1,281.48	3,146.74	3,036.72	110.02	28.601		
20,000.00	12,644.00	15,313.81	9,559.00	123.84	92.81	11.90	-7,350.72	-1,280.75	3,146.59	3,035.07	111.52	28.215		
20,100.00	12,644.00	15,413.81	9,559.00	125.43	94.41	11.88	-7,450.72	-1,280.02	3,146.44	3,033.42	113.02	27.839		
20,200.00	12,644.00	15,513.80	9,559.00	127.02	96.00	11.87	-7,550.71	-1,279.28	3,146.29	3,031.77	114.52	27.473		
20,300.00	12,644.00	15,613.80	9,559.00	128.62	97.60	11.86	-7,650.71	-1,278.55	3,146.14	3,030.11	116.03	27.115		
20,400.00	12,644.00	15,713.80	9,559.00	130.21	99.19	11.84	-7,750.70	-1,277.81	3,145.99	3,028.46	117.53	26.767		
20,500.00	12,644.00	15,813.80	9,559.00	131.80	100.79	11.83	-7,850.70	-1,277.08	3,145.84	3,026.80	119.04	26.427		
20,600.00	12,644.00	15,913.79	9,559.00	133.40	102.39	11.82	-7,950.69	-1,276.35	3,145.69	3,025.14	120.54	26.096		
20,700.00	12,644.00	16,013.79	9,559.00	134.99	103.99	11.81	-8,050.69	-1,275.61	3,145.54	3,023.49	122.05	25.772		
20,800.00	12,644.00	16,113.79	9,559.00	136.59	105.59	11.79	-8,150.68	-1,274.88	3,145.39	3,021.83	123.56	25.456		
20,900.00	12,644.00	16,213.79	9,559.00	138.19	107.20	11.78	-8,250.68	-1,274.15	3,145.24	3,020.17	125.07	25.148		
21,000.00	12,644.00	16,313.78	9,559.00	139.78	108.80	11.77	-8,350.67	-1,273.41	3,145.09	3,018.51	126.58	24.847		
21,100.00	12,644.00	16,413.78	9,559.00	141.38	110.41	11.75	-8,450.66	-1,272.68	3,144.94	3,016.85	128.09	24.552		
21,200.00	12,644.00	16,513.78	9,559.00	142.98	112.01	11.74	-8,550.66	-1,271.94	3,144.79	3,015.19	129.60	24.265		
21,300.00	12,644.00	16,613.78	9,559.00	144.58	113.62	11.73	-8,650.65	-1,271.21	3,144.64	3,013.52	131.12	23.984		
21,400.00	12,644.00	16,713.77	9,559.00	146.19	115.22	11.71	-8,750.65	-1,270.48	3,144.49	3,011.86	132.63	23.709		
21,500.00	12,644.00	16,813.77	9,559.00	147.79	116.83	11.70	-8,850.64	-1,269.74	3,144.34	3,010.20	134.14	23.440		
21,600.00	12,644.00	16,913.77	9,559.00	149.39	118.44	11.69	-8,950.64	-1,269.01	3,144.19	3,008.53	135.66	23.177		
21,700.00	12,644.00	17,013.76	9,559.00	150.99	120.05	11.67	-9,050.63	-1,268.28	3,144.05	3,006.87	137.17	22.920		
21,800.00	12,644.00	17,113.76	9,559.00	152.60	121.66	11.66	-9,150.63	-1,267.54	3,143.90	3,005.21	138.69	22.669		
21,900.00	12,644.00	17,213.76	9,559.00	154.20	123.27	11.65	-9,250.62	-1,266.81	3,143.75	3,003.54	140.21	22.422		
22,000.00	12,644.00	17,313.76	9,559.00	155.81	124.88	11.64	-9,350.62	-1,266.07	3,143.60	3,001.88	141.72	22.181		
22,100.00	12,644.00	17,413.75	9,559.00	157.41	126.50	11.62	-9,450.61	-1,265.34	3,143.45	3,000.21	143.24	21.945		
22,200.00	12,644.00	17,513.75	9,559.00	159.02	128.11	11.61	-9,550.61	-1,264.61	3,143.30	2,998.55	144.76	21.714		
22,300.00	12,644.00	17,613.75	9,559.00	160.63	129.72	11.60	-9,650.60	-1,263.87	3,143.16	2,996.88	146.28	21.488		
22,400.00	12,644.00	17,713.75	9,559.00	162.24	131.34	11.58	-9,750.59	-1,263.14	3,143.01	2,995.22	147.79	21.266		
22,500.00	12,644.00	17,813.74	9,559.00	163.84	132.95	11.57	-9,850.59	-1,262.41	3,142.86	2,993.55	149.31	21.049		
22,563.68	12,644.00	17,877.42	9,559.00	164.87	133.98	11.56	-9,914.26	-1,261.94	3,142.77	2,992.49	150.28	20.913 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 4H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
0.00	0.00	0.00	0.00	0.00	0.00	92.09	-37.13	1,015.06	1,015.76					
100.00	100.00	94.00	94.00	0.08	0.08	92.09	-37.13	1,015.06	1,015.74	1,015.58	0.16	6,211.805		
200.00	200.00	194.00	194.00	0.31	0.30	92.09	-37.13	1,015.06	1,015.74	1,015.13	0.60	1,679.960		
300.00	300.00	294.00	294.00	0.53	0.52	92.09	-37.13	1,015.06	1,015.74	1,014.68	1.05	963.559		
400.00	400.00	394.00	394.00	0.76	0.75	92.09	-37.13	1,015.06	1,015.74	1,014.24	1.50	675.500		
500.00	500.00	494.00	494.00	0.98	0.97	92.09	-37.13	1,015.06	1,015.74	1,013.79	1.95	520.034		
600.00	600.00	594.00	594.00	1.21	1.19	92.09	-37.13	1,015.06	1,015.74	1,013.34	2.40	422.740		
700.00	700.00	694.00	694.00	1.43	1.42	92.09	-37.13	1,015.06	1,015.74	1,012.89	2.85	356.115		
800.00	800.00	794.00	794.00	1.66	1.64	92.09	-37.13	1,015.06	1,015.74	1,012.44	3.30	307.631		
900.00	900.00	894.00	894.00	1.88	1.87	92.09	-37.13	1,015.06	1,015.74	1,011.99	3.75	270.767		
1,000.00	1,000.00	994.00	994.00	2.11	2.09	92.09	-37.13	1,015.06	1,015.74	1,011.54	4.20	241.792		
1,100.00	1,100.00	1,094.00	1,094.00	2.33	2.32	92.09	-37.13	1,015.06	1,015.74	1,011.09	4.65	218.419		
1,200.00	1,200.00	1,194.00	1,194.00	2.56	2.54	92.09	-37.13	1,015.06	1,015.74	1,010.64	5.10	199.167		
1,300.00	1,300.00	1,294.00	1,294.00	2.78	2.77	92.09	-37.13	1,015.06	1,015.74	1,010.19	5.55	183.033		
1,400.00	1,400.00	1,394.00	1,394.00	3.01	2.99	92.09	-37.13	1,015.06	1,015.74	1,009.74	6.00	169.318		
1,500.00	1,500.00	1,494.00	1,494.00	3.23	3.22	92.09	-37.13	1,015.06	1,015.74	1,009.29	6.45	157.515		
1,600.00	1,600.00	1,594.00	1,594.00	3.46	3.44	92.09	-37.13	1,015.06	1,015.74	1,008.84	6.90	147.250		
1,700.00	1,700.00	1,694.00	1,694.00	3.68	3.67	92.09	-37.13	1,015.06	1,015.74	1,008.39	7.35	138.241		
1,800.00	1,800.00	1,794.00	1,794.00	3.91	3.89	92.09	-37.13	1,015.06	1,015.74	1,007.94	7.80	130.271		
1,900.00	1,900.00	1,894.00	1,894.00	4.13	4.12	92.09	-37.13	1,015.06	1,015.74	1,007.49	8.25	123.170		
2,000.00	2,000.00	1,994.00	1,994.00	4.35	4.34	92.09	-37.13	1,015.06	1,015.74	1,007.04	8.70	116.803		
2,100.00	2,100.00	2,094.00	2,094.00	4.58	4.57	92.09	-37.13	1,015.06	1,015.74	1,006.59	9.15	111.062		
2,200.00	2,200.00	2,194.00	2,194.00	4.80	4.79	92.09	-37.13	1,015.06	1,015.74	1,006.14	9.60	105.858		
2,300.00	2,300.00	2,294.00	2,294.00	5.03	5.02	92.09	-37.13	1,015.06	1,015.74	1,005.69	10.04	101.121		
2,400.00	2,400.00	2,394.00	2,394.00	5.25	5.24	92.09	-37.13	1,015.06	1,015.74	1,005.24	10.49	96.789		
2,500.00	2,500.00	2,494.00	2,494.00	5.48	5.47	92.09	-37.13	1,015.06	1,015.74	1,004.80	10.94	92.814 CC, ES		
2,600.00	2,599.99	2,579.83	2,579.83	5.69	5.65	162.11	-37.13	1,015.62	1,017.22	1,005.88	11.34	89.706		
2,700.00	2,699.96	2,664.64	2,664.64	5.90	5.82	162.13	-37.13	1,017.43	1,021.85	1,010.13	11.71	87.237		
2,800.00	2,799.86	2,749.21	2,749.13	6.11	5.99	162.16	-37.13	1,020.48	1,029.60	1,017.52	12.08	85.202		
2,900.00	2,899.68	2,833.40	2,833.21	6.33	6.16	162.20	-37.13	1,024.76	1,040.48	1,028.02	12.45	83.546		
2,949.81	2,949.35	2,875.17	2,874.90	6.43	6.24	162.23	-37.13	1,027.34	1,047.05	1,034.42	12.64	82.849		
3,000.00	2,999.38	2,917.13	2,916.77	6.54	6.33	162.28	-37.13	1,030.24	1,054.25	1,041.43	12.82	82.220		
3,100.00	3,099.08	3,000.00	2,999.37	6.76	6.51	162.37	-37.13	1,036.86	1,069.67	1,056.49	13.19	81.123		
3,200.00	3,198.77	3,083.44	3,082.43	6.99	6.69	162.46	-37.13	1,044.74	1,086.53	1,072.98	13.55	80.182		
3,300.00	3,298.46	3,165.97	3,164.48	7.21	6.87	162.54	-37.13	1,053.72	1,104.81	1,090.90	13.91	79.413		
3,400.00	3,398.15	3,249.55	3,247.42	7.44	7.06	162.62	-37.13	1,064.01	1,124.50	1,110.22	14.28	78.765		
3,500.00	3,497.84	3,347.47	3,344.51	7.67	7.29	162.71	-37.13	1,076.63	1,144.76	1,130.07	14.69	77.903		
3,600.00	3,597.54	3,445.38	3,441.61	7.90	7.52	162.79	-37.13	1,089.25	1,165.03	1,149.91	15.12	77.075		
3,700.00	3,697.23	3,543.29	3,538.70	8.13	7.76	162.87	-37.13	1,101.86	1,185.29	1,169.76	15.54	76.279		
3,800.00	3,796.92	3,641.20	3,635.80	8.37	8.01	162.95	-37.13	1,114.48	1,205.57	1,189.60	15.96	75.514		
3,900.00	3,896.61	3,739.11	3,732.89	8.60	8.25	163.02	-37.13	1,127.10	1,225.84	1,209.44	16.39	74.778		
4,000.00	3,996.30	3,837.02	3,829.99	8.84	8.50	163.09	-37.13	1,139.72	1,246.11	1,229.29	16.82	74.071		
4,100.00	4,096.00	3,934.93	3,927.08	9.08	8.76	163.17	-37.13	1,152.33	1,266.39	1,249.13	17.26	73.392		
4,200.00	4,195.69	4,032.84	4,024.18	9.31	9.01	163.23	-37.13	1,164.95	1,286.67	1,268.98	17.69	72.738		
4,300.00	4,295.38	4,130.75	4,121.27	9.55	9.27	163.30	-37.13	1,177.57	1,306.95	1,288.82	18.12	72.108		
4,400.00	4,395.07	4,228.67	4,218.37	9.79	9.53	163.36	-37.13	1,190.18	1,327.23	1,308.67	18.56	71.503		
4,500.00	4,494.76	4,326.58	4,315.46	10.04	9.80	163.43	-37.13	1,202.80	1,347.51	1,328.51	19.00	70.920		
4,600.00	4,594.46	4,424.49	4,412.56	10.28	10.06	163.49	-37.13	1,215.42	1,367.80	1,348.36	19.44	70.359		
4,700.00	4,694.15	4,522.40	4,509.65	10.52	10.33	163.54	-37.13	1,228.04	1,388.08	1,368.20	19.88	69.818		
4,800.00	4,793.84	4,620.31	4,606.75	10.76	10.60	163.60	-37.13	1,240.65	1,408.37	1,388.05	20.32	69.296		
4,900.00	4,893.53	4,718.22	4,703.84	11.01	10.87	163.66	-37.13	1,253.27	1,428.66	1,407.89	20.77	68.794		
5,000.00	4,993.22	4,816.13	4,800.94	11.25	11.14	163.71	-37.13	1,265.89	1,448.95	1,427.74	21.21	68.309		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 4H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.92	4,914.04	4,898.03	11.50	11.42	163.76	-37.13	1,278.50	1,469.24	1,447.58	21.66	67.840		
5,200.00	5,192.81	5,011.95	4,995.12	11.74	11.69	163.81	-37.13	1,291.12	1,489.53	1,467.43	22.10	67.388		
5,300.00	5,292.30	5,109.87	5,092.22	11.99	11.97	163.86	-37.13	1,303.74	1,509.83	1,487.27	22.55	66.952		
5,400.00	5,391.99	5,207.78	5,189.31	12.24	12.25	163.91	-37.13	1,316.36	1,530.12	1,507.12	23.00	66.530		
5,500.00	5,491.68	5,305.69	5,286.41	12.48	12.53	163.96	-37.13	1,328.97	1,550.42	1,526.97	23.45	66.122		
5,600.00	5,591.38	5,403.60	5,383.50	12.73	12.80	164.00	-37.13	1,341.59	1,570.71	1,546.81	23.90	65.727		
5,700.00	5,691.07	5,501.51	5,480.60	12.98	13.09	164.05	-37.13	1,354.21	1,591.01	1,566.66	24.35	65.345		
5,800.00	5,790.76	5,599.42	5,577.69	13.23	13.37	164.09	-37.13	1,366.82	1,611.31	1,586.51	24.80	64.975		
5,900.00	5,890.45	5,697.33	5,674.79	13.48	13.65	164.13	-37.13	1,379.44	1,631.61	1,606.36	25.25	64.617		
6,000.00	5,990.14	5,795.24	5,771.88	13.72	13.93	164.17	-37.13	1,392.06	1,651.91	1,626.20	25.70	64.270		
6,100.00	6,089.84	5,893.15	5,868.98	13.97	14.22	164.21	-37.13	1,404.68	1,672.21	1,646.05	26.16	63.933		
6,200.00	6,189.53	5,991.07	5,966.07	14.22	14.50	164.25	-37.13	1,417.29	1,692.51	1,665.90	26.61	63.607		
6,300.00	6,289.22	6,088.98	6,063.17	14.47	14.78	164.29	-37.13	1,429.91	1,712.81	1,685.75	27.06	63.290		
6,400.00	6,388.91	6,186.89	6,160.26	14.72	15.07	164.33	-37.13	1,442.53	1,733.11	1,705.60	27.52	62.983		
6,500.00	6,488.60	6,284.80	6,257.36	14.97	15.36	164.37	-37.13	1,455.14	1,753.42	1,725.44	27.97	62.685		
6,600.00	6,588.30	6,382.71	6,354.45	15.22	15.64	164.40	-37.13	1,467.76	1,773.72	1,745.29	28.43	62.395		
6,700.00	6,687.99	6,480.62	6,451.55	15.47	15.93	164.44	-37.13	1,480.38	1,794.03	1,765.14	28.88	62.113		
6,800.00	6,787.68	6,578.53	6,548.64	15.72	16.22	164.47	-37.13	1,493.00	1,814.33	1,784.99	29.34	61.840		
6,900.00	6,887.37	6,676.44	6,645.73	15.98	16.51	164.50	-37.13	1,505.61	1,834.64	1,804.84	29.80	61.573		
7,000.00	6,987.06	6,774.35	6,742.83	16.23	16.80	164.54	-37.13	1,518.23	1,854.94	1,824.69	30.25	61.314		
7,100.00	7,086.76	6,872.26	6,839.92	16.48	17.08	164.57	-37.13	1,530.85	1,875.25	1,844.54	30.71	61.062		
7,200.00	7,186.45	6,970.18	6,937.02	16.73	17.37	164.60	-37.13	1,543.47	1,895.56	1,864.39	31.17	60.817		
7,300.00	7,286.14	7,068.09	7,034.11	16.98	17.66	164.63	-37.13	1,556.08	1,915.87	1,884.24	31.63	60.578		
7,400.00	7,385.83	7,166.00	7,131.21	17.23	17.95	164.66	-37.13	1,568.70	1,936.18	1,904.09	32.08	60.346		
7,500.00	7,485.52	7,263.91	7,228.30	17.49	18.24	164.69	-37.13	1,581.32	1,956.49	1,923.94	32.54	60.119		
7,600.00	7,585.22	7,361.82	7,325.40	17.74	18.53	164.72	-37.13	1,593.93	1,976.80	1,943.79	33.00	59.898		
7,700.00	7,684.91	7,459.73	7,422.49	17.99	18.83	164.75	-37.13	1,606.55	1,997.11	1,963.64	33.46	59.682		
7,800.00	7,784.60	7,557.64	7,519.59	18.24	19.12	164.77	-37.13	1,619.17	2,017.42	1,983.49	33.92	59.472		
7,900.00	7,884.29	7,655.55	7,616.68	18.50	19.41	164.80	-37.13	1,631.79	2,037.73	2,003.35	34.38	59.267		
8,000.00	7,983.98	7,753.46	7,713.78	18.75	19.70	164.83	-37.13	1,644.40	2,058.04	2,023.20	34.84	59.067		
8,100.00	8,083.68	7,851.38	7,810.87	19.00	19.99	164.85	-37.13	1,657.02	2,078.35	2,043.05	35.30	58.872		
8,200.00	8,183.37	7,949.29	7,907.97	19.25	20.29	164.88	-37.13	1,669.64	2,098.66	2,062.90	35.76	58.681		
8,300.00	8,283.06	8,047.20	8,005.06	19.51	20.58	164.90	-37.13	1,682.25	2,118.98	2,082.75	36.23	58.495		
8,400.00	8,382.75	8,145.11	8,102.16	19.76	20.87	164.93	-37.13	1,694.87	2,139.29	2,102.60	36.69	58.313		
8,500.00	8,482.44	8,243.02	8,199.25	20.01	21.16	164.95	-37.13	1,707.49	2,159.60	2,122.45	37.15	58.135		
8,600.00	8,582.14	8,340.93	8,296.35	20.27	21.46	164.98	-37.13	1,720.11	2,179.92	2,142.31	37.61	57.961		
8,700.00	8,681.83	8,438.84	8,393.44	20.52	21.75	165.00	-37.13	1,732.72	2,200.23	2,162.16	38.07	57.791		
8,800.00	8,781.52	8,536.75	8,490.53	20.77	22.04	165.02	-37.13	1,745.34	2,220.55	2,182.01	38.54	57.624		
8,900.00	8,881.21	8,634.66	8,587.63	21.03	22.34	165.04	-37.13	1,757.96	2,240.86	2,201.86	39.00	57.461		
9,000.00	8,980.90	8,732.58	8,684.72	21.28	22.63	165.07	-37.13	1,770.57	2,261.18	2,221.72	39.46	57.302		
9,100.00	9,080.60	8,830.49	8,781.82	21.54	22.93	165.09	-37.13	1,783.19	2,281.49	2,241.57	39.92	57.146		
9,200.00	9,180.29	8,928.40	8,878.91	21.79	23.22	165.11	-37.13	1,795.81	2,301.81	2,261.42	40.39	56.993		
9,300.00	9,279.98	9,026.31	8,976.01	22.04	23.52	165.13	-37.13	1,808.43	2,322.12	2,281.27	40.85	56.844		
9,400.00	9,379.67	9,124.22	9,073.10	22.30	23.81	165.15	-37.13	1,821.04	2,342.44	2,301.13	41.31	56.697		
9,500.00	9,479.36	9,222.13	9,170.20	22.55	24.10	165.17	-37.13	1,833.66	2,362.76	2,320.98	41.78	56.554		
9,600.00	9,579.05	9,320.04	9,267.29	22.81	24.40	165.19	-37.13	1,846.28	2,383.07	2,340.83	42.24	56.413		
9,700.00	9,678.75	9,417.95	9,364.39	23.06	24.69	165.21	-37.13	1,858.90	2,403.39	2,360.68	42.71	56.276		
9,800.00	9,778.44	9,515.86	9,461.48	23.31	24.99	165.23	-37.13	1,871.51	2,423.71	2,380.54	43.17	56.140		
9,900.00	9,878.13	9,613.77	9,558.58	23.57	25.29	165.25	-37.13	1,884.13	2,444.03	2,400.39	43.64	56.008		
10,000.00	9,977.82	9,711.69	9,655.67	23.82	25.58	165.27	-37.13	1,896.75	2,464.34	2,420.24	44.10	55.878		
10,100.00	10,077.51	9,809.60	9,752.77	24.08	25.88	165.28	-37.13	1,909.36	2,484.66	2,440.10	44.57	55.750		
10,200.00	10,177.21	9,907.51	9,849.86	24.33	26.17	165.30	-37.13	1,921.98	2,504.98	2,459.95	45.03	55.625		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 4H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
10,300.00	10,276.90	10,005.42	9,946.96	24.59	26.47	165.32	-37.13	1,934.60	2,525.30	2,479.80	45.50	55.502			
10,400.00	10,376.59	10,103.33	10,044.05	24.84	26.76	165.34	-37.13	1,947.22	2,545.62	2,499.85	45.96	55.382			
10,500.00	10,476.28	10,201.24	10,141.15	25.10	27.06	165.35	-37.13	1,959.83	2,565.94	2,519.51	46.43	55.264			
10,600.00	10,575.97	10,299.15	10,238.24	25.35	27.36	165.37	-37.13	1,972.45	2,586.26	2,539.36	46.90	55.147			
10,700.00	10,675.67	10,397.06	10,335.33	25.61	27.65	165.39	-37.13	1,985.07	2,606.58	2,559.21	47.36	55.033			
10,800.00	10,775.36	10,554.85	10,491.99	25.86	28.05	165.42	-37.13	2,003.91	2,626.08	2,578.08	48.00	54.710			
10,900.00	10,875.05	10,736.68	10,673.07	26.12	28.43	165.46	-37.13	2,020.33	2,642.61	2,593.97	48.65	54.321			
11,000.00	10,974.74	10,820.26	10,856.32	26.37	28.77	165.52	-37.13	2,031.08	2,656.01	2,606.75	49.26	53.921			
11,076.14	11,050.65	11,060.98	10,996.98	26.57	29.01	165.57	-37.13	2,035.33	2,664.07	2,614.38	49.70	53.608			
11,100.00	11,074.44	11,105.23	11,041.22	26.62	29.08	165.59	-37.13	2,035.96	2,666.17	2,616.35	49.82	53.513			
11,200.00	11,174.22	11,232.23	11,168.22	26.81	29.29	165.65	-37.13	2,036.26	2,672.69	2,622.45	50.24	53.198			
11,300.00	11,274.10	11,332.11	11,268.10	26.99	29.47	165.69	-37.13	2,036.26	2,677.35	2,626.73	50.62	52.892			
11,400.00	11,374.06	11,432.07	11,368.06	27.17	29.64	165.71	-37.13	2,036.26	2,680.33	2,629.33	51.00	52.560			
11,500.00	11,474.05	11,532.06	11,468.05	27.33	29.82	165.72	-37.13	2,036.26	2,681.61	2,630.24	51.37	52.202			
11,525.95	11,500.00	11,558.01	11,494.00	27.38	29.87	95.72	-37.13	2,036.26	2,681.67	2,630.20	51.47	52.103			
11,600.00	11,574.05	11,632.06	11,568.05	27.51	30.00	95.72	-37.13	2,036.26	2,681.67	2,629.91	51.76	51.808			
11,700.00	11,674.05	11,732.06	11,668.05	27.71	30.18	95.72	-37.13	2,036.26	2,681.67	2,629.50	52.17	51.401			
11,800.00	11,774.05	11,832.06	11,768.05	27.91	30.36	95.72	-37.13	2,036.26	2,681.67	2,629.09	52.58	51.000			
11,900.00	11,874.05	11,932.06	11,868.05	28.11	30.53	95.72	-37.13	2,036.26	2,681.67	2,628.68	52.99	50.605			
12,000.00	11,974.05	12,032.06	11,968.05	28.31	30.72	95.72	-37.13	2,036.26	2,681.67	2,628.26	53.40	50.215			
12,096.99	12,071.04	12,129.05	12,065.04	28.50	30.89	95.72	-37.13	2,036.26	2,681.67	2,627.86	53.80	49.842			
12,100.00	12,074.05	12,132.06	12,068.05	28.51	30.90	-84.28	-37.13	2,036.26	2,681.67	2,627.85	53.82	49.831			
12,150.00	12,123.97	12,173.46	12,109.45	28.59	30.97	-84.34	-37.43	2,036.26	2,681.47	2,627.48	53.99	49.670			
12,200.00	12,173.49	12,200.00	12,135.94	28.67	31.01	-84.41	-38.89	2,036.26	2,681.12	2,627.00	54.12	49.542			
12,250.00	12,222.23	12,241.88	12,177.54	28.73	31.08	-84.55	-43.70	2,036.26	2,680.61	2,626.35	54.26	49.400			
12,300.00	12,269.83	12,276.26	12,211.35	28.79	31.14	-84.70	-49.90	2,036.26	2,680.01	2,625.62	54.39	49.275			
12,350.00	12,315.90	12,310.81	12,244.89	28.85	31.20	-84.89	-58.17	2,036.26	2,679.29	2,624.78	54.51	49.156			
12,400.00	12,360.12	12,350.00	12,282.25	28.90	31.26	-85.12	-69.98	2,036.26	2,678.49	2,623.86	54.63	49.032			
12,450.00	12,402.13	12,380.55	12,310.77	28.94	31.31	-85.35	-80.94	2,036.26	2,677.60	2,622.87	54.73	48.922			
12,500.00	12,441.63	12,415.82	12,342.90	28.98	31.37	-85.62	-95.46	2,036.26	2,676.66	2,621.81	54.85	48.803			
12,550.00	12,478.30	12,450.00	12,373.14	29.02	31.43	-85.90	-111.39	2,036.26	2,675.67	2,620.71	54.96	48.682			
12,600.00	12,511.88	12,487.39	12,405.06	29.06	31.49	-86.23	-130.84	2,036.26	2,674.66	2,619.57	55.09	48.548			
12,650.00	12,542.10	12,523.80	12,434.86	29.09	31.56	-86.57	-151.75	2,036.26	2,673.66	2,618.42	55.23	48.406			
12,700.00	12,568.73	12,560.71	12,463.65	29.14	31.62	-86.92	-174.83	2,036.26	2,672.68	2,617.29	55.39	48.251			
12,750.00	12,591.58	12,600.00	12,492.60	29.19	31.70	-87.31	-201.39	2,036.26	2,671.74	2,616.17	55.57	48.078			
12,800.00	12,610.47	12,636.30	12,517.67	29.25	31.76	-87.68	-227.63	2,036.26	2,670.88	2,615.11	55.77	47.894			
12,850.00	12,625.25	12,675.16	12,542.60	29.33	31.84	-88.08	-257.43	2,036.26	2,670.10	2,614.11	55.99	47.689			
12,900.00	12,635.81	12,714.86	12,565.94	29.43	31.93	-88.49	-289.54	2,036.26	2,669.44	2,613.20	56.24	47.465			
12,950.00	12,642.07	12,755.53	12,587.47	29.54	32.03	-88.91	-324.02	2,036.26	2,668.92	2,612.40	56.52	47.222			
12,996.99	12,644.00	12,794.74	12,605.88	29.68	32.13	-89.31	-358.65	2,036.26	2,668.57	2,611.76	56.81	46.977			
13,000.00	12,644.00	12,797.29	12,606.99	29.69	32.13	-89.33	-360.94	2,036.26	2,668.55	2,611.73	56.82	46.961			
13,093.49	12,644.00	12,881.78	12,638.00	30.01	32.38	-90.00	-439.45	2,036.26	2,668.33	2,610.82	57.51	46.400			
13,100.00	12,644.00	12,888.02	12,639.82	30.04	32.40	-90.04	-445.42	2,036.26	2,668.33	2,610.77	57.56	46.360			
13,200.00	12,644.00	12,988.18	12,660.10	30.48	32.75	-90.47	-543.37	2,036.26	2,668.42	2,609.96	58.47	45.641			
13,300.00	12,644.00	13,090.93	12,664.00	31.00	33.19	-90.56	-645.96	2,036.26	2,668.46	2,608.93	59.53	44.824			
13,400.00	12,644.00	13,190.93	12,664.00	31.61	33.70	-90.56	-745.96	2,036.26	2,668.46	2,607.72	60.74	43.932			
13,500.00	12,644.00	13,290.93	12,664.00	32.29	34.27	-90.56	-845.96	2,036.26	2,668.46	2,606.36	62.10	42.973			
13,600.00	12,644.00	13,390.93	12,664.00	33.04	34.92	-90.56	-945.96	2,036.26	2,668.46	2,604.87	63.59	41.963			
13,700.00	12,644.00	13,490.93	12,664.00	33.85	35.63	-90.56	-1,045.96	2,036.26	2,668.46	2,603.24	65.21	40.918			
13,800.00	12,644.00	13,590.93	12,664.00	34.72	36.40	-90.56	-1,145.96	2,036.26	2,668.46	2,601.50	66.96	39.852			
13,900.00	12,644.00	13,690.93	12,664.00	35.64	37.22	-90.56	-1,245.96	2,036.26	2,668.46	2,599.64	68.82	38.777			
14,000.00	12,644.00	13,790.93	12,664.00	36.62	38.10	-90.56	-1,345.96	2,036.26	2,668.46	2,597.68	70.77	37.704			

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 4H - OH - Plan #1													Offset Site Error:
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,100.00	12,644.00	13,890.93	12,664.00	37.64	39.03	-90.56	-1,445.96	2,036.26	2,668.46	2,595.63	72.83	36.642	
14,200.00	12,644.00	13,990.93	12,664.00	38.70	40.01	-90.56	-1,545.96	2,036.26	2,668.46	2,593.49	74.96	35.596	
14,300.00	12,644.00	14,090.93	12,664.00	39.80	41.02	-90.56	-1,645.96	2,036.26	2,668.46	2,591.27	77.18	34.573	
14,400.00	12,644.00	14,190.93	12,664.00	40.94	42.08	-90.56	-1,745.96	2,036.26	2,668.46	2,588.98	79.47	33.577	
14,500.00	12,644.00	14,290.93	12,664.00	42.11	43.17	-90.56	-1,845.96	2,036.26	2,668.46	2,586.63	81.83	32.610	
14,600.00	12,644.00	14,390.93	12,664.00	43.30	44.29	-90.56	-1,945.96	2,036.26	2,668.46	2,584.21	84.25	31.674	
14,700.00	12,644.00	14,490.93	12,664.00	44.53	45.45	-90.56	-2,045.96	2,036.26	2,668.46	2,581.74	86.72	30.771	
14,800.00	12,644.00	14,590.93	12,664.00	45.78	46.64	-90.56	-2,145.96	2,036.26	2,668.46	2,579.21	89.25	29.900	
14,900.00	12,644.00	14,690.93	12,664.00	47.06	47.85	-90.56	-2,245.96	2,036.26	2,668.46	2,576.64	91.82	29.063	
15,000.00	12,644.00	14,790.93	12,664.00	48.36	49.08	-90.56	-2,345.96	2,036.26	2,668.46	2,574.02	94.43	28.258	
15,100.00	12,644.00	14,890.93	12,664.00	49.67	50.34	-90.56	-2,445.96	2,036.26	2,668.46	2,571.37	97.09	27.485	
15,200.00	12,644.00	14,990.93	12,664.00	51.01	51.62	-90.56	-2,545.96	2,036.26	2,668.46	2,568.68	99.78	26.744	
15,300.00	12,644.00	15,090.93	12,664.00	52.36	52.92	-90.56	-2,645.96	2,036.26	2,668.46	2,565.95	102.50	26.033	
15,400.00	12,644.00	15,190.93	12,664.00	53.73	54.24	-90.56	-2,745.96	2,036.26	2,668.46	2,563.20	105.26	25.352	
15,500.00	12,644.00	15,290.93	12,664.00	55.11	55.58	-90.56	-2,845.96	2,036.26	2,668.46	2,560.41	108.04	24.698	
15,600.00	12,644.00	15,390.93	12,664.00	56.51	56.93	-90.56	-2,945.96	2,036.26	2,668.46	2,557.60	110.85	24.072	
15,700.00	12,644.00	15,490.93	12,664.00	57.92	58.29	-90.56	-3,045.96	2,036.26	2,668.46	2,554.77	113.69	23.472	
15,800.00	12,644.00	15,590.93	12,664.00	59.34	59.67	-90.56	-3,145.96	2,036.26	2,668.46	2,551.91	116.55	22.896	
15,900.00	12,644.00	15,690.93	12,664.00	60.77	61.06	-90.56	-3,245.96	2,036.26	2,668.46	2,549.03	119.42	22.344	
16,000.00	12,644.00	15,790.93	12,664.00	62.21	62.46	-90.56	-3,345.96	2,036.26	2,668.46	2,546.13	122.32	21.815	
16,100.00	12,644.00	15,890.93	12,664.00	63.66	63.88	-90.56	-3,445.96	2,036.26	2,668.46	2,543.22	125.24	21.307	
16,200.00	12,644.00	15,990.93	12,664.00	65.12	65.30	-90.56	-3,545.96	2,036.26	2,668.46	2,540.28	128.17	20.819	
16,300.00	12,644.00	16,090.93	12,664.00	66.58	66.74	-90.56	-3,645.96	2,036.26	2,668.46	2,537.33	131.12	20.351	
16,400.00	12,644.00	16,190.93	12,664.00	68.06	68.18	-90.56	-3,745.96	2,036.26	2,668.46	2,534.37	134.09	19.901	
16,500.00	12,644.00	16,290.93	12,664.00	69.54	69.63	-90.56	-3,845.96	2,036.26	2,668.46	2,531.39	137.07	19.468	
16,600.00	12,644.00	16,390.93	12,664.00	71.03	71.09	-90.56	-3,945.96	2,036.26	2,668.46	2,528.40	140.06	19.053	
16,700.00	12,644.00	16,490.93	12,664.00	72.52	72.56	-90.56	-4,045.96	2,036.26	2,668.46	2,525.40	143.06	18.653	
16,800.00	12,644.00	16,590.93	12,664.00	74.02	74.03	-90.56	-4,145.96	2,036.26	2,668.46	2,522.38	146.07	18.268	
16,900.00	12,644.00	16,690.93	12,664.00	75.53	75.51	-90.56	-4,245.96	2,036.26	2,668.46	2,519.36	149.10	17.897	
17,000.00	12,644.00	16,790.93	12,664.00	77.04	77.00	-90.56	-4,345.96	2,036.26	2,668.46	2,516.32	152.14	17.540	
17,100.00	12,644.00	16,890.93	12,664.00	78.56	78.49	-90.56	-4,445.96	2,036.26	2,668.46	2,513.28	155.18	17.196	
17,200.00	12,644.00	16,990.93	12,664.00	80.08	79.99	-90.56	-4,545.96	2,036.26	2,668.46	2,510.22	158.23	16.864	
17,300.00	12,644.00	17,090.93	12,664.00	81.60	81.49	-90.56	-4,645.96	2,036.26	2,668.46	2,507.16	161.30	16.544	
17,400.00	12,644.00	17,190.93	12,664.00	83.13	83.00	-90.56	-4,745.96	2,036.26	2,668.46	2,504.09	164.37	16.235	
17,500.00	12,644.00	17,290.93	12,664.00	84.67	84.51	-90.56	-4,845.96	2,036.26	2,668.46	2,501.01	167.44	15.936	
17,600.00	12,644.00	17,390.93	12,664.00	86.20	86.03	-90.56	-4,945.96	2,036.26	2,668.46	2,497.93	170.53	15.648	
17,700.00	12,644.00	17,490.93	12,664.00	87.75	87.55	-90.56	-5,045.96	2,036.26	2,668.46	2,494.84	173.62	15.369	
17,800.00	12,644.00	17,590.93	12,664.00	89.29	89.08	-90.56	-5,145.96	2,036.26	2,668.46	2,491.74	176.72	15.100	
17,900.00	12,644.00	17,690.93	12,664.00	90.84	90.61	-90.56	-5,245.96	2,036.26	2,668.46	2,488.63	179.82	14.839	
18,000.00	12,644.00	17,790.93	12,664.00	92.39	92.14	-90.56	-5,345.96	2,036.26	2,668.46	2,485.52	182.93	14.587	
18,100.00	12,644.00	17,890.93	12,664.00	93.94	93.68	-90.56	-5,445.96	2,036.26	2,668.46	2,482.41	186.05	14.343	
18,200.00	12,644.00	17,990.93	12,664.00	95.50	95.22	-90.56	-5,545.96	2,036.26	2,668.46	2,479.29	189.17	14.106	
18,300.00	12,644.00	18,090.93	12,664.00	97.05	96.76	-90.56	-5,645.96	2,036.26	2,668.46	2,476.16	192.29	13.877	
18,400.00	12,644.00	18,190.93	12,664.00	98.61	98.30	-90.56	-5,745.96	2,036.26	2,668.46	2,473.03	195.42	13.655	
18,500.00	12,644.00	18,290.93	12,664.00	100.18	99.85	-90.56	-5,845.96	2,036.26	2,668.46	2,469.90	198.56	13.439	
18,600.00	12,644.00	18,390.93	12,664.00	101.74	101.40	-90.56	-5,945.96	2,036.26	2,668.46	2,466.76	201.70	13.230	
18,700.00	12,644.00	18,490.93	12,664.00	103.31	102.96	-90.56	-6,045.96	2,036.26	2,668.46	2,463.62	204.84	13.027	
18,800.00	12,644.00	18,590.93	12,664.00	104.88	104.51	-90.56	-6,145.96	2,036.26	2,668.46	2,460.47	207.99	12.830	
18,900.00	12,644.00	18,690.93	12,664.00	106.45	106.07	-90.56	-6,245.96	2,036.26	2,668.46	2,457.32	211.14	12.639	
19,000.00	12,644.00	18,790.93	12,664.00	108.02	107.63	-90.56	-6,345.96	2,036.26	2,668.46	2,454.17	214.29	12.453	
19,100.00	12,644.00	18,890.93	12,664.00	109.60	109.20	-90.56	-6,445.96	2,036.26	2,668.46	2,451.01	217.45	12.272	
19,200.00	12,644.00	18,990.93	12,664.00	111.18	110.76	-90.56	-6,545.96	2,036.26	2,668.46	2,447.85	220.61	12.096	

