

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-1730
District II
611 S. First St., Artesia, NM 88210
Phone: (575) 745-1233 Fax: (575) 746-4720
District III
1000 Rio Bosque Road, Aztec, NM 87410
Phone: (505) 334-6176 Fax: (505) 334-6770
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

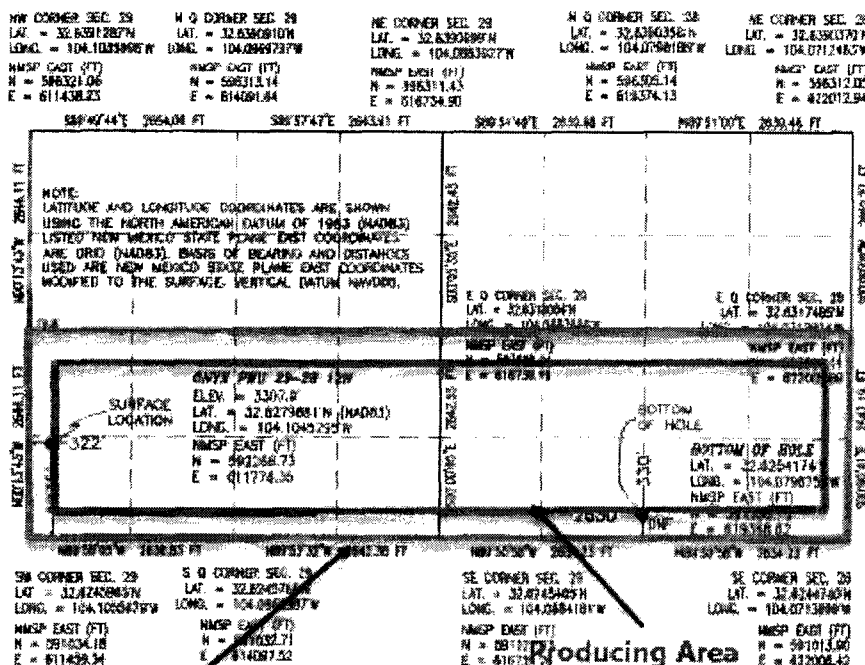
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-44355		Post Code 98199		Pool Name PARKWAY; BONE SPRING, WEST	
Property Code		Property Name ONYX FWU 29-28		Well Number 12H	
OGRID No. 6137		Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.		Elevation 3307.9	
10 Surface Location					
UL or lot no. M	Section 29	Township 19 S	Range 29 E	Lot Idn 1235	Feet from the SOUTH
				North/South line WEST	Feet from the WEST
				County EDDY	
10 Bottom Hole Location If Different From Surface					
UL or lot no. N	Section 28	Township 19 S	Range 29 E	Lot Idn 330	Feet from the SOUTH
				North/South line WEST	Feet from the WEST
				County EDDY	
Dedicated Acres 640		Joint or Infill		Consolidation Code	Order No. R-14188

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.

PARKWAY WEST UNIT



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 undivided mineral interest in the land including the proposed well location or has a right to drill this well on this location pursuant to a contract with an owner of such a mineral or working interest, or to a satisfactory pooling agreement or a compulsory pooling order heretofore entered by the division.

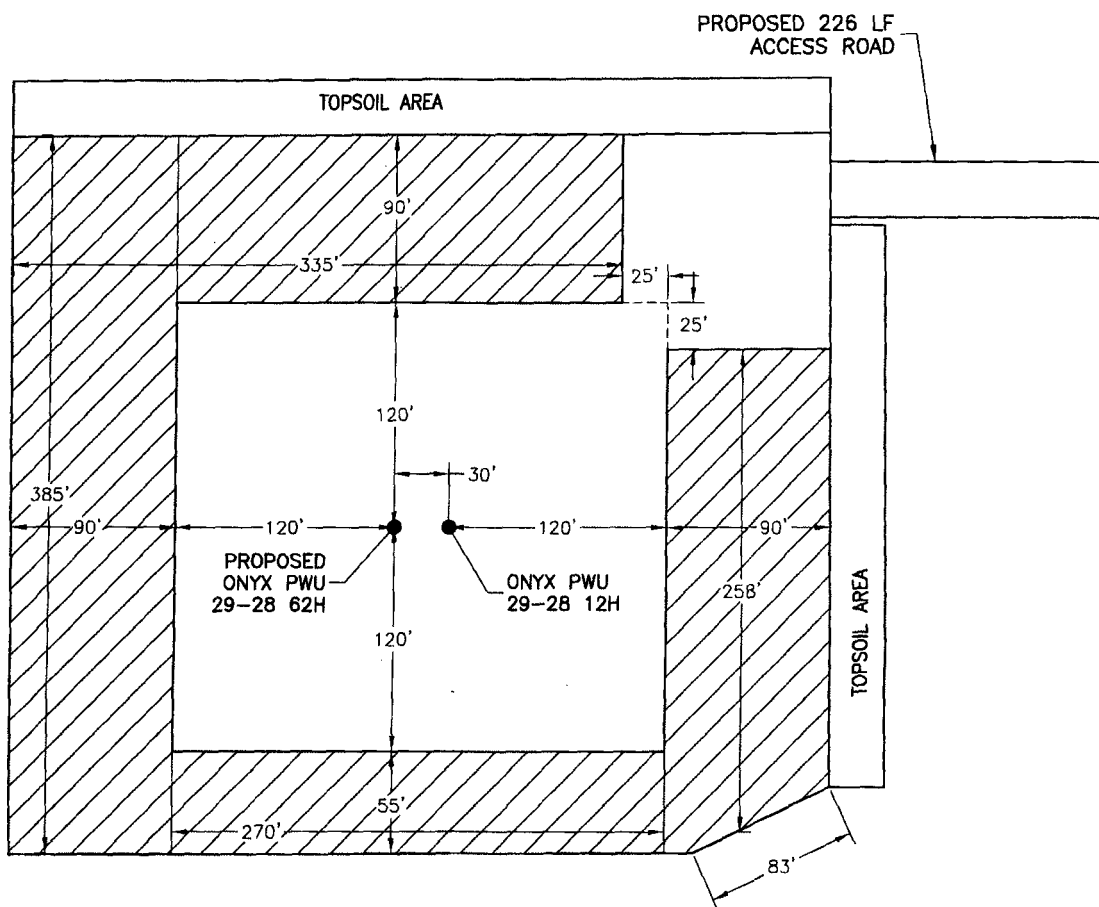
Erin Workman 08/02/2017
Signature: Erin Workman
Printed Name: Erin Workman
Email Address: Erin.workman@dvn.com

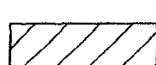
SURVEYOR CERTIFICATION

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.

JULIUS, 2013 MEXICO
L. J. JARAMELLO
12797
Producing Area
330' from exterior
Certification Number: JULIUS A. JARAMELLO, PLS 12797
SURVEY NO. 5216

SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



 DENOTES INTERIM PAD RECLAMATION AREA
2.171± ACRES

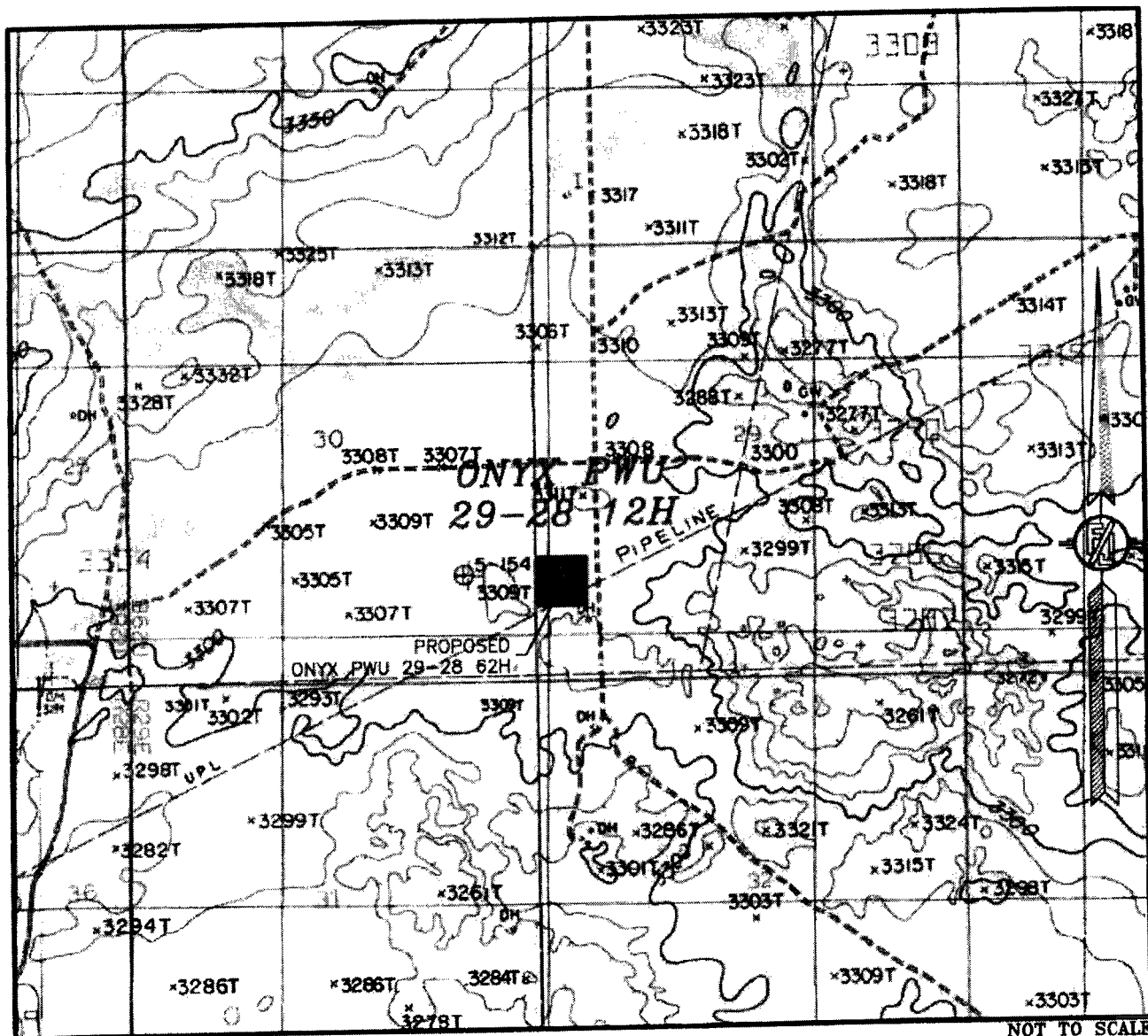
010 50 100 200
SCALE 1" = 100'

DEVON ENERGY PRODUCTION COMPANY, L.P.
ONYX PWU 29-28 12H
LOCATED 1235 FT. FROM THE SOUTH LINE
AND 322 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 15, 2017

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO SURVEY NO. 5216

SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
ILLINOIS CAMP NE

NOT TO SCALE

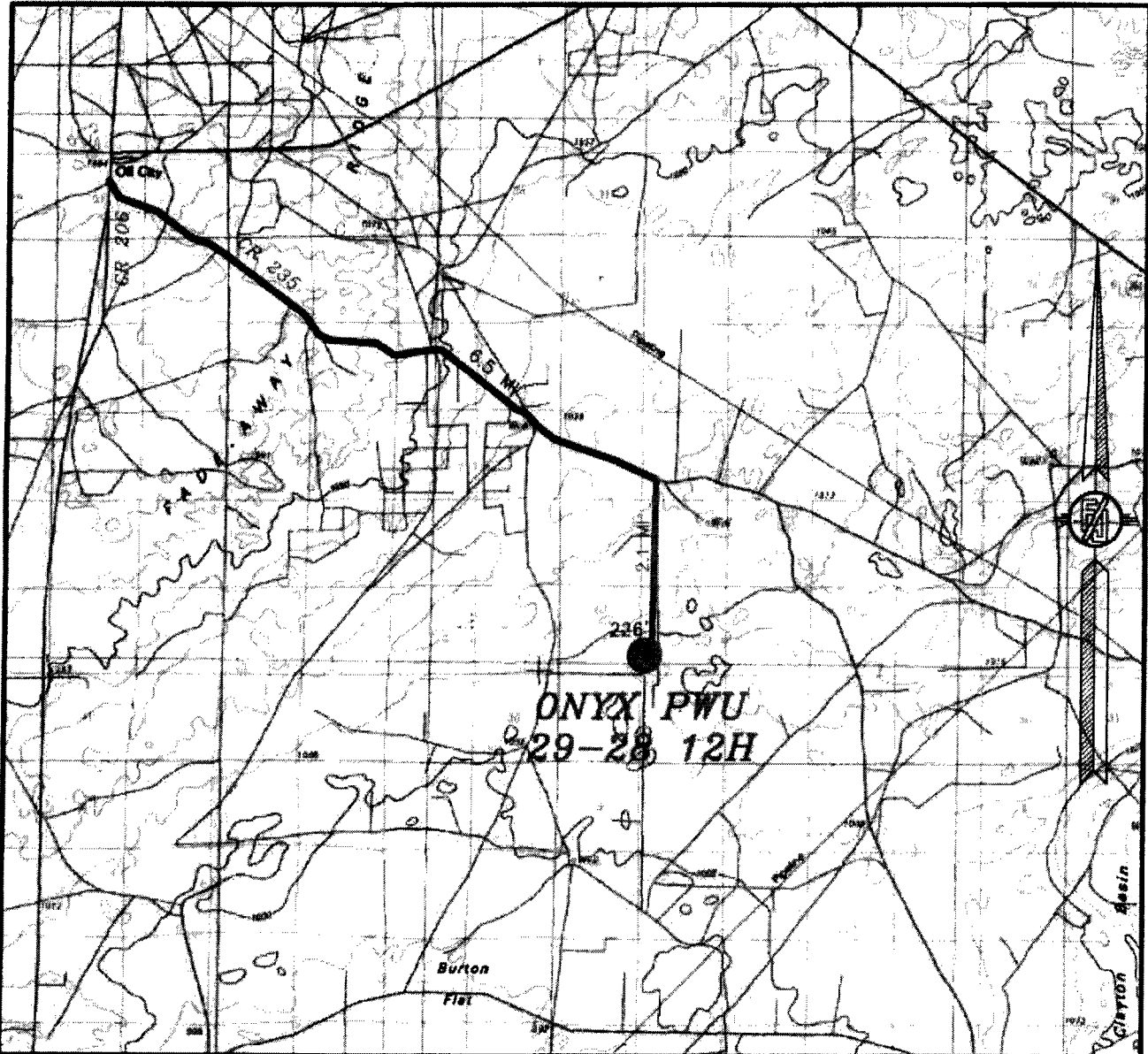
DEVON ENERGY PRODUCTION COMPANY, L.P.
ONIX PWU 29-28 12H
LOCATED 1235 FT. FROM THE SOUTH LINE
AND 322 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 15, 2017

SURVEY NO. 5216

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

SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

ONYX PWU 29-28 12H

LOCATED 1235 FT. FROM THE SOUTH LINE
AND 322 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

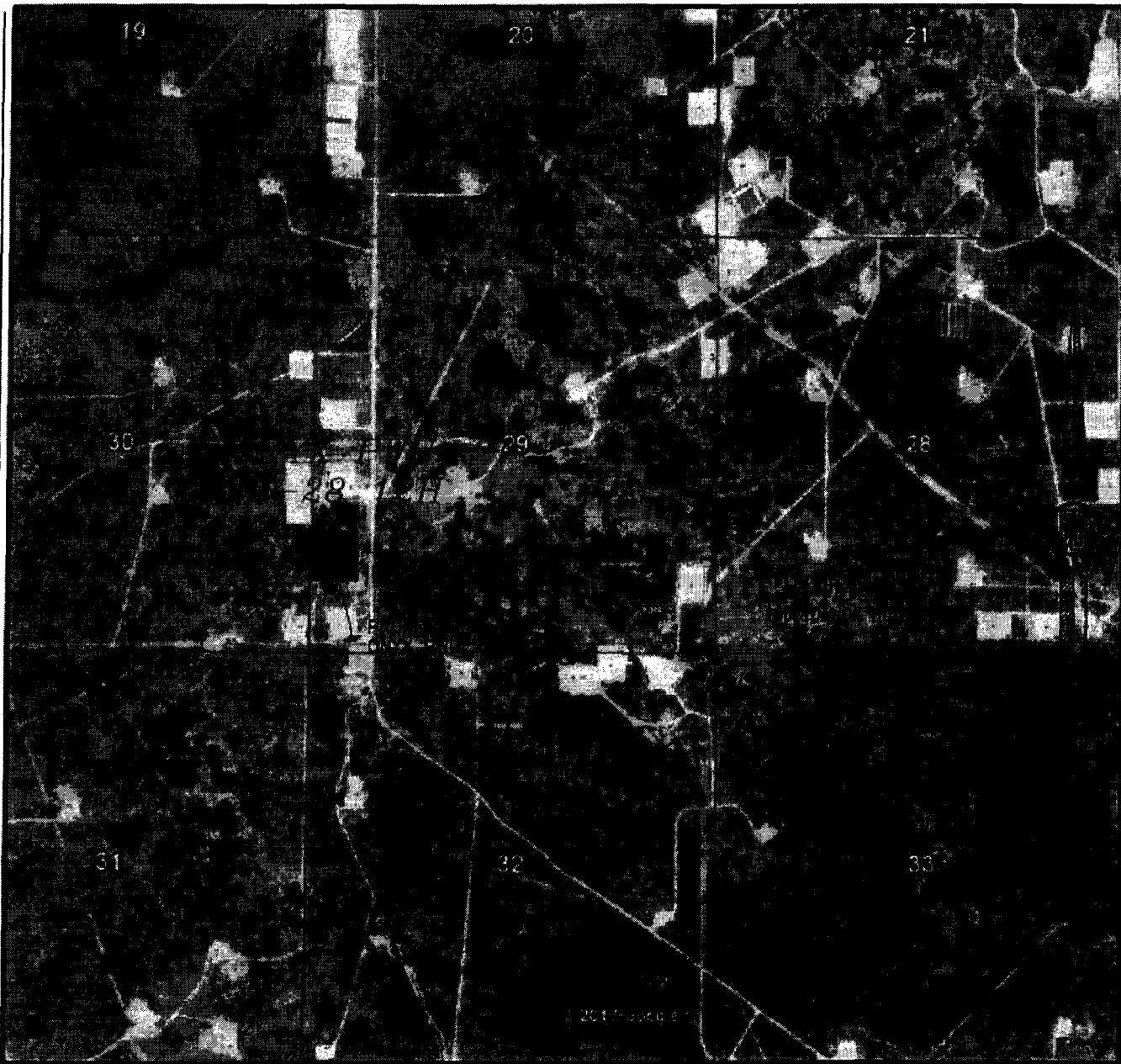
FROM THE INTERSECTION OF CR 206 (ILLINOIS CAMP ROAD) AND CR 235 (CURRY COMBS ROAD) GO SOUTHEAST & EAST ON CR 235 APPROX. 6.5 MILES TO A LEASE ROAD ON RIGHT (SOUTH) TURN SOUTH ON LEASE ROAD GO APPROX. 2.1 MILES TO ROAD LATH ON RIGHT (WEST) GO WEST 226' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

JULY 15, 2017

SURVEY NO. 5216

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

SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2016

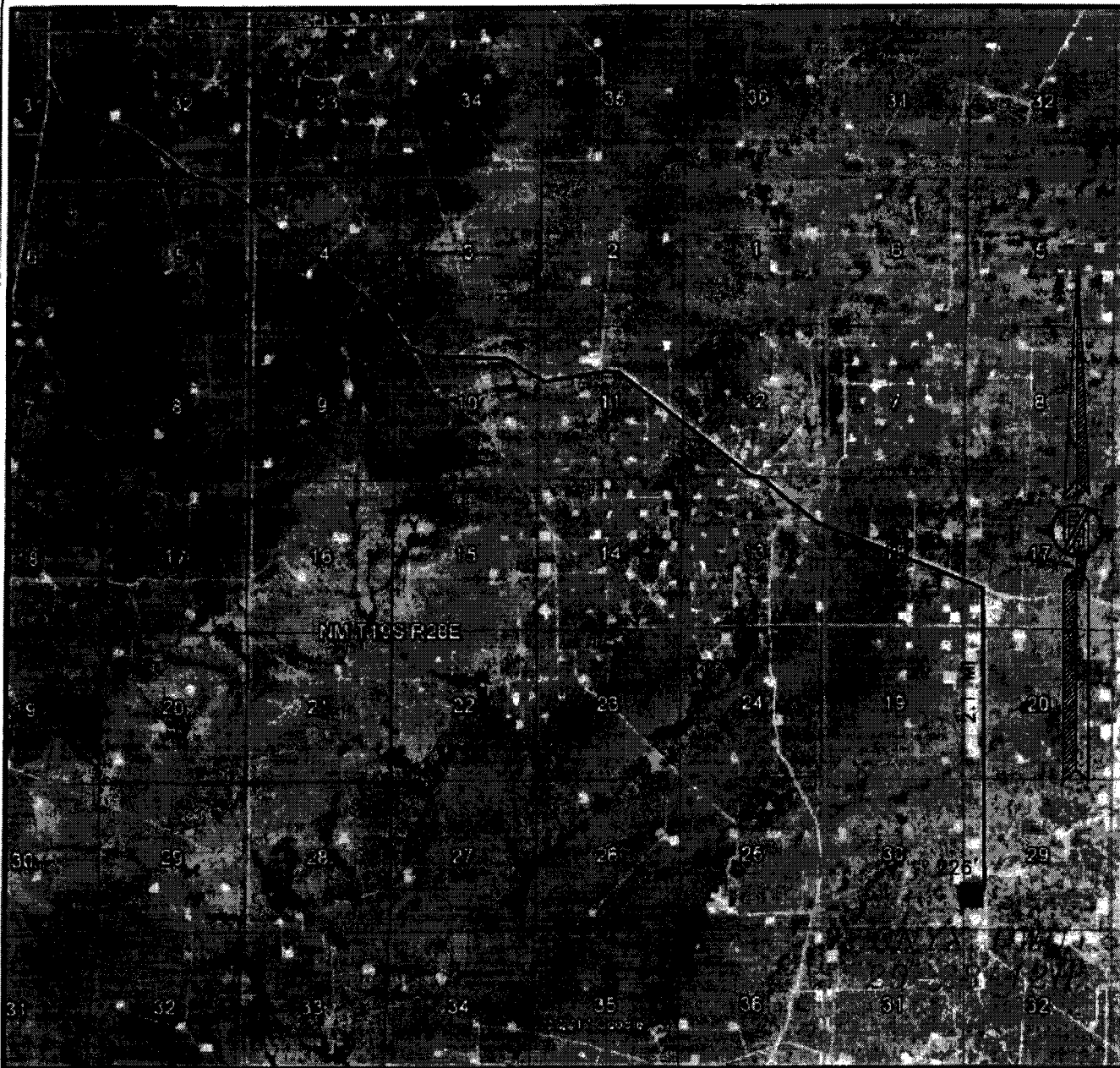
DEVON ENERGY PRODUCTION COMPANY, L.P.
ONYX PWU 29-28 12H
LOCATED 1235 FT. FROM THE SOUTH LINE
AND 322 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 15, 2017

SURVEY NO. 5216

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

SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
ONYX PWU 29-28 12H
LOCATED 1235 FT. FROM THE SOUTH LINE
AND 322 FT. FROM THE WEST LINE OF
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 15, 2017

SURVEY NO. 5216

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

DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
ONYX PMU 29-28 12H
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 15, 2017

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(505) 234-2341

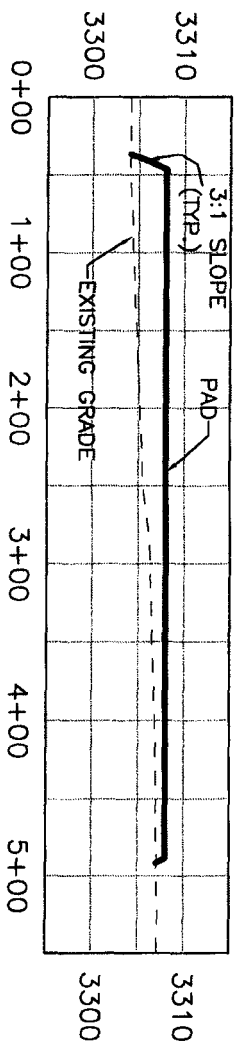
SHEET 1-
SURVEY NO. 5216

CUT	FILL	NET
230 CU. YD	9256 CU. YD	9026 CU. YD (FILL)

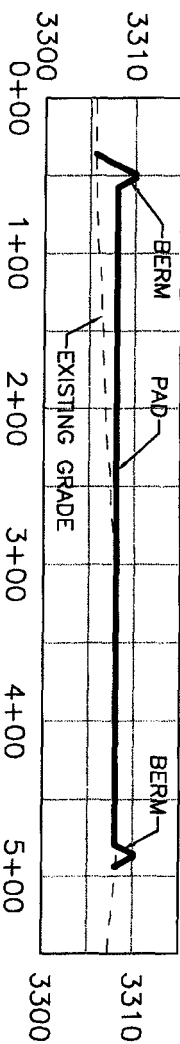


CROSS SECTIONS

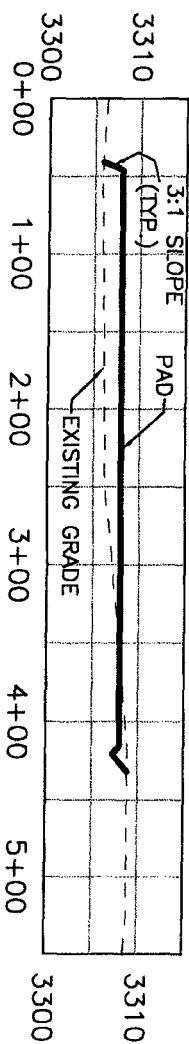
SECTION A-A



SECTION B-B



SECTION C-C



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
ONLY PW 29-28 12H
SECTION 29, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

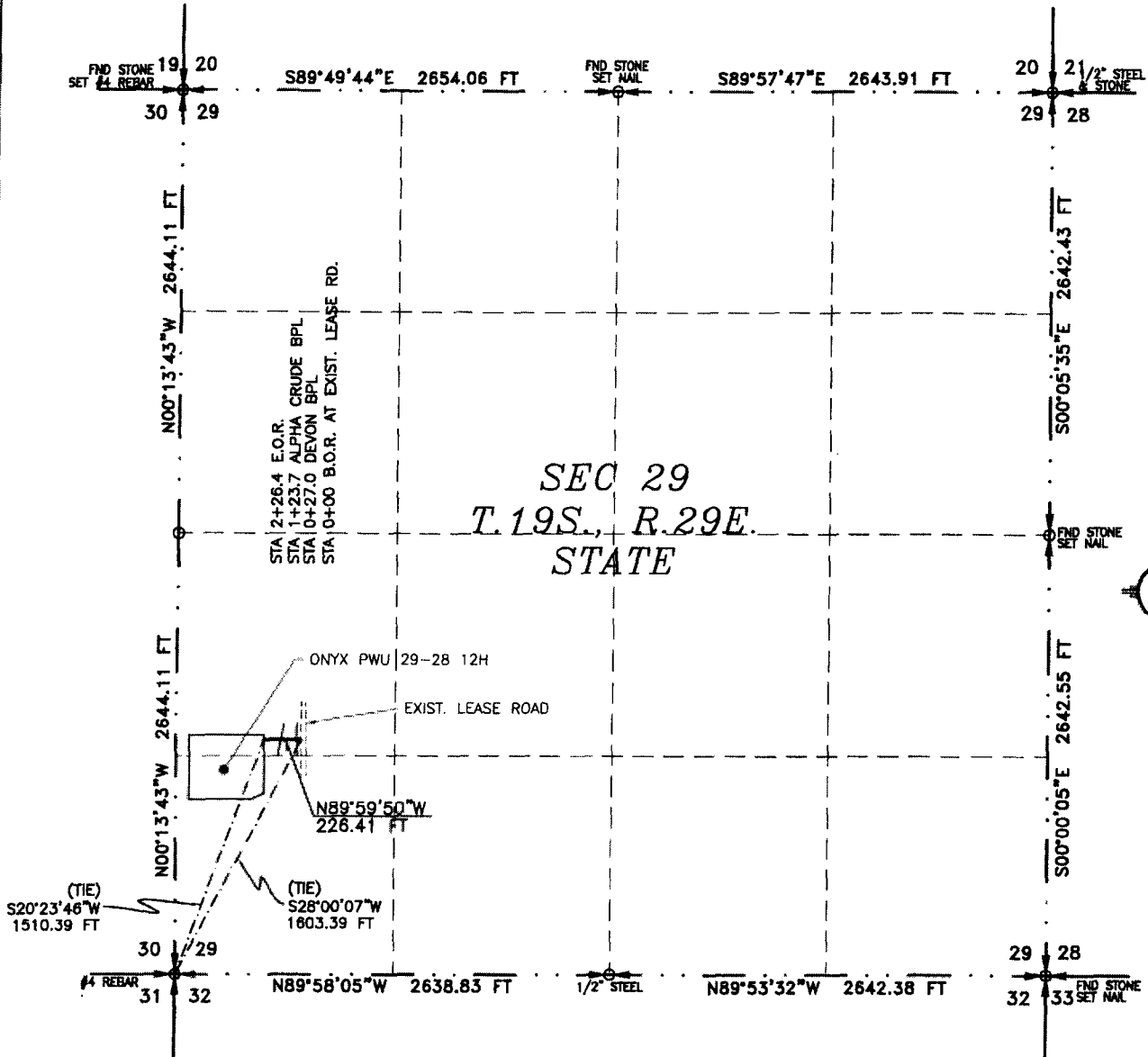
JULY 15, 2017

MADRON SURVEYING, INC. 301 SOUTH CANAL (975) 234-3341 CARLSBAD, NEW MEXICO

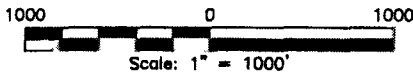
SHEET 2-2 SURVEY NO. 5216

ACCESS ROAD PLAT
ACCESS ROAD TO THE ONYX PWU 29-28 12H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 15, 2017



SEE NEXT SHEET (2-2) FOR DESCRIPTION



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

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 15th DAY OF JULY 2017.