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 4H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
19,300.00	12,644.00	19,090.93	12,664.00	112.75	112.33	-90.56	-6,645.96	2,036.26	2,668.46	2,444.69	223.77	11.925		
19,400.00	12,644.00	19,190.93	12,664.00	114.33	113.90	-90.56	-6,745.96	2,036.26	2,668.46	2,441.52	226.94	11.759		
19,500.00	12,644.00	19,290.93	12,664.00	115.92	115.47	-90.56	-6,845.96	2,036.26	2,668.46	2,438.35	230.11	11.597		
19,600.00	12,644.00	19,390.93	12,664.00	117.50	117.04	-90.56	-6,945.96	2,036.26	2,668.46	2,435.18	233.28	11.439		
19,700.00	12,644.00	19,490.93	12,664.00	119.08	118.61	-90.56	-7,045.96	2,036.26	2,668.46	2,432.00	236.45	11.285		
19,800.00	12,644.00	19,590.93	12,664.00	120.67	120.19	-90.56	-7,145.96	2,036.26	2,668.46	2,428.82	239.63	11.136		
19,900.00	12,644.00	19,690.93	12,664.00	122.26	121.77	-90.56	-7,245.96	2,036.26	2,668.46	2,425.64	242.81	10.990		
20,000.00	12,644.00	19,790.93	12,664.00	123.84	123.35	-90.56	-7,345.96	2,036.26	2,668.46	2,422.46	245.99	10.848		
20,100.00	12,644.00	19,890.93	12,664.00	125.43	124.93	-90.56	-7,445.96	2,036.26	2,668.46	2,419.28	249.18	10.709		
20,200.00	12,644.00	19,990.93	12,664.00	127.02	126.51	-90.56	-7,545.96	2,036.26	2,668.46	2,416.09	252.36	10.574		
20,300.00	12,644.00	20,090.93	12,664.00	128.62	128.09	-90.56	-7,645.96	2,036.26	2,668.46	2,412.90	255.55	10.442		
20,400.00	12,644.00	20,190.93	12,664.00	130.21	129.68	-90.56	-7,745.96	2,036.26	2,668.46	2,409.71	258.74	10.313		
20,500.00	12,644.00	20,290.93	12,664.00	131.80	131.26	-90.56	-7,845.96	2,036.26	2,668.46	2,406.52	261.94	10.187		
20,600.00	12,644.00	20,390.93	12,664.00	133.40	132.85	-90.56	-7,945.96	2,036.26	2,668.46	2,403.33	265.13	10.065		
20,700.00	12,644.00	20,490.93	12,664.00	134.99	134.44	-90.56	-8,045.96	2,036.26	2,668.46	2,400.13	268.33	9.945		
20,800.00	12,644.00	20,590.93	12,664.00	136.59	136.02	-90.56	-8,145.96	2,036.26	2,668.46	2,396.93	271.52	9.828		
20,900.00	12,644.00	20,690.93	12,664.00	138.19	137.61	-90.56	-8,245.96	2,036.26	2,668.46	2,393.73	274.72	9.713		
21,000.00	12,644.00	20,790.93	12,664.00	139.78	139.20	-90.56	-8,345.96	2,036.26	2,668.46	2,390.53	277.93	9.601		
21,100.00	12,644.00	20,890.93	12,664.00	141.38	140.80	-90.56	-8,445.96	2,036.26	2,668.46	2,387.33	281.13	9.492		
21,200.00	12,644.00	20,990.93	12,664.00	142.98	142.39	-90.56	-8,545.96	2,036.26	2,668.46	2,384.12	284.33	9.385		
21,300.00	12,644.00	21,090.93	12,664.00	144.58	143.98	-90.56	-8,645.96	2,036.26	2,668.46	2,380.92	287.54	9.280		
21,400.00	12,644.00	21,190.93	12,664.00	146.19	145.58	-90.56	-8,745.96	2,036.26	2,668.46	2,377.71	290.74	9.178		
21,500.00	12,644.00	21,290.93	12,664.00	147.79	147.17	-90.56	-8,845.96	2,036.26	2,668.46	2,374.50	293.95	9.078		
21,600.00	12,644.00	21,390.93	12,664.00	149.39	148.77	-90.56	-8,945.96	2,036.26	2,668.46	2,371.29	297.16	8.980		
21,700.00	12,644.00	21,490.93	12,664.00	150.99	150.37	-90.56	-9,045.96	2,036.26	2,668.46	2,368.08	300.37	8.884		
21,800.00	12,644.00	21,590.93	12,664.00	152.60	151.97	-90.56	-9,145.96	2,036.26	2,668.46	2,364.87	303.59	8.790		
21,900.00	12,644.00	21,690.93	12,664.00	154.20	153.56	-90.56	-9,245.96	2,036.26	2,668.46	2,361.66	306.80	8.698		
22,000.00	12,644.00	21,790.93	12,664.00	155.81	155.16	-90.56	-9,345.96	2,036.26	2,668.46	2,358.44	310.01	8.608		
22,100.00	12,644.00	21,890.93	12,664.00	157.41	156.76	-90.56	-9,445.96	2,036.26	2,668.46	2,355.23	313.23	8.519		
22,200.00	12,644.00	21,990.93	12,664.00	159.02	158.37	-90.56	-9,545.96	2,036.26	2,668.46	2,352.01	316.45	8.433		
22,300.00	12,644.00	22,090.93	12,664.00	160.63	159.97	-90.56	-9,645.96	2,036.26	2,668.46	2,348.79	319.66	8.348		
22,400.00	12,644.00	22,190.93	12,664.00	162.24	161.57	-90.56	-9,745.96	2,036.26	2,668.46	2,345.57	322.88	8.264		
22,500.00	12,644.00	22,290.93	12,664.00	163.84	163.17	-90.56	-9,845.96	2,036.26	2,668.46	2,342.35	326.10	8.183		
22,500.01	12,644.00	22,290.94	12,664.00	163.84	163.17	-90.56	-9,845.98	2,036.26	2,668.46	2,342.35	326.10	8.183		
22,563.68	12,644.00	22,329.57	12,664.00	164.87	163.79	-90.56	-9,884.61	2,036.26	2,668.57	2,340.78	327.79	8.141 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 5H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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)	Separation (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	92.26	-37.13	940.14	940.89					
100.00	100.00	94.00	94.00	0.08	0.08	92.26	-37.13	940.14	940.87	940.71	0.16	5,753.958		
200.00	200.00	194.00	194.00	0.31	0.30	92.26	-37.13	940.14	940.87	940.27	0.60	1,556.137		
300.00	300.00	294.00	294.00	0.53	0.52	92.26	-37.13	940.14	940.87	939.82	1.05	892.539		
400.00	400.00	394.00	394.00	0.76	0.75	92.26	-37.13	940.14	940.87	939.37	1.50	625.711		
500.00	500.00	494.00	494.00	0.98	0.97	92.26	-37.13	940.14	940.87	938.92	1.95	481.704		
600.00	600.00	594.00	594.00	1.21	1.19	92.26	-37.13	940.14	940.87	938.47	2.40	391.582		
700.00	700.00	694.00	694.00	1.43	1.42	92.26	-37.13	940.14	940.87	938.02	2.85	329.867		
800.00	800.00	794.00	794.00	1.66	1.64	92.26	-37.13	940.14	940.87	937.57	3.30	284.956		
900.00	900.00	894.00	894.00	1.88	1.87	92.26	-37.13	940.14	940.87	937.12	3.75	250.809		
1,000.00	1,000.00	994.00	994.00	2.11	2.09	92.26	-37.13	940.14	940.87	936.67	4.20	223.971		
1,100.00	1,100.00	1,094.00	1,094.00	2.33	2.32	92.26	-37.13	940.14	940.87	936.22	4.65	202.320		
1,200.00	1,200.00	1,194.00	1,194.00	2.56	2.54	92.26	-37.13	940.14	940.87	935.77	5.10	184.487		
1,300.00	1,300.00	1,294.00	1,294.00	2.78	2.77	92.26	-37.13	940.14	940.87	935.32	5.55	169.543		
1,400.00	1,400.00	1,394.00	1,394.00	3.01	2.99	92.26	-37.13	940.14	940.87	934.87	6.00	156.838		
1,500.00	1,500.00	1,494.00	1,494.00	3.23	3.22	92.26	-37.13	940.14	940.87	934.42	6.45	145.905		
1,600.00	1,600.00	1,594.00	1,594.00	3.46	3.44	92.26	-37.13	940.14	940.87	933.97	6.90	136.397		
1,700.00	1,700.00	1,694.00	1,694.00	3.68	3.67	92.26	-37.13	940.14	940.87	933.53	7.35	128.052		
1,800.00	1,800.00	1,794.00	1,794.00	3.91	3.89	92.26	-37.13	940.14	940.87	933.08	7.80	120.669		
1,900.00	1,900.00	1,894.00	1,894.00	4.13	4.12	92.26	-37.13	940.14	940.87	932.63	8.25	114.091		
2,000.00	2,000.00	1,994.00	1,994.00	4.35	4.34	92.26	-37.13	940.14	940.87	932.18	8.70	108.194		
2,100.00	2,100.00	2,094.00	2,094.00	4.58	4.57	92.26	-37.13	940.14	940.87	931.73	9.15	102.876		
2,200.00	2,200.00	2,194.00	2,194.00	4.80	4.79	92.26	-37.13	940.14	940.87	931.28	9.60	98.056		
2,300.00	2,300.00	2,294.00	2,294.00	5.03	5.02	92.26	-37.13	940.14	940.87	930.83	10.04	93.668		
2,400.00	2,400.00	2,394.00	2,394.00	5.25	5.24	92.26	-37.13	940.14	940.87	930.38	10.49	89.655		
2,500.00	2,500.00	2,494.00	2,494.00	5.48	5.47	92.26	-37.13	940.14	940.87	929.93	10.94	85.973 CC, ES		
2,600.00	2,599.99	2,593.99	2,593.99	5.69	5.69	162.28	-37.13	940.14	941.70	930.32	11.38	82.723		
2,700.00	2,699.96	2,693.96	2,693.96	5.90	5.91	162.32	-37.13	940.14	944.20	932.38	11.82	79.913		
2,800.00	2,799.86	2,793.86	2,793.86	6.11	6.14	162.39	-37.13	940.14	948.36	936.11	12.25	77.428		
2,900.00	2,899.68	2,893.68	2,893.68	6.33	6.36	162.48	-37.13	940.14	954.18	941.49	12.68	75.238		
2,949.81	2,949.35	2,943.35	2,943.35	6.43	6.48	162.54	-37.13	940.14	957.70	944.80	12.90	74.247		
3,000.00	2,999.38	2,993.38	2,993.38	6.54	6.59	162.61	-37.13	940.14	961.45	948.34	13.12	73.298		
3,100.00	3,099.08	3,093.08	3,093.08	6.76	6.81	162.75	-37.13	940.14	968.94	955.39	13.55	71.495		
3,200.00	3,198.77	3,192.77	3,192.77	6.99	7.04	162.88	-37.13	940.14	976.44	962.45	13.99	69.799		
3,300.00	3,298.46	3,292.46	3,292.46	7.21	7.26	163.02	-37.13	940.14	983.94	969.51	14.43	68.200		
3,400.00	3,398.15	3,392.15	3,392.15	7.44	7.48	163.15	-37.13	940.14	991.44	976.58	14.87	66.691		
3,500.00	3,497.84	3,491.84	3,491.84	7.67	7.71	163.28	-37.13	940.14	998.95	983.65	15.31	65.264		
3,600.00	3,597.54	3,580.69	3,580.69	7.90	7.90	163.37	-36.79	940.60	1,006.96	991.24	15.72	64.071		
3,700.00	3,697.23	3,668.43	3,668.40	8.13	8.09	163.42	-35.65	942.13	1,016.14	1,000.02	16.12	63.045		
3,800.00	3,796.92	3,755.97	3,755.88	8.37	8.28	163.41	-33.71	944.72	1,026.47	1,009.96	16.52	62.150		
3,900.00	3,896.61	3,843.27	3,843.07	8.60	8.47	163.35	-30.99	948.38	1,037.97	1,021.06	16.91	61.374		
4,000.00	3,996.30	3,930.65	3,930.24	8.84	8.66	163.25	-27.47	953.11	1,050.63	1,033.32	17.31	60.704		
4,100.00	4,096.00	4,029.74	4,029.06	9.08	8.88	163.12	-23.05	959.04	1,063.83	1,046.09	17.74	59.967		
4,200.00	4,195.69	4,128.83	4,127.88	9.31	9.10	162.98	-18.63	964.97	1,077.04	1,058.87	18.17	59.261		
4,300.00	4,295.38	4,227.93	4,226.69	9.55	9.32	162.85	-14.22	970.90	1,090.26	1,071.65	18.61	58.582		
4,400.00	4,395.07	4,327.02	4,325.51	9.79	9.54	162.72	-9.80	976.82	1,103.48	1,084.43	19.05	57.930		
4,500.00	4,494.76	4,426.11	4,424.33	10.04	9.76	162.60	-5.38	982.75	1,116.70	1,097.22	19.49	57.303		
4,600.00	4,594.46	4,525.20	4,523.14	10.28	9.99	162.48	-0.97	988.68	1,129.94	1,110.01	19.93	56.701		
4,700.00	4,694.15	4,624.30	4,621.96	10.52	10.21	162.36	3.45	994.61	1,143.17	1,122.80	20.37	56.121		
4,800.00	4,793.84	4,723.39	4,720.78	10.76	10.44	162.25	7.86	1,000.54	1,156.41	1,135.60	20.81	55.563		
4,900.00	4,893.53	4,822.48	4,819.59	11.01	10.67	162.13	12.28	1,006.47	1,169.66	1,148.40	21.26	55.026		
5,000.00	4,993.22	4,921.58	4,918.41	11.25	10.90	162.02	16.70	1,012.39	1,182.91	1,161.21	21.70	54.508		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 5H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,092.92	5,020.67	5,017.23	11.50	11.13	161.91	21.11	1,018.32	1,196.16	1,174.02	22.15	54.009		
5,200.00	5,192.61	5,119.76	5,116.04	11.74	11.36	161.81	25.53	1,024.25	1,209.42	1,186.83	22.59	53.528		
5,300.00	5,292.30	5,218.85	5,214.86	11.99	11.59	161.71	29.95	1,030.18	1,222.68	1,199.64	23.04	53.063		
5,400.00	5,391.99	5,317.95	5,313.68	12.24	11.82	161.60	34.36	1,036.11	1,235.95	1,212.46	23.49	52.615		
5,500.00	5,491.68	5,417.04	5,412.49	12.48	12.06	161.51	38.78	1,042.04	1,249.22	1,225.28	23.94	52.182		
5,600.00	5,591.38	5,516.13	5,511.31	12.73	12.29	161.41	43.19	1,047.96	1,262.49	1,238.10	24.39	51.763		
5,700.00	5,691.07	5,615.23	5,610.13	12.98	12.53	161.31	47.61	1,053.89	1,275.77	1,250.93	24.84	51.358		
5,800.00	5,790.76	5,714.32	5,708.94	13.23	12.76	161.22	52.03	1,059.82	1,289.05	1,263.76	25.29	50.967		
5,900.00	5,890.45	5,813.41	5,807.76	13.48	13.00	161.13	56.44	1,065.75	1,302.33	1,276.59	25.74	50.588		
6,000.00	5,990.14	5,912.50	5,906.58	13.72	13.23	161.04	60.86	1,071.68	1,315.62	1,289.43	26.20	50.222		
6,100.00	6,089.84	6,011.60	6,005.39	13.97	13.47	160.95	65.28	1,077.60	1,328.91	1,302.26	26.65	49.867		
6,200.00	6,189.53	6,110.69	6,104.21	14.22	13.71	160.87	69.69	1,083.53	1,342.20	1,315.10	27.10	49.522		
6,300.00	6,289.22	6,209.78	6,203.03	14.47	13.94	160.78	74.11	1,089.46	1,355.50	1,327.94	27.56	49.189		
6,400.00	6,388.91	6,308.88	6,301.84	14.72	14.18	160.70	78.53	1,095.39	1,368.80	1,340.79	28.01	48.865		
6,500.00	6,488.60	6,407.97	6,400.66	14.97	14.42	160.62	82.94	1,101.32	1,382.10	1,353.63	28.47	48.552		
6,600.00	6,588.30	6,507.06	6,499.48	15.22	14.66	160.54	87.36	1,107.25	1,395.40	1,366.48	28.92	48.247		
6,700.00	6,687.99	6,606.15	6,598.29	15.47	14.90	160.46	91.77	1,113.17	1,408.71	1,379.33	29.38	47.951		
6,800.00	6,787.68	6,705.25	6,697.11	15.72	15.14	160.39	96.19	1,119.10	1,422.02	1,392.18	29.83	47.664		
6,900.00	6,887.37	6,804.34	6,795.93	15.98	15.38	160.31	100.61	1,125.03	1,435.33	1,405.04	30.29	47.385		
7,000.00	6,987.06	6,903.43	6,894.74	16.23	15.62	160.24	105.02	1,130.96	1,448.64	1,417.90	30.75	47.113		
7,100.00	7,086.76	7,002.52	6,993.56	16.48	15.86	160.17	109.44	1,136.89	1,461.96	1,430.75	31.21	46.850		
7,200.00	7,186.45	7,101.62	7,092.38	16.73	16.10	160.10	113.86	1,142.81	1,475.28	1,443.61	31.66	46.593		
7,300.00	7,286.14	7,200.71	7,191.19	16.98	16.34	160.03	118.27	1,148.74	1,488.60	1,456.48	32.12	46.343		
7,400.00	7,385.83	7,299.80	7,290.01	17.23	16.59	159.96	122.69	1,154.67	1,501.92	1,469.34	32.58	46.100		
7,500.00	7,485.52	7,398.90	7,388.83	17.49	16.83	159.89	127.11	1,160.60	1,515.24	1,482.21	33.04	45.864		
7,600.00	7,585.22	7,497.99	7,487.64	17.74	17.07	159.82	131.52	1,166.53	1,528.57	1,495.07	33.50	45.633		
7,700.00	7,684.91	7,597.08	7,586.46	17.99	17.31	159.76	135.94	1,172.46	1,541.90	1,507.94	33.96	45.408		
7,800.00	7,784.60	7,696.17	7,685.28	18.24	17.55	159.70	140.35	1,178.38	1,555.23	1,520.81	34.42	45.190		
7,900.00	7,884.29	7,795.27	7,784.09	18.50	17.80	159.63	144.77	1,184.31	1,568.56	1,533.69	34.88	44.976		
8,000.00	7,983.98	7,894.36	7,882.91	18.75	18.04	159.57	149.19	1,190.24	1,581.90	1,546.56	35.34	44.768		
8,100.00	8,083.68	7,993.45	7,981.73	19.00	18.28	159.51	153.60	1,196.17	1,595.23	1,559.44	35.80	44.565		
8,200.00	8,183.37	8,092.55	8,080.54	19.25	18.53	159.45	158.02	1,202.10	1,608.57	1,572.31	36.26	44.367		
8,300.00	8,283.06	8,191.64	8,179.36	19.51	18.77	159.39	162.44	1,208.02	1,621.91	1,585.19	36.72	44.173		
8,400.00	8,382.75	8,290.73	8,278.18	19.76	19.01	159.34	166.85	1,213.95	1,635.25	1,598.07	37.18	43.985		
8,500.00	8,482.44	8,389.82	8,376.99	20.01	19.26	159.28	171.27	1,219.88	1,648.59	1,610.95	37.64	43.800		
8,600.00	8,582.14	8,488.92	8,475.81	20.27	19.50	159.22	175.68	1,225.81	1,661.94	1,623.84	38.10	43.620		
8,700.00	8,681.83	8,588.01	8,574.63	20.52	19.75	159.17	180.10	1,231.74	1,675.28	1,636.72	38.56	43.444		
8,800.00	8,781.52	8,687.10	8,673.44	20.77	19.99	159.11	184.52	1,237.67	1,688.63	1,649.61	39.02	43.272		
8,900.00	8,881.21	8,786.20	8,772.26	21.03	20.24	159.06	188.93	1,243.59	1,701.98	1,662.49	39.49	43.104		
9,000.00	8,980.90	8,885.29	8,871.08	21.28	20.48	159.01	193.35	1,249.52	1,715.33	1,675.38	39.95	42.939		
9,100.00	9,080.60	8,984.38	8,969.89	21.54	20.73	158.96	197.77	1,255.45	1,728.68	1,688.27	40.41	42.779		
9,200.00	9,180.29	9,083.47	9,068.71	21.79	20.97	158.91	202.18	1,261.38	1,742.03	1,701.16	40.87	42.621		
9,300.00	9,279.98	9,182.57	9,167.53	22.04	21.22	158.86	206.60	1,267.31	1,755.39	1,714.05	41.34	42.467		
9,400.00	9,379.67	9,281.66	9,266.34	22.30	21.46	158.81	211.02	1,273.24	1,768.74	1,726.94	41.80	42.317		
9,500.00	9,479.36	9,380.75	9,365.16	22.55	21.71	158.76	215.43	1,279.16	1,782.10	1,739.84	42.26	42.169		
9,600.00	9,579.05	9,479.85	9,463.98	22.81	21.95	158.71	219.85	1,285.09	1,795.46	1,752.73	42.72	42.025		
9,700.00	9,678.75	9,578.94	9,562.79	23.06	22.20	158.66	224.26	1,291.02	1,808.81	1,765.63	43.19	41.883		
9,800.00	9,778.44	9,678.03	9,661.61	23.31	22.44	158.62	228.68	1,296.95	1,822.17	1,778.52	43.65	41.744		
9,900.00	9,878.13	9,777.12	9,760.43	23.57	22.69	158.57	233.10	1,302.88	1,835.54	1,791.42	44.11	41.609		
10,000.00	9,977.82	9,876.22	9,859.24	23.82	22.94	158.53	237.51	1,308.80	1,848.90	1,804.32	44.58	41.475		
10,100.00	10,077.51	9,975.31	9,958.06	24.08	23.18	158.48	241.93	1,314.73	1,862.26	1,817.22	45.04	41.345		
10,200.00	10,177.21	10,074.40	10,056.88	24.33	23.43	158.44	246.35	1,320.66	1,875.63	1,830.12	45.51	41.217		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 5H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,300.00	10,276.90	10,173.49	10,155.69	24.59	23.67	158.40	250.76	1,326.59	1,888.99	1,843.02	45.97	41.092		
10,400.00	10,376.59	10,272.59	10,254.51	24.84	23.92	158.35	255.18	1,332.52	1,902.36	1,855.92	46.43	40.968		
10,500.00	10,476.28	10,371.68	10,353.33	25.10	24.17	158.31	259.60	1,338.45	1,915.73	1,868.83	46.90	40.848		
10,600.00	10,575.97	10,470.77	10,452.14	25.35	24.41	158.27	264.01	1,344.37	1,929.10	1,881.73	47.36	40.729		
10,700.00	10,675.67	10,569.87	10,550.96	25.61	24.66	158.23	268.43	1,350.30	1,942.46	1,894.64	47.83	40.613		
10,800.00	10,775.36	10,668.96	10,649.78	25.86	24.91	158.19	272.84	1,356.23	1,955.84	1,907.54	48.29	40.499		
10,900.00	10,875.05	10,768.05	10,748.59	26.12	25.15	158.15	277.26	1,362.16	1,969.21	1,920.45	48.76	40.387		
11,000.00	10,974.74	10,866.88	10,847.13	26.37	25.42	158.11	282.43	1,369.10	1,982.02	1,932.75	49.27	40.227		
11,076.14	11,050.65	11,002.61	10,982.74	26.57	25.61	158.12	285.41	1,373.10	1,990.49	1,940.83	49.66	40.082		
11,100.00	11,074.44	11,035.82	11,015.93	26.62	25.67	158.14	286.10	1,374.03	1,992.87	1,943.09	49.77	40.038		
11,200.00	11,174.22	11,175.40	11,155.48	26.81	25.91	158.22	287.77	1,376.26	2,000.59	1,950.37	50.22	39.838		
11,300.00	11,274.10	11,288.03	11,268.10	26.99	26.12	158.29	287.87	1,376.40	2,005.16	1,954.55	50.61	39.619		
11,400.00	11,374.06	11,387.98	11,368.06	27.17	26.32	158.33	287.87	1,376.40	2,008.02	1,957.02	51.00	39.373		
11,500.00	11,474.05	11,487.97	11,468.05	27.33	26.53	158.35	287.87	1,376.40	2,009.25	1,957.86	51.39	39.100		
11,525.95	11,500.00	11,513.92	11,494.00	27.38	26.59	88.35	287.87	1,376.40	2,009.30	1,957.81	51.49	39.024		
11,600.00	11,574.05	11,587.97	11,568.05	27.51	26.74	88.35	287.87	1,376.40	2,009.30	1,957.51	51.79	38.796		
11,700.00	11,674.05	11,687.97	11,668.05	27.71	26.95	88.35	287.87	1,376.40	2,009.30	1,957.09	52.21	38.482		
11,800.00	11,774.05	11,787.97	11,768.05	27.91	27.16	88.35	287.87	1,376.40	2,009.30	1,956.67	52.64	38.174		
11,900.00	11,874.05	11,887.97	11,868.05	28.11	27.37	88.35	287.87	1,376.40	2,009.30	1,956.24	53.06	37.869		
12,000.00	11,974.05	11,987.97	11,968.05	28.31	27.58	88.35	287.87	1,376.40	2,009.30	1,955.82	53.48	37.570		
12,096.99	12,071.04	12,084.96	12,065.04	28.50	27.78	88.35	287.87	1,376.40	2,009.30	1,955.41	53.89	37.283		
12,100.00	12,074.05	12,087.97	12,068.05	28.51	27.79	-91.65	287.87	1,376.40	2,009.30	1,955.40	53.91	37.275		
12,150.00	12,123.97	12,137.89	12,117.97	28.59	27.89	-91.71	287.87	1,376.40	2,009.38	1,955.28	54.10	37.143		
12,200.00	12,173.49	12,187.41	12,167.49	28.67	28.00	-91.88	287.87	1,376.40	2,009.59	1,955.31	54.28	37.023		
12,250.00	12,222.23	12,236.16	12,216.23	28.73	28.10	-92.15	287.87	1,376.40	2,009.99	1,955.54	54.45	36.914		
12,300.00	12,269.83	12,291.95	12,271.96	28.79	28.19	-92.52	285.60	1,376.40	2,010.56	1,955.95	54.60	36.821		
12,350.00	12,315.90	12,350.27	12,329.69	28.85	28.27	-92.88	277.47	1,376.40	2,011.18	1,956.44	54.73	36.744		
12,400.00	12,360.12	12,410.40	12,388.02	28.90	28.34	-93.23	263.00	1,376.40	2,011.84	1,956.99	54.84	36.683		
12,450.00	12,402.13	12,472.35	12,446.19	28.94	28.40	-93.55	241.78	1,376.40	2,012.51	1,957.57	54.94	36.633		
12,500.00	12,441.63	12,536.08	12,503.28	28.98	28.44	-93.84	213.53	1,376.40	2,013.16	1,958.14	55.02	36.592		
12,550.00	12,478.30	12,601.51	12,558.26	29.02	28.47	-94.11	178.12	1,376.40	2,013.77	1,958.68	55.09	36.554		
12,600.00	12,511.88	12,668.48	12,609.98	29.06	28.49	-94.33	135.63	1,376.40	2,014.32	1,959.15	55.17	36.514		
12,650.00	12,542.10	12,736.79	12,657.26	29.09	28.51	-94.51	86.39	1,376.40	2,014.76	1,959.51	55.25	36.464		
12,700.00	12,568.73	12,806.15	12,698.92	29.14	28.53	-94.64	30.99	1,376.40	2,015.10	1,959.73	55.36	36.398		
12,750.00	12,591.58	12,876.22	12,733.92	29.19	28.54	-94.71	-29.67	1,376.40	2,015.29	1,959.78	55.51	36.305		
12,800.00	12,610.47	12,946.64	12,761.36	29.25	28.58	-94.74	-94.47	1,376.40	2,015.35	1,959.65	55.69	36.186		
12,850.00	12,625.25	13,017.01	12,780.64	29.33	28.64	-94.70	-162.10	1,376.40	2,015.26	1,959.32	55.93	36.030		
12,900.00	12,635.81	13,086.93	12,791.45	29.43	28.75	-94.61	-231.14	1,376.40	2,015.02	1,958.80	56.22	35.842		
12,950.00	12,642.07	13,151.89	12,794.00	29.54	28.90	-94.48	-296.02	1,376.40	2,014.67	1,958.13	56.54	35.630		
12,996.99	12,644.00	13,198.83	12,794.00	29.68	29.03	-94.44	-342.96	1,376.40	2,014.52	1,957.68	56.84	35.443		
13,000.00	12,644.00	13,201.84	12,794.00	29.69	29.04	-94.44	-345.96	1,376.40	2,014.52	1,957.66	56.86	35.430		
13,100.00	12,644.00	13,301.84	12,794.00	30.04	29.40	-94.44	-445.96	1,376.40	2,014.52	1,956.90	57.62	34.963		
13,200.00	12,644.00	13,401.84	12,794.00	30.48	29.85	-94.44	-545.96	1,376.40	2,014.52	1,955.97	58.55	34.408		
13,300.00	12,644.00	13,501.84	12,794.00	31.00	30.39	-94.44	-645.96	1,376.40	2,014.52	1,954.88	59.64	33.776		
13,400.00	12,644.00	13,601.84	12,794.00	31.61	31.00	-94.44	-745.96	1,376.40	2,014.52	1,953.63	60.89	33.083		
13,500.00	12,644.00	13,701.84	12,794.00	32.29	31.68	-94.44	-845.96	1,376.40	2,014.52	1,952.23	62.29	32.342		
13,600.00	12,644.00	13,801.84	12,794.00	33.04	32.44	-94.44	-945.96	1,376.40	2,014.52	1,950.70	63.82	31.565		
13,700.00	12,644.00	13,901.84	12,794.00	33.85	33.25	-94.44	-1,045.96	1,376.40	2,014.52	1,949.04	65.48	30.766		
13,800.00	12,644.00	14,001.84	12,794.00	34.72	34.13	-94.44	-1,145.96	1,376.40	2,014.52	1,947.26	67.25	29.954		
13,900.00	12,644.00	14,101.84	12,794.00	35.64	35.05	-94.44	-1,245.96	1,376.40	2,014.52	1,945.38	69.14	29.137		
14,000.00	12,644.00	14,201.84	12,794.00	36.62	36.03	-94.44	-1,345.96	1,376.40	2,014.52	1,943.40	71.12	28.325		
14,100.00	12,644.00	14,301.84	12,794.00	37.64	37.05	-94.44	-1,445.96	1,376.40	2,014.52	1,941.32	73.20	27.522		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 5H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
14,200.00	12,644.00	14,401.84	12,794.00	38.70	38.12	-94.44	-1,545.96	1,376.40	2,014.52	1,939.16	75.36	26.733		
14,300.00	12,644.00	14,501.84	12,794.00	39.80	39.22	-94.44	-1,645.96	1,376.40	2,014.52	1,936.93	77.59	25.963		
14,400.00	12,644.00	14,601.84	12,794.00	40.94	40.37	-94.44	-1,745.96	1,376.40	2,014.52	1,934.62	79.90	25.213		
14,500.00	12,644.00	14,701.84	12,794.00	42.11	41.54	-94.44	-1,845.96	1,376.40	2,014.52	1,932.25	82.27	24.486		
14,600.00	12,644.00	14,801.84	12,794.00	43.30	42.74	-94.44	-1,945.96	1,376.40	2,014.52	1,929.82	84.70	23.784		
14,700.00	12,644.00	14,901.84	12,794.00	44.53	43.97	-94.44	-2,045.96	1,376.40	2,014.52	1,927.33	87.19	23.106		
14,800.00	12,644.00	15,001.84	12,794.00	45.78	45.23	-94.44	-2,145.96	1,376.40	2,014.52	1,924.80	89.72	22.453		
14,900.00	12,644.00	15,101.84	12,794.00	47.06	46.51	-94.44	-2,245.96	1,376.40	2,014.52	1,922.22	92.30	21.826		
15,000.00	12,644.00	15,201.84	12,794.00	48.36	47.81	-94.44	-2,345.96	1,376.40	2,014.52	1,919.60	94.92	21.223		
15,100.00	12,644.00	15,301.84	12,794.00	49.67	49.14	-94.44	-2,445.96	1,376.40	2,014.52	1,916.94	97.58	20.644		
15,200.00	12,644.00	15,401.84	12,794.00	51.01	50.48	-94.44	-2,545.96	1,376.40	2,014.52	1,914.24	100.28	20.089		
15,300.00	12,644.00	15,501.84	12,794.00	52.36	51.83	-94.44	-2,645.96	1,376.40	2,014.52	1,911.51	103.01	19.557		
15,400.00	12,644.00	15,601.84	12,794.00	53.73	53.20	-94.44	-2,745.96	1,376.40	2,014.52	1,908.75	105.77	19.047		
15,500.00	12,644.00	15,701.84	12,794.00	55.11	54.59	-94.44	-2,845.96	1,376.40	2,014.52	1,905.97	108.55	18.558		
15,600.00	12,644.00	15,801.84	12,794.00	56.51	55.99	-94.44	-2,945.96	1,376.40	2,014.52	1,903.15	111.37	18.089		
15,700.00	12,644.00	15,901.84	12,794.00	57.92	57.40	-94.44	-3,045.96	1,376.40	2,014.52	1,900.32	114.20	17.640		
15,800.00	12,644.00	16,001.84	12,794.00	59.34	58.83	-94.44	-3,145.96	1,376.40	2,014.52	1,897.46	117.06	17.209		
15,900.00	12,644.00	16,101.84	12,794.00	60.77	60.26	-94.44	-3,245.96	1,376.40	2,014.52	1,894.58	119.94	16.796		
16,000.00	12,644.00	16,201.84	12,794.00	62.21	61.71	-94.44	-3,345.96	1,376.40	2,014.52	1,891.68	122.84	16.400		
16,100.00	12,644.00	16,301.84	12,794.00	63.66	63.16	-94.44	-3,445.96	1,376.40	2,014.52	1,888.77	125.75	16.020		
16,200.00	12,644.00	16,401.84	12,794.00	65.12	64.62	-94.44	-3,545.96	1,376.40	2,014.52	1,885.84	128.68	15.655		
16,300.00	12,644.00	16,501.84	12,794.00	66.58	66.09	-94.44	-3,645.96	1,376.40	2,014.52	1,882.89	131.63	15.304		
16,400.00	12,644.00	16,601.84	12,794.00	68.06	67.57	-94.44	-3,745.96	1,376.40	2,014.52	1,879.93	134.59	14.967		
16,500.00	12,644.00	16,701.84	12,794.00	69.54	69.06	-94.44	-3,845.96	1,376.40	2,014.52	1,876.95	137.57	14.644		
16,600.00	12,644.00	16,801.84	12,794.00	71.03	70.55	-94.44	-3,945.96	1,376.40	2,014.52	1,873.96	140.56	14.332		
16,700.00	12,644.00	16,901.84	12,794.00	72.52	72.05	-94.44	-4,045.96	1,376.40	2,014.52	1,870.96	143.56	14.033		
16,800.00	12,644.00	17,001.84	12,794.00	74.02	73.55	-94.44	-4,145.96	1,376.40	2,014.52	1,867.95	146.57	13.744		
16,900.00	12,644.00	17,101.84	12,794.00	75.53	75.06	-94.44	-4,245.96	1,376.40	2,014.52	1,864.93	149.59	13.467		
17,000.00	12,644.00	17,201.84	12,794.00	77.04	76.57	-94.44	-4,345.96	1,376.40	2,014.52	1,861.90	152.62	13.199		
17,100.00	12,644.00	17,301.84	12,794.00	78.56	78.09	-94.44	-4,445.96	1,376.40	2,014.52	1,858.86	155.66	12.941		
17,200.00	12,644.00	17,401.84	12,794.00	80.08	79.62	-94.44	-4,545.96	1,376.40	2,014.52	1,855.81	158.71	12.693		
17,300.00	12,644.00	17,501.84	12,794.00	81.60	81.14	-94.44	-4,645.96	1,376.40	2,014.52	1,852.75	161.77	12.453		
17,400.00	12,644.00	17,601.84	12,794.00	83.13	82.68	-94.44	-4,745.96	1,376.40	2,014.52	1,849.68	164.84	12.221		
17,500.00	12,644.00	17,701.84	12,794.00	84.67	84.21	-94.44	-4,845.96	1,376.40	2,014.52	1,846.61	167.91	11.998		
17,600.00	12,644.00	17,801.84	12,794.00	86.20	85.75	-94.44	-4,945.96	1,376.40	2,014.52	1,843.53	170.99	11.782		
17,700.00	12,644.00	17,901.84	12,794.00	87.75	87.29	-94.44	-5,045.96	1,376.40	2,014.52	1,840.44	174.08	11.573		
17,800.00	12,644.00	18,001.84	12,794.00	89.29	88.84	-94.44	-5,145.96	1,376.40	2,014.52	1,837.35	177.17	11.371		
17,900.00	12,644.00	18,101.84	12,794.00	90.84	90.39	-94.44	-5,245.96	1,376.40	2,014.52	1,834.25	180.27	11.175		
18,000.00	12,644.00	18,201.84	12,794.00	92.39	91.94	-94.44	-5,345.96	1,376.40	2,014.52	1,831.15	183.37	10.986		
18,100.00	12,644.00	18,301.84	12,794.00	93.94	93.50	-94.44	-5,445.96	1,376.40	2,014.52	1,828.04	186.48	10.803		
18,200.00	12,644.00	18,401.84	12,794.00	95.50	95.05	-94.44	-5,545.96	1,376.40	2,014.52	1,824.92	189.60	10.625		
18,300.00	12,644.00	18,501.84	12,794.00	97.05	96.62	-94.44	-5,645.96	1,376.40	2,014.52	1,821.80	192.72	10.453		
18,400.00	12,644.00	18,601.84	12,794.00	98.61	98.18	-94.44	-5,745.96	1,376.40	2,014.52	1,818.68	195.84	10.287		
18,500.00	12,644.00	18,701.84	12,794.00	100.18	99.74	-94.44	-5,845.96	1,376.40	2,014.52	1,815.55	198.97	10.125		
18,600.00	12,644.00	18,801.84	12,794.00	101.74	101.31	-94.44	-5,945.96	1,376.40	2,014.52	1,812.42	202.10	9.968		
18,700.00	12,644.00	18,901.84	12,794.00	103.31	102.88	-94.44	-6,045.96	1,376.40	2,014.52	1,809.28	205.24	9.816		
18,800.00	12,644.00	19,001.84	12,794.00	104.88	104.45	-94.44	-6,145.96	1,376.40	2,014.52	1,806.14	208.38	9.668		
18,900.00	12,644.00	19,101.84	12,794.00	106.45	106.02	-94.44	-6,245.96	1,376.40	2,014.52	1,803.00	211.52	9.524		
19,000.00	12,644.00	19,201.84	12,794.00	108.02	107.60	-94.44	-6,345.96	1,376.40	2,014.52	1,799.85	214.67	9.384		
19,100.00	12,644.00	19,301.84	12,794.00	109.60	109.17	-94.44	-6,445.96	1,376.40	2,014.52	1,796.70	217.82	9.248		
19,200.00	12,644.00	19,401.84	12,794.00	111.18	110.75	-94.44	-6,545.96	1,376.40	2,014.52	1,793.54	220.98	9.116		
19,300.00	12,644.00	19,501.84	12,794.00	112.75	112.33	-94.44	-6,645.96	1,376.40	2,014.52	1,790.39	224.13	8.988		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 5H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MVD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,400.00	12,644.00	19,601.84	12,794.00	114.33	113.91	-94.44	-6,745.96	1,376.40	2,014.52	1,787.23	227.29	8.863	
19,500.00	12,644.00	19,701.84	12,794.00	115.92	115.50	-94.44	-6,845.96	1,376.40	2,014.52	1,784.06	230.46	8.741	
19,600.00	12,644.00	19,801.84	12,794.00	117.50	117.08	-94.44	-6,945.96	1,376.40	2,014.52	1,780.90	233.62	8.623	
19,700.00	12,644.00	19,901.84	12,794.00	119.08	118.67	-94.44	-7,045.96	1,376.40	2,014.52	1,777.73	236.79	8.508	
19,800.00	12,644.00	20,001.84	12,794.00	120.67	120.25	-94.44	-7,145.96	1,376.40	2,014.52	1,774.56	239.96	8.395	
19,900.00	12,644.00	20,101.84	12,794.00	122.26	121.84	-94.44	-7,245.96	1,376.40	2,014.52	1,771.39	243.13	8.286	
20,000.00	12,644.00	20,201.84	12,794.00	123.84	123.43	-94.44	-7,345.96	1,376.40	2,014.52	1,768.21	246.31	8.179	
20,100.00	12,644.00	20,301.84	12,794.00	125.43	125.02	-94.44	-7,445.96	1,376.40	2,014.52	1,765.03	249.49	8.075	
20,200.00	12,644.00	20,401.84	12,794.00	127.02	126.61	-94.44	-7,545.96	1,376.40	2,014.52	1,761.85	252.67	7.973	
20,300.00	12,644.00	20,501.84	12,794.00	128.62	128.21	-94.44	-7,645.96	1,376.40	2,014.52	1,758.67	255.85	7.874	
20,400.00	12,644.00	20,601.84	12,794.00	130.21	129.80	-94.44	-7,745.96	1,376.40	2,014.52	1,755.49	259.03	7.777	
20,500.00	12,644.00	20,701.84	12,794.00	131.80	131.40	-94.44	-7,845.96	1,376.40	2,014.52	1,752.30	262.22	7.683	
20,600.00	12,644.00	20,801.84	12,794.00	133.40	132.99	-94.44	-7,945.96	1,376.40	2,014.52	1,749.11	265.40	7.590	
20,700.00	12,644.00	20,901.84	12,794.00	134.99	134.59	-94.44	-8,045.96	1,376.40	2,014.52	1,745.93	268.59	7.500	
20,800.00	12,644.00	21,001.84	12,794.00	136.59	136.19	-94.44	-8,145.96	1,376.40	2,014.52	1,742.73	271.78	7.412	
20,900.00	12,644.00	21,101.84	12,794.00	138.19	137.78	-94.44	-8,245.96	1,376.40	2,014.52	1,739.54	274.98	7.326	
21,000.00	12,644.00	21,201.84	12,794.00	139.78	139.38	-94.44	-8,345.96	1,376.40	2,014.52	1,736.35	278.17	7.242	
21,100.00	12,644.00	21,301.84	12,794.00	141.38	140.98	-94.44	-8,445.96	1,376.40	2,014.52	1,733.15	281.37	7.160	
21,200.00	12,644.00	21,401.84	12,794.00	142.98	142.59	-94.44	-8,545.96	1,376.40	2,014.52	1,729.96	284.56	7.079	
21,300.00	12,644.00	21,501.84	12,794.00	144.58	144.19	-94.44	-8,645.96	1,376.40	2,014.52	1,726.76	287.76	7.001	
21,400.00	12,644.00	21,601.84	12,794.00	146.19	145.79	-94.44	-8,745.96	1,376.40	2,014.52	1,723.56	290.96	6.924	
21,500.00	12,644.00	21,701.84	12,794.00	147.79	147.39	-94.44	-8,845.96	1,376.40	2,014.52	1,720.36	294.16	6.848	
21,600.00	12,644.00	21,801.84	12,794.00	149.39	149.00	-94.44	-8,945.96	1,376.40	2,014.52	1,717.15	297.37	6.775	
21,700.00	12,644.00	21,901.84	12,794.00	150.99	150.60	-94.44	-9,045.96	1,376.40	2,014.52	1,713.95	300.57	6.702	
21,800.00	12,644.00	22,001.84	12,794.00	152.60	152.21	-94.44	-9,145.96	1,376.40	2,014.52	1,710.74	303.77	6.632	
21,900.00	12,644.00	22,101.84	12,794.00	154.20	153.81	-94.44	-9,245.96	1,376.40	2,014.52	1,707.54	306.98	6.562	
22,000.00	12,644.00	22,201.84	12,794.00	155.81	155.42	-94.44	-9,345.96	1,376.40	2,014.52	1,704.33	310.19	6.495	
22,100.00	12,644.00	22,301.84	12,794.00	157.41	157.02	-94.44	-9,445.96	1,376.40	2,014.52	1,701.12	313.40	6.428	
22,200.00	12,644.00	22,401.84	12,794.00	159.02	158.63	-94.44	-9,545.96	1,376.40	2,014.52	1,697.91	316.61	6.363	
22,300.00	12,644.00	22,501.84	12,794.00	160.63	160.24	-94.44	-9,645.96	1,376.40	2,014.52	1,694.70	319.82	6.299	
22,400.00	12,644.00	22,601.84	12,794.00	162.24	161.85	-94.44	-9,745.96	1,376.40	2,014.52	1,691.49	323.03	6.236	
22,500.00	12,644.00	22,701.84	12,794.00	163.84	163.46	-94.44	-9,845.96	1,376.40	2,014.52	1,688.28	326.24	6.175	
22,543.22	12,644.00	22,745.05	12,794.00	164.54	164.15	-94.44	-9,889.18	1,376.40	2,014.52	1,686.89	327.63	6.149	
22,563.68	12,644.00	22,746.83	12,794.00	164.87	164.18	-94.44	-9,890.95	1,376.40	2,014.61	1,686.66	327.94	6.143 SF	

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 6H - OH - Plan #1													Offset Site Error:
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	93.93	-175.08	2,547.71	2,553.72				
100.00	100.00	98.00	98.00	0.08	0.08	93.93	-175.08	2,547.71	2,553.72	2,553.55	0.17	N/A	
200.00	200.00	198.00	198.00	0.31	0.30	93.93	-175.08	2,547.71	2,553.72	2,553.11	0.61	4,161.784	
300.00	300.00	298.00	298.00	0.53	0.53	93.93	-175.08	2,547.71	2,553.72	2,552.66	1.06	2,402.045	
400.00	400.00	398.00	398.00	0.76	0.75	93.93	-175.08	2,547.71	2,553.72	2,552.21	1.51	1,688.213	
500.00	500.00	498.00	498.00	0.98	0.98	93.93	-175.08	2,547.71	2,553.72	2,551.76	1.96	1,301.452	
600.00	600.00	598.00	598.00	1.21	1.20	93.93	-175.08	2,547.71	2,553.72	2,551.31	2.41	1,058.870	
700.00	700.00	698.00	698.00	1.43	1.43	93.93	-175.08	2,547.71	2,553.72	2,550.86	2.86	892.512	
800.00	800.00	798.00	798.00	1.66	1.65	93.93	-175.08	2,547.71	2,553.72	2,550.41	3.31	771.329	
900.00	900.00	898.00	898.00	1.88	1.88	93.93	-175.08	2,547.71	2,553.72	2,549.96	3.76	679.120	
1,000.00	1,000.00	998.00	998.00	2.11	2.10	93.93	-175.08	2,547.71	2,553.72	2,549.51	4.21	606.603	
1,100.00	1,100.00	1,098.00	1,098.00	2.33	2.33	93.93	-175.08	2,547.71	2,553.72	2,549.06	4.66	548.079	
1,200.00	1,200.00	1,198.00	1,198.00	2.56	2.55	93.93	-175.08	2,547.71	2,553.72	2,548.61	5.11	499.854	
1,300.00	1,300.00	1,298.00	1,298.00	2.78	2.78	93.93	-175.08	2,547.71	2,553.72	2,548.16	5.56	459.429	
1,400.00	1,400.00	1,398.00	1,398.00	3.01	3.00	93.93	-175.08	2,547.71	2,553.72	2,547.71	6.01	425.053	
1,500.00	1,500.00	1,498.00	1,498.00	3.23	3.23	93.93	-175.08	2,547.71	2,553.72	2,547.26	6.46	395.464	
1,600.00	1,600.00	1,598.00	1,598.00	3.46	3.45	93.93	-175.08	2,547.71	2,553.72	2,546.81	6.91	369.726	
1,700.00	1,700.00	1,698.00	1,698.00	3.68	3.68	93.93	-175.08	2,547.71	2,553.72	2,546.36	7.36	347.133	
1,800.00	1,800.00	1,798.00	1,798.00	3.91	3.90	93.93	-175.08	2,547.71	2,553.72	2,545.91	7.81	327.143	
1,900.00	1,900.00	1,898.00	1,898.00	4.13	4.13	93.93	-175.08	2,547.71	2,553.72	2,545.46	8.26	309.330	
2,000.00	2,000.00	1,998.00	1,998.00	4.35	4.35	93.93	-175.08	2,547.71	2,553.72	2,545.01	8.71	293.356	
2,100.00	2,100.00	2,098.00	2,098.00	4.58	4.58	93.93	-175.08	2,547.71	2,553.72	2,544.56	9.15	278.951	
2,200.00	2,200.00	2,198.00	2,198.00	4.80	4.80	93.93	-175.08	2,547.71	2,553.72	2,544.11	9.60	265.895	
2,300.00	2,300.00	2,298.00	2,298.00	5.03	5.02	93.93	-175.08	2,547.71	2,553.72	2,543.66	10.05	254.006	
2,400.00	2,400.00	2,398.00	2,398.00	5.25	5.25	93.93	-175.08	2,547.71	2,553.72	2,543.22	10.50	243.135	
2,500.00	2,500.00	2,498.00	2,498.00	5.48	5.47	93.93	-175.08	2,547.71	2,553.72	2,542.77	10.95	233.156 CC, ES	
2,600.00	2,599.99	2,597.99	2,597.99	5.69	5.70	163.94	-175.08	2,547.71	2,554.56	2,543.16	11.39	224.225	
2,700.00	2,699.96	2,697.96	2,697.96	5.90	5.92	163.95	-175.08	2,547.71	2,557.07	2,545.25	11.82	216.255	
2,800.00	2,799.86	2,797.86	2,797.86	6.11	6.15	163.96	-175.08	2,547.71	2,561.27	2,549.01	12.26	208.961	
2,900.00	2,899.68	2,897.68	2,897.68	6.33	6.37	163.98	-175.08	2,547.71	2,567.13	2,554.44	12.69	202.279	
2,949.81	2,949.35	2,947.35	2,947.35	6.43	6.48	164.00	-175.08	2,547.71	2,570.68	2,557.77	12.91	199.157	
3,000.00	2,999.38	2,997.38	2,997.38	6.54	6.60	164.02	-175.08	2,547.71	2,574.47	2,561.34	13.13	196.134	
3,100.00	3,099.08	3,097.08	3,097.08	6.76	6.82	164.07	-175.08	2,547.71	2,582.01	2,568.45	13.56	190.394	
3,200.00	3,198.77	3,196.77	3,196.77	6.99	7.04	164.12	-175.08	2,547.71	2,589.55	2,575.55	14.00	184.993	
3,300.00	3,298.46	3,296.46	3,296.46	7.21	7.27	164.16	-175.08	2,547.71	2,597.10	2,582.66	14.44	179.904	
3,400.00	3,398.15	3,396.15	3,396.15	7.44	7.49	164.21	-175.08	2,547.71	2,604.65	2,589.77	14.88	175.102	
3,500.00	3,497.84	3,495.84	3,495.84	7.67	7.72	164.26	-175.08	2,547.71	2,612.20	2,596.88	15.32	170.564	
3,600.00	3,597.54	3,595.51	3,595.50	7.90	7.92	164.29	-174.46	2,547.91	2,619.91	2,604.18	15.73	166.509	
3,700.00	3,697.23	3,676.75	3,676.72	8.13	8.12	164.28	-172.48	2,548.53	2,627.99	2,611.83	16.15	162.702	
3,800.00	3,796.92	3,786.90	3,786.81	8.37	8.32	164.25	-169.15	2,549.58	2,636.42	2,619.85	16.57	159.110	
3,900.00	3,896.61	3,886.94	3,886.71	8.60	8.53	164.19	-164.48	2,551.06	2,645.21	2,628.23	16.99	155.714	
4,000.00	3,996.30	3,952.17	3,951.72	8.84	8.74	164.10	-158.33	2,553.00	2,654.32	2,636.90	17.42	152.383	
4,100.00	4,096.00	4,051.64	4,050.96	9.08	8.96	164.00	-151.76	2,555.08	2,663.46	2,645.60	17.86	149.116	
4,200.00	4,195.69	4,151.12	4,150.19	9.31	9.19	163.90	-145.20	2,557.15	2,672.62	2,654.31	18.31	145.994	
4,300.00	4,295.38	4,250.80	4,249.43	9.55	9.41	163.80	-138.63	2,559.22	2,681.78	2,663.03	18.75	143.009	
4,400.00	4,395.07	4,350.07	4,348.67	9.79	9.64	163.71	-132.06	2,561.30	2,690.95	2,671.75	19.20	140.151	
4,500.00	4,494.76	4,449.55	4,447.91	10.04	9.86	163.61	-125.50	2,563.37	2,700.13	2,680.48	19.65	137.414	
4,600.00	4,594.46	4,549.02	4,547.14	10.28	10.09	163.52	-118.93	2,565.45	2,709.32	2,689.22	20.10	134.791	
4,700.00	4,694.15	4,648.50	4,646.38	10.52	10.32	163.42	-112.36	2,567.52	2,718.51	2,697.96	20.55	132.275	
4,800.00	4,793.84	4,747.98	4,745.62	10.76	10.55	163.33	-105.80	2,569.60	2,727.71	2,706.71	21.00	129.861	
4,900.00	4,893.53	4,847.45	4,844.86	11.01	10.78	163.23	-99.23	2,571.67	2,736.92	2,715.46	21.46	127.543	
5,000.00	4,993.22	4,946.93	4,944.09	11.25	11.01	163.14	-92.66	2,573.74	2,746.13	2,724.22	21.91	125.315	

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 6H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
5,100.00	5,092.92	5,046.41	5,043.33	11.50	11.24	163.05	-86.10	2,575.82	2,755.35	2,732.98	22.37	123.173			
5,200.00	5,192.61	5,145.88	5,142.57	11.74	11.47	162.96	-79.53	2,577.89	2,764.58	2,741.76	22.83	121.112			
5,300.00	5,292.30	5,245.36	5,241.81	11.99	11.71	162.87	-72.96	2,579.97	2,773.82	2,750.53	23.28	119.128			
5,400.00	5,391.99	5,344.83	5,341.04	12.24	11.94	162.78	-66.40	2,582.04	2,783.06	2,759.32	23.74	117.217			
5,500.00	5,491.68	5,444.31	5,440.28	12.48	12.17	162.69	-59.83	2,584.11	2,792.31	2,768.11	24.20	115.375			
5,600.00	5,591.38	5,543.79	5,539.52	12.73	12.41	162.60	-53.26	2,586.19	2,801.57	2,776.91	24.66	113.598			
5,700.00	5,691.07	5,643.26	5,638.76	12.98	12.64	162.51	-46.70	2,588.26	2,810.83	2,785.71	25.12	111.884			
5,800.00	5,790.76	5,742.74	5,737.99	13.23	12.88	162.42	-40.13	2,590.34	2,820.10	2,794.52	25.58	110.229			
5,900.00	5,890.45	5,842.21	5,837.23	13.48	13.11	162.33	-33.56	2,592.41	2,829.38	2,803.33	26.05	108.630			
6,000.00	5,990.14	5,941.69	5,936.47	13.72	13.35	162.25	-27.00	2,594.49	2,838.66	2,812.15	26.51	107.085			
6,100.00	6,089.84	6,041.17	6,035.71	13.97	13.59	162.16	-20.43	2,596.56	2,847.95	2,820.98	26.97	105.592			
6,200.00	6,189.53	6,140.64	6,134.94	14.22	13.82	162.07	-13.86	2,598.63	2,857.24	2,829.81	27.43	104.146			
6,300.00	6,289.22	6,240.12	6,234.18	14.47	14.06	161.99	-7.30	2,600.71	2,866.55	2,838.65	27.90	102.747			
6,400.00	6,388.91	6,339.60	6,333.42	14.72	14.30	161.91	-0.73	2,602.78	2,875.85	2,847.49	28.36	101.393			
6,500.00	6,488.60	6,439.07	6,432.66	14.97	14.54	161.82	5.84	2,604.86	2,885.17	2,856.34	28.83	100.081			
6,600.00	6,588.30	6,538.55	6,531.89	15.22	14.77	161.74	12.40	2,606.93	2,894.49	2,865.19	29.29	98.809			
6,700.00	6,687.99	6,638.02	6,631.13	15.47	15.01	161.65	18.97	2,609.00	2,903.81	2,874.06	29.76	97.576			
6,800.00	6,787.68	6,737.50	6,730.37	15.72	15.25	161.57	25.54	2,611.08	2,913.15	2,882.92	30.23	96.379			
6,900.00	6,887.37	6,836.98	6,829.61	15.98	15.49	161.49	32.10	2,613.15	2,922.49	2,891.79	30.69	95.219			
7,000.00	6,987.06	6,936.45	6,928.84	16.23	15.73	161.41	38.67	2,615.23	2,931.83	2,900.67	31.16	94.092			
7,100.00	7,086.76	7,035.93	7,028.08	16.48	15.97	161.33	45.24	2,617.30	2,941.18	2,909.55	31.63	92.997			
7,200.00	7,186.45	7,135.41	7,127.32	16.73	16.21	161.25	51.80	2,619.38	2,950.54	2,918.44	32.09	91.933			
7,300.00	7,286.14	7,234.88	7,226.56	16.98	16.45	161.17	58.37	2,621.45	2,959.90	2,927.34	32.56	90.900			
7,400.00	7,385.83	7,334.36	7,325.79	17.23	16.69	161.09	64.94	2,623.52	2,969.27	2,936.23	33.03	89.895			
7,500.00	7,485.52	7,433.83	7,425.03	17.49	16.93	161.01	71.50	2,625.60	2,978.64	2,945.14	33.50	88.917			
7,600.00	7,585.22	7,533.31	7,524.27	17.74	17.17	160.93	78.07	2,627.67	2,988.02	2,954.05	33.97	87.966			
7,700.00	7,684.91	7,632.79	7,623.51	17.99	17.41	160.85	84.64	2,629.75	2,997.40	2,962.96	34.44	87.040			
7,800.00	7,784.60	7,732.26	7,722.74	18.24	17.65	160.78	91.20	2,631.82	3,006.79	2,971.88	34.91	86.139			
7,900.00	7,884.29	7,831.74	7,821.98	18.50	17.89	160.70	97.77	2,633.90	3,016.18	2,980.81	35.38	85.261			
8,000.00	7,983.98	7,931.21	7,921.22	18.75	18.13	160.62	104.33	2,635.97	3,025.59	2,989.74	35.85	84.406			
8,100.00	8,083.68	8,030.69	8,020.46	19.00	18.37	160.55	110.90	2,638.04	3,034.99	2,998.67	36.32	83.572			
8,200.00	8,183.37	8,130.17	8,119.69	19.25	18.61	160.47	117.47	2,640.12	3,044.40	3,007.62	36.79	82.759			
8,300.00	8,283.06	8,229.64	8,218.93	19.51	18.85	160.40	124.03	2,642.19	3,053.82	3,016.56	37.26	81.967			
8,400.00	8,382.75	8,329.12	8,318.17	19.76	19.10	160.32	130.60	2,644.27	3,063.24	3,025.51	37.73	81.194			
8,500.00	8,482.44	8,428.60	8,417.41	20.01	19.34	160.25	137.17	2,646.34	3,072.67	3,034.47	38.20	80.439			
8,600.00	8,582.14	8,528.07	8,516.64	20.27	19.58	160.17	143.73	2,648.41	3,082.10	3,043.43	38.67	79.703			
8,700.00	8,681.83	8,627.55	8,615.88	20.52	19.82	160.10	150.30	2,650.49	3,091.53	3,052.39	39.14	78.984			
8,800.00	8,781.52	8,727.02	8,715.12	20.77	20.06	160.03	156.87	2,652.56	3,100.97	3,061.36	39.61	78.282			
8,900.00	8,881.21	8,826.50	8,814.36	21.03	20.30	159.96	163.43	2,654.64	3,110.42	3,070.34	40.08	77.597			
9,000.00	8,980.90	8,925.98	8,913.59	21.28	20.55	159.88	170.00	2,656.71	3,119.87	3,079.32	40.56	76.927			
9,100.00	9,080.60	9,025.45	9,012.83	21.54	20.79	159.81	176.57	2,658.79	3,129.33	3,088.30	41.03	76.272			
9,200.00	9,180.29	9,124.93	9,112.07	21.79	21.03	159.74	183.13	2,660.86	3,138.79	3,097.29	41.50	75.632			
9,300.00	9,279.98	9,224.41	9,211.31	22.04	21.27	159.67	189.70	2,662.93	3,148.25	3,106.28	41.97	75.006			
9,400.00	9,379.67	9,323.88	9,310.54	22.30	21.52	159.60	196.27	2,665.01	3,157.73	3,115.28	42.45	74.394			
9,500.00	9,479.36	9,423.36	9,409.78	22.55	21.76	159.53	202.83	2,667.08	3,167.20	3,124.28	42.92	73.795			
9,600.00	9,579.05	9,522.83	9,509.02	22.81	22.00	159.46	209.40	2,669.16	3,176.68	3,133.29	43.39	73.210			
9,700.00	9,678.75	9,622.31	9,608.26	23.06	22.24	159.39	215.97	2,671.23	3,186.16	3,142.30	43.86	72.636			
9,800.00	9,778.44	9,721.79	9,707.49	23.31	22.49	159.32	222.53	2,673.31	3,195.65	3,151.32	44.34	72.075			
9,900.00	9,878.13	9,821.26	9,806.73	23.57	22.73	159.26	229.10	2,675.38	3,205.15	3,160.33	44.81	71.525			
10,000.00	9,977.82	9,920.74	9,905.97	23.82	22.97	159.19	235.67	2,677.45	3,214.64	3,169.36	45.28	70.987			
10,100.00	10,077.51	10,020.21	10,005.21	24.08	23.21	159.12	242.23	2,679.53	3,224.15	3,178.39	45.76	70.460			
10,200.00	10,177.21	10,119.69	10,104.44	24.33	23.46	159.05	248.80	2,681.60	3,233.65	3,187.42	46.23	69.944			

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 6H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,300.00	10,276.90	10,219.17	10,203.68	24.59	23.70	158.99	255.37	2,683.68	3,243.16	3,196.46	46.71	69.438		
10,400.00	10,376.59	10,318.64	10,302.92	24.84	23.94	158.92	261.93	2,685.75	3,252.68	3,205.50	47.18	68.942		
10,500.00	10,476.28	10,418.12	10,402.16	25.10	24.19	158.86	268.50	2,687.82	3,262.20	3,214.54	47.65	68.455		
10,600.00	10,575.97	10,517.60	10,501.40	25.35	24.43	158.79	275.07	2,689.90	3,271.72	3,223.59	48.13	67.979		
10,700.00	10,675.67	10,617.07	10,600.63	25.61	24.67	158.72	281.63	2,691.97	3,281.25	3,232.65	48.60	67.511		
10,800.00	10,775.36	10,738.53	10,721.88	25.86	24.92	158.67	288.48	2,694.14	3,290.46	3,241.37	49.09	67.028		
10,900.00	10,875.05	10,860.84	10,844.10	26.12	25.14	158.65	292.90	2,695.53	3,298.99	3,249.44	49.55	66.583		
11,000.00	10,974.74	10,983.28	10,966.52	26.37	25.35	158.68	294.83	2,696.14	3,306.82	3,256.83	49.99	66.146		
11,076.14	11,050.65	11,065.41	11,048.65	26.57	25.50	158.72	294.92	2,696.17	3,312.42	3,262.10	50.32	65.828		
11,100.00	11,074.44	11,089.20	11,072.44	26.62	25.54	158.73	294.92	2,696.17	3,314.11	3,263.70	50.41	65.738		
11,200.00	11,174.22	11,188.99	11,172.22	26.81	25.75	158.80	294.92	2,696.17	3,320.23	3,269.42	50.81	65.349		
11,300.00	11,274.10	11,288.87	11,272.10	26.99	25.97	158.84	294.92	2,696.17	3,324.72	3,273.52	51.20	64.934		
11,400.00	11,374.06	11,388.82	11,372.06	27.17	26.18	158.87	294.92	2,696.17	3,327.58	3,275.99	51.59	64.497		
11,500.00	11,474.05	11,488.81	11,472.05	27.33	26.39	158.89	294.92	2,696.17	3,328.82	3,276.84	51.98	64.038		
11,525.95	11,500.00	11,514.76	11,498.00	27.38	26.45	88.88	294.92	2,696.17	3,328.87	3,276.79	52.08	63.914		
11,600.00	11,574.05	11,588.81	11,572.05	27.51	26.61	88.88	294.92	2,696.17	3,328.87	3,276.49	52.39	63.544		
11,700.00	11,674.05	11,688.81	11,672.05	27.71	26.82	88.88	294.92	2,696.17	3,328.87	3,276.06	52.81	63.035		
11,800.00	11,774.05	11,788.81	11,772.05	27.91	27.04	88.88	294.92	2,696.17	3,328.87	3,275.64	53.23	62.534		
11,900.00	11,874.05	11,888.81	11,872.05	28.11	27.25	88.88	294.92	2,696.17	3,328.87	3,275.22	53.66	62.040		
12,000.00	11,974.05	11,988.81	11,972.05	28.31	27.46	88.88	294.92	2,696.17	3,328.87	3,274.79	54.08	61.553		
12,096.99	12,071.04	12,085.80	12,069.04	28.50	27.67	88.88	294.92	2,696.17	3,328.87	3,274.38	54.49	61.088		
12,100.00	12,074.05	12,088.81	12,072.05	28.51	27.68	-91.12	294.92	2,696.17	3,328.87	3,274.37	54.51	61.075		
12,150.00	12,123.97	12,138.73	12,121.97	28.59	27.79	-91.15	294.92	2,696.17	3,328.92	3,274.22	54.70	60.860		
12,200.00	12,173.49	12,188.26	12,171.49	28.67	27.89	-91.26	294.92	2,696.17	3,329.07	3,274.18	54.88	60.659		
12,250.00	12,222.23	12,237.00	12,220.23	28.73	28.00	-91.41	294.92	2,696.17	3,329.33	3,274.28	55.05	60.473		
12,300.00	12,269.83	12,291.71	12,274.81	28.79	28.10	-91.64	293.46	2,696.17	3,329.72	3,274.50	55.22	60.303		
12,350.00	12,315.90	12,350.77	12,333.50	28.85	28.17	-91.87	286.22	2,696.17	3,330.15	3,274.81	55.34	60.171		
12,400.00	12,360.12	12,411.84	12,392.97	28.90	28.22	-92.10	272.44	2,696.17	3,330.61	3,275.17	55.44	60.074		
12,450.00	12,402.13	12,474.95	12,452.51	28.94	28.26	-92.30	251.63	2,696.17	3,331.07	3,275.56	55.52	60.002		
12,500.00	12,441.63	12,540.04	12,511.15	28.98	28.27	-92.49	223.45	2,696.17	3,331.52	3,275.95	55.57	59.950		
12,550.00	12,478.30	12,607.04	12,567.77	29.02	28.27	-92.66	187.70	2,696.17	3,331.94	3,276.33	55.61	59.914		
12,600.00	12,511.88	12,675.77	12,621.10	29.06	28.25	-92.81	144.42	2,696.17	3,332.31	3,276.66	55.65	59.882		
12,650.00	12,542.10	12,745.97	12,669.83	29.09	28.23	-92.92	93.95	2,696.17	3,332.61	3,276.92	55.69	59.843		
12,700.00	12,568.73	12,817.31	12,712.65	29.14	28.21	-93.00	36.94	2,696.17	3,332.82	3,277.07	55.75	59.782		
12,750.00	12,591.58	12,889.39	12,748.39	29.19	28.19	-93.04	-25.60	2,696.17	3,332.94	3,277.10	55.84	59.689		
12,800.00	12,610.47	12,961.77	12,776.10	29.25	28.19	-93.05	-92.42	2,696.17	3,332.95	3,276.98	55.97	59.551		
12,850.00	12,625.25	13,033.99	12,795.13	29.33	28.23	-93.01	-162.03	2,696.17	3,332.87	3,276.72	56.15	59.361		
12,900.00	12,635.81	13,105.59	12,805.22	29.43	28.32	-92.95	-232.87	2,696.17	3,332.68	3,276.31	56.37	59.118		
12,950.00	12,642.07	13,168.78	12,807.00	29.54	28.43	-92.86	-296.02	2,696.17	3,332.42	3,275.79	56.64	58.839		
12,996.99	12,644.00	13,215.72	12,807.00	29.68	28.54	-92.84	-342.96	2,696.17	3,332.33	3,275.43	56.90	58.570		
13,000.00	12,644.00	13,218.73	12,807.00	29.69	28.55	-92.84	-345.96	2,696.17	3,332.33	3,275.41	56.91	58.551		
13,100.00	12,644.00	13,318.73	12,807.00	30.04	28.84	-92.84	-445.96	2,696.17	3,332.33	3,274.74	57.59	57.865		
13,200.00	12,644.00	13,418.73	12,807.00	30.48	29.22	-92.84	-545.96	2,696.17	3,332.33	3,273.89	58.44	57.024		
13,300.00	12,644.00	13,518.73	12,807.00	31.00	29.68	-92.84	-645.96	2,696.17	3,332.33	3,272.87	59.45	56.049		
13,400.00	12,644.00	13,618.73	12,807.00	31.61	30.22	-92.84	-745.96	2,696.17	3,332.33	3,271.70	60.63	54.963		
13,500.00	12,644.00	13,718.73	12,807.00	32.29	30.84	-92.84	-845.96	2,696.17	3,332.33	3,270.37	61.95	53.787		
13,600.00	12,644.00	13,818.73	12,807.00	33.04	31.53	-92.84	-945.96	2,696.17	3,332.33	3,268.91	63.42	52.544		
13,700.00	12,644.00	13,918.73	12,807.00	33.85	32.29	-92.84	-1,045.96	2,696.17	3,332.33	3,267.31	65.02	51.254		
13,800.00	12,644.00	14,018.73	12,807.00	34.72	33.11	-92.84	-1,145.96	2,696.17	3,332.33	3,265.59	66.73	49.934		
13,900.00	12,644.00	14,118.73	12,807.00	35.64	33.99	-92.84	-1,245.96	2,696.17	3,332.33	3,263.76	68.57	48.601		
14,000.00	12,644.00	14,218.73	12,807.00	36.62	34.92	-92.84	-1,345.96	2,696.17	3,332.33	3,261.83	70.50	47.267		
14,100.00	12,644.00	14,318.73	12,807.00	37.64	35.90	-92.84	-1,445.96	2,696.17	3,332.33	3,259.80	72.53	45.944		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 6H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)					
14,200.00	12,644.00	14,418.73	12,807.00	38.70	36.93	-92.84	-1,545.96	2,696.17	3,332.33	3,257.68	74.65	44.641	
14,300.00	12,644.00	14,518.73	12,807.00	39.80	38.01	-92.84	-1,645.96	2,696.17	3,332.33	3,255.48	76.85	43.364	
14,400.00	12,644.00	14,618.73	12,807.00	40.94	39.12	-92.84	-1,745.96	2,696.17	3,332.33	3,253.21	79.12	42.119	
14,500.00	12,644.00	14,718.73	12,807.00	42.11	40.26	-92.84	-1,845.96	2,696.17	3,332.33	3,250.87	81.46	40.909	
14,600.00	12,644.00	14,818.73	12,807.00	43.30	41.44	-92.84	-1,945.96	2,696.17	3,332.33	3,248.47	83.86	39.738	
14,700.00	12,644.00	14,918.73	12,807.00	44.53	42.65	-92.84	-2,045.96	2,696.17	3,332.33	3,246.01	86.32	38.606	
14,800.00	12,644.00	15,018.73	12,807.00	45.78	43.89	-92.84	-2,145.96	2,696.17	3,332.33	3,243.50	88.83	37.515	
14,900.00	12,644.00	15,118.73	12,807.00	47.06	45.15	-92.84	-2,245.96	2,696.17	3,332.33	3,240.94	91.39	36.465	
15,000.00	12,644.00	15,218.73	12,807.00	48.36	46.44	-92.84	-2,345.96	2,696.17	3,332.33	3,238.34	93.99	35.455	
15,100.00	12,644.00	15,318.73	12,807.00	49.67	47.74	-92.84	-2,445.96	2,696.17	3,332.33	3,235.70	96.63	34.486	
15,200.00	12,644.00	15,418.73	12,807.00	51.01	49.07	-92.84	-2,545.96	2,696.17	3,332.33	3,233.02	99.31	33.555	
15,300.00	12,644.00	15,518.73	12,807.00	52.36	50.41	-92.84	-2,645.96	2,696.17	3,332.33	3,230.31	102.02	32.663	
15,400.00	12,644.00	15,618.73	12,807.00	53.73	51.77	-92.84	-2,745.96	2,696.17	3,332.33	3,227.56	104.77	31.807	
15,500.00	12,644.00	15,718.73	12,807.00	55.11	53.15	-92.84	-2,845.96	2,696.17	3,332.33	3,224.79	107.54	30.986	
15,600.00	12,644.00	15,818.73	12,807.00	56.51	54.54	-92.84	-2,945.96	2,696.17	3,332.33	3,221.98	110.34	30.200	
15,700.00	12,644.00	15,918.73	12,807.00	57.92	55.95	-92.84	-3,045.96	2,696.17	3,332.33	3,219.16	113.17	29.446	
15,800.00	12,644.00	16,018.73	12,807.00	59.34	57.36	-92.84	-3,145.96	2,696.17	3,332.33	3,216.31	116.02	28.723	
15,900.00	12,644.00	16,118.73	12,807.00	60.77	58.79	-92.84	-3,245.96	2,696.17	3,332.33	3,213.44	118.89	28.029	
16,000.00	12,644.00	16,218.73	12,807.00	62.21	60.23	-92.84	-3,345.96	2,696.17	3,332.33	3,210.55	121.78	27.364	
16,100.00	12,644.00	16,318.73	12,807.00	63.66	61.67	-92.84	-3,445.96	2,696.17	3,332.33	3,207.64	124.69	26.725	
16,200.00	12,644.00	16,418.73	12,807.00	65.12	63.13	-92.84	-3,545.96	2,696.17	3,332.33	3,204.71	127.61	26.113	
16,300.00	12,644.00	16,518.73	12,807.00	66.58	64.60	-92.84	-3,645.96	2,696.17	3,332.33	3,201.77	130.56	25.524	
16,400.00	12,644.00	16,618.73	12,807.00	68.06	66.07	-92.84	-3,745.96	2,696.17	3,332.33	3,198.81	133.51	24.959	
16,500.00	12,644.00	16,718.73	12,807.00	69.54	67.55	-92.84	-3,845.96	2,696.17	3,332.33	3,195.84	136.49	24.415	
16,600.00	12,644.00	16,818.73	12,807.00	71.03	69.04	-92.84	-3,945.96	2,696.17	3,332.33	3,192.86	139.47	23.893	
16,700.00	12,644.00	16,918.73	12,807.00	72.52	70.53	-92.84	-4,045.96	2,696.17	3,332.33	3,189.86	142.47	23.390	
16,800.00	12,644.00	17,018.73	12,807.00	74.02	72.03	-92.84	-4,145.96	2,696.17	3,332.33	3,186.85	145.48	22.907	
16,900.00	12,644.00	17,118.73	12,807.00	75.53	73.54	-92.84	-4,245.96	2,696.17	3,332.33	3,183.83	148.49	22.441	
17,000.00	12,644.00	17,218.73	12,807.00	77.04	75.05	-92.84	-4,345.96	2,696.17	3,332.33	3,180.80	151.52	21.992	
17,100.00	12,644.00	17,318.73	12,807.00	78.56	76.57	-92.84	-4,445.96	2,696.17	3,332.33	3,177.76	154.56	21.560	
17,200.00	12,644.00	17,418.73	12,807.00	80.08	78.09	-92.84	-4,545.96	2,696.17	3,332.33	3,174.72	157.61	21.143	
17,300.00	12,644.00	17,518.73	12,807.00	81.60	79.61	-92.84	-4,645.96	2,696.17	3,332.33	3,171.66	160.67	20.740	
17,400.00	12,644.00	17,618.73	12,807.00	83.13	81.14	-92.84	-4,745.96	2,696.17	3,332.33	3,168.59	163.73	20.352	
17,500.00	12,644.00	17,718.73	12,807.00	84.67	82.68	-92.84	-4,845.96	2,696.17	3,332.33	3,165.52	166.81	19.977	
17,600.00	12,644.00	17,818.73	12,807.00	86.20	84.21	-92.84	-4,945.96	2,696.17	3,332.33	3,162.44	169.89	19.615	
17,700.00	12,644.00	17,918.73	12,807.00	87.75	85.76	-92.84	-5,045.96	2,696.17	3,332.33	3,159.36	172.97	19.265	
17,800.00	12,644.00	18,018.73	12,807.00	89.29	87.30	-92.84	-5,145.96	2,696.17	3,332.33	3,156.26	176.06	18.927	
17,900.00	12,644.00	18,118.73	12,807.00	90.84	88.85	-92.84	-5,245.96	2,696.17	3,332.33	3,153.16	179.16	18.599	
18,000.00	12,644.00	18,218.73	12,807.00	92.39	90.40	-92.84	-5,345.96	2,696.17	3,332.33	3,150.06	182.27	18.283	
18,100.00	12,644.00	18,318.73	12,807.00	93.94	91.95	-92.84	-5,445.96	2,696.17	3,332.33	3,146.95	185.38	17.976	
18,200.00	12,644.00	18,418.73	12,807.00	95.50	93.51	-92.84	-5,545.96	2,696.17	3,332.33	3,143.83	188.49	17.679	
18,300.00	12,644.00	18,518.73	12,807.00	97.05	95.07	-92.84	-5,645.96	2,696.17	3,332.33	3,140.71	191.62	17.391	
18,400.00	12,644.00	18,618.73	12,807.00	98.61	96.63	-92.84	-5,745.96	2,696.17	3,332.33	3,137.59	194.74	17.112	
18,500.00	12,644.00	18,718.73	12,807.00	100.18	98.19	-92.84	-5,845.96	2,696.17	3,332.33	3,134.46	197.87	16.841	
18,600.00	12,644.00	18,818.73	12,807.00	101.74	99.76	-92.84	-5,945.96	2,696.17	3,332.33	3,131.32	201.00	16.578	
18,700.00	12,644.00	18,918.73	12,807.00	103.31	101.33	-92.84	-6,045.96	2,696.17	3,332.33	3,128.18	204.14	16.323	
18,800.00	12,644.00	19,018.73	12,807.00	104.88	102.90	-92.84	-6,145.96	2,696.17	3,332.33	3,125.04	207.29	16.076	
18,900.00	12,644.00	19,118.73	12,807.00	106.45	104.47	-92.84	-6,245.96	2,696.17	3,332.33	3,121.90	210.43	15.836	
19,000.00	12,644.00	19,218.73	12,807.00	108.02	106.04	-92.84	-6,345.96	2,696.17	3,332.33	3,118.75	213.58	15.602	
19,100.00	12,644.00	19,318.73	12,807.00	109.60	107.62	-92.84	-6,445.96	2,696.17	3,332.33	3,115.59	216.73	15.375	
19,200.00	12,644.00	19,418.73	12,807.00	111.18	109.20	-92.84	-6,545.96	2,696.17	3,332.33	3,112.44	219.89	15.154	
19,300.00	12,644.00	19,518.73	12,807.00	112.75	110.78	-92.84	-6,645.96	2,696.17	3,332.33	3,109.28	223.05	14.940	

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 6H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,400.00	12,644.00	19,618.73	12,807.00	114.33	112.36	-92.84	-6,745.96	2,696.17	3,332.33	3,106.12	226.21	14.731	
19,500.00	12,644.00	19,718.73	12,807.00	115.92	113.94	-92.84	-6,845.96	2,696.17	3,332.33	3,102.95	229.38	14.528	
19,600.00	12,644.00	19,818.73	12,807.00	117.50	115.53	-92.84	-6,945.96	2,696.17	3,332.33	3,099.78	232.55	14.330	
19,700.00	12,644.00	19,918.73	12,807.00	119.08	117.11	-92.84	-7,045.96	2,696.17	3,332.33	3,096.61	235.72	14.137	
19,800.00	12,644.00	20,018.73	12,807.00	120.67	118.70	-92.84	-7,145.96	2,696.17	3,332.33	3,093.44	238.89	13.949	
19,900.00	12,644.00	20,118.73	12,807.00	122.26	120.29	-92.84	-7,245.96	2,696.17	3,332.33	3,090.26	242.07	13.766	
20,000.00	12,644.00	20,218.73	12,807.00	123.84	121.87	-92.84	-7,345.96	2,696.17	3,332.33	3,087.08	245.24	13.588	
20,100.00	12,644.00	20,318.73	12,807.00	125.43	123.46	-92.84	-7,445.96	2,696.17	3,332.33	3,083.90	248.42	13.414	
20,200.00	12,644.00	20,418.73	12,807.00	127.02	125.06	-92.84	-7,545.96	2,696.17	3,332.33	3,080.72	251.61	13.244	
20,300.00	12,644.00	20,518.73	12,807.00	128.62	126.65	-92.84	-7,645.96	2,696.17	3,332.33	3,077.54	254.79	13.079	
20,400.00	12,644.00	20,618.73	12,807.00	130.21	128.24	-92.84	-7,745.96	2,696.17	3,332.33	3,074.35	257.98	12.917	
20,500.00	12,644.00	20,718.73	12,807.00	131.80	129.84	-92.84	-7,845.96	2,696.17	3,332.33	3,071.16	261.17	12.759	
20,600.00	12,644.00	20,818.73	12,807.00	133.40	131.43	-92.84	-7,945.96	2,696.17	3,332.33	3,067.97	264.36	12.605	
20,700.00	12,644.00	20,918.73	12,807.00	134.99	133.03	-92.84	-8,045.96	2,696.17	3,332.33	3,064.78	267.55	12.455	
20,800.00	12,644.00	21,018.73	12,807.00	136.59	134.63	-92.84	-8,145.96	2,696.17	3,332.33	3,061.58	270.74	12.308	
20,900.00	12,644.00	21,118.73	12,807.00	138.19	136.22	-92.84	-8,245.96	2,696.17	3,332.33	3,058.39	273.94	12.164	
21,000.00	12,644.00	21,218.73	12,807.00	139.78	137.82	-92.84	-8,345.96	2,696.17	3,332.33	3,055.19	277.14	12.024	
21,100.00	12,644.00	21,318.73	12,807.00	141.38	139.42	-92.84	-8,445.96	2,696.17	3,332.33	3,051.99	280.34	11.887	
21,200.00	12,644.00	21,418.73	12,807.00	142.98	141.02	-92.84	-8,545.96	2,696.17	3,332.33	3,048.79	283.54	11.753	
21,300.00	12,644.00	21,518.73	12,807.00	144.58	142.63	-92.84	-8,645.96	2,696.17	3,332.33	3,045.59	286.74	11.621	
21,400.00	12,644.00	21,618.73	12,807.00	146.19	144.23	-92.84	-8,745.96	2,696.17	3,332.33	3,042.39	289.94	11.493	
21,500.00	12,644.00	21,718.73	12,807.00	147.79	145.83	-92.84	-8,845.96	2,696.17	3,332.33	3,039.18	293.15	11.367	
21,600.00	12,644.00	21,818.73	12,807.00	149.39	147.44	-92.84	-8,945.96	2,696.17	3,332.33	3,035.97	296.35	11.244	
21,700.00	12,644.00	21,918.73	12,807.00	150.99	149.04	-92.84	-9,045.96	2,696.17	3,332.33	3,032.77	299.56	11.124	
21,800.00	12,644.00	22,018.73	12,807.00	152.60	150.64	-92.84	-9,145.96	2,696.17	3,332.33	3,029.56	302.77	11.006	
21,900.00	12,644.00	22,118.73	12,807.00	154.20	152.25	-92.84	-9,245.96	2,696.17	3,332.33	3,026.35	305.98	10.891	
22,000.00	12,644.00	22,218.73	12,807.00	155.81	153.86	-92.84	-9,345.96	2,696.17	3,332.33	3,023.14	309.19	10.778	
22,100.00	12,644.00	22,318.73	12,807.00	157.41	155.46	-92.84	-9,445.96	2,696.17	3,332.33	3,019.93	312.40	10.667	
22,200.00	12,644.00	22,418.73	12,807.00	159.02	157.07	-92.84	-9,545.96	2,696.17	3,332.33	3,016.71	315.61	10.558	
22,300.00	12,644.00	22,518.73	12,807.00	160.63	158.68	-92.84	-9,645.96	2,696.17	3,332.33	3,013.50	318.83	10.452	
22,400.00	12,644.00	22,618.73	12,807.00	162.24	160.29	-92.84	-9,745.96	2,696.17	3,332.33	3,010.28	322.04	10.347	
22,500.00	12,644.00	22,718.73	12,807.00	163.84	161.90	-92.84	-9,845.96	2,696.17	3,332.33	3,007.07	325.26	10.245	
22,531.40	12,644.00	22,750.13	12,807.00	164.35	162.40	-92.84	-9,877.37	2,696.17	3,332.33	3,006.06	326.27	10.213	
22,563.68	12,644.00	22,751.03	12,807.00	164.87	162.42	-92.84	-9,878.26	2,696.17	3,332.48	3,005.75	326.72	10.200 SF	

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:
Fighting Okra 18-19 Fed - 71H - OH - OH													0.00 usft
Survey Program: 166-MWD-ISCWSA, 5236-LEAM MWD+HDGM, 22587-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	
0.00	0.00	0.00	0.00	0.00	0.00	-84.92	118.79	-1,335.70	1,341.02				
100.00	100.00	91.23	91.23	0.08	0.08	-84.93	118.60	-1,335.61	1,340.87	1,340.70	0.17	7,924.936	
200.00	200.00	200.15	200.15	0.31	0.23	-84.95	117.90	-1,335.21	1,340.46	1,339.92	0.54	2,481.742	
300.00	300.00	319.18	319.16	0.53	0.49	-84.98	117.07	-1,333.25	1,338.74	1,337.70	1.03	1,294.015	
400.00	400.00	422.85	422.80	0.76	0.72	-85.00	116.44	-1,330.75	1,336.29	1,334.80	1.49	899.598	
500.00	500.00	522.69	522.60	0.98	0.94	-85.01	115.88	-1,328.13	1,333.62	1,331.70	1.92	694.022	
600.00	600.00	617.64	617.52	1.21	1.14	-85.04	115.04	-1,325.93	1,331.23	1,328.89	2.34	569.132	
700.00	700.00	706.26	706.12	1.43	1.32	-85.08	113.98	-1,324.32	1,329.34	1,326.60	2.74	484.991	
800.00	800.00	788.60	788.45	1.66	1.48	-85.11	113.16	-1,323.83	1,328.65	1,325.52	3.13	424.714	
801.43	801.43	789.78	789.63	1.66	1.48	-85.11	113.15	-1,323.83	1,328.65	1,325.52	3.13	423.960	
900.00	900.00	872.58	872.42	1.88	1.65	-85.14	112.57	-1,324.42	1,329.29	1,325.77	3.52	377.592	
1,000.00	1,000.00	974.07	973.91	2.11	1.85	-85.16	112.26	-1,325.59	1,330.42	1,326.46	3.95	336.704	
1,100.00	1,100.00	1,072.06	1,071.89	2.33	2.05	-85.16	112.31	-1,326.72	1,331.56	1,327.19	4.38	304.071	
1,200.00	1,200.00	1,170.69	1,170.51	2.56	2.26	-85.15	112.62	-1,327.98	1,332.86	1,328.05	4.81	277.161	
1,300.00	1,300.00	1,272.15	1,271.97	2.78	2.47	-85.14	113.08	-1,329.23	1,334.13	1,328.88	5.25	254.206	
1,400.00	1,400.00	1,374.90	1,374.71	3.01	2.69	-85.12	113.59	-1,330.37	1,335.28	1,329.59	5.69	234.625	
1,500.00	1,500.00	1,479.90	1,479.71	3.23	2.91	-85.10	114.03	-1,331.20	1,336.10	1,329.96	6.14	217.592	
1,600.00	1,600.00	1,581.31	1,581.12	3.46	3.13	-85.09	114.35	-1,331.70	1,336.62	1,330.04	6.58	203.179	
1,700.00	1,700.00	1,679.69	1,679.49	3.68	3.33	-85.09	114.55	-1,332.27	1,337.21	1,330.20	7.01	190.832	
1,800.00	1,800.00	1,780.54	1,780.33	3.91	3.54	-85.08	114.65	-1,332.92	1,337.87	1,330.42	7.44	179.775	
1,900.00	1,900.00	1,882.84	1,882.64	4.13	3.75	-85.09	114.66	-1,333.43	1,338.37	1,330.49	7.88	169.845	
2,000.00	2,000.00	1,984.92	1,984.72	4.35	3.97	-85.09	114.61	-1,333.78	1,338.70	1,330.38	8.32	160.841	
2,100.00	2,100.00	2,086.95	2,086.74	4.58	4.19	-85.09	114.52	-1,333.98	1,338.89	1,330.12	8.77	152.704	
2,200.00	2,200.00	2,187.74	2,187.54	4.80	4.40	-85.10	114.43	-1,334.06	1,338.96	1,329.76	9.20	145.466	
2,300.00	2,300.00	2,288.45	2,288.24	5.03	4.61	-85.10	114.40	-1,334.09	1,338.99	1,329.35	9.64	138.888	
2,400.00	2,400.00	2,390.24	2,390.04	5.25	4.83	-85.09	114.53	-1,334.01	1,338.92	1,328.84	10.08	132.851	
2,500.00	2,500.00	2,492.53	2,492.33	5.48	5.04	-85.08	114.91	-1,333.76	1,338.71	1,328.19	10.52	127.277	
2,600.00	2,599.99	2,597.30	2,597.10	5.69	5.27	-15.06	115.42	-1,333.21	1,337.38	1,326.42	10.96	122.034	
2,700.00	2,699.96	2,701.15	2,700.93	5.90	5.49	-15.07	115.97	-1,332.29	1,334.02	1,322.63	11.39	117.119	
2,800.00	2,799.86	2,803.36	2,803.14	6.11	5.71	-15.10	116.65	-1,331.16	1,328.76	1,316.94	11.82	112.412	
2,900.00	2,899.68	2,906.71	2,906.47	6.33	5.94	-15.15	117.46	-1,329.80	1,321.63	1,309.37	12.25	107.847	
2,949.81	2,949.35	2,958.81	2,958.57	6.43	6.05	-15.19	117.85	-1,328.98	1,317.32	1,304.84	12.47	105.612	
3,000.00	2,999.38	3,011.26	3,011.01	6.54	6.17	-15.22	118.22	-1,328.06	1,312.67	1,299.98	12.69	103.418	
3,100.00	3,099.08	3,120.00	3,119.72	6.76	6.41	-15.27	119.02	-1,325.71	1,303.03	1,289.89	13.14	99.162	
3,200.00	3,198.77	3,230.61	3,230.28	6.99	6.65	-15.31	120.13	-1,322.38	1,292.55	1,278.96	13.59	95.097	
3,300.00	3,298.46	3,334.99	3,334.57	7.21	6.88	-15.34	121.26	-1,318.56	1,281.45	1,267.42	14.03	91.325	
3,400.00	3,398.15	3,438.07	3,437.57	7.44	7.11	-15.38	122.18	-1,314.43	1,269.98	1,255.51	14.47	87.779	
3,500.00	3,497.84	3,535.02	3,534.44	7.67	7.31	-15.43	122.96	-1,310.54	1,258.50	1,243.61	14.88	84.554	
3,600.00	3,597.54	3,633.41	3,632.75	7.90	7.51	-15.47	123.70	-1,306.77	1,247.19	1,231.88	15.30	81.495	
3,700.00	3,697.23	3,737.13	3,736.38	8.13	7.73	-15.52	124.52	-1,302.59	1,235.70	1,219.96	15.73	78.537	
3,800.00	3,796.92	3,838.52	3,837.67	8.37	7.95	-15.56	125.39	-1,298.18	1,223.89	1,207.73	16.16	75.729	
3,900.00	3,896.61	3,935.99	3,935.05	8.60	8.16	-15.61	126.24	-1,293.99	1,212.13	1,195.55	16.58	73.087	
4,000.00	3,996.30	4,032.92	4,031.90	8.84	8.36	-15.65	127.08	-1,289.98	1,200.54	1,183.53	17.00	70.599	
4,100.00	4,096.00	4,129.11	4,128.01	9.08	8.55	-15.69	128.06	-1,286.22	1,189.18	1,171.76	17.42	68.263	
4,200.00	4,195.69	4,224.76	4,223.59	9.31	8.75	-15.72	129.17	-1,282.74	1,178.10	1,160.27	17.84	66.047	
4,300.00	4,295.38	4,319.80	4,318.57	9.55	8.95	-15.76	130.15	-1,279.63	1,167.38	1,149.13	18.26	63.948	
4,400.00	4,395.07	4,416.51	4,415.24	9.79	9.15	-15.81	130.99	-1,276.81	1,157.00	1,138.32	18.68	61.947	
4,500.00	4,494.76	4,515.12	4,513.81	10.04	9.35	-15.85	131.98	-1,274.04	1,146.74	1,127.63	19.10	60.027	
4,600.00	4,594.46	4,615.96	4,614.60	10.28	9.56	-15.90	133.08	-1,271.23	1,136.50	1,116.96	19.54	58.176	
4,700.00	4,694.15	4,718.67	4,717.25	10.52	9.79	-15.95	133.96	-1,268.12	1,126.01	1,106.04	19.97	56.382	
4,800.00	4,793.84	4,824.12	4,822.65	10.76	10.02	-16.03	134.52	-1,264.56	1,115.15	1,094.74	20.41	54.636	
4,900.00	4,893.53	4,930.72	4,929.16	11.01	10.25	-16.13	134.70	-1,260.30	1,103.66	1,082.81	20.85	52.932	

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 71H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 166-MWD-ISCWISA, 5236-LEAM MWD+HDGM, 22587-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)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
5,000.00	4,993.22	5,028.78	5,027.13	11.25	10.46	-16.23	134.61	-1,256.11	1,091.87	1,070.59	21.28	51.307			
5,100.00	5,092.92	5,126.07	5,124.34	11.50	10.67	-16.34	134.38	-1,252.13	1,080.26	1,058.55	21.71	49.752			
5,200.00	5,192.61	5,220.60	5,218.80	11.74	10.77	-16.45	134.24	-1,248.56	1,068.97	1,046.92	22.05	48.490			
5,300.00	5,292.30	5,314.65	5,312.80	11.99	10.80	-16.55	134.25	-1,245.44	1,058.15	1,035.86	22.29	47.464			
5,400.00	5,391.99	5,413.10	5,411.21	12.24	10.81	-16.66	134.22	-1,242.51	1,047.68	1,025.15	22.53	46.505			
5,500.00	5,491.68	5,514.13	5,512.19	12.48	10.83	-16.77	134.29	-1,239.44	1,037.15	1,014.38	22.76	45.559			
5,600.00	5,591.38	5,628.00	5,625.97	12.73	10.85	-16.90	134.37	-1,235.04	1,025.79	1,002.80	22.99	44.610			
5,700.00	5,691.07	5,728.74	5,726.60	12.98	10.88	-17.00	134.63	-1,230.46	1,013.79	990.55	23.24	43.621			
5,800.00	5,790.76	5,834.21	5,831.94	13.23	10.92	-17.11	134.81	-1,225.05	1,001.18	977.70	23.49	42.630			
5,900.00	5,890.45	5,936.80	5,934.38	13.48	10.96	-17.24	134.71	-1,219.67	988.48	964.75	23.74	41.643			
6,000.00	5,990.14	6,048.88	6,046.23	13.72	11.01	-17.34	135.25	-1,212.45	974.59	950.61	23.98	40.641			
6,100.00	6,089.84	6,161.07	6,158.10	13.97	11.07	-17.45	135.69	-1,203.94	959.60	935.38	24.23	39.612			
6,200.00	6,189.53	6,261.72	6,258.37	14.22	11.13	-17.56	135.88	-1,195.26	943.57	919.08	24.49	38.526			
6,300.00	6,289.22	6,356.24	6,352.56	14.47	11.19	-17.66	136.15	-1,187.35	927.79	903.02	24.77	37.452			
6,400.00	6,388.91	6,453.92	6,449.92	14.72	11.26	-17.77	136.44	-1,179.52	912.36	887.31	25.05	36.418			
6,500.00	6,488.60	6,553.82	6,549.50	14.97	11.34	-17.86	137.04	-1,171.46	896.90	871.57	25.33	35.403			
6,600.00	6,588.30	6,652.69	6,648.03	15.22	11.42	-17.95	137.82	-1,163.40	881.37	855.74	25.62	34.399			
6,700.00	6,687.99	6,754.52	6,749.51	15.47	11.50	-18.04	138.65	-1,154.93	865.67	839.76	25.91	33.412			
6,800.00	6,787.68	6,856.61	6,853.19	15.72	11.60	-18.12	139.69	-1,145.70	849.44	823.24	26.19	32.428			
6,900.00	6,887.37	6,956.20	6,950.36	15.98	11.70	-18.18	140.85	-1,136.87	833.02	806.53	26.50	31.439			
7,000.00	6,987.06	7,056.23	7,049.97	16.23	11.80	-18.24	142.20	-1,127.68	816.49	789.70	26.80	30.469			
7,100.00	7,086.76	7,151.65	7,144.99	16.48	11.90	-18.29	143.56	-1,119.14	800.20	773.08	27.11	29.515			
7,200.00	7,186.45	7,251.23	7,244.16	16.73	12.01	-18.33	145.09	-1,110.30	783.98	756.55	27.42	28.590			
7,300.00	7,286.14	7,349.58	7,342.11	16.98	12.12	-18.38	146.67	-1,101.54	767.72	739.98	27.74	27.677			
7,400.00	7,385.83	7,447.53	7,439.67	17.23	12.24	-18.44	148.08	-1,092.90	751.56	723.50	28.06	26.787			
7,500.00	7,485.52	7,546.07	7,537.82	17.49	12.36	-18.50	149.50	-1,084.26	735.44	707.06	28.38	25.915			
7,600.00	7,585.22	7,643.81	7,635.17	17.74	12.48	-18.55	151.01	-1,075.73	719.37	690.86	28.71	25.059			
7,700.00	7,684.91	7,740.82	7,731.83	17.99	12.60	-18.63	152.30	-1,067.49	703.53	674.50	29.04	24.229			
7,800.00	7,784.60	7,839.62	7,830.28	18.24	12.72	-18.72	153.41	-1,059.26	687.84	658.48	29.36	23.425			
7,900.00	7,884.29	7,938.02	7,928.32	18.50	12.85	-18.84	154.31	-1,050.96	672.06	642.36	29.69	22.632			
8,000.00	7,983.98	8,031.38	8,021.37	18.75	12.97	-18.97	155.07	-1,043.45	656.66	626.62	30.04	21.858			
8,100.00	8,083.68	8,126.18	8,115.94	19.00	13.10	-19.13	155.60	-1,036.83	642.29	611.91	30.39	21.136			
8,200.00	8,183.37	8,229.95	8,219.45	19.25	13.23	-19.39	155.33	-1,029.45	627.82	597.10	30.72	20.439			
8,300.00	8,283.06	8,340.86	8,329.95	19.51	13.39	-19.77	154.05	-1,020.04	611.99	580.96	31.03	19.724			
8,400.00	8,382.75	8,443.59	8,432.13	19.76	13.55	-20.24	151.95	-1,009.66	594.55	563.19	31.36	18.958			
8,500.00	8,482.44	8,539.62	8,527.64	20.01	13.70	-20.74	149.58	-999.91	577.13	545.41	31.72	18.192			
8,600.00	8,582.14	8,635.38	8,622.92	20.27	13.85	-21.26	147.35	-990.66	560.23	528.14	32.09	17.458			
8,700.00	8,681.83	8,731.38	8,718.49	20.52	14.00	-21.80	145.21	-981.83	543.84	511.38	32.46	16.755			
8,800.00	8,781.52	8,824.82	8,811.56	20.77	14.15	-22.37	142.97	-973.86	528.16	495.32	32.84	16.083			
8,900.00	8,881.21	8,923.09	8,909.51	21.03	14.30	-22.98	140.76	-966.10	513.17	479.96	33.21	15.453			
9,000.00	8,980.90	9,020.55	9,006.64	21.28	14.46	-23.62	138.63	-958.48	498.30	464.72	33.58	14.837			
9,100.00	9,080.60	9,115.47	9,101.28	21.54	14.61	-24.29	136.43	-951.54	484.02	450.05	33.97	14.248			
9,200.00	9,180.29	9,214.04	9,199.60	21.79	14.76	-25.00	134.28	-944.82	470.29	435.94	34.35	13.691			
9,300.00	9,279.98	9,312.88	9,298.19	22.04	14.92	-25.73	132.36	-938.11	456.64	421.90	34.74	13.146			
9,400.00	9,379.67	9,409.00	9,394.10	22.30	15.08	-26.43	130.84	-932.00	443.45	408.32	35.13	12.623			
9,500.00	9,479.36	9,504.00	9,488.95	22.55	15.23	-27.13	129.49	-926.79	431.17	395.64	35.53	12.135			
9,600.00	9,579.05	9,599.00	9,583.84	22.81	15.37	-27.84	128.24	-922.50	419.90	383.97	35.93	11.687			
9,700.00	9,678.75	9,694.00	9,678.78	23.06	15.51	-28.55	127.13	-919.20	409.71	373.38	36.33	11.277			
9,800.00	9,778.44	9,790.02	9,774.77	23.31	15.65	-29.20	126.54	-916.78	400.45	363.72	36.73	10.903			
9,900.00	9,878.13	9,887.45	9,872.18	23.57	15.80	-29.79	126.55	-915.02	391.83	354.71	37.13	10.554			
10,000.00	9,977.82	9,981.49	9,966.21	23.82	15.93	-30.34	126.61	-914.34	384.32	346.80	37.52	10.242			
10,100.00	10,077.51	10,086.03	10,070.75	24.08	16.07	-30.94	126.97	-913.58	376.78	338.87	37.92	9.937			

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

LEAM Drilling Systems LLC

Anticollision Report

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Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 71H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 166-MWD-ISCWSA, 5236-LEAM MWD+HDGM, 22587-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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	10,177.21	10,186.47	10,171.18	24.33	16.21	-31.45	127.96	-912.44	368.77	330.46	38.31	9.626		
10,300.00	10,276.90	10,290.80	10,275.47	24.59	16.37	-32.00	129.27	-910.06	359.59	320.90	38.70	9.292		
10,400.00	10,376.59	10,387.65	10,372.29	24.84	16.52	-32.52	130.62	-907.82	350.41	311.31	39.10	8.961		
10,500.00	10,476.28	10,483.98	10,468.60	25.10	16.66	-33.06	131.82	-906.46	342.16	302.65	39.51	8.660		
10,600.00	10,575.97	10,578.31	10,562.93	25.35	16.80	-33.71	132.17	-905.89	334.95	295.03	39.92	8.391		
10,700.00	10,675.67	10,668.92	10,653.50	25.61	16.92	-34.72	129.97	-907.05	330.29	289.96	40.33	8.189		
10,800.00	10,775.36	10,762.77	10,747.21	25.86	17.04	-36.01	125.89	-910.02	328.09	287.33	40.76	8.050		
10,900.00	10,875.05	10,861.89	10,846.12	26.12	17.16	-37.52	120.56	-913.92	327.12	285.92	41.20	7.940		
11,000.00	10,974.74	10,964.43	10,948.45	26.37	17.29	-39.14	115.00	-917.15	325.67	284.02	41.65	7.818		
11,076.14	11,050.65	11,040.55	11,024.43	26.57	17.39	-40.35	111.02	-919.30	324.45	282.45	42.00	7.725		
11,100.00	11,074.44	11,064.30	11,048.15	26.62	17.42	-40.70	109.89	-920.01	324.13	282.03	42.11	7.698		
11,200.00	11,174.22	11,165.50	11,149.22	26.81	17.55	-41.84	106.30	-923.39	323.60	281.10	42.50	7.614		
11,300.00	11,274.10	11,272.18	11,255.84	26.99	17.70	-42.29	105.82	-926.96	323.32	280.45	42.87	7.542		
11,383.05	11,357.11	11,355.73	11,339.37	27.14	17.82	-42.42	106.30	-928.51	322.58	279.44	43.15	7.476 CC		
11,400.00	11,374.06	11,371.88	11,355.52	27.17	17.84	-42.44	106.32	-928.86	322.62	279.42	43.20	7.467		
11,500.00	11,474.05	11,470.64	11,454.24	27.33	17.98	-42.44	106.27	-931.45	324.09	280.56	43.53	7.445		
11,525.95	11,500.00	11,496.00	11,479.59	27.38	18.01	-112.39	106.39	-932.18	324.68	281.07	43.61	7.445		
11,600.00	11,574.05	11,568.53	11,552.09	27.51	18.12	-112.24	106.39	-934.36	326.74	282.88	43.86	7.450		
11,700.00	11,674.05	11,666.92	11,650.42	27.71	18.25	-112.22	105.25	-937.49	330.13	285.92	44.22	7.466		
11,800.00	11,774.05	11,765.45	11,748.88	27.91	18.39	-112.32	103.31	-940.73	333.92	289.34	44.58	7.491		
11,900.00	11,874.05	11,864.15	11,847.48	28.11	18.53	-112.52	100.60	-944.09	338.11	293.16	44.95	7.522		
12,000.00	11,974.05	11,966.88	11,950.12	28.31	18.68	-112.86	97.18	-947.13	342.13	296.80	45.33	7.547		
12,096.99	12,071.04	12,063.39	12,046.54	28.50	18.82	-113.20	93.92	-949.51	345.61	299.91	45.70	7.562		
12,100.00	12,074.05	12,066.37	12,049.52	28.51	18.82	66.78	93.82	-949.59	345.72	300.01	45.72	7.562		
12,150.00	12,123.97	12,115.93	12,099.04	28.59	18.90	66.91	92.24	-950.93	346.63	300.76	45.87	7.556		
12,200.00	12,173.49	12,165.10	12,148.16	28.67	18.98	67.86	90.75	-952.35	345.93	299.94	45.99	7.522		
12,250.00	12,222.23	12,212.65	12,195.67	28.73	19.05	69.54	89.28	-953.87	343.91	297.85	46.06	7.466		
12,300.00	12,269.83	12,259.34	12,242.29	28.79	19.12	71.93	87.71	-955.53	340.97	294.87	46.10	7.396		
12,350.00	12,315.90	12,305.65	12,288.54	28.85	19.19	74.95	85.73	-957.17	337.50	291.39	46.12	7.319		
12,400.00	12,360.12	12,347.00	12,329.74	28.90	19.25	78.07	82.69	-958.64	334.30	288.19	46.11	7.250		
12,450.00	12,402.13	12,379.00	12,361.36	28.94	19.30	80.51	78.00	-960.00	332.49	286.40	46.10	7.213		
12,472.65	12,420.36	12,398.08	12,380.00	28.96	19.33	81.90	74.07	-961.00	332.25	286.14	46.12	7.205		
12,500.00	12,441.63	12,417.35	12,398.63	28.98	19.36	83.26	69.32	-962.25	332.57	286.44	46.13	7.209		
12,550.00	12,478.30	12,455.18	12,434.55	29.02	19.42	85.84	57.89	-965.32	334.79	288.58	46.21	7.246		
12,600.00	12,511.88	12,495.33	12,471.78	29.06	19.47	88.50	43.32	-969.01	338.74	292.41	46.33	7.311		
12,650.00	12,542.10	12,528.85	12,501.88	29.09	19.52	90.47	29.13	-972.95	345.13	298.64	46.49	7.424		
12,700.00	12,568.73	12,581.66	12,546.95	29.14	19.60	93.60	2.59	-979.99	353.48	306.79	46.69	7.570		
12,750.00	12,591.58	12,656.15	12,606.62	29.19	19.73	98.09	-41.55	-985.75	360.07	313.22	46.84	7.687		
12,800.00	12,610.47	12,708.63	12,645.71	29.25	19.85	100.96	-76.44	-988.40	366.83	319.82	47.01	7.803		
12,850.00	12,625.25	12,762.26	12,681.24	29.33	19.98	103.48	-116.44	-991.39	374.55	327.37	47.18	7.939		
12,900.00	12,635.81	12,822.17	12,714.37	29.43	20.16	105.77	-166.15	-995.39	382.90	335.55	47.34	8.088		
12,950.00	12,642.07	12,889.08	12,744.73	29.54	20.41	108.08	-225.63	-999.07	390.82	343.30	47.52	8.224		
12,996.99	12,644.00	12,951.67	12,767.06	29.68	20.69	110.03	-283.99	-1,001.94	398.08	350.35	47.73	8.341		
13,000.00	12,644.00	12,956.01	12,768.35	29.69	20.71	110.20	-288.13	-1,002.12	398.52	350.78	47.74	8.347		
13,100.00	12,644.00	13,088.82	12,792.39	30.04	21.48	113.11	-418.38	-1,007.37	408.99	360.46	48.53	8.428		
13,200.00	12,644.00	13,204.29	12,797.28	30.48	22.30	113.54	-533.67	-1,011.05	413.56	363.92	49.64	8.332		
13,300.00	12,644.00	13,318.29	12,799.19	31.00	23.17	113.75	-647.64	-1,011.61	414.66	363.78	50.87	8.151		
13,400.00	12,644.00	13,418.90	12,799.18	31.61	24.03	113.78	-748.24	-1,011.02	414.11	361.93	52.18	7.936		
13,478.06	12,644.00	13,495.00	12,797.93	32.14	24.74	113.61	-824.33	-1,011.29	413.85	360.52	53.33	7.760		
13,500.00	12,644.00	13,514.54	12,797.62	32.29	24.91	113.56	-843.87	-1,011.46	413.89	360.26	53.64	7.717		
13,600.00	12,644.00	13,604.14	12,797.86	33.04	25.73	113.49	-933.45	-1,013.24	415.80	360.72	55.08	7.549		
13,700.00	12,644.00	13,702.27	12,797.92	33.85	26.70	113.31	-1,031.51	-1,016.64	419.00	362.26	56.75	7.383		

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 71H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 166-MWD-ISCWSA, 5236-LEAM MWD+HDGM, 22587-Project														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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
13,800.00	12,644.00	13,801.03	12,794.12	34.72	27.76	112.53	-1,130.02	-1,022.32	422.81	364.12	58.69	7.204			
13,900.00	12,644.00	13,907.83	12,791.74	35.64	28.87	112.02	-1,236.69	-1,026.62	425.68	364.99	60.69	7.014			
14,000.00	12,644.00	14,005.14	12,793.35	36.62	29.90	112.14	-1,333.98	-1,028.08	427.71	365.17	62.54	6.839			
14,100.00	12,644.00	14,096.83	12,794.26	37.64	30.93	112.07	-1,425.59	-1,031.83	431.84	367.35	64.49	6.697			
14,200.00	12,644.00	14,204.46	12,794.64	38.70	32.20	111.88	-1,533.11	-1,036.54	436.06	369.35	66.71	6.536			
14,300.00	12,644.00	14,319.64	12,791.65	39.80	33.59	111.39	-1,648.21	-1,039.15	437.21	368.06	69.14	6.323			
14,389.80	12,644.00	14,407.20	12,791.95	40.82	34.66	111.47	-1,735.76	-1,038.27	436.49	365.40	71.09	6.140			
14,400.00	12,644.00	14,416.37	12,792.03	40.94	34.77	111.48	-1,744.92	-1,038.26	436.50	365.19	71.31	6.121			
14,500.00	12,644.00	14,497.00	12,792.75	42.11	35.76	111.50	-1,825.53	-1,039.71	438.59	365.22	73.37	5.978			
14,600.00	12,644.00	14,592.35	12,793.28	43.30	36.95	111.25	-1,920.66	-1,046.22	445.09	369.39	75.70	5.880			
14,700.00	12,644.00	14,717.50	12,794.30	44.53	38.54	111.21	-2,045.74	-1,049.69	447.98	369.63	78.34	5.718			
14,800.00	12,644.00	14,825.29	12,796.59	45.78	39.94	111.59	-2,153.46	-1,047.58	446.91	366.23	80.68	5.539			
14,860.95	12,644.00	14,878.79	12,798.49	46.56	40.66	111.87	-2,206.91	-1,046.31	446.37	364.34	82.03	5.442			
14,900.00	12,644.00	14,912.84	12,798.77	47.06	41.12	111.90	-2,240.96	-1,046.40	446.59	363.65	82.94	5.385			
15,000.00	12,644.00	15,021.00	12,797.24	48.36	42.60	111.66	-2,349.10	-1,047.57	447.09	361.48	85.60	5.223			
15,100.00	12,644.00	15,132.43	12,797.05	49.67	44.12	111.77	-2,460.48	-1,044.89	444.76	356.61	88.15	5.046			
15,200.00	12,644.00	15,230.86	12,795.65	51.01	45.50	111.72	-2,558.86	-1,042.39	441.87	351.13	90.73	4.870			
15,300.00	12,644.00	15,336.13	12,793.35	52.36	46.99	111.60	-2,664.05	-1,039.20	438.23	344.83	93.40	4.692			
15,400.00	12,644.00	15,435.52	12,789.92	53.73	48.41	111.33	-2,763.33	-1,035.99	433.96	337.82	96.15	4.514			
15,500.00	12,644.00	15,529.86	12,782.29	55.11	49.75	110.41	-2,857.35	-1,035.53	430.62	331.43	99.19	4.342			
15,600.00	12,644.00	15,625.00	12,775.45	56.51	51.05	109.53	-2,952.24	-1,036.01	428.63	326.45	102.18	4.195			
15,690.69	12,644.00	15,709.46	12,773.03	57.79	52.19	109.22	-3,036.66	-1,035.95	427.73	323.06	104.67	4.087			
15,700.00	12,644.00	15,717.41	12,772.86	57.92	52.30	109.20	-3,044.61	-1,036.02	427.74	322.83	104.92	4.077			
15,800.00	12,644.00	15,807.32	12,770.41	59.34	53.56	108.77	-3,134.44	-1,038.70	429.63	321.93	107.70	3.989			
15,900.00	12,644.00	15,909.49	12,772.73	60.77	54.99	108.99	-3,236.55	-1,040.50	432.03	321.68	110.35	3.915			
16,000.00	12,644.00	16,006.36	12,776.89	62.21	56.37	109.47	-3,333.32	-1,041.32	434.26	321.44	112.82	3.849			
16,100.00	12,644.00	16,100.60	12,779.59	63.66	57.72	109.68	-3,427.48	-1,044.28	438.16	322.76	115.39	3.797			
16,200.00	12,644.00	16,206.61	12,781.34	65.12	59.25	109.73	-3,533.40	-1,047.85	441.90	323.67	118.23	3.738			
16,300.00	12,644.00	16,310.94	12,775.97	66.58	60.75	108.90	-3,637.50	-1,052.03	443.96	322.46	121.51	3.654			
16,400.00	12,644.00	16,406.48	12,770.92	68.06	62.10	108.12	-3,732.82	-1,055.97	446.21	321.59	124.63	3.580			
16,500.00	12,644.00	16,501.56	12,766.49	69.54	63.41	107.38	-3,827.66	-1,061.00	449.83	322.13	127.70	3.523			
16,600.00	12,644.00	16,600.87	12,763.64	71.03	64.80	106.84	-3,926.79	-1,066.30	454.09	323.33	130.76	3.473			
16,700.00	12,644.00	16,703.25	12,763.40	72.52	66.26	106.65	-4,029.08	-1,070.65	458.10	324.37	133.73	3.426			
16,800.00	12,644.00	16,801.74	12,763.75	74.02	67.70	106.57	-4,127.50	-1,074.35	461.80	325.17	136.63	3.380			
16,900.00	12,644.00	16,897.76	12,763.50	75.53	69.12	106.38	-4,223.41	-1,078.83	466.20	326.66	139.54	3.341			
17,000.00	12,644.00	16,996.99	12,762.90	77.04	70.57	106.12	-4,322.49	-1,084.18	471.21	328.65	142.55	3.305			
17,100.00	12,644.00	17,100.63	12,762.97	78.56	72.06	105.97	-4,426.01	-1,089.17	475.86	330.28	145.58	3.269			
17,200.00	12,644.00	17,200.51	12,761.75	80.08	73.51	105.67	-4,525.77	-1,093.83	480.01	331.37	148.64	3.229			
17,300.00	12,644.00	17,306.51	12,759.16	81.60	75.07	105.23	-4,631.64	-1,098.54	483.65	331.76	151.90	3.184			
17,400.00	12,644.00	17,414.59	12,758.74	83.13	76.67	105.11	-4,739.68	-1,100.70	485.45	330.46	154.99	3.132			
17,500.00	12,644.00	17,506.10	12,757.81	84.67	78.03	104.93	-4,831.15	-1,103.02	487.64	329.71	157.93	3.088			
17,600.00	12,644.00	17,600.62	12,755.54	86.20	79.44	104.55	-4,925.55	-1,107.25	491.35	330.35	161.00	3.052			
17,700.00	12,644.00	17,703.05	12,754.39	87.75	80.94	104.29	-5,027.88	-1,111.62	495.20	331.07	164.13	3.017			
17,800.00	12,644.00	17,799.74	12,754.30	89.29	82.34	104.18	-5,124.49	-1,115.39	498.97	331.90	167.06	2.987			
17,900.00	12,644.00	17,887.69	12,754.70	90.84	83.60	104.09	-5,212.31	-1,120.26	504.45	334.68	169.77	2.971			
18,000.00	12,644.00	17,976.25	12,754.47	92.39	84.88	103.86	-5,300.57	-1,127.52	512.33	339.83	172.50	2.970			
18,100.00	12,644.00	18,082.79	12,756.43	93.94	86.44	103.84	-5,406.72	-1,136.22	520.71	345.04	175.68	2.964			
18,200.00	12,644.00	18,192.04	12,759.27	95.50	88.04	103.98	-5,515.76	-1,142.38	526.76	347.97	178.79	2.946			
18,300.00	12,644.00	18,290.47	12,758.16	97.05	89.50	103.69	-5,613.94	-1,149.02	533.04	351.14	181.91	2.930			
18,400.00	12,644.00	18,399.81	12,757.91	98.61	91.13	103.52	-5,723.13	-1,154.72	538.04	352.83	185.21	2.905			
18,500.00	12,644.00	18,510.48	12,761.28	100.18	92.80	103.80	-5,833.70	-1,157.76	541.44	353.23	188.21	2.877			
18,600.00	12,644.00	18,618.16	12,766.57	101.74	94.43	104.33	-5,941.25	-1,158.03	542.87	351.90	190.98	2.843			