FILMON F. JARAMILLO, PLS. 12797

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

SURVEY NO. 5216

ACCESS ROAD PLAT
ACCESS ROAD TO THE ONYX PWU 29-28 12H

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 15, 2017

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING STATE OF NEW MEXICO LAND IN SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 SW/4 OF SAID SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S28°00'07"W, A DISTANCE OF 1603.39 FEET;

THENCE N89°59'50"W A DISTANCE OF 226.41 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 29, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S20°23'46"W, A DISTANCE OF 1510.39 FEET;

SAID STRIP OF LAND BEING 226.41 FEET OR 13.72 RODS IN LENGTH, CONTAINING 0.156 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 SW/4 226.41 L.F. 13.72 RODS 0.156 ACRES

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 15 DAY OF JULY 2017

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. 301 SOUTH CANAL
(575) 234-3341 **CARLSBAD, NEW MEXICO**

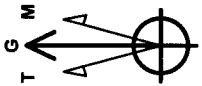
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 5216

Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Onyx PWU 29-28
 Well: 12H
 Wellbore: OH
 Design: Plan #2

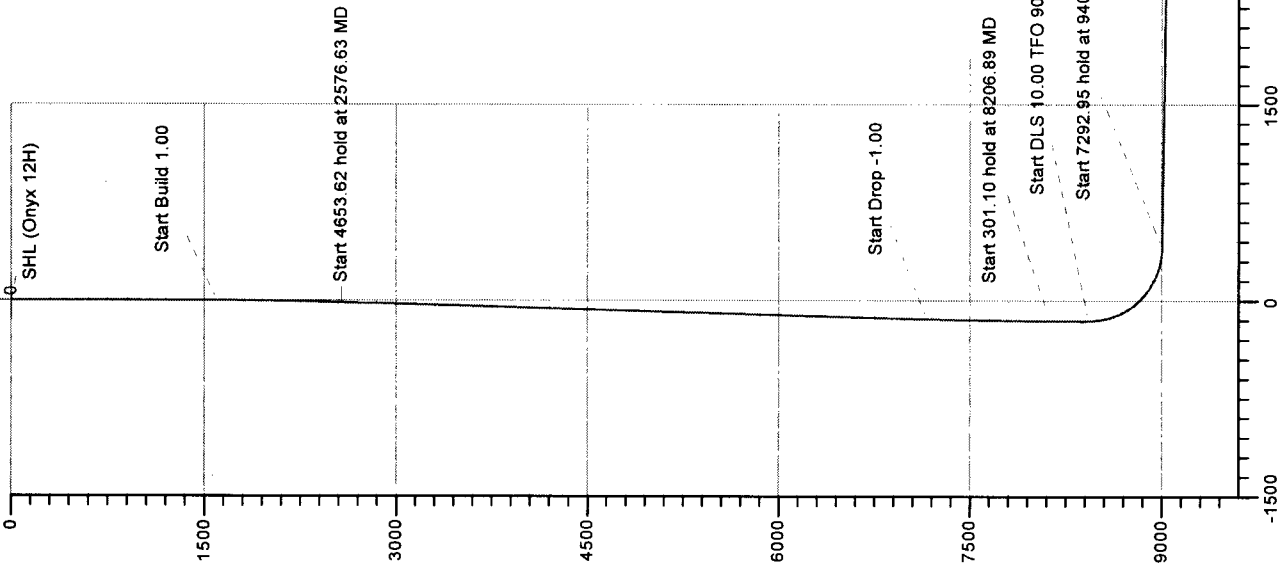
3307.9' GE + 23.5' KB @ 3331.40usft
 Ground Level: 3307.90



Azimuths to Grid North
 True North: -0.12°
 Magnetic North: 7.31°
 Magnetic Field
 Strength: 48198.7nT
 Dip Angle: 60.60°
 Date: 6/28/2017
 Model: HDGM

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

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

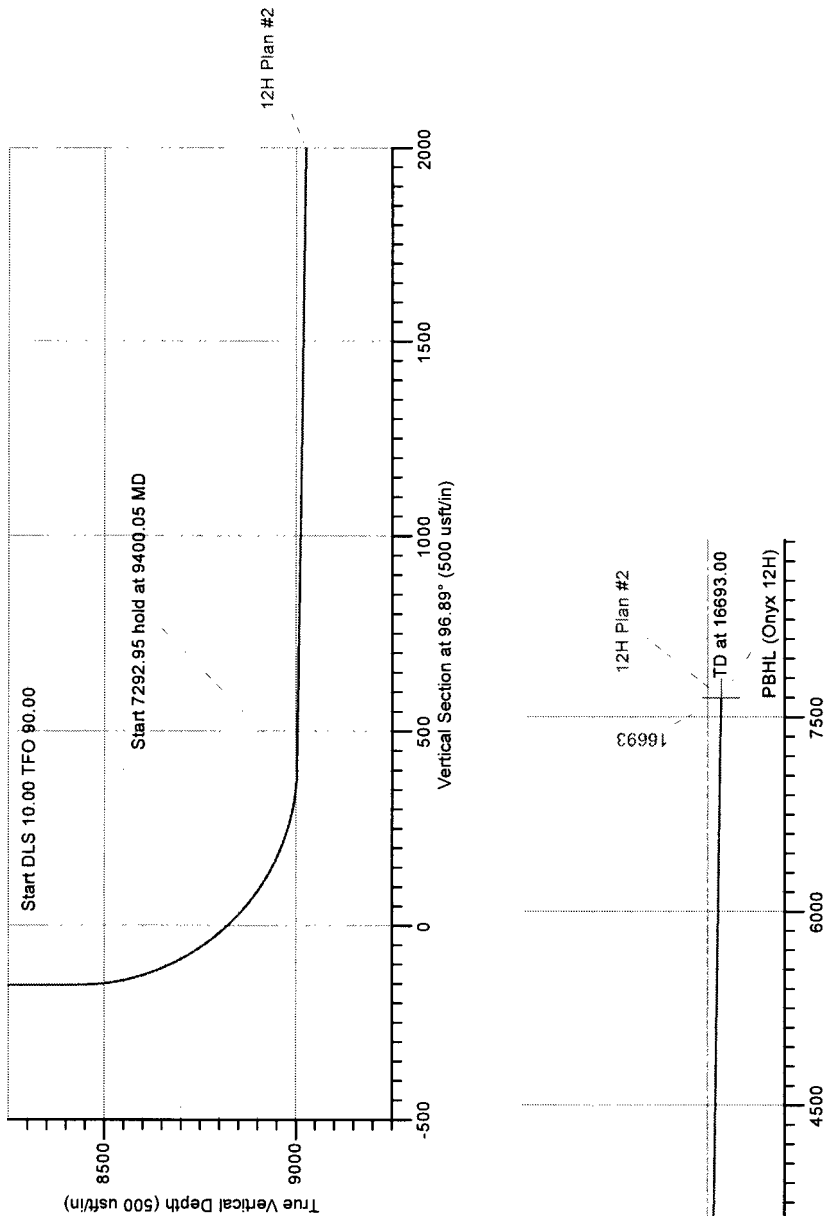


SECTION DETAILS

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	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
2576.63	9.77	196.10	2571.91	-79.78	-23.03	1.00	196.10	-13.29	Start 4653.62 hold at 2576.63 MD
7230.25	9.77	196.10	7158.09	-838.20	-241.97	0.00	0.00	-139.61	Start Drop -1.00
8206.89	0.00	0.00	8130.00	-917.98	-265.00	1.00	180.00	-152.89	Start 301.10 hold at 8206.89 MD
8507.99	0.00	0.00	8431.10	-917.98	-265.00	0.00	0.00	-152.89	Start DLS 10.00 TFO 90.00
9400.05	89.21	90.00	9004.00	-917.98	-300.02	10.00	90.00	-408.04	Start 7292.95 hold at 9400.05 MD
16693.00	89.21	90.00	9105.00	-917.98	-7592.27	0.00	0.00	-7647.57	TD at 16693.00

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (Onyx 12H)	9105.00	-917.98	7592.27	32° 37' 31.503 N	104° 4' 47.551 W
SHL (Onyx 12H)	0.00	0.00	0.00	32° 37' 40.757 N	104° 6' 16.306 W

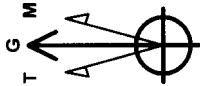


LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

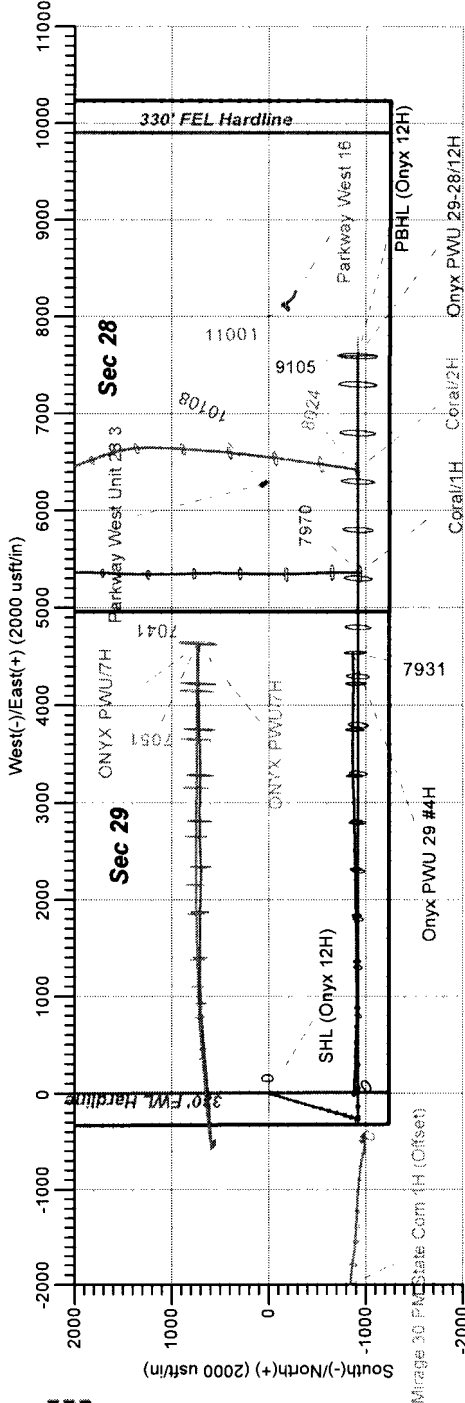
Plan: Plan #2 (12H/OH)
 Onyx PWU 29-28
 Created By: Dustin Ault
 Date: 12/28, July 28 2017
 Approved: _____
 Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 12H
Wellbore: OH
Design: Plan #2



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.31°
Magnetic Field
Strength: 48198.7 nT
Dip Angle: 60.50°
Date: 6/28/2017
Model: HDGM



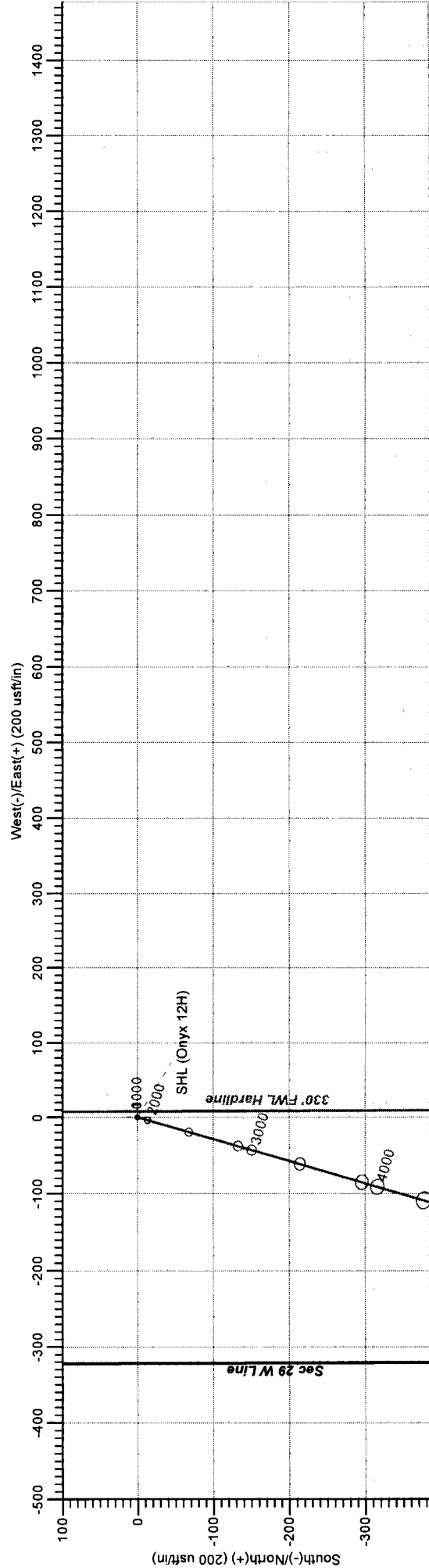
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Onyx 12H)	0.00	0.00	0.00	592268.73	611776.35	32° 37' 40.757 N	104° 6' 16.306 W
PBHL (Onyx 12H)	9105.00	-917.98	7592.27	591350.75	619368.62	32° 37' 31.503 N	104° 4' 47.551 W

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

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	Start Build 1.00
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	Start 4653.62 hold at 2576.63 MD
2576.63	9.77	196.10	2571.91	-79.78	-23.03	1.00	196.10	-13.29	Start Drop -1.00
7230.25	9.77	196.10	7158.09	-838.20	-241.97	0.00	0.00	-139.61	Start 301.10 hold at 8206.89 MD
8206.89	0.00	0.00	8130.00	-917.98	-265.00	1.00	180.00	-152.89	Start DLS 10.00 TFO 90.00
8507.99	0.00	0.00	8431.10	-917.98	-265.00	0.00	0.00	-152.89	Start 7292.95 hold at 9400.05 MD
9400.05	89.21	90.00	9004.00	-917.98	300.02	10.00	90.00	408.04	TD at 16693.00
16693.00	89.21	90.00	9105.00	-917.98	7592.27	0.00	0.00	7647.57	



Devon Energy
Eddy County, NM (NAD-83)
Onyx PWU 29-28
12H

OH

Plan: Plan #2

Standard Planning Report

28 July, 2017

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 12H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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

Site	Onyx PWU 29-28		
Site Position:			
From:	Map	North: 596,305.26 usft East: 611,703.20 usft	Latitude: 32° 38' 20.701 N Longitude: 104° 6' 17.060 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16"	Grid Convergence: 0.12°

Well	12H		
Well Position			
+N-S	-4,036.53 usft	North: 592,268.73 usft	Latitude: 32° 37' 40.757 N
+E-W	73.15 usft	East: 611,776.35 usft	Longitude: 104° 6' 16.306 W
Position Uncertainty	0.00 usft	Wellhead Elevation: 0.00 usft	Ground Level: 3,307.90 usft

Wellbore	OH		
Magnetics			
Model Name	HDGM	Declination (°)	7.43
		Dip Angle (°)	60.50
		Field Strength (nT)	48,199

Design	Plan #2		
Audit Notes:			
Version:	Phase: PLAN	Tie On Depth:	0.00
Vertical Section:			
	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)
	0.00	0.00	0.00
		Direction (°)	96.89

Plan Sections						
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Turn Rate (°/100usft)
0.00	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
2,576.63	9.77	196.10	2,571.91	-79.78	-23.03	0.00
7,230.25	9.77	196.10	7,156.09	-838.20	-241.97	196.10
8,206.89	0.00	0.00	8,130.00	-917.98	-265.00	0.00
8,507.99	0.00	0.00	8,431.10	-917.98	-265.00	0.00
9,400.05	89.21	90.00	9,004.00	-917.98	300.02	180.00
16,693.00	89.21	90.00	9,105.00	-917.98	7,592.27	10.09
						0.00 PBHL (Onyx 12H)

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Onyx PMU 29-28
 Well: 12H
 Wellbore: OH
 Design: Plan #2

Local Co-ordinates Reference: Well 12H
 3307.9' GE + 23.5' KB @ 3331.40usft
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 MD Reference: Grid
 North Reference: Minimum Curvature
 Survey Calculation Method:

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 (Onyx 12H) - SHL (12H)									
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
Start Build 1.00									
1,700.00	1.00	196.10	1,699.99	-0.84	-0.24	-0.14	1.00	1.00	0.00
1,800.00	2.00	196.10	1,799.96	-3.35	-0.97	-0.96	1.00	1.00	0.00
1,900.00	3.00	196.10	1,899.86	-7.54	-2.18	-1.26	1.00	1.00	0.00
2,000.00	4.00	196.10	1,999.68	-13.41	-3.87	-2.23	1.00	1.00	0.00
2,100.00	5.00	196.10	2,099.37	-20.95	-6.05	-3.49	1.00	1.00	0.00
2,200.00	6.00	196.10	2,198.90	-30.16	-8.71	-5.02	1.00	1.00	0.00
2,300.00	7.00	196.10	2,298.26	-41.03	-11.84	-6.83	1.00	1.00	0.00
2,400.00	8.00	196.10	2,397.40	-53.57	-15.47	-8.92	1.00	1.00	0.00
2,500.00	9.00	196.10	2,496.30	-67.77	-19.56	-11.29	1.00	1.00	0.00
2,576.63	9.77	196.10	2,571.91	-79.78	-23.03	-13.29	1.00	1.00	0.00
Start 453.62 hold at 2576.63 MD									
2,600.00	9.77	196.10	2,594.94	-83.59	-24.13	-13.92	0.00	0.00	0.00
2,700.00	9.77	196.10	2,693.49	-99.88	-28.83	-16.64	0.00	0.00	0.00
2,800.00	9.77	196.10	2,792.04	-116.18	-33.54	-19.35	0.00	0.00	0.00
2,900.00	9.77	196.10	2,890.59	-132.48	-38.24	-22.06	0.00	0.00	0.00
3,000.00	9.77	196.10	2,989.14	-148.78	-42.95	-24.78	0.00	0.00	0.00
3,100.00	9.77	196.10	3,087.69	-165.07	-47.65	-27.49	0.00	0.00	0.00
3,200.00	9.77	196.10	3,186.24	-181.37	-52.36	-30.21	0.00	0.00	0.00
3,300.00	9.77	196.10	3,284.79	-197.67	-57.06	-32.92	0.00	0.00	0.00
3,400.00	9.77	196.10	3,383.35	-213.97	-61.77	-35.64	0.00	0.00	0.00
3,500.00	9.77	196.10	3,481.90	-230.26	-66.47	-38.35	0.00	0.00	0.00
3,600.00	9.77	196.10	3,580.45	-246.56	-71.18	-41.07	0.00	0.00	0.00
3,700.00	9.77	196.10	3,679.00	-262.86	-75.88	-43.78	0.00	0.00	0.00
3,800.00	9.77	196.10	3,777.55	-279.16	-80.59	-46.49	0.00	0.00	0.00
3,900.00	9.77	196.10	3,876.10	-295.45	-85.29	-49.21	0.00	0.00	0.00
4,000.00	9.77	196.10	3,974.65	-311.75	-90.00	-51.92	0.00	0.00	0.00
4,100.00	9.77	196.10	4,073.20	-328.05	-94.70	-54.64	0.00	0.00	0.00
4,200.00	9.77	196.10	4,171.75	-344.35	-99.40	-57.35	0.00	0.00	0.00
4,300.00	9.77	196.10	4,270.30	-360.64	-104.11	-60.07	0.00	0.00	0.00
4,400.00	9.77	196.10	4,368.85	-376.94	-108.81	-62.78	0.00	0.00	0.00
4,500.00	9.77	196.10	4,467.40	-393.24	-113.52	-65.50	0.00	0.00	0.00
4,600.00	9.77	196.10	4,565.95	-409.54	-118.22	-68.21	0.00	0.00	0.00
4,700.00	9.77	196.10	4,664.51	-425.83	-122.93	-70.92	0.00	0.00	0.00
4,800.00	9.77	196.10	4,763.06	-442.13	-127.63	-73.64	0.00	0.00	0.00

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Well 12H
 3307.9' GE + 23.5' KB @ 3331.40usft
 3307.9' GE + 23.5' KB @ 3331.40usft
 Grid
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.00	9.77	196.10	4,861.61	-458.43	-132.34	-76.35	0.00	0.00	0.00
5,000.00	9.77	196.10	4,960.16	-474.73	-137.04	-79.07	0.00	0.00	0.00
5,100.00	9.77	196.10	5,058.71	-491.02	-141.75	-81.78	0.00	0.00	0.00
5,200.00	9.77	196.10	5,157.26	-507.32	-146.45	-84.50	0.00	0.00	0.00
5,300.00	9.77	196.10	5,255.81	-523.62	-151.16	-87.21	0.00	0.00	0.00
5,400.00	9.77	196.10	5,354.36	-539.92	-155.86	-89.93	0.00	0.00	0.00
5,500.00	9.77	196.10	5,452.91	-556.21	-160.57	-92.64	0.00	0.00	0.00
5,600.00	9.77	196.10	5,551.46	-572.51	-165.27	-95.35	0.00	0.00	0.00
5,700.00	9.77	196.10	5,650.01	-588.81	-169.98	-98.07	0.00	0.00	0.00
5,800.00	9.77	196.10	5,748.56	-605.11	-174.68	-100.78	0.00	0.00	0.00
5,900.00	9.77	196.10	5,847.11	-621.40	-179.39	-103.50	0.00	0.00	0.00
6,000.00	9.77	196.10	5,945.67	-637.70	-184.09	-106.21	0.00	0.00	0.00
6,100.00	9.77	196.10	6,044.22	-654.00	-188.79	-108.93	0.00	0.00	0.00
6,200.00	9.77	196.10	6,142.77	-670.30	-193.50	-111.64	0.00	0.00	0.00
6,300.00	9.77	196.10	6,241.32	-686.59	-198.20	-114.36	0.00	0.00	0.00
6,400.00	9.77	196.10	6,339.87	-702.89	-202.91	-117.07	0.00	0.00	0.00
6,500.00	9.77	196.10	6,438.42	-719.19	-207.61	-119.78	0.00	0.00	0.00
6,600.00	9.77	196.10	6,536.97	-735.49	-212.32	-122.50	0.00	0.00	0.00
6,700.00	9.77	196.10	6,635.52	-751.78	-217.02	-125.21	0.00	0.00	0.00
6,800.00	9.77	196.10	6,734.07	-768.08	-221.73	-127.93	0.00	0.00	0.00
6,900.00	9.77	196.10	6,832.62	-784.38	-226.43	-130.64	0.00	0.00	0.00
7,000.00	9.77	196.10	6,931.17	-800.68	-231.14	-133.36	0.00	0.00	0.00
7,100.00	9.77	196.10	7,029.72	-816.98	-235.84	-136.07	0.00	0.00	0.00
7,200.00	9.77	196.10	7,128.27	-833.27	-240.55	-138.79	0.00	0.00	0.00
7,230.25	9.77	196.10	7,158.09	-838.20	-241.97	-139.61	0.00	0.00	0.00
Start Drop -1.00									
7,300.00	9.07	196.10	7,226.90	-849.17	-245.14	-141.43	1.00	-1.00	0.00
7,400.00	8.07	196.10	7,325.78	-863.48	-249.27	-143.82	1.00	-1.00	0.00
7,500.00	7.07	196.10	7,424.91	-876.14	-252.92	-146.92	1.00	-1.00	0.00
7,600.00	6.07	196.10	7,524.25	-887.13	-256.09	-147.76	1.00	-1.00	0.00
7,700.00	5.07	196.10	7,623.77	-896.45	-258.79	-149.31	1.00	-1.00	0.00
7,800.00	4.07	196.10	7,723.46	-904.11	-260.99	-150.58	1.00	-1.00	0.00
7,900.00	3.07	196.10	7,823.26	-910.09	-262.72	-151.58	1.00	-1.00	0.00
8,000.00	2.07	196.10	7,923.16	-914.39	-263.96	-152.30	1.00	-1.00	0.00
8,100.00	1.07	196.10	8,023.12	-917.02	-264.72	-152.73	1.00	-1.00	0.00
8,206.89	0.00	0.00	8,130.00	-917.98	-265.00	-152.89	1.00	-1.00	0.00
Start 301.10 hold at 8206.89 MD									
8,300.00	0.00	0.00	8,223.11	-917.98	-265.00	-152.89	0.00	0.00	0.00
8,400.00	0.00	0.00	8,323.11	-917.98	-265.00	-152.89	0.00	0.00	0.00
8,507.99	0.00	0.00	8,431.10	-917.98	-265.00	-152.89	0.00	0.00	0.00
Start DLS 10.00 TFO 90.00									
8,550.00	4.20	90.00	8,473.08	-917.98	-263.46	-151.37	10.00	10.00	0.00
8,600.00	9.20	90.00	8,522.72	-917.98	-257.63	-145.57	10.00	10.00	0.00
8,650.00	14.20	90.00	8,571.66	-917.98	-247.49	-135.51	10.00	10.00	0.00
8,700.00	19.20	90.00	8,619.54	-917.98	-233.13	-121.25	10.00	10.00	0.00
8,750.00	24.20	90.00	8,665.98	-917.98	-214.64	-102.90	10.00	10.00	0.00
8,800.00	29.20	90.00	8,710.64	-917.98	-192.18	-80.60	10.00	10.00	0.00
8,850.00	34.20	90.00	8,753.16	-917.98	-165.92	-54.53	10.00	10.00	0.00
8,900.00	39.20	90.00	8,793.24	-917.98	-136.04	-24.87	10.00	10.00	0.00
8,950.00	44.20	90.00	8,830.56	-917.98	-102.79	8.14	10.00	10.00	0.00
9,000.00	49.20	90.00	8,864.84	-917.98	-66.41	44.26	10.00	10.00	0.00
9,050.00	54.20	90.00	8,895.81	-917.98	-27.19	83.20	10.00	10.00	0.00
9,100.00	59.20	90.00	8,923.25	-917.98	14.59	124.68	10.00	10.00	0.00