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 71H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 166-MWD-ISCWSA, 5236-LEAM MWD+HDGM, 22587-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		
18,700.00	12,644.00	18,730.61	12,773.85	103.31	96.16	105.13	-6,053.44	-1,155.91	542.70	349.18	193.53	2.804		
18,800.00	12,644.00	18,842.02	12,777.85	104.88	97.85	105.66	-6,164.66	-1,151.62	539.91	343.77	196.13	2.753		
18,900.00	12,644.00	18,934.72	12,776.54	106.45	99.25	105.58	-6,257.33	-1,149.60	537.40	338.19	199.21	2.698		
19,000.00	12,644.00	19,042.07	12,777.14	108.02	100.90	105.76	-6,364.58	-1,145.66	533.97	331.91	202.07	2.643		
19,100.00	12,644.00	19,133.68	12,778.25	109.60	102.29	105.95	-6,456.15	-1,143.19	531.68	326.71	204.96	2.594		
19,200.00	12,644.00	19,236.44	12,779.33	111.18	103.86	106.15	-6,558.86	-1,139.98	528.95	321.15	207.80	2.546		
19,300.00	12,644.00	19,333.59	12,779.40	112.75	105.34	106.21	-6,656.00	-1,138.52	527.50	316.73	210.77	2.503		
19,400.00	12,644.00	19,432.91	12,780.19	114.33	107.16	106.45	-6,775.19	-1,133.33	523.47	310.04	213.43	2.453		
19,500.00	12,644.00	19,545.55	12,780.67	115.92	108.58	106.67	-6,867.66	-1,127.78	517.92	301.58	216.34	2.394		
19,600.00	12,644.00	19,631.32	12,779.79	117.50	109.88	106.65	-6,953.40	-1,125.69	515.26	295.84	219.42	2.348		
19,700.00	12,644.00	19,732.41	12,778.54	119.08	111.40	106.53	-7,054.48	-1,125.12	514.38	291.86	222.52	2.312		
19,800.00	12,644.00	19,857.16	12,778.85	120.67	113.32	106.73	-7,179.10	-1,120.04	510.60	285.49	225.11	2.268		
19,900.00	12,644.00	19,934.75	12,779.42	122.26	114.52	106.93	-7,256.54	-1,115.74	505.69	277.49	228.20	2.216		
19,943.82	12,644.00	19,968.00	12,778.60	122.95	115.03	106.84	-7,289.78	-1,115.74	505.34	275.76	229.59	2.201		
20,000.00	12,644.00	20,020.72	12,777.11	123.84	115.83	106.65	-7,342.48	-1,116.56	505.71	274.29	231.42	2.185		
20,100.00	12,644.00	20,120.41	12,775.48	125.43	117.33	106.44	-7,442.14	-1,117.79	506.43	271.81	234.62	2.159		
20,200.00	12,644.00	20,233.48	12,772.50	127.02	119.06	106.09	-7,555.17	-1,118.56	506.40	268.39	238.01	2.128		
20,300.00	12,644.00	20,330.84	12,770.72	128.62	120.54	105.94	-7,652.50	-1,117.10	504.46	263.30	241.17	2.092		
20,368.51	12,644.00	20,392.83	12,769.79	129.71	121.45	105.84	-7,714.48	-1,116.92	503.99	260.71	243.28	2.072		
20,400.00	12,644.00	20,421.05	12,769.67	130.21	121.87	105.83	-7,742.70	-1,117.04	504.09	259.89	244.21	2.064		
20,500.00	12,644.00	20,501.41	12,770.00	131.80	123.03	105.81	-7,823.04	-1,118.88	506.46	259.62	246.84	2.052		
20,600.00	12,644.00	20,588.86	12,770.11	133.40	124.32	105.64	-7,910.29	-1,124.56	512.68	263.11	249.57	2.054		
20,700.00	12,644.00	20,688.26	12,768.83	134.99	125.80	105.28	-8,009.39	-1,132.25	519.80	266.90	252.90	2.055		
20,800.00	12,644.00	20,798.10	12,765.84	136.59	127.42	104.73	-8,118.89	-1,140.28	526.19	269.46	256.73	2.050		
20,900.00	12,644.00	20,916.73	12,762.13	138.19	129.18	104.20	-8,237.34	-1,145.46	529.65	269.04	260.61	2.032		
21,000.00	12,644.00	21,023.01	12,759.75	139.78	130.81	103.91	-8,343.58	-1,147.18	530.67	266.67	264.00	2.010		
21,100.00	12,644.00	21,127.57	12,758.89	141.38	132.41	103.82	-8,448.14	-1,147.25	530.54	263.36	267.17	1.986		
21,156.23	12,644.00	21,181.63	12,758.84	142.28	133.23	103.81	-8,502.19	-1,147.15	530.42	261.55	268.87	1.973		
21,200.00	12,644.00	21,225.36	12,758.85	142.98	133.89	103.81	-8,545.93	-1,147.19	530.46	260.26	270.20	1.963		
21,288.13	12,644.00	21,313.53	12,759.14	144.39	135.22	103.85	-8,634.10	-1,146.87	530.22	257.37	272.85	1.943		
21,300.00	12,644.00	21,323.41	12,759.16	144.58	135.37	103.85	-8,643.97	-1,146.88	530.24	257.04	273.20	1.941		
21,400.00	12,644.00	21,410.01	12,758.59	146.19	136.69	103.75	-8,730.54	-1,148.77	532.15	255.98	276.18	1.927		
21,500.00	12,644.00	21,517.37	12,758.58	147.79	138.34	103.68	-8,837.88	-1,151.18	534.33	254.91	279.42	1.912		
21,600.00	12,644.00	21,621.24	12,759.52	149.39	139.94	103.76	-8,941.73	-1,152.03	535.34	252.87	282.47	1.895		
21,700.00	12,644.00	21,722.70	12,760.48	150.99	141.50	103.84	-9,043.19	-1,152.59	536.10	250.62	285.48	1.878		
21,800.00	12,644.00	21,817.32	12,762.51	152.60	142.95	104.05	-9,137.79	-1,152.62	536.67	248.39	288.28	1.862 ES		
21,900.00	12,644.00	21,904.25	12,763.54	154.20	144.27	104.10	-9,224.68	-1,154.93	539.52	248.49	291.03	1.854		
22,000.00	12,644.00	21,994.96	12,764.45	155.81	145.61	104.08	-9,315.28	-1,159.22	544.35	250.56	293.79	1.853 SF		
22,100.00	12,644.00	22,088.17	12,765.44	157.41	146.97	104.04	-9,408.30	-1,165.06	550.68	254.09	296.59	1.857		
22,200.00	12,644.00	22,182.93	12,766.54	159.02	148.35	103.98	-9,502.81	-1,171.78	557.85	258.43	299.42	1.863		
22,300.00	12,644.00	22,273.47	12,767.40	160.63	149.68	103.87	-9,593.01	-1,179.56	566.42	264.33	302.09	1.875		
22,400.00	12,644.00	22,363.98	12,767.97	162.24	151.01	103.71	-9,683.05	-1,188.79	576.48	271.72	304.76	1.892		
22,500.00	12,644.00	22,450.86	12,768.23	163.84	152.28	103.48	-9,769.27	-1,199.48	588.50	281.33	307.17	1.916		
22,563.68	12,644.00	22,509.48	12,768.51	164.87	153.12	103.33	-9,827.34	-1,207.49	597.04	288.15	308.89	1.933		

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 7H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.70	0.70	0.00	0.00	89.52	0.50	59.99	59.99					
100.00	100.00	100.70	100.70	0.08	0.09	89.52	0.50	59.99	59.99	59.82	0.17	352.587		
200.00	200.00	200.70	200.70	0.31	0.31	89.52	0.50	59.99	59.99	59.37	0.62	96.811		
300.00	300.00	300.70	300.70	0.53	0.54	89.52	0.50	59.99	59.99	58.92	1.07	56.109		
400.00	400.00	400.70	400.70	0.76	0.76	89.52	0.50	59.99	59.99	58.47	1.52	39.501		
500.00	500.00	500.70	500.70	0.98	0.98	89.52	0.50	59.99	59.99	58.02	1.97	30.480		
600.00	600.00	600.70	600.70	1.21	1.21	89.52	0.50	59.99	59.99	57.57	2.42	24.813		
700.00	700.00	700.70	700.70	1.43	1.43	89.52	0.50	59.99	59.99	57.12	2.87	20.923		
800.00	800.00	800.70	800.70	1.66	1.66	89.52	0.50	59.99	59.99	56.68	3.32	18.087		
900.00	900.00	900.70	900.70	1.88	1.88	89.52	0.50	59.99	59.99	56.23	3.77	15.928		
1,000.00	1,000.00	1,000.70	1,000.70	2.11	2.11	89.52	0.50	59.99	59.99	55.78	4.22	14.230		
1,100.00	1,100.00	1,100.70	1,100.70	2.33	2.33	89.52	0.50	59.99	59.99	55.33	4.67	12.859		
1,200.00	1,200.00	1,200.70	1,200.70	2.56	2.56	89.52	0.50	59.99	59.99	54.88	5.12	11.729		
1,300.00	1,300.00	1,300.70	1,300.70	2.78	2.78	89.52	0.50	59.99	59.99	54.43	5.56	10.781		
1,400.00	1,400.00	1,400.70	1,400.70	3.01	3.01	89.52	0.50	59.99	59.99	53.98	6.01	9.975		
1,500.00	1,500.00	1,500.70	1,500.70	3.23	3.23	89.52	0.50	59.99	59.99	53.53	6.46	9.282		
1,600.00	1,600.00	1,600.70	1,600.70	3.46	3.46	89.52	0.50	59.99	59.99	53.08	6.91	8.678		
1,700.00	1,700.00	1,700.70	1,700.70	3.68	3.68	89.52	0.50	59.99	59.99	52.63	7.36	8.148		
1,800.00	1,800.00	1,800.70	1,800.70	3.91	3.91	89.52	0.50	59.99	59.99	52.18	7.81	7.679		
1,900.00	1,900.00	1,900.70	1,900.70	4.13	4.13	89.52	0.50	59.99	59.99	51.73	8.26	7.261		
2,000.00	2,000.00	2,000.70	2,000.70	4.35	4.36	89.52	0.50	59.99	59.99	51.28	8.71	6.887		
2,100.00	2,100.00	2,100.70	2,100.70	4.58	4.58	89.52	0.50	59.99	59.99	50.83	9.16	6.549		
2,200.00	2,200.00	2,200.70	2,200.70	4.80	4.81	89.52	0.50	59.99	59.99	50.38	9.61	6.242		
2,300.00	2,300.00	2,300.70	2,300.70	5.03	5.03	89.52	0.50	59.99	59.99	49.93	10.06	5.964		
2,400.00	2,400.00	2,400.70	2,400.70	5.25	5.26	89.52	0.50	59.99	59.99	49.48	10.51	5.708		
2,500.00	2,500.00	2,500.70	2,500.70	5.48	5.48	89.52	0.50	59.99	59.99	49.03	10.96	5.474 CC, ES		
2,600.00	2,599.99	2,600.69	2,600.69	5.69	5.71	159.81	0.50	59.99	60.81	49.41	11.40	5.335		
2,700.00	2,699.96	2,700.66	2,700.66	5.90	5.93	160.62	0.50	59.99	63.27	51.44	11.83	5.348		
2,800.00	2,799.86	2,800.56	2,800.56	6.11	6.15	161.84	0.50	59.99	67.40	55.14	12.26	5.496		
2,900.00	2,899.68	2,900.38	2,900.38	6.33	6.38	163.31	0.50	59.99	73.23	60.53	12.70	5.767		
2,949.81	2,949.35	2,950.05	2,950.05	6.43	6.49	164.09	0.50	59.99	76.77	63.86	12.91	5.945		
3,000.00	2,999.38	3,000.08	3,000.08	6.54	6.60	164.86	0.50	59.99	80.57	67.43	13.13	6.135		
3,100.00	3,099.08	3,099.78	3,099.78	6.76	6.83	166.19	0.50	59.99	88.16	74.60	13.57	6.498		
3,200.00	3,198.77	3,199.47	3,199.47	6.99	7.05	167.31	0.50	59.99	95.80	81.79	14.00	6.841		
3,300.00	3,298.46	3,299.16	3,299.16	7.21	7.27	168.26	0.50	59.99	103.46	89.02	14.44	7.164		
3,400.00	3,398.15	3,398.85	3,398.85	7.44	7.50	169.09	0.50	59.99	111.16	96.28	14.88	7.470		
3,500.00	3,497.84	3,498.54	3,498.54	7.67	7.72	169.80	0.50	59.99	118.87	103.55	15.32	7.759		
3,600.00	3,597.54	3,598.24	3,598.24	7.90	7.94	170.21	0.83	60.73	127.28	111.53	15.75	8.083		
3,700.00	3,697.23	3,697.93	3,697.93	8.13	8.14	170.17	1.84	62.99	137.09	120.93	16.16	8.484		
3,800.00	3,796.92	3,797.62	3,797.62	8.37	8.35	169.78	3.52	66.76	148.31	131.74	16.57	8.950		
3,900.00	3,896.61	3,897.31	3,897.31	8.60	8.55	169.11	5.86	72.01	160.94	143.97	16.98	9.479		
4,000.00	3,996.30	3,997.00	3,997.00	8.84	8.76	168.25	8.86	78.73	175.01	157.63	17.38	10.068		
4,100.00	4,096.00	4,096.70	4,096.70	9.08	8.97	167.27	12.50	86.89	190.45	172.65	17.79	10.703		
4,200.00	4,195.69	4,196.39	4,196.39	9.31	9.19	166.36	16.34	95.51	206.25	188.03	18.22	11.319		
4,300.00	4,295.38	4,296.08	4,296.08	9.55	9.41	165.59	20.19	104.14	222.10	203.44	18.65	11.907		
4,400.00	4,395.07	4,395.77	4,395.77	9.79	9.64	164.91	24.04	112.76	237.98	218.89	19.09	12.469		
4,500.00	4,494.76	4,495.46	4,495.46	10.04	9.86	164.33	27.89	121.38	253.89	234.37	19.52	13.007		
4,600.00	4,594.46	4,595.16	4,595.16	10.28	10.09	163.81	31.73	130.01	269.82	249.86	19.96	13.521		
4,700.00	4,694.15	4,694.85	4,694.85	10.52	10.32	163.35	35.58	138.63	285.77	265.37	20.39	14.013		
4,800.00	4,793.84	4,794.54	4,794.54	10.76	10.55	162.94	39.43	147.26	301.73	280.90	20.83	14.484		
4,900.00	4,893.53	4,894.23	4,894.23	11.01	10.79	162.57	43.27	155.88	317.71	296.44	21.27	14.935		
5,000.00	4,993.22	4,993.92	4,993.92	11.25	11.02	162.23	47.12	164.51	333.71	311.99	21.71	15.368		

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 7H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis 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	
5,100.00	5,092.92	5,089.07	5,083.55	11.50	11.26	161.93	50.97	173.13	349.71	327.55	22.16	15.783		
5,200.00	5,192.61	5,167.76	5,161.79	11.74	11.50	161.65	54.81	181.75	365.72	343.12	22.60	16.182		
5,300.00	5,292.30	5,266.46	5,260.03	11.99	11.73	161.39	58.66	190.38	381.74	358.69	23.04	16.565		
5,400.00	5,391.99	5,365.15	5,358.28	12.24	11.97	161.16	62.51	199.00	397.76	374.27	23.49	16.933		
5,500.00	5,491.68	5,463.85	5,456.52	12.48	12.22	160.94	66.35	207.63	413.79	389.86	23.94	17.287		
5,600.00	5,591.38	5,562.54	5,554.76	12.73	12.46	160.74	70.20	216.25	429.83	405.45	24.38	17.627		
5,700.00	5,691.07	5,661.24	5,653.00	12.98	12.70	160.56	74.05	224.88	445.87	421.04	24.83	17.955		
5,800.00	5,790.76	5,759.93	5,751.24	13.23	12.95	160.39	77.90	233.50	461.92	436.64	25.28	18.271		
5,900.00	5,890.45	5,858.63	5,849.49	13.48	13.19	160.23	81.74	242.12	477.97	452.24	25.73	18.576		
6,000.00	5,990.14	5,957.32	5,947.73	13.72	13.44	160.07	85.59	250.75	494.02	467.84	26.18	18.869		
6,100.00	6,089.84	6,056.02	6,045.97	13.97	13.68	159.93	89.44	259.37	510.07	483.44	26.63	19.153		
6,200.00	6,189.53	6,154.71	6,144.21	14.22	13.93	159.80	93.28	268.00	526.13	499.05	27.08	19.426		
6,300.00	6,289.22	6,253.41	6,242.46	14.47	14.18	159.68	97.13	276.62	542.19	514.66	27.54	19.691		
6,400.00	6,388.91	6,352.10	6,340.70	14.72	14.43	159.56	100.98	285.25	558.26	530.27	27.99	19.946		
6,500.00	6,488.60	6,450.80	6,438.94	14.97	14.68	159.45	104.82	293.87	574.32	545.88	28.44	20.193		
6,600.00	6,588.30	6,549.49	6,537.18	15.22	14.93	159.34	108.67	302.50	590.39	561.50	28.89	20.432		
6,700.00	6,687.99	6,648.19	6,635.42	15.47	15.18	159.24	112.52	311.12	606.46	577.11	29.35	20.664		
6,800.00	6,787.68	6,746.89	6,733.67	15.72	15.43	159.15	116.37	319.74	622.53	592.73	29.80	20.888		
6,900.00	6,887.37	6,845.58	6,831.91	15.98	15.68	159.06	120.21	328.37	638.61	608.35	30.26	21.105		
7,000.00	6,987.06	6,944.28	6,930.15	16.23	15.94	158.98	124.06	336.99	654.68	623.96	30.71	21.315		
7,100.00	7,086.76	7,042.97	7,028.39	16.48	16.19	158.90	127.91	345.62	670.75	639.58	31.17	21.519		
7,200.00	7,186.45	7,141.67	7,126.64	16.73	16.44	158.82	131.75	354.24	686.83	655.20	31.63	21.717		
7,300.00	7,286.14	7,240.36	7,224.88	16.98	16.70	158.74	135.60	362.87	702.91	670.83	32.08	21.909		
7,400.00	7,385.83	7,339.06	7,323.12	17.23	16.95	158.67	139.45	371.49	718.99	686.45	32.54	22.095		
7,500.00	7,485.52	7,437.75	7,421.36	17.49	17.21	158.61	143.29	380.11	735.07	702.07	33.00	22.276		
7,600.00	7,585.22	7,536.45	7,519.61	17.74	17.46	158.54	147.14	388.74	751.15	717.69	33.46	22.452		
7,700.00	7,684.91	7,635.14	7,617.85	17.99	17.72	158.48	150.99	397.36	767.23	733.32	33.91	22.623		
7,800.00	7,784.60	7,733.84	7,716.09	18.24	17.97	158.42	154.84	405.99	783.31	748.94	34.37	22.789		
7,900.00	7,884.29	7,832.53	7,814.33	18.50	18.23	158.37	158.68	414.61	799.40	764.57	34.83	22.951		
8,000.00	7,983.98	7,931.23	7,912.57	18.75	18.49	158.31	162.53	423.24	815.48	780.19	35.29	23.108		
8,100.00	8,083.68	8,029.92	8,010.82	19.00	18.74	158.26	166.38	431.86	831.57	795.82	35.75	23.261		
8,200.00	8,183.37	8,128.62	8,109.06	19.25	19.00	158.21	170.22	440.49	847.65	811.44	36.21	23.410		
8,300.00	8,283.06	8,227.31	8,207.30	19.51	19.26	158.16	174.07	449.11	863.74	827.07	36.67	23.555		
8,400.00	8,382.75	8,326.01	8,305.54	19.76	19.51	158.11	177.92	457.73	879.82	842.70	37.13	23.696		
8,500.00	8,482.44	8,424.70	8,403.79	20.01	19.77	158.07	181.76	466.36	895.91	858.32	37.59	23.834		
8,600.00	8,582.14	8,523.40	8,502.03	20.27	20.03	158.02	185.61	474.98	912.00	873.95	38.05	23.968		
8,700.00	8,681.83	8,622.09	8,600.27	20.52	20.29	157.98	189.46	483.61	928.09	889.58	38.51	24.099		
8,800.00	8,781.52	8,720.79	8,698.51	20.77	20.55	157.94	193.31	492.23	944.18	905.20	38.97	24.227		
8,900.00	8,881.21	8,819.48	8,796.75	21.03	20.81	157.90	197.15	500.86	960.27	920.83	39.43	24.351		
9,000.00	8,980.90	8,918.18	8,895.00	21.28	21.07	157.86	201.00	509.48	976.36	936.46	39.90	24.473		
9,100.00	9,080.60	9,016.87	8,993.24	21.54	21.32	157.83	204.85	518.10	992.45	952.09	40.36	24.592		
9,200.00	9,180.29	9,115.57	9,091.48	21.79	21.58	157.79	208.69	526.73	1,008.54	967.72	40.82	24.707		
9,300.00	9,279.98	9,214.26	9,189.72	22.04	21.84	157.76	212.54	535.35	1,024.63	983.35	41.28	24.820		
9,400.00	9,379.67	9,312.96	9,287.97	22.30	22.10	157.72	216.39	543.98	1,040.72	998.97	41.74	24.931		
9,500.00	9,479.36	9,411.65	9,386.21	22.55	22.36	157.69	220.23	552.60	1,056.81	1,014.60	42.21	25.039		
9,600.00	9,579.05	9,510.35	9,484.45	22.81	22.62	157.66	224.08	561.23	1,072.90	1,030.23	42.67	25.144		
9,700.00	9,678.75	9,609.04	9,582.69	23.06	22.88	157.63	227.93	569.85	1,088.99	1,045.86	43.13	25.247		
9,800.00	9,778.44	9,707.74	9,680.94	23.31	23.15	157.60	231.77	578.48	1,105.09	1,061.49	43.60	25.348		
9,900.00	9,878.13	9,806.43	9,779.18	23.57	23.41	157.57	235.62	587.10	1,121.18	1,077.12	44.06	25.447		
10,000.00	9,977.82	9,905.13	9,877.42	23.82	23.67	157.54	239.47	595.72	1,137.27	1,092.75	44.52	25.543		
10,100.00	10,077.51	10,003.82	9,975.66	24.08	23.93	157.52	243.32	604.35	1,153.36	1,108.38	44.99	25.638		
10,200.00	10,177.21	10,102.52	10,073.90	24.33	24.19	157.49	247.16	612.97	1,169.46	1,124.01	45.45	25.730		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 7H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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)	Separation (usft)	Factor		
10,300.00	10,276.90	10,201.21	10,172.15	24.59	24.45	157.47	251.01	621.60	1,185.55	1,139.64	45.92	25.820		
10,400.00	10,376.59	10,299.91	10,270.39	24.84	24.71	157.44	254.86	630.22	1,201.65	1,155.27	46.38	25.909		
10,500.00	10,476.28	10,398.60	10,368.63	25.10	24.97	157.42	258.70	638.85	1,217.74	1,170.90	46.84	25.995		
10,600.00	10,575.97	10,497.30	10,466.87	25.35	25.24	157.39	262.55	647.07	1,233.83	1,186.52	47.31	26.080		
10,700.00	10,675.67	10,595.99	10,565.12	25.61	25.50	157.37	266.40	656.09	1,249.93	1,202.15	47.77	26.163		
10,800.00	10,775.36	10,697.70	10,666.36	25.86	25.76	157.35	270.35	664.96	1,266.01	1,217.76	48.25	26.239		
10,900.00	10,875.05	10,822.37	10,790.60	26.12	26.01	157.35	274.53	674.34	1,280.87	1,232.11	48.76	26.266		
11,000.00	10,974.74	10,947.74	10,915.74	26.37	26.25	157.39	277.63	681.27	1,293.72	1,244.46	49.26	26.261		
11,076.14	11,050.65	11,043.60	11,011.52	26.57	26.43	157.46	279.24	684.88	1,302.15	1,252.51	49.63	26.235		
11,100.00	11,074.44	11,073.71	11,041.61	26.62	26.48	157.49	279.61	685.71	1,304.50	1,254.76	49.74	26.225		
11,200.00	11,174.22	11,200.26	11,168.14	26.81	26.70	157.62	280.46	687.63	1,312.10	1,261.94	50.16	26.158		
11,300.00	11,274.10	11,306.92	11,274.80	26.99	26.89	157.72	280.50	687.71	1,316.62	1,266.08	50.55	26.048		
11,400.00	11,374.06	11,406.87	11,374.76	27.17	27.09	157.79	280.50	687.71	1,319.46	1,268.53	50.93	25.906		
11,500.00	11,474.05	11,506.86	11,474.75	27.33	27.29	157.81	280.50	687.71	1,320.69	1,269.37	51.32	25.735		
11,525.95	11,500.00	11,532.82	11,500.70	27.38	27.34	87.81	280.50	687.71	1,320.75	1,269.33	51.42	25.685		
11,600.00	11,574.05	11,606.86	11,574.75	27.51	27.49	87.81	280.50	687.71	1,320.75	1,269.03	51.72	25.536		
11,700.00	11,674.05	11,706.86	11,674.75	27.71	27.69	87.81	280.50	687.71	1,320.75	1,268.61	52.14	25.331		
11,800.00	11,774.05	11,806.86	11,774.75	27.91	27.90	87.81	280.50	687.71	1,320.75	1,268.19	52.56	25.129		
11,900.00	11,874.05	11,906.86	11,874.75	28.11	28.10	87.81	280.50	687.71	1,320.75	1,267.77	52.98	24.929		
12,000.00	11,974.05	12,006.86	11,974.75	28.31	28.30	87.81	280.50	687.71	1,320.75	1,267.35	53.40	24.733		
12,096.99	12,071.04	12,103.86	12,071.74	28.50	28.50	87.81	280.50	687.71	1,320.75	1,266.94	53.81	24.545		
12,100.00	12,074.05	12,106.86	12,074.75	28.51	28.50	-92.19	280.50	687.71	1,320.75	1,266.92	53.82	24.539		
12,150.00	12,123.97	12,156.79	12,124.67	28.59	28.60	-92.29	280.50	687.71	1,320.84	1,266.83	54.01	24.454		
12,200.00	12,173.49	12,206.31	12,174.19	28.67	28.70	-92.55	280.50	687.71	1,321.13	1,266.94	54.19	24.379		
12,250.00	12,222.23	12,255.05	12,222.93	28.73	28.80	-92.96	280.50	687.71	1,321.68	1,267.32	54.36	24.313		
12,300.00	12,269.83	12,302.64	12,270.53	28.79	28.90	-93.50	280.50	687.71	1,322.58	1,268.07	54.52	24.260		
12,350.00	12,315.90	12,349.98	12,317.86	28.85	29.00	-94.15	280.46	687.71	1,323.98	1,269.32	54.67	24.220		
12,400.00	12,360.12	12,407.10	12,374.85	28.90	29.08	-94.99	276.94	687.71	1,325.78	1,270.98	54.80	24.194		
12,450.00	12,402.13	12,467.27	12,434.18	28.94	29.17	-95.81	267.11	687.71	1,327.82	1,272.90	54.92	24.179		
12,500.00	12,441.63	12,530.79	12,495.33	28.98	29.24	-96.63	250.05	687.71	1,330.03	1,275.01	55.02	24.175		
12,550.00	12,478.30	12,597.92	12,557.49	29.02	29.30	-97.41	224.79	687.71	1,332.34	1,277.23	55.10	24.179		
12,600.00	12,511.88	12,668.87	12,619.49	29.06	29.36	-98.16	190.39	687.71	1,334.64	1,279.47	55.17	24.190		
12,650.00	12,542.10	12,743.70	12,679.75	29.09	29.40	-98.84	146.11	687.71	1,336.83	1,281.59	55.24	24.201		
12,700.00	12,568.73	12,822.28	12,736.25	29.14	29.44	-99.44	91.57	687.71	1,338.78	1,283.47	55.31	24.204		
12,750.00	12,591.58	12,904.26	12,786.66	29.19	29.47	-99.93	47.02	687.71	1,340.39	1,284.98	55.41	24.189		
12,800.00	12,610.47	12,988.96	12,828.53	29.25	29.52	-100.28	-46.52	687.71	1,341.54	1,285.98	55.56	24.147		
12,850.00	12,625.25	13,075.47	12,859.63	29.33	29.60	-100.47	-127.16	687.71	1,342.16	1,286.38	55.78	24.063		
12,900.00	12,635.81	13,162.66	12,878.35	29.43	29.72	-100.48	-212.22	687.71	1,342.19	1,286.11	56.08	23.934		
12,950.00	12,642.07	13,246.72	12,884.00	29.54	29.91	-100.32	-296.02	687.71	1,341.64	1,285.19	56.46	23.764		
12,996.99	12,644.00	13,293.66	12,884.00	29.68	30.04	-100.28	-342.96	687.71	1,341.30	1,284.53	56.76	23.629		
13,000.00	12,644.00	13,296.66	12,884.00	29.69	30.04	-100.28	-345.96	687.71	1,341.30	1,284.52	56.78	23.621		
13,100.00	12,644.00	13,396.66	12,884.00	30.04	30.39	-100.28	-445.96	687.71	1,341.30	1,283.75	57.55	23.307		
13,200.00	12,644.00	13,496.66	12,884.00	30.48	30.83	-100.28	-545.96	687.71	1,341.30	1,282.82	58.48	22.935		
13,300.00	12,644.00	13,596.66	12,884.00	31.00	31.36	-100.28	-645.96	687.71	1,341.30	1,281.72	59.58	22.513		
13,400.00	12,644.00	13,696.66	12,884.00	31.61	31.96	-100.28	-745.96	687.71	1,341.30	1,280.48	60.82	22.052		
13,500.00	12,644.00	13,796.66	12,884.00	32.29	32.64	-100.28	-845.96	687.71	1,341.30	1,279.09	62.21	21.560		
13,600.00	12,644.00	13,896.66	12,884.00	33.04	33.39	-100.28	-945.96	687.71	1,341.30	1,277.57	63.73	21.046		
13,700.00	12,644.00	13,996.66	12,884.00	33.85	34.20	-100.28	-1,045.96	687.71	1,341.30	1,275.92	65.38	20.516		
13,800.00	12,644.00	14,096.66	12,884.00	34.72	35.06	-100.28	-1,145.96	687.71	1,341.30	1,274.16	67.14	19.978		
13,900.00	12,644.00	14,196.66	12,884.00	35.64	35.98	-100.28	-1,245.96	687.71	1,341.30	1,272.29	69.00	19.438		
14,000.00	12,644.00	14,296.66	12,884.00	36.62	36.95	-100.28	-1,345.96	687.71	1,341.30	1,270.33	70.97	18.900		
14,100.00	12,644.00	14,396.66	12,884.00	37.64	37.97	-100.28	-1,445.96	687.71	1,341.30	1,268.28	73.02	18.368		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 7H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
14,200.00	12,644.00	14,496.66	12,884.00	38.70	39.03	-100.28	-1,545.96	687.71	1,341.30	1,266.14	75.16	17.846		
14,300.00	12,644.00	14,596.66	12,884.00	39.80	40.12	-100.28	-1,645.96	687.71	1,341.30	1,263.93	77.37	17.336		
14,400.00	12,644.00	14,696.66	12,884.00	40.94	41.25	-100.28	-1,745.96	687.71	1,341.30	1,261.65	79.65	16.840		
14,500.00	12,644.00	14,796.66	12,884.00	42.11	42.42	-100.28	-1,845.96	687.71	1,341.30	1,259.30	82.00	16.358		
14,600.00	12,644.00	14,896.66	12,884.00	43.30	43.61	-100.28	-1,945.96	687.71	1,341.30	1,256.90	84.40	15.892		
14,700.00	12,644.00	14,996.66	12,884.00	44.53	44.83	-100.28	-2,045.96	687.71	1,341.30	1,254.44	86.86	15.443		
14,800.00	12,644.00	15,096.66	12,884.00	45.78	46.08	-100.28	-2,145.96	687.71	1,341.30	1,251.94	89.36	15.010		
14,900.00	12,644.00	15,196.66	12,884.00	47.06	47.35	-100.28	-2,245.96	687.71	1,341.30	1,249.39	91.91	14.593		
15,000.00	12,644.00	15,296.66	12,884.00	48.36	48.65	-100.28	-2,345.96	687.71	1,341.30	1,246.80	94.50	14.193		
15,100.00	12,644.00	15,396.66	12,884.00	49.67	49.96	-100.28	-2,445.96	687.71	1,341.30	1,244.17	97.13	13.809		
15,200.00	12,644.00	15,496.66	12,884.00	51.01	51.29	-100.28	-2,545.96	687.71	1,341.30	1,241.50	99.80	13.440		
15,300.00	12,644.00	15,596.66	12,884.00	52.36	52.64	-100.28	-2,645.96	687.71	1,341.30	1,238.81	102.49	13.087		
15,400.00	12,644.00	15,696.66	12,884.00	53.73	54.00	-100.28	-2,745.96	687.71	1,341.30	1,236.08	105.22	12.747		
15,500.00	12,644.00	15,796.66	12,884.00	55.11	55.38	-100.28	-2,845.96	687.71	1,341.30	1,233.32	107.98	12.422		
15,600.00	12,644.00	15,896.66	12,884.00	56.51	56.78	-100.28	-2,945.96	687.71	1,341.30	1,230.54	110.76	12.110		
15,700.00	12,644.00	15,996.66	12,884.00	57.92	58.18	-100.28	-3,045.96	687.71	1,341.30	1,227.74	113.56	11.811		
15,800.00	12,644.00	16,096.66	12,884.00	59.34	59.60	-100.28	-3,145.96	687.71	1,341.30	1,224.91	116.38	11.525		
15,900.00	12,644.00	16,196.66	12,884.00	60.77	61.02	-100.28	-3,245.96	687.71	1,341.30	1,222.07	119.23	11.250		
16,000.00	12,644.00	16,296.66	12,884.00	62.21	62.46	-100.28	-3,345.96	687.71	1,341.30	1,219.20	122.10	10.986		
16,100.00	12,644.00	16,396.66	12,884.00	63.66	63.91	-100.28	-3,445.96	687.71	1,341.30	1,216.32	124.98	10.732		
16,200.00	12,644.00	16,496.66	12,884.00	65.12	65.36	-100.28	-3,545.96	687.71	1,341.30	1,213.42	127.88	10.489		
16,300.00	12,644.00	16,596.66	12,884.00	66.58	66.83	-100.28	-3,645.96	687.71	1,341.30	1,210.51	130.79	10.255		
16,400.00	12,644.00	16,696.66	12,884.00	68.06	68.30	-100.28	-3,745.96	687.71	1,341.30	1,207.58	133.72	10.031		
16,500.00	12,644.00	16,796.66	12,884.00	69.54	69.78	-100.28	-3,845.96	687.71	1,341.30	1,204.64	136.66	9.815		
16,600.00	12,644.00	16,896.66	12,884.00	71.03	71.27	-100.28	-3,945.96	687.71	1,341.30	1,201.68	139.62	9.607		
16,700.00	12,644.00	16,996.66	12,884.00	72.52	72.76	-100.28	-4,045.96	687.71	1,341.30	1,198.72	142.58	9.407		
16,800.00	12,644.00	17,096.66	12,884.00	74.02	74.26	-100.28	-4,145.96	687.71	1,341.30	1,195.74	145.56	9.215		
16,900.00	12,644.00	17,196.66	12,884.00	75.53	75.76	-100.28	-4,245.96	687.71	1,341.30	1,192.75	148.55	9.029		
17,000.00	12,644.00	17,296.66	12,884.00	77.04	77.27	-100.28	-4,345.96	687.71	1,341.30	1,189.75	151.55	8.851		
17,100.00	12,644.00	17,396.66	12,884.00	78.56	78.78	-100.28	-4,445.96	687.71	1,341.30	1,186.75	154.55	8.679		
17,200.00	12,644.00	17,496.66	12,884.00	80.08	80.30	-100.28	-4,545.96	687.71	1,341.30	1,183.73	157.57	8.513		
17,300.00	12,644.00	17,596.66	12,884.00	81.60	81.83	-100.28	-4,645.96	687.71	1,341.30	1,180.71	160.59	8.352		
17,400.00	12,644.00	17,696.66	12,884.00	83.13	83.35	-100.28	-4,745.96	687.71	1,341.30	1,177.68	163.62	8.197		
17,500.00	12,644.00	17,796.66	12,884.00	84.67	84.88	-100.28	-4,845.96	687.71	1,341.30	1,174.64	166.66	8.048		
17,600.00	12,644.00	17,896.66	12,884.00	86.20	86.42	-100.28	-4,945.96	687.71	1,341.30	1,171.59	169.71	7.904		
17,700.00	12,644.00	17,996.66	12,884.00	87.75	87.96	-100.28	-5,045.96	687.71	1,341.30	1,168.54	172.76	7.764		
17,800.00	12,644.00	18,096.66	12,884.00	89.29	89.50	-100.28	-5,145.96	687.71	1,341.30	1,165.48	175.82	7.629		
17,900.00	12,644.00	18,196.66	12,884.00	90.84	91.05	-100.28	-5,245.96	687.71	1,341.30	1,162.42	178.88	7.498		
18,000.00	12,644.00	18,296.66	12,884.00	92.39	92.59	-100.28	-5,345.96	687.71	1,341.30	1,159.35	181.95	7.372		
18,100.00	12,644.00	18,396.66	12,884.00	93.94	94.15	-100.28	-5,445.96	687.71	1,341.30	1,156.27	185.03	7.249		
18,200.00	12,644.00	18,496.66	12,884.00	95.50	95.70	-100.28	-5,545.96	687.71	1,341.30	1,153.19	188.11	7.130		
18,300.00	12,644.00	18,596.66	12,884.00	97.05	97.26	-100.28	-5,645.96	687.71	1,341.30	1,150.10	191.19	7.015		
18,400.00	12,644.00	18,696.66	12,884.00	98.61	98.82	-100.28	-5,745.96	687.71	1,341.30	1,147.01	194.28	6.904		
18,500.00	12,644.00	18,796.66	12,884.00	100.18	100.38	-100.28	-5,845.96	687.71	1,341.30	1,143.92	197.38	6.796		
18,600.00	12,644.00	18,896.66	12,884.00	101.74	101.94	-100.28	-5,945.96	687.71	1,341.30	1,140.82	200.48	6.691		
18,700.00	12,644.00	18,996.66	12,884.00	103.31	103.51	-100.28	-6,045.96	687.71	1,341.30	1,137.72	203.58	6.589		
18,800.00	12,644.00	19,096.66	12,884.00	104.88	105.07	-100.28	-6,145.96	687.71	1,341.30	1,134.61	206.69	6.490		
18,900.00	12,644.00	19,196.66	12,884.00	106.45	106.64	-100.28	-6,245.96	687.71	1,341.30	1,131.50	209.80	6.393		
19,000.00	12,644.00	19,296.66	12,884.00	108.02	108.22	-100.28	-6,345.96	687.71	1,341.30	1,128.39	212.91	6.300		
19,100.00	12,644.00	19,396.66	12,884.00	109.60	109.79	-100.28	-6,445.96	687.71	1,341.30	1,125.27	216.03	6.209		
19,200.00	12,644.00	19,496.66	12,884.00	111.18	111.37	-100.28	-6,545.96	687.71	1,341.30	1,122.15	219.15	6.121		
19,300.00	12,644.00	19,596.66	12,884.00	112.75	112.94	-100.28	-6,645.96	687.71	1,341.30	1,119.03	222.27	6.035		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 7H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,400.00	12,644.00	19,696.66	12,884.00	114.33	114.52	-100.28	-6,745.96	687.71	1,341.30	1,115.90	225.39	5.951		
19,500.00	12,644.00	19,796.66	12,884.00	115.92	116.10	-100.28	-6,845.96	687.71	1,341.30	1,112.78	228.52	5.869		
19,600.00	12,644.00	19,896.66	12,884.00	117.50	117.68	-100.28	-6,945.96	687.71	1,341.30	1,109.65	231.65	5.790		
19,700.00	12,644.00	19,996.66	12,884.00	119.08	119.27	-100.28	-7,045.96	687.71	1,341.30	1,106.51	234.79	5.713		
19,800.00	12,644.00	20,096.66	12,884.00	120.67	120.85	-100.28	-7,145.96	687.71	1,341.30	1,103.37	237.92	5.637		
19,900.00	12,644.00	20,196.66	12,884.00	122.26	122.44	-100.28	-7,245.96	687.71	1,341.30	1,100.24	241.06	5.564		
20,000.00	12,644.00	20,296.66	12,884.00	123.84	124.03	-100.28	-7,345.96	687.71	1,341.30	1,097.09	244.20	5.493		
20,100.00	12,644.00	20,396.66	12,884.00	125.43	125.61	-100.28	-7,445.96	687.71	1,341.30	1,093.95	247.35	5.423		
20,200.00	12,644.00	20,496.66	12,884.00	127.02	127.20	-100.28	-7,545.96	687.71	1,341.30	1,090.81	250.49	5.355		
20,300.00	12,644.00	20,596.66	12,884.00	128.62	128.79	-100.28	-7,645.96	687.71	1,341.30	1,087.66	253.64	5.288		
20,400.00	12,644.00	20,696.66	12,884.00	130.21	130.39	-100.28	-7,745.96	687.71	1,341.30	1,084.51	256.79	5.223		
20,500.00	12,644.00	20,796.66	12,884.00	131.80	131.98	-100.28	-7,845.96	687.71	1,341.30	1,081.36	259.94	5.160		
20,600.00	12,644.00	20,896.66	12,884.00	133.40	133.57	-100.28	-7,945.96	687.71	1,341.30	1,078.21	263.09	5.098		
20,700.00	12,644.00	20,996.66	12,884.00	134.99	135.17	-100.28	-8,045.96	687.71	1,341.30	1,075.05	266.25	5.038		
20,800.00	12,644.00	21,096.66	12,884.00	136.59	136.76	-100.28	-8,145.96	687.71	1,341.30	1,071.89	269.41	4.979		
20,900.00	12,644.00	21,196.66	12,884.00	138.19	138.36	-100.28	-8,245.96	687.71	1,341.30	1,068.74	272.56	4.921		
21,000.00	12,644.00	21,296.66	12,884.00	139.78	139.96	-100.28	-8,345.96	687.71	1,341.30	1,065.58	275.72	4.865		
21,100.00	12,644.00	21,396.66	12,884.00	141.38	141.56	-100.28	-8,445.96	687.71	1,341.30	1,062.41	278.88	4.810		
21,200.00	12,644.00	21,496.66	12,884.00	142.98	143.15	-100.28	-8,545.96	687.71	1,341.30	1,059.25	282.05	4.756		
21,300.00	12,644.00	21,596.66	12,884.00	144.58	144.75	-100.28	-8,645.96	687.71	1,341.30	1,056.09	285.21	4.703		
21,400.00	12,644.00	21,696.66	12,884.00	146.19	146.36	-100.28	-8,745.96	687.71	1,341.30	1,052.92	288.38	4.651		
21,500.00	12,644.00	21,796.66	12,884.00	147.79	147.96	-100.28	-8,845.96	687.71	1,341.30	1,049.75	291.54	4.601		
21,600.00	12,644.00	21,896.66	12,884.00	149.39	149.56	-100.28	-8,945.96	687.71	1,341.30	1,046.59	294.71	4.551		
21,700.00	12,644.00	21,996.66	12,884.00	150.99	151.16	-100.28	-9,045.96	687.71	1,341.30	1,043.42	297.88	4.503		
21,800.00	12,644.00	22,096.66	12,884.00	152.60	152.76	-100.28	-9,145.96	687.71	1,341.30	1,040.25	301.05	4.455		
21,900.00	12,644.00	22,196.66	12,884.00	154.20	154.37	-100.28	-9,245.96	687.71	1,341.30	1,037.07	304.22	4.409		
22,000.00	12,644.00	22,296.66	12,884.00	155.81	155.97	-100.28	-9,345.96	687.71	1,341.30	1,033.90	307.40	4.363		
22,100.00	12,644.00	22,396.66	12,884.00	157.41	157.58	-100.28	-9,445.96	687.71	1,341.30	1,030.73	310.57	4.319		
22,200.00	12,644.00	22,496.66	12,884.00	159.02	159.19	-100.28	-9,545.96	687.71	1,341.30	1,027.55	313.75	4.275		
22,300.00	12,644.00	22,596.66	12,884.00	160.63	160.79	-100.28	-9,645.96	687.71	1,341.30	1,024.38	316.92	4.232		
22,400.00	12,644.00	22,696.66	12,884.00	162.24	162.40	-100.28	-9,745.96	687.71	1,341.30	1,021.20	320.10	4.190		
22,500.00	12,644.00	22,796.66	12,884.00	163.84	164.01	-100.28	-9,845.96	687.71	1,341.30	1,018.02	323.28	4.149		
22,551.46	12,644.00	22,848.12	12,884.00	164.67	164.83	-100.28	-9,897.42	687.71	1,341.30	1,016.38	324.91	4.128		
22,563.68	12,644.00	22,848.13	12,884.00	164.87	164.83	-100.28	-9,897.43	687.71	1,341.35	1,016.27	325.09	4.126 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 84H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
0.00	0.00	0.00	0.00	0.00	0.00	93.84	-175.08	2,607.69	2,613.56					
100.00	100.00	98.50	98.50	0.08	0.08	93.84	-175.08	2,607.69	2,613.56	2,613.39	0.17	N/A		
200.00	200.00	198.50	198.50	0.31	0.31	93.84	-175.08	2,607.69	2,613.56	2,612.95	0.61	4,251.522		
300.00	300.00	298.50	298.50	0.53	0.53	93.84	-175.08	2,607.69	2,613.56	2,612.50	1.06	2,455.737		
400.00	400.00	398.50	398.50	0.76	0.76	93.84	-175.08	2,607.69	2,613.56	2,612.05	1.51	1,726.491		
500.00	500.00	498.50	498.50	0.98	0.98	93.84	-175.08	2,607.69	2,613.56	2,611.60	1.96	1,331.187		
600.00	600.00	598.50	598.50	1.21	1.20	93.84	-175.08	2,607.69	2,613.56	2,611.15	2.41	1,083.178		
700.00	700.00	698.50	698.50	1.43	1.43	93.84	-175.08	2,607.69	2,613.56	2,610.70	2.86	913.068		
800.00	800.00	798.50	798.50	1.66	1.65	93.84	-175.08	2,607.69	2,613.56	2,610.25	3.31	789.136		
900.00	900.00	898.50	898.50	1.88	1.88	93.84	-175.08	2,607.69	2,613.56	2,609.80	3.76	694.826		
1,000.00	1,000.00	998.50	998.50	2.11	2.10	93.84	-175.08	2,607.69	2,613.56	2,609.35	4.21	620.652		
1,100.00	1,100.00	1,098.50	1,098.50	2.33	2.33	93.84	-175.08	2,607.69	2,613.56	2,608.90	4.66	560.787		
1,200.00	1,200.00	1,198.50	1,198.50	2.56	2.55	93.84	-175.08	2,607.69	2,613.56	2,608.45	5.11	511.454		
1,300.00	1,300.00	1,298.50	1,298.50	2.78	2.78	93.84	-175.08	2,607.69	2,613.56	2,608.00	5.56	470.100		
1,400.00	1,400.00	1,398.50	1,398.50	3.01	3.00	93.84	-175.08	2,607.69	2,613.56	2,607.55	6.01	434.932		
1,500.00	1,500.00	1,498.50	1,498.50	3.23	3.23	93.84	-175.08	2,607.69	2,613.56	2,607.10	6.46	404.660		
1,600.00	1,600.00	1,598.50	1,598.50	3.46	3.45	93.84	-175.08	2,607.69	2,613.56	2,606.65	6.91	378.328		
1,700.00	1,700.00	1,698.50	1,698.50	3.68	3.68	93.84	-175.08	2,607.69	2,613.56	2,606.20	7.36	355.214		
1,800.00	1,800.00	1,798.50	1,798.50	3.91	3.90	93.84	-175.08	2,607.69	2,613.56	2,605.75	7.81	334.761		
1,900.00	1,900.00	1,898.50	1,898.50	4.13	4.13	93.84	-175.08	2,607.69	2,613.56	2,605.30	8.26	316.535		
2,000.00	2,000.00	1,998.50	1,998.50	4.35	4.35	93.84	-175.08	2,607.69	2,613.56	2,604.85	8.71	300.191		
2,100.00	2,100.00	2,098.50	2,098.50	4.58	4.58	93.84	-175.08	2,607.69	2,613.56	2,604.41	9.16	285.453		
2,200.00	2,200.00	2,198.50	2,198.50	4.80	4.80	93.84	-175.08	2,607.69	2,613.56	2,603.96	9.61	272.094		
2,300.00	2,300.00	2,298.50	2,298.50	5.03	5.03	93.84	-175.08	2,607.69	2,613.56	2,603.51	10.05	259.929		
2,400.00	2,400.00	2,398.50	2,398.50	5.25	5.25	93.84	-175.08	2,607.69	2,613.56	2,603.06	10.50	248.805		
2,500.00	2,500.00	2,498.50	2,498.50	5.48	5.48	93.84	-175.08	2,607.69	2,613.56	2,602.61	10.95	238.595 CC, ES		
2,600.00	2,599.99	2,569.80	2,569.80	5.69	5.63	163.84	-174.92	2,608.08	2,614.94	2,603.62	11.32	230.950		
2,700.00	2,699.96	2,640.59	2,640.58	5.90	5.78	163.83	-174.44	2,609.29	2,619.11	2,607.43	11.68	224.294		
2,800.00	2,799.86	2,700.00	2,699.96	6.11	5.90	163.81	-173.78	2,610.93	2,626.09	2,614.09	12.00	218.768		
2,900.00	2,899.68	2,781.63	2,781.52	6.33	6.08	163.78	-172.50	2,614.11	2,635.78	2,623.40	12.38	212.896		
2,949.81	2,949.35	2,816.60	2,816.44	6.43	6.15	163.76	-171.82	2,615.80	2,641.66	2,629.10	12.56	210.389		
3,000.00	2,999.38	2,851.75	2,851.53	6.54	6.23	163.76	-171.05	2,617.70	2,648.06	2,635.33	12.73	207.986		
3,100.00	3,099.08	2,921.65	2,921.27	6.76	6.38	163.75	-169.29	2,622.08	2,661.64	2,648.56	13.08	203.474		
3,200.00	3,198.77	3,000.00	2,999.37	6.99	6.55	163.72	-166.94	2,627.92	2,676.32	2,662.87	13.45	198.972		
3,300.00	3,298.46	3,070.29	3,069.35	7.21	6.70	163.70	-164.53	2,633.92	2,691.99	2,678.19	13.80	195.050		
3,400.00	3,398.15	3,168.99	3,167.62	7.44	6.92	163.66	-161.08	2,642.51	2,707.93	2,693.70	14.23	190.359		
3,500.00	3,497.84	3,267.70	3,265.89	7.67	7.15	163.62	-157.62	2,651.10	2,723.86	2,709.21	14.65	185.900		
3,600.00	3,597.54	3,366.40	3,364.16	7.90	7.38	163.58	-154.17	2,659.69	2,739.80	2,724.72	15.08	181.666		
3,700.00	3,697.23	3,465.11	3,462.43	8.13	7.61	163.54	-150.71	2,668.28	2,755.74	2,740.23	15.51	177.642		
3,800.00	3,796.92	3,563.81	3,560.70	8.37	7.84	163.50	-147.26	2,676.86	2,771.68	2,755.74	15.95	173.813		
3,900.00	3,896.61	3,662.52	3,658.97	8.60	8.07	163.47	-143.80	2,685.45	2,787.62	2,771.24	16.38	170.168		
4,000.00	3,996.30	3,761.22	3,757.24	8.84	8.31	163.43	-140.35	2,694.04	2,803.57	2,786.75	16.82	166.694		
4,100.00	4,096.00	3,859.93	3,855.51	9.08	8.55	163.39	-136.89	2,702.63	2,819.51	2,802.25	17.26	163.381		
4,200.00	4,195.69	3,958.63	3,953.78	9.31	8.79	163.36	-133.44	2,711.22	2,835.46	2,817.76	17.70	160.220		
4,300.00	4,295.38	4,057.34	4,052.05	9.55	9.03	163.32	-129.98	2,719.81	2,851.40	2,833.26	18.14	157.199		
4,400.00	4,395.07	4,156.04	4,150.32	9.79	9.27	163.29	-126.53	2,728.40	2,867.35	2,848.77	18.58	154.312		
4,500.00	4,494.76	4,254.75	4,248.59	10.04	9.51	163.25	-123.07	2,736.99	2,883.30	2,864.27	19.03	151.550		
4,600.00	4,594.46	4,353.45	4,346.86	10.28	9.76	163.22	-119.62	2,745.58	2,899.25	2,879.78	19.47	148.906		
4,700.00	4,694.15	4,452.16	4,445.13	10.52	10.00	163.18	-116.16	2,754.17	2,915.20	2,895.28	19.92	146.372		
4,800.00	4,793.84	4,550.86	4,543.40	10.76	10.25	163.15	-112.71	2,762.76	2,931.15	2,910.79	20.36	143.942		
4,900.00	4,893.53	4,649.57	4,641.67	11.01	10.50	163.12	-109.25	2,771.35	2,947.10	2,926.29	20.81	141.611		
5,000.00	4,993.22	4,748.27	4,739.94	11.25	10.75	163.08	-105.80	2,779.94	2,963.05	2,941.79	21.26	139.372		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 84H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				+N-S (usft)	+E-W (usft)	
5,100.00	5,092.92	4,846.98	4,838.21	11.50	11.00	163.05	-102.34	2,788.53	2,979.01	2,957.30	21.71	137.221		
5,200.00	5,192.61	4,945.68	4,936.48	11.74	11.25	163.02	-98.89	2,797.12	2,994.96	2,972.80	22.16	135.153		
5,300.00	5,292.30	5,044.39	5,034.75	11.99	11.50	162.99	-95.43	2,805.71	3,010.92	2,988.31	22.61	133.163		
5,400.00	5,391.99	5,143.09	5,133.02	12.24	11.75	162.95	-91.98	2,814.30	3,026.88	3,003.81	23.06	131.247		
5,500.00	5,491.68	5,241.80	5,231.29	12.48	12.00	162.92	-88.52	2,822.89	3,042.83	3,019.32	23.51	129.401		
5,600.00	5,591.38	5,340.50	5,329.56	12.73	12.25	162.89	-85.07	2,831.48	3,058.79	3,034.83	23.97	127.622		
5,700.00	5,691.07	5,439.21	5,427.83	12.98	12.51	162.86	-81.61	2,840.07	3,074.75	3,050.33	24.42	125.906		
5,800.00	5,790.76	5,537.91	5,526.10	13.23	12.76	162.83	-78.16	2,848.66	3,090.71	3,065.84	24.87	124.250		
5,900.00	5,890.45	5,636.62	5,624.37	13.48	13.02	162.80	-74.70	2,857.25	3,106.67	3,081.35	25.33	122.651		
6,000.00	5,990.14	5,735.32	5,722.64	13.72	13.27	162.77	-71.25	2,865.84	3,122.64	3,096.85	25.78	121.106		
6,100.00	6,089.84	5,834.03	5,820.91	13.97	13.53	162.74	-67.79	2,874.43	3,138.60	3,112.36	26.24	119.612		
6,200.00	6,189.53	5,932.73	5,919.18	14.22	13.78	162.71	-64.34	2,883.02	3,154.56	3,127.87	26.70	118.168		
6,300.00	6,289.22	6,031.44	6,017.45	14.47	14.04	162.68	-60.88	2,891.61	3,170.53	3,143.38	27.15	116.770		
6,400.00	6,388.91	6,130.14	6,115.72	14.72	14.29	162.66	-57.43	2,900.20	3,186.49	3,158.88	27.61	115.417		
6,500.00	6,488.60	6,228.85	6,213.99	14.97	14.55	162.63	-53.97	2,908.79	3,202.46	3,174.39	28.07	114.107		
6,600.00	6,588.30	6,327.55	6,312.26	15.22	14.81	162.60	-50.52	2,917.37	3,218.43	3,189.90	28.52	112.837		
6,700.00	6,687.99	6,426.26	6,410.53	15.47	15.07	162.57	-47.06	2,925.96	3,234.39	3,205.41	28.98	111.605		
6,800.00	6,787.68	6,524.96	6,508.80	15.72	15.32	162.54	-43.61	2,934.55	3,250.36	3,220.92	29.44	110.411		
6,900.00	6,887.37	6,623.67	6,607.07	15.98	15.58	162.52	-40.15	2,943.14	3,266.33	3,236.43	29.90	109.253		
7,000.00	6,987.06	6,722.37	6,705.34	16.23	15.84	162.49	-36.70	2,951.73	3,282.30	3,251.94	30.36	108.128		
7,100.00	7,086.76	6,821.08	6,803.61	16.48	16.10	162.46	-33.24	2,960.32	3,298.27	3,267.46	30.81	107.035		
7,200.00	7,186.45	6,919.78	6,901.88	16.73	16.36	162.44	-29.79	2,968.91	3,314.24	3,282.97	31.27	105.974		
7,300.00	7,286.14	7,018.49	7,000.15	16.98	16.62	162.41	-26.33	2,977.50	3,330.21	3,298.48	31.73	104.943		
7,400.00	7,385.83	7,117.19	7,098.42	17.23	16.88	162.39	-22.88	2,986.09	3,346.19	3,313.99	32.19	103.940		
7,500.00	7,485.52	7,215.90	7,196.69	17.49	17.13	162.36	-19.42	2,994.68	3,362.16	3,329.51	32.65	102.965		
7,600.00	7,585.22	7,314.60	7,294.96	17.74	17.39	162.33	-15.97	3,003.27	3,378.13	3,345.02	33.11	102.016		
7,700.00	7,684.91	7,413.31	7,393.22	17.99	17.65	162.31	-12.51	3,011.86	3,394.11	3,360.53	33.57	101.092		
7,800.00	7,784.60	7,512.01	7,491.49	18.24	17.91	162.28	-9.06	3,020.45	3,410.08	3,376.05	34.04	100.193		
7,900.00	7,884.29	7,610.72	7,589.76	18.50	18.17	162.26	-5.60	3,029.04	3,426.06	3,391.56	34.50	99.317		
8,000.00	7,983.98	7,709.42	7,688.03	18.75	18.43	162.24	-2.15	3,037.63	3,442.03	3,407.08	34.96	98.464		
8,100.00	8,083.68	7,808.13	7,786.30	19.00	18.70	162.21	1.31	3,046.22	3,458.01	3,422.59	35.42	97.632		
8,200.00	8,183.37	7,906.83	7,884.57	19.25	18.96	162.19	4.76	3,054.81	3,473.99	3,438.11	35.88	96.821		
8,300.00	8,283.06	8,005.54	7,982.84	19.51	19.22	162.16	8.22	3,063.40	3,489.97	3,453.62	36.34	96.030		
8,400.00	8,382.75	8,104.24	8,081.11	19.76	19.48	162.14	11.67	3,071.99	3,505.94	3,469.14	36.80	95.259		
8,500.00	8,482.44	8,202.95	8,179.38	20.01	19.74	162.12	15.13	3,080.58	3,521.92	3,484.66	37.27	94.506		
8,600.00	8,582.14	8,301.65	8,277.65	20.27	20.00	162.09	18.58	3,089.17	3,537.90	3,500.17	37.73	93.771		
8,700.00	8,681.83	8,400.36	8,375.92	20.52	20.26	162.07	22.04	3,097.76	3,553.88	3,515.69	38.19	93.054		
8,800.00	8,781.52	8,499.06	8,474.19	20.77	20.52	162.05	25.49	3,106.35	3,569.86	3,531.21	38.65	92.353		
8,900.00	8,881.21	8,597.77	8,572.46	21.03	20.78	162.03	28.95	3,114.94	3,585.85	3,546.73	39.12	91.669		
9,000.00	8,980.90	8,696.47	8,670.73	21.28	21.05	162.00	32.40	3,123.53	3,601.83	3,562.25	39.58	91.000		
9,100.00	9,080.60	8,795.17	8,769.00	21.54	21.31	161.98	35.86	3,132.12	3,617.81	3,577.77	40.04	90.346		
9,200.00	9,180.29	8,893.88	8,867.27	21.79	21.57	161.96	39.31	3,140.71	3,633.79	3,593.29	40.51	89.707		
9,300.00	9,279.98	8,992.58	8,965.54	22.04	21.83	161.94	42.77	3,149.30	3,649.78	3,608.81	40.97	89.082		
9,400.00	9,379.67	9,091.29	9,063.81	22.30	22.09	161.92	46.22	3,157.88	3,665.76	3,624.33	41.43	88.471		
9,500.00	9,479.36	9,189.99	9,162.08	22.55	22.36	161.89	49.68	3,166.47	3,681.74	3,639.85	41.90	87.873		
9,600.00	9,579.05	9,288.70	9,260.35	22.81	22.62	161.87	53.13	3,175.06	3,697.73	3,655.37	42.36	87.288		
9,700.00	9,678.75	9,387.40	9,358.62	23.06	22.88	161.85	56.59	3,183.65	3,713.71	3,670.89	42.83	86.715		
9,800.00	9,778.44	9,486.11	9,456.89	23.31	23.14	161.83	60.04	3,192.24	3,729.70	3,686.41	43.29	86.154		
9,900.00	9,878.13	9,584.81	9,555.16	23.57	23.40	161.81	63.50	3,200.83	3,745.69	3,701.93	43.76	85.604		
10,000.00	9,977.82	9,683.52	9,653.43	23.82	23.67	161.79	66.95	3,209.42	3,761.67	3,717.45	44.22	85.066		
10,100.00	10,077.51	9,782.22	9,751.70	24.08	23.93	161.77	70.41	3,218.01	3,777.66	3,732.98	44.69	84.539		
10,200.00	10,177.21	9,880.93	9,849.97	24.33	24.19	161.75	73.86	3,226.60	3,793.65	3,748.50	45.15	84.023		

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
 Project: Lea County, NM (NAD-83)
 Reference Site: Fighting Okra 18-19 Fed
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
 MD Reference: 3371' GE + 25' KB @ 3396.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 84H - OH - Plan #1														Offset Site Error: 0.00 usft	
Survey Program: O-LEAM MWD+HDGM														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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
10,300.00	10,276.90	9,979.63	9,948.24	24.59	24.46	161.73	77.32	3,235.19	3,809.64	3,764.02	45.62	83.517			
10,400.00	10,376.59	10,078.34	10,046.51	24.84	24.72	161.71	80.77	3,243.78	3,825.63	3,779.55	46.08	83.021			
10,500.00	10,476.28	10,177.04	10,144.78	25.10	24.98	161.69	84.23	3,252.37	3,841.61	3,795.07	46.55	82.534			
10,600.00	10,575.97	10,275.75	10,243.05	25.35	25.24	161.67	87.68	3,260.96	3,857.60	3,810.59	47.01	82.057			
10,700.00	10,675.67	10,374.45	10,341.32	25.61	25.51	161.65	91.14	3,269.55	3,873.59	3,826.12	47.48	81.589			
10,800.00	10,775.36	10,473.16	10,439.59	25.86	25.77	161.63	94.59	3,278.14	3,889.58	3,841.64	47.94	81.130			
10,900.00	10,875.05	10,571.86	10,537.86	26.12	26.03	161.61	98.05	3,286.73	3,905.58	3,857.17	48.41	80.680			
11,000.00	10,974.74	10,670.57	10,636.13	26.37	26.30	161.60	101.50	3,295.32	3,921.57	3,872.69	48.87	80.237			
11,076.14	11,050.65	10,745.72	10,710.95	26.57	26.50	161.58	104.13	3,301.86	3,933.74	3,884.51	49.23	79.906			
11,100.00	11,074.44	10,769.28	10,734.41	26.62	26.56	161.59	104.96	3,303.91	3,937.51	3,888.18	49.33	79.812			
11,200.00	11,174.22	10,868.17	10,832.86	26.81	26.82	161.61	108.42	3,312.51	3,952.30	3,902.54	49.75	79.438			
11,300.00	11,274.10	10,967.27	10,931.52	26.99	27.09	161.62	111.89	3,321.14	3,965.44	3,915.27	50.17	79.042			
11,400.00	11,374.06	11,066.57	11,030.38	27.17	27.35	161.62	115.36	3,329.78	3,976.94	3,926.36	50.58	78.623			
11,500.00	11,474.05	11,284.52	11,247.62	27.33	27.81	161.56	121.87	3,345.97	3,985.80	3,934.56	51.24	77.786			
11,525.95	11,500.00	11,356.19	11,319.18	27.38	27.94	91.53	123.35	3,349.64	3,987.17	3,935.74	51.43	77.522			
11,600.00	11,574.05	11,561.08	11,523.96	27.51	28.30	91.50	125.73	3,355.56	3,989.29	3,937.33	51.97	76.769			
11,700.00	11,674.05	11,709.67	11,672.55	27.71	28.56	91.49	125.92	3,356.03	3,989.46	3,937.01	52.45	76.065			
11,800.00	11,774.05	11,809.67	11,772.55	27.91	28.75	91.49	125.92	3,356.03	3,989.46	3,936.60	52.86	75.468			
11,900.00	11,874.05	11,909.67	11,872.55	28.11	28.94	91.49	125.92	3,356.03	3,989.46	3,936.18	53.28	74.881			
12,000.00	11,974.05	12,009.67	11,972.55	28.31	29.14	91.49	125.92	3,356.03	3,989.46	3,935.76	53.69	74.301			
12,096.99	12,071.04	12,106.66	12,069.54	28.50	29.33	91.49	125.92	3,356.03	3,989.46	3,935.36	54.10	73.747			
12,100.00	12,074.05	12,109.67	12,072.55	28.51	29.33	-88.51	125.92	3,356.03	3,989.46	3,935.35	54.11	73.730			
12,150.00	12,123.97	12,157.87	12,120.75	28.59	29.42	-88.54	125.84	3,356.03	3,989.40	3,935.11	54.29	73.482			
12,200.00	12,173.49	12,200.00	12,162.81	28.67	29.49	-88.60	123.58	3,356.03	3,989.29	3,934.86	54.44	73.283			
12,250.00	12,222.23	12,242.99	12,205.43	28.73	29.55	-88.67	118.09	3,356.03	3,989.18	3,934.62	54.57	73.107			
12,300.00	12,269.83	12,285.93	12,247.49	28.79	29.60	-88.75	109.44	3,356.03	3,989.06	3,934.38	54.68	72.954			
12,350.00	12,315.90	12,329.19	12,289.07	28.85	29.65	-88.84	97.56	3,356.03	3,988.93	3,934.15	54.78	72.819			
12,400.00	12,360.12	12,372.80	12,329.97	28.90	29.69	-88.93	82.44	3,356.03	3,988.80	3,933.94	54.87	72.700			
12,450.00	12,402.13	12,416.81	12,369.95	28.94	29.72	-89.04	64.08	3,356.03	3,988.68	3,933.73	54.95	72.591			
12,500.00	12,441.63	12,461.26	12,408.78	28.98	29.75	-89.14	42.48	3,356.03	3,988.56	3,933.53	55.02	72.489			
12,550.00	12,478.30	12,506.19	12,446.22	29.02	29.78	-89.26	17.65	3,356.03	3,988.44	3,933.34	55.10	72.387			
12,600.00	12,511.88	12,550.00	12,480.74	29.06	29.80	-89.38	-9.31	3,356.03	3,988.34	3,933.16	55.18	72.281			
12,650.00	12,542.10	12,597.70	12,515.86	29.09	29.81	-89.51	-41.57	3,356.03	3,988.25	3,932.98	55.27	72.161			
12,700.00	12,568.73	12,644.38	12,547.51	29.14	29.83	-89.63	-75.86	3,356.03	3,988.18	3,932.81	55.37	72.024			
12,750.00	12,591.58	12,691.74	12,576.67	29.19	29.85	-89.77	-113.16	3,356.03	3,988.13	3,932.64	55.50	71.863			
12,800.00	12,610.47	12,739.83	12,603.02	29.25	29.87	-89.90	-153.37	3,356.03	3,988.11	3,932.46	55.64	71.674			
12,835.72	12,621.45	12,774.66	12,619.95	29.30	29.88	-90.00	-183.81	3,356.03	3,988.10	3,932.33	55.77	71.516			
12,850.00	12,625.25	12,788.70	12,626.25	29.33	29.89	-90.04	-196.35	3,356.03	3,988.10	3,932.29	55.82	71.452			
12,900.00	12,635.81	12,838.40	12,646.03	29.43	29.92	-90.18	-241.93	3,356.03	3,988.12	3,932.10	56.02	71.193			
12,950.00	12,642.07	12,888.98	12,662.03	29.54	29.97	-90.31	-289.90	3,356.03	3,988.16	3,931.91	56.25	70.896			
12,996.99	12,644.00	12,937.36	12,673.32	29.68	30.03	-90.44	-336.92	3,356.03	3,988.22	3,931.72	56.51	70.581			
13,000.00	12,644.00	12,940.48	12,673.91	29.69	30.03	-90.45	-339.99	3,356.03	3,988.23	3,931.71	56.52	70.560			
13,100.00	12,644.00	13,047.00	12,684.00	30.04	30.23	-90.60	-445.88	3,356.03	3,988.32	3,931.13	57.18	69.748			
13,200.00	12,644.00	13,147.09	12,684.00	30.48	30.51	-90.60	-545.96	3,356.03	3,988.32	3,930.32	58.00	68.764			
13,300.00	12,644.00	13,247.09	12,684.00	31.00	30.89	-90.60	-645.96	3,356.03	3,988.32	3,929.34	58.98	67.625			
13,400.00	12,644.00	13,347.09	12,684.00	31.61	31.35	-90.60	-745.96	3,356.03	3,988.32	3,928.20	60.12	66.345			
13,500.00	12,644.00	13,447.09	12,684.00	32.29	31.89	-90.60	-845.96	3,356.03	3,988.32	3,926.91	61.41	64.949			
13,600.00	12,644.00	13,547.09	12,684.00	33.04	32.51	-90.60	-945.96	3,356.03	3,988.32	3,925.47	62.84	63.466			
13,700.00	12,644.00	13,647.09	12,684.00	33.85	33.20	-90.60	-1,045.96	3,356.03	3,988.32	3,923.91	64.41	61.921			
13,800.00	12,644.00	13,747.09	12,684.00	34.72	33.96	-90.60	-1,145.96	3,356.03	3,988.32	3,922.21	66.10	60.335			
13,900.00	12,644.00	13,847.09	12,684.00	35.64	34.78	-90.60	-1,245.96	3,356.03	3,988.32	3,920.40	67.91	58.728			
14,000.00	12,644.00	13,947.09	12,684.00	36.62	35.66	-90.60	-1,345.96	3,356.03	3,988.32	3,918.49	69.83	57.118			

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 84H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
14,100.00	12,644.00	14,047.09	12,684.00	37.64	36.59	-90.60	-1,445.96	3,356.03	3,988.32	3,916.48	71.84	55.517			
14,200.00	12,644.00	14,147.09	12,684.00	38.70	37.56	-90.60	-1,545.96	3,356.03	3,988.32	3,914.37	73.94	53.939			
14,300.00	12,644.00	14,247.09	12,684.00	39.80	38.59	-90.60	-1,645.96	3,356.03	3,988.32	3,912.19	76.13	52.391			
14,400.00	12,644.00	14,347.09	12,684.00	40.94	39.65	-90.60	-1,745.96	3,356.03	3,988.32	3,909.93	78.39	50.880			
14,500.00	12,644.00	14,447.09	12,684.00	42.11	40.75	-90.60	-1,845.96	3,356.03	3,988.32	3,907.60	80.72	49.412			
14,600.00	12,644.00	14,547.09	12,684.00	43.30	41.89	-90.60	-1,945.96	3,356.03	3,988.32	3,905.21	83.11	47.989			
14,700.00	12,644.00	14,647.09	12,684.00	44.53	43.06	-90.60	-2,045.96	3,356.03	3,988.32	3,902.76	85.56	46.615			
14,800.00	12,644.00	14,747.09	12,684.00	45.78	44.25	-90.60	-2,145.96	3,356.03	3,988.32	3,900.25	88.06	45.289			
14,900.00	12,644.00	14,847.09	12,684.00	47.06	45.48	-90.60	-2,245.96	3,356.03	3,988.32	3,897.70	90.62	44.013			
15,000.00	12,644.00	14,947.09	12,684.00	48.36	46.73	-90.60	-2,345.96	3,356.03	3,988.32	3,895.10	93.21	42.787			
15,100.00	12,644.00	15,047.09	12,684.00	49.67	48.00	-90.60	-2,445.96	3,356.03	3,988.32	3,892.46	95.85	41.609			
15,200.00	12,644.00	15,147.09	12,684.00	51.01	49.30	-90.60	-2,545.96	3,356.03	3,988.32	3,889.79	98.53	40.479			
15,300.00	12,644.00	15,247.09	12,684.00	52.36	50.61	-90.60	-2,645.96	3,356.03	3,988.32	3,887.08	101.24	39.395			
15,400.00	12,644.00	15,347.09	12,684.00	53.73	51.94	-90.60	-2,745.96	3,356.03	3,988.32	3,884.33	103.98	38.355			
15,500.00	12,644.00	15,447.09	12,684.00	55.11	53.29	-90.60	-2,845.96	3,356.03	3,988.32	3,881.56	106.76	37.359			
15,600.00	12,644.00	15,547.09	12,684.00	56.51	54.65	-90.60	-2,945.96	3,356.03	3,988.32	3,878.76	109.56	36.404			
15,700.00	12,644.00	15,647.09	12,684.00	57.92	56.03	-90.60	-3,045.96	3,356.03	3,988.32	3,875.93	112.38	35.489			
15,800.00	12,644.00	15,747.09	12,684.00	59.34	57.43	-90.60	-3,145.96	3,356.03	3,988.32	3,873.08	115.23	34.611			
15,900.00	12,644.00	15,847.09	12,684.00	60.77	58.83	-90.60	-3,245.96	3,356.03	3,988.32	3,870.21	118.10	33.770			
16,000.00	12,644.00	15,947.09	12,684.00	62.21	60.25	-90.60	-3,345.96	3,356.03	3,988.32	3,867.32	120.99	32.963			
16,100.00	12,644.00	16,047.09	12,684.00	63.66	61.67	-90.60	-3,445.96	3,356.03	3,988.32	3,864.41	123.90	32.189			
16,200.00	12,644.00	16,147.09	12,684.00	65.12	63.11	-90.60	-3,545.96	3,356.03	3,988.32	3,861.48	126.83	31.446			
16,300.00	12,644.00	16,247.09	12,684.00	66.58	64.56	-90.60	-3,645.96	3,356.03	3,988.32	3,858.54	129.78	30.732			
16,400.00	12,644.00	16,347.09	12,684.00	68.06	66.01	-90.60	-3,745.96	3,356.03	3,988.32	3,855.58	132.73	30.047			
16,500.00	12,644.00	16,447.09	12,684.00	69.54	67.48	-90.60	-3,845.96	3,356.03	3,988.32	3,852.61	135.71	29.389			
16,600.00	12,644.00	16,547.09	12,684.00	71.03	68.95	-90.60	-3,945.96	3,356.03	3,988.32	3,849.62	138.69	28.756			
16,700.00	12,644.00	16,647.09	12,684.00	72.52	70.42	-90.60	-4,045.96	3,356.03	3,988.32	3,846.62	141.69	28.148			
16,800.00	12,644.00	16,747.09	12,684.00	74.02	71.91	-90.60	-4,145.96	3,356.03	3,988.32	3,843.61	144.70	27.562			
16,900.00	12,644.00	16,847.09	12,684.00	75.53	73.40	-90.60	-4,245.96	3,356.03	3,988.32	3,840.59	147.73	26.998			
17,000.00	12,644.00	16,947.09	12,684.00	77.04	74.90	-90.60	-4,345.96	3,356.03	3,988.32	3,837.56	150.76	26.455			
17,100.00	12,644.00	17,047.09	12,684.00	78.56	76.40	-90.60	-4,445.96	3,356.03	3,988.32	3,834.52	153.80	25.932			
17,200.00	12,644.00	17,147.09	12,684.00	80.08	77.91	-90.60	-4,545.96	3,356.03	3,988.32	3,831.47	156.85	25.428			
17,300.00	12,644.00	17,247.09	12,684.00	81.60	79.42	-90.60	-4,645.96	3,356.03	3,988.32	3,828.41	159.91	24.941			
17,400.00	12,644.00	17,347.09	12,684.00	83.13	80.94	-90.60	-4,745.96	3,356.03	3,988.32	3,825.34	162.98	24.472			
17,500.00	12,644.00	17,447.09	12,684.00	84.67	82.46	-90.60	-4,845.96	3,356.03	3,988.32	3,822.26	166.05	24.018			
17,600.00	12,644.00	17,547.09	12,684.00	86.20	83.99	-90.60	-4,945.96	3,356.03	3,988.32	3,819.18	169.13	23.581			
17,700.00	12,644.00	17,647.09	12,684.00	87.75	85.52	-90.60	-5,045.96	3,356.03	3,988.32	3,816.09	172.22	23.158			
17,800.00	12,644.00	17,747.09	12,684.00	89.29	87.05	-90.60	-5,145.96	3,356.03	3,988.32	3,813.00	175.32	22.749			
17,900.00	12,644.00	17,847.09	12,684.00	90.84	88.59	-90.60	-5,245.96	3,356.03	3,988.32	3,809.89	178.42	22.353			
18,000.00	12,644.00	17,947.09	12,684.00	92.39	90.13	-90.60	-5,345.96	3,356.03	3,988.32	3,806.79	181.53	21.971			
18,100.00	12,644.00	18,047.09	12,684.00	93.94	91.68	-90.60	-5,445.96	3,356.03	3,988.32	3,803.67	184.64	21.600			
18,200.00	12,644.00	18,147.09	12,684.00	95.50	93.22	-90.60	-5,545.96	3,356.03	3,988.32	3,800.55	187.76	21.241			
18,300.00	12,644.00	18,247.09	12,684.00	97.05	94.78	-90.60	-5,645.96	3,356.03	3,988.32	3,797.43	190.89	20.894			
18,400.00	12,644.00	18,347.09	12,684.00	98.61	96.33	-90.60	-5,745.96	3,356.03	3,988.32	3,794.30	194.01	20.557			
18,500.00	12,644.00	18,447.09	12,684.00	100.18	97.88	-90.60	-5,845.96	3,356.03	3,988.32	3,791.17	197.15	20.230			
18,600.00	12,644.00	18,547.09	12,684.00	101.74	99.44	-90.60	-5,945.96	3,356.03	3,988.32	3,788.03	200.28	19.913			
18,700.00	12,644.00	18,647.09	12,684.00	103.31	101.00	-90.60	-6,045.96	3,356.03	3,988.32	3,784.89	203.43	19.606			
18,800.00	12,644.00	18,747.09	12,684.00	104.88	102.57	-90.60	-6,145.96	3,356.03	3,988.32	3,781.74	206.57	19.307			
18,900.00	12,644.00	18,847.09	12,684.00	106.45	104.13	-90.60	-6,245.96	3,356.03	3,988.32	3,778.60	209.72	19.017			
19,000.00	12,644.00	18,947.09	12,684.00	108.02	105.70	-90.60	-6,345.96	3,356.03	3,988.32	3,775.44	212.87	18.736			
19,100.00	12,644.00	19,047.09	12,684.00	109.60	107.27	-90.60	-6,445.96	3,356.03	3,988.32	3,772.29	216.03	18.462			
19,200.00	12,644.00	19,147.09	12,684.00	111.18	108.84	-90.60	-6,545.96	3,356.03	3,988.32	3,769.13	219.19	18.196			

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 84H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													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		
19,300.00	12,644.00	19,247.09	12,684.00	112.75	110.41	-90.60	-6,645.96	3,356.03	3,988.32	3,765.96	222.35	17.937		
19,400.00	12,644.00	19,347.09	12,684.00	114.33	111.99	-90.60	-6,745.96	3,356.03	3,988.32	3,762.80	225.52	17.685		
19,500.00	12,644.00	19,447.09	12,684.00	115.92	113.56	-90.60	-6,845.96	3,356.03	3,988.32	3,759.63	228.69	17.440		
19,600.00	12,644.00	19,547.09	12,684.00	117.50	115.14	-90.60	-6,945.96	3,356.03	3,988.32	3,756.46	231.86	17.202		
19,700.00	12,644.00	19,647.09	12,684.00	119.08	116.72	-90.60	-7,045.96	3,356.03	3,988.32	3,753.28	235.03	16.969		
19,800.00	12,644.00	19,747.09	12,684.00	120.67	118.30	-90.60	-7,145.96	3,356.03	3,988.32	3,750.11	238.21	16.743		
19,900.00	12,644.00	19,847.09	12,684.00	122.26	119.89	-90.60	-7,245.96	3,356.03	3,988.32	3,746.93	241.39	16.522		
20,000.00	12,644.00	19,947.09	12,684.00	123.84	121.47	-90.60	-7,345.96	3,356.03	3,988.32	3,743.75	244.57	16.308		
20,100.00	12,644.00	20,047.09	12,684.00	125.43	123.05	-90.60	-7,445.96	3,356.03	3,988.32	3,740.56	247.75	16.098		
20,200.00	12,644.00	20,147.09	12,684.00	127.02	124.64	-90.60	-7,545.96	3,356.03	3,988.32	3,737.38	250.94	15.894		
20,300.00	12,644.00	20,247.09	12,684.00	128.62	126.23	-90.60	-7,645.96	3,356.03	3,988.32	3,734.19	254.13	15.694		
20,400.00	12,644.00	20,347.09	12,684.00	130.21	127.82	-90.60	-7,745.96	3,356.03	3,988.32	3,731.00	257.32	15.500		
20,500.00	12,644.00	20,447.09	12,684.00	131.80	129.41	-90.60	-7,845.96	3,356.03	3,988.32	3,727.81	260.51	15.310		
20,600.00	12,644.00	20,547.09	12,684.00	133.40	131.00	-90.60	-7,945.96	3,356.03	3,988.32	3,724.61	263.70	15.124		
20,700.00	12,644.00	20,647.09	12,684.00	134.99	132.59	-90.60	-8,045.96	3,356.03	3,988.32	3,721.42	266.90	14.943		
20,800.00	12,644.00	20,747.09	12,684.00	136.59	134.18	-90.60	-8,145.96	3,356.03	3,988.32	3,718.22	270.10	14.766		
20,900.00	12,644.00	20,847.09	12,684.00	138.19	135.78	-90.60	-8,245.96	3,356.03	3,988.32	3,715.02	273.30	14.593		
21,000.00	12,644.00	20,947.09	12,684.00	139.78	137.37	-90.60	-8,345.96	3,356.03	3,988.32	3,711.82	276.50	14.425		
21,100.00	12,644.00	21,047.09	12,684.00	141.38	138.97	-90.60	-8,445.96	3,356.03	3,988.32	3,708.62	279.70	14.259		
21,200.00	12,644.00	21,147.09	12,684.00	142.98	140.57	-90.60	-8,545.96	3,356.03	3,988.32	3,705.41	282.90	14.098		
21,300.00	12,644.00	21,247.09	12,684.00	144.58	142.16	-90.60	-8,645.96	3,356.03	3,988.32	3,702.21	286.11	13.940		
21,400.00	12,644.00	21,347.09	12,684.00	146.19	143.76	-90.60	-8,745.96	3,356.03	3,988.32	3,699.00	289.31	13.785		
21,500.00	12,644.00	21,447.09	12,684.00	147.79	145.36	-90.60	-8,845.96	3,356.03	3,988.32	3,695.79	292.52	13.634		
21,600.00	12,644.00	21,547.09	12,684.00	149.39	146.96	-90.60	-8,945.96	3,356.03	3,988.32	3,692.58	295.73	13.486		
21,700.00	12,644.00	21,647.09	12,684.00	150.99	148.56	-90.60	-9,045.96	3,356.03	3,988.32	3,689.37	298.94	13.341		
21,800.00	12,644.00	21,747.09	12,684.00	152.60	150.17	-90.60	-9,145.96	3,356.03	3,988.32	3,686.16	302.15	13.200		
21,900.00	12,644.00	21,847.09	12,684.00	154.20	151.77	-90.60	-9,245.96	3,356.03	3,988.32	3,682.95	305.37	13.061		
22,000.00	12,644.00	21,947.09	12,684.00	155.81	153.37	-90.60	-9,345.96	3,356.03	3,988.32	3,679.73	308.58	12.925		
22,100.00	12,644.00	22,047.09	12,684.00	157.41	154.97	-90.60	-9,445.96	3,356.03	3,988.32	3,676.52	311.80	12.791		
22,200.00	12,644.00	22,147.09	12,684.00	159.02	156.58	-90.60	-9,545.96	3,356.03	3,988.32	3,673.30	315.01	12.661		
22,300.00	12,644.00	22,247.09	12,684.00	160.63	158.18	-90.60	-9,645.96	3,356.03	3,988.32	3,670.09	318.23	12.533		
22,400.00	12,644.00	22,347.09	12,684.00	162.24	159.79	-90.60	-9,745.96	3,356.03	3,988.32	3,666.87	321.45	12.407		
22,500.00	12,644.00	22,447.09	12,684.00	163.84	161.40	-90.60	-9,845.96	3,356.03	3,988.32	3,663.65	324.67	12.284		
22,501.68	12,644.00	22,448.77	12,684.00	163.87	161.42	-90.60	-9,847.64	3,356.03	3,988.32	3,663.59	324.72	12.282		
22,563.68	12,644.00	22,473.03	12,684.00	164.87	161.81	-90.60	-9,871.91	3,356.03	3,988.49	3,662.38	326.11	12.230 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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 85H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	93.89	-175.08	2,577.70	2,583.64						
100.00	100.00	98.10	98.10	0.08	0.08	93.89	-175.08	2,577.70	2,583.64	2,583.47	0.17	N/A			
200.00	200.00	198.10	198.10	0.31	0.30	93.89	-175.08	2,577.70	2,583.64	2,583.03	0.61	4,209.004			
300.00	300.00	298.10	298.10	0.53	0.53	93.89	-175.08	2,577.70	2,583.64	2,582.58	1.06	2,429.675			
400.00	400.00	398.10	398.10	0.76	0.75	93.89	-175.08	2,577.70	2,583.64	2,582.13	1.51	1,707.739			
500.00	500.00	498.10	498.10	0.98	0.98	93.89	-175.08	2,577.70	2,583.64	2,581.68	1.96	1,316.549			
600.00	600.00	598.10	598.10	1.21	1.20	93.89	-175.08	2,577.70	2,583.64	2,581.23	2.41	1,071.176			
700.00	700.00	698.10	698.10	1.43	1.43	93.89	-175.08	2,577.70	2,583.64	2,580.78	2.86	902.898			
800.00	800.00	798.10	798.10	1.66	1.65	93.89	-175.08	2,577.70	2,583.64	2,580.33	3.31	780.313			
900.00	900.00	898.10	898.10	1.88	1.88	93.89	-175.08	2,577.70	2,583.64	2,579.88	3.76	687.036			
1,000.00	1,000.00	998.10	998.10	2.11	2.10	93.89	-175.08	2,577.70	2,583.64	2,579.43	4.21	613.677			
1,100.00	1,100.00	1,098.10	1,098.10	2.33	2.33	93.89	-175.08	2,577.70	2,583.64	2,578.98	4.66	554.474			
1,200.00	1,200.00	1,198.10	1,198.10	2.56	2.55	93.89	-175.08	2,577.70	2,583.64	2,578.53	5.11	505.688			
1,300.00	1,300.00	1,298.10	1,298.10	2.78	2.78	93.89	-175.08	2,577.70	2,583.64	2,578.08	5.56	464.793			
1,400.00	1,400.00	1,398.10	1,398.10	3.01	3.00	93.89	-175.08	2,577.70	2,583.64	2,577.63	6.01	430.017			
1,500.00	1,500.00	1,498.10	1,498.10	3.23	3.23	93.89	-175.08	2,577.70	2,583.64	2,577.18	6.46	400.083			
1,600.00	1,600.00	1,598.10	1,598.10	3.46	3.45	93.89	-175.08	2,577.70	2,583.64	2,576.73	6.91	374.046			
1,700.00	1,700.00	1,698.10	1,698.10	3.68	3.68	93.89	-175.08	2,577.70	2,583.64	2,576.28	7.36	351.190			
1,800.00	1,800.00	1,798.10	1,798.10	3.91	3.90	93.89	-175.08	2,577.70	2,583.64	2,575.83	7.81	330.966			
1,900.00	1,900.00	1,898.10	1,898.10	4.13	4.13	93.89	-175.08	2,577.70	2,583.64	2,575.38	8.26	312.945			
2,000.00	2,000.00	1,998.10	1,998.10	4.35	4.35	93.89	-175.08	2,577.70	2,583.64	2,574.93	8.71	296.785			
2,100.00	2,100.00	2,098.10	2,098.10	4.58	4.58	93.89	-175.08	2,577.70	2,583.64	2,574.48	9.15	282.212			
2,200.00	2,200.00	2,198.10	2,198.10	4.80	4.80	93.89	-175.08	2,577.70	2,583.64	2,574.03	9.60	269.004			
2,300.00	2,300.00	2,298.10	2,298.10	5.03	5.02	93.89	-175.08	2,577.70	2,583.64	2,573.59	10.05	256.976			
2,400.00	2,400.00	2,398.10	2,398.10	5.25	5.25	93.89	-175.08	2,577.70	2,583.64	2,573.14	10.50	245.978			
2,500.00	2,500.00	2,498.10	2,498.10	5.48	5.47	93.89	-175.08	2,577.70	2,583.64	2,572.69	10.95	235.883 CC, ES			
2,600.00	2,599.99	2,598.09	2,598.09	5.69	5.70	163.89	-175.08	2,577.70	2,584.48	2,573.08	11.39	226.847			
2,700.00	2,699.96	2,698.06	2,698.06	5.90	5.92	163.90	-175.08	2,577.70	2,586.99	2,575.17	11.82	218.781			
2,800.00	2,799.86	2,797.96	2,797.96	6.11	6.15	163.92	-175.08	2,577.70	2,591.18	2,578.93	12.26	211.398			
2,900.00	2,899.68	2,897.78	2,897.78	6.33	6.37	163.94	-175.08	2,577.70	2,597.05	2,584.36	12.69	204.633			
2,949.81	2,949.35	2,947.45	2,947.45	6.43	6.48	163.95	-175.08	2,577.70	2,600.60	2,587.69	12.91	201.471			
3,000.00	2,999.38	2,997.48	2,997.48	6.54	6.60	163.97	-175.08	2,577.70	2,604.38	2,591.26	13.13	198.410			
3,100.00	3,099.08	3,097.18	3,097.18	6.76	6.82	164.02	-175.08	2,577.70	2,611.92	2,598.36	13.56	192.596			
3,200.00	3,198.77	3,196.87	3,196.87	6.99	7.04	164.07	-175.08	2,577.70	2,619.46	2,605.47	14.00	187.127			
3,300.00	3,298.46	3,296.56	3,296.56	7.21	7.27	164.12	-175.08	2,577.70	2,627.01	2,612.57	14.44	181.973			
3,400.00	3,398.15	3,396.25	3,396.25	7.44	7.49	164.16	-175.08	2,577.70	2,634.55	2,619.68	14.88	177.110			
3,500.00	3,497.84	3,495.94	3,495.94	7.67	7.72	164.21	-175.08	2,577.70	2,642.10	2,626.79	15.32	172.514			
3,600.00	3,597.54	3,595.64	3,595.64	7.90	7.98	164.24	-174.87	2,578.06	2,650.13	2,634.44	15.69	168.904			
3,700.00	3,697.23	3,695.33	3,695.33	8.13	8.23	164.26	-174.21	2,579.21	2,659.19	2,643.13	16.06	165.600			
3,800.00	3,796.92	3,795.02	3,795.02	8.37	8.46	164.26	-173.33	2,580.72	2,669.33	2,652.94	16.39	162.851			
3,900.00	3,896.61	3,894.71	3,894.71	8.60	8.70	164.26	-171.53	2,583.83	2,680.40	2,663.62	16.78	159.692			
4,000.00	3,996.30	3,994.40	3,994.40	8.84	8.94	164.24	-169.52	2,587.29	2,692.55	2,675.40	17.15	157.035			
4,100.00	4,096.00	4,094.10	4,094.10	9.08	9.18	164.21	-167.08	2,591.51	2,705.72	2,688.21	17.51	154.562			
4,200.00	4,195.69	4,193.79	4,193.79	9.31	9.41	164.18	-164.15	2,596.56	2,719.90	2,702.04	17.87	152.237			
4,300.00	4,295.38	4,293.48	4,293.48	9.55	9.65	164.13	-160.88	2,602.20	2,735.10	2,716.88	18.22	150.116			
4,400.00	4,395.07	4,393.17	4,393.17	9.79	9.89	164.07	-157.15	2,608.64	2,751.32	2,732.74	18.57	148.123			
4,500.00	4,494.76	4,492.86	4,492.86	10.04	10.14	163.99	-152.17	2,617.24	2,768.39	2,749.42	18.97	145.924			
4,600.00	4,594.46	4,592.56	4,592.56	10.28	10.38	163.90	-146.39	2,627.22	2,785.58	2,766.17	19.41	143.535			
4,700.00	4,694.15	4,692.25	4,692.25	10.52	10.62	163.81	-140.61	2,637.19	2,802.77	2,782.93	19.84	141.236			
4,800.00	4,793.84	4,791.94	4,791.94	10.76	10.86	163.73	-134.83	2,647.17	2,819.97	2,799.69	20.28	139.023			
4,900.00	4,893.53	4,891.63	4,891.63	11.01	11.11	163.64	-129.05	2,657.14	2,837.18	2,816.45	20.73	136.891			
5,000.00	4,993.22	4,991.32	4,991.32	11.25	11.35	163.55	-123.27	2,667.12	2,854.39	2,833.22	21.17	134.838			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 85H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,092.92	4,816.63	4,810.65	11.50	10.71	163.47	-117.49	2,677.09	2,871.61	2,850.00	21.61	132.859	
5,200.00	5,192.61	4,915.05	4,908.39	11.74	10.96	163.38	-111.71	2,687.07	2,888.84	2,866.78	22.06	130.950	
5,300.00	5,292.30	5,013.46	5,006.13	11.99	11.20	163.30	-105.93	2,697.04	2,906.07	2,883.56	22.51	129.110	
5,400.00	5,391.99	5,111.88	5,103.87	12.24	11.45	163.22	-100.15	2,707.02	2,923.31	2,900.35	22.96	127.334	
5,500.00	5,491.68	5,210.29	5,201.61	12.48	11.70	163.13	-94.37	2,716.99	2,940.55	2,917.14	23.41	125.619	
5,600.00	5,591.38	5,308.71	5,299.35	12.73	11.95	163.05	-88.59	2,726.97	2,957.80	2,933.94	23.86	123.964	
5,700.00	5,691.07	5,407.13	5,397.08	12.98	12.20	162.97	-82.81	2,736.94	2,975.05	2,950.74	24.31	122.364	
5,800.00	5,790.76	5,505.54	5,494.82	13.23	12.45	162.89	-77.03	2,746.92	2,992.31	2,967.55	24.77	120.818	
5,900.00	5,890.45	5,603.96	5,592.56	13.48	12.71	162.82	-71.25	2,756.89	3,009.58	2,984.36	25.22	119.323	
6,000.00	5,990.14	5,702.38	5,690.30	13.72	12.96	162.74	-65.47	2,766.87	3,026.85	3,001.17	25.68	117.877	
6,100.00	6,089.84	5,800.79	5,788.04	13.97	13.22	162.66	-59.69	2,776.84	3,044.13	3,017.99	26.13	116.478	
6,200.00	6,189.53	5,899.21	5,885.78	14.22	13.48	162.59	-53.91	2,786.82	3,061.41	3,034.81	26.59	115.123	
6,300.00	6,289.22	5,997.62	5,983.52	14.47	13.74	162.51	-48.13	2,796.79	3,078.69	3,051.64	27.05	113.811	
6,400.00	6,388.91	6,096.04	6,081.26	14.72	14.00	162.44	-42.35	2,806.77	3,095.98	3,068.47	27.51	112.539	
6,500.00	6,488.60	6,194.46	6,178.99	14.97	14.26	162.37	-36.57	2,816.74	3,113.28	3,085.31	27.97	111.307	
6,600.00	6,588.30	6,292.87	6,276.73	15.22	14.53	162.30	-30.79	2,826.72	3,130.58	3,102.15	28.43	110.112	
6,700.00	6,687.99	6,391.29	6,374.47	15.47	14.79	162.22	-25.01	2,836.69	3,147.89	3,118.99	28.89	108.953	
6,800.00	6,787.68	6,489.71	6,472.21	15.72	15.06	162.15	-19.23	2,846.66	3,165.20	3,135.84	29.35	107.828	
6,900.00	6,887.37	6,588.12	6,569.95	15.98	15.32	162.08	-13.45	2,856.64	3,182.51	3,152.70	29.82	106.736	
7,000.00	6,987.06	6,686.54	6,667.69	16.23	15.59	162.02	-7.67	2,866.61	3,199.83	3,169.55	30.28	105.675	
7,100.00	7,086.76	6,784.95	6,765.43	16.48	15.86	161.95	-1.89	2,876.59	3,217.16	3,186.41	30.74	104.645	
7,200.00	7,186.45	6,883.37	6,863.16	16.73	16.12	161.88	3.89	2,886.56	3,234.48	3,203.28	31.21	103.644	
7,300.00	7,286.14	6,981.79	6,960.90	16.98	16.39	161.81	9.67	2,896.54	3,251.82	3,220.14	31.67	102.671	
7,400.00	7,385.83	7,080.20	7,058.64	17.23	16.66	161.75	15.45	2,906.51	3,269.15	3,237.02	32.14	101.724	
7,500.00	7,485.52	7,178.62	7,156.38	17.49	16.93	161.68	21.23	2,916.49	3,286.49	3,253.89	32.60	100.804	
7,600.00	7,585.22	7,277.04	7,254.12	17.74	17.20	161.62	27.01	2,926.46	3,303.84	3,270.77	33.07	99.908	
7,700.00	7,684.91	7,375.45	7,351.86	17.99	17.47	161.55	32.79	2,936.44	3,321.19	3,287.65	33.54	99.036	
7,800.00	7,784.60	7,473.87	7,449.60	18.24	17.74	161.49	38.57	2,946.41	3,338.54	3,304.54	34.00	98.186	
7,900.00	7,884.29	7,572.28	7,547.34	18.50	18.01	161.43	44.35	2,956.39	3,355.90	3,321.43	34.47	97.359	
8,000.00	7,983.98	7,670.70	7,645.07	18.75	18.29	161.37	50.13	2,966.36	3,373.26	3,338.32	34.94	96.553	
8,100.00	8,083.68	7,769.12	7,742.81	19.00	18.56	161.30	55.91	2,976.34	3,390.62	3,355.22	35.40	95.767	
8,200.00	8,183.37	7,867.53	7,840.55	19.25	18.83	161.24	61.69	2,986.31	3,407.99	3,372.12	35.87	95.001	
8,300.00	8,283.06	7,965.95	7,938.29	19.51	19.11	161.18	67.47	2,996.29	3,425.37	3,389.02	36.34	94.254	
8,400.00	8,382.75	8,064.36	8,036.03	19.76	19.38	161.12	73.25	3,006.26	3,442.74	3,405.93	36.81	93.526	
8,500.00	8,482.44	8,162.78	8,133.77	20.01	19.65	161.07	79.03	3,016.24	3,460.12	3,422.84	37.28	92.815	
8,600.00	8,582.14	8,261.20	8,231.51	20.27	19.93	161.01	84.81	3,026.21	3,477.50	3,439.75	37.75	92.121	
8,700.00	8,681.83	8,359.61	8,329.24	20.52	20.20	160.95	90.59	3,036.19	3,494.89	3,456.67	38.22	91.443	
8,800.00	8,781.52	8,458.03	8,426.98	20.77	20.48	160.89	96.37	3,046.16	3,512.28	3,473.59	38.69	90.782	
8,900.00	8,881.21	8,556.45	8,524.72	21.03	20.76	160.84	102.15	3,056.14	3,529.67	3,490.51	39.16	90.135	
9,000.00	8,980.90	8,654.86	8,622.46	21.28	21.03	160.78	107.93	3,066.11	3,547.07	3,507.44	39.63	89.504	
9,100.00	9,080.60	8,753.28	8,720.20	21.54	21.31	160.72	113.71	3,076.08	3,564.47	3,524.37	40.10	88.887	
9,200.00	9,180.29	8,851.69	8,817.94	21.79	21.58	160.67	119.49	3,086.06	3,581.87	3,541.30	40.57	88.283	
9,300.00	9,279.98	8,950.11	8,915.68	22.04	21.86	160.62	125.27	3,096.03	3,599.28	3,558.23	41.04	87.693	
9,400.00	9,379.67	9,048.53	9,013.41	22.30	22.14	160.56	131.05	3,106.01	3,616.69	3,575.17	41.52	87.117	
9,500.00	9,479.36	9,146.94	9,111.15	22.55	22.42	160.51	136.83	3,115.98	3,634.10	3,592.11	41.99	86.552	
9,600.00	9,579.05	9,245.36	9,208.89	22.81	22.69	160.46	142.61	3,125.96	3,651.51	3,609.05	42.46	86.000	
9,700.00	9,678.75	9,343.78	9,306.63	23.06	22.97	160.40	148.39	3,135.93	3,668.93	3,626.00	42.93	85.460	
9,800.00	9,778.44	9,442.19	9,404.37	23.31	23.25	160.35	154.17	3,145.91	3,686.35	3,642.95	43.40	84.931	
9,900.00	9,878.13	9,540.61	9,502.11	23.57	23.53	160.30	159.95	3,155.88	3,703.78	3,659.90	43.88	84.413	
10,000.00	9,977.82	9,639.02	9,599.85	23.82	23.81	160.25	165.73	3,165.86	3,721.20	3,676.85	44.35	83.905	
10,100.00	10,077.51	9,737.44	9,697.59	24.08	24.08	160.20	171.51	3,175.83	3,738.63	3,693.81	44.82	83.409	
10,200.00	10,177.21	9,835.86	9,795.32	24.33	24.36	160.15	177.29	3,185.81	3,756.06	3,710.77	45.30	82.922	

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
 Project: Lea County, NM (NAD-83)
 Reference Site: Fighting Okra 18-19 Fed
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
 MD Reference: 3371' GE + 25' KB @ 3396.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 85H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,300.00	10,276.90	9,934.27	9,893.06	24.59	24.64	160.10	183.07	3,195.78	3,773.50	3,727.73	45.77	82.445	
10,400.00	10,376.59	10,032.69	9,990.80	24.84	24.92	160.05	188.84	3,205.76	3,790.94	3,744.69	46.24	81.977	
10,500.00	10,476.28	10,131.10	10,088.54	25.10	25.20	160.00	194.62	3,215.73	3,808.38	3,761.66	46.72	81.519	
10,600.00	10,575.97	10,229.52	10,186.28	25.35	25.48	159.95	200.40	3,225.71	3,825.82	3,778.63	47.19	81.070	
10,700.00	10,675.67	10,327.94	10,284.02	25.61	25.76	159.91	206.18	3,235.68	3,843.27	3,795.60	47.67	80.629	
10,800.00	10,775.36	10,426.35	10,381.76	25.86	26.04	159.86	211.96	3,245.66	3,860.72	3,812.58	48.14	80.197	
10,900.00	10,875.05	10,524.77	10,479.49	26.12	26.32	159.81	217.74	3,255.63	3,878.17	3,829.55	48.62	79.773	
11,000.00	10,974.74	10,623.19	10,577.23	26.37	26.60	159.76	223.52	3,265.61	3,895.62	3,846.53	49.09	79.356	
11,076.14	11,050.65	10,698.12	10,651.65	26.57	26.82	159.73	227.92	3,273.20	3,908.91	3,859.46	49.45	79.045	
11,100.00	11,074.44	10,721.61	10,674.98	26.62	26.88	159.73	229.30	3,275.58	3,913.03	3,863.47	49.56	78.956	
11,200.00	11,174.22	10,820.21	10,772.90	26.81	27.16	159.74	235.10	3,285.58	3,929.30	3,879.31	49.99	78.607	
11,300.00	11,274.10	10,919.05	10,871.06	26.99	27.45	159.73	240.90	3,295.59	3,943.95	3,893.54	50.41	78.236	
11,400.00	11,374.06	11,018.08	10,969.41	27.17	27.73	159.70	246.72	3,305.63	3,956.99	3,906.15	50.83	77.842	
11,500.00	11,474.05	11,117.28	11,067.93	27.33	28.01	159.67	252.54	3,315.68	3,968.40	3,917.15	51.25	77.428	
11,525.95	11,500.00	11,143.05	11,093.52	27.38	28.09	89.65	254.06	3,318.30	3,971.10	3,919.74	51.36	77.315	
11,600.00	11,574.05	11,274.57	11,224.22	27.51	28.40	89.55	261.38	3,330.93	3,978.37	3,926.54	51.83	76.760	
11,700.00	11,674.05	11,526.94	11,475.79	27.71	28.91	89.41	271.32	3,348.09	3,985.21	3,932.62	52.59	75.776	
11,800.00	11,774.05	11,780.58	11,729.26	27.91	29.36	89.34	275.70	3,355.65	3,988.21	3,934.93	53.29	74.847	
11,900.00	11,874.05	11,923.47	11,872.15	28.11	29.60	89.34	275.92	3,356.03	3,988.36	3,934.61	53.76	74.192	
12,000.00	11,974.05	12,023.47	11,972.15	28.31	29.79	89.34	275.92	3,356.03	3,988.36	3,934.19	54.17	73.624	
12,096.99	12,071.04	12,120.46	12,069.14	28.50	29.98	89.34	275.92	3,356.03	3,988.36	3,933.79	54.57	73.081	
12,100.00	12,074.05	12,123.47	12,072.15	28.51	29.99	-90.66	275.92	3,356.03	3,988.36	3,933.78	54.59	73.065	
12,150.00	12,123.97	12,173.39	12,122.07	28.59	30.08	-90.69	275.92	3,356.03	3,988.39	3,933.62	54.77	72.815	
12,200.00	12,173.49	12,222.91	12,171.59	28.67	30.18	-90.78	275.92	3,356.03	3,988.48	3,933.53	54.95	72.584	
12,250.00	12,222.23	12,271.66	12,220.33	28.73	30.27	-90.92	275.92	3,356.03	3,988.65	3,933.54	55.11	72.372	
12,300.00	12,269.83	12,319.25	12,267.93	28.79	30.37	-91.10	275.92	3,356.03	3,988.93	3,933.67	55.26	72.179	
12,350.00	12,315.90	12,365.32	12,314.00	28.85	30.46	-91.31	275.92	3,356.03	3,989.38	3,933.97	55.40	72.006	
12,400.00	12,360.12	12,414.28	12,362.96	28.90	30.54	-91.57	275.50	3,356.03	3,990.02	3,934.49	55.53	71.850	
12,450.00	12,402.13	12,472.27	12,420.69	28.94	30.62	-91.88	270.36	3,356.03	3,990.81	3,935.17	55.65	71.715	
12,500.00	12,441.63	12,534.00	12,481.24	28.98	30.68	-92.19	258.50	3,356.03	3,991.71	3,935.96	55.75	71.603	
12,550.00	12,478.30	12,599.96	12,544.13	29.02	30.73	-92.50	238.72	3,356.03	3,992.67	3,936.84	55.83	71.512	
12,600.00	12,511.88	12,670.62	12,608.49	29.06	30.75	-92.80	209.67	3,356.03	3,993.68	3,937.78	55.90	71.442	
12,650.00	12,542.10	12,746.35	12,672.94	29.09	30.75	-93.09	170.00	3,356.03	3,994.68	3,938.72	55.96	71.381	
12,700.00	12,568.73	12,827.34	12,735.42	29.14	30.73	-93.36	118.58	3,356.03	3,995.61	3,939.59	56.02	71.320	
12,750.00	12,591.58	12,913.46	12,793.21	29.19	30.69	-93.60	54.85	3,356.03	3,996.43	3,940.33	56.10	71.240	
12,800.00	12,610.47	13,004.13	12,843.01	29.25	30.65	-93.79	-20.81	3,356.03	3,997.07	3,940.87	56.20	71.119	
12,850.00	12,625.25	13,098.27	12,881.44	29.33	30.60	-93.91	-106.64	3,356.03	3,997.48	3,941.12	56.36	70.931	
12,900.00	12,635.81	13,194.31	12,905.63	29.43	30.59	-93.96	-199.47	3,356.03	3,997.62	3,941.04	56.58	70.657	
12,950.00	12,642.07	13,290.41	12,913.99	29.54	30.63	-93.92	-295.08	3,356.03	3,997.49	3,940.62	56.87	70.292	
12,996.99	12,644.00	13,338.28	12,914.00	29.68	30.68	-93.90	-342.96	3,356.03	3,997.36	3,940.23	57.13	69.975	
13,000.00	12,644.00	13,341.29	12,914.00	29.69	30.68	-93.90	-345.96	3,356.03	3,997.36	3,940.22	57.14	69.954	
13,100.00	12,644.00	13,441.29	12,914.00	30.04	30.86	-93.90	-445.96	3,356.03	3,997.36	3,939.57	57.79	69.170	
13,200.00	12,644.00	13,541.29	12,914.00	30.48	31.14	-93.90	-545.96	3,356.03	3,997.36	3,938.75	58.61	68.200	
13,300.00	12,644.00	13,641.29	12,914.00	31.00	31.51	-93.90	-645.96	3,356.03	3,997.36	3,937.76	59.60	67.069	
13,400.00	12,644.00	13,741.29	12,914.00	31.61	31.98	-93.90	-745.96	3,356.03	3,997.36	3,936.61	60.75	65.801	
13,500.00	12,644.00	13,841.29	12,914.00	32.29	32.53	-93.90	-845.96	3,356.03	3,997.36	3,935.31	62.05	64.425	
13,600.00	12,644.00	13,941.29	12,914.00	33.04	33.17	-93.90	-945.96	3,356.03	3,997.36	3,933.87	63.49	62.964	
13,700.00	12,644.00	14,041.29	12,914.00	33.85	33.87	-93.90	-1,045.96	3,356.03	3,997.36	3,932.30	65.06	61.444	
13,800.00	12,644.00	14,141.29	12,914.00	34.72	34.64	-93.90	-1,145.96	3,356.03	3,997.36	3,930.61	66.75	59.885	
13,900.00	12,644.00	14,241.29	12,914.00	35.64	35.47	-93.90	-1,245.96	3,356.03	3,997.36	3,928.80	68.56	58.307	
14,000.00	12,644.00	14,341.29	12,914.00	36.62	36.35	-93.90	-1,345.96	3,356.03	3,997.36	3,926.89	70.47	56.725	
14,100.00	12,644.00	14,441.29	12,914.00	37.64	37.28	-93.90	-1,445.96	3,356.03	3,997.36	3,924.88	72.48	55.153	