LEAM Drilling Systems LLC

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 3307.9' GE + 23.5' KB @ 3331.40usft
 3307.9' GE + 23.5' KB @ 3331.40usft
 Grid
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+W-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,150.00	64.20	90.00	8,946.95	-917.98	58.60	168.37	10.00	10.00	0.00
9,200.00	69.20	90.00	8,966.72	-917.98	104.51	213.94	10.00	10.00	0.00
9,250.00	74.20	90.00	8,982.41	-917.98	151.97	261.06	10.00	10.00	0.00
9,300.00	79.20	90.00	8,993.91	-917.98	200.81	309.35	10.00	10.00	0.00
9,350.00	84.20	90.00	9,001.13	-917.98	250.07	358.45	10.00	10.00	0.00
9,400.05	89.21	90.00	9,004.00	-917.98	300.02	408.04	10.00	10.00	0.00
Start 7292.95 hold at 9400.05 MD									
9,500.00	89.21	90.00	9,005.39	-917.98	399.96	507.26	0.00	0.00	0.00
9,600.00	89.21	90.00	9,006.77	-917.98	499.95	606.53	0.00	0.00	0.00
9,700.00	89.21	90.00	9,008.16	-917.98	599.94	705.80	0.00	0.00	0.00
9,800.00	89.21	90.00	9,009.54	-917.98	699.93	805.06	0.00	0.00	0.00
9,900.00	89.21	90.00	9,010.93	-917.98	799.92	904.33	0.00	0.00	0.00
10,000.00	89.21	90.00	9,012.31	-917.98	899.91	1,003.60	0.00	0.00	0.00
10,100.00	89.21	90.00	9,013.70	-917.98	999.90	1,102.87	0.00	0.00	0.00
10,200.00	89.21	90.00	9,015.08	-917.98	1,099.89	1,202.13	0.00	0.00	0.00
10,300.00	89.21	90.00	9,016.47	-917.98	1,199.89	1,301.40	0.00	0.00	0.00
10,400.00	89.21	90.00	9,017.85	-917.98	1,299.88	1,400.67	0.00	0.00	0.00
10,500.00	89.21	90.00	9,019.24	-917.98	1,399.87	1,499.93	0.00	0.00	0.00
10,600.00	89.21	90.00	9,020.62	-917.98	1,499.86	1,599.20	0.00	0.00	0.00
10,700.00	89.21	90.00	9,022.01	-917.98	1,599.85	1,698.47	0.00	0.00	0.00
10,800.00	89.21	90.00	9,023.39	-917.98	1,699.84	1,797.74	0.00	0.00	0.00
10,900.00	89.21	90.00	9,024.78	-917.98	1,799.83	1,897.00	0.00	0.00	0.00
11,000.00	89.21	90.00	9,026.16	-917.98	1,899.82	1,996.27	0.00	0.00	0.00
11,100.00	89.21	90.00	9,027.54	-917.98	1,999.81	2,095.54	0.00	0.00	0.00
11,200.00	89.21	90.00	9,028.93	-917.98	2,099.80	2,194.81	0.00	0.00	0.00
11,300.00	89.21	90.00	9,030.31	-917.98	2,199.79	2,294.07	0.00	0.00	0.00
11,400.00	89.21	90.00	9,031.70	-917.98	2,299.78	2,393.34	0.00	0.00	0.00
11,500.00	89.21	90.00	9,033.08	-917.98	2,399.77	2,492.61	0.00	0.00	0.00
11,600.00	89.21	90.00	9,034.47	-917.98	2,499.76	2,591.88	0.00	0.00	0.00
11,700.00	89.21	90.00	9,035.85	-917.98	2,599.75	2,691.14	0.00	0.00	0.00
11,800.00	89.21	90.00	9,037.24	-917.98	2,699.74	2,790.41	0.00	0.00	0.00
11,900.00	89.21	90.00	9,038.62	-917.98	2,799.73	2,889.68	0.00	0.00	0.00
12,000.00	89.21	90.00	9,040.01	-917.98	2,899.72	2,988.95	0.00	0.00	0.00
12,100.00	89.21	90.00	9,041.39	-917.98	2,999.71	3,088.21	0.00	0.00	0.00
12,200.00	89.21	90.00	9,042.78	-917.98	3,099.70	3,187.48	0.00	0.00	0.00
12,300.00	89.21	90.00	9,044.16	-917.98	3,199.69	3,286.75	0.00	0.00	0.00
12,400.00	89.21	90.00	9,045.55	-917.98	3,299.68	3,386.02	0.00	0.00	0.00
12,500.00	89.21	90.00	9,046.93	-917.98	3,399.67	3,485.28	0.00	0.00	0.00
12,600.00	89.21	90.00	9,048.32	-917.98	3,499.66	3,584.55	0.00	0.00	0.00
12,700.00	89.21	90.00	9,049.70	-917.98	3,599.66	3,683.82	0.00	0.00	0.00
12,800.00	89.21	90.00	9,051.09	-917.98	3,699.65	3,783.09	0.00	0.00	0.00
12,900.00	89.21	90.00	9,052.47	-917.98	3,799.64	3,882.35	0.00	0.00	0.00
13,000.00	89.21	90.00	9,053.86	-917.98	3,899.63	3,981.62	0.00	0.00	0.00
13,100.00	89.21	90.00	9,055.24	-917.98	3,999.62	4,080.89	0.00	0.00	0.00
13,200.00	89.21	90.00	9,056.63	-917.98	4,099.61	4,180.16	0.00	0.00	0.00
13,300.00	89.21	90.00	9,058.01	-917.98	4,199.60	4,279.42	0.00	0.00	0.00
13,400.00	89.21	90.00	9,059.40	-917.98	4,299.59	4,378.69	0.00	0.00	0.00
13,500.00	89.21	90.00	9,060.78	-917.98	4,399.58	4,477.96	0.00	0.00	0.00
13,600.00	89.21	90.00	9,062.17	-917.98	4,499.57	4,577.23	0.00	0.00	0.00
13,700.00	89.21	90.00	9,063.55	-917.98	4,599.56	4,676.49	0.00	0.00	0.00
13,800.00	89.21	90.00	9,064.94	-917.98	4,699.55	4,775.76	0.00	0.00	0.00
13,900.00	89.21	90.00	9,066.32	-917.98	4,799.54	4,875.03	0.00	0.00	0.00
14,000.00	89.21	90.00	9,067.71	-917.98	4,899.53	4,974.30	0.00	0.00	0.00
14,100.00	89.21	90.00	9,069.09	-917.98	4,999.52	5,073.56	0.00	0.00	0.00

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 3307.9' GE + 23.5' KB @ 3331.40usft
 Grid
 Minimum Curvature

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)
14,200.00	89.21	90.00	9,070.48	-917.98	5,099.51	5,172.83	0.00	0.00	0.00
14,300.00	89.21	90.00	9,071.86	-917.98	5,199.50	5,272.10	0.00	0.00	0.00
14,400.00	89.21	90.00	9,073.25	-917.98	5,299.49	5,371.37	0.00	0.00	0.00
14,500.00	89.21	90.00	9,074.63	-917.98	5,399.48	5,470.83	0.00	0.00	0.00
14,600.00	89.21	90.00	9,076.02	-917.98	5,499.47	5,569.90	0.00	0.00	0.00
14,700.00	89.21	90.00	9,077.40	-917.98	5,599.46	5,669.17	0.00	0.00	0.00
14,800.00	89.21	90.00	9,078.78	-917.98	5,699.45	5,768.43	0.00	0.00	0.00
14,900.00	89.21	90.00	9,080.17	-917.98	5,799.44	5,867.70	0.00	0.00	0.00
15,000.00	89.21	90.00	9,081.55	-917.98	5,899.43	5,966.97	0.00	0.00	0.00
15,100.00	89.21	90.00	9,082.94	-917.98	5,999.43	6,066.24	0.00	0.00	0.00
15,200.00	89.21	90.00	9,084.32	-917.98	6,099.42	6,165.50	0.00	0.00	0.00
15,300.00	89.21	90.00	9,085.71	-917.98	6,199.41	6,264.77	0.00	0.00	0.00
15,400.00	89.21	90.00	9,087.09	-917.98	6,299.40	6,364.04	0.00	0.00	0.00
15,500.00	89.21	90.00	9,088.48	-917.98	6,399.39	6,463.31	0.00	0.00	0.00
15,600.00	89.21	90.00	9,089.86	-917.98	6,499.38	6,562.57	0.00	0.00	0.00
15,700.00	89.21	90.00	9,091.25	-917.98	6,599.37	6,661.84	0.00	0.00	0.00
15,800.00	89.21	90.00	9,092.63	-917.98	6,699.36	6,761.11	0.00	0.00	0.00
15,900.00	89.21	90.00	9,094.02	-917.98	6,799.35	6,860.38	0.00	0.00	0.00
16,000.00	89.21	90.00	9,095.40	-917.98	6,899.34	6,959.64	0.00	0.00	0.00
16,100.00	89.21	90.00	9,096.79	-917.98	6,999.33	7,058.91	0.00	0.00	0.00
16,200.00	89.21	90.00	9,098.17	-917.98	7,099.32	7,158.18	0.00	0.00	0.00
16,300.00	89.21	90.00	9,099.56	-917.98	7,199.31	7,257.45	0.00	0.00	0.00
16,400.00	89.21	90.00	9,100.94	-917.98	7,299.30	7,356.71	0.00	0.00	0.00
16,500.00	89.21	90.00	9,102.33	-917.98	7,399.29	7,455.98	0.00	0.00	0.00
16,600.00	89.21	90.00	9,103.71	-917.98	7,499.28	7,555.25	0.00	0.00	0.00
16,693.00	89.21	90.00	9,105.00	-917.98	7,592.27	7,647.57	0.00	0.00	0.00
TD at 16693.00 - PBHL (12H) - PBHL (Onyx 12H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Onyx 12H)	0.00	0.00	0.00	0.00	0.00	592,268.73	611,776.35	32° 37' 40.757 N	104° 6' 16.306 W
- hit/miss target									
- Shape									
plan hits target center									
- Point									
PBHL (Onyx 12H)	0.00	0.00	9,105.00	-917.98	7,592.27	591,350.75	619,368.62	32° 37' 31.503 N	104° 4' 47.551 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	+N-S (usft)	+E-W (usft)	Comment
1,600.00	1,600.00		0.00	0.00	Start Build 1.00
2,576.63	2,571.91		-79.78	-23.03	Start 4653.62 hold at 2576.63 MD
7,230.25	7,158.09		-838.20	-241.97	Start Drop -1.00
8,206.89	8,130.00		-917.98	-265.00	Start 301.10 hold at 8206.89 MD
8,507.99	8,431.10		-917.98	-265.00	Start DLS 10.00 TFO 90.00
9,400.05	9,004.00		-917.98	300.02	Start 7292.95 hold at 9400.05 MD
16,693.00	9,105.00		-917.98	7,592.27	TD at 16693.00

Devon Energy
Eddy County, NM (NAD-83)
Onyx PWU 29-28
12H

OH
Plan #2

Anticollision Report

28 July, 2017

Anticollision Report

Reference	Plan #2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 9,999.98' uft
Warning Levels Evaluated at:	2.00 Sigma
	Error Model:
	Scan Method:
	Error Surface:
	Casing Method:
	ISCSWA
	Closest Approach 3D
	Elliptical Conic
	Not applied

Summary		Reference Measured Depth (fath)	Offset Measured Depth (fath)	Distance Between Centres (fath)	Distance Between Ellipses (fath)	Separation Factor	Warning
Site Name	Offset Well - Wellbore - Design						
Coral							
1H - OH - OH		14,439.67	12,380.00	1,103.74	1,022.17	13.532 CC, ES	
1H - OH - OH		15,100.00	15,100.00	1,286.03	1,160.89	10.277 SF	
2H - OH - OH		15,057.69	12,660.00	1,065.21	974.25	11.712 CC, ES	
2H - OH - OH		15,900.00	12,660.00	1,135.15	1,036.64	11.522 SF	
Onyx Offsets							
Onyx PWU 29 #4H - OH - OH		7,018.30	6,955.15	229.98	196.91	6.955 CC, ES	
Onyx PWU 29 #4H - OH - OH		7,230.25	7,164.50	232.33	196.32	6.831 SF	
ONYX PWU							
7H - OH - OH (Actual)		1,606.39	1,605.68	736.10	731.63	164.605 CC, ES	
7H - OH - OH (Actual)		13,900.00	11,845.00	2,612.24	2,406.69	12.709 SF	
7H - OH - Plan #1 - Draft #4		1,606.39	1,605.68	736.10	731.63	164.605 CC, ES	
7H - OH - Plan #1 - Draft #4		13,900.00	11,892.85	2,614.07	2,403.91	12.439 SF	
Onyx PWU 29-28							
Mirage 30 PM State Com 1H (Offset) - OH - OH		7,380.60	7,289.67	222.46	190.46	6.952 CC, ES	
Mirage 30 PM State Com 1H (Offset) - OH - OH		7,400.00	7,301.00	222.78	190.66	6.935 SF	
Parkway West (Offsets)							
16 - OH - OH		16,693.00	9,123.02	915.64	723.58	4.767 CC, ES, SF	
Unit 28 3 - OH - OH		15,366.76	9,071.77	988.57	800.55	5.258 CC, ES	
Unit 28 3 - OH - OH		15,400.00	9,072.36	989.13	800.57	5.246 SF	

[illegible]

LEAM Drilling Systems LLC
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 25-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uoft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uoft
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

Corral - 1H - OH - OH										Offset Error: 0.00 uft									
Survey Program: 44-NS-GYRO-MS, 7351-MWD-ISCVA										Offset Well Error: 0.00 uft									
Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)
600.00	600.00	646.54	646.44	1.21	1.61	55.36	55.36	3.68101	5.32657	6.47847	6.47386	2.82	2.298513						
700.00	700.00	729.35	729.24	1.43	1.80	55.36	55.36	3.68150	5.32781	6.47605	6.47281	3.24	1.989966						
745.82	745.82	759.53	759.42	1.54	1.97	55.35	55.35	3.68177	5.32758	6.47600	6.47258	3.41	1.903673						
800.00	800.00	805.92	805.81	1.66	1.97	55.35	55.35	3.68231	5.32731	6.47606	6.47246	3.83	1.783851						
900.00	900.00	855.70	855.58	1.88	2.05	55.34	55.34	3.68304	5.32719	6.47606	6.47272	3.94	1.645640						
1,000.00	1,000.00	916.56	916.43	2.11	2.14	55.33	55.33	3.68407	5.32740	6.47786	6.47361	4.25	1.523257						
1,100.00	1,100.00	996.40	996.26	2.33	2.23	55.33	55.33	3.68527	5.32817	6.47953	6.47497	4.56	1.420068						
1,200.00	1,200.00	1,083.22	1,083.06	2.56	2.30	55.33	55.33	3.68622	5.32957	6.48148	6.47662	4.86	1.334960						
1,300.00	1,300.00	1,169.83	1,169.75	2.78	2.40	55.33	55.33	3.68732	5.33137	6.48346	6.47827	5.19	1.249890						
1,400.00	1,400.00	1,261.76	1,261.56	3.01	2.64	55.32	55.32	3.68841	5.33253	6.48506	6.47942	5.65	1.148447						
1,500.00	1,500.00	1,352.50	1,352.28	3.23	2.88	55.31	55.31	3.68932	5.33301	6.48640	6.48029	6.11	1.061763						
1,600.00	1,600.00	1,446.61	1,446.38	3.46	3.15	55.30	55.30	3.69331	5.33324	6.48754	6.48094	6.60	992.484						
1,700.00	1,699.99	1,546.46	1,546.21	3.65	3.43	55.30	55.30	3.69519	5.33318	6.48909	6.48200	7.09	915.464						
1,800.00	1,799.96	1,646.67	1,646.40	3.83	3.79	55.30	55.30	3.69725	5.33249	6.49155	6.48384	7.62	852.112						
1,900.00	1,899.96	1,746.55	1,746.27	4.01	4.05	55.29	55.29	3.69959	5.33155	6.49433	6.48687	8.06	806.274						
2,000.00	1,999.98	1,846.12	1,846.84	4.19	4.26	55.28	55.28	3.69968	5.33104	6.49591	6.48746	8.45	769.274						
2,100.00	2,099.97	1,946.67	1,946.38	4.38	4.49	55.27	55.27	3.70079	5.32975	6.49649	6.48763	8.86	733.988						
2,200.00	2,199.90	2,046.67	2,046.38	4.58	4.73	55.26	55.26	3.70225	5.32846	6.49744	6.48823	9.31	700.081						
2,300.00	2,299.86	2,146.67	2,146.38	4.79	4.98	55.25	55.25	3.70383	5.32711	6.49808	6.48884	9.75	669.069						
2,400.00	2,399.80	2,246.67	2,246.38	5.02	5.21	55.24	55.24	3.70545	5.32583	6.49866	6.48944	10.20	640.916						
2,500.00	2,499.70	2,346.67	2,346.38	5.26	5.46	55.23	55.23	3.70723	5.32462	6.49922	6.48998	10.67	613.822						
2,576.63	2,571.91	2,446.67	2,446.38	5.45	5.70	55.22	55.22	3.70923	5.32333	6.49979	6.49057	11.07	592.251						
2,600.00	2,594.94	2,546.67	2,546.38	5.64	5.86	55.21	55.21	3.71141	5.32208	6.49999	6.49075	11.20	565.923						
2,700.00	2,693.49	2,646.67	2,646.38	5.84	6.11	55.20	55.20	3.71499	5.32081	6.50000	6.49084	11.32	539.585						
2,800.00	2,792.04	2,746.67	2,746.38	6.06	6.40	55.19	55.19	3.71866	5.31956	6.50000	6.49084	11.44	513.247						
2,900.00	2,890.99	2,846.67	2,846.38	6.34	6.62	55.18	55.18	3.72251	5.31831	6.50000	6.49084	11.56	486.909						
3,000.00	2,989.14	2,946.67	2,946.38	6.64	6.86	55.17	55.17	3.72654	5.31706	6.50000	6.49084	11.68	460.571						
3,100.00	3,087.69	3,046.67	3,046.38	6.94	7.16	55.16	55.16	3.73073	5.31581	6.50000	6.49084	11.80	434.233						
3,200.00	3,186.24	3,146.67	3,146.38	7.24	7.45	55.15	55.15	3.73507	5.31456	6.50000	6.49084	11.92	407.895						
3,300.00	3,284.79	3,246.67	3,246.38	7.55	7.69	55.14	55.14	3.73954	5.31331	6.50000	6.49084	12.04	381.557						
3,400.00	3,383.35	3,346.67	3,346.38	7.86	7.94	55.13	55.13	3.74413	5.31206	6.50000	6.49084	12.16	355.219						
3,500.00	3,481.90	3,446.67	3,446.38	8.18	8.19	55.12	55.12	3.74882	5.31081	6.50000	6.49084	12.28	328.881						
3,600.00	3,580.45	3,546.67	3,546.38	8.50	8.44	55.11	55.11	3.75361	5.30956	6.50000	6.49084	12.40	302.543						
3,700.00	3,679.00	3,646.67	3,646.38	8.82	8.69	55.10	55.10	3.75850	5.30831	6.50000	6.49084	12.52	276.205						
3,800.00	3,777.55	3,746.67	3,746.38	9.15	8.96	55.09	55.09	3.76349	5.30706	6.50000	6.49084	12.64	249.867						
3,900.00	3,876.10	3,846.67	3,846.38	9.48	9.23	55.08	55.08	3.76858	5.30581	6.50000	6.49084	12.76	223.529						
4,000.00	3,974.65	3,946.67	3,946.38	9.81	9.56	55.07	55.07	3.77377	5.30456	6.50000	6.49084	12.88	197.191						
4,100.00	4,073.20	4,046.67	4,046.38	10.14	10.14	55.06	55.06	3.77906	5.30331	6.50000	6.49084	13.00	170.853						
4,200.00	4,171.75	4,146.67	4,146.38	10.48	10.48	55.05	55.05	3.78445	5.30206	6.50000	6.49084	13.12	144.515						
4,300.00	4,270.30	4,246.67	4,246.38	10.81	10.81	55.04	55.04	3.78994	5.30081	6.50000	6.49084	13.24	118.177						
4,400.00	4,368.85	4,346.67	4,346.38	11.15	11.15	55.03	55.03	3.79553	5.29956	6.50000	6.49084	13.36	91.839						
4,500.00	4,467.40	4,446.67	4,446.38	11.49	11.49	55.02	55.02	3.80122	5.29831	6.50000	6.49084	13.48	65.501						
4,600.00	4,565.95	4,546.67	4,546.38	11.83	11.83	55.01	55.01	3.80701	5.29706	6.50000	6.49084	13.60	39.163						
4,700.00	4,664.50	4,644.67	4,644.38	12.17	12.17	55.00	55.00	3.81290	5.29581	6.50000	6.49084	13.72	12.825						
4,800.00	4,763.05	4,743.67	4,743.38	12.51	12.51	54.99	54.99	3.81889	5.29456	6.50000	6.49084	13.84	-13.513						
4,900.00	4,861.60	4,841.67	4,841.38	12.86	12.86	54.98	54.98	3.82498	5.29331	6.50000	6.49084	13.96	-37.175						
5,000.00	4,960.15	4,940.67	4,940.38	13.20	13.20	54.97	54.97	3.83117	5.29206	6.50000	6.49084	14.08	-60.837						
5,100.00	5,058.70	5,038.67	5,038.38	13.54	13.54	54.96	54.96	3.83746	5.29081	6.50000	6.49084	14.20	-84.499						
5,200.00	5,157.25	5,137.67	5,137.38	13.89	13.89	54.95	54.95	3.84385	5.28956	6.50000	6.49084	14.32	-108.161						
5,300.00	5,255.80	5,235.67	5,235.38	14.24	14.24	54.94	54.94	3.85034	5.28831	6.50000	6.49084	14.44	-131.823						
5,400.00	5,354.35	5,334.67	5,334.38	14.58	14.58	54.93	54.93	3.85693	5.28706	6.50000	6.49084	14.56	-155.485						
5,500.00	5,452.90	5,432.67	5,432.38	14.93	14.93	54.92	54.92	3.86362	5.28581	6.50000	6.49084	14.68	-179.147						

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

Anticollision Report

Company:	Devon Energy	Local Co-ordinates Reference:	Well 12H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3307.9' GE + 23.5' KB @ 3331.40usft
Reference Sits:	Onyx PMU 29-28	MD Reference:	3307.9' GE + 23.5' KB @ 3331.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	12H	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 #2	Offset TVD Reference:	Offset Datum

Coral - 1H - OH - OH															0.00 uft		
Survey Program: 44-NS-GYRC-MS_7331-MMD/ISCVSA															0.00 uft		
Offset Design		Send Major Axis										Offset Site Error:					
Reference		Offset										Offset Well Error:					
Reference		Offset										Offset Well Error:					
Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)
5,600.00	5,551.46	11,714.00	7,971.14	15.28	72.73	-268.98	5,347.22	6,022.37	5,905.57	82.90	72.730	82.90	72.730	82.90	72.730	82.90	72.730
5,700.00	5,650.01	11,714.00	7,971.14	15.63	72.73	-268.98	5,347.22	6,022.37	5,905.57	83.66	71.587	83.66	71.587	83.66	71.587	83.66	71.587
5,800.00	5,748.56	11,746.60	7,972.71	15.98	73.28	-310.43	5,346.25	5,966.84	5,911.60	85.04	70.047	85.04	70.047	85.04	70.047	85.04	70.047
5,900.00	5,847.11	11,765.58	7,973.16	16.33	73.43	-310.43	5,346.25	5,966.84	5,911.60	86.03	68.885	86.03	68.885	86.03	68.885	86.03	68.885
6,000.00	5,945.67	11,784.58	7,973.61	16.68	73.58	-319.49	5,346.92	5,969.87	5,909.86	87.01	67.772	87.01	67.772	87.01	67.772	87.01	67.772
6,100.00	6,044.22	11,773.64	7,974.07	17.03	73.73	-328.52	5,349.29	5,969.27	5,911.26	87.99	66.708	87.99	66.708	87.99	66.708	87.99	66.708
6,200.00	6,142.77	11,769.00	7,975.90	17.38	74.33	-363.79	5,350.67	5,963.35	5,733.96	89.39	65.370	89.39	65.370	89.39	65.370	89.39	65.370
6,300.00	6,241.32	11,809.00	7,975.90	17.73	74.33	-363.79	5,350.67	5,963.35	5,733.96	90.19	64.515	90.19	64.515	90.19	64.515	90.19	64.515
6,400.00	6,339.87	12,233.00	7,983.19	18.08	83.05	-877.37	5,355.96	5,795.47	5,866.06	96.41	58.296	96.41	58.296	96.41	58.296	96.41	58.296
6,500.00	6,438.42	12,233.00	7,983.19	18.43	83.05	-877.37	5,355.96	5,795.47	5,866.06	100.25	57.584	100.25	57.584	100.25	57.584	100.25	57.584
6,600.00	6,536.97	12,233.00	7,983.19	18.78	83.05	-877.37	5,355.96	5,795.47	5,866.06	101.07	56.907	101.07	56.907	101.07	56.907	101.07	56.907
6,700.00	6,635.52	12,248.32	7,983.18	19.13	83.47	-902.67	5,354.95	5,751.37	5,829.17	102.06	56.047	102.06	56.047	102.06	56.047	102.06	56.047
6,800.00	6,734.07	12,250.91	7,983.21	19.49	83.52	-902.67	5,354.95	5,751.37	5,829.17	103.08	55.426	103.08	55.426	103.08	55.426	103.08	55.426
6,900.00	6,832.62	12,253.55	7,983.24	19.84	83.56	-902.67	5,354.80	5,697.22	5,893.33	103.89	54.841	103.89	54.841	103.89	54.841	103.89	54.841
7,000.00	6,931.17	12,280.00	7,983.89	20.19	84.01	-106.26	5,354.44	5,892.96	5,877.94	105.04	54.102	105.04	54.102	105.04	54.102	105.04	54.102
7,100.00	7,029.72	12,280.00	7,983.89	20.55	84.01	-106.26	5,354.44	5,892.96	5,877.94	105.76	53.613	105.76	53.613	105.76	53.613	105.76	53.613
7,200.00	7,128.27	12,280.00	7,983.89	20.90	84.01	-106.26	5,354.44	5,892.96	5,877.94	106.45	53.159	106.45	53.159	106.45	53.159	106.45	53.159
7,300.00	7,226.90	12,280.00	7,983.89	21.22	84.01	-106.26	5,354.44	5,892.96	5,877.94	107.08	52.796	107.08	52.796	107.08	52.796	107.08	52.796
7,400.00	7,325.78	12,280.00	7,983.89	21.46	84.01	-106.26	5,354.44	5,892.96	5,877.94	107.62	52.416	107.62	52.416	107.62	52.416	107.62	52.416
7,500.00	7,424.91	12,280.00	7,983.89	21.70	84.01	-106.26	5,354.44	5,892.96	5,877.94	108.12	52.111	108.12	52.111	108.12	52.111	108.12	52.111
7,600.00	7,524.25	12,280.00	7,983.89	21.92	84.01	-106.26	5,354.44	5,892.96	5,877.94	108.57	51.840	108.57	51.840	108.57	51.840	108.57	51.840
7,700.00	7,623.77	12,280.00	7,983.89	22.13	84.01	-105.96	5,354.44	5,892.96	5,877.94	109.06	51.603	109.06	51.603	109.06	51.603	109.06	51.603
7,800.00	7,723.46	12,280.00	7,983.89	22.33	84.01	-105.93	5,354.44	5,892.96	5,877.94	109.51	51.399	109.51	51.399	109.51	51.399	109.51	51.399
7,900.00	7,823.26	12,280.00	7,983.89	22.52	84.01	-											

LEAM Drilling Systems LLC
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
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										Corral - 1H - OH - OH										Offset Well Error: 0.00 uft									
Survey Program: 44-NS-GYRC-MS 731-MWD-SDMSA										Well 12H										Offset Well Error: 0.00 uft									
Reference										Reference										Reference									
Measured	Vertical	Depth	Depth	Offset	Vertical	Depth	Depth	Offset	Vertical	Measured	Vertical	Depth	Depth	Offset	Vertical	Depth	Depth	Offset	Vertical	Measured	Vertical	Depth	Depth	Offset	Vertical	Depth	Depth	Offset	Vertical
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
9,700.00	9,008.16	12,360.00	7,983.89	28.18	84.01	0.85	-934.33	5,354.44	4,866.49	4,756.09	110.40	44.080																	
9,800.00	9,009.54	12,360.00	7,983.89	29.95	84.01	0.85	-934.33	5,354.44	4,769.15	4,759.15	110.33	43.225																	
9,900.00	9,010.93	12,360.00	7,983.89	31.86	84.01	0.85	-934.33	5,354.44	4,771.92	4,761.92	110.26	42.372																	
10,000.00	9,012.31	12,360.00	7,983.89	33.87	84.01	0.85	-934.33	5,354.44	4,774.81	4,764.81	110.19	41.519																	
10,100.00	9,013.70	12,360.00	7,983.89	35.97	84.01	0.85	-934.33	5,354.44	4,777.83	4,767.83	110.11	40.667																	
10,200.00	9,015.08	12,360.00	7,983.89	38.14	84.01	0.85	-934.33	5,354.44	4,780.96	4,770.96	110.03	39.817																	
10,300.00	9,016.47	12,360.00	7,983.89	40.36	84.01	0.85	-934.33	5,354.44	4,784.29	4,774.29	109.95	38.967																	
10,400.00	9,017.85	12,360.00	7,983.89	42.63	84.01	0.85	-934.33	5,354.44	4,787.74	4,777.74	109.86	38.120																	
10,500.00	9,019.24	12,360.00	7,983.89	44.94	84.01	0.85	-934.33	5,354.44	4,791.36	4,781.36	109.77	37.274																	
10,600.00	9,020.62	12,360.00	7,983.89	47.28	84.01	0.85	-934.33	5,354.44	4,795.16	4,785.16	109.67	36.428																	
10,700.00	9,022.01	12,360.00	7,983.89	49.66	84.01	0.85	-934.33	5,354.44	4,799.15	4,789.15	109.57	35.587																	
10,800.00	9,023.39	12,360.00	7,983.89	52.05	84.01	0.85	-934.33	5,354.44	4,803.34	4,793.34	109.46	34.747																	
10,900.00	9,024.78	12,360.00	7,983.89	54.47	84.01	0.85	-934.33	5,354.44	4,807.76	4,797.76	109.34	33.909																	
11,000.00	9,026.16	12,360.00	7,983.89	56.91	84.01	0.85	-934.33	5,354.44	4,812.42	4,802.42	109.22	33.074																	
11,100.00	9,027.54	12,360.00	7,983.89	59.37	84.01	0.85	-934.33	5,354.44	4,817.33	4,807.33	109.09	32.241																	
11,200.00	9,028.93	12,360.00	7,983.89	61.84	84.01	0.85	-934.33	5,354.44	4,822.53	4,812.53	108.96	31.412																	
11,300.00	9,030.31	12,360.00	7,983.89	64.33	84.01	0.85	-934.33	5,354.44	4,828.03	4,818.03	108.81	30.586																	
11,400.00	9,031.70	12,360.00	7,983.89	66.82	84.01	0.85	-934.33	5,354.44	4,833.86	4,823.86	108.65	29.763																	
11,500.00	9,033.08	12,360.00	7,983.89	69.33	84.01	0.85	-934.33	5,354.44	4,840.06	4,830.06	108.48	28.945																	
11,600.00	9,034.47	12,360.00	7,983.89	71.84	84.01	0.85	-934.33	5,354.44	4,846.63	4,836.63	108.30	28.131																	
11,700.00	9,035.85	12,360.00	7,983.89	74.37	84.01	0.85	-934.33	5,354.44	4,853.55	4,843.55	108.11	27.322																	
11,800.00	9,037.24	12,360.00	7,983.89	76.90	84.01	0.85	-934.33	5,354.44	4,860.89	4,850.89	107.89	26.518																	
11,900.00	9,038.62	12,360.00	7,983.89	79.44	84.01	0.85	-934.33	5,354.44	4,868.63	4,858.63	107.65	25.720																	
12,000.00	9,040.01	12,360.00	7,983.89	81.98	84.01	0.85	-934.33	5,354.44	4,876.79	4,866.79	107.41	24.929																	
12,100.00	9,041.39	12,360.00	7,983.89	84.53	84.01	0.85	-934.33	5,354.44	4,885.33	4,875.33	107.14	24.145																	
12,200.00	9,042.78	12,360.00	7,983.89	87.09	84.01	0.85	-934.33	5,354.44	4,894.33	4,884.33	106.84	23.369																	
12,300.00	9,044.16	12,360.00	7,983.89	89.65	84.01	0.85	-934.33	5,354.44	4,903.83	4,893.83	106.52	22.603																	
12,400.00	9,045.55	12,360.00	7,983.89	92.21	84.01	0.85	-934.33	5,354.44	4,913.83	4,903.83	106.18	21.846																	
12,500.00	9,046.93	12,360.00	7,983.89	94.78	84.01	0.85	-934.33	5,354.44	4,924.33	4,914.33	105.76	21.102																	
12,600.00	9,048.32	12,360.00	7,983.89	97.35	84.01	0.85	-934.33	5,354.44	4,935.33	4,925.33	105.32	20.370																	
12,700.00	9,049.70	12,360.00	7,983.89	99.93	84.01	0.85	-934.33	5,354.44	4,946.83	4,936.83	104.83	19.654																	
12,800.00	9,051.09	12,360.00	7,983.89	102.51	84.01	0.85	-934.33	5,354.44	4,958.33	4,948.33	104.28	18.954																	
12,900.00	9,052.47	12,360.00	7,983.89	105.09	84.01	0.85	-934.33	5,354.44	4,970.83	4,960.83	103.66	18.275																	
13,000.00	9,053.86	12,360.00	7,983.89	107.67	84.01	0.85	-934.33	5,354.44	4,983.33	4,973.33	102.96	17.619																	
13,100.00	9,055.24	12,360.00	7,983.89	110.26	84.01	0.85	-934.33	5,354.44	4,996.83	4,986.83	102.17	16.989																	
13,200.00	9,056.63	12,360.00	7,983.89	112.85	84.01	0.85	-934.33	5,354.44	5,010.33	5,000.33	101.27	16.390																	
13,300.00	9,058.01	12,360.00	7,983.89	115.44	84.01	0.85	-934.33	5,354.44	5,024.83	5,014.83	100.24	15.827																	
13,400.00	9,059.40	12,360.00	7,983.89	118.03	84.01	0.85	-934.33	5,354.44	5,039.33	5,029.33	99.06	15.307																	
13,500.00	9,060.78	12,360.00	7,983.89	120.63	84.01	0.85	-934.33	5,354.44	5,054.83	5,044.83	97.71	14.836																	
13,600.00	9,062.17	12,360.00	7,983.89	123.22	84.01	0.85	-934.33	5,354.44	5,070.33	5,060.33	96.16	14.423																	
13,700.00	9,063.55	12,360.00	7,983.89	125.82	84.01	0.85	-934.33	5,354.44	5,086.83	5,076.83	94.39	14.076																	
13,800.00	9,064.94	12,360.00	7,983.89	128.42	84.01	0.85	-934.33	5,354.44	5,103.33	5,093.33	92.42	13.803																	
13,900.00	9,066.32	12,360.00	7,983.89	131.02	84.01	0.85	-934.33	5,354.44	5,120.83	5,110.83	90.25	13.513																	
14,000.00	9,067.71	12,360.00	7,983.89	133.63	84.01	0.85	-934.33	5,354.44	5,139.33	5,129.33	87.86	13.207																	
14,100.00	9,069.09	12,360.00	7,983.89	136.23	84.01	0.85	-934.33	5,354.44	5,159.83	5,149.83	85.19	12.882																	
14,200.00	9,070.48	12,360.00	7,983.89	138.84	84.01	0.85	-934.33	5,354.44	5,180.33	5,170.33	82.24	12.534																	
14,300.00	9,071.86	12,360.00	7,983.89	141.44	84.01	0.85	-934.33	5,354.44	5,202.83	5,192.83	79.00	12.164																	
14,400.00	9,073.25	12,360.00	7,983.89	144.05	84.01	0.85	-934.33	5,354.44	5,225.33	5,215.33	75.00	11.794																	
14,500.00	9,074.63	12,360.00	7,983.89	146.66	84.01	0.85	-934.33	5,354.44	5,249.83	5,239.83	70.00	11.394																	
14,600.00	9,076.02	12,360.00	7,983.89	149.27	84.01	0.85	-934.33	5,354.44	5,275.33	5,265.33	64.00	10.934																	
14,700.00	9,077.40	12,360.00	7,983.89	151.88	84.01	0.85	-934.33	5,354.44	5,302.83	5,292.83	57.																		

LEAM Drilling Systems LLC
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference:
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
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

Well 12H
3307.9' GE + 23.5' KB @ 3331.40uft
3307.9' GE + 23.5' KB @ 3331.40uft
Grid
Minimum Curvature
2.00 sigma
EDM 5000.1 Multi User Db
Offset Datum

Coral - 1H - OH - OH												0.00 uft
Survey Program: 44-NS-GYRO-MS-7331-MWD-SCWBA												0.00 uft
Semi Major Axis												
Offset		Offset		Offset		Offset		Offset		Offset		
Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	
14,800.00	9,076.78	14,800.00	7,983.74	154.49	124.65	0.23	-922.42	5,354.76	1,161.00	1,051.97	109.04	10,648
14,900.00	9,080.17	14,900.00	7,983.71	157.10	126.33	0.09	-919.77	5,354.83	1,195.79	1,081.41	114.39	10,454
15,000.00	9,081.55	15,000.00	7,983.67	159.72	128.01	-0.04	-917.12	5,354.90	1,237.70	1,117.87	119.83	10,329
15,100.00	9,082.94	15,100.00	7,983.64	162.33	129.69	-0.18	-914.47	5,354.97	1,286.03	1,160.89	125.14	10,277 SF
15,200.00	9,084.32	15,200.00	7,983.61	164.95	131.37	-0.32	-911.81	5,355.04	1,340.08	1,209.91	130.17	10,265
15,300.00	9,085.71	15,300.00	7,983.58	167.56	133.05	-0.46	-909.16	5,355.11	1,399.20	1,264.32	134.88	10,373
15,400.00	9,087.09	15,400.00	7,983.54	170.18	134.72	-0.60	-906.51	5,355.19	1,462.77	1,333.52	139.25	10,505
15,500.00	9,088.48	15,500.00	7,983.51	172.80	136.39	-0.74	-903.87	5,355.95	1,530.30	1,428.37	143.74	10,638
15,600.00	9,089.86	15,600.00	7,983.39	175.41	138.05	-0.88	-903.70	5,357.16	1,601.05	1,495.92	156.13	10,729
15,700.00	9,091.25	15,700.00	7,983.41	178.03	139.72	-1.02	-904.70	5,357.35	1,674.78	1,568.65	161.71	10,861
15,800.00	9,092.63	15,800.00	7,983.44	180.65	141.39	-1.16	-904.73	5,357.55	1,751.10	1,644.15	166.95	10,993
15,900.00	9,094.02	15,900.00	7,983.46	183.27	143.05	-1.30	-904.80	5,357.74	1,828.69	1,722.06	172.03	11,125
16,000.00	9,095.40	16,000.00	7,983.48	185.89	144.72	-1.43	-904.42	5,358.10	1,910.28	1,802.13	176.63	11,257
16,100.00	9,096.79	16,200.00	7,983.48	188.51	146.39	-1.57	-904.42	5,358.10	1,992.61	1,883.93	181.69	11,389
16,200.00	9,098.17	16,200.00	7,983.49	191.13	148.05	-1.71	-904.42	5,358.10	2,075.50	1,967.22	186.26	11,521
16,300.00	9,099.56	16,300.00	7,983.49	193.75	149.71	-1.85	-904.42	5,358.10	2,161.75	2,051.96	191.89	11,653
16,400.00	9,100.94	16,400.00	7,983.49	196.37	151.38	-1.99	-904.42	5,358.10	2,248.22	2,137.98	196.94	11,785
16,500.00	9,102.33	16,500.00	7,983.49	198.99	153.04	-2.13	-904.42	5,358.10	2,335.78	2,225.14	201.94	11,917
16,600.00	9,103.71	16,600.00	7,983.49	201.61	154.70	-2.27	-904.42	5,358.10	2,424.29	2,313.30	206.94	12,049
16,693.00	9,105.00	16,693.00	7,983.49	204.05	156.00	-2.41	-904.42	5,358.10	2,507.38	2,396.11	211.94	12,181

Company:	Devon Energy
Project:	Eddy County, NM (NAD-83)
Reference Site:	Cory PMU 29-28
Site Error:	0.00 uft
Reference Well:	12H
Well Error:	0.00 uft
Reference Wellbore:	OH
Reference Design:	Plan #2

Local Co-ordinates Reference:
 TWD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Output errors are at
 Database:
 Offset TWD Reference:

Corral - 2H - OH - OH										0.00 uet	
Survey Program: 100-NS-GYRO-MS, 7313-MWD-GYSCA										0.00 uet	
Offset Design										Offset Site Error:	
Reference										Offset Well Error:	
Measured	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Minimum	Separation
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Separation	Factor
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	N/A
100.00	100.00	186.85	186.84	0.09	0.33	57.76	3.9523	6.2687	7.4110	7.4092	0.96
200.00	200.00	304.23	304.21	0.31	0.64	57.76	3.9518	6.2681	7.4093	7.4087	1.55
300.00	300.00	444.06	444.03	0.54	1.01	57.76	3.9504	6.2647	7.4072	7.4059	2.20
400.00	400.00	603.88	603.79	0.76	1.43	57.77	3.9478	6.2646	7.4050	7.4040	5.87
500.00	500.00	1,639.52	1,629.67	0.99	4.81	57.58	3.9903	6.1421	7.3979	7.3912	6.21
600.00	600.00	1,900.00	1,889.40	1.21	4.99	57.57	3.8956	6.1320	7.3795	7.3734	6.44
700.00	700.00	1,917.44	1,906.60	1.54	5.04	57.56	3.8959	6.1298	7.3827	7.3763	8.86
800.00	800.00	2,000.00	1,987.96	1.96	5.28	57.54	3.8991	6.1073	7.3441	7.3395	7.22
900.00	900.00	2,058.29	2,045.49	1.88	5.45	57.52	3.8870	6.1073	7.3304	7.3232	7.54
1,000.00	1,000.00	2,100.00	2,086.66	2.11	5.57	57.51	3.8855	6.1012	7.3158	7.3074	7.93
1,100.00	1,100.00	2,168.27	2,155.14	2.33	5.75	57.48	3.8929	6.0928	7.2909	7.2823	8.23
1,200.00	1,200.00	2,200.00	2,182.48	2.56	5.85	57.47	3.8917	6.0928	7.2861	7.2776	8.60
1,300.00	1,300.00	2,255.71	2,240.62	2.78	6.01	57.45	3.8768	6.0754	7.2728	7.2644	8.94
1,400.00	1,400.00	2,300.00	2,284.52	3.01	6.13	57.44	3.8748	6.0754	7.2602	7.2518	9.33
1,500.00	1,500.00	2,362.72	2,346.74	3.23	6.31	57.41	3.8764	6.0754	7.2482	7.2392	9.76
1,600.00	1,600.00	2,441.53	2,424.96	3.46	6.53	57.39	3.8742	6.0573	7.2367	7.2284	10.21
1,700.00	1,699.99	2,538.86	2,521.56	3.65	6.80	57.38	3.8756	6.0573	7.2287	7.2204	10.63
1,800.00	1,799.96	2,632.48	2,614.21	3.83	7.06	57.45	3.8987	6.0327	7.2168	7.2085	10.98
1,900.00	1,899.86	2,700.00	2,681.50	4.01	7.25	57.44	3.8963	6.0247	7.2038	7.1957	11.41
2,000.00	1,999.88	2,791.90	2,772.76	4.19	7.25	57.41	3.8667	6.0147	7.2023	7.1940	11.88
2,100.00	2,099.37	2,888.57	2,878.71	4.38	7.80	57.40	3.8638	6.0021	7.1974	7.1853	12.29
2,200.00	2,198.80	2,979.64	2,969.24	4.58	8.02	57.40	3.8619	6.0021	7.1930	7.1811	12.72
2,300.00	2,298.26	3,062.48	3,041.55	4.79	8.25	57.45	3.8607	6.0021	7.1919	7.1797	13.25
2,400.00	2,397.40	3,183.95	3,162.16	5.02	8.59	57.45	3.8573	5.9704	7.1919	7.1784	13.62
2,500.00	2,496.30	3,320.73	3,298.54	5.28	8.80	57.45	3.8562	5.9687	7.1919	7.1784	13.98
2,600.00	2,591.91	3,400.00	3,377.56	5.45	8.91	57.45	3.8560	5.9687	7.1931	7.1796	14.01
2,700.00	2,693.49	3,373.72	3,350.81	5.51	8.91	57.45	3.8560	5.9687	7.1931	7.1796	14.01
2,800.00	2,792.04	3,426.80	3,403.81	5.05	8.64	57.45	3.8541	5.9492	7.1909	7.1835	14.45
2,900.00	2,880.59	3,500.00	3,476.44	5.28	8.80	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,000.00	2,969.14	3,542.54	3,518.79	6.54	9.45	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,100.00	3,087.69	3,609.46	3,585.45	6.94	9.74	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,200.00	3,168.24	3,690.03	3,665.74	7.24	9.95	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,300.00	3,248.79	3,768.85	3,742.32	7.55	10.15	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,400.00	3,333.35	3,839.74	3,815.00	7.86	10.34	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,500.00	3,461.90	3,900.00	3,875.11	8.18	10.50	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,600.00	3,560.45	3,978.02	3,952.87	8.50	10.71	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,700.00	3,679.00	4,064.29	4,039.08	8.82	10.93	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,800.00	3,777.55	4,156.60	4,131.21	9.15	11.17	57.45	3.8541	5.9492	7.1909	7.1835	14.45
3,900.00	3,876.10	4,254.17	4,228.59	9.48	11.43	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,000.00	3,974.65	4,389.32	4,363.42	9.81	11.77	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,100.00	4,073.20	4,462.00	4,435.92	10.14	11.96	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,200.00	4,171.75	4,532.60	4,506.35	10.48	12.14	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,300.00	4,270.30	4,609.85	4,583.45	10.81	12.34	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,400.00	4,368.85	4,700.00	4,673.45	11.15	12.57	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,500.00	4,467.40	4,780.02	4,753.74	11.48	12.77	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,600.00	4,565.95	4,871.92	4,845.11	11.83	13.01	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,700.00	4,664.51	4,970.66	4,943.93	12.17	13.26	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,800.00	4,763.06	5,060.00	5,032.17	12.51	13.51	57.45	3.8541	5.9492	7.1909	7.1835	14.45
4,900.00	4,861.61	5,150.00	5,121.17	12.86	13.76	57.45	3.8541	5.9492	7.1909	7.1835	14.45
5,000.00	4,960.16	5,240.00	5,210.17	13.21	14.01	57.45	3.8541	5.9492	7.1909	7.1835	14.45

Anticollision Report

Local Co-ordinate Reference: Well 12H
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Multis User Db
 Offset TVD Reference: Offset Datum

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinates Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Databases: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Coral - 2H - OH - OH										Offset Site Error: 0.00 uft									
Survey Program: 100-NS-GYRO-48, 7313-MWD-USQWSA										Offset Well Error: 0.00 uft									
Reference										Warning									
Measured	Vertical	Depth	Measured	Vertical	Depth	Offset	Small	Major	Axis	Highside	Footcandle	Offset	Between	Distance	Minimum	Separation	Factor		
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Reference	Reference	Reference	(°)	(ft)	(ft)	-N/E	Centres	Between	Separation	Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)				(ft)	(ft)	(ft)	(ft)			
9,250.00	9,982.41	12,660.00	8,020.17	23.92	88.19	-0.29	88.19	-0.37	88.19	-0.47	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,300.00	9,983.91	12,660.00	8,020.17	24.00	88.19	-0.37	88.19	-0.47	88.19	-0.47	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,350.00	9,985.41	12,660.00	8,020.17	24.08	88.19	-0.48	88.19	-0.48	88.19	-0.48	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,400.00	9,986.91	12,660.00	8,020.17	24.16	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,450.00	9,988.41	12,660.00	8,020.17	24.24	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,500.00	9,989.91	12,660.00	8,020.17	24.32	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,550.00	9,991.41	12,660.00	8,020.17	24.40	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,600.00	9,992.91	12,660.00	8,020.17	24.48	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,650.00	9,994.41	12,660.00	8,020.17	24.56	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,700.00	9,995.91	12,660.00	8,020.17	24.64	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,750.00	9,997.41	12,660.00	8,020.17	24.72	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,800.00	9,998.91	12,660.00	8,020.17	24.80	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,850.00	9,999.91	12,660.00	8,020.17	24.88	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,900.00	9,999.91	12,660.00	8,020.17	24.96	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
9,950.00	9,999.91	12,660.00	8,020.17	25.04	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,000.00	9,999.91	12,660.00	8,020.17	25.12	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,050.00	9,999.91	12,660.00	8,020.17	25.20	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,100.00	9,999.91	12,660.00	8,020.17	25.28	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,150.00	9,999.91	12,660.00	8,020.17	25.36	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,200.00	9,999.91	12,660.00	8,020.17	25.44	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,250.00	9,999.91	12,660.00	8,020.17	25.52	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,300.00	9,999.91	12,660.00	8,020.17	25.60	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,350.00	9,999.91	12,660.00	8,020.17	25.68	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,400.00	9,999.91	12,660.00	8,020.17	25.76	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,450.00	9,999.91	12,660.00	8,020.17	25.84	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,500.00	9,999.91	12,660.00	8,020.17	25.92	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,550.00	9,999.91	12,660.00	8,020.17	26.00	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,600.00	9,999.91	12,660.00	8,020.17	26.08	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,650.00	9,999.91	12,660.00	8,020.17	26.16	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,700.00	9,999.91	12,660.00	8,020.17	26.24	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,750.00	9,999.91	12,660.00	8,020.17	26.32	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,800.00	9,999.91	12,660.00	8,020.17	26.40	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,850.00	9,999.91	12,660.00	8,020.17	26.48	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,900.00	9,999.91	12,660.00	8,020.17	26.56	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
10,950.00	9,999.91	12,660.00	8,020.17	26.64	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,000.00	9,999.91	12,660.00	8,020.17	26.72	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,050.00	9,999.91	12,660.00	8,020.17	26.80	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,100.00	9,999.91	12,660.00	8,020.17	26.88	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,150.00	9,999.91	12,660.00	8,020.17	26.96	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,200.00	9,999.91	12,660.00	8,020.17	27.04	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,250.00	9,999.91	12,660.00	8,020.17	27.12	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,300.00	9,999.91	12,660.00	8,020.17	27.20	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,350.00	9,999.91	12,660.00	8,020.17	27.28	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,400.00	9,999.91	12,660.00	8,020.17	27.36	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,450.00	9,999.91	12,660.00	8,020.17	27.44	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,500.00	9,999.91	12,660.00	8,020.17	27.52	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,550.00	9,999.91	12,660.00	8,020.17	27.60	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,600.00	9,999.91	12,660.00	8,020.17	27.68	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,650.00	9,999.91	12,660.00	8,020.17	27.76	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,700.00	9,999.91	12,660.00	8,020.17	27.84	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,750.00	9,999.91	12,660.00	8,020.17	27.92	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,800.00	9,999.91	12,660.00	8,020.17	28.00	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,850.00	9,999.91	12,660.00	8,020.17	28.08	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,900.00	9,999.91	12,660.00	8,020.17	28.16	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
11,950.00	9,999.91	12,660.00	8,020.17	28.24	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
12,000.00	9,999.91	12,660.00	8,020.17	28.32	88.19	-0.73	88.19	-0.73	88.19	-0.73	6,421.83	6,342.77	6,226.28	116.47	54.467	54.467			
12,050.00	9,999.91	12,660.00	8,020.17	28.40	88.19	-0.73	88.19	-0.73											

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Onyx PWU 29-28
 Site Error: 0.00 usft
 Reference Well: 12H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 MID Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 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