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 85H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,200.00	12,644.00	14,541.29	12,914.00	38.70	38.27	-93.90	-1,545.96	3,356.03	3,997.36	3,922.78	74.57	53.603		
14,300.00	12,644.00	14,641.29	12,914.00	39.80	39.29	-93.90	-1,645.96	3,356.03	3,997.36	3,920.61	76.75	52.081		
14,400.00	12,644.00	14,741.29	12,914.00	40.94	40.36	-93.90	-1,745.96	3,356.03	3,997.36	3,918.35	79.01	50.596		
14,500.00	12,644.00	14,841.29	12,914.00	42.11	41.46	-93.90	-1,845.96	3,356.03	3,997.36	3,916.03	81.33	49.152		
14,600.00	12,644.00	14,941.29	12,914.00	43.30	42.60	-93.90	-1,945.96	3,356.03	3,997.36	3,913.65	83.71	47.752		
14,700.00	12,644.00	15,041.29	12,914.00	44.53	43.77	-93.90	-2,045.96	3,356.03	3,997.36	3,911.21	86.15	46.398		
14,800.00	12,644.00	15,141.29	12,914.00	45.78	44.96	-93.90	-2,145.96	3,356.03	3,997.36	3,908.71	88.65	45.093		
14,900.00	12,644.00	15,241.29	12,914.00	47.06	46.19	-93.90	-2,245.96	3,356.03	3,997.36	3,906.17	91.19	43.835		
15,000.00	12,644.00	15,341.29	12,914.00	48.36	47.44	-93.90	-2,345.96	3,356.03	3,997.36	3,903.58	93.78	42.625		
15,100.00	12,644.00	15,441.29	12,914.00	49.67	48.71	-93.90	-2,445.96	3,356.03	3,997.36	3,900.95	96.41	41.463		
15,200.00	12,644.00	15,541.29	12,914.00	51.01	50.00	-93.90	-2,545.96	3,356.03	3,997.36	3,898.28	99.07	40.347		
15,300.00	12,644.00	15,641.29	12,914.00	52.36	51.31	-93.90	-2,645.96	3,356.03	3,997.36	3,895.58	101.78	39.276		
15,400.00	12,644.00	15,741.29	12,914.00	53.73	52.64	-93.90	-2,745.96	3,356.03	3,997.36	3,892.85	104.51	38.249		
15,500.00	12,644.00	15,841.29	12,914.00	55.11	53.99	-93.90	-2,845.96	3,356.03	3,997.36	3,890.09	107.27	37.263		
15,600.00	12,644.00	15,941.29	12,914.00	56.51	55.35	-93.90	-2,945.96	3,356.03	3,997.36	3,887.29	110.06	36.319		
15,700.00	12,644.00	16,041.29	12,914.00	57.92	56.73	-93.90	-3,045.96	3,356.03	3,997.36	3,884.48	112.88	35.413		
15,800.00	12,644.00	16,141.29	12,914.00	59.34	58.12	-93.90	-3,145.96	3,356.03	3,997.36	3,881.64	115.72	34.544		
15,900.00	12,644.00	16,241.29	12,914.00	60.77	59.52	-93.90	-3,245.96	3,356.03	3,997.36	3,878.78	118.58	33.710		
16,000.00	12,644.00	16,341.29	12,914.00	62.21	60.93	-93.90	-3,345.96	3,356.03	3,997.36	3,875.90	121.46	32.911		
16,100.00	12,644.00	16,441.29	12,914.00	63.66	62.35	-93.90	-3,445.96	3,356.03	3,997.36	3,873.00	124.36	32.143		
16,200.00	12,644.00	16,541.29	12,914.00	65.12	63.79	-93.90	-3,545.96	3,356.03	3,997.36	3,870.08	127.28	31.406		
16,300.00	12,644.00	16,641.29	12,914.00	66.58	65.23	-93.90	-3,645.96	3,356.03	3,997.36	3,867.14	130.21	30.699		
16,400.00	12,644.00	16,741.29	12,914.00	68.06	66.69	-93.90	-3,745.96	3,356.03	3,997.36	3,864.20	133.16	30.019		
16,500.00	12,644.00	16,841.29	12,914.00	69.54	68.15	-93.90	-3,845.96	3,356.03	3,997.36	3,861.23	136.13	29.365		
16,600.00	12,644.00	16,941.29	12,914.00	71.03	69.61	-93.90	-3,945.96	3,356.03	3,997.36	3,858.25	139.10	28.736		
16,700.00	12,644.00	17,041.29	12,914.00	72.52	71.09	-93.90	-4,045.96	3,356.03	3,997.36	3,855.26	142.09	28.132		
16,800.00	12,644.00	17,141.29	12,914.00	74.02	72.57	-93.90	-4,145.96	3,356.03	3,997.36	3,852.26	145.10	27.550		
16,900.00	12,644.00	17,241.29	12,914.00	75.53	74.06	-93.90	-4,245.96	3,356.03	3,997.36	3,849.25	148.11	26.990		
17,000.00	12,644.00	17,341.29	12,914.00	77.04	75.55	-93.90	-4,345.96	3,356.03	3,997.36	3,846.23	151.13	26.450		
17,100.00	12,644.00	17,441.29	12,914.00	78.56	77.06	-93.90	-4,445.96	3,356.03	3,997.36	3,843.19	154.16	25.929		
17,200.00	12,644.00	17,541.29	12,914.00	80.08	78.56	-93.90	-4,545.96	3,356.03	3,997.36	3,840.15	157.21	25.428		
17,300.00	12,644.00	17,641.29	12,914.00	81.60	80.07	-93.90	-4,645.96	3,356.03	3,997.36	3,837.10	160.26	24.944		
17,400.00	12,644.00	17,741.29	12,914.00	83.13	81.59	-93.90	-4,745.96	3,356.03	3,997.36	3,834.04	163.31	24.476		
17,500.00	12,644.00	17,841.29	12,914.00	84.67	83.11	-93.90	-4,845.96	3,356.03	3,997.36	3,830.98	166.38	24.025		
17,600.00	12,644.00	17,941.29	12,914.00	86.20	84.63	-93.90	-4,945.96	3,356.03	3,997.36	3,827.90	169.46	23.589		
17,700.00	12,644.00	18,041.29	12,914.00	87.75	86.16	-93.90	-5,045.96	3,356.03	3,997.36	3,824.82	172.54	23.168		
17,800.00	12,644.00	18,141.29	12,914.00	89.29	87.69	-93.90	-5,145.96	3,356.03	3,997.36	3,821.73	175.62	22.761		
17,900.00	12,644.00	18,241.29	12,914.00	90.84	89.23	-93.90	-5,245.96	3,356.03	3,997.36	3,818.64	178.72	22.367		
18,000.00	12,644.00	18,341.29	12,914.00	92.39	90.77	-93.90	-5,345.96	3,356.03	3,997.36	3,815.54	181.82	21.986		
18,100.00	12,644.00	18,441.29	12,914.00	93.94	92.31	-93.90	-5,445.96	3,356.03	3,997.36	3,812.44	184.92	21.616		
18,200.00	12,644.00	18,541.29	12,914.00	95.50	93.85	-93.90	-5,545.96	3,356.03	3,997.36	3,809.33	188.03	21.259		
18,300.00	12,644.00	18,641.29	12,914.00	97.05	95.40	-93.90	-5,645.96	3,356.03	3,997.36	3,806.21	191.15	20.912		
18,400.00	12,644.00	18,741.29	12,914.00	98.61	96.95	-93.90	-5,745.96	3,356.03	3,997.36	3,803.09	194.27	20.576		
18,500.00	12,644.00	18,841.29	12,914.00	100.18	98.51	-93.90	-5,845.96	3,356.03	3,997.36	3,799.96	197.39	20.251		
18,600.00	12,644.00	18,941.29	12,914.00	101.74	100.06	-93.90	-5,945.96	3,356.03	3,997.36	3,796.84	200.52	19.935		
18,700.00	12,644.00	19,041.29	12,914.00	103.31	101.62	-93.90	-6,045.96	3,356.03	3,997.36	3,793.70	203.66	19.628		
18,800.00	12,644.00	19,141.29	12,914.00	104.88	103.18	-93.90	-6,145.96	3,356.03	3,997.36	3,790.56	206.79	19.330		
18,900.00	12,644.00	19,241.29	12,914.00	106.45	104.75	-93.90	-6,245.96	3,356.03	3,997.36	3,787.42	209.94	19.041		
19,000.00	12,644.00	19,341.29	12,914.00	108.02	106.31	-93.90	-6,345.96	3,356.03	3,997.36	3,784.28	213.08	18.760		
19,100.00	12,644.00	19,441.29	12,914.00	109.60	107.88	-93.90	-6,445.96	3,356.03	3,997.36	3,781.13	216.23	18.487		
19,200.00	12,644.00	19,541.29	12,914.00	111.18	109.45	-93.90	-6,545.96	3,356.03	3,997.36	3,777.98	219.38	18.221		
19,300.00	12,644.00	19,641.29	12,914.00	112.75	111.02	-93.90	-6,645.96	3,356.03	3,997.36	3,774.82	222.54	17.963		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 85H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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	
19,400.00	12,644.00	19,741.29	12,914.00	114.33	112.59	-93.90	-6,745.96	3,356.03	3,997.36	3,771.66	225.69	17.711		
19,500.00	12,644.00	19,841.29	12,914.00	115.92	114.17	-93.90	-6,845.96	3,356.03	3,997.36	3,768.50	228.86	17.467		
19,600.00	12,644.00	19,941.29	12,914.00	117.50	115.75	-93.90	-6,945.96	3,356.03	3,997.36	3,765.34	232.02	17.229		
19,700.00	12,644.00	20,041.29	12,914.00	119.08	117.32	-93.90	-7,045.96	3,356.03	3,997.36	3,762.17	235.19	16.997		
19,800.00	12,644.00	20,141.29	12,914.00	120.67	118.90	-93.90	-7,145.96	3,356.03	3,997.36	3,759.00	238.35	16.771		
19,900.00	12,644.00	20,241.29	12,914.00	122.26	120.48	-93.90	-7,245.96	3,356.03	3,997.36	3,755.83	241.53	16.550		
20,000.00	12,644.00	20,341.29	12,914.00	123.84	122.07	-93.90	-7,345.96	3,356.03	3,997.36	3,752.66	244.70	16.336		
20,100.00	12,644.00	20,441.29	12,914.00	125.43	123.65	-93.90	-7,445.96	3,356.03	3,997.36	3,749.48	247.88	16.126		
20,200.00	12,644.00	20,541.29	12,914.00	127.02	125.24	-93.90	-7,545.96	3,356.03	3,997.36	3,746.30	251.06	15.922		
20,300.00	12,644.00	20,641.29	12,914.00	128.62	126.82	-93.90	-7,645.96	3,356.03	3,997.36	3,743.12	254.24	15.723		
20,400.00	12,644.00	20,741.29	12,914.00	130.21	128.41	-93.90	-7,745.96	3,356.03	3,997.36	3,739.94	257.42	15.529		
20,500.00	12,644.00	20,841.29	12,914.00	131.80	130.00	-93.90	-7,845.96	3,356.03	3,997.36	3,736.75	260.60	15.339		
20,600.00	12,644.00	20,941.29	12,914.00	133.40	131.59	-93.90	-7,945.96	3,356.03	3,997.36	3,733.57	263.79	15.154		
20,700.00	12,644.00	21,041.29	12,914.00	134.99	133.18	-93.90	-8,045.96	3,356.03	3,997.36	3,730.38	266.98	14.973		
20,800.00	12,644.00	21,141.29	12,914.00	136.59	134.77	-93.90	-8,145.96	3,356.03	3,997.36	3,727.19	270.17	14.796		
20,900.00	12,644.00	21,241.29	12,914.00	138.19	136.37	-93.90	-8,245.96	3,356.03	3,997.36	3,724.00	273.36	14.623		
21,000.00	12,644.00	21,341.29	12,914.00	139.78	137.96	-93.90	-8,345.96	3,356.03	3,997.36	3,720.80	276.55	14.454		
21,100.00	12,644.00	21,441.29	12,914.00	141.38	139.55	-93.90	-8,445.96	3,356.03	3,997.36	3,717.61	279.75	14.289		
21,200.00	12,644.00	21,541.29	12,914.00	142.98	141.15	-93.90	-8,545.96	3,356.03	3,997.36	3,714.41	282.95	14.128		
21,300.00	12,644.00	21,641.29	12,914.00	144.58	142.75	-93.90	-8,645.96	3,356.03	3,997.36	3,711.21	286.14	13.970		
21,400.00	12,644.00	21,741.29	12,914.00	146.19	144.34	-93.90	-8,745.96	3,356.03	3,997.36	3,708.01	289.34	13.815		
21,500.00	12,644.00	21,841.29	12,914.00	147.79	145.94	-93.90	-8,845.96	3,356.03	3,997.36	3,704.81	292.54	13.664		
21,600.00	12,644.00	21,941.29	12,914.00	149.39	147.54	-93.90	-8,945.96	3,356.03	3,997.36	3,701.61	295.75	13.516		
21,700.00	12,644.00	22,041.29	12,914.00	150.99	149.14	-93.90	-9,045.96	3,356.03	3,997.36	3,698.41	298.95	13.371		
21,800.00	12,644.00	22,141.29	12,914.00	152.60	150.74	-93.90	-9,145.96	3,356.03	3,997.36	3,695.20	302.16	13.229		
21,900.00	12,644.00	22,241.29	12,914.00	154.20	152.34	-93.90	-9,245.96	3,356.03	3,997.36	3,692.00	305.36	13.091		
22,000.00	12,644.00	22,341.29	12,914.00	155.81	153.95	-93.90	-9,345.96	3,356.03	3,997.36	3,688.79	308.57	12.954		
22,100.00	12,644.00	22,441.29	12,914.00	157.41	155.55	-93.90	-9,445.96	3,356.03	3,997.36	3,685.58	311.78	12.821		
22,200.00	12,644.00	22,541.29	12,914.00	159.02	157.15	-93.90	-9,545.96	3,356.03	3,997.36	3,682.37	314.99	12.691		
22,300.00	12,644.00	22,641.29	12,914.00	160.63	158.76	-93.90	-9,645.96	3,356.03	3,997.36	3,679.16	318.20	12.562		
22,400.00	12,644.00	22,741.29	12,914.00	162.24	160.36	-93.90	-9,745.96	3,356.03	3,997.36	3,675.95	321.41	12.437		
22,500.00	12,644.00	22,841.29	12,914.00	163.84	161.96	-93.90	-9,845.96	3,356.03	3,997.36	3,672.74	324.62	12.314		
22,525.91	12,644.00	22,867.20	12,914.00	164.26	162.38	-93.90	-9,871.88	3,356.03	3,997.36	3,671.90	325.46	12.282		
22,563.68	12,644.00	22,867.23	12,914.00	164.87	162.38	-93.90	-9,871.91	3,356.03	3,997.54	3,671.48	326.06	12.260 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 86H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	92.23	-99.43	2,551.91	2,553.85					
100.00	100.00	96.70	96.70	0.08	0.08	92.23	-99.43	2,551.91	2,553.85	2,553.68	0.17	N/A		
200.00	200.00	196.70	196.70	0.31	0.30	92.23	-99.43	2,551.91	2,553.85	2,553.24	0.61	4,181.906		
300.00	300.00	296.70	296.70	0.53	0.53	92.23	-99.43	2,551.91	2,553.85	2,552.79	1.06	2,408.785		
400.00	400.00	396.70	396.70	0.76	0.75	92.23	-99.43	2,551.91	2,553.85	2,552.34	1.51	1,691.565		
500.00	500.00	496.70	496.70	0.98	0.98	92.23	-99.43	2,551.91	2,553.85	2,551.89	1.96	1,303.458		
600.00	600.00	596.70	596.70	1.21	1.20	92.23	-99.43	2,551.91	2,553.85	2,551.44	2.41	1,060.207		
700.00	700.00	696.70	696.70	1.43	1.43	92.23	-99.43	2,551.91	2,553.85	2,550.99	2.86	893.469		
800.00	800.00	796.70	796.70	1.66	1.65	92.23	-99.43	2,551.91	2,553.85	2,550.54	3.31	772.049		
900.00	900.00	896.70	896.70	1.88	1.87	92.23	-99.43	2,551.91	2,553.85	2,550.09	3.76	679.682		
1,000.00	1,000.00	996.70	996.70	2.11	2.10	92.23	-99.43	2,551.91	2,553.85	2,549.64	4.21	607.055		
1,100.00	1,100.00	1,096.70	1,096.70	2.33	2.32	92.23	-99.43	2,551.91	2,553.85	2,549.19	4.66	548.450		
1,200.00	1,200.00	1,196.70	1,196.70	2.56	2.55	92.23	-99.43	2,551.91	2,553.85	2,548.74	5.11	500.165		
1,300.00	1,300.00	1,296.70	1,296.70	2.78	2.77	92.23	-99.43	2,551.91	2,553.85	2,548.29	5.56	459.693		
1,400.00	1,400.00	1,396.70	1,396.70	3.01	3.00	92.23	-99.43	2,551.91	2,553.85	2,547.84	6.01	425.281		
1,500.00	1,500.00	1,496.70	1,496.70	3.23	3.22	92.23	-99.43	2,551.91	2,553.85	2,547.39	6.45	395.663		
1,600.00	1,600.00	1,596.70	1,596.70	3.46	3.45	92.23	-99.43	2,551.91	2,553.85	2,546.94	6.90	369.901		
1,700.00	1,700.00	1,696.70	1,696.70	3.68	3.67	92.23	-99.43	2,551.91	2,553.85	2,546.49	7.35	347.289		
1,800.00	1,800.00	1,796.70	1,796.70	3.91	3.90	92.23	-99.43	2,551.91	2,553.85	2,546.04	7.80	327.282		
1,900.00	1,900.00	1,896.70	1,896.70	4.13	4.12	92.23	-99.43	2,551.91	2,553.85	2,545.59	8.25	309.455		
2,000.00	2,000.00	1,996.70	1,996.70	4.35	4.35	92.23	-99.43	2,551.91	2,553.85	2,545.14	8.70	293.469		
2,100.00	2,100.00	2,096.70	2,096.70	4.58	4.57	92.23	-99.43	2,551.91	2,553.85	2,544.69	9.15	279.054		
2,200.00	2,200.00	2,196.70	2,196.70	4.80	4.80	92.23	-99.43	2,551.91	2,553.85	2,544.25	9.60	265.989		
2,300.00	2,300.00	2,296.70	2,296.70	5.03	5.02	92.23	-99.43	2,551.91	2,553.85	2,543.80	10.05	254.092		
2,400.00	2,400.00	2,396.70	2,396.70	5.25	5.25	92.23	-99.43	2,551.91	2,553.85	2,543.35	10.50	243.214		
2,500.00	2,500.00	2,496.70	2,496.70	5.48	5.47	92.23	-99.43	2,551.91	2,553.85	2,542.90	10.95	233.230 CC, ES		
2,600.00	2,599.99	2,567.06	2,567.06	5.69	5.62	162.23	-99.39	2,552.30	2,555.24	2,543.92	11.31	225.849		
2,700.00	2,699.96	2,636.33	2,636.32	5.90	5.76	162.23	-99.28	2,553.52	2,559.49	2,547.83	11.66	219.487		
2,800.00	2,799.86	2,700.00	2,699.96	6.11	5.89	162.22	-99.10	2,555.38	2,566.60	2,554.61	11.99	214.018		
2,900.00	2,899.68	2,774.30	2,774.20	6.33	6.04	162.21	-98.80	2,558.45	2,576.54	2,564.20	12.35	208.672		
2,949.81	2,949.35	2,800.00	2,799.86	6.43	6.10	162.20	-98.68	2,559.73	2,582.58	2,570.08	12.50	206.622		
3,000.00	2,999.38	2,842.87	2,842.67	6.54	6.19	162.22	-98.45	2,562.12	2,589.12	2,576.43	12.69	204.031		
3,100.00	3,099.08	2,900.00	2,899.68	6.76	6.30	162.24	-98.10	2,565.80	2,603.11	2,590.10	13.00	200.190		
3,200.00	3,198.77	2,979.31	2,978.75	6.99	6.47	162.26	-97.52	2,571.86	2,618.19	2,604.82	13.37	195.836		
3,300.00	3,298.46	3,054.33	3,053.47	7.21	6.63	162.28	-96.88	2,578.54	2,634.44	2,620.72	13.73	191.935		
3,400.00	3,398.15	3,152.93	3,151.65	7.44	6.85	162.31	-96.01	2,587.63	2,651.04	2,636.89	14.14	187.447		
3,500.00	3,497.84	3,251.54	3,249.83	7.67	7.07	162.33	-95.14	2,596.72	2,667.63	2,653.07	14.56	183.175		
3,600.00	3,597.54	3,350.15	3,348.02	7.90	7.29	162.35	-94.27	2,605.81	2,684.22	2,669.24	14.99	179.117		
3,700.00	3,697.23	3,448.76	3,446.20	8.13	7.52	162.38	-93.40	2,614.90	2,700.82	2,685.41	15.41	175.255		
3,800.00	3,796.92	3,547.37	3,544.39	8.37	7.75	162.40	-92.54	2,623.99	2,717.41	2,701.58	15.84	171.579		
3,900.00	3,896.61	3,645.97	3,642.57	8.60	7.98	162.42	-91.67	2,633.09	2,734.01	2,717.74	16.27	168.075		
4,000.00	3,996.30	3,744.58	3,740.75	8.84	8.21	162.44	-90.80	2,642.18	2,750.60	2,733.91	16.70	164.735		
4,100.00	4,096.00	3,843.19	3,838.94	9.08	8.45	162.47	-89.93	2,651.27	2,767.20	2,750.07	17.13	161.546		
4,200.00	4,195.69	3,941.80	3,937.12	9.31	8.68	162.49	-89.06	2,660.36	2,783.80	2,766.23	17.56	158.501		
4,300.00	4,295.38	4,040.40	4,035.30	9.55	8.92	162.51	-88.19	2,669.45	2,800.39	2,782.39	18.00	155.591		
4,400.00	4,395.07	4,139.01	4,133.49	9.79	9.16	162.53	-87.32	2,678.54	2,816.99	2,798.55	18.43	152.807		
4,500.00	4,494.76	4,237.62	4,231.67	10.04	9.40	162.55	-86.45	2,687.63	2,833.59	2,814.71	18.87	150.143		
4,600.00	4,594.46	4,336.23	4,329.86	10.28	9.64	162.57	-85.58	2,696.73	2,850.18	2,830.87	19.31	147.590		
4,700.00	4,694.15	4,434.83	4,428.04	10.52	9.89	162.59	-84.71	2,705.82	2,866.78	2,847.03	19.75	145.143		
4,800.00	4,793.84	4,533.44	4,526.22	10.76	10.13	162.62	-83.84	2,714.91	2,883.38	2,863.19	20.19	142.796		
4,900.00	4,893.53	4,632.05	4,624.41	11.01	10.38	162.64	-82.97	2,724.00	2,899.98	2,879.34	20.63	140.543		
5,000.00	4,993.22	4,730.66	4,722.59	11.25	10.62	162.66	-82.10	2,733.09	2,916.58	2,895.50	21.08	138.378		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 86H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
5,100.00	5,092.92	4,829.26	4,820.78	11.50	10.87	162.68	-81.23	2,742.18	2,933.18	2,911.66	21.52	136.297		
5,200.00	5,192.61	4,927.87	4,918.96	11.74	11.12	162.69	-80.36	2,751.27	2,949.78	2,927.81	21.96	134.296		
5,300.00	5,292.30	5,026.48	5,017.14	11.99	11.37	162.71	-79.49	2,760.37	2,966.38	2,943.97	22.41	132.369		
5,400.00	5,391.99	5,125.09	5,115.33	12.24	11.62	162.73	-78.62	2,769.46	2,982.98	2,960.12	22.86	130.514		
5,500.00	5,491.68	5,223.69	5,213.51	12.48	11.87	162.75	-77.75	2,778.55	2,999.58	2,976.28	23.30	128.726		
5,600.00	5,591.38	5,322.30	5,311.69	12.73	12.12	162.77	-76.88	2,787.64	3,016.18	2,992.43	23.75	127.002		
5,700.00	5,691.07	5,420.91	5,409.88	12.98	12.37	162.79	-76.01	2,796.73	3,032.78	3,008.58	24.20	125.339		
5,800.00	5,790.76	5,519.52	5,508.06	13.23	12.62	162.81	-75.14	2,805.82	3,049.38	3,024.74	24.64	123.733		
5,900.00	5,890.45	5,618.13	5,606.25	13.48	12.88	162.83	-74.27	2,814.91	3,065.98	3,040.89	25.09	122.182		
6,000.00	5,990.14	5,716.73	5,704.43	13.72	13.13	162.84	-73.40	2,824.01	3,082.59	3,057.04	25.54	120.683		
6,100.00	6,089.84	5,815.34	5,802.61	13.97	13.38	162.86	-72.53	2,833.10	3,099.19	3,073.20	25.99	119.234		
6,200.00	6,189.53	5,913.95	5,900.80	14.22	13.64	162.88	-71.67	2,842.19	3,115.79	3,089.35	26.44	117.832		
6,300.00	6,289.22	6,012.56	5,998.98	14.47	13.89	162.90	-70.80	2,851.28	3,132.40	3,105.50	26.89	116.475		
6,400.00	6,388.91	6,111.16	6,097.16	14.72	14.15	162.91	-69.93	2,860.37	3,149.00	3,121.65	27.34	115.162		
6,500.00	6,488.60	6,209.77	6,195.35	14.97	14.40	162.93	-69.06	2,869.46	3,165.60	3,137.81	27.80	113.889		
6,600.00	6,588.30	6,308.38	6,293.53	15.22	14.66	162.95	-68.19	2,878.55	3,182.21	3,153.96	28.25	112.655		
6,700.00	6,687.99	6,406.99	6,391.72	15.47	14.91	162.96	-67.32	2,887.65	3,198.81	3,170.11	28.70	111.459		
6,800.00	6,787.68	6,505.59	6,489.90	15.72	15.17	162.98	-66.45	2,896.74	3,215.42	3,186.26	29.15	110.298		
6,900.00	6,887.37	6,604.20	6,588.08	15.98	15.43	163.00	-65.58	2,905.83	3,232.02	3,202.41	29.60	109.172		
7,000.00	6,987.06	6,702.81	6,686.27	16.23	15.68	163.01	-64.71	2,914.92	3,248.62	3,218.57	30.06	108.078		
7,100.00	7,086.76	6,801.42	6,784.45	16.48	15.94	163.03	-63.84	2,924.01	3,265.23	3,234.72	30.51	107.016		
7,200.00	7,186.45	6,900.02	6,882.63	16.73	16.20	163.04	-62.97	2,933.10	3,281.84	3,250.87	30.97	105.984		
7,300.00	7,286.14	6,998.63	6,980.82	16.98	16.46	163.06	-62.10	2,942.19	3,298.44	3,267.02	31.42	104.981		
7,400.00	7,385.83	7,097.24	7,079.00	17.23	16.71	163.08	-61.23	2,951.29	3,315.05	3,283.17	31.87	104.005		
7,500.00	7,485.52	7,195.85	7,177.19	17.49	16.97	163.09	-60.36	2,960.38	3,331.65	3,299.32	32.33	103.056		
7,600.00	7,585.22	7,294.46	7,275.37	17.74	17.23	163.11	-59.49	2,969.47	3,348.26	3,315.48	32.78	102.133		
7,700.00	7,684.91	7,393.06	7,373.55	17.99	17.49	163.12	-58.62	2,978.56	3,364.87	3,331.63	33.24	101.234		
7,800.00	7,784.60	7,491.67	7,471.74	18.24	17.75	163.14	-57.75	2,987.65	3,381.47	3,347.78	33.69	100.358		
7,900.00	7,884.29	7,590.28	7,569.92	18.50	18.01	163.15	-56.88	2,996.74	3,398.08	3,363.93	34.15	99.506		
8,000.00	7,983.98	7,688.89	7,668.10	18.75	18.27	163.17	-56.01	3,005.83	3,414.69	3,380.08	34.61	98.675		
8,100.00	8,083.68	7,787.49	7,766.29	19.00	18.53	163.18	-55.14	3,014.93	3,431.30	3,396.23	35.06	97.865		
8,200.00	8,183.37	7,886.10	7,864.47	19.25	18.79	163.19	-54.27	3,024.02	3,447.90	3,412.38	35.52	97.075		
8,300.00	8,283.06	7,984.71	7,962.66	19.51	19.05	163.21	-53.40	3,033.11	3,464.51	3,428.54	35.97	96.304		
8,400.00	8,382.75	8,083.32	8,060.84	19.76	19.31	163.22	-52.53	3,042.20	3,481.12	3,444.69	36.43	95.553		
8,500.00	8,482.44	8,181.92	8,159.02	20.01	19.57	163.24	-51.66	3,051.29	3,497.73	3,460.84	36.89	94.819		
8,600.00	8,582.14	8,280.53	8,257.21	20.27	19.83	163.25	-50.80	3,060.38	3,514.34	3,476.99	37.35	94.103		
8,700.00	8,681.83	8,379.14	8,355.39	20.52	20.09	163.26	-49.93	3,069.47	3,530.94	3,493.14	37.80	93.404		
8,800.00	8,781.52	8,477.75	8,453.58	20.77	20.35	163.28	-49.06	3,078.57	3,547.55	3,509.29	38.26	92.721		
8,900.00	8,881.21	8,576.35	8,551.76	21.03	20.61	163.29	-48.19	3,087.66	3,564.16	3,525.44	38.72	92.054		
9,000.00	8,980.90	8,674.96	8,649.94	21.28	20.87	163.30	-47.32	3,096.75	3,580.77	3,541.60	39.18	91.402		
9,100.00	9,080.60	8,773.57	8,748.13	21.54	21.13	163.32	-46.45	3,105.84	3,597.38	3,557.75	39.63	90.765		
9,200.00	9,180.29	8,872.18	8,846.31	21.79	21.39	163.33	-45.58	3,114.93	3,613.99	3,573.90	40.09	90.141		
9,300.00	9,279.98	8,970.79	8,944.49	22.04	21.65	163.34	-44.71	3,124.02	3,630.60	3,590.05	40.55	89.532		
9,400.00	9,379.67	9,069.39	9,042.68	22.30	21.91	163.36	-43.84	3,133.11	3,647.21	3,606.20	41.01	88.936		
9,500.00	9,479.36	9,168.00	9,140.86	22.55	22.18	163.37	-42.97	3,142.21	3,663.82	3,622.35	41.47	88.352		
9,600.00	9,579.05	9,266.61	9,239.05	22.81	22.44	163.38	-42.10	3,151.30	3,680.43	3,638.50	41.93	87.781		
9,700.00	9,678.75	9,365.22	9,337.23	23.06	22.70	163.39	-41.23	3,160.39	3,697.04	3,654.66	42.39	87.222		
9,800.00	9,778.44	9,463.82	9,435.41	23.31	22.96	163.41	-40.36	3,169.48	3,713.65	3,670.81	42.85	86.675		
9,900.00	9,878.13	9,562.43	9,533.60	23.57	23.22	163.42	-39.49	3,178.57	3,730.26	3,686.96	43.31	86.139		
10,000.00	9,977.82	9,661.04	9,631.78	23.82	23.48	163.43	-38.62	3,187.66	3,746.87	3,703.11	43.76	85.614		
10,100.00	10,077.51	9,759.65	9,729.96	24.08	23.75	163.44	-37.75	3,196.75	3,763.49	3,719.26	44.22	85.099		
10,200.00	10,177.21	9,858.25	9,828.15	24.33	24.01	163.45	-36.88	3,205.85	3,780.10	3,735.41	44.68	84.595		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 86H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM														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)	Separation (usft)	Factor			
10,300.00	10,276.90	9,956.86	9,926.33	24.59	24.27	163.47	-36.01	3,214.94	3,796.71	3,751.56	45.14	84.101			
10,400.00	10,376.59	10,055.47	10,024.52	24.84	24.53	163.48	-35.14	3,224.03	3,813.32	3,767.72	45.80	83.617			
10,500.00	10,476.28	10,154.08	10,122.70	25.10	24.79	163.49	-34.27	3,233.12	3,829.93	3,783.87	46.07	83.142			
10,600.00	10,575.97	10,252.68	10,220.88	25.35	25.06	163.50	-33.40	3,242.21	3,846.54	3,800.02	46.53	82.676			
10,700.00	10,675.67	10,351.29	10,319.07	25.61	25.32	163.51	-32.53	3,251.30	3,863.16	3,816.17	46.99	82.219			
10,800.00	10,775.36	10,449.90	10,417.25	25.86	25.58	163.52	-31.66	3,260.39	3,879.77	3,832.32	47.45	81.771			
10,900.00	10,875.05	10,548.51	10,515.43	26.12	25.84	163.53	-30.79	3,269.49	3,896.38	3,848.47	47.91	81.331			
11,000.00	10,974.74	10,647.12	10,613.62	26.37	26.11	163.55	-29.93	3,278.58	3,912.99	3,864.62	48.37	80.899			
11,076.14	11,050.65	10,722.20	10,688.38	26.57	26.31	163.55	-29.26	3,285.50	3,925.64	3,876.92	48.72	80.575			
11,100.00	11,074.44	10,745.73	10,711.81	26.62	26.37	163.57	-29.06	3,287.67	3,929.56	3,880.73	48.82	80.483			
11,200.00	11,174.22	10,844.54	10,810.19	26.81	26.63	163.62	-28.18	3,296.78	3,944.95	3,895.71	49.24	80.121			
11,300.00	11,274.10	10,943.59	10,908.82	26.99	26.90	163.65	-27.31	3,305.91	3,958.69	3,909.04	49.65	79.733			
11,400.00	11,374.06	11,042.63	11,007.79	27.17	27.33	163.67	-25.82	3,321.46	3,970.36	3,920.09	50.26	78.991			
11,500.00	11,474.05	11,142.88	11,107.09	27.33	27.90	163.67	-24.50	3,335.28	3,975.96	3,924.89	51.07	77.852			
11,525.95	11,500.00	11,525.31	11,489.52	27.38	28.04	93.67	-24.43	3,336.02	3,976.25	3,924.98	51.27	77.563			
11,600.00	11,574.05	11,606.54	11,570.75	27.51	28.19	93.67	-24.43	3,336.03	3,976.25	3,924.68	51.57	77.108			
11,700.00	11,674.05	11,706.54	11,670.75	27.71	28.38	93.67	-24.43	3,336.03	3,976.25	3,924.27	51.98	76.496			
11,800.00	11,774.05	11,806.54	11,770.75	27.91	28.57	93.67	-24.43	3,336.03	3,976.25	3,923.86	52.39	75.893			
11,900.00	11,874.05	11,906.54	11,870.75	28.11	28.76	93.67	-24.43	3,336.03	3,976.25	3,923.44	52.81	75.299			
12,000.00	11,974.05	12,006.54	11,970.75	28.31	28.95	93.67	-24.43	3,336.03	3,976.25	3,923.03	53.22	74.713			
12,096.99	12,071.04	12,073.50	12,037.55	28.50	29.07	93.72	-28.30	3,336.03	3,976.61	3,923.06	53.55	74.262			
12,100.00	12,074.05	12,075.55	12,039.59	28.51	29.07	-86.27	-28.55	3,336.03	3,976.64	3,923.08	53.56	74.250			
12,150.00	12,123.97	12,109.64	12,073.30	28.59	29.13	-86.19	-33.63	3,336.03	3,976.97	3,923.27	53.70	74.057			
12,200.00	12,173.49	12,150.00	12,112.72	28.67	29.19	-86.12	-42.22	3,336.03	3,977.22	3,923.38	53.85	73.864			
12,250.00	12,222.23	12,177.58	12,139.27	28.73	29.24	-86.09	-49.68	3,336.03	3,977.37	3,923.41	53.96	73.714			
12,300.00	12,269.83	12,211.48	12,171.36	28.79	29.29	-86.08	-60.59	3,336.03	3,977.42	3,923.35	54.07	73.558			
12,350.00	12,315.90	12,250.00	12,206.97	28.85	29.35	-86.09	-75.26	3,336.03	3,977.39	3,923.20	54.19	73.402			
12,400.00	12,360.12	12,279.31	12,233.36	28.90	29.39	-86.12	-88.01	3,336.03	3,977.25	3,922.97	54.28	73.270			
12,450.00	12,402.13	12,313.29	12,263.09	28.94	29.45	-86.17	-104.45	3,336.03	3,977.03	3,922.64	54.38	73.129			
12,500.00	12,441.63	12,350.00	12,294.05	28.98	29.50	-86.26	-124.16	3,336.03	3,976.71	3,922.22	54.49	72.979			
12,550.00	12,478.30	12,381.55	12,319.61	29.02	29.55	-86.35	-142.66	3,336.03	3,976.31	3,921.72	54.60	72.832			
12,600.00	12,511.88	12,415.90	12,346.23	29.06	29.60	-86.47	-164.36	3,336.03	3,975.84	3,921.13	54.71	72.688			
12,650.00	12,542.10	12,450.00	12,371.32	29.09	29.66	-86.61	-187.44	3,336.03	3,975.30	3,920.46	54.84	72.489			
12,700.00	12,568.73	12,485.18	12,395.72	29.14	29.72	-86.78	-212.78	3,336.03	3,974.70	3,919.71	54.99	72.285			
12,750.00	12,591.58	12,520.21	12,418.43	29.19	29.78	-86.95	-239.44	3,336.03	3,974.06	3,918.91	55.15	72.058			
12,800.00	12,610.47	12,550.00	12,436.43	29.25	29.83	-87.13	-263.18	3,336.03	3,973.39	3,918.07	55.32	71.825			
12,850.00	12,625.25	12,591.23	12,459.25	29.33	29.91	-87.36	-297.50	3,336.03	3,972.69	3,917.15	55.54	71.524			
12,900.00	12,635.81	12,627.34	12,477.17	29.43	29.99	-87.59	-328.85	3,336.03	3,971.99	3,916.22	55.78	71.211			
12,950.00	12,642.07	12,663.92	12,493.27	29.54	30.07	-87.83	-361.69	3,336.03	3,971.31	3,915.27	56.04	70.870			
12,996.99	12,644.00	12,700.00	12,507.07	29.68	30.17	-88.07	-395.02	3,336.03	3,970.69	3,914.38	56.31	70.519			
13,000.00	12,644.00	12,700.00	12,507.07	29.69	30.17	-88.07	-395.02	3,336.03	3,970.65	3,914.33	56.32	70.505			
13,100.00	12,644.00	12,779.42	12,529.89	30.04	30.40	-88.40	-471.02	3,336.03	3,969.73	3,912.73	57.00	69.649			
13,200.00	12,644.00	12,862.92	12,542.32	30.48	30.70	-88.58	-553.52	3,336.03	3,969.33	3,911.51	57.81	68.656			
13,300.00	12,644.00	12,955.41	12,544.00	31.00	31.09	-88.60	-645.96	3,336.03	3,969.28	3,910.47	58.81	67.494			
13,318.51	12,644.00	12,973.92	12,544.00	31.11	31.17	-88.60	-664.48	3,336.03	3,969.28	3,910.26	59.02	67.254			
13,400.00	12,644.00	13,055.41	12,544.00	31.61	31.59	-88.60	-745.96	3,336.03	3,969.28	3,909.29	59.99	66.169			
13,500.00	12,644.00	13,155.41	12,544.00	32.29	32.17	-88.60	-845.96	3,336.03	3,969.28	3,907.96	61.31	64.737			
13,600.00	12,644.00	13,255.41	12,544.00	33.04	32.82	-88.60	-945.96	3,336.03	3,969.28	3,906.49	62.78	63.222			
13,700.00	12,644.00	13,355.41	12,544.00	33.85	33.53	-88.60	-1,045.96	3,336.03	3,969.28	3,904.89	64.39	61.648			
13,800.00	12,644.00	13,455.41	12,544.00	34.72	34.31	-88.60	-1,145.96	3,336.03	3,969.28	3,903.17	66.11	60.040			
13,900.00	12,644.00	13,555.41	12,544.00	35.64	35.15	-88.60	-1,245.96	3,336.03	3,969.28	3,901.33	67.95	58.416			
14,000.00	12,644.00	13,655.41	12,544.00	36.62	36.05	-88.60	-1,345.96	3,336.03	3,969.28	3,899.39	69.89	56.792			

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
 Project: Lea County, NM (NAD-83)
 Reference Site: Fighting Okra 18-19 Fed
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
 MD Reference: 3371' GE + 25' KB @ 3396.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 86H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,100.00	12,644.00	13,755.41	12,544.00	37.64	36.99	-88.60	-1,445.96	3,336.03	3,969.28	3,897.35	71.93	55.182		
14,200.00	12,644.00	13,855.41	12,544.00	38.70	37.99	-88.60	-1,545.96	3,336.03	3,969.28	3,895.22	74.06	53.597		
14,300.00	12,644.00	13,955.41	12,544.00	39.80	39.02	-88.60	-1,645.96	3,336.03	3,969.28	3,893.01	76.27	52.045		
14,400.00	12,644.00	14,055.41	12,544.00	40.94	40.10	-88.60	-1,745.96	3,336.03	3,969.28	3,890.73	78.55	50.533		
14,500.00	12,644.00	14,155.41	12,544.00	42.11	41.21	-88.60	-1,845.96	3,336.03	3,969.28	3,888.38	80.90	49.065		
14,600.00	12,644.00	14,255.41	12,544.00	43.30	42.36	-88.60	-1,945.96	3,336.03	3,969.28	3,885.97	83.31	47.645		
14,700.00	12,644.00	14,355.41	12,544.00	44.53	43.53	-88.60	-2,045.96	3,336.03	3,969.28	3,883.50	85.78	46.274		
14,800.00	12,644.00	14,455.41	12,544.00	45.78	44.74	-88.60	-2,145.96	3,336.03	3,969.28	3,880.98	88.30	44.953		
14,900.00	12,644.00	14,555.41	12,544.00	47.06	45.97	-88.60	-2,245.96	3,336.03	3,969.28	3,878.41	90.87	43.682		
15,000.00	12,644.00	14,655.41	12,544.00	48.36	47.23	-88.60	-2,345.96	3,336.03	3,969.28	3,875.80	93.48	42.462		
15,100.00	12,644.00	14,755.41	12,544.00	49.67	48.51	-88.60	-2,445.96	3,336.03	3,969.28	3,873.15	96.13	41.290		
15,200.00	12,644.00	14,855.41	12,544.00	51.01	49.81	-88.60	-2,545.96	3,336.03	3,969.28	3,870.46	98.82	40.167		
15,300.00	12,644.00	14,955.41	12,544.00	52.36	51.13	-88.60	-2,645.96	3,336.03	3,969.28	3,867.73	101.54	39.089		
15,400.00	12,644.00	15,055.41	12,544.00	53.73	52.47	-88.60	-2,745.96	3,336.03	3,969.28	3,864.98	104.30	38.057		
15,500.00	12,644.00	15,155.41	12,544.00	55.11	53.82	-88.60	-2,845.96	3,336.03	3,969.28	3,862.20	107.08	37.068		
15,600.00	12,644.00	15,255.41	12,544.00	56.51	55.19	-88.60	-2,945.96	3,336.03	3,969.28	3,859.39	109.89	36.120		
15,700.00	12,644.00	15,355.41	12,544.00	57.92	56.57	-88.60	-3,045.96	3,336.03	3,969.28	3,856.55	112.73	35.212		
15,800.00	12,644.00	15,455.41	12,544.00	59.34	57.97	-88.60	-3,145.96	3,336.03	3,969.28	3,853.69	115.58	34.341		
15,900.00	12,644.00	15,555.41	12,544.00	60.77	59.38	-88.60	-3,245.96	3,336.03	3,969.28	3,850.82	118.46	33.507		
16,000.00	12,644.00	15,655.41	12,544.00	62.21	60.80	-88.60	-3,345.96	3,336.03	3,969.28	3,847.92	121.36	32.706		
16,100.00	12,644.00	15,755.41	12,544.00	63.66	62.23	-88.60	-3,445.96	3,336.03	3,969.28	3,845.00	124.28	31.939		
16,200.00	12,644.00	15,855.41	12,544.00	65.12	63.67	-88.60	-3,545.96	3,336.03	3,969.28	3,842.07	127.21	31.202		
16,300.00	12,644.00	15,955.41	12,544.00	66.58	65.11	-88.60	-3,645.96	3,336.03	3,969.28	3,839.12	130.16	30.495		
16,400.00	12,644.00	16,055.41	12,544.00	68.06	66.57	-88.60	-3,745.96	3,336.03	3,969.28	3,836.15	133.13	29.816		
16,500.00	12,644.00	16,155.41	12,544.00	69.54	68.04	-88.60	-3,845.96	3,336.03	3,969.28	3,833.17	136.11	29.163		
16,600.00	12,644.00	16,255.41	12,544.00	71.03	69.51	-88.60	-3,945.96	3,336.03	3,969.28	3,830.18	139.10	28.536		
16,700.00	12,644.00	16,355.41	12,544.00	72.52	70.99	-88.60	-4,045.96	3,336.03	3,969.28	3,827.18	142.10	27.933		
16,800.00	12,644.00	16,455.41	12,544.00	74.02	72.48	-88.60	-4,145.96	3,336.03	3,969.28	3,824.16	145.12	27.352		
16,900.00	12,644.00	16,555.41	12,544.00	75.53	73.97	-88.60	-4,245.96	3,336.03	3,969.28	3,821.14	148.14	26.794		
17,000.00	12,644.00	16,655.41	12,544.00	77.04	75.47	-88.60	-4,345.96	3,336.03	3,969.28	3,818.10	151.18	26.256		
17,100.00	12,644.00	16,755.41	12,544.00	78.56	76.97	-88.60	-4,445.96	3,336.03	3,969.28	3,815.05	154.22	25.737		
17,200.00	12,644.00	16,855.41	12,544.00	80.08	78.48	-88.60	-4,545.96	3,336.03	3,969.28	3,812.00	157.28	25.237		
17,300.00	12,644.00	16,955.41	12,544.00	81.60	80.00	-88.60	-4,645.96	3,336.03	3,969.28	3,808.94	160.34	24.755		
17,400.00	12,644.00	17,055.41	12,544.00	83.13	81.52	-88.60	-4,745.96	3,336.03	3,969.28	3,805.87	163.41	24.290		
17,500.00	12,644.00	17,155.41	12,544.00	84.67	83.04	-88.60	-4,845.96	3,336.03	3,969.28	3,802.79	166.49	23.841		
17,600.00	12,644.00	17,255.41	12,544.00	86.20	84.57	-88.60	-4,945.96	3,336.03	3,969.28	3,799.70	169.58	23.407		
17,700.00	12,644.00	17,355.41	12,544.00	87.75	86.10	-88.60	-5,045.96	3,336.03	3,969.28	3,796.61	172.67	22.988		
17,800.00	12,644.00	17,455.41	12,544.00	89.29	87.64	-88.60	-5,145.96	3,336.03	3,969.28	3,793.51	175.77	22.583		
17,900.00	12,644.00	17,555.41	12,544.00	90.84	89.17	-88.60	-5,245.96	3,336.03	3,969.28	3,790.41	178.87	22.191		
18,000.00	12,644.00	17,655.41	12,544.00	92.39	90.72	-88.60	-5,345.96	3,336.03	3,969.28	3,787.30	181.98	21.811		
18,100.00	12,644.00	17,755.41	12,544.00	93.94	92.26	-88.60	-5,445.96	3,336.03	3,969.28	3,784.18	185.10	21.444		
18,200.00	12,644.00	17,855.41	12,544.00	95.50	93.81	-88.60	-5,545.96	3,336.03	3,969.28	3,781.06	188.22	21.089		
18,300.00	12,644.00	17,955.41	12,544.00	97.05	95.36	-88.60	-5,645.96	3,336.03	3,969.28	3,777.93	191.35	20.744		
18,400.00	12,644.00	18,055.41	12,544.00	98.61	96.92	-88.60	-5,745.96	3,336.03	3,969.28	3,774.80	194.48	20.410		
18,500.00	12,644.00	18,155.41	12,544.00	100.18	98.47	-88.60	-5,845.96	3,336.03	3,969.28	3,771.67	197.61	20.086		
18,600.00	12,644.00	18,255.41	12,544.00	101.74	100.03	-88.60	-5,945.96	3,336.03	3,969.28	3,768.53	200.75	19.772		
18,700.00	12,644.00	18,355.41	12,544.00	103.31	101.59	-88.60	-6,045.96	3,336.03	3,969.28	3,765.39	203.89	19.467		
18,800.00	12,644.00	18,455.41	12,544.00	104.88	103.16	-88.60	-6,145.96	3,336.03	3,969.28	3,762.24	207.04	19.172		
18,900.00	12,644.00	18,555.41	12,544.00	106.45	104.72	-88.60	-6,245.96	3,336.03	3,969.28	3,759.09	210.19	18.884		
19,000.00	12,644.00	18,655.41	12,544.00	108.02	106.29	-88.60	-6,345.96	3,336.03	3,969.28	3,755.93	213.35	18.605		
19,100.00	12,644.00	18,755.41	12,544.00	109.60	107.86	-88.60	-6,445.96	3,336.03	3,969.28	3,752.77	216.50	18.334		
19,200.00	12,644.00	18,855.41	12,544.00	111.18	109.43	-88.60	-6,545.96	3,336.03	3,969.28	3,749.61	219.66	18.070		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 86H - OH - Plan #1														Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
19,300.00	12,644.00	18,955.41	12,544.00	112.75	111.01	-88.60	-6,645.96	3,336.03	3,969.28	3,746.45	222.83	17.813			
19,400.00	12,644.00	19,055.41	12,544.00	114.33	112.58	-88.60	-6,745.96	3,336.03	3,969.28	3,743.28	226.00	17.564			
19,500.00	12,644.00	19,155.41	12,544.00	115.92	114.16	-88.60	-6,845.96	3,336.03	3,969.28	3,740.11	229.17	17.321			
19,600.00	12,644.00	19,255.41	12,544.00	117.50	115.74	-88.60	-6,945.96	3,336.03	3,969.28	3,736.94	232.34	17.084			
19,700.00	12,644.00	19,355.41	12,544.00	119.08	117.32	-88.60	-7,045.96	3,336.03	3,969.28	3,733.77	235.51	16.854			
19,800.00	12,644.00	19,455.41	12,544.00	120.67	118.90	-88.60	-7,145.96	3,336.03	3,969.28	3,730.59	238.69	16.629			
19,900.00	12,644.00	19,555.41	12,544.00	122.26	120.48	-88.60	-7,245.96	3,336.03	3,969.28	3,727.41	241.87	16.411			
20,000.00	12,644.00	19,655.41	12,544.00	123.84	122.07	-88.60	-7,345.96	3,336.03	3,969.28	3,724.22	245.05	16.198			
20,100.00	12,644.00	19,755.41	12,544.00	125.43	123.65	-88.60	-7,445.96	3,336.03	3,969.28	3,721.04	248.24	15.990			
20,200.00	12,644.00	19,855.41	12,544.00	127.02	125.24	-88.60	-7,545.96	3,336.03	3,969.28	3,717.85	251.42	15.787			
20,300.00	12,644.00	19,955.41	12,544.00	128.62	126.83	-88.60	-7,645.96	3,336.03	3,969.28	3,714.66	254.61	15.589			
20,400.00	12,644.00	20,055.41	12,544.00	130.21	128.42	-88.60	-7,745.96	3,336.03	3,969.28	3,711.47	257.80	15.396			
20,500.00	12,644.00	20,155.41	12,544.00	131.80	130.01	-88.60	-7,845.96	3,336.03	3,969.28	3,708.28	261.00	15.208			
20,600.00	12,644.00	20,255.41	12,544.00	133.40	131.60	-88.60	-7,945.96	3,336.03	3,969.28	3,705.09	264.19	15.024			
20,700.00	12,644.00	20,355.41	12,544.00	134.99	133.19	-88.60	-8,045.96	3,336.03	3,969.28	3,701.89	267.39	14.845			
20,800.00	12,644.00	20,455.41	12,544.00	136.59	134.78	-88.60	-8,145.96	3,336.03	3,969.28	3,698.69	270.59	14.669			
20,900.00	12,644.00	20,555.41	12,544.00	138.19	136.38	-88.60	-8,245.96	3,336.03	3,969.28	3,695.49	273.79	14.498			
21,000.00	12,644.00	20,655.41	12,544.00	139.78	137.97	-88.60	-8,345.96	3,336.03	3,969.28	3,692.29	276.99	14.330			
21,100.00	12,644.00	20,755.41	12,544.00	141.38	139.57	-88.60	-8,445.96	3,336.03	3,969.28	3,689.09	280.19	14.166			
21,200.00	12,644.00	20,855.41	12,544.00	142.98	141.17	-88.60	-8,545.96	3,336.03	3,969.28	3,685.88	283.39	14.006			
21,300.00	12,644.00	20,955.41	12,544.00	144.58	142.76	-88.60	-8,645.96	3,336.03	3,969.28	3,682.68	286.60	13.850			
21,400.00	12,644.00	21,055.41	12,544.00	146.19	144.36	-88.60	-8,745.96	3,336.03	3,969.28	3,679.47	289.81	13.696			
21,500.00	12,644.00	21,155.41	12,544.00	147.79	145.96	-88.60	-8,845.96	3,336.03	3,969.28	3,676.26	293.02	13.546			
21,600.00	12,644.00	21,255.41	12,544.00	149.39	147.56	-88.60	-8,945.96	3,336.03	3,969.28	3,673.05	296.23	13.400			
21,700.00	12,644.00	21,355.41	12,544.00	150.99	149.16	-88.60	-9,045.96	3,336.03	3,969.28	3,669.84	299.44	13.256			
21,800.00	12,644.00	21,455.41	12,544.00	152.60	150.77	-88.60	-9,145.96	3,336.03	3,969.28	3,666.63	302.65	13.115			
21,900.00	12,644.00	21,555.41	12,544.00	154.20	152.37	-88.60	-9,245.96	3,336.03	3,969.28	3,663.42	305.86	12.977			
22,000.00	12,644.00	21,655.41	12,544.00	155.81	153.97	-88.60	-9,345.96	3,336.03	3,969.28	3,660.20	309.08	12.842			
22,100.00	12,644.00	21,755.41	12,544.00	157.41	155.58	-88.60	-9,445.96	3,336.03	3,969.28	3,656.99	312.29	12.710			
22,200.00	12,644.00	21,855.41	12,544.00	159.02	157.18	-88.60	-9,545.96	3,336.03	3,969.28	3,653.77	315.51	12.581			
22,300.00	12,644.00	21,955.41	12,544.00	160.63	158.79	-88.60	-9,645.96	3,336.03	3,969.28	3,650.55	318.73	12.454			
22,400.00	12,644.00	22,055.41	12,544.00	162.24	160.39	-88.60	-9,745.96	3,336.03	3,969.28	3,647.33	321.95	12.329			
22,500.00	12,644.00	22,155.41	12,544.00	163.84	162.00	-88.60	-9,845.96	3,336.03	3,969.28	3,644.11	325.17	12.207			
22,526.13	12,644.00	22,181.54	12,544.00	164.26	162.42	-88.60	-9,872.10	3,336.03	3,969.28	3,643.27	326.01	12.175			
22,563.88	12,644.00	22,181.55	12,544.00	164.87	162.42	-88.60	-9,872.10	3,336.03	3,969.46	3,642.83	326.62	12.153 SF			