Coral - 2H - OH - OH													0.00 usft	
100-NS-GYROMS 7313-MMD-SCWSA													0.00 usft	
Survey Program:													Offset Site Error:	
Reference													Offset Well Error:	
Semi Major Axis													Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Offset (usft)	Highside Toolface (°)	+N/S (usft)	+E/W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
14,300.00	9,071.86	12,660.00	8,020.17	141.44	88.19	-904.47	6,421.83	1,610.33	1,500.01	110.33	14.586			
14,400.00	9,073.25	12,660.00	8,020.17	144.05	88.19	-904.47	6,421.83	1,538.76	1,427.28	106.48	14.037			
14,500.00	9,074.63	12,660.00	8,020.17	146.66	88.19	-904.47	6,421.83	1,468.32	1,357.86	108.47	13.519			
14,600.00	9,076.02	12,660.00	8,020.17	149.27	88.19	-904.47	6,421.83	1,399.48	1,292.24	107.25	13.049			
14,700.00	9,077.40	12,660.00	8,020.17	151.88	88.19	-904.47	6,421.83	1,338.80	1,230.99	105.81	12.634			
14,800.00	9,078.78	12,660.00	8,020.17	154.49	88.19	-904.47	6,421.83	1,278.86	1,174.75	104.11	12.284			
14,900.00	9,080.17	12,660.00	8,020.17	157.10	88.19	-904.47	6,421.83	1,226.36	1,124.22	102.14	12.007			
15,000.00	9,081.55	12,660.00	8,020.17	159.72	88.19	-904.47	6,421.83	1,180.01	1,080.08	99.92	11.809			
15,100.00	9,082.94	12,660.00	8,020.17	162.33	88.19	-904.47	6,421.83	1,140.56	1,043.02	97.54	11.894			
15,200.00	9,084.32	12,660.00	8,020.17	164.95	88.19	-904.47	6,421.83	1,108.75	1,013.62	95.14	11.854			
15,300.00	9,085.71	12,660.00	8,020.17	167.56	88.19	-904.47	6,421.83	1,085.26	992.27	93.00	11.670			
15,400.00	9,087.09	12,660.00	8,020.17	170.18	88.19	-904.47	6,421.83	1,070.64	979.16	91.48	11.704			
15,500.00	9,088.48	12,660.00	8,020.17	172.80	88.19	-904.47	6,421.83	1,065.23	974.29	90.94	11.713			
15,600.00	9,089.86	12,660.00	8,020.17	175.41	88.19	-904.47	6,421.83	1,065.21	974.25	90.95	11.713	CC ES		
15,700.00	9,091.25	12,660.00	8,020.17	178.03	88.19	-904.47	6,421.83	1,069.20	977.61	91.59	11.674			
15,800.00	9,092.63	12,660.00	8,020.17	180.65	88.19	-904.47	6,421.83	1,082.43	989.13	93.30	11.601			
15,900.00	9,092.63	12,660.00	8,020.17	180.65	88.19	-904.47	6,421.83	1,104.59	1,008.84	95.74	11.537			
15,900.00	9,094.02	12,660.00	8,020.17	183.27	88.19	-904.47	6,421.83	1,135.15	1,036.64	98.52	11.522	SF		
16,000.00	9,095.40	12,660.00	8,020.17	185.89	88.19	-904.47	6,421.83	1,173.47	1,072.16	101.31	11.563			
16,100.00	9,096.79	12,660.00	8,020.17	188.51	88.19	-904.47	6,421.83	1,218.81	1,114.89	103.92	11.729			
16,200.00	9,098.17	12,640.36	8,016.55	191.13	87.89	-885.23	6,425.40	1,270.24	1,164.47	105.77	12.009			
16,300.00	9,099.56	12,625.31	8,017.29	193.75	87.65	-870.47	6,428.08	1,327.02	1,219.55	107.47	12.348			
16,400.00	9,100.94	12,610.68	8,016.06	196.37	87.42	-856.13	6,430.67	1,388.51	1,279.80	108.91	12.749			
16,500.00	9,102.33	12,591.00	8,014.38	198.99	87.11	-836.62	6,434.09	1,454.11	1,344.04	110.07	13.211			
16,600.00	9,103.71	12,582.06	8,013.61	201.61	86.97	-828.05	6,435.62	1,523.28	1,412.18	111.10	13.711			
16,693.00	9,105.00	12,568.72	8,012.47	204.05	86.76	-814.85	6,437.88	1,590.42	1,478.32	112.10	14.187			

Company:	Devon Energy
Project:	Eddy County, NM (NAD-83)
Reference Site:	Ornyx PMU 29-28
Site Error:	0.00 usft
Reference Well:	12H
Well Error:	0.00 usft
Reference Wellbore:	OH
Reference Design:	Plan #2

Offset Design Onyx Offsets - Onyx PWJ 29 #4H - OH - OH
Survey Program: 100-HIS-GYRO-HIS, 7249-MWD-ISCWSA

Onyx Offsets - Onyx PWU 29 #4H - OH - OH										Onyx Offsets - Onyx PWU 29 #4H - OH - OH										Onyx Offsets - Onyx PWU 29 #4H - OH - OH									
Survey Program: 100-MS-GYR-MS, 726-HWD-JCWYSE										Survey Program: 100-MS-GYR-MS, 726-HWD-JCWYSE										Survey Program: 100-MS-GYR-MS, 726-HWD-JCWYSE									
Measured		Vertical		Depth		Reference		Offset		Highside		Offset		Between		Distance		Separation		Offset		Offset							
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth							
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)							
0.00	0.00	5.45	5.45	0.00	0.01	175.92	-913.48	65.15	915.80	915.77	0.19	4.724 544																	
100.00	100.00	102.78	102.78	0.00	0.11	175.94	-913.68	64.90	915.96	915.77	0.19	4.724 544																	
200.00	200.00	202.08	202.08	0.00	0.31	175.96	-914.05	64.26	916.31	915.83	0.68	1.344 732																	
300.00	300.00	305.02	305.02	0.04	0.64	176.03	-914.34	63.44	916.54	915.37	1.17	781.099																	
400.00	400.00	408.97	408.96	0.78	0.88	176.08	-914.23	62.71	916.39	914.74	1.64	557.999																	
500.00	500.00	512.06	512.05	0.99	1.07	176.10	-913.68	62.34	915.82	913.77	2.05	446.157																	
600.00	600.00	611.21	611.20	1.21	1.18	176.08	-913.02	62.53	915.18	912.78	2.39	362.387																	
700.00	700.00	711.70	711.70	1.43	1.28	176.02	-912.29	63.41	914.51	911.80	2.72	308.493																	
800.00	800.00	808.64	808.60	1.66	1.40	175.92	-911.70	65.00	914.02	910.97	3.05	269.231																	
900.00	900.00	907.19	907.19	1.88	1.53	175.81	-911.33	66.74	913.78	910.36	3.42	267.337																	
1,000.00	1,000.00	1,006.93	1,006.87	2.11	1.70	175.72	-911.07	68.15	913.62	909.81	3.81	239.884																	
1,100.00	1,100.00	1,106.30	1,106.23	2.33	1.89	175.66	-910.89	68.19	913.52	909.29	4.23	216.148																	
1,200.00	1,200.00	1,205.75	1,205.68	2.56	2.10	175.61	-910.80	68.95	913.48	908.82	4.86	196.221																	
1,300.00	1,300.00	1,305.75	1,305.69	2.78	2.31	175.58	-910.76	70.32	913.47	908.37	5.10	179.220																	
1,332.43	1,332.43	1,338.10	1,338.03	2.86	2.39	175.58	-910.75	70.46	913.47	908.23	5.24	174.256																	
1,400.00	1,400.00	1,405.51	1,405.44	3.01	2.54	175.56	-910.73	70.72	913.47	907.93	5.55	164.724																	
1,500.00	1,500.00	1,505.26	1,505.19	3.23	2.77	175.54	-910.74	71.07	913.51	907.51	6.00	152.289																	
1,600.00	1,600.00	1,605.32	1,605.24	3.46	3.00	175.52	-910.76	71.33	913.55	907.09	6.46	141.499																	
1,700.00	1,699.98	1,704.28	1,704.20	3.65	3.23	-910.83	-910.83	71.62	913.82	905.94	6.88	132.641																	
1,800.00	1,799.96	1,803.32	1,803.24	3.83	3.45	-911.00	-911.00	72.03	914.58	903.30	7.28	125.058																	
1,900.00	1,899.86	1,903.66	1,903.58	4.01	3.69	-911.19	-911.19	72.57	906.73	899.04	7.70	117.817																	
2,000.00	1,999.68	2,004.15	2,004.07	4.19	3.94	-911.31	-911.31	73.22	901.20	893.07	8.13	110.894																	
2,100.00	2,099.37	2,103.72	2,103.64	4.38	4.18	-911.39	-911.39	73.85	884.02	876.23	8.86	104.388																	
2,200.00	2,198.90	2,203.31	2,203.23	4.58	4.43	-911.49	-911.49	74.36	865.24	855.48	9.01	98.282																	
2,300.00	2,298.26	2,301.71	2,301.63	4.79	4.67	-911.59	-911.59	74.87	846.42	836.65	9.44	92.647																	
2,400.00	2,397.40	2,402.00	2,401.92	5.02	4.91	-911.69	-911.69	75.37	827.50	817.73	9.89	87.240																	
2,500.00	2,496.30	2,502.41	2,502.33	5.26	5.17</																								

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore Design: OH
Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
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

Onyx Offsets - Onyx PWU 29 #4H - OH - OH										Offset Site Error: 0.00 uft		Offset Well Error: 0.00 uft	
Survey Program: 100-NS-GYRO-MS 724S-MMC-ISOUSA													
Measured Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Vertical Depth (uft)	Between Centres (uft)	Distance Ellipse (uft)	Minimum Separation (uft)	Separation Factor
5,000.00	4,960.16	4,979.08	4,978.36	13.20	9.16	-39.63	-888.07	37.51	448.02	428.00	21.02	21.382	
5,100.00	5,068.71	5,076.99	5,076.22	13.54	9.36	-40.79	-886.30	35.06	433.19	411.64	21.55	20.101	
5,200.00	5,157.26	5,173.90	5,173.08	13.89	9.55	-42.04	-884.72	32.45	417.78	395.88	22.09	18.910	
5,300.00	5,255.81	5,273.35	5,272.48	14.24	9.76	-43.40	-883.28	29.70	402.73	380.09	22.64	17.786	
5,400.00	5,354.36	5,373.49	5,372.55	14.58	9.96	-44.82	-881.89	26.42	387.46	364.26	23.20	16.700	
5,500.00	5,452.91	5,472.32	5,471.30	14.93	10.17	-46.30	-879.79	22.76	372.12	346.35	23.77	15.655	
5,600.00	5,551.46	5,570.71	5,569.59	15.28	10.37	-47.83	-878.17	18.77	357.01	322.86	24.35	14.663	
5,700.00	5,650.01	5,668.56	5,667.34	15.62	10.57	-49.41	-876.79	14.51	342.21	317.28	24.93	13.725	
5,800.00	5,748.56	5,766.17	5,764.85	15.96	10.77	-51.09	-875.77	10.14	327.92	302.39	25.53	12.846	
5,900.00	5,847.11	5,863.79	5,862.37	16.33	10.96	-52.88	-875.06	5.78	314.20	288.07	26.13	12.025	
6,000.00	5,945.67	5,961.38	5,959.87	16.68	11.16	-54.85	-874.50	1.72	301.12	274.37	26.75	11.259	
6,100.00	6,044.22	6,058.75	6,057.17	17.03	11.36	-57.03	-874.08	-1.95	288.79	261.41	27.38	10.546	
6,200.00	6,142.77	6,155.97	6,154.35	17.38	11.55	-59.45	-873.77	-5.06	277.40	249.36	28.04	9.894	
6,300.00	6,241.32	6,253.81	6,252.15	17.73	11.76	-62.17	-873.53	-7.63	267.00	238.30	28.71	9.301	
6,400.00	6,339.87	6,351.90	6,350.21	18.08	11.96	-65.17	-873.16	-9.86	257.45	228.06	29.39	8.759	
6,500.00	6,438.42	6,449.53	6,447.82	18.43	12.17	-68.42	-872.81	-11.75	248.95	218.86	30.09	8.274	
6,600.00	6,536.97	6,548.31	6,546.59	18.78	12.37	-71.87	-872.68	-13.15	241.85	211.08	30.77	7.860	
6,700.00	6,635.52	6,646.98	6,645.26	19.13	12.52	-75.44	-873.19	-13.94	236.61	205.21	31.40	7.535	
6,800.00	6,734.07	6,745.60	6,743.87	19.49	12.64	-79.22	-873.88	-14.11	233.02	201.05	31.97	7.289	
6,900.00	6,832.62	6,843.73	6,842.00	19.84	12.73	-83.20	-874.39	-13.87	230.84	196.34	32.49	7.104	
7,000.00	6,931.17	6,937.10	6,935.37	20.19	12.82	-87.22	-875.03	-13.49	230.00	197.02	32.98	6.973	
7,018.30	6,948.21	6,955.15	6,953.42	20.26	12.84	-87.95	-875.18	-13.43	229.98	196.91	33.07	6.955 CC ES	
7,100.00	7,039.72	7,045.85	7,044.11	20.55	12.92	-91.19	-876.00	-13.18	230.35	198.91	33.44	6.888	
7,200.00	7,128.27	7,134.69	7,132.93	20.90	13.03	-94.98	-877.94	-13.18	231.71	197.63	33.68	6.839	
7,230.25	7,158.09	7,164.50	7,162.73	21.01	13.07	-95.88	-878.68	-13.23	232.33	198.32	34.01	6.811 SF	
7,300.00	7,258.99	7,264.91	7,263.17	21.22	13.12	-99.03	-881.00	-12.90	234.45	200.22	34.23	6.849	
7,400.00	7,355.78	7,362.81	7,360.93	21.46	13.13	-100.50	-882.36	-8.76	243.18	208.65	34.53	7.042	
7,500.00	7,454.81	7,461.86	7,459.94	21.70	13.14	-102.52	-883.54	3.27	265.12	230.81	34.31	7.727	
7,600.00	7,554.25	7,561.29	7,559.34	21.92	13.16	-104.19	-884.69	22.01	289.20	265.53	33.67	8.887	
7,700.00	7,653.77	7,660.77	7,658.81	22.13	13.19	-105.92	-883.75	46.34	343.20	310.34	32.85	10.447	
7,800.00	7,753.46	7,760.43	7,758.49	22.33	13.26	-107.64	-880.93	75.09	394.34	362.24	32.10	12.286	
7,900.00	7,853.26	7,860.26	7,858.30	22.52	13.37	-108.66	-880.57	110.98	448.71	417.96	31.75	14.163	
8,000.00	7,953.16	7,960.16	7,958.20	22.69	13.49	-109.15	-882.31	137.21	509.10	478.26	30.85	16.506	
8,100.00	8,053.12	8,060.12	8,058.16	22.85	13.62	-109.54	-884.63	162.94	573.94	544.01	29.93	19.178	
8,208.89	8,130.00	8,137.00	8,135.04	23.02	13.76	-96.06	-886.96	185.22	648.27	619.46	28.81	22.402	
8,300.00	8,233.11	8,240.11	8,238.15	23.17	13.93	86.55	-888.44	208.85	716.60	688.67	28.13	25.481	
8,400.00	8,333.11	8,340.11	8,338.15	23.31	14.07	86.85	-890.92	225.95	793.74	766.53	27.21	29.170	
8,507.99	8,431.10	8,438.10	8,436.14	23.47	14.24	87.10	-892.08	246.43	860.08	833.62	26.46	33.281	
8,550.00	8,473.08	8,480.08	8,478.12	23.52	14.36	-2.53	-892.52	259.80	913.62	887.28	26.34	34.687	
8,600.00	8,522.72	8,529.72	8,527.76	23.59	14.36	-2.28	-892.52	259.80	913.62	887.28	26.34	34.687	
8,650.00	8,571.66	8,578.66	8,576.70	23.64	14.49	-2.03	-892.81	267.75	927.27	891.89	25.38	38.894	
8,700.00	8,619.54	8,626.54	8,624.58	23.68	14.62	-1.83	-893.00	276.95	1,020.81	995.79	25.03	40.787	
8,750.00	8,668.38	8,675.38	8,673.42	23.72	14.62	-1.71	-893.00	286.95	1,052.08	1,027.79	24.30	43.286	
8,800.00	8,717.25	8,724.25	8,722.29	23.75	14.92	-1.56	-893.24	315.12	1,080.78	1,056.49	24.27	44.530	
8,850.00	8,763.16	8,770.16	8,768.20	23.77	14.92	-1.48	-893.24	315.12	1,080.78	1,056.49	24.27	44.530	
8,900.00	8,793.24	8,800.24	8,798.28	23.78	15.08	-1.40	-893.30	329.37	1,130.37	1,107.26	23.11	48.912	
8,950.00	8,830.56	8,837.56	8,835.60	23.79	15.25	-1.33	-893.32	343.36	1,151.36	1,128.68	22.68	50.781	
9,000.00	8,868.84	8,875.84	8,873.88	23.80	15.25	-1.20	-893.32	343.36	1,151.36	1,128.68	22.68	50.781	
9,050.00	8,895.81	8,902.81	8,900.85	23.81	15.63	-1.23	-893.48	373.38	1,185.32	1,163.44	21.88	54.160	
9,100.00	8,923.25	8,930.25	8,928.29	23.82	15.63	-1.20	-893.48	373.38	1,185.32	1,163.44	21.88	54.160	
9,150.00	8,946.95	8,953.95	8,951.99	23.84	15.87	-1.17	-893.66	381.30	1,207.92	1,187.01	20.91	57.772	
9,200.00	8,968.72	8,975.72	8,973.76	23.87	16.04	-1.15	-893.80	404.08	1,215.00	1,194.43	20.57	59.065	

LEAM Drilling Systems LLC Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at EDM 5000.1 Multi User Db
Database: Offset Datum
Offset TVD Reference: Offset Datum

Offset Design															Offset Site Error:	
Survey Program: 100-NS-GYRO-MS-720-MWD-HSCWISA															0.00 uft	
Onyx Offsets - Onyx PWU 29 #4H - OH - OH															0.00 uft	
Measured Depth (uft)	Vertical Depth (uft)	Measured Depth (uft)	Vertical Depth (uft)	Offset Depth (uft)	Offset Vertical Depth (uft)	Reference Depth (uft)	Reference Vertical Depth (uft)	Highside Toolface (°)	Offset Wellbore Centre +H-S (uft)	Offset Wellbore Centre +E-W (uft)	Between Centres (uft)	Distance Between Centres (uft)	Minimum Separation (uft)	Separation Factor	Warning	
9,250.00	8,982.41	7,995.98	7,798.34	23.92	18.24	-1.13	-850.99	417.69	1,219.23	1,198.95	20.28	60.120				
9,300.00	8,993.91	8,014.00	7,801.90	24.10	18.49	-1.11	-894.36	435.33	1,220.63	1,200.52	20.11	60.706				
9,350.00	9,001.13	8,026.67	7,804.05	24.15	18.68	-1.10	-894.70	447.81	1,219.05	1,199.14	19.91	61.231				
9,400.00	9,004.00	8,046.00	7,806.94	24.39	18.96	-1.08	-895.31	466.92	1,214.40	1,194.54	19.87	61.122				
9,500.00	9,005.39	8,110.00	7,814.61	25.26	17.98	-1.00	-897.03	530.43	1,203.66	1,183.40	20.25	59.428				
9,600.00	9,006.77	8,149.60	7,817.43	26.58	18.86	-0.93	-898.51	569.89	1,197.14	1,176.61	20.54	58.296				
9,700.00	9,008.16	8,216.95	7,820.78	28.18	19.87	-0.81	-901.14	637.10	1,193.67	1,172.42	21.25	56.180				
9,740.17	9,008.71	8,237.00	7,821.18	28.88	20.25	-0.78	-901.76	657.15	1,193.37	1,171.84	21.53	55.437				
9,800.00	9,009.54	8,269.00	7,821.14	29.95	20.85	-0.74	-902.65	689.13	1,194.15	1,172.17	21.98	54.326				
9,900.00	9,010.93	8,365.53	7,819.98	31.86	22.75	-0.62	-904.95	795.63	1,196.70	1,173.64	23.06	51.896				
10,000.00	9,012.31	8,479.07	7,819.06	33.87	25.11	-0.50	-907.42	899.14	1,198.90	1,174.62	24.29	48.366				
10,100.00	9,013.70	8,594.68	7,819.90	35.97	27.60	-0.52	-907.15	1,014.73	1,199.53	1,173.96	25.57	46.910				
10,200.00	9,015.08	8,701.01	7,821.48	38.14	29.95	-0.62	-905.04	1,121.04	1,199.46	1,172.63	26.83	44.707				
10,300.00	9,016.47	8,809.38	7,823.79	40.36	32.39	-0.71	-903.14	1,228.36	1,198.73	1,170.80	28.13	42.515				
10,400.00	9,017.85	8,919.03	7,826.93	42.63	34.91	-0.77	-901.82	1,338.96	1,197.27	1,167.91	29.46	40.637				
10,500.00	9,019.24	9,027.64	7,828.89	44.94	37.43	-0.80	-901.23	1,447.49	1,195.02	1,164.21	30.81	38.793				
10,600.00	9,020.62	9,105.12	7,833.32	47.28	39.25	-0.82	-900.89	1,524.93	1,193.28	1,161.34	31.95	37.353				
10,643.47	9,021.22	9,140.03	7,833.91	48.31	40.07	-0.83	-900.64	1,559.84	1,193.15	1,160.89	32.46	36.758				
10,700.00	9,022.01	9,192.57	7,834.55	48.66	41.32	-0.85	-900.23	1,612.37	1,193.25	1,160.07	33.18	35.965				
10,800.00	9,023.39	9,285.41	7,835.26	52.05	43.52	-0.89	-899.39	1,705.21	1,193.88	1,159.42	34.46	34.644				
10,900.00	9,024.78	9,384.71	7,835.60	54.47	45.89	-0.95	-898.23	1,804.50	1,194.95	1,159.15	35.80	33.377				
11,000.00	9,026.16	9,469.40	7,838.63	56.91	48.65	-1.03	-896.58	1,919.17	1,195.47	1,158.22	37.26	32.089				
11,100.00	9,027.54	9,510.42	7,839.03	59.37	51.32	-1.14	-894.23	2,030.14	1,194.74	1,156.03	38.70	30.868				
11,200.00	9,028.93	9,714.31	7,841.91	61.84	53.83	-1.26	-891.81	2,133.96	1,193.39	1,153.27	40.12	29.743				
11,300.00	9,030.31	9,812.96	7,844.73	64.33	56.23	-1.36	-889.67	2,232.54	1,191.97	1,150.45	41.52	28.709				
11,400.00	9,031.70	9,912.99	7,847.47	66.82	58.66	-1.44	-888.07	2,332.53	1,190.66	1,147.73	42.93	27.736				
11,500.00	9,033.08	10,017.30	7,850.64	69.33	61.21	-1.52	-886.53	2,436.78	1,189.04	1,144.67	44.37	26.797				
11,600.00	9,034.47	10,116.21	7,853.68	71.84	63.63	-1.57	-885.53	2,535.63	1,187.38	1,141.59	45.78	25.935				
11,700.00	9,035.85	10,213.79	7,856.62	74.37	66.02	-1.60	-884.62	2,633.17	1,185.76	1,138.57	47.19	25.128				
11,800.00	9,037.24	10,308.06	7,859.05	76.90	68.34	-1.66	-883.03	2,727.39	1,184.63	1,136.02	48.61	24.372				
11,900.00	9,038.62	10,422.36	7,862.05	79.44	71.14	-1.82	-880.31	2,841.62	1,183.51	1,133.35	50.16	23.596				
12,000.00	9,040.01	10,547.42	7,868.23	81.98	74.21	-2.07	-875.36	2,966.42	1,180.04	1,128.21	51.62	22.770				
12,100.00	9,041.39	10,660.45	7,875.44	84.53	76.98	-2.31	-870.63	3,079.12	1,175.20	1,121.75	53.44	21.960				
12,200.00	9,042.78	10,757.00	7,881.97	87.08	79.35	-2.50	-866.96	3,175.38	1,169.98	1,115.00	54.98	21.281				
12,300.00	9,044.16	10,858.22	7,888.70	89.65	81.84	-2.65	-864.18	3,276.34	1,164.84	1,108.31	56.52	20.608				
12,400.00	9,045.55	10,948.00	7,894.56	92.21	84.05	-2.76	-862.28	3,365.91	1,159.82	1,101.82	58.00	19.966				
12,500.00	9,046.93	11,044.00	7,900.07	94.78	86.43	-2.81	-861.36	3,461.74	1,155.52	1,096.04	59.49	19.425				
12,600.00	9,048.32	11,112.02	7,902.69	97.35	88.11	-2.81	-861.46	3,529.71	1,153.01	1,092.21	60.80	18.963				
12,700.00	9,049.70	11,198.99	7,904.20	99.93	90.78	-2.78	-862.12	3,617.66	1,152.90	1,090.42	62.19	18.535				
12,800.00	9,051.09	11,303.54	7,905.85	102.51	92.86	-2.72	-863.39	3,721.19	1,152.34	1,088.71	63.63	18.111				
12,900.00	9,052.47	11,402.28	7,907.66	105.08	95.31	-2.65	-864.65	3,819.90	1,151.83	1,086.79	65.04	17.708				
12,955.55	9,053.24	11,453.51	7,908.43	106.52	96.59	-2.60	-865.76	3,871.12	1,151.70	1,085.90	65.80	17.504				
13,000.00	9,053.96	11,463.22	7,908.86	107.67	97.57	-2.56	-866.62	3,910.82	1,151.79	1,085.40	66.39	17.348				
13,100.00	9,055.24	11,563.38	7,909.62	110.26	100.06	-2.46	-868.72	4,010.96	1,152.34	1,084.55	67.78	17.000				
13,200.00	9,056.63	11,717.70	7,911.92	112.85	103.15	-2.36	-870.49	4,135.23	1,151.64	1,082.55	69.29	16.623				
13,300.00	9,058.01	11,842.00	7,917.13	115.44	106.24	-2.41	-869.76	4,259.42	1,149.05	1,079.17	70.88	16.211				
13,400.00	9,059.40	11,961.01	7,924.50	118.03	109.19	-2.54	-867.35	4,378.17	1,144.33	1,071.81	72.51	15.781				
13,500.00	9,060.78	12,074.21	7,933.06	120.63	111.99	-2.65	-865.42	4,491.03	1,138.22	1,064.11	74.11	15.358				
13,600.00	9,062.17	12,120.00	7,938.87	123.22	113.12	-2.69	-864.83	4,536.66	1,132.76	1,057.26	75.49	15.005				
13,621.43	9,062.46	12,120.00	7,938.87	123.78	113.12	-2.69	-864.83	4,536.66	1,132.55	1,056.83	75.73	14.956				
13,700.00	9,063.55	12,120.00	7,938.87	125.82	113.12	-2.69	-864.83	4,536.66	1,135.27	1,058.85	76.42	14.856				
13,800.00	9,064.94	12,120.00	7,938.87	128.42	113.12	-2.69	-864.83	4,536.66	1,146.54	1,069.62	78.93	14.905				

OC - Min centre to center distance or convergent point, SP - min separation factor, ES - min ellipse separation

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy

Project: Eddy County, NM (NAD-83)

Reference Site: Onyx PWU 29-28

Site Error: 0.00 usft

Reference Well: 12H

Well Error: 0.00 usft

Reference Wellbore OH

Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H

TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft

MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft

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

Onyx Offsets - Onyx PWU 29 #4H - OH - OH												0.00 usft
Survey Program: 100-NS-GYRC-M8-7248-MMD-ISCWSA												0.00 usft
Reference: Sand Major Axis												
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Distance	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Reference (usft)	Offset (usft)	Tooltips (°)	+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)		
13,900.00	9,068.32	12,120.00	7,936.87	131.02	113.12	-2.69	-864.83	4,536.66	1,168.31	1,089.29	77.02	15.143
14,000.00	9,067.71	12,120.00	7,936.87	133.63	113.12	-2.69	-864.83	4,536.66	1,194.15	1,117.40	76.75	15.560
14,100.00	9,069.09	12,120.00	7,936.87	136.24	113.12	-2.69	-864.83	4,536.66	1,229.52	1,153.36	76.16	16.144
14,200.00	9,070.48	12,120.00	7,936.87	138.84	113.12	-2.69	-864.83	4,536.66	1,271.78	1,186.46	75.32	16.885
14,300.00	9,071.86	12,120.00	7,936.87	141.44	113.12	-2.69	-864.83	4,536.66	1,320.28	1,245.97	74.31	17.768
14,400.00	9,073.25	12,120.00	7,936.87	144.05	113.12	-2.69	-864.83	4,536.66	1,374.36	1,301.18	73.17	18.783
14,500.00	9,074.63	12,120.00	7,936.87	146.66	113.12	-2.69	-864.83	4,536.66	1,433.38	1,361.40	71.97	19.915
14,600.00	9,076.02	12,120.00	7,936.87	149.27	113.12	-2.69	-864.83	4,536.66	1,496.76	1,426.01	70.75	21.155
14,700.00	9,077.40	12,120.00	7,936.87	151.88	113.12	-2.69	-864.83	4,536.66	1,563.97	1,494.43	69.54	22.480
14,800.00	9,078.78	12,120.00	7,936.87	154.49	113.12	-2.69	-864.83	4,536.66	1,634.54	1,566.18	68.36	23.910
14,900.00	9,080.17	12,120.00	7,936.87	157.10	113.12	-2.69	-864.83	4,536.66	1,708.05	1,640.62	67.23	25.406
15,000.00	9,081.55	12,120.00	7,936.87	159.72	113.12	-2.69	-864.83	4,536.66	1,784.14	1,717.98	66.15	26.969
15,100.00	9,082.94	12,120.00	7,936.87	162.33	113.12	-2.69	-864.83	4,536.66	1,862.49	1,797.34	65.14	28.590
15,200.00	9,084.32	12,120.00	7,936.87	164.95	113.12	-2.69	-864.83	4,536.66	1,942.83	1,878.63	64.20	30.263
15,300.00	9,085.71	12,120.00	7,936.87	167.56	113.12	-2.69	-864.83	4,536.66	2,024.92	1,961.60	63.32	31.980
15,400.00	9,087.09	12,120.00	7,936.87	170.18	113.12	-2.69	-864.83	4,536.66	2,108.56	2,046.05	62.50	33.736
15,500.00	9,088.48	12,120.00	7,936.87	172.80	113.12	-2.69	-864.83	4,536.66	2,193.56	2,131.82	61.75	35.525
15,600.00	9,089.86	12,120.00	7,936.87	175.41	113.12	-2.69	-864.83	4,536.66	2,279.79	2,216.74	61.05	37.342
15,700.00	9,091.25	12,120.00	7,936.87	178.03	113.12	-2.69	-864.83	4,536.66	2,367.10	2,306.69	60.41	39.184
15,800.00	9,092.63	12,120.00	7,936.87	180.65	113.12	-2.69	-864.83	4,536.66	2,455.37	2,395.55	59.82	41.046
15,900.00	9,094.02	12,120.00	7,936.87	183.27	113.12	-2.69	-864.83	4,536.66	2,544.52	2,485.24	59.28	42.925
16,000.00	9,095.40	12,120.00	7,936.87	185.89	113.12	-2.69	-864.83	4,536.66	2,634.44	2,575.66	58.78	44.819
16,100.00	9,096.79	12,120.00	7,936.87	188.51	113.12	-2.69	-864.83	4,536.66	2,725.07	2,666.75	58.32	46.724
16,200.00	9,098.17	12,120.00	7,936.87	191.13	113.12	-2.69	-864.83	4,536.66	2,816.33	2,758.43	57.90	48.599
16,300.00	9,099.56	12,120.00	7,936.87	193.75	113.12	-2.69	-864.83	4,536.66	2,908.17	2,850.65	57.52	50.558
16,400.00	9,100.94	12,120.00	7,936.87	196.37	113.12	-2.69	-864.83	4,536.66	3,000.53	2,943.36	57.17	52.486
16,500.00	9,102.33	12,120.00	7,936.87	198.99	113.12	-2.69	-864.83	4,536.66	3,093.36	3,036.51	56.85	54.417
16,600.00	9,103.71	12,120.00	7,936.87	201.61	113.12	-2.69	-864.83	4,536.66	3,186.63	3,130.07	56.55	56.348
16,693.00	9,105.00	12,120.00	7,936.87	204.05	113.12	-2.69	-864.83	4,536.66	3,273.72	3,217.42	56.30	58.148

LEAM Drilling Systems LLC
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PMU 28-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
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 uft									
Survey Program: 185-VES GYROFLEX V2.6335-LEAM-MWD-ADL 11845-Project										Offset Well Error: 0.00 uft									
Reference										Warning									
Measured	Vertical	Vertical	Offset	Vertical	Reference	Offset	Highside	Offset Wellbore	Distance	Minimum	Separation	Separation	Separation	Separation	Separation	Separation	Separation	Separation	Separation
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Footcandle	Center	Between	Between	Between	Between	Between	Between	Between	Between	Between	Between	Between
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(ft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	-41.43	565.63	-489.18	754.40	754.05	0.16	4.989	4.989	0.16	4.989	4.989	0.16	4.989
100.00	100.00	101.40	101.38	0.08	0.08	0.08	-41.45	565.32	-489.25	754.22	754.05	0.16	4.989	4.989	0.16	4.989	4.989	0.16	4.989
200.00	200.00	203.81	203.81	0.31	0.17	-41.51	-41.51	564.39	-489.44	753.98	753.19	0.47	1.591	1.591	0.47	1.591	1.591	0.47	1.591
300.00	300.00	304.03	304.02	0.54	0.28	-41.58	-41.58	563.24	-489.67	753.96	752.14	0.82	921.310	921.310	0.82	921.310	921.310	0.82	921.310
400.00	400.00	404.42	404.40	0.76	0.40	-41.65	-41.65	562.06	-489.89	752.22	751.07	1.15	852.123	852.123	1.15	852.123	852.123	1.15	852.123
500.00	500.00	505.75	505.72	0.99	0.48	-41.72	-41.72	560.80	-500.00	751.36	749.91	1.45	517.914	517.914	1.45	517.914	517.914	1.45	517.914
600.00	600.00	607.58	607.55	1.21	0.55	-41.79	-41.79	559.43	-489.94	750.32	748.57	1.75	429.680	429.680	1.75	429.680	429.680	1.75	429.680
700.00	700.00	711.61	711.57	1.43	0.61	-41.82	-41.82	558.04	-489.21	748.86	746.82	2.03	369.218	369.218	2.03	369.218	369.218	2.03	369.218
800.00	800.00	814.96	814.89	1.66	0.87	-41.79	-41.79	556.73	-487.59	746.67	744.55	2.32	322.204	322.204	2.32	322.204	322.204	2.32	322.204
900.00	900.00	916.43	916.33	1.88	0.72	-41.70	-41.70	555.76	-486.21	744.59	741.96	2.59	287.036	287.036	2.59	287.036	287.036	2.59	287.036
1,000.00	1,000.00	1,016.37	1,016.22	2.11	0.77	-41.56	-41.56	555.17	-482.18	742.14	739.27	2.87	258.399	258.399	2.87	258.399	258.399	2.87	258.399
1,100.00	1,100.00	1,112.71	1,112.52	2.33	0.81	-41.42	-41.42	554.79	-488.52	740.01	736.87	3.14	235.577	235.577	3.14	235.577	235.577	3.14	235.577
1,200.00	1,200.00	1,209.06	1,208.85	2.56	0.86	-41.32	-41.32	554.51	-487.45	738.37	734.96	3.41	216.520	216.520	3.41	216.520	216.520	3.41	216.520
1,300.00	1,300.00	1,305.37	1,305.14	2.78	0.89	-41.22	-41.22	554.51	-485.79	737.24	733.56	3.67	200.622	200.622	3.67	200.622	200.622	3.67	200.622
1,400.00	1,400.00	1,402.01	1,401.78	3.01	0.93	-41.13	-41.13	554.85	-484.46	736.60	732.66	3.94	187.006	187.006	3.94	187.006	187.006	3.94	187.006
1,500.00	1,500.00	1,500.67	1,500.43	3.23	0.97	-41.04	-41.04	555.30	-483.43	736.26	732.06	4.20	175.362	175.362	4.20	175.362	175.362	4.20	175.362
1,600.00	1,600.00	1,599.36	1,599.11	3.46	1.00	-40.98	-40.98	555.71	-482.73	736.10	731.64	4.46	165.138	165.138	4.46	165.138	165.138	4.46	165.138
1,700.00	1,699.39	1,605.68	1,605.43	3.47	1.00	122.92	123.03	555.73	-482.70	736.10	731.63	4.47	164.605	164.605	4.47	164.605	164.605	4.47	164.605
1,800.00	1,799.96	1,797.12	1,796.87	3.83	1.06	123.24	123.24	556.79	-481.72	738.16	733.28	4.68	151.127	151.127	4.68	151.127	151.127	4.68	151.127
1,900.00	1,899.86	1,895.62	1,895.36	4.01	1.09	123.55	123.55	557.45	-481.43	740.89	735.90	5.08	145.700	145.700	5.08	145.700	145.700	5.08	145.700
2,000.00	1,999.68	1,894.06	1,893.81	4.19	1.11	123.93	123.93	558.11	-481.43	744.79	739.50	5.28	140.740	140.740	5.28	140.740	140.740	5.28	140.740
2,100.00	2,099.37	2,093.02	2,092.76	4.38	1.14	124.41	124.41	558.83	-481.57	749.86	744.36	5.50	136.279	136.279	5.50	136.279	136.279	5.50	136.279
2,200.00	2,198.90	2,191.83	2,191.57	4.58	1.16	124.98	124.98	559.62	-481.75	756.07	750.35	5.72	132.153	132.153	5.72	132.153	132.153	5.72	132.153
2,300.00	2,298.26	2,291.39	2,291.13	4.79	1.18	125.64	125.64	560.45	-481.93	763.41	757.47	5.95	128.362	128.362	5.95	128.362	128.362	5.95	128.362
2,400.00	2,397.40	2,390.73	2,390.46	5.02	1.21	126.39	126.39	561.25	-482.09	771.87	765.68	6.19	124.775	124.775	6.19	124.775	124.775	6.19	124.775
2,500.00	2,496.30	2,489.90	2,489.63	5.26	1.23	127.20	127.20	561.96	-482.30	781.48	775.05	6.43	121.462	121.462	6.43	121.462	121.462	6.43	121.462
2,576.83	2,571.91	2,565.73	2,565.46	5.45	1.25	127.86	127.86	562.41	-482.53	789.96	783.03	6.63	119.087	119.087	6.63	119.087	119.087	6.63	119.087
2,600.00	2,594.94	2,588.85	2,588.58	5.51	1.25	128.06	128.06	562.53	-482.61	792.27	785.58	6.69	118.399	118.399	6.69	118.399	118.399	6.69	118.399
2,700.00	2,693.49	2,687.30	2,687.03	5.78	1.27	129.03	129.03	562.84	-483.06	803.45	796.49	6.96	115.475	115.475	6.96	115.475	115.475	6.96	115.475
2,800.00	2,792.04	2,785.86	2,785.59	6.06	1.29	129.93	129.93	562.75	-483.64	814.58	807.35	7.23	112.672	112.672	7.23	112.672	112.672	7.23	112.672
2,900.00	2,880.59	2,874.72	2,874.44	6.34	1.31	130.78	130.78	562.45	-484.31	825.77	818.26	7.51	110.017	110.017	7.51	110.017	110.017	7.51	110.017
3,000.00	2,969.14	2,963.02	2,962.74	6.64	1.33	131.60	131.60	562.06	-485.05	837.11	829.32	7.79	107.525	107.525	7.79	107.525	107.525	7.79	107.525
3,100.00	3,057.69	3,051.51	3,051.23	6.94	1.35	132.39	132.39	561.62	-485.87	848.80	840.53	8.07	105.196	105.196	8.07	105.196	105.196	8.07	105.196
3,200.00	3,146.24	3,140.04	3,139.76	7.24	1.36	133.14	133.14	561.14	-486.79	860.26	851.91	8.35	103.021	103.021	8.35	103.021	103.021	8.35	103.021
3,300.00	3,234.79	3,228.51	3,228.23	7.55	1.38	133.87	133.87	560.66	-487.84	872.15	863.51	8.63	101.005	101.005	8.63	101.005	101.005	8.63	101.005
3,400.00	3,323.35	3,317.01	3,316.73	7.86	1.40	134.56	134.56	560.24	-489.08	884.30	875.38	8.92	98.135	98.135	8.92	98.135	98.135	8.92	98.135
3,500.00	3,411.90	3,405.51	3,405.23	8.18	1.43	135.23	135.23	559.74	-490.61	896.66	887.45	9.21	97.388	97.388	9.21	97.388	97.388	9.21	97.388
3,600.00	3,500.45	3,494.01	3,493.73	8.50	1.45	135.85	135.85	559.00	-492.56	908.12	898.62	9.50	95.744	95.744	9.50	95.744	95.744	9.50	95.744
3,700.00	3,589.00	3,582.51	3,582.23	8.82	1.47	136.41	136.41	558.25	-494.80	921.81	912.03	9.78	94.235	94.235	9.78	94.235	94.235	9.78	94.235
3,800.00	3,677.55	3,671.01	3,670.73	9.15	1.49	136.95	136.95	557.77	-497.28	934.96	924.89	10.07	92.658	92.658	10.07	92.658	92.658	10.07	92.658
3,900.00	3,766.10	3,759.51	3,759.23	9.48	1.51	137.47	137.47	557.52	-500.06	948.54	938.18	10.36	91.594	91.594	10.36	91.594	91.594	10.36	91.594
4,000.00	3,854.65	3,848.01	3,847.73	9.81	1.53	137.96	137.96	557.41	-503.23	962.49	951.85	10.64	90.431	90.431	10.64	90.431	90.431	10.64	90.431
4,100.00	4,073.20	4,066.51	4,066.23	10.14	1.56	138.43	138.43	557.41	-506.73	976.78	965.83	10.93	89.346	89.346	10.93	89.346	89.346	10.93	89.346
4,200.00	4,171.75	4,165.01	4,164.73	10.48	1.58	138.88	138.88	557.51	-510.34	991.21	979.98	11.22	88.330	88.330	11.22	88.330	88.330	11.22	88.330
4,300.00	4,270.30	4,263.51	4,263.23	10.81	1.60	139.32	139.32	557.68	-514.05	1,005.82	994.30	11.51	87.373	87.373	11.51	87.373	87.373	11.51	87.373
4,400.00	4,368.85	4,362.01	4,361.73	11.15	1.63	139.74	139.74	557.83	-517.88	1,020.51	1,008.70	11.80	86.470	86.470	11.80	86.470	86.470	11.80	86.470
4,500.00	4,467.40	4,460.51	4,460.23	11.49	1.65	140.15	140.15	557.98	-521.76	1,035.28	1,023.19	12.09	85.618	85.618	12.09	85.618	85.618	12.09	85.618
4,600.00	4,565.95	4,559.01	4,558.73	11.83	1.68	140.55	140.55	558.22	-525.62	1,050.18	1,037.79	12.36	84.819	84.819	12.36	84.819	84.819	12.36	84.819
4,700.00	4,664.51	4,657.51	4,657.23	12.17	1.70	140.93	140.93	558.60	-529.34	1,065.25	1,052.58	12.67	84.088	84.088	12.67	84.088	84.088	12.67	84.088
4,800.00	4,763.06	4,756.01	4,755.73	12.51	1.73	141.32	141.32	558.96	-533.82	1,080.75	1,067.90	129.9							

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PMU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVL Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVL Reference: Offset Datum

Offset Design															Offset Site Error: 0.00 uft	
Survey Program: 188-VES CycPlus V2.0335-LEAM MWD-AQJ.1194C-Project															Offset Well Error: 0.00 uft	
Reference															Warning	
Measured	Vertical	Depth	Depth	Vertical	Offset	Reference	Offset	Highside	Offset	Offshore Wellbore Centre	Distance	Between	Minimum	Separation	Factor	
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Footcandle	Footcandle	+N-S	+E-W	Centres	Centres	Separation	Factor	
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(ft)	(ft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	
5,000.00	4,900.16	4,929.59	4,928.38	13.20	1.78	142.12	142.12	142.12	142.12	562.28	-539.56	1,112.80	1,099.27	13.52	82.281	
5,100.00	5,058.71	5,027.72	5,026.44	13.54	1.81	142.51	142.51	142.51	142.51	563.87	-542.92	1,128.03	1,115.21	13.81	81.744	
5,200.00	5,157.26	5,126.68	5,125.34	13.69	1.83	142.91	142.91	142.91	142.91	565.53	-546.11	1,145.28	1,131.16	14.10	81.228	
5,300.00	5,255.81	5,224.87	5,223.47	14.24	1.86	143.30	143.30	143.30	143.30	567.20	-548.06	1,161.54	1,147.16	14.39	80.742	
5,400.00	5,354.36	5,321.78	5,320.32	14.58	1.89	143.68	143.68	143.68	143.68	568.97	-551.81	1,177.95	1,163.28	14.67	80.295	
5,500.00	5,452.91	5,418.47	5,416.95	14.93	1.91	144.06	144.06	144.06	144.06	570.88	-554.73	1,194.53	1,179.57	14.95	79.881	
5,600.00	5,551.46	5,514.77	5,513.18	15.28	1.94	144.43	144.43	144.43	144.43	572.93	-557.55	1,211.31	1,196.07	15.24	79.489	
5,700.00	5,650.01	5,612.76	5,611.11	15.63	1.97	144.78	144.78	144.78	144.78	575.16	-560.42	1,228.28	1,212.76	15.52	79.134	
5,800.00	5,748.56	5,711.36	5,710.00	15.98	1.99	145.18	145.18	145.18	145.18	577.37	-563.09	1,245.05	1,229.24	15.81	78.735	
5,900.00	5,847.11	5,810.82	5,810.00	16.33	2.02	145.57	145.57	145.57	145.57	579.26	-565.22	1,261.47	1,245.37	16.10	78.343	
6,000.00	5,945.67	5,917.90	5,915.82	16.68	2.05	145.94	145.94	145.94	145.94	581.00	-567.14	1,277.80	1,261.41	16.39	77.983	
6,100.00	6,044.22	6,015.92	6,014.10	17.03	2.08	146.30	146.30	146.30	146.30	582.68	-569.01	1,294.13	1,277.46	16.67	77.640	
6,200.00	6,142.77	6,112.53	6,110.68	17.38	2.11	146.65	146.65	146.65	146.65	584.41	-570.90	1,310.60	1,293.65	16.95	77.328	
6,300.00	6,241.32	6,210.79	6,208.90	17.73	2.13	146.99	146.99	146.99	146.99	586.26	-572.84	1,327.23	1,310.00	17.23	77.036	
6,400.00	6,339.87	6,314.97	6,313.05	18.08	2.14	147.39	147.39	147.39	147.39	588.29	-573.81	1,343.64	1,326.14	17.50	76.768	
6,500.00	6,438.42	6,413.96	6,412.08	18.43	2.17	147.91	147.91	147.91	147.91	590.94	-575.83	1,359.37	1,334.19	18.18	74.396	
6,600.00	6,536.97	6,512.00	6,510.04	18.78	2.24	154.70	154.70	154.70	154.70	598.33	-581.58	1,365.71	1,339.80	20.92	85.058	
6,700.00	6,635.52	6,610.00	6,608.00	19.13	2.31	156.34	156.34	156.34	156.34	601.21	-585.14	1,367.48	1,345.21	22.27	81.400	
6,800.00	6,734.07	6,711.96	6,710.04	19.48	2.39	157.58	157.58	157.58	157.58	603.64	-587.32	1,379.50	1,356.12	23.38	59.005	
6,900.00	6,832.62	6,810.00	6,808.00	19.84	2.47	159.51	159.51	159.51	159.51	607.95	-592.43	1,396.68	1,371.68	25.01	55.854	
7,000.00	6,931.17	6,911.00	6,910.00	20.19	2.55	162.08	162.08	162.08	162.08	612.85	-594.87	1,418.02	1,390.24	27.78	51.050	
7,100.00	7,029.72	6,985.04	6,982.89	20.55	2.63	164.12	164.12	164.12	164.12	613.86	-595.55	1,444.95	1,416.20	28.75	50.256	
7,200.00	7,128.27	7,010.02	6,985.09	20.90	2.71	165.12	165.12	165.12	165.12	614.52	-596.14	1,477.71	1,448.26	29.44	50.191	
7,300.00	7,226.82	7,016.89	6,986.97	21.01	2.79	165.40	165.40	165.40	165.40	614.67	-596.14	1,488.72	1,459.11	29.61	50.277	
7,400.00	7,325.37	7,037.14	6,942.22	21.46	2.87	165.39	165.39	165.39	165.39	615.11	-595.48	1,557.48	1,527.70	29.78	52.306	
7,500.00	7,424.91	7,045.09	6,944.09	21.70	2.95	166.83	166.83	166.83	166.83	615.31	-595.76	1,602.87	1,573.23	29.64	54.069	
7,600.00	7,524.25	7,057.00	6,946.89	21.92	3.03	167.42	167.42	167.42	167.42	615.66	-596.14	1,651.56	1,621.97	29.58	55.830	
7,700.00	7,623.77	7,067.00	6,946.89	22.13	3.11	167.55	167.55	167.55	167.55	615.66	-596.14	1,703.19	1,674.07	29.11	58.507	
7,800.00	7,723.46	7,077.00	6,946.89	22.33	3.19	167.68	167.68	167.68	167.68	615.66	-596.14	1,757.59	1,728.97	28.62	61.415	
7,900.00	7,823.26	7,087.00	6,946.89	22.52	3.27	167.84	167.84	167.84	167.84	615.66	-596.14	1,814.51	1,786.39	28.11	64.542	
8,000.00	7,923.16	7,097.37	6,946.89	22.69	3.35	168.57	168.57	168.57	168.57	616.20	-596.14	1,873.43	1,845.40	28.03	66.828	
8,100.00	8,023.12	7,088.00	6,952.21	22.85	3.43	169.30	169.30	169.30	169.30	616.68	-596.14	1,934.64	1,906.70	27.94	69.247	
8,200.00	8,123.00	7,088.00	6,952.21	23.02	3.51	169.56	169.56	169.56	169.56	616.68	-596.14	2,001.82	1,974.43	27.39	73.094	
8,300.00	8,223.11	7,088.00	6,952.21	23.17	3.59	169.56	169.56	169.56	169.56	616.68	-596.14	2,062.44	2,035.51	26.92	76.600	
8,400.00	8,323.11	7,088.00	6,952.21	23.31	3.67	169.56	169.56	169.56	169.56	616.68	-596.14	2,130.15	2,103.70	26.45	80.525	
8,507.99	8,431.10	7,088.00	6,952.21	23.47	3.75	169.56	169.56	169.56	169.56	616.68	-596.14	2,206.03	2,180.05	25.98	84.910	
8,550.00	8,473.08	7,088.00	6,952.21	23.52	3.83	169.56	169.56	169.56	169.56	616.68	-596.14	2,236.14	2,210.33	25.81	86.652	
8,600.00	8,522.72	7,084.00	6,953.06	23.59	3.91	169.56	169.56	169.56	169.56	617.18	-596.14	2,271.93	2,246.19	25.74	88.260	
8,650.00	8,571.66	7,103.00	6,954.14	23.64	3.99	169.56	169.56	169.56	169.56	617.61	-596.14	2,307.51	2,281.77	25.74	89.645	
8,700.00	8,619.54	7,103.00	6,954.14	23.68	4.07	169.56	169.56	169.56	169.56	617.61	-596.14	2,342.48	2,316.94	25.54	91.710	
8,750.00	8,665.98	7,103.00	6,954.14	23.72	4.15	169.56	169.56	169.56	169.56	617.61	-596.14	2,376.70	2,351.34	25.35	93.748	
8,800.00	8,710.84	7,103.00	6,954.14	23.75	4.23	169.56	169.56	169.56	169.56	617.61	-596.14	2,409.93	2,384.76	25.17	95.738	
8,850.00	8,753.16	7,116.37	6,955.45	23.77	4.31	169.56	169.56	169.56	169.56	618.30	-596.14	2,441.78	2,416.50	25.28	96.560	
8,900.00	8,793.24	7,129.00	6,956.38	23.78	4.39	169.56	169.56	169.56	169.56	619.03	-596.14	2,472.27	2,446.87	25.40	97.341	
8,950.00	8,830.56	7,129.00	6,956.38	23.78	4.47	169.56	169.56	169.56	169.56	619.03	-596.14	2,501.00	2,475.74	25.26	99.001	
9,000.00	8,864.84	7,129.00	6,956.38	23.80	4.55	169.56	169.56	169.56	169.56	619.03	-596.14	2,527.99	2,502.84	25.15	100.500	
9,050.00	8,895.81	7,145.32	6,957.17	23.81	4.63	169.56	169.56	169.56	169.56	620.06	-596.14	2,552.82	2,527.42	25.41	100.475	
9,100.00	8,923.25	7,160.00	6,957.47	23.82	4.71	169.56	169.56	169.56	169.56	621.03	-596.14	2,575.60	2,549.94	25.86	100.374	
9,150.00	8,946.95	7,160.00	6,957.47	23.84	4.73	169.56	169.56	169.56	169.56	621.03	-596.14	2,595.99	2,570.30	25.66	101.166	
9,200.00	8,966.72	7,191.00	6,957.57	23.87	4.79	169.56	169.56	169.56	169.56	623.37	-596.14	2,613.79	2,587.46	26.33	99.288	
9,250.00	8,982.41	7,254.88	8,888.13	23.92	21.89	37.51	37.51	37.51	37.51	628.57	50.34	2,628.45	2,600.72	27.74	94.765	

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Onyx PMU 29-28
 Site Error: 0.00 uft
 Reference Well: 12H
 Well Error: 0.00 uft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinates Reference: Well 12H
 3307.9' GE + 23.5' KB @ 3331.40uft
 3307.9' GE + 23.5' KB @ 3331.40uft
 Grid
 Minimum Curvature
 2.00 sigma
 EDM 5000.1 Multi User Db
 Offset Datum