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 8H - OH - Plan #1											Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	0.00	0.00	0.00	0.00	92.18	-36.88	970.13	970.85			
100.00	100.00	94.20	94.20	0.08	0.08	92.18	-36.88	970.13	970.83	970.67	0.16	5,931.053
200.00	200.00	194.20	194.20	0.31	0.30	92.18	-36.88	970.13	970.83	970.23	0.61	1,604.492
300.00	300.00	294.20	294.20	0.53	0.52	92.18	-36.88	970.13	970.83	969.78	1.05	920.566
400.00	400.00	394.20	394.20	0.76	0.75	92.18	-36.88	970.13	970.83	969.33	1.50	645.441
500.00	500.00	494.20	494.20	0.98	0.97	92.18	-36.88	970.13	970.83	968.88	1.95	496.928
600.00	600.00	594.20	594.20	1.21	1.20	92.18	-36.88	970.13	970.83	968.43	2.40	403.974
700.00	700.00	694.20	694.20	1.43	1.42	92.18	-36.88	970.13	970.83	967.98	2.85	340.316
800.00	800.00	794.20	794.20	1.66	1.64	92.18	-36.88	970.13	970.83	967.53	3.30	293.990
900.00	900.00	894.20	894.20	1.88	1.87	92.18	-36.88	970.13	970.83	967.08	3.75	258.764
1,000.00	1,000.00	994.20	994.20	2.11	2.09	92.18	-36.88	970.13	970.83	966.63	4.20	231.077
1,100.00	1,100.00	1,094.20	1,094.20	2.33	2.32	92.18	-36.88	970.13	970.83	966.18	4.65	208.742
1,200.00	1,200.00	1,194.20	1,194.20	2.56	2.54	92.18	-36.88	970.13	970.83	965.73	5.10	190.344
1,300.00	1,300.00	1,294.20	1,294.20	2.78	2.77	92.18	-36.88	970.13	970.83	965.28	5.55	174.927
1,400.00	1,400.00	1,394.20	1,394.20	3.01	2.99	92.18	-36.88	970.13	970.83	964.83	6.00	161.820
1,500.00	1,500.00	1,494.20	1,494.20	3.23	3.22	92.18	-36.88	970.13	970.83	964.38	6.45	150.540
1,600.00	1,600.00	1,594.20	1,594.20	3.46	3.44	92.18	-36.88	970.13	970.83	963.93	6.90	140.730
1,700.00	1,700.00	1,694.20	1,694.20	3.68	3.67	92.18	-36.88	970.13	970.83	963.48	7.35	132.121
1,800.00	1,800.00	1,794.20	1,794.20	3.91	3.89	92.18	-36.88	970.13	970.83	963.03	7.80	124.504
1,900.00	1,900.00	1,894.20	1,894.20	4.13	4.12	92.18	-36.88	970.13	970.83	962.58	8.25	117.718
2,000.00	2,000.00	1,994.20	1,994.20	4.35	4.34	92.18	-36.88	970.13	970.83	962.13	8.70	111.633
2,100.00	2,100.00	2,094.20	2,094.20	4.58	4.57	92.18	-36.88	970.13	970.83	961.68	9.15	106.146
2,200.00	2,200.00	2,194.20	2,194.20	4.80	4.79	92.18	-36.88	970.13	970.83	961.24	9.60	101.173
2,300.00	2,300.00	2,294.20	2,294.20	5.03	5.02	92.18	-36.88	970.13	970.83	960.79	10.05	96.646
2,400.00	2,400.00	2,394.20	2,394.20	5.25	5.24	92.18	-36.88	970.13	970.83	960.34	10.49	92.506
2,500.00	2,500.00	2,494.20	2,494.20	5.48	5.47	92.18	-36.88	970.13	970.83	959.89	10.94	88.706 CC, ES
2,600.00	2,599.99	2,594.19	2,594.19	5.69	5.69	162.19	-36.88	970.13	971.66	960.28	11.38	85.351
2,700.00	2,699.96	2,694.16	2,694.16	5.90	5.92	162.23	-36.88	970.13	974.15	962.34	11.82	82.445
2,800.00	2,799.86	2,794.06	2,794.06	6.11	6.14	162.30	-36.88	970.13	978.31	966.06	12.25	79.871
2,900.00	2,899.68	2,893.88	2,893.88	6.33	6.36	162.39	-36.88	970.13	984.13	971.45	12.68	77.597
2,949.81	2,949.35	2,943.55	2,943.55	6.43	6.48	162.44	-36.88	970.13	987.65	974.75	12.90	76.566
3,000.00	2,999.38	2,993.58	2,993.58	6.54	6.59	162.51	-36.88	970.13	991.40	978.28	13.12	75.578
3,100.00	3,099.08	3,079.95	3,079.95	6.76	6.77	162.62	-36.74	970.67	999.51	985.99	13.51	73.966
3,200.00	3,198.77	3,165.21	3,165.18	6.99	6.95	162.70	-36.29	972.44	1,009.03	995.14	13.90	72.606
3,300.00	3,298.46	3,250.23	3,250.15	7.21	7.13	162.76	-35.52	975.42	1,019.97	1,005.70	14.28	71.438
3,400.00	3,398.15	3,334.97	3,334.78	7.44	7.30	162.80	-34.44	979.61	1,032.32	1,017.66	14.66	70.437
3,500.00	3,497.84	3,419.41	3,419.03	7.67	7.48	162.82	-33.05	984.99	1,046.06	1,031.03	15.03	69.590
3,600.00	3,597.54	3,500.00	3,499.37	7.90	7.65	162.82	-31.43	991.24	1,061.20	1,045.80	15.39	68.938
3,700.00	3,697.23	3,587.21	3,586.18	8.13	7.84	162.79	-29.37	999.24	1,077.70	1,061.93	15.78	68.313
3,800.00	3,796.92	3,670.51	3,668.98	8.37	8.03	162.75	-27.09	1,008.08	1,095.59	1,079.44	16.14	67.864
3,900.00	3,896.61	3,753.37	3,751.20	8.60	8.22	162.69	-24.53	1,018.02	1,114.83	1,098.32	16.51	67.527
4,000.00	3,996.30	3,835.76	3,832.80	8.84	8.41	162.61	-21.68	1,029.05	1,135.43	1,118.55	16.87	67.298
4,100.00	4,096.00	3,932.69	3,928.69	9.08	8.65	162.52	-18.15	1,042.75	1,156.76	1,139.46	17.30	66.881
4,200.00	4,195.69	4,030.37	4,025.32	9.31	8.89	162.42	-14.58	1,056.57	1,178.10	1,160.37	17.73	66.464
4,300.00	4,295.38	4,128.05	4,121.95	9.55	9.14	162.33	-11.02	1,070.38	1,199.44	1,181.28	18.16	66.057
4,400.00	4,395.07	4,225.73	4,218.59	9.79	9.39	162.24	-7.46	1,084.19	1,220.78	1,202.19	18.59	65.662
4,500.00	4,494.76	4,323.41	4,315.22	10.04	9.64	162.16	-3.90	1,098.00	1,242.12	1,223.10	19.03	65.278
4,600.00	4,594.46	4,421.08	4,411.85	10.28	9.90	162.08	-0.33	1,111.81	1,263.47	1,244.01	19.47	64.905
4,700.00	4,694.15	4,518.76	4,508.48	10.52	10.16	162.00	3.23	1,125.63	1,284.82	1,264.92	19.91	64.543
4,800.00	4,793.84	4,616.44	4,605.11	10.76	10.42	161.92	6.79	1,139.44	1,306.18	1,285.83	20.35	64.191
4,900.00	4,893.53	4,714.12	4,701.75	11.01	10.69	161.85	10.35	1,153.25	1,327.53	1,306.74	20.79	63.850
5,000.00	4,993.22	4,811.80	4,798.38	11.25	10.96	161.77	13.92	1,167.06	1,348.89	1,327.65	21.24	63.518

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 8H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													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		
5,100.00	5,092.92	4,909.48	4,895.01	11.50	11.23	161.70	17.48	1,180.88	1,370.25	1,348.56	21.68	63.196		
5,200.00	5,192.61	5,007.16	4,991.64	11.74	11.51	161.64	21.04	1,194.69	1,391.61	1,369.48	22.13	62.884		
5,300.00	5,292.30	5,104.84	5,088.27	11.99	11.79	161.57	24.61	1,208.50	1,412.97	1,390.39	22.58	62.580		
5,400.00	5,391.99	5,202.52	5,184.90	12.24	12.07	161.51	28.17	1,222.31	1,434.33	1,411.31	23.03	62.286		
5,500.00	5,491.68	5,300.20	5,281.54	12.48	12.35	161.45	31.73	1,236.12	1,455.70	1,432.22	23.48	62.000		
5,600.00	5,591.38	5,397.87	5,378.17	12.73	12.63	161.39	35.29	1,249.94	1,477.07	1,453.14	23.93	61.722		
5,700.00	5,691.07	5,495.55	5,474.80	12.98	12.91	161.33	38.86	1,263.75	1,498.44	1,474.05	24.38	61.452		
5,800.00	5,790.76	5,593.23	5,571.43	13.23	13.20	161.27	42.42	1,277.56	1,519.81	1,494.97	24.84	61.189		
5,900.00	5,890.45	5,690.91	5,668.06	13.48	13.49	161.22	45.98	1,291.37	1,541.18	1,515.89	25.29	60.934		
6,000.00	5,990.14	5,788.59	5,764.70	13.72	13.78	161.16	49.54	1,305.18	1,562.55	1,536.81	25.75	60.686		
6,100.00	6,089.84	5,886.27	5,861.33	13.97	14.07	161.11	53.11	1,319.00	1,583.93	1,557.72	26.20	60.445		
6,200.00	6,189.53	5,983.95	5,957.96	14.22	14.36	161.06	56.67	1,332.81	1,605.30	1,578.64	26.66	60.211		
6,300.00	6,289.22	6,081.63	6,054.59	14.47	14.65	161.01	60.23	1,346.62	1,626.68	1,599.56	27.12	59.983		
6,400.00	6,388.91	6,179.31	6,151.22	14.72	14.94	160.96	63.80	1,360.43	1,648.06	1,620.48	27.58	59.761		
6,500.00	6,488.60	6,276.98	6,247.85	14.97	15.24	160.92	67.36	1,374.25	1,669.44	1,641.40	28.04	59.545		
6,600.00	6,588.30	6,374.66	6,344.49	15.22	15.53	160.87	70.92	1,388.06	1,690.82	1,662.32	28.50	59.334		
6,700.00	6,687.99	6,472.34	6,441.12	15.47	15.83	160.83	74.48	1,401.87	1,712.20	1,683.24	28.96	59.130		
6,800.00	6,787.68	6,570.02	6,537.75	15.72	16.13	160.78	78.05	1,415.68	1,733.58	1,704.16	29.42	58.930		
6,900.00	6,887.37	6,667.70	6,634.38	15.98	16.43	160.74	81.61	1,429.49	1,754.96	1,725.09	29.88	58.736		
7,000.00	6,987.06	6,765.38	6,731.01	16.23	16.73	160.70	85.17	1,443.31	1,776.35	1,746.01	30.34	58.546		
7,100.00	7,086.76	6,863.06	6,827.65	16.48	17.02	160.66	88.74	1,457.12	1,797.73	1,766.93	30.80	58.361		
7,200.00	7,186.45	6,960.74	6,924.28	16.73	17.33	160.62	92.30	1,470.93	1,819.12	1,787.85	31.27	58.181		
7,300.00	7,286.14	7,058.42	7,020.91	16.98	17.63	160.58	95.86	1,484.74	1,840.51	1,808.78	31.73	58.005		
7,400.00	7,385.83	7,156.10	7,117.54	17.23	17.93	160.54	99.42	1,498.56	1,861.89	1,829.70	32.19	57.834		
7,500.00	7,485.52	7,253.77	7,214.17	17.49	18.23	160.51	102.99	1,512.37	1,883.28	1,850.62	32.66	57.667		
7,600.00	7,585.22	7,351.45	7,310.80	17.74	18.53	160.47	106.55	1,526.18	1,904.67	1,871.55	33.12	57.503		
7,700.00	7,684.91	7,449.13	7,407.44	17.99	18.83	160.43	110.11	1,539.99	1,926.06	1,892.47	33.59	57.344		
7,800.00	7,784.60	7,546.81	7,504.07	18.24	19.14	160.40	113.67	1,553.80	1,947.45	1,913.39	34.05	57.188		
7,900.00	7,884.29	7,644.49	7,600.70	18.50	19.44	160.37	117.24	1,567.62	1,968.84	1,934.32	34.52	57.036		
8,000.00	7,983.98	7,742.17	7,697.33	18.75	19.75	160.33	120.80	1,581.43	1,990.23	1,955.24	34.99	56.887		
8,100.00	8,083.68	7,839.85	7,793.96	19.00	20.05	160.30	124.36	1,595.24	2,011.62	1,976.17	35.45	56.742		
8,200.00	8,183.37	7,937.53	7,890.60	19.25	20.36	160.27	127.93	1,609.05	2,033.01	1,997.10	35.92	56.599		
8,300.00	8,283.06	8,035.21	7,987.23	19.51	20.66	160.24	131.49	1,622.86	2,054.41	2,018.02	36.39	56.460		
8,400.00	8,382.75	8,132.89	8,083.86	19.76	20.97	160.21	135.05	1,636.68	2,075.80	2,038.95	36.85	56.324		
8,500.00	8,482.44	8,230.56	8,180.49	20.01	21.28	160.18	138.61	1,650.49	2,097.20	2,059.87	37.32	56.191		
8,600.00	8,582.14	8,328.24	8,277.12	20.27	21.58	160.15	142.18	1,664.30	2,118.59	2,080.80	37.79	56.061		
8,700.00	8,681.83	8,425.92	8,373.75	20.52	21.89	160.12	145.74	1,678.11	2,139.99	2,101.73	38.26	55.933		
8,800.00	8,781.52	8,523.60	8,470.39	20.77	22.20	160.09	149.30	1,691.93	2,161.38	2,122.85	38.73	55.809		
8,900.00	8,881.21	8,621.28	8,567.02	21.03	22.50	160.07	152.86	1,705.74	2,182.78	2,143.58	39.20	55.686		
9,000.00	8,980.90	8,718.96	8,663.65	21.28	22.81	160.04	156.43	1,719.55	2,204.17	2,164.51	39.67	55.567		
9,100.00	9,080.60	8,816.64	8,760.28	21.54	23.12	160.01	159.99	1,733.36	2,225.57	2,185.43	40.14	55.449		
9,200.00	9,180.29	8,914.32	8,856.91	21.79	23.43	159.99	163.55	1,747.17	2,246.97	2,206.36	40.61	55.334		
9,300.00	9,279.98	9,012.00	8,953.55	22.04	23.74	159.96	167.12	1,760.99	2,268.37	2,227.29	41.08	55.221		
9,400.00	9,379.67	9,109.67	9,050.18	22.30	24.05	159.94	170.68	1,774.80	2,289.77	2,248.22	41.55	55.111		
9,500.00	9,479.36	9,207.35	9,146.81	22.55	24.36	159.91	174.24	1,788.61	2,311.16	2,269.15	42.02	55.002		
9,600.00	9,579.05	9,305.03	9,243.44	22.81	24.67	159.89	177.80	1,802.42	2,332.56	2,290.07	42.49	54.896		
9,700.00	9,678.75	9,402.71	9,340.07	23.06	24.98	159.87	181.37	1,816.24	2,353.96	2,311.00	42.96	54.792		
9,800.00	9,778.44	9,500.39	9,436.70	23.31	25.29	159.84	184.93	1,830.05	2,375.36	2,331.93	43.43	54.689		
9,900.00	9,878.13	9,598.07	9,533.34	23.57	25.60	159.82	188.49	1,843.86	2,396.76	2,352.86	43.91	54.589		
10,000.00	9,977.82	9,695.75	9,629.97	23.82	25.91	159.80	192.05	1,857.67	2,418.16	2,373.79	44.38	54.490		
10,100.00	10,077.51	9,793.43	9,726.60	24.08	26.22	159.78	195.62	1,871.48	2,439.56	2,394.71	44.85	54.394		
10,200.00	10,177.21	9,891.11	9,823.23	24.33	26.53	159.76	199.18	1,885.30	2,460.97	2,415.64	45.32	54.298		

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
 Project: Lea County, NM (NAD-83)
 Reference Site: Fighting Okra 18-19 Fed
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
 MD Reference: 3371' GE + 25' KB @ 3396.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 8H - OH - Plan #1														Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,300.00	10,276.90	9,988.79	9,919.86	24.59	26.84	159.73	202.74	1,899.11	2,482.37	2,436.57	45.80	54.205		
10,400.00	10,376.59	10,086.46	10,016.50	24.84	27.15	159.71	206.31	1,912.92	2,503.77	2,457.50	46.27	54.113		
10,500.00	10,476.28	10,184.14	10,113.13	25.10	27.46	159.69	209.87	1,926.73	2,525.17	2,478.43	46.74	54.023		
10,600.00	10,575.97	10,281.82	10,209.76	25.35	27.77	159.67	213.43	1,940.54	2,546.57	2,499.36	47.22	53.934		
10,700.00	10,675.67	10,379.50	10,306.39	25.61	28.08	159.65	216.99	1,954.36	2,567.98	2,520.29	47.69	53.847		
10,800.00	10,775.36	10,477.18	10,403.02	25.86	28.40	159.63	220.56	1,968.17	2,589.38	2,541.22	48.16	53.762		
10,900.00	10,875.05	10,575.94	10,502.47	26.12	28.77	159.61	225.09	1,985.73	2,610.58	2,561.84	48.73	53.567		
11,000.00	10,974.74	10,675.03	10,602.62	26.37	29.18	159.60	230.35	2,006.12	2,629.43	2,580.02	49.41	53.219		
11,076.14	11,050.65	10,755.94	10,683.63	26.57	29.46	159.62	233.47	2,018.24	2,641.81	2,591.91	49.90	52.945		
11,100.00	11,074.44	10,855.65	10,783.21	26.62	29.55	159.64	234.29	2,021.42	2,645.28	2,595.24	50.04	52.863		
11,200.00	11,174.22	11,138.73	11,060.99	26.81	29.88	159.71	236.87	2,031.43	2,656.98	2,606.39	50.59	52.518		
11,300.00	11,274.10	11,320.12	11,242.31	26.99	30.18	159.78	238.05	2,035.98	2,664.01	2,612.90	51.10	52.131		
11,400.00	11,374.06	11,446.07	11,368.26	27.17	30.39	159.82	238.12	2,036.26	2,667.04	2,615.53	51.51	51.775		
11,500.00	11,474.05	11,546.06	11,468.25	27.33	30.57	159.83	238.12	2,036.26	2,668.29	2,616.40	51.89	51.423		
11,525.95	11,500.00	11,572.01	11,494.20	27.38	30.61	89.83	238.12	2,036.26	2,668.34	2,616.36	51.99	51.327		
11,600.00	11,574.05	11,646.06	11,568.25	27.51	30.74	89.83	238.12	2,036.26	2,668.34	2,616.06	52.28	51.039		
11,700.00	11,674.05	11,746.06	11,668.25	27.71	30.92	89.83	238.12	2,036.26	2,668.34	2,615.65	52.69	50.642		
11,800.00	11,774.05	11,846.06	11,768.25	27.91	31.10	89.83	238.12	2,036.26	2,668.34	2,615.24	53.10	50.250		
11,900.00	11,874.05	11,946.06	11,868.25	28.11	31.28	89.83	238.12	2,036.26	2,668.34	2,614.83	53.51	49.864		
12,000.00	11,974.05	12,046.06	11,968.25	28.31	31.46	89.83	238.12	2,036.26	2,668.34	2,614.42	53.92	49.483		
12,096.99	12,071.04	12,143.05	12,065.24	28.50	31.63	89.83	238.12	2,036.26	2,668.34	2,614.02	54.33	49.118		
12,100.00	12,074.05	12,146.06	12,068.25	28.51	31.64	-90.17	238.12	2,036.26	2,668.34	2,614.01	54.34	49.107		
12,150.00	12,123.97	12,195.98	12,118.17	28.59	31.73	-90.23	238.12	2,036.26	2,668.35	2,613.83	54.52	48.940		
12,200.00	12,173.49	12,245.51	12,167.69	28.67	31.82	-90.37	238.12	2,036.26	2,668.39	2,613.69	54.70	48.784		
12,250.00	12,222.23	12,294.25	12,216.43	28.73	31.91	-90.59	238.12	2,036.26	2,668.48	2,613.62	54.86	48.642		
12,300.00	12,269.83	12,341.84	12,264.03	28.79	31.99	-90.88	238.12	2,036.26	2,668.69	2,613.68	55.01	48.512		
12,350.00	12,315.90	12,387.92	12,310.10	28.85	32.08	-91.22	238.12	2,036.26	2,669.08	2,613.93	55.15	48.398		
12,400.00	12,360.12	12,437.98	12,360.14	28.90	32.15	-91.64	236.78	2,036.26	2,669.69	2,614.42	55.27	48.299		
12,450.00	12,402.13	12,491.91	12,413.69	28.94	32.23	-92.07	230.58	2,036.26	2,670.49	2,615.10	55.39	48.212		
12,500.00	12,441.63	12,548.70	12,469.18	28.98	32.29	-92.50	218.64	2,036.26	2,671.45	2,615.95	55.50	48.136		
12,550.00	12,478.30	12,608.70	12,526.23	29.02	32.35	-92.93	200.12	2,036.26	2,672.54	2,616.94	55.60	48.068		
12,600.00	12,511.88	12,672.27	12,584.20	29.06	32.40	-93.36	174.11	2,036.26	2,673.75	2,618.05	55.70	48.004		
12,650.00	12,542.10	12,739.76	12,642.18	29.09	32.45	-93.78	139.66	2,036.26	2,675.01	2,619.21	55.80	47.938		
12,700.00	12,568.73	12,811.43	12,698.87	29.14	32.48	-94.18	95.88	2,036.26	2,676.28	2,620.37	55.91	47.863		
12,750.00	12,591.58	12,887.43	12,752.52	29.19	32.52	-94.55	42.13	2,036.26	2,677.50	2,621.45	56.05	47.771		
12,800.00	12,610.47	12,967.68	12,800.92	29.25	32.55	-94.88	-21.80	2,036.26	2,678.60	2,622.38	56.22	47.648		
12,850.00	12,625.25	13,051.83	12,841.57	29.33	32.60	-95.16	-95.40	2,036.26	2,679.51	2,623.09	56.42	47.491		
12,900.00	12,635.81	13,139.17	12,871.89	29.43	32.67	-95.35	-177.21	2,036.26	2,680.16	2,623.48	56.69	47.279		
12,950.00	12,642.07	13,228.65	12,889.70	29.54	32.79	-95.46	-264.81	2,036.26	2,680.52	2,623.50	57.02	47.009		
12,996.99	12,644.00	13,306.97	12,894.00	29.68	32.95	-95.48	-342.96	2,036.26	2,680.56	2,623.19	57.38	46.718		
13,000.00	12,644.00	13,309.98	12,894.00	29.69	32.95	-95.48	-345.96	2,036.26	2,680.56	2,623.17	57.40	46.702		
13,100.00	12,644.00	13,409.98	12,894.00	30.04	33.22	-95.48	-445.96	2,036.26	2,680.56	2,622.44	58.12	46.118		
13,200.00	12,644.00	13,509.98	12,894.00	30.48	33.56	-95.48	-545.96	2,036.26	2,680.56	2,621.54	59.02	45.417		
13,300.00	12,644.00	13,609.98	12,894.00	31.00	33.98	-95.48	-645.96	2,036.26	2,680.56	2,620.48	60.08	44.615		
13,400.00	12,644.00	13,709.98	12,894.00	31.61	34.48	-95.48	-745.96	2,036.26	2,680.56	2,619.26	61.30	43.730		
13,500.00	12,644.00	13,809.98	12,894.00	32.29	35.06	-95.48	-845.96	2,036.26	2,680.56	2,617.90	62.66	42.780		
13,600.00	12,644.00	13,909.98	12,894.00	33.04	35.70	-95.48	-945.96	2,036.26	2,680.56	2,616.41	64.16	41.781		
13,700.00	12,644.00	14,009.98	12,894.00	33.85	36.41	-95.48	-1,045.96	2,036.26	2,680.56	2,614.78	65.78	40.749		
13,800.00	12,644.00	14,109.98	12,894.00	34.72	37.18	-95.48	-1,145.96	2,036.26	2,680.56	2,613.04	67.53	39.697		
13,900.00	12,644.00	14,209.98	12,894.00	35.64	38.01	-95.48	-1,245.96	2,036.26	2,680.56	2,611.18	69.38	38.637		
14,000.00	12,644.00	14,309.98	12,894.00	36.62	38.90	-95.48	-1,345.96	2,036.26	2,680.56	2,609.23	71.33	37.579		
14,100.00	12,644.00	14,409.98	12,894.00	37.64	39.83	-95.48	-1,445.96	2,036.26	2,680.56	2,607.19	73.38	36.532		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Reference Site: Fighting Okra 18-19 Fed
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
 TVD Reference: 3371' GE + 25' KB @ 3396.00usft
 MD Reference: 3371' GE + 25' KB @ 3396.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - 8H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,200.00	12,644.00	14,509.98	12,894.00	38.70	40.80	-95.48	-1,545.96	2,036.26	2,680.56	2,605.06	75.51	35.501	
14,300.00	12,644.00	14,609.98	12,894.00	39.80	41.82	-95.48	-1,645.96	2,036.26	2,680.56	2,602.85	77.72	34.492	
14,400.00	12,644.00	14,709.98	12,894.00	40.94	42.88	-95.48	-1,745.96	2,036.26	2,680.56	2,600.57	80.00	33.509	
14,500.00	12,644.00	14,809.98	12,894.00	42.11	43.98	-95.48	-1,845.96	2,036.26	2,680.56	2,598.22	82.34	32.554	
14,600.00	12,644.00	14,909.98	12,894.00	43.30	45.10	-95.48	-1,945.96	2,036.26	2,680.56	2,595.81	84.75	31.630	
14,700.00	12,644.00	15,009.98	12,894.00	44.53	46.26	-95.48	-2,045.96	2,036.26	2,680.56	2,593.35	87.21	30.737	
14,800.00	12,644.00	15,109.98	12,894.00	45.78	47.45	-95.48	-2,145.96	2,036.26	2,680.56	2,590.84	89.72	29.876	
14,900.00	12,644.00	15,209.98	12,894.00	47.06	48.66	-95.48	-2,245.96	2,036.26	2,680.56	2,588.28	92.28	29.048	
15,000.00	12,644.00	15,309.98	12,894.00	48.36	49.90	-95.48	-2,345.96	2,036.26	2,680.56	2,585.68	94.88	28.252	
15,100.00	12,644.00	15,409.98	12,894.00	49.67	51.16	-95.48	-2,445.96	2,036.26	2,680.56	2,583.04	97.52	27.487	
15,200.00	12,644.00	15,509.98	12,894.00	51.01	52.44	-95.48	-2,545.96	2,036.26	2,680.56	2,580.36	100.20	26.752	
15,300.00	12,644.00	15,609.98	12,894.00	52.36	53.74	-95.48	-2,645.96	2,036.26	2,680.56	2,577.65	102.91	26.048	
15,400.00	12,644.00	15,709.98	12,894.00	53.73	55.05	-95.48	-2,745.96	2,036.26	2,680.56	2,574.91	105.65	25.372	
15,500.00	12,644.00	15,809.98	12,894.00	55.11	56.39	-95.48	-2,845.96	2,036.26	2,680.56	2,572.14	108.42	24.724	
15,600.00	12,644.00	15,909.98	12,894.00	56.51	57.74	-95.48	-2,945.96	2,036.26	2,680.56	2,569.35	111.22	24.102	
15,700.00	12,644.00	16,009.98	12,894.00	57.92	59.10	-95.48	-3,045.96	2,036.26	2,680.56	2,566.52	114.04	23.506	
15,800.00	12,644.00	16,109.98	12,894.00	59.34	60.48	-95.48	-3,145.96	2,036.26	2,680.56	2,563.68	116.88	22.934	
15,900.00	12,644.00	16,209.98	12,894.00	60.77	61.87	-95.48	-3,245.96	2,036.26	2,680.56	2,560.82	119.75	22.385	
16,000.00	12,644.00	16,309.98	12,894.00	62.21	63.27	-95.48	-3,345.96	2,036.26	2,680.56	2,557.93	122.63	21.859	
16,100.00	12,644.00	16,409.98	12,894.00	63.66	64.68	-95.48	-3,445.96	2,036.26	2,680.56	2,555.03	125.53	21.354	
16,200.00	12,644.00	16,509.98	12,894.00	65.12	66.11	-95.48	-3,545.96	2,036.26	2,680.56	2,552.11	128.45	20.868	
16,300.00	12,644.00	16,609.98	12,894.00	66.58	67.54	-95.48	-3,645.96	2,036.26	2,680.56	2,549.18	131.39	20.402	
16,400.00	12,644.00	16,709.98	12,894.00	68.06	68.98	-95.48	-3,745.96	2,036.26	2,680.56	2,546.23	134.34	19.954	
16,500.00	12,644.00	16,809.98	12,894.00	69.54	70.43	-95.48	-3,845.96	2,036.26	2,680.56	2,543.26	137.30	19.523	
16,600.00	12,644.00	16,909.98	12,894.00	71.03	71.89	-95.48	-3,945.96	2,036.26	2,680.56	2,540.29	140.28	19.109	
16,700.00	12,644.00	17,009.98	12,894.00	72.52	73.35	-95.48	-4,045.96	2,036.26	2,680.56	2,537.30	143.27	18.710	
16,800.00	12,644.00	17,109.98	12,894.00	74.02	74.82	-95.48	-4,145.96	2,036.26	2,680.56	2,534.30	146.27	18.327	
16,900.00	12,644.00	17,209.98	12,894.00	75.53	76.30	-95.48	-4,245.96	2,036.26	2,680.56	2,531.29	149.28	17.957	
17,000.00	12,644.00	17,309.98	12,894.00	77.04	77.79	-95.48	-4,345.96	2,036.26	2,680.56	2,528.26	152.30	17.601	
17,100.00	12,644.00	17,409.98	12,894.00	78.56	79.28	-95.48	-4,445.96	2,036.26	2,680.56	2,525.23	155.33	17.257	
17,200.00	12,644.00	17,509.98	12,894.00	80.08	80.78	-95.48	-4,545.96	2,036.26	2,680.56	2,522.19	158.37	16.926	
17,300.00	12,644.00	17,609.98	12,894.00	81.60	82.28	-95.48	-4,645.96	2,036.26	2,680.56	2,519.15	161.42	16.606	
17,400.00	12,644.00	17,709.98	12,894.00	83.13	83.78	-95.48	-4,745.96	2,036.26	2,680.56	2,516.09	164.47	16.298	
17,500.00	12,644.00	17,809.98	12,894.00	84.67	85.30	-95.48	-4,845.96	2,036.26	2,680.56	2,513.03	167.54	16.000	
17,600.00	12,644.00	17,909.98	12,894.00	86.20	86.81	-95.48	-4,945.96	2,036.26	2,680.56	2,509.95	170.61	15.712	
17,700.00	12,644.00	18,009.98	12,894.00	87.75	88.33	-95.48	-5,045.96	2,036.26	2,680.56	2,506.88	173.69	15.433	
17,800.00	12,644.00	18,109.98	12,894.00	89.29	89.86	-95.48	-5,145.96	2,036.26	2,680.56	2,503.79	176.77	15.164	
17,900.00	12,644.00	18,209.98	12,894.00	90.84	91.38	-95.48	-5,245.96	2,036.26	2,680.56	2,500.70	179.86	14.904	
18,000.00	12,644.00	18,309.98	12,894.00	92.39	92.91	-95.48	-5,345.96	2,036.26	2,680.56	2,497.61	182.96	14.651	
18,100.00	12,644.00	18,409.98	12,894.00	93.94	94.45	-95.48	-5,445.96	2,036.26	2,680.56	2,494.50	186.06	14.407	
18,200.00	12,644.00	18,509.98	12,894.00	95.50	95.99	-95.48	-5,545.96	2,036.26	2,680.56	2,491.40	189.16	14.171	
18,300.00	12,644.00	18,609.98	12,894.00	97.05	97.53	-95.48	-5,645.96	2,036.26	2,680.56	2,488.29	192.28	13.941	
18,400.00	12,644.00	18,709.98	12,894.00	98.61	99.07	-95.48	-5,745.96	2,036.26	2,680.56	2,485.17	195.39	13.719	
18,500.00	12,644.00	18,809.98	12,894.00	100.18	100.62	-95.48	-5,845.96	2,036.26	2,680.56	2,482.05	198.51	13.503	
18,600.00	12,644.00	18,909.98	12,894.00	101.74	102.17	-95.48	-5,945.96	2,036.26	2,680.56	2,478.92	201.64	13.294	
18,700.00	12,644.00	19,009.98	12,894.00	103.31	103.72	-95.48	-6,045.96	2,036.26	2,680.56	2,475.79	204.77	13.091	
18,800.00	12,644.00	19,109.98	12,894.00	104.88	105.28	-95.48	-6,145.96	2,036.26	2,680.56	2,472.66	207.90	12.893	
18,900.00	12,644.00	19,209.98	12,894.00	106.45	106.83	-95.48	-6,245.96	2,036.26	2,680.56	2,469.52	211.04	12.702	
19,000.00	12,644.00	19,309.98	12,894.00	108.02	108.39	-95.48	-6,345.96	2,036.26	2,680.56	2,466.38	214.18	12.516	
19,100.00	12,644.00	19,409.98	12,894.00	109.60	109.96	-95.48	-6,445.96	2,036.26	2,680.56	2,463.24	217.32	12.334	
19,200.00	12,644.00	19,509.98	12,894.00	111.18	111.52	-95.48	-6,545.96	2,036.26	2,680.56	2,460.09	220.47	12.158	
19,300.00	12,644.00	19,609.98	12,894.00	112.75	113.09	-95.48	-6,645.96	2,036.26	2,680.56	2,456.94	223.62	11.987	

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 2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3371' GE + 25' KB @ 3396.00usft
Reference Site:	Fighting Okra 18-19 Fed	MD Reference:	3371' GE + 25' KB @ 3396.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Fighting Okra 18-19 Fed - 8H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
19,400.00	12,644.00	19,709.98	12,894.00	114.33	114.65	-95.48	-6,745.96	2,036.26	2,680.56	2,453.79	226.77	11.820		
19,500.00	12,644.00	19,809.98	12,894.00	115.92	116.22	-95.48	-6,845.96	2,036.26	2,680.56	2,450.83	229.93	11.658		
19,600.00	12,644.00	19,909.98	12,894.00	117.50	117.79	-95.48	-6,945.96	2,036.26	2,680.56	2,447.47	233.09	11.500		
19,700.00	12,644.00	20,009.98	12,894.00	119.08	119.37	-95.48	-7,045.96	2,036.26	2,680.56	2,444.31	236.25	11.346		
19,800.00	12,644.00	20,109.98	12,894.00	120.67	120.94	-95.48	-7,145.96	2,036.26	2,680.56	2,441.15	239.41	11.196		
19,900.00	12,644.00	20,209.98	12,894.00	122.26	122.52	-95.48	-7,245.96	2,036.26	2,680.56	2,437.98	242.58	11.050		
20,000.00	12,644.00	20,309.98	12,894.00	123.84	124.10	-95.48	-7,345.96	2,036.26	2,680.56	2,434.81	245.75	10.908		
20,100.00	12,644.00	20,409.98	12,894.00	125.43	125.67	-95.48	-7,445.96	2,036.26	2,680.56	2,431.64	248.92	10.769		
20,200.00	12,644.00	20,509.98	12,894.00	127.02	127.26	-95.48	-7,545.96	2,036.26	2,680.56	2,428.47	252.09	10.633		
20,300.00	12,644.00	20,609.98	12,894.00	128.62	128.84	-95.48	-7,645.96	2,036.26	2,680.56	2,425.29	255.27	10.501		
20,400.00	12,644.00	20,709.98	12,894.00	130.21	130.42	-95.48	-7,745.96	2,036.26	2,680.56	2,422.12	258.45	10.372		
20,500.00	12,644.00	20,809.98	12,894.00	131.80	132.00	-95.48	-7,845.96	2,036.26	2,680.56	2,418.94	261.63	10.246		
20,600.00	12,644.00	20,909.98	12,894.00	133.40	133.59	-95.48	-7,945.96	2,036.26	2,680.56	2,415.75	264.81	10.123		
20,700.00	12,644.00	21,009.98	12,894.00	134.99	135.18	-95.48	-8,045.96	2,036.26	2,680.56	2,412.57	267.99	10.002		
20,800.00	12,644.00	21,109.98	12,894.00	136.59	136.76	-95.48	-8,145.96	2,036.26	2,680.56	2,409.39	271.18	9.885		
20,900.00	12,644.00	21,209.98	12,894.00	138.19	138.35	-95.48	-8,245.96	2,036.26	2,680.56	2,406.20	274.36	9.770		
21,000.00	12,644.00	21,309.98	12,894.00	139.78	139.94	-95.48	-8,345.96	2,036.26	2,680.56	2,403.01	277.55	9.658		
21,100.00	12,644.00	21,409.98	12,894.00	141.38	141.53	-95.48	-8,445.96	2,036.26	2,680.56	2,399.82	280.74	9.548		
21,200.00	12,644.00	21,509.98	12,894.00	142.98	143.13	-95.48	-8,545.96	2,036.26	2,680.56	2,396.63	283.93	9.441		
21,300.00	12,644.00	21,609.98	12,894.00	144.58	144.72	-95.48	-8,645.96	2,036.26	2,680.56	2,393.44	287.13	9.336		
21,400.00	12,644.00	21,709.98	12,894.00	146.19	146.31	-95.48	-8,745.96	2,036.26	2,680.56	2,390.24	290.32	9.233		
21,500.00	12,644.00	21,809.98	12,894.00	147.79	147.91	-95.48	-8,845.96	2,036.26	2,680.56	2,387.05	293.52	9.133		
21,600.00	12,644.00	21,909.98	12,894.00	149.39	149.50	-95.48	-8,945.96	2,036.26	2,680.56	2,383.85	296.71	9.034		
21,700.00	12,644.00	22,009.98	12,894.00	150.99	151.10	-95.48	-9,045.96	2,036.26	2,680.56	2,380.65	299.91	8.938		
21,800.00	12,644.00	22,109.98	12,894.00	152.60	152.70	-95.48	-9,145.96	2,036.26	2,680.56	2,377.45	303.11	8.844		
21,900.00	12,644.00	22,209.98	12,894.00	154.20	154.30	-95.48	-9,245.96	2,036.26	2,680.56	2,374.25	306.31	8.751		
22,000.00	12,644.00	22,309.98	12,894.00	155.81	155.89	-95.48	-9,345.96	2,036.26	2,680.56	2,371.05	309.51	8.661		
22,100.00	12,644.00	22,409.98	12,894.00	157.41	157.49	-95.48	-9,445.96	2,036.26	2,680.56	2,367.85	312.72	8.572		
22,200.00	12,644.00	22,509.98	12,894.00	159.02	159.09	-95.48	-9,545.96	2,036.26	2,680.56	2,364.64	315.92	8.485		
22,300.00	12,644.00	22,609.98	12,894.00	160.63	160.69	-95.48	-9,645.96	2,036.26	2,680.56	2,361.44	319.12	8.400		
22,400.00	12,644.00	22,709.98	12,894.00	162.24	162.30	-95.48	-9,745.96	2,036.26	2,680.56	2,358.23	322.33	8.316		
22,500.00	12,644.00	22,809.98	12,894.00	163.84	163.90	-95.48	-9,845.96	2,036.26	2,680.56	2,355.03	325.54	8.234		
22,500.01	12,644.00	22,809.99	12,894.00	163.84	163.90	-95.48	-9,845.98	2,036.26	2,680.56	2,355.03	325.54	8.234		
22,563.68	12,644.00	22,848.63	12,894.00	164.87	164.52	-95.48	-9,884.61	2,036.26	2,680.68	2,353.47	327.21	8.192 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - Fighting Okra Fed Com 1H (offset) - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 119- VES GyroFlex V2. 9389-MWD-ISCWSA													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-149.83	-2,269.97	-1,319.35	2,625.57					
100.00	100.00	93.74	93.74	0.08	0.07	-149.84	-2,269.95	-1,319.14	2,625.43	2,625.28	0.15	N/A		
200.00	200.00	196.47	196.47	0.31	0.17	-149.85	-2,270.01	-1,318.36	2,625.10	2,624.62	0.48	5,507.008		
300.00	300.00	305.02	305.01	0.53	0.26	-149.88	-2,270.22	-1,316.92	2,624.59	2,623.81	0.78	3,353.660		
400.00	400.00	411.77	411.75	0.76	0.32	-149.91	-2,270.18	-1,315.20	2,623.75	2,622.69	1.07	2,461.066		
500.00	500.00	504.24	504.20	0.98	0.38	-149.94	-2,270.18	-1,313.73	2,622.96	2,621.63	1.33	1,967.445		
600.00	600.00	601.95	601.90	1.21	0.42	-149.97	-2,270.33	-1,312.28	2,622.35	2,620.75	1.60	1,640.791		
700.00	700.00	701.42	701.36	1.43	0.47	-150.00	-2,270.51	-1,310.91	2,621.81	2,619.95	1.86	1,409.229		
800.00	800.00	806.76	806.69	1.66	0.52	-150.03	-2,270.52	-1,309.47	2,621.14	2,619.01	2.12	1,234.757		
900.00	900.00	906.00	905.92	1.88	0.56	-150.06	-2,270.52	-1,307.97	2,620.39	2,618.01	2.38	1,100.620		
1,000.00	1,000.00	997.99	997.90	2.11	0.60	-150.08	-2,270.62	-1,306.62	2,619.75	2,617.12	2.63	994.655		
1,061.91	1,061.91	1,049.00	1,048.91	2.25	0.62	-150.10	-2,270.83	-1,306.05	2,619.63	2,616.84	2.79	939.866		
1,100.00	1,100.00	1,084.94	1,084.84	2.33	0.64	-150.10	-2,271.05	-1,305.73	2,619.66	2,616.78	2.88	908.834		
1,200.00	1,200.00	1,189.37	1,189.27	2.56	0.68	-150.13	-2,271.58	-1,304.76	2,619.63	2,616.50	3.13	836.003		
1,300.00	1,300.00	1,292.15	1,292.04	2.78	0.72	-150.16	-2,272.18	-1,303.49	2,619.53	2,616.14	3.38	774.127		
1,388.70	1,388.70	1,375.82	1,375.70	2.98	0.75	-150.18	-2,272.58	-1,302.39	2,619.32	2,615.72	3.60	727.024		
1,400.00	1,400.00	1,384.31	1,384.19	3.01	0.75	-150.19	-2,272.63	-1,302.32	2,619.33	2,615.70	3.63	721.582		
1,500.00	1,500.00	1,464.46	1,464.33	3.23	0.78	-150.20	-2,273.31	-1,302.06	2,619.89	2,616.02	3.87	676.795		
1,600.00	1,600.00	1,564.35	1,564.22	3.46	0.80	-150.21	-2,274.38	-1,301.99	2,620.78	2,616.67	4.11	637.087		
1,700.00	1,700.00	1,665.77	1,665.63	3.68	0.83	-150.23	-2,275.56	-1,301.55	2,621.58	2,617.22	4.36	601.578		
1,800.00	1,800.00	1,760.47	1,760.33	3.91	0.86	-150.25	-2,276.74	-1,301.24	2,622.50	2,617.89	4.60	569.955		
1,900.00	1,900.00	1,861.16	1,861.00	4.13	0.89	-150.27	-2,278.21	-1,300.84	2,623.57	2,618.72	4.85	541.383		
2,000.00	2,000.00	1,971.13	1,970.97	4.35	0.92	-150.29	-2,279.39	-1,300.53	2,624.36	2,619.27	5.09	515.281		
2,100.00	2,100.00	2,072.03	2,071.86	4.58	0.96	-150.31	-2,280.26	-1,300.11	2,624.90	2,619.56	5.34	491.695		
2,200.00	2,200.00	2,169.50	2,169.33	4.80	0.99	-150.33	-2,281.27	-1,299.59	2,625.53	2,619.95	5.58	470.255		
2,300.00	2,300.00	2,289.96	2,289.77	5.03	1.03	-150.36	-2,282.32	-1,298.70	2,625.95	2,620.12	5.83	450.317		
2,400.00	2,400.00	2,386.44	2,386.25	5.25	1.06	-150.37	-2,282.62	-1,298.04	2,625.89	2,619.81	6.07	432.353		
2,439.18	2,439.18	2,436.19	2,436.00	5.34	1.08	-150.38	-2,282.70	-1,297.74	2,625.83	2,619.66	6.17	425.599		
2,500.00	2,500.00	2,512.58	2,512.39	5.48	1.10	-150.39	-2,282.52	-1,296.99	2,625.40	2,619.08	6.32	415.506		
2,600.00	2,599.99	2,623.80	2,623.59	5.69	1.14	-80.46	-2,282.13	-1,294.84	2,623.99	2,617.43	6.55	400.519		
2,700.00	2,699.96	2,728.95	2,728.71	5.90	1.17	-80.58	-2,281.74	-1,292.42	2,622.10	2,615.33	6.78	386.959		
2,800.00	2,799.86	2,829.32	2,829.03	6.11	1.20	-80.75	-2,281.54	-1,289.38	2,619.73	2,612.73	7.00	374.086		
2,900.00	2,899.68	2,914.00	2,913.64	6.33	1.23	-80.96	-2,282.08	-1,285.99	2,617.37	2,610.14	7.23	361.961		
2,949.81	2,949.35	2,956.71	2,956.30	6.43	1.25	-81.08	-2,282.74	-1,284.07	2,616.38	2,609.03	7.35	356.157		
3,000.00	2,999.38	2,995.34	2,994.88	6.54	1.26	-81.19	-2,283.54	-1,282.26	2,615.53	2,608.06	7.46	350.499		
3,100.00	3,099.08	3,087.93	3,087.33	6.76	1.29	-81.46	-2,285.94	-1,277.74	2,614.26	2,606.56	7.70	339.590		
3,200.00	3,198.77	3,219.33	3,218.53	6.99	1.34	-81.84	-2,288.81	-1,271.10	2,612.69	2,604.74	7.94	328.934		
3,300.00	3,298.46	3,358.72	3,357.73	7.21	1.39	-82.22	-2,289.32	-1,263.91	2,609.44	2,601.25	8.19	318.667		
3,400.00	3,398.15	3,461.89	3,460.78	7.44	1.42	-82.48	-2,288.52	-1,258.98	2,605.47	2,597.04	8.43	309.011		
3,500.00	3,497.84	3,553.63	3,552.40	7.67	1.45	-82.73	-2,288.11	-1,254.32	2,601.70	2,593.02	8.68	299.884		
3,600.00	3,597.54	3,647.60	3,646.26	7.90	1.48	-82.97	-2,287.80	-1,249.89	2,598.26	2,589.33	8.92	291.231		
3,700.00	3,697.23	3,754.01	3,752.57	8.13	1.52	-83.24	-2,287.36	-1,245.10	2,594.89	2,585.72	9.17	282.973		
3,800.00	3,796.92	3,881.57	3,880.00	8.37	1.56	-83.55	-2,285.58	-1,239.79	2,590.87	2,581.44	9.42	275.002		
3,900.00	3,896.61	3,981.23	3,979.57	8.60	1.58	-83.77	-2,283.10	-1,236.24	2,586.18	2,576.50	9.67	267.382		
4,000.00	3,996.30	4,085.17	4,083.43	8.84	1.60	-83.98	-2,280.29	-1,233.12	2,581.57	2,571.84	9.92	260.109		
4,100.00	4,096.00	4,174.67	4,172.85	9.08	1.62	-84.15	-2,277.54	-1,231.18	2,577.04	2,566.86	10.18	253.181		
4,200.00	4,195.69	4,246.40	4,244.56	9.31	1.64	-84.28	-2,275.78	-1,229.86	2,573.25	2,562.82	10.43	246.664		
4,300.00	4,295.38	4,329.46	4,327.60	9.55	1.65	-84.44	-2,274.58	-1,228.68	2,570.52	2,559.84	10.69	240.523		
4,400.00	4,395.07	4,441.09	4,439.20	9.79	1.68	-84.66	-2,273.17	-1,226.79	2,567.91	2,556.97	10.95	234.594		
4,500.00	4,494.76	4,538.06	4,536.11	10.04	1.71	-84.88	-2,272.11	-1,223.82	2,564.89	2,553.69	11.20	228.929		
4,600.00	4,594.46	4,628.12	4,626.10	10.28	1.74	-85.11	-2,271.97	-1,220.04	2,562.28	2,550.82	11.46	223.571		
4,700.00	4,694.15	4,706.34	4,704.22	10.52	1.77	-85.33	-2,272.59	-1,216.05	2,560.21	2,548.50	11.72	218.523		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - Fighting Okra Fed Com 1H (offset) - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 119- VES GyroFlex V2, 9389-MWD-ISCWSA													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,800.00	4,793.84	4,780.44	4,778.21	10.76	1.80	-85.55	-2,273.97	-1,212.40	2,559.22	2,547.25	11.97	213.802		
4,860.41	4,854.06	4,828.24	4,825.96	10.91	1.81	-85.68	-2,275.06	-1,210.39	2,559.07	2,546.94	12.12	211.086		
4,900.00	4,893.53	4,862.43	4,860.12	11.01	1.83	-85.78	-2,275.90	-1,209.15	2,559.12	2,546.90	12.22	209.354		
5,000.00	4,993.22	4,966.61	4,964.21	11.25	1.86	-86.05	-2,278.35	-1,205.65	2,559.35	2,546.87	12.48	205.078		
5,100.00	5,092.92	5,077.36	5,074.87	11.50	1.90	-86.34	-2,280.32	-1,201.95	2,559.10	2,546.36	12.74	200.911		
5,200.00	5,192.61	5,174.78	5,172.23	11.74	1.93	-86.59	-2,282.01	-1,198.77	2,558.90	2,545.90	12.99	196.922		
5,300.00	5,292.30	5,289.94	5,287.34	11.99	1.97	-86.87	-2,283.47	-1,195.66	2,558.56	2,545.31	13.25	193.046		
5,400.00	5,391.99	5,400.94	5,398.29	12.24	2.01	-87.13	-2,284.06	-1,192.55	2,557.53	2,544.02	13.51	189.253		
5,500.00	5,491.68	5,475.40	5,472.72	12.48	2.04	-87.31	-2,284.59	-1,190.56	2,556.80	2,543.03	13.77	185.673		
5,511.09	5,502.74	5,483.07	5,480.39	12.51	2.04	-87.33	-2,284.69	-1,190.37	2,556.79	2,543.00	13.80	185.290		
5,600.00	5,591.38	5,577.82	5,575.11	12.73	2.07	-87.55	-2,286.09	-1,188.30	2,556.96	2,542.93	14.03	182.262		
5,700.00	5,691.07	5,692.22	5,689.48	12.98	2.11	-87.81	-2,286.82	-1,185.80	2,556.39	2,542.10	14.29	178.898		
5,771.28	5,762.13	5,744.62	5,741.86	13.16	2.13	-87.92	-2,287.17	-1,184.74	2,556.09	2,541.62	14.47	176.611		
5,800.00	5,790.76	5,764.58	5,761.82	13.23	2.13	-87.97	-2,287.42	-1,184.36	2,556.14	2,541.59	14.55	175.719		
5,900.00	5,890.45	5,855.43	5,852.64	13.48	2.16	-88.17	-2,289.00	-1,182.84	2,556.86	2,542.05	14.80	172.705		
6,000.00	5,990.14	5,963.65	5,960.84	13.72	2.20	-88.41	-2,290.60	-1,181.20	2,557.43	2,542.37	15.06	169.772		
6,100.00	6,089.84	6,063.08	6,060.24	13.97	2.23	-88.63	-2,291.92	-1,179.49	2,557.84	2,542.52	15.32	166.922		
6,200.00	6,189.53	6,161.33	6,158.47	14.22	2.26	-88.86	-2,293.42	-1,177.48	2,558.35	2,542.77	15.58	164.167		
6,300.00	6,289.22	6,242.69	6,239.80	14.47	2.28	-89.04	-2,294.85	-1,176.06	2,559.24	2,543.39	15.84	161.531		
6,400.00	6,388.91	6,358.24	6,355.33	14.72	2.32	-89.29	-2,296.96	-1,174.76	2,560.46	2,544.36	16.10	158.988		
6,500.00	6,488.60	6,466.34	6,463.41	14.97	2.35	-89.51	-2,298.10	-1,173.54	2,560.97	2,544.60	16.37	156.475		
6,600.00	6,588.30	6,551.51	6,548.57	15.22	2.38	-89.69	-2,299.13	-1,172.46	2,561.62	2,544.99	16.63	154.056		
6,700.00	6,687.99	6,646.52	6,643.55	15.47	2.41	-89.89	-2,300.61	-1,171.39	2,562.67	2,545.78	16.89	151.723		
6,800.00	6,787.68	6,767.46	6,764.48	15.72	2.44	-90.14	-2,302.06	-1,170.14	2,563.44	2,546.29	17.15	149.433		
6,900.00	6,887.37	6,863.42	6,860.43	15.98	2.48	-90.34	-2,302.73	-1,169.07	2,563.77	2,546.35	17.42	147.196		
7,000.00	6,987.06	6,936.79	6,933.79	16.23	2.50	-90.49	-2,303.82	-1,168.38	2,564.91	2,547.23	17.68	145.067		
7,100.00	7,086.76	7,027.17	7,024.16	16.48	2.51	-90.66	-2,305.53	-1,168.33	2,566.76	2,548.81	17.95	143.022		
7,200.00	7,186.45	7,147.37	7,144.34	16.73	2.52	-90.88	-2,307.27	-1,168.65	2,568.31	2,550.09	18.21	141.017		
7,300.00	7,286.14	7,250.34	7,247.31	16.98	2.54	-91.06	-2,308.38	-1,168.82	2,569.52	2,551.04	18.48	139.040		
7,400.00	7,385.83	7,355.39	7,352.34	17.23	2.56	-91.27	-2,309.65	-1,168.08	2,570.60	2,551.85	18.75	137.108		
7,500.00	7,485.52	7,496.08	7,493.04	17.49	63.43	-24.46	134.20	-1,265.88	2,516.37	2,479.59	36.77	68.427		
7,600.00	7,585.22	12,101.92	9,817.00	17.74	63.58	-24.01	140.04	-1,265.93	2,420.98	2,383.30	37.67	64.262		
7,700.00	7,684.91	12,107.01	9,816.96	17.99	63.72	-23.61	145.13	-1,265.98	2,325.97	2,287.34	38.63	60.216		
7,800.00	7,784.60	12,111.47	9,816.91	18.24	63.84	-23.27	149.59	-1,266.01	2,231.39	2,191.75	39.64	56.286		
7,900.00	7,884.29	12,115.42	9,816.87	18.50	63.94	-22.96	153.54	-1,266.04	2,137.31	2,096.58	40.73	52.471		
8,000.00	7,983.98	12,118.94	9,816.83	18.75	64.03	-22.69	157.06	-1,266.07	2,043.78	2,001.88	41.91	48.772		
8,100.00	8,083.68	12,122.10	9,816.79	19.00	64.12	-22.45	160.22	-1,266.09	1,950.90	1,907.72	43.17	45.189		
8,200.00	8,183.37	12,124.94	9,816.76	19.25	64.19	-22.23	163.06	-1,266.11	1,858.74	1,814.20	44.55	41.727		
8,300.00	8,283.06	12,126.62	9,816.73	19.51	64.24	-22.10	164.73	-1,266.13	1,767.45	1,721.42	46.03	38.398		
8,400.00	8,382.75	12,128.24	9,816.71	19.76	64.28	-21.97	166.36	-1,266.14	1,677.14	1,629.48	47.65	35.195		
8,500.00	8,482.44	12,129.85	9,816.69	20.01	64.33	-21.85	167.97	-1,266.15	1,587.99	1,538.55	49.44	32.122		
8,600.00	8,582.14	12,131.43	9,816.67	20.27	64.37	-21.72	169.55	-1,266.16	1,500.21	1,448.81	51.40	29.188		
8,700.00	8,681.83	12,133.00	9,816.65	20.52	64.41	-21.60	171.11	-1,266.17	1,414.05	1,360.49	53.56	26.401		
8,800.00	8,781.52	12,134.54	9,816.62	20.77	64.45	-21.48	172.66	-1,266.18	1,329.83	1,273.89	55.95	23.770		
8,900.00	8,881.21	12,136.06	9,816.60	21.03	64.49	-21.37	174.18	-1,266.18	1,247.95	1,189.37	58.58	21.305		
9,000.00	8,980.90	12,137.56	9,816.58	21.28	64.54	-21.25	175.68	-1,266.19	1,168.88	1,107.41	61.46	19.017		
9,100.00	9,080.60	12,139.05	9,816.56	21.54	64.58	-21.13	177.16	-1,266.20	1,093.24	1,028.82	64.62	16.918		
9,200.00	9,180.29	12,140.51	9,816.54	21.79	64.61	-21.02	178.63	-1,266.21	1,021.79	953.77	68.02	15.022		
9,300.00	9,279.98	12,141.95	9,816.52	22.04	64.65	-20.91	180.07	-1,266.22	955.49	883.86	71.63	13.340		
9,400.00	9,379.67	12,143.38	9,816.50	22.30	64.69	-20.80	181.50	-1,266.22	895.46	820.13	75.33	11.887		
9,500.00	9,479.36	12,144.79	9,816.48	22.55	64.73	-20.69	182.90	-1,266.23	843.05	764.09	78.96	10.677		
9,600.00	9,579.05	12,146.18	9,816.46	22.81	64.77	-20.58	184.29	-1,266.24	799.75	717.49	82.26	9.722		