Survey Program: 188-VES GynFlex V2.8395-LEAM-MWD-ADJ. 11845-Project										Offset Design									
Reference										Sanit Major Axis									
Measured	Vertical	Vertical	Measured	Vertical	Vertical	Offset	Reference	Reference	Offset	Highside	Offset Wellbore	Distance	Minimum	Separation	Factor	Warning	Warning	Warning	Warning
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Twist	+N/S	+E/W	Centre	Between	Between	Between	Between	Between	Between
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(ft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)
9,300.00	8,883.91	7,313.36	6,859.57	24.00	24.04	-36.76	634.13	108.74	2,639.49	2,610.35	29.14	90.580							
9,350.00	9,001.13	7,365.56	6,861.19	24.15	25.88	-36.32	639.38	160.65	2,616.52	2,616.52	30.50	86.801							
9,400.00	9,004.00	7,408.92	6,862.69	24.39	27.42	-36.15	643.97	203.74	2,651.07	2,619.33	31.74	83.535							
9,500.00	9,005.39	7,493.17	6,865.64	25.26	30.42	-36.34	662.77	287.37	2,856.20	2,621.86	34.34	77.350							
9,600.00	9,006.77	7,570.00	6,868.48	26.58	33.17	-36.52	693.61	363.61	2,861.52	2,624.57	36.95	72.034							
9,700.00	9,008.16	7,655.16	6,869.69	28.18	35.52	-36.65	670.02	428.34	2,668.00	2,628.60	39.40	67.718							
9,800.00	9,009.54	7,696.85	6,868.74	29.95	37.74	-36.73	676.35	489.70	2,676.40	2,634.56	41.84	63.973							
9,900.00	9,010.93	7,698.43	6,869.12	31.86	47.59	-37.03	686.27	760.44	2,681.17	2,631.59	49.58	54.079							
10,000.00	9,012.31	8,054.36	6,870.39	33.87	50.73	-37.11	700.52	846.25	2,684.08	2,631.24	52.83	50.803							
10,100.00	9,013.70	8,175.67	6,871.71	35.97	55.17	-37.19	705.47	967.45	2,686.78	2,629.75	57.03	47.111							
10,200.00	9,015.08	8,340.32	6,875.11	38.14	61.20	-37.28	710.44	1,131.96	2,688.17	2,625.79	62.38	43.088							
10,300.00	9,016.47	8,471.11	6,879.69	40.36	65.99	-37.36	712.79	1,282.67	2,687.60	2,620.65	66.95	40.141							
10,400.00	9,017.85	8,608.30	6,884.78	42.63	71.01	-37.40	712.54	1,399.76	2,685.63	2,613.96	71.67	37.470							
10,500.00	9,019.24	8,760.17	6,882.36	44.94	78.57	-37.44	710.98	1,551.43	2,682.19	2,605.39	76.80	34.924							
10,600.00	9,020.62	8,890.00	6,881.72	47.28	81.32	-37.52	709.64	1,680.91	2,678.89	2,595.43	81.46	32.860							
10,700.00	9,022.01	9,024.07	6,883.85	49.66	86.22	-37.64	709.13	1,814.42	2,670.57	2,584.23	86.34	30.932							
10,800.00	9,023.39	9,157.83	6,825.77	52.05	91.11	-37.72	705.66	1,947.60	2,663.03	2,571.88	91.15	29.216							
10,900.00	9,024.78	9,251.32	6,834.14	54.47	94.52	-37.75	702.27	2,040.65	2,654.83	2,559.87	94.96	27.957							
11,000.00	9,026.16	9,346.31	6,843.13	56.91	98.00	-37.82	700.00	2,135.19	2,646.97	2,548.09	98.88	26.771							
11,100.00	9,027.54	9,415.42	6,850.02	59.37	100.53	-37.88	699.36	2,203.95	2,639.85	2,537.45	102.20	25.829							
11,200.00	9,028.93	9,479.82	6,855.85	61.84	102.89	-37.95	699.47	2,268.08	2,633.69	2,528.28	105.41	24.985							
11,300.00	9,030.31	9,552.00	6,861.80	64.33	105.54	-38.03	700.42	2,340.01	2,629.04	2,520.19	108.85	24.152							
11,400.00	9,031.70	9,603.43	6,865.57	66.82	107.43	-38.10	701.70	2,391.29	2,625.80	2,514.08	111.72	23.502							
11,500.00	9,033.08	9,662.89	6,869.27	69.33	109.62	-38.17	703.86	2,450.59	2,624.23	2,509.41	114.82	22.855							
11,600.00	9,034.47	9,741.00	6,873.35	71.84	112.49	-38.26	707.41	2,528.51	2,623.96	2,505.50	118.46	22.150							
11,700.00	9,035.85	9,828.11	6,878.75	74.37	115.70	-38.36	710.82	2,615.49	2,624.36	2,502.05	122.34	21.452							
11,800.00	9,037.24	9,968.75	6,881.51	76.90	120.88	-38.45	713.36	2,716.02	2,623.87	2,496.21	127.66	20.554							
11,900.00	9,038.62	10,105.16	6,886.85	79.44	125.90	-38.51	714.42	2,822.32	2,622.46	2,489.64	132.83	19.743							
12,000.00	9,040.01	10,226.98	6,892.36	81.98	130.38	-38.55	713.55	3,014.01	2,619.56	2,482.01	137.55	19.045							
12,100.00	9,041.39	10,354.79	6,897.90	84.53	135.07	-38.54	710.34	3,141.66	2,615.67	2,473.35	142.31	18.380							
12,200.00	9,042.78	10,488.49	7,004.13	87.09	139.25	-38.56	707.72	3,255.15	2,611.03	2,464.25	146.78	17.789							
12,300.00	9,044.16	10,551.75	7,010.11	89.65	142.31	-38.63	707.50	3,338.20	2,606.35	2,455.75	150.59	17.307							
12,400.00	9,045.55	10,614.26	7,014.50	92.21	144.61	-38.69	708.21	3,400.55	2,602.72	2,448.85	153.86	16.916							
12,500.00	9,046.93	10,684.00	7,018.34	94.78	147.17	-38.78	710.14	3,470.15	2,601.01	2,443.66	157.35	16.530							
12,550.00	9,047.74	10,699.12	7,019.00	96.29	147.73	-38.77	710.69	3,485.25	2,600.86	2,442.07	158.59	16.398							
12,600.00	9,048.32	10,729.59	7,022.18	97.35	148.85	-38.80	711.75	3,515.68	2,600.78	2,440.70	160.05	16.249							
12,700.00	9,049.70	10,800.52	7,022.14	99.93	151.47	-38.86	714.07	3,586.54	2,601.75	2,438.27	163.48	15.915							
12,800.00	9,051.09	10,873.00	7,023.13	102.51	154.14	-38.90	716.73	3,658.97	2,604.01	2,437.10	166.91	15.601							
12,900.00	9,052.47	11,000.12	7,025.25	105.09	158.82	-38.98	720.84	3,786.00	2,605.74	2,433.68	172.06	15.145							
13,000.00	9,053.86	11,067.51	7,025.59	107.67	161.31	-39.00	722.56	3,853.36	2,608.01	2,432.74	175.27	14.890							
13,100.00	9,055.24	11,267.41	7,028.07	110.26	166.67	-39.06	726.40	4,053.19	2,605.71	2,427.21	182.50	14.300							
13,200.00	9,056.63	11,346.00	7,030.64	112.85	171.57	-39.10	727.63	4,131.73	2,603.22	2,423.06	186.16	14.016							
13,300.00	9,058.01	11,459.71	7,033.25	115.44	175.72	-39.13	728.96	4,244.40	2,606.91	2,418.16	190.75	13.677							
13,400.00	9,059.40	11,566.97	7,035.46	118.03	179.49	-39.13	727.97	4,346.64	2,608.07	2,413.11	194.96	13.377							
13,500.00	9,060.78	11,665.27	7,038.54	120.63	182.96	-39.12	727.18	4,440.82	2,607.71	2,408.84	198.87	13.113							
13,600.00	9,062.17	11,767.20	7,038.78	123.22	185.46	-39.08	724.71	4,572.81	2,606.19	2,403.98	202.22	12.888							
13,700.00	9,063.55	11,845.00	7,039.89	125.82	185.46	-39.06	723.50	4,650.59	2,604.80	2,401.11	203.63	12.788							
13,800.00	9,064.94	11,845.00	7,039.89	125.82	185.46	-39.06	723.50	4,650.59	2,604.80	2,401.11	203.63	12.788							
13,900.00	9,066.32	11,845.00	7,039.89	125.82	185.46	-39.06	723.50	4,650.59	2,604.80	2,401.11	203.63	12.788							
14,000.00	9,067.71	11,845.00	7,039.89	125.82	185.46	-39.06	723.50	4,650.59	2,604.80	2,401.11	203.63	12.788							

LEAM Drilling Systems LLC

Anticollision Report

Company:
Project:
Reference Site:
Site Error:
Reference Well:
Well Error:
Reference Wellbore
Reference Design:

Devon Energy
Eddy County, NM (NAD-83)
Onyx PWU 29-28
0.00 uft
12H
0.00 uft
OH
Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Output errors are at
Database:
Offset TVD Reference:

Well 12H
3307.9' GE + 23.5' KB @ 3331.40uft
3307.9' GE + 23.5' KB @ 3331.40uft
Grid
Minimum Curvature
2.00 sigma
EDM 5000.1 Multi User Db
Offset Datum

Offset Design												Offset Site Error:	0.00 uft
Reference												Offset Well Error:	0.00 uft
Survey Program: 188-VES GyroFix V2.6335-LEAM MWD-AJL 1194C-Project												Warning	
Semi Major Axis													
Measured	Vertical	Measured	Vertical	Offset	Reference	Offset	Highside	Toollace	Offset Wellbore Centre	Between	Distance	Minimum	Separation
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Footcandle	Footcandle	+N/S	+E/W	Between	Separation	Factor
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(°)	(°)	(uft)	(uft)	(uft)	(uft)	
14,100.00	9,089.09	11,845.00	7,039.89	136.23	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,634.87	2,428.64	206.24
14,200.00	9,070.48	11,845.00	7,039.89	138.84	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,651.78	2,445.62	206.16
14,300.00	9,071.86	11,845.00	7,039.89	141.44	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,672.33	2,466.52	205.81
14,400.00	9,073.25	11,845.00	7,039.89	144.05	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,696.43	2,491.23	205.21
14,500.00	9,074.63	11,845.00	7,039.89	146.66	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,723.99	2,519.63	204.36
14,600.00	9,076.02	11,845.00	7,039.89	149.27	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,754.91	2,551.62	203.30
14,700.00	9,077.40	11,845.00	7,039.89	151.88	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,789.07	2,587.05	202.02
14,800.00	9,078.78	11,845.00	7,039.89	154.49	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,826.36	2,625.79	200.57
14,900.00	9,080.17	11,845.00	7,039.89	157.10	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,866.66	2,667.71	198.95
15,000.00	9,081.55	11,845.00	7,039.89	159.72	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,909.83	2,712.64	197.18
15,100.00	9,082.94	11,845.00	7,039.89	162.33	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	2,956.76	2,760.45	195.31
15,200.00	9,084.32	11,845.00	7,039.89	164.95	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,004.32	2,811.00	193.32
15,300.00	9,085.71	11,845.00	7,039.89	167.56	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,053.37	2,864.13	191.24
15,400.00	9,087.09	11,845.00	7,039.89	170.18	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,103.81	2,919.71	189.10
15,500.00	9,088.48	11,845.00	7,039.89	172.80	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,164.51	2,977.61	186.90
15,600.00	9,089.86	11,845.00	7,039.89	175.41	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,222.34	3,037.69	184.66
15,700.00	9,091.25	11,845.00	7,039.89	178.03	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,282.21	3,099.82	182.39
15,800.00	9,092.63	11,845.00	7,039.89	180.65	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,343.99	3,163.89	180.10
15,900.00	9,094.02	11,845.00	7,039.89	183.27	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,407.59	3,229.78	177.81
16,000.00	9,095.40	11,845.00	7,039.89	185.89	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,472.91	3,297.39	175.52
16,100.00	9,096.79	11,845.00	7,039.89	188.51	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,539.84	3,366.60	173.24
16,200.00	9,098.17	11,845.00	7,039.89	191.13	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,608.31	3,437.33	170.98
16,300.00	9,099.56	11,845.00	7,039.89	193.75	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,676.22	3,509.48	168.74
16,400.00	9,100.94	11,845.00	7,039.89	196.37	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,745.49	3,582.96	166.53
16,500.00	9,102.33	11,845.00	7,039.89	198.99	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,822.05	3,657.70	164.35
16,600.00	9,103.71	11,845.00	7,039.89	201.61	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,895.83	3,733.62	162.20
16,695.00	9,105.00	11,845.00	7,039.89	204.05	185.46	-39.06	-39.06	-39.06	723.50	4,630.59	3,965.47	3,805.22	160.24

LEAM Drilling Systems LLC
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 28-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
North Reference: Grd
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 uft	
Survey Program: 188-VES GyroFlex V2.6188-LEAM-MMD-ADJ														Offset Well Error: 0.00 uft	
ONYP PWU - 7H - OH - Plan #1 - Draft #4															
Reference	Measured	Vertical	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)	(uoft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	100.00	101.40	101.39	0.09	0.08	-41.43	-49.63	-49.18	754.40	565.63	-49.18	754.40	565.63	0.16	4.589 499
200.00	200.00	203.81	203.81	0.31	0.17	-41.51	-49.25	-49.25	753.19	564.39	-49.25	753.19	564.39	0.47	1.591 968
300.00	300.00	304.03	304.02	0.54	0.29	-41.58	-49.67	-49.67	752.96	563.24	-49.67	752.96	563.24	0.82	921.310
400.00	400.00	404.42	404.40	0.76	0.40	-41.65	-49.89	-49.89	752.22	562.06	-49.89	752.22	562.06	1.15	852.123
500.00	500.00	505.75	505.72	0.99	0.48	-41.72	-50.00	-50.00	749.91	560.80	-50.00	749.91	560.80	1.45	917.914
600.00	600.00	607.58	607.55	1.21	0.55	-41.79	-49.94	-49.94	750.32	559.43	-49.94	750.32	559.43	1.75	429.680
700.00	700.00	711.61	711.57	1.43	0.61	-41.82	-49.91	-49.91	748.86	558.04	-49.91	748.86	558.04	2.03	368.218
800.00	800.00	814.96	814.89	1.58	0.67	-41.79	-49.79	-49.79	746.87	556.73	-49.79	746.87	556.73	2.32	322.204
900.00	900.00	916.43	916.33	1.88	0.72	-41.70	-49.67	-49.67	744.59	555.17	-49.67	744.59	555.17	2.59	287.036
1,000.00	1,000.00	1,016.37	1,016.22	2.11	0.77	-41.56	-49.21	-49.21	742.14	553.77	-49.21	742.14	553.77	2.87	258.389
1,100.00	1,100.00	1,127.11	1,127.02	2.33	0.81	-41.42	-48.92	-48.92	740.01	552.79	-48.92	740.01	552.79	3.14	235.577
1,200.00	1,200.00	1,209.06	1,208.85	2.56	0.86	-41.32	-48.75	-48.75	738.37	551.51	-48.75	738.37	551.51	3.41	216.520
1,300.00	1,300.00	1,305.37	1,305.14	2.78	0.89	-41.22	-48.59	-48.59	737.24	550.18	-48.59	737.24	550.18	3.67	200.822
1,400.00	1,400.00	1,402.01	1,401.76	3.01	0.93	-41.13	-48.46	-48.46	736.60	548.85	-48.46	736.60	548.85	3.94	187.006
1,500.00	1,500.00	1,500.67	1,500.43	3.23	0.97	-41.04	-48.33	-48.33	736.26	547.45	-48.33	736.26	547.45	4.20	175.362
1,600.00	1,600.00	1,599.36	1,599.11	3.46	1.00	-40.96	-48.23	-48.23	736.10	545.71	-48.23	736.10	545.71	4.46	165.138
1,700.00	1,699.39	1,605.68	1,605.43	3.47	1.00	122.92	-48.20	-48.20	736.10	543.85	-48.20	736.10	543.85	4.47	164.606 CC, ES
1,800.00	1,699.99	1,698.28	1,698.03	3.65	1.03	123.03	-48.20	-48.20	735.58	543.85	-48.20	735.58	543.85	4.68	157.282
1,900.00	1,799.96	1,797.12	1,796.87	3.83	1.06	123.24	-48.17	-48.17	735.16	542.79	-48.17	735.16	542.79	4.88	151.127
2,000.00	1,899.86	1,895.62	1,895.36	4.01	1.09	123.55	-48.13	-48.13	734.88	541.43	-48.13	734.88	541.43	5.08	145.700
2,100.00	1,999.68	1,994.06	1,993.81	4.19	1.11	123.93	-48.11	-48.11	734.79	539.51	-48.11	734.79	539.51	5.28	140.740
2,200.00	2,099.37	2,093.02	2,092.76	4.38	1.14	124.41	-48.08	-48.08	734.36	538.23	-48.08	734.36	538.23	5.50	136.279
2,300.00	2,198.90	2,191.83	2,191.57	4.58	1.16	124.98	-48.05	-48.05	733.74	536.62	-48.05	733.74	536.62	5.72	132.153
2,400.00	2,298.26	2,291.39	2,291.13	4.79	1.18	125.64	-48.03	-48.03	733.41	534.75	-48.03	733.41	534.75	5.95	128.362
2,500.00	2,397.40	2,390.73	2,390.46	5.02	1.21	126.38	-48.01	-48.01	733.16	532.65	-48.01	733.16	532.65	6.19	124.775
2,600.00	2,496.30	2,489.90	2,489.63	5.26	1.23	127.20	-48.00	-48.00	732.88	530.36	-48.00	732.88	530.36	6.43	121.462
2,700.00	2,595.63	2,589.23	2,588.96	5.45	1.25	127.86	-48.00	-48.00	732.61	527.83	-48.00	732.61	527.83	6.63	118.097
2,800.00	2,694.94	2,688.54	2,688.27	5.71	1.25	128.08	-48.01	-48.01	732.35	525.03	-48.01	732.35	525.03	6.89	114.399
2,900.00	2,793.46	2,787.06	2,786.79	5.78	1.27	129.03	-48.04	-48.04	732.07	522.03	-48.04	732.07	522.03	7.16	110.475
3,000.00	2,892.04	2,885.64	2,885.37	6.06	1.29	129.93	-48.04	-48.04	731.87	518.84	-48.04	731.87	518.84	7.43	106.272
3,100.00	2,990.59	2,984.19	2,983.92	6.34	1.31	130.78	-48.04	-48.04	731.61	515.48	-48.04	731.61	515.48	7.71	101.017
3,200.00	3,089.14	3,082.74	3,082.47	6.64	1.33	131.60	-48.05	-48.05	731.30	511.97	-48.05	731.30	511.97	7.99	95.725
3,300.00	3,187.69	3,181.29	3,181.02	6.94	1.35	132.39	-48.07	-48.07	730.90	508.40	-48.07	730.90	508.40	8.27	90.396
3,400.00	3,286.24	3,279.84	3,279.57	7.24	1.36	133.14	-48.09	-48.09	730.51	504.79	-48.09	730.51	504.79	8.55	85.044
3,500.00	3,384.79	3,378.39	3,378.12	7.55	1.38	133.87	-48.08	-48.08	730.26	501.03	-48.08	730.26	501.03	8.83	80.001
3,600.00	3,483.35	3,476.95	3,476.68	7.86	1.40	134.56	-48.08	-48.08	729.96	497.13	-48.08	729.96	497.13	9.11	75.135
3,700.00	3,581.91	3,575.51	3,575.24	8.18	1.43	135.23	-48.01	-48.01	729.66	493.00	-48.01	729.66	493.00	9.40	70.386
3,800.00	3,680.45	3,674.05	3,673.78	8.50	1.45	135.85	-48.00	-48.00	729.32	488.82	-48.00	729.32	488.82	9.70	65.744
3,900.00	3,779.00	3,772.60	3,772.33	8.82	1.47	136.41	-48.00	-48.00	728.96	484.50	-48.00	728.96	484.50	10.00	61.203
4,000.00	3,877.55	3,871.15	3,870.88	9.15	1.49	136.95	-48.00	-48.00	728.61	479.99	-48.00	728.61	479.99	10.30	56.759
4,100.00	3,976.10	3,969.70	3,969.43	9.48	1.51	137.47	-500.06	-500.06	728.26	475.28	-500.06	728.26	475.28	10.60	52.406
4,200.00	4,074.65	4,068.25	4,067.98	9.81	1.53	137.96	-503.23	-503.23	727.91	470.49	-503.23	727.91	470.49	10.90	48.053
4,300.00	4,173.20	4,166.80	4,166.53	10.14	1.56	138.43	-506.73	-506.73	727.56	465.63	-506.73	727.56	465.63	11.20	43.700
4,400.00	4,271.75	4,265.35	4,265.08	10.48	1.58	138.88	-510.34	-510.34	727.21	460.63	-510.34	727.21	460.63	11.50	39.347
4,500.00	4,370.30	4,363.90	4,363.63	10.81	1.60	139.32	-514.05	-514.05	726.86	455.50	-514.05	726.86	455.50	11.80	35.000
4,600.00	4,468.85	4,462.45	4,462.18	11.15	1.63	139.74	-517.88	-517.88	726.51	450.23	-517.88	726.51	450.23	12.10	30.753
4,700.00	4,567.40	4,561.00	4,560.73	11.49	1.65	140.15	-521.76	-521.76	726.16	444.83	-521.76	726.16	444.83	12.40	26.506
4,800.00	4,665.95	4,659.55	4,659.28	11.83	1.68	140.55	-525.62	-525.62	725.81	439.30	-525.62	725.81	439.30	12.70	22.259
4,900.00	4,764.50	4,758.10	4,757.83	12.17	1.70	140.93	-529.34	-529.34	725.46	433.65	-529.34	725.46	433.65	13.00	18.012
5,000.00	4,863.05	4,856.65	4,856.38	12.51	1.73	141.32	-533.02	-533.02	725.11	427.88	-533.02	725.11	427.88	13.30	13.765
5,100.00	4,961.60	4,955.20	4,954.93	12.86	1.75	141.71	-536.68	-536.68	724.76	421.99	-536.68	724.76	421.99	13.60	9.518
5,200.00	5,060.15	5,053.75	5,053.48	13.21	1.78	142.09	-540.33	-540.33	724.41	416.00	-540.33	724.41	416.00	13.90	5.271
5,300.00	5,158.70	5,152.30	5,152.03	13.56	1.81	142.47	-543.98	-543.98	724.06	410.00	-543.98	724.06	410.00	14.20	1.024
5,400.00	5,257.25	5,250.85	5,250.58	13.91	1.84	142.85	-547.63	-547.63	723.71	403.99	-547.63	723.71	403.99	14.50	-3.223
5,500.00	5,355.80	5,349.40	5,349.13	14.26	1.87	143.23	-551.28	-551.28	723.36	397.98	-551.28	723.36	397.98	14.80	-7.476
5,600.00	5,454.35	5,447.95	5,447.68	14.61	1.90	143.61	-554.93	-554.93	723.01	391.97	-554.93	723.01	391.97	15.10	-11.729
5,700.00	5,552.90	5,546.50	5,546.23	14.96	1.93	143.99	-558.58	-558.58	722.66	385.96	-558.58	722.66	385.96</		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
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 uft			
Survey Program: 188-YES GyroPlus V2.8106-LEAM MMD-ADJ										Offset Well Error: 0.00 uft			
Reference													
Measured	Vertical	Measured	Vertical	Offset	Semi Major Axis	Highside	Offset	Wellbore Centre	Distance	Minimum	Separation	Factor	Warning
Depth	Depth	Depth	Depth	Reference	Reference	Toothline	Offset	+N/S	Between Centres	Separation			
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(°)	(uft)	(uft)	(uft)	(uft)			
5.000.00	4.960.16	4.928.59	4.928.38	13.20	1.78	142.12	562.28	-539.56	1.129.80	1.099.27	13.52	82.281	
5.100.00	5.058.71	5.027.72	5.026.44	13.54	1.81	142.51	563.67	-542.92	1.129.03	1.115.21	13.81	81.744	
5.200.00	5.157.26	5.126.68	5.125.34	13.89	1.83	142.91	565.03	-546.11	1.145.28	1.131.18	14.10	81.228	
5.300.00	5.255.81	5.224.87	5.223.47	14.24	1.86	143.30	567.20	-549.06	1.161.54	1.147.16	14.39	80.742	
5.400.00	5.354.36	5.321.78	5.320.32	14.58	1.89	143.68	568.97	-551.91	1.177.96	1.163.28	14.67	80.295	
5.500.00	5.452.91	5.418.47	5.416.95	14.93	1.91	144.06	570.88	-554.73	1.194.53	1.179.57	14.95	79.881	
5.600.00	5.551.46	5.514.77	5.513.18	15.28	1.94	144.43	572.93	-557.55	1.211.31	1.196.07	15.24	79.499	
5.700.00	5.650.01	5.612.76	5.611.11	15.63	1.97	144.79	575.16	-560.42	1.228.28	1.212.76	15.52	79.134	
5.800.00	5.748.56	5.716.36	5.714.67	15.98	1.99	145.18	577.37	-563.09	1.245.05	1.239.24	15.81	78.735	
5.900.00	5.847.11	5.818.62	5.816.87	16.33	2.02	145.57	579.26	-565.22	1.261.47	1.245.37	16.10	78.343	
6.000.00	5.945.67	5.917.60	5.915.82	16.68	2.05	145.94	581.00	-567.14	1.277.80	1.261.41	16.39	77.983	
6.100.00	6.044.22	6.015.92	6.014.10	17.03	2.08	146.30	582.68	-568.01	1.294.13	1.277.46	16.67	77.640	
6.200.00	6.142.77	6.112.53	6.110.88	17.38	2.11	146.65	584.41	-569.90	1.310.80	1.293.65	16.95	77.328	
6.300.00	6.241.32	6.209.49	6.207.80	17.73	2.12	146.99	586.26	-571.85	1.327.24	1.310.01	17.23	77.046	
6.400.00	6.339.87	6.307.78	6.306.85	18.08	2.14	147.32	588.17	-573.85	1.343.96	1.326.46	17.50	76.795	
6.500.00	6.438.42	6.404.58	6.402.54	18.43	2.20	147.66	590.89	-574.40	1.360.46	1.342.63	17.83	76.281	
6.600.00	6.536.97	6.502.97	6.502.36	18.78	2.78	150.67	599.05	-573.45	1.372.20	1.353.50	18.71	73.352	
6.700.00	6.635.52	6.601.85	6.601.94	19.13	4.77	154.03	607.55	-581.33	1.381.52	1.360.76	20.78	66.532	
6.800.00	6.734.07	6.698.94	6.698.26	19.49	6.77	156.70	613.99	-581.16	1.392.82	1.369.97	22.85	60.944	
6.900.00	6.832.62	6.801.41	6.796.89	19.84	8.34	158.64	618.55	-584.39	1.408.47	1.383.97	24.50	57.477	
7.000.00	6.931.17	6.897.27	6.895.07	20.19	9.51	160.06	621.83	-583.35	1.428.49	1.403.78	25.71	55.596	
7.100.00	7.029.72	6.995.00	6.992.86	20.55	10.49	161.23	624.53	-585.54	1.458.23	1.429.57	26.66	54.623	
7.200.00	7.128.27	6.997.60	6.994.36	20.90	11.07	161.92	626.10	-586.27	1.488.67	1.461.54	27.13	54.875	
7.300.00	7.226.82	6.975.00	6.969.92	21.01	11.32	162.21	626.76	-586.35	1.469.59	1.472.27	27.32	54.891	
7.400.00	7.325.78	6.953.90	6.949.84	21.22	11.62	162.65	627.55	-585.99	1.526.27	1.498.80	27.47	55.599	
7.500.00	7.424.81	6.932.47	6.928.44	21.46	12.15	163.41	628.99	-586.72	1.567.68	1.539.98	27.70	56.591	
7.600.00	7.524.25	6.911.11	6.906.47	21.70	12.44	163.88	629.75	-587.62	1.612.58	1.594.94	27.64	58.346	
7.700.00	7.623.77	6.889.32	6.884.32	21.92	13.00	164.67	631.23	-588.70	1.660.75	1.632.98	27.71	59.809	
7.800.00	7.723.26	6.867.32	6.862.32	22.13	13.00	164.83	631.23	-588.70	1.711.81	1.684.45	27.35	62.578	
7.900.00	7.822.66	6.845.32	6.840.32	22.33	13.30	165.32	632.02	-589.20	1.763.81	1.738.43	27.18	64.968	
8.000.00	7.921.16	6.823.26	6.818.26	22.52	13.52	165.74	632.80	-589.80	1.821.87	1.794.96	26.91	67.700	
8.100.00	8.019.66	6.801.16	6.796.16	22.69	13.85	166.27	633.47	-590.38	1.880.37	1.853.66	26.71	70.387	
8.200.00	8.118.16	6.779.16	6.774.16	22.85	13.85	166.45	633.47	-590.38	1.940.88	1.914.03	26.25	73.943	
8.300.00	8.216.66	6.757.16	6.752.16	23.02	13.85	166.45	633.47	-590.38	2.007.61	1.981.84	25.77	77.919	
8.400.00	8.315.16	6.735.16	6.730.16	23.17	14.24	167.21	634.47	-591.44	2.067.74	2.042.10	25.64	80.647	
8.500.00	8.413.66	6.713.16	6.708.16	23.31	14.38	167.74	634.83	-591.44	2.134.98	2.109.66	25.32	84.333	
8.600.00	8.512.16	6.691.16	6.686.16	23.47	14.71	168.27	635.70	-591.81	2.210.37	2.185.25	25.12	87.996	
8.700.00	8.610.66	6.669.16	6.664.16	23.52	14.71	168.27	635.70	-591.81	2.240.29	2.215.33	24.96	89.757	
8.800.00	8.709.16	6.647.16	6.642.16	23.59	14.71	168.27	635.70	-591.81	2.270.01	2.245.24	24.77	91.870	
8.900.00	8.807.66	6.625.16	6.620.16	23.64	14.71	168.27	635.70	-591.81	2.311.58	2.286.98	24.59	93.988	
9.000.00	8.906.16	6.603.16	6.598.16	23.68	14.71	168.27	635.70	-591.81	2.346.76	2.322.34	24.42	96.095	
9.100.00	9.004.66	6.581.16	6.576.16	23.72	15.12	168.27	636.77	-591.81	2.381.14	2.356.63	24.51	97.144	
9.200.00	9.103.16	6.559.16	6.554.16	23.75	15.57	168.27	637.93	-591.81	2.414.89	2.390.06	24.63	98.051	
9.300.00	9.201.66	6.537.16	6.532.16	23.77	15.57	168.27	637.93	-591.81	2.448.94	2.422.46	24.48	99.970	
9.400.00	9.300.16	6.515.16	6.510.16	23.78	15.57	168.27	637.93	-591.81	2.477.88	2.453.54	24.34	101.787	
9.500.00	9.400.66	6.493.16	6.488.16	23.79	15.99	168.27	639.03	-591.81	2.507.17	2.482.68	24.48	102.402	
9.600.00	9.500.16	6.471.16	6.466.16	23.80	16.42	168.27	640.13	-591.81	2.534.72	2.510.08	24.65	102.847	
9.700.00	9.600.66	6.449.16	6.444.16	23.81	16.42	168.27	640.13	-591.81	2.560.28	2.535.70	24.59	104.128	
9.800.00	9.700.16	6.427.16	6.422.16	23.82	16.92	168.27	641.41	-591.81	2.583.77	2.558.92	24.85	103.966	
9.900.00	9.800.66	6.405.16	6.400.16	23.84	17.73	168.27	643.48	-591.81	2.604.80	2.579.56	25.34	102.799	
10.000.00	9.900.16	6.383.16	6.378.16	23.87	19.30	168.27	647.46	-591.81	2.623.11	2.596.79	26.32	99.673	
10.100.00	10.000.66	6.361.16	6.356.16	23.92	20.95	168.27	651.58	-591.81	2.638.16	2.610.76	27.40	96.268	

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: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TYD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TYD Reference: Offset Datum

Offset Design										Offset Site Error: 0.00 uft									
Survey Program: 188-VES Gyrofix VZ.6188-LEAM-MMO-ADJ										Offset Well Error: 0.00 uft									
Reference										Warning									
Measured	Vertical	Measured	Vertical	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference	Offset	Reference
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)
9.300.00	8.993.91	7.304.81	6.865.00	24.00	22.65	-37.32	665.81	62.92	2.649.92	2.621.34	28.58	92.710							
9.350.00	9.001.13	7.354.08	6.865.00	24.15	24.40	-36.79	660.10	112.01	2.658.28	2.628.41	29.87	89.005							
9.400.05	9.004.04	7.403.84	6.865.00	24.39	26.16	-36.54	664.44	161.58	2.663.19	2.631.95	31.23	85.270							
9.500.00	9.005.39	7.503.40	6.865.00	25.28	29.73	-36.67	673.12	260.76	2.669.50	2.635.34	34.16	78.152							
9.600.00	9.006.77	7.603.01	6.865.00	26.58	33.32	-36.80	681.80	359.99	2.675.83	2.639.58	37.77	71.787							
9.700.00	9.008.16	7.702.62	6.865.00	28.18	36.93	-36.93	690.48	459.22	2.682.17	2.641.62	40.55	66.142							
9.800.00	9.009.54	7.802.23	6.865.00	29.95	40.54	-37.06	699.16	558.45	2.688.53	2.644.57	43.97	61.151							
9.900.00	9.010.93	7.901.84	6.865.00	31.86	44.17	-37.19	707.84	657.68	2.694.91	2.647.41	47.49	56.741							
10.000.00	9.012.31	8.002.97	6.865.00	33.87	50.42	-37.34	716.09	828.48	2.699.40	2.648.52	52.87	51.053							
10.100.00	9.013.70	8.102.86	6.865.00	35.97	54.07	-37.38	724.45	928.28	2.703.15	2.648.61	56.54	47.813							
10.200.00	9.015.08	8.202.76	6.865.00	38.14	57.73	-37.45	732.80	1,028.08	2.706.90	2.646.64	60.26	44.922							
10.300.00	9.016.47	8.304.75	6.865.00	40.36	62.20	-37.53	741.12	1,149.96	2.710.21	2.645.60	64.61	41.949							
10.400.00	9.017.85	8.405.05	6.865.00	42.63	71.55	-37.74	749.53	1,404.88	2.711.00	2.638.52	72.48	37.402							
10.500.00	9.019.24	8.506.05	6.865.00	44.94	75.22	-37.85	757.93	1,504.48	2.708.23	2.631.78	76.45	35.423							
10.600.00	9.020.62	8.607.22	6.865.00	47.28	78.89	-37.95	766.31	1,604.07	2.705.46	2.624.99	80.47	33.621							
10.700.00	9.022.01	8.708.49	6.865.00	49.66	82.56	-38.06	774.65	1,703.66	2.702.71	2.618.19	84.52	31.976							
10.800.00	9.023.39	8.809.40	6.865.00	52.05	86.23	-38.17	783.00	1,803.25	2.699.96	2.611.35	88.61	30.470							
10.900.00	9.024.78	8.910.71	6.865.00	54.47	89.92	-38.27	791.35	1,902.87	2.697.22	2.604.48	92.74	29.063							
11.000.00	9.026.16	9.012.46	6.865.00	56.91	94.09	-38.35	799.70	2,002.50	2.694.51	2.598.97	97.18	27.724							
11.100.00	9.027.54	9.114.38	6.865.00	59.37	97.76	-38.39	808.05	2,102.16	2.691.74	2.593.24	101.23	26.581							
11.200.00	9.028.93	9.216.31	6.865.00	61.84	101.44	-38.43	816.40	2,201.83	2.688.97	2.588.52	105.31	25.521							
11.300.00	9.030.31	9.318.24	6.865.00	64.33	105.11	-38.47	824.75	2,301.50	2.686.20	2.583.75	109.40	24.537							
11.400.00	9.031.70	9.420.17	6.865.00	66.82	108.78	-38.51	833.10	2,401.17	2.683.43	2.578.98	113.51	23.621							
11.500.00	9.033.08	9.522.10	6.865.00	69.31	112.46	-38.56	841.45	2,500.84	2.680.66	2.574.21	117.63	22.766							
11.600.00	9.034.47	9.624.03	6.865.00	71.84	116.13	-38.60	849.80	2,600.51	2.677.89	2.569.44	121.76	21.967							
11.700.00	9.035.85	9.725.96	6.865.00	74.37	119.81	-38.64	858.15	2,700.18	2.675.12	2.564.67	125.90	21.217							
11.800.00	9.037.24	9.827.89	6.865.00	76.90	123.49	-38.68	866.50	2,800.00	2.672.35	2.559.90	130.06	20.514							
11.900.00	9.038.62	9.929.82	6.865.00	79.44	127.16	-38.73	874.85	2,900.00	2.669.58	2.555.13	134.23	19.853							
12.000.00	9.040.01	10.031.75	6.865.00	81.98	130.84	-38.77	883.20	3,000.00	2.666.81	2.550.36	138.41	19.229							
12.100.00	9.041.39	10.133.68	6.865.00	84.53	134.52	-38.81	891.55	3,100.00	2.664.04	2.545.59	142.61	18.641							
12.200.00	9.042.78	10.235.61	6.865.00	87.09	138.20	-38.86	900.00	3,200.00	2.661.27	2.540.82	146.81	18.096							
12.300.00	9.044.16	10.337.54	6.865.00	89.65	141.88	-38.90	908.40	3,300.00	2.658.50	2.536.05	151.02	17.590							
12.400.00	9.045.55	10.439.47	6.865.00	92.21	145.55	-38.94	916.80	3,400.00	2.655.73	2.531.28	155.24	17.061							
12.500.00	9.046.93	10.541.40	6.865.00	94.78	149.23	-38.98	925.20	3,500.00	2.652.96	2.526.51	159.46	16.568							
12.600.00	9.048.32	10.643.33	6.865.00	97.35	152.91	-39.03	933.60	3,600.00	2.650.19	2.521.74	163.72	16.139							
12.700.00	9.049.70	10.745.26	6.865.00	99.93	156.59	-39.07	942.00	3,700.00	2.647.42	2.516.97	167.97	15.711							
12.800.00	9.051.09	10.847.19	6.865.00	102.51	160.27	-39.12	950.40	3,800.00	2.644.65	2.512.20	172.23	15.303							
12.900.00	9.052.47	10.949.12	6.865.00	105.09	163.95	-39.16	958.80	3,900.00	2.641.88	2.507.43	176.50	14.915							
13.000.00	9.053.86	11.051.05	6.865.00	107.67	167.63	-39.20	967.20	4,000.00	2.639.11	2.502.66	180.78	14.544							
13.100.00	9.055.24	11.152.98	6.865.00	110.25	171.31	-39.25	975.60	4,100.00	2.636.34	2.497.89	185.07	14.190							
13.200.00	9.056.63	11.254.91	6.865.00	112.85	175.00	-39.29	984.00	4,200.00	2.633.57	2.493.12	189.36	13.851							
13.300.00	9.058.01	11.356.84	6.865.00	115.44	178.68	-39.34	992.40	4,300.00	2.630.80	2.488.35	193.67	13.526							
13.400.00	9.059.40	11.458.77	6.865.00	118.03	182.36	-39.38	1,000.80	4,400.00	2.628.03	2.483.58	197.98	13.215							
13.500.00	9.060.78	11.560.70	6.865.00	120.63	186.04	-39.42	1,009.20	4,500.00	2.625.26	2.478.81	202.30	12.917							
13.600.00	9.062.17	11.662.63	6.865.00	123.23	189.72	-39.47	1,017.60	4,600.00	2.622.49	2.474.04	206.63	12.652							
13.700.00	9.063.55	11.764.56	6.865.00	125.82	193.40	-39.48	1,026.00	4,700.00	2.619.72	2.469.27	210.96	12.404							
13.800.00	9.064.94	11.866.49	6.865.00	128.42	197.08	-39.48	1,034.40	4,800.00	2.616.95	2.464.50	215.24	12.164							
13.900.00	9.066.32	11.968.42	6.865.00	131.02	200.76	-39.48	1,042.80	4,900.00	2.614.18	2.459.73	219.51	11.934							
14.000.00	9.067.71	12.070.35	6.865.00	133.63	204.44	-39.48	1,051.20	5,000.00	2.611.41	2.454.96	223.78	11.714							
14.100.00	9.069.10	12.172.28	6.865.00	136.23	208.12	-39.48	1,059.60	5,100.00	2.608.64	2.450.19	228.05	11.504							
14.200.00	9.070.48	12.274.21	6.865.00	138.84	211.80	-39.48	1,068.00	5,200.00	2.605.87	2.445.42	232.32	11.304							

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Ohyx PWU 29-28
Site Error: 0.00 usft
Reference Well: 12H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
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:	Offset Well Error:
Survey Program: 188-VES GyroFix V2.6186-LEAM (MNO-AJ)												0.00 usft	0.00 usft
Reference													
Measured	Vertical	Offset	Vertical	Depth	Depth	Reference	Offset	Highside	Toolface	Offset Wellbore Centre	Distance	Minimum	Separation
Depth	Depth		Depth	Depth	Depth	Reference	Offset	Toolface	Toolface	+N-S	Between	Separation	Factor
(usft)	(usft)		(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	Centres	(usft)	
14,300.00	9,071.86	11,892.85	7,050.00	141.44	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,672.29	210.61	12,688
14,400.00	9,073.25	11,892.85	7,050.00	144.05	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,665.94	210.04	12,835
14,500.00	9,074.63	11,892.85	7,050.00	146.66	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,659.59	209.22	13,015
14,600.00	9,076.02	11,892.85	7,050.00	149.27	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,653.24	208.17	13,227
14,700.00	9,077.40	11,892.85	7,050.00	151.88	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,646.89	206.91	13,471
14,800.00	9,078.78	11,892.85	7,050.00	154.49	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,640.54	205.46	13,745
14,900.00	9,080.17	11,892.85	7,050.00	157.10	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,634.19	203.85	14,050
15,000.00	9,081.55	11,892.85	7,050.00	159.72	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,627.84	202.08	14,384
15,100.00	9,082.94	11,892.85	7,050.00	162.33	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,621.49	200.19	14,748
15,200.00	9,084.32	11,892.85	7,050.00	164.95	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,615.14	198.19	15,140
15,300.00	9,085.71	11,892.85	7,050.00	167.56	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,608.79	196.10	15,560
15,400.00	9,087.09	11,892.85	7,050.00	170.18	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,602.44	193.93	16,008
15,500.00	9,088.48	11,892.85	7,050.00	172.80	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,596.09	191.71	16,482
15,600.00	9,089.86	11,892.85	7,050.00	175.41	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,589.74	189.44	16,983
15,700.00	9,091.25	11,892.85	7,050.00	178.03	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,583.39	187.15	17,510
15,800.00	9,092.63	11,892.85	7,050.00	180.65	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,577.04	184.83	18,062
15,900.00	9,094.02	11,892.85	7,050.00	183.27	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,570.69	182.51	18,639
16,000.00	9,095.40	11,892.85	7,050.00	185.89	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,564.34	180.19	19,240
16,100.00	9,096.79	11,892.85	7,050.00	188.51	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,557.99	177.88	19,865
16,200.00	9,098.17	11,892.85	7,050.00	191.13	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,551.64	175.59	20,513
16,300.00	9,099.56	11,892.85	7,050.00	193.75	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,545.29	173.31	21,184
16,400.00	9,100.94	11,892.85	7,050.00	196.37	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,538.94	171.07	21,877
16,500.00	9,102.33	11,892.85	7,050.00	198.99	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,532.59	168.86	22,592
16,600.00	9,103.71	11,892.85	7,050.00	201.61	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,526.24	166.68	23,329
16,693.00	9,105.00	11,892.85	7,050.00	204.05	189.76	-39.48	-39.48	-39.48	-39.48	740.00	2,520.00	164.70	24,032

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Onyx PMU 29-28
 Site Error: 0.00 uft
 Reference Well: 12H
 Well Error: 0.00 uft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinates Reference: Well 12H
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
 IMD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
 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 TVD Error:																
Survey Program: 200-HS-GRO-46, 728-MWD-ISCWA, 12150-Project																	Offset TVD Error:																
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LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40 uft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TYD Reference: Offset Datum

Onyx PWU 29-28 - Mirage 30 PM State Com 1H (Offset) - OH - OH															Offset Site Error: 0.00 uft			
Survey Program: 200-NS-GYRO-MG 7288-MMO-SONSA, 12150-Project															Offset Well Error: 0.00 uft			
Reference																		
Measured	Vertical	Measured	Vertical	Offset	Semi Major Axis	Highside	Offshore Wellbore Centre	Distance	Minimum	Separation	Separation	Warning						
Depth	Depth	Depth	Depth	Depth	Reference	Footcandle	+N/S	Between	Between	Factor	Factor	Warning						
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(ft)	(uft)	Centras	Centras	(uft)	(uft)	(uft)						
5,100.00	5,058.71	5,077.76	5,076.49	13.54	8.85	18.02	-980.05	-455.83	564.63	544.39	20.23	27.904						
5,200.00	5,157.26	5,174.27	5,172.97	13.89	9.00	18.51	-958.57	-454.26	546.34	525.68	20.66	26.445						
5,300.00	5,255.81	5,273.14	5,271.82	14.24	9.17	19.01	-957.35	-452.47	528.24	507.15	21.10	25.038						
5,400.00	5,354.36	5,372.78	5,371.43	14.58	9.35	19.51	-956.14	-450.20	509.93	488.39	21.54	23.672						
5,500.00	5,452.91	5,468.54	5,467.15	14.93	9.54	19.96	-955.25	-447.63	491.66	469.66	22.01	22.342						
5,600.00	5,551.46	5,563.12	5,561.70	15.28	9.73	20.35	-955.39	-444.90	474.16	451.88	22.48	21.095						
5,700.00	5,650.01	5,659.89	5,658.40	15.63	9.93	20.69	-956.49	-441.89	457.32	434.37	22.96	19.922						
5,800.00	5,748.56	5,757.95	5,756.39	15.98	10.14	20.99	-958.07	-438.49	440.67	417.23	23.44	18.801						
5,900.00	5,847.11	5,855.54	5,854.90	16.33	10.35	21.23	-960.01	-434.74	424.10	400.18	23.92	17.727						
6,000.00	5,945.67	5,953.48	5,953.74	16.68	10.57	21.48	-961.98	-430.81	407.48	383.07	24.41	16.692						
6,100.00	6,044.22	6,053.39	6,051.55	17.03	10.78	21.75	-963.92	-426.93	390.86	365.95	24.91	15.693						
6,200.00	6,142.77	6,150.53	6,148.62	17.38	11.01	22.13	-965.78	-423.73	374.58	349.17	25.41	14.742						
6,300.00	6,241.32	6,247.93	6,245.97	17.73	11.23	22.64	-967.52	-421.24	358.70	332.77	25.92	13.838						
6,400.00	6,339.87	6,345.55	6,343.56	18.08	11.45	23.29	-969.21	-419.33	343.16	316.72	26.44	12.978						
6,500.00	6,438.42	6,442.92	6,440.91	18.43	11.66	24.08	-970.84	-418.00	328.01	301.05	26.97	12.163						
6,600.00	6,536.97	6,539.98	6,537.95	18.78	11.87	25.03	-972.52	-417.37	313.43	285.93	27.50	11.397						
6,700.00	6,635.52	6,637.48	6,635.44	19.13	12.06	26.18	-974.25	-417.45	299.48	271.44	28.03	10.683						
6,800.00	6,734.07	6,736.53	6,733.47	19.48	12.23	27.59	-975.70	-418.32	285.97	257.41	28.56	10.012						
6,900.00	6,832.62	6,833.90	6,831.82	19.84	12.38	29.33	-976.76	-419.86	272.94	243.83	29.11	9.377						
7,000.00	6,931.17	6,932.88	6,930.78	20.19	12.52	31.39	-977.37	-422.05	260.18	230.52	29.66	8.772						
7,100.00	7,029.72	7,031.84	7,029.70	20.55	12.65	33.81	-977.41	-424.53	247.71	217.47	30.24	8.191						
7,200.00	7,128.27	7,129.78	7,127.56	20.90	12.78	37.00	-975.82	-428.34	235.71	204.82	30.89	7.631						
7,300.25	7,158.09	7,157.71	7,155.45	21.01	12.77	37.98	-975.20	-429.59	232.42	201.35	31.08	7.479						
7,300.00	7,226.90	7,222.84	7,220.32	21.22	12.81	39.90	-975.79	-432.39	226.33	194.85	31.48	7.190						
7,380.60	7,306.57	7,289.67	7,287.19	21.41	12.84	41.41	-978.67	-435.65	222.46	190.46	32.00	6.952 CC ES						
7,400.00	7,325.78	7,301.00	7,298.44	21.46	12.84	41.70	-979.34	-436.86	222.78	190.66	32.13	6.935 SF						
7,500.00	7,424.91	7,371.50	7,367.41	21.70	12.85	44.31	-983.20	-450.56	233.20	200.75	32.44	7.168						
7,600.00	7,524.25	7,455.96	7,427.37	21.92	12.86	47.70	-985.96	-472.87	258.64	228.59	32.25	8.027						
7,700.00	7,623.77	7,487.84	7,462.99	22.13	12.92	51.11	-988.03	-501.47	287.55	265.84	31.71	9.382						
7,800.00	7,723.46	7,555.00	7,530.11	22.33	13.01	54.96	-987.85	-533.17	346.81	315.85	30.96	11.201						
7,900.00	7,823.26	7,607.33	7,570.74	22.52	13.14	57.99	-984.54	-565.94	404.47	374.34	30.13	13.426						
8,000.00	7,923.16	7,650.00	7,601.53	22.89	13.29	61.06	-979.32	-595.00	469.28	440.19	29.10	16.127						
8,100.00	8,023.12	7,682.00	7,623.00	22.85	13.43	63.69	-973.83	-618.08	540.26	512.34	27.92	19.351						
8,206.89	8,130.00	7,714.00	7,642.81	23.02	13.60	-97.47	-967.43	-642.37	621.86	594.98	26.88	23.136						
8,300.00	8,233.11	7,746.00	7,660.96	23.17	13.81	-96.05	-960.68	-667.84	696.65	670.35	26.30	26.484						
8,400.00	8,333.11	7,784.34	7,670.67	23.31	13.94	-95.31	-956.85	-692.92	778.67	754.25	25.42	30.676						
8,507.99	8,431.10	7,777.00	7,677.11	23.47	14.04	-94.85	-954.37	-693.54	872.03	847.52	24.50	35.587						
8,550.00	8,473.08	7,791.72	7,684.26	23.52	14.16	174.97	-951.69	-706.11	905.15	884.67	24.49	37.130						
8,600.00	8,522.72	7,797.74	7,687.10	23.59	14.22	174.05	-950.67	-711.33	905.45	891.15	24.29	39.330						
8,650.00	8,571.66	7,809.00	7,692.20	23.64	14.31	172.74	-948.86	-721.20	1,003.45	979.13	24.33	41.246						
8,700.00	8,619.54	7,809.00	7,692.20	23.68	14.31	168.89	-948.96	-721.20	1,052.46	1,028.25	24.21	43.474						
8,750.00	8,665.98	7,809.00	7,692.20	23.72	14.31	153.13	-948.86	-721.20	1,102.17	1,077.96	24.19	45.570						
8,800.00	8,710.64	7,809.00	7,692.20	23.75	14.31	39.59	-948.86	-721.20	1,152.13	1,127.88	24.25	47.516						
8,850.00	8,753.16	7,809.00	7,692.20	23.77	14.31	12.46	-948.86	-721.20	1,201.96	1,177.58	24.38	49.303						
8,900.00	8,793.24	7,809.00	7,692.20	23.78	14.31	7.17	-948.86	-721.20	1,251.31	1,226.74	24.57	50.920						
8,950.00	8,830.56	7,809.00	7,692.20	23.79	14.31	4.96	-948.86	-721.20	1,299.89	1,275.07	24.82	52.363						
9,000.00	8,864.84	7,795.73	7,686.17	23.80	14.20	3.97	-951.00	-709.58	1,347.18	1,322.27	24.90	54.097						
9,050.00	8,895.81	7,790.96	7,683.87	23.81	14.16	3.28	-951.84	-705.36	1,393.22	1,368.04	25.17	55.345						
9,100.00	8,923.25	7,777.00	7,677.11	23.82	14.04	2.93	-954.37	-693.54	1,437.76	1,412.41	25.35	56.722						
9,150.00	8,946.95	7,777.00	7,677.11	23.84	14.04	2.54	-954.37	-693.54	1,480.28	1,454.51	25.78	57.430						
9,200.00	8,968.72	7,777.00	7,677.11	23.87	14.04	2.25	-954.37	-693.54	1,520.92	1,494.69	26.23	57.981						
9,250.00	8,982.41	7,762.75	7,669.84	23.92	13.93	2.16	-957.17	-681.80	1,569.27	1,532.75	26.52	58.796						

LEAM Drilling Systems LLC
Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PMU 28-28
Site Error: 0.00 usft
Reference Well: 12H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
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

Survey Program: 200-NS-GYRO-MIS, 728-MWD-SCVSA, 12150-Project												Offset Design: Onyx PMU 28-28 - Mirage 30 PM State Com 1H (Offset) - OH - OH												Offset Site Error: 0.00 usft		Offset Well Error: 0.00 usft		
Measured		Vertical		Vertical		Offset		Semi Major Axis		Offset		Offset Wellbore Curve		Distance		Between		Between		Minimum		Separation		Factor		Warning		
Depth	(usft)	Depth	(usft)	Depth	(usft)	Reference	(usft)	Depth	(usft)	Reference	(usft)	Offset	(usft)	Highside	Tooface	Offset	(usft)	Offset	(usft)	Offset	(usft)	Offset	(usft)	Offset	(usft)	Offset	(usft)	Offset
9.300.00	8.993.91	7.748.00	7.890.96	24.00	13.81	2.12	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96
9.350.00	9.001.13	7.748.00	7.890.96	24.15	13.81	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96
9.400.00	9.004.00	7.748.00	7.890.96	24.30	13.81	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96
9.450.00	9.005.39	7.714.00	7.842.81	25.26	13.60	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09
9.500.00	9.006.77	7.699.20	7.833.86	26.58	13.52	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
9.550.00	9.008.16	7.682.00	7.823.00	28.18	13.43	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
9.600.00	9.009.54	7.667.91	7.813.75	29.95	13.37	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42
9.650.00	9.010.93	7.650.00	7.801.53	31.86	13.29	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
9.700.00	9.012.31	7.635.26	7.791.86	33.87	13.24	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
9.750.00	9.013.70	7.619.00	7.779.36	35.97	13.18	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64
9.800.00	9.015.08	7.606.23	7.769.92	38.14	13.14	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
9.850.00	9.016.47	7.597.00	7.755.29	40.36	13.09	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71
9.900.00	9.017.85	7.587.00	7.755.29	42.63	13.09	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71
9.950.00	9.019.24	7.555.00	7.730.11	44.94	13.01	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
10.000.00	9.020.62	7.555.00	7.730.11	47.28	13.01	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
10.050.00	9.022.01	7.555.00	7.730.11	49.66	13.01	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
10.100.00	9.023.39	7.523.00	7.703.93	52.05	12.96	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
10.150.00	9.024.78	7.523.00	7.703.93	54.47	12.96	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
10.200.00	9.026.16	7.523.00	7.703.93	56.91	12.96	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
10.250.00	9.027.54	7.507.01	7.680.44	59.37	12.93	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
10.300.00	9.028.93	7.491.00	7.676.67	61.84	12.91	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
10.350.00	9.030.31	7.481.00	7.676.67	64.33	12.91	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
10.400.00	9.031.70	7.461.00	7.676.67	66.82	12.91	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
10.450.00	9.033.08	7.477.86	7.685.20	69.33	12.90	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
10.500.00	9.034.47	7.463.00	7.685.20	71.84	12.89	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
10.550.00	9.035.85	7.460.00	7.685.20	74.37	12.89	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
10.600.00	9.037.24	7.460.00	7.685.20	76.90	12.89	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
10.650.00	9.038.62	7.460.00	7.685.20	79.44	12.89	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
10.700.00	9.040.01	7.460.00	7.685.20	81.98	12.89	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
10.750.00	9.041.39	7.428.00	7.620.44	84.53	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
10.800.00	9.042.78	7.428.00	7.620.44	87.09	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
10.850.00	9.044.16	7.428.00	7.620.44	89.65	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
10.900.00	9.045.55	7.428.00	7.620.44	92.21	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
10.950.00	9.046.93	7.428.00	7.620.44	94.78	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
11.000.00	9.048.32	7.428.00	7.620.44	97.35	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
11.050.00	9.049.70	7.428.00	7.620.44	99.93	12.87	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
11.100.00	9.051.09	7.412.25	7.605.90	102.51	12.87	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41
11.150.00	9.052.47	7.398.00	7.590.71	105.09	12.86	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
11.200.00	9.053.86	7.386.00	7.580.71	107.67	12.86	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
11.250.00	9.055.24	7.396.00	7.590.71																									

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County NM (NAD-83)
Reference Site: Onyx PMU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Mult User Db
Offset TVD Reference: Offset Datum

Offset Design														Offset Site Error:	
Survey Program: 200-NS-GTIO-MS, 728-4MCH-SCVSA, 12150-Project														Offset Well Error:	
Semi Major Axis														Warning	
Measured	Vertical