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error: 0.00 usft
Fighting Okra 18-19 Fed - Fighting Okra Fed Com 1H (offset) - OH - OH													Offset Well Error: 0.00 usft
Survey Program: 119- VES GyroFlex V2, 9389-MWD-ISCWSA													
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	
9,700.00	9,678.75	12,147.55	9,816.44	23.06	64.81	-20.47	185.67	-1,266.24	767.13	682.23	84.90	9.036	
9,800.00	9,778.44	12,148.91	9,816.42	23.31	64.84	-20.37	187.02	-1,266.25	746.56	660.02	86.54	8.627	
9,900.00	9,878.13	12,150.25	9,816.40	23.57	64.88	-20.27	188.36	-1,266.26	739.07	651.86	87.21	8.475	
9,905.66	9,883.77	12,150.32	9,816.40	23.58	64.88	-20.26	188.44	-1,266.26	739.05	651.80	87.25	8.470 CC, ES, SF	
10,000.00	9,977.82	12,151.57	9,816.38	23.82	64.91	-20.16	189.68	-1,266.26	745.05	657.71	87.34	8.530	
10,100.00	10,077.51	12,152.88	9,816.36	24.08	64.95	-20.06	190.99	-1,266.27	764.17	677.98	86.19	8.867	
10,200.00	10,177.21	12,154.17	9,816.34	24.33	64.99	-19.96	192.28	-1,266.27	795.50	711.49	84.01	9.469	
10,300.00	10,276.90	12,155.44	9,816.32	24.59	65.02	-19.86	193.56	-1,266.28	837.66	756.50	81.16	10.321	
10,400.00	10,376.59	12,156.70	9,816.30	24.84	65.05	-19.77	194.81	-1,266.28	889.12	811.13	77.98	11.401	
10,500.00	10,476.28	12,157.94	9,816.28	25.10	65.09	-19.67	196.06	-1,266.29	948.36	873.61	74.74	12.688	
10,600.00	10,575.97	12,159.17	9,816.27	25.35	65.12	-19.57	197.29	-1,266.29	1,014.01	942.40	71.62	14.158	
10,700.00	10,675.67	12,160.39	9,816.25	25.61	65.15	-19.48	198.50	-1,266.30	1,084.93	1,016.21	68.72	15.787	
10,800.00	10,775.36	12,161.59	9,816.23	25.86	65.19	-19.39	199.70	-1,266.30	1,160.14	1,094.03	66.10	17.551	
10,900.00	10,875.05	12,162.78	9,816.21	26.12	65.22	-19.29	200.89	-1,266.31	1,238.85	1,175.08	63.77	19.427	
11,000.00	10,974.74	12,163.95	9,816.19	26.37	65.25	-19.20	202.06	-1,266.31	1,320.45	1,258.73	61.72	21.394	
11,076.14	11,050.65	12,164.84	9,816.18	26.57	65.27	-19.13	202.95	-1,266.31	1,384.20	1,323.86	60.34	22.941	
11,100.00	11,074.44	12,165.09	9,816.17	26.62	65.28	-19.24	203.21	-1,266.31	1,404.45	1,344.52	59.93	23.433	
11,200.00	11,174.22	12,165.80	9,816.16	26.81	65.30	-19.76	203.91	-1,266.32	1,491.01	1,432.60	58.41	25.529	
11,300.00	11,274.10	12,165.91	9,816.16	26.99	65.30	-20.42	204.02	-1,266.32	1,579.89	1,522.76	57.13	27.653	
11,400.00	11,374.06	12,165.42	9,816.17	27.17	65.29	-21.23	203.54	-1,266.32	1,670.71	1,614.63	56.08	29.790	
11,500.00	11,474.05	12,164.36	9,816.19	27.33	65.26	-22.22	202.47	-1,266.31	1,763.14	1,707.91	55.23	31.925	
11,525.95	11,500.00	12,163.99	9,816.19	27.38	65.25	-92.52	202.10	-1,266.31	1,787.36	1,732.32	55.04	32.477	
11,600.00	11,574.05	12,162.88	9,816.21	27.51	65.22	-92.62	200.99	-1,266.31	1,856.76	1,802.23	54.53	34.048	
11,700.00	11,674.05	12,161.40	9,816.23	27.71	65.18	-92.75	199.51	-1,266.30	1,951.03	1,897.08	53.96	36.160	
11,800.00	11,774.05	12,159.93	9,816.25	27.91	65.14	-92.88	198.04	-1,266.30	2,045.85	1,992.37	53.48	38.258	
11,900.00	11,874.05	12,158.48	9,816.28	28.11	65.10	-93.02	196.59	-1,266.29	2,141.13	2,088.05	53.08	40.338	
12,000.00	11,974.05	12,157.04	9,816.30	28.31	65.06	-93.15	195.15	-1,266.29	2,236.83	2,184.07	52.76	42.396	
12,096.99	12,071.04	12,155.65	9,816.32	28.50	65.03	-93.27	193.77	-1,266.28	2,329.99	2,277.48	52.51	44.369	
12,100.00	12,074.05	12,155.60	9,816.32	28.51	65.02	85.67	193.72	-1,266.28	2,332.88	2,280.38	52.51	44.430	
12,150.00	12,123.97	12,152.60	9,816.36	28.59	64.94	68.59	190.71	-1,266.27	2,380.92	2,328.54	52.38	45.458	
12,200.00	12,173.49	12,145.53	9,816.47	28.67	64.75	54.30	183.64	-1,266.23	2,428.58	2,376.36	52.22	46.508	
12,250.00	12,222.23	12,134.48	9,816.63	28.73	64.45	43.55	172.59	-1,266.17	2,475.49	2,423.46	52.03	47.575	
12,300.00	12,269.83	12,125.00	9,816.75	28.79	64.19	35.90	163.12	-1,266.11	2,521.30	2,469.42	51.87	48.606	
12,350.00	12,315.90	12,125.00	9,816.75	28.85	64.19	30.57	163.12	-1,266.11	2,565.75	2,513.95	51.81	49.526	
12,400.00	12,360.12	12,093.28	9,817.06	28.90	63.35	26.09	131.40	-1,265.85	2,608.31	2,556.85	51.46	50.682	
12,450.00	12,402.13	12,075.97	9,817.12	28.94	62.89	22.97	114.09	-1,265.67	2,648.93	2,597.67	51.26	51.675	
12,500.00	12,441.63	12,056.63	9,817.10	28.98	62.38	20.56	94.76	-1,265.44	2,687.24	2,636.19	51.05	52.641	
12,550.00	12,478.30	12,031.00	9,816.93	29.02	61.70	18.64	69.13	-1,265.07	2,722.99	2,672.20	50.79	53.615	
12,600.00	12,511.88	12,031.00	9,816.93	29.06	61.70	17.29	69.13	-1,265.07	2,756.03	2,705.26	50.77	54.287	
12,650.00	12,542.10	11,990.87	9,816.33	29.09	60.69	16.01	29.00	-1,264.49	2,785.89	2,735.48	50.40	55.270	
12,700.00	12,568.73	11,966.73	9,815.77	29.14	60.09	15.07	4.87	-1,264.17	2,812.66	2,762.46	50.19	56.037	
12,750.00	12,591.58	11,936.00	9,814.84	29.19	59.32	14.30	-25.84	-1,263.79	2,836.08	2,786.15	49.93	56.796	
12,800.00	12,610.47	11,900.96	9,813.66	29.25	58.49	13.70	-60.86	-1,263.48	2,855.90	2,806.25	49.66	57.513	
12,850.00	12,625.25	11,855.11	9,812.16	29.33	57.41	13.23	-106.68	-1,263.38	2,871.81	2,822.51	49.30	58.249	
12,900.00	12,635.81	11,810.56	9,810.74	29.43	56.32	12.91	-151.21	-1,263.61	2,883.69	2,834.72	48.97	58.888	
12,950.00	12,642.07	11,766.20	9,809.33	29.54	55.23	12.71	-195.55	-1,264.20	2,891.47	2,842.82	48.65	59.433	
12,996.99	12,644.00	11,702.27	9,807.40	29.68	53.65	12.64	-259.44	-1,265.26	2,894.93	2,846.75	48.17	60.093	
13,000.00	12,644.00	11,696.99	9,807.26	29.69	53.52	12.64	-264.71	-1,265.32	2,895.01	2,846.88	48.13	60.146	
13,100.00	12,644.00	11,474.26	9,807.09	30.04	48.38	12.64	-487.41	-1,265.58	2,894.39	2,847.97	46.42	62.352	
13,200.00	12,644.00	11,371.79	9,808.77	30.48	46.16	12.66	-589.87	-1,266.19	2,892.92	2,847.14	45.78	63.187	
13,300.00	12,644.00	11,294.63	9,809.96	31.00	44.26	12.69	-667.00	-1,267.40	2,891.77	2,846.41	45.36	63.748	
13,370.48	12,644.00	11,245.17	9,810.50	31.43	43.02	12.72	-716.45	-1,268.90	2,891.50	2,846.36	45.13	64.064	

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - Fighting Okra Fed Com 1H (offset) - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 119- VES GyroFlex V2, 9389-MWD-ISCWSA													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,400.00	12,644.00	11,225.62	9,810.59	31.61	42.54	12.73	-735.98	-1,269.45	2,891.55	2,846.50	45.05	64.186	
13,500.00	12,644.00	11,124.84	9,810.33	32.29	40.13	12.78	-836.73	-1,271.74	2,892.31	2,847.82	44.49	65.011	
13,600.00	12,644.00	10,937.57	9,813.47	33.04	36.20	12.84	-1,023.95	-1,274.32	2,890.85	2,847.60	43.26	66.827	
13,700.00	12,644.00	10,776.80	9,819.90	33.85	32.67	12.90	-1,184.59	-1,275.79	2,887.19	2,844.93	42.26	68.324	
13,800.00	12,644.00	10,666.66	9,825.50	34.72	29.63	12.90	-1,294.57	-1,274.42	2,881.93	2,840.32	41.61	69.253	
13,900.00	12,644.00	10,578.70	9,829.34	35.64	27.34	12.87	-1,382.42	-1,272.30	2,877.12	2,835.89	41.23	69.784	
14,000.00	12,644.00	10,438.65	9,835.61	36.62	24.32	12.79	-1,522.21	-1,266.51	2,871.89	2,831.43	40.46	70.979	
14,100.00	12,644.00	10,326.00	9,841.80	37.64	21.65	12.68	-1,634.46	-1,259.49	2,865.10	2,825.17	39.93	71.748	
14,200.00	12,644.00	10,267.32	9,844.59	38.70	19.92	12.61	-1,692.93	-1,255.32	2,859.04	2,819.15	39.89	71.675	
14,300.00	12,644.00	10,212.95	9,846.05	39.80	18.37	12.54	-1,747.13	-1,251.35	2,854.76	2,814.84	39.92	71.505	
14,400.00	12,644.00	10,154.38	9,846.73	40.94	16.79	12.44	-1,805.48	-1,246.32	2,851.84	2,811.88	39.96	71.362	
14,494.73	12,644.00	10,127.60	9,846.30	42.04	16.03	12.37	-1,832.03	-1,242.86	2,850.91	2,810.62	40.29	70.762	
14,500.00	12,644.00	10,126.65	9,846.27	42.11	16.00	12.37	-1,832.97	-1,242.72	2,850.93	2,810.61	40.31	70.722	
14,600.00	12,644.00	10,114.00	9,845.69	43.30	15.63	12.33	-1,845.48	-1,240.93	2,852.85	2,812.02	40.82	69.880	
14,700.00	12,644.00	10,096.60	9,844.35	44.53	15.11	12.27	-1,862.64	-1,238.38	2,857.73	2,816.42	41.31	69.180	
14,800.00	12,644.00	10,083.00	9,842.81	45.78	14.71	12.23	-1,875.98	-1,236.29	2,865.65	2,823.82	41.84	68.494	
14,900.00	12,644.00	10,083.00	9,842.81	47.06	14.71	12.23	-1,875.98	-1,236.29	2,876.80	2,834.30	42.50	67.686	
15,000.00	12,644.00	10,051.00	9,837.56	48.36	13.76	12.11	-1,907.14	-1,231.25	2,890.48	2,847.61	42.87	67.426	
15,100.00	12,644.00	10,051.00	9,837.56	49.67	13.76	12.11	-1,907.14	-1,231.25	2,907.34	2,863.81	43.53	66.794	
15,200.00	12,644.00	10,019.00	9,830.11	51.01	12.83	11.98	-1,937.85	-1,226.29	2,927.09	2,883.19	43.90	66.677	
15,300.00	12,644.00	10,019.00	9,830.11	52.36	12.83	11.98	-1,937.85	-1,226.29	2,949.49	2,904.95	44.54	66.226	
15,400.00	12,644.00	10,004.37	9,825.97	53.73	12.42	11.92	-1,951.72	-1,224.10	2,974.81	2,929.77	45.04	66.049	
15,500.00	12,644.00	9,988.00	9,820.81	55.11	11.95	11.85	-1,967.06	-1,221.71	3,002.88	2,957.36	45.52	65.973	
15,600.00	12,644.00	9,988.00	9,820.81	56.51	11.95	11.85	-1,967.06	-1,221.71	3,033.65	2,987.56	46.10	65.810	
15,700.00	12,644.00	9,957.00	9,809.50	57.92	11.10	11.72	-1,995.60	-1,217.39	3,067.04	3,020.59	46.44	66.038	
15,800.00	12,644.00	9,957.00	9,809.50	59.34	11.10	11.72	-1,995.60	-1,217.39	3,102.71	3,055.72	46.98	66.042	
15,900.00	12,644.00	9,957.00	9,809.50	60.77	11.10	11.72	-1,995.60	-1,217.39	3,141.16	3,093.67	47.49	66.143	
16,000.00	12,644.00	9,925.00	9,795.77	62.21	10.24	11.58	-2,024.19	-1,213.24	3,181.73	3,133.93	47.79	66.572	
16,100.00	12,644.00	9,925.00	9,795.77	63.66	10.24	11.58	-2,024.19	-1,213.24	3,224.55	3,176.30	48.26	66.821	
16,200.00	12,644.00	9,911.54	9,789.40	65.12	9.90	11.53	-2,035.93	-1,211.57	3,269.67	3,221.03	48.64	67.219	
16,300.00	12,644.00	9,894.00	9,780.62	66.58	9.45	11.45	-2,050.96	-1,209.45	3,316.94	3,267.97	48.96	67.744	
16,400.00	12,644.00	9,894.00	9,780.62	68.06	9.45	11.45	-2,050.96	-1,209.45	3,366.16	3,316.81	49.35	68.207	
16,500.00	12,644.00	9,878.59	9,772.47	69.54	9.07	11.38	-2,063.92	-1,207.67	3,417.34	3,367.67	49.66	68.808	
16,600.00	12,644.00	9,862.00	9,763.25	71.03	8.67	11.31	-2,077.59	-1,205.85	3,470.45	3,420.50	49.95	69.478	
16,700.00	12,644.00	9,862.00	9,763.25	72.52	8.67	11.31	-2,077.59	-1,205.85	3,525.30	3,475.02	50.27	70.124	
16,800.00	12,644.00	9,846.33	9,754.15	74.02	8.31	11.25	-2,090.25	-1,204.27	3,581.84	3,531.31	50.54	70.877	
16,900.00	12,644.00	9,831.00	9,744.93	75.53	7.96	11.19	-2,102.42	-1,202.87	3,640.06	3,589.27	50.78	71.678	
17,000.00	12,644.00	9,831.00	9,744.93	77.04	7.96	11.19	-2,102.42	-1,202.87	3,699.83	3,648.78	51.05	72.478	
17,100.00	12,644.00	9,813.19	9,733.83	78.56	7.56	11.12	-2,116.27	-1,201.41	3,761.01	3,709.74	51.27	73.357	
17,200.00	12,644.00	9,799.00	9,724.71	80.08	7.25	11.06	-2,127.09	-1,200.34	3,823.66	3,772.18	51.48	74.272	
17,300.00	12,644.00	9,799.00	9,724.71	81.60	7.25	11.06	-2,127.09	-1,200.34	3,887.70	3,836.00	51.70	75.201	
17,400.00	12,644.00	9,768.00	9,704.02	83.13	6.60	10.94	-2,150.04	-1,198.00	3,953.01	3,901.13	51.88	76.191	
17,500.00	12,644.00	9,768.00	9,704.02	84.67	6.60	10.94	-2,150.04	-1,198.00	4,019.39	3,967.32	52.07	77.189	
17,600.00	12,644.00	9,768.00	9,704.02	86.20	6.60	10.94	-2,150.04	-1,198.00	4,087.13	4,034.89	52.25	78.226	
17,700.00	12,644.00	9,750.93	9,692.15	87.75	6.27	10.87	-2,162.23	-1,196.58	4,155.89	4,103.47	52.42	79.288	
17,800.00	12,644.00	9,737.00	9,682.19	89.29	6.01	10.81	-2,171.89	-1,195.32	4,225.85	4,173.28	52.57	80.379	
17,900.00	12,644.00	9,737.00	9,682.19	90.84	6.01	10.81	-2,171.89	-1,195.32	4,296.82	4,244.10	52.72	81.507	
18,000.00	12,644.00	9,720.84	9,670.40	92.39	5.72	10.74	-2,182.83	-1,193.76	4,368.76	4,315.89	52.87	82.640	
18,100.00	12,644.00	9,705.00	9,658.67	93.94	5.45	10.67	-2,193.34	-1,192.11	4,441.61	4,388.61	53.01	83.794	
18,200.00	12,644.00	9,705.00	9,658.67	95.50	5.45	10.67	-2,193.34	-1,192.11	4,515.36	4,462.23	53.13	84.995	
18,300.00	12,644.00	9,673.00	9,634.53	97.05	4.93	10.52	-2,214.05	-1,188.56	4,589.83	4,536.55	53.28	86.145	
18,400.00	12,644.00	9,673.00	9,634.53	98.61	4.93	10.52	-2,214.05	-1,188.56	4,665.07	4,611.69	53.39	87.383	

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
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Fighting Okra 18-19 Fed - Fighting Okra Fed Com 1H (offset) - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 119- VES GyroFlex V2, 9389-MWD-ISCWSA														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
18,500.00	12,644.00	9,673.00	9,634.53	100.18	4.93	10.52	-2,214.05	-1,188.56	4,741.23	4,687.75	53.49	88.645			
18,600.00	12,644.00	9,642.00	9,610.48	101.74	4.49	10.37	-2,233.29	-1,185.07	4,818.02	4,764.38	53.64	89.826			
18,700.00	12,644.00	9,642.00	9,610.48	103.31	4.49	10.37	-2,233.29	-1,185.07	4,895.49	4,841.77	53.73	91.119			
18,800.00	12,644.00	9,642.00	9,610.48	104.88	4.49	10.37	-2,233.29	-1,185.07	4,973.77	4,919.96	53.81	92.431			
18,900.00	12,644.00	9,642.00	9,610.48	106.45	4.49	10.37	-2,233.29	-1,185.07	5,052.81	4,998.92	53.89	93.762			
19,000.00	12,644.00	9,626.25	9,597.91	108.02	4.32	10.30	-2,242.62	-1,183.35	5,132.34	5,078.34	54.00	95.038			
19,100.00	12,644.00	9,610.00	9,584.67	109.60	4.16	10.23	-2,251.88	-1,181.61	5,212.72	5,158.60	54.12	96.325			
19,200.00	12,644.00	9,610.00	9,584.67	111.18	4.16	10.23	-2,251.88	-1,181.61	5,293.51	5,239.33	54.19	97.693			
19,300.00	12,644.00	9,610.00	9,584.67	112.75	4.16	10.23	-2,251.88	-1,181.61	5,374.95	5,320.70	54.25	99.076			
19,400.00	12,644.00	9,610.00	9,584.67	114.33	4.16	10.23	-2,251.88	-1,181.61	5,457.00	5,402.69	54.31	100.472			
19,500.00	12,644.00	9,610.00	9,584.67	115.92	4.16	10.23	-2,251.88	-1,181.61	5,539.65	5,485.27	54.37	101.881			
19,600.00	12,644.00	9,593.65	9,571.09	117.50	4.04	10.15	-2,260.82	-1,179.94	5,622.61	5,568.13	54.48	103.202			
19,700.00	12,644.00	9,578.00	9,557.86	119.08	3.95	10.08	-2,269.04	-1,178.41	5,706.28	5,651.70	54.59	104.535			
19,800.00	12,644.00	9,578.00	9,557.86	120.67	3.95	10.08	-2,269.04	-1,178.41	5,790.26	5,735.61	54.64	105.965			
19,900.00	12,644.00	9,578.00	9,557.86	122.26	3.95	10.08	-2,269.04	-1,178.41	5,874.73	5,820.03	54.70	107.405			
20,000.00	12,644.00	9,578.00	9,557.86	123.84	3.95	10.08	-2,269.04	-1,178.41	5,959.68	5,904.93	54.75	108.853			
20,100.00	12,644.00	9,578.00	9,557.86	125.43	3.95	10.08	-2,269.04	-1,178.41	6,045.10	5,990.30	54.80	110.309			
20,200.00	12,644.00	9,561.71	9,543.88	127.02	3.88	10.01	-2,277.27	-1,176.88	6,130.76	6,075.85	54.91	111.652			
20,300.00	12,644.00	9,547.00	9,531.12	128.62	3.82	9.94	-2,284.45	-1,175.51	6,216.95	6,161.94	55.01	113.011			
20,400.00	12,644.00	9,547.00	9,531.12	130.21	3.82	9.94	-2,284.45	-1,175.51	6,303.39	6,248.33	55.06	114.477			
20,500.00	12,644.00	9,547.00	9,531.12	131.80	3.82	9.94	-2,284.45	-1,175.51	6,390.23	6,335.12	55.11	115.950			
20,600.00	12,644.00	9,547.00	9,531.12	133.40	3.82	9.94	-2,284.45	-1,175.51	6,477.45	6,422.29	55.16	117.427			
20,700.00	12,644.00	9,547.00	9,531.12	134.99	3.82	9.94	-2,284.45	-1,175.51	6,565.03	6,509.82	55.21	118.909			
20,800.00	12,644.00	9,547.00	9,531.12	136.59	3.82	9.94	-2,284.45	-1,175.51	6,652.97	6,597.71	55.26	120.395			
20,900.00	12,644.00	9,516.00	9,503.71	138.19	3.73	9.81	-2,298.69	-1,172.90	6,741.11	6,685.68	55.43	121.614			
21,000.00	12,644.00	9,516.00	9,503.71	139.78	3.73	9.81	-2,298.69	-1,172.90	6,829.50	6,774.02	55.48	123.099			
21,100.00	12,644.00	9,516.00	9,503.71	141.38	3.73	9.81	-2,298.69	-1,172.90	6,918.20	6,862.67	55.53	124.586			
21,200.00	12,644.00	9,516.00	9,503.71	142.98	3.73	9.81	-2,298.69	-1,172.90	7,007.21	6,951.63	55.58	126.075			
21,300.00	12,644.00	9,516.00	9,503.71	144.58	3.73	9.81	-2,298.69	-1,172.90	7,096.51	7,040.88	55.63	127.566			
21,400.00	12,644.00	9,516.00	9,503.71	146.19	3.73	9.81	-2,298.69	-1,172.90	7,186.09	7,130.41	55.68	129.058			
21,500.00	12,644.00	9,516.00	9,503.71	147.79	3.73	9.81	-2,298.69	-1,172.90	7,275.94	7,220.21	55.73	130.552			
21,600.00	12,644.00	9,516.00	9,503.71	149.39	3.73	9.81	-2,298.69	-1,172.90	7,366.06	7,310.27	55.78	132.046			
21,700.00	12,644.00	9,516.00	9,503.71	150.99	3.73	9.81	-2,298.69	-1,172.90	7,456.42	7,400.59	55.84	133.540			
21,800.00	12,644.00	9,499.91	9,489.19	152.60	3.69	9.75	-2,305.53	-1,171.77	7,546.77	7,490.81	55.96	134.863			
21,900.00	12,644.00	9,484.00	9,474.63	154.20	3.65	9.69	-2,311.89	-1,170.88	7,637.70	7,581.61	56.08	136.187			
22,000.00	12,644.00	9,484.00	9,474.63	155.81	3.65	9.69	-2,311.89	-1,170.88	7,728.60	7,672.46	56.14	137.674			
22,100.00	12,644.00	9,484.00	9,474.63	157.41	3.65	9.69	-2,311.89	-1,170.88	7,819.72	7,763.53	56.19	139.160			
22,200.00	12,644.00	9,484.00	9,474.63	159.02	3.65	9.69	-2,311.89	-1,170.88	7,911.06	7,854.81	56.25	140.644			
22,300.00	12,644.00	9,484.00	9,474.63	160.63	3.65	9.69	-2,311.89	-1,170.88	8,002.60	7,946.30	56.31	142.128			
22,400.00	12,644.00	9,484.00	9,474.63	162.24	3.65	9.69	-2,311.89	-1,170.88	8,094.35	8,037.99	56.36	143.610			
22,500.00	12,644.00	9,484.00	9,474.63	163.84	3.65	9.69	-2,311.89	-1,170.88	8,186.29	8,129.87	56.42	145.090			
22,563.68	12,644.00	9,484.00	9,474.63	164.87	3.65	9.69	-2,311.89	-1,170.88	8,244.93	8,188.47	56.46	146.031			

LEAM Drilling Systems LLC

Anticollision Report

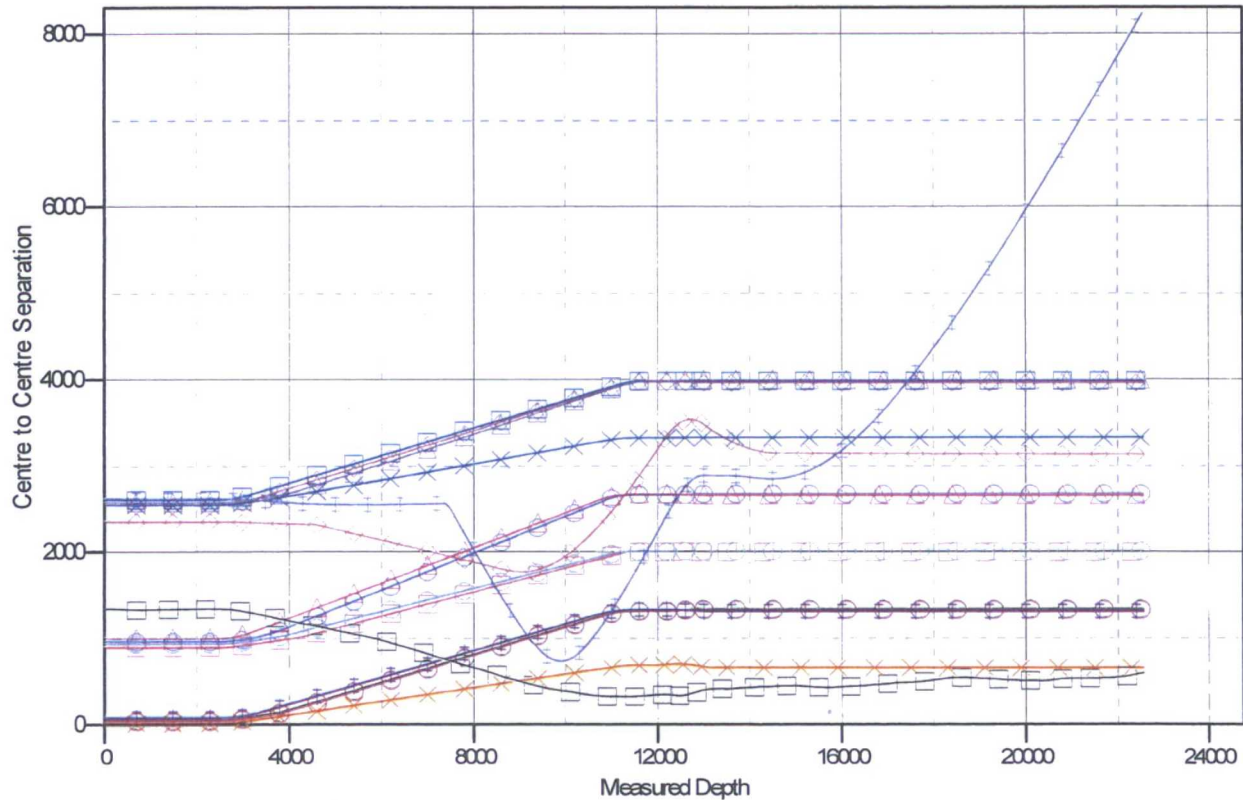
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3371' GE + 25' KB @ 3396.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: 2H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.44°

Ladder Plot



LEGEND

- | | | |
|---------------------|---------------------|---|
| 15H, OH, Plan #1 V0 | 14H, OH, Plan #1 V0 | 3H, OH, Plan #1 V0 |
| 8H, OH, Plan #1 V0 | 84H, OH, Plan #1 V0 | 4H, OH, Plan #1 V0 |
| 7H, OH, Plan #1 V0 | 5H, OH, Plan #1 V0 | Fighting Okra Fed Corn 1H (offset), OH, OH V0 |
| 86H, OH, Plan #1 V0 | 6H, OH, Plan #1 V0 | 71H, OH, OH V0 |
| 41H, OH, Plan #1 V0 | 85H, OH, Plan #1 V0 | |

LEAM Drilling Systems LLC

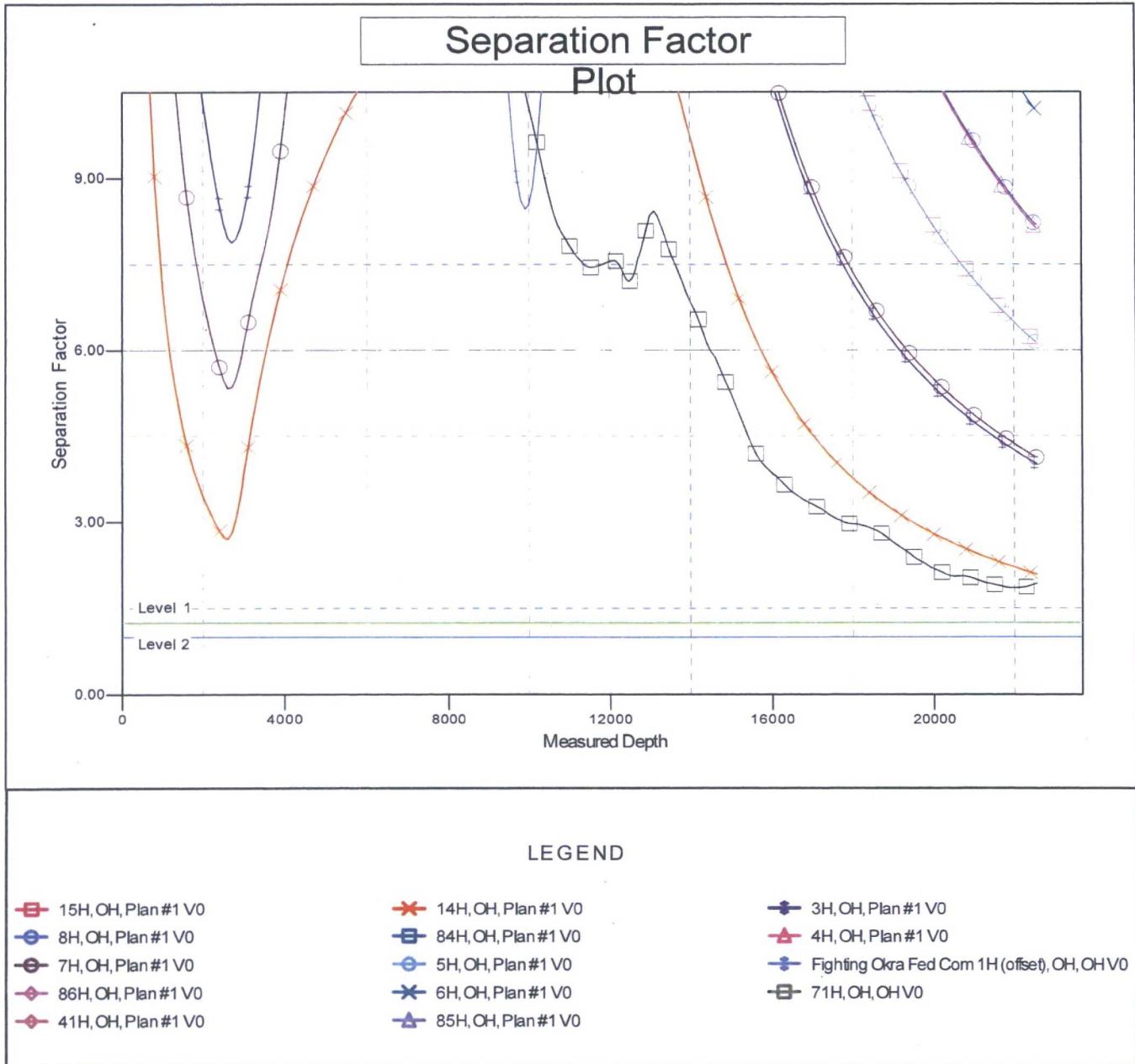
Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Fighting Okra 18-19 Fed
Site Error: 0.00 usft
Reference Well: 2H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H
TVD Reference: 3371' GE + 25' KB @ 3396.00usft
MD Reference: 3371' GE + 25' KB @ 3396.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3371' GE + 25' KB @ 3396.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: 2H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.44°



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

VAM SG

Connection Data Sheet

O.D (in)	WEIGHT (lb/ft)	WALL (in)	GRADE	DRIFT	CONNECTION
5.500	20.00	0.361	VST P110EC	4.653	VAM® SG

PIPE PROPERTIES	
Material Grade	VST P110EC
Min. Yield Strength	125 ksi
Min. Tensile Strength	135 ksi
Nominal OD	5.500 in
Nominal ID	4.778 in
Nominal Area	5.828 sq. in
Yield Strength	729 kips
Ultimate Strength	787 kips
Min Internal Yield	14,360 psi
External Pressure	12,090 psi

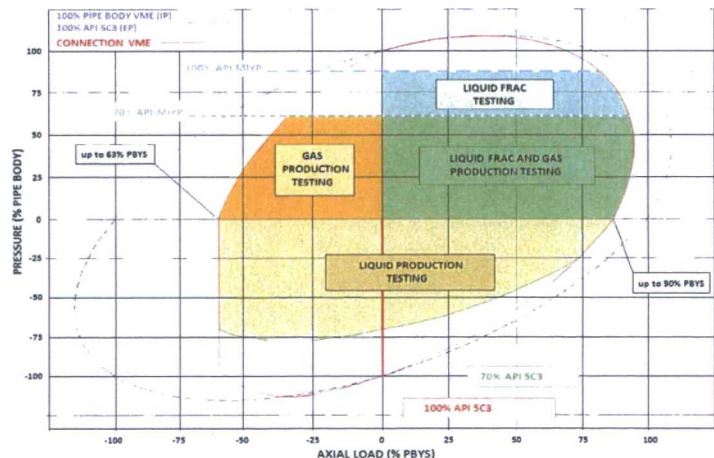
CONNECTION PROPERTIES	
Connection OD	5.697 in
Connection ID	4.711 in
Make up Loss	6.335 in
Connection Critical Area	5.071 sq. in
%PB Section Area	87.0%
Yield Strength	634 kips
Parting Load	685 kips
Min Internal Yield	14,360 psi
External Pressure	8,460 psi
Structural Collapse	12,090 psi
Working Compression	444 kips
Max. Bending w/ Sealability	40 °/100 ft

DOCUMENTATION	
Ref. Drawing	SI-PD 100954 Rev.A
Date	21-Jul-17
Time	3:19 PM
Email	tech.support@vam-usa.com

TORQUE VALUES	
Min Make Up Torque	8,100 ft-lb
Opt Make Up Torque	9,800 ft-lb
Max Make Up Torque	11,500 ft-lb
Max Torque w/ Sealability	12,500 ft-lb

The single solution for Shale Play needs

VAM® SG brings VAM® premium sealing performance to a semi-flush connection with extremely high Tension performance and increased Torque capacity, validated to the specific Shale drilling requirements, while remaining highly competitive in North American Shale play economics.



All information is provided by VAM USA or its affiliates at user's sole risk, without liability for loss, damage or injury resulting from the use thereof; and on an "AS IS" basis without warranty or representation of any kind, whether express or implied, including without limitation any warranty of merchantability, fitness for purpose or completeness. This document and its contents are subject to change without notice. In no event shall VAM USA or its affiliates be responsible for any indirect, special, incidental, punitive, exemplary or consequential loss or damage (including without limitation, loss of use, loss of bargain, loss of revenue, profit or anticipated profit) however caused or arising, and whether such losses or damages were foreseeable or VAM USA or its affiliates was advised of the possibility of such damages.

VAM® TOP HT

Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
5 1/2 in.	20.00 lb/ft	0.361 in.	P110 EC	4.653 in.	VAM® TOP HT

PIPE PROPERTIES

Nominal OD	5.500 in.
Nominal ID	4.778 in.
Nominal Cross Section Area	5.828 sqin.
Grade Type	High Yield
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi

CONNECTION PROPERTIES

Connection Type	Premium T&C
Connection OD (nom)	6.071 in.
Connection ID (nom)	4.715 in.
Make-up Loss	4.382 in.
Coupling Length	10.748 in.
Critical Cross Section	5.828 sqin.
Tension Efficiency	100 % of pipe
Compression Efficiency	80 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES

Tensile Yield Strength	729 klb
Compression Resistance	583 klb
Internal Yield Pressure	14360 psi
External Pressure Resistance	12090 psi
Max. Bending with Sealability (CAL IV)	20 °/100 ft
Max. Load on Coupling Face	388 klb

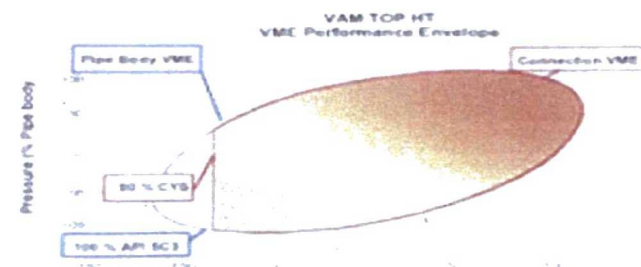
FIELD TORQUE VALUES

Min. Make-up torque	10850 ft.lb
Opti. Make-up torque	11950 ft.lb
Max. Make-up torque	13050 ft.lb
Field Liner Max	15900 ft.lb

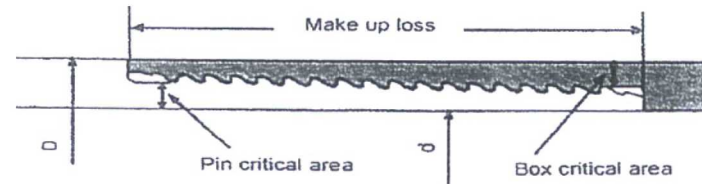
VAM® TOP HT (High Torque) is a T&C connection based on the main features of the VAM® TOP connection.

This connection provides reinforced torque capability for liners and where High Torque is anticipated due to string rotation during running operations (torque rotating liner while running, rotating casing when cementing). It has been tested as per ISO13679 CAL IV requirements.

VAM® TOP HT is interchangeable with VAM® TOP product line with the exception of 4 1/2" size.



**FLUSHMAX-III
Connection Data Sheet**



Pipe Body	Imperial		S.I.	
Grade	P110		P110	
Pipe OD (D)	7 5/8	in	193.68	mm
Weight	29.7	lb/ft	44.25	kg/m
Actual weight	29.0	lb/ft	43.26	kg/m
Wall thickness (t)	0.375	in	9.53	mm
Pipe ID (d)	6.875	in	174.63	mm
Pipe body cross section	8.537	in ²	5,508	mm ²
Drift Dia.	6.750	in	171.45	mm

Connection				
Box OD (W)	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Pin critical area	4.420	in ²	2,852	mm ²
Box critical area	4.424	in ²	2,854	mm ²
Joint load efficiency	60	%	60	%
Make up loss	3.040	in	77.22	mm
Thread taper	1/16 (3/4 in per ft)			
Number of threads	5 thread per in.			

Connection Performance Properties				
Tensile Yield load	563.4	kips	2,506	kN
M.I.Y.P.	7,574	psi	52.2	MPa
Collapse strength	5,350	psi	36.9	MPa

Note
M.I.Y.P. = Minimum Internal Yield Pressure of the connection

Torque Recommended				
Min.	8,700	ft-lb	11,700	N-m
Optl.	9,700	ft-lb	13,100	N-m
Max.	10,700	ft-lb	14,500	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

Note : Operational Max. torque can be applied for high torque application

**PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Devon Energy Prod Co
LEASE NO.:	NM114992
WELL NAME & NO.:	Fighting Okra 18-19 Fed 2H
SURFACE HOLE FOOTAGE:	330'/N & 1665'/W
BOTTOM HOLE FOOTAGE:	330'/S & 960'/W, sec. 19
LOCATION:	Sec. 18, T. 26 S, R. 34 E
COUNTY:	Lea County

All previous COAs still apply, except for the following:

A. DRILLING OPERATIONS REQUIREMENTS

1. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
2. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Red Beds, Rustler, and Delaware.

Abnormal pressures may be encountered upon penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

1. The 10 3/4 inch surface casing shall be set at approximately 900 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 10 3/4" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the 7 5/8 inch intermediate casing is:

Cement Option #1 (Single Stage):

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to -46% - Additional cement will be required.**

Cement Option #2:

Operator has proposed DV tool at a depth of 4900', but will adjust cement proportionally 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 or approved top of cement on the next stage. **Excess calculates to -48% - Additional cement will be required.**

b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to -25% - Additional cement will be required.**

Formation below the 7 5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

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

- ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 18% - Additional cement may be required.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a

larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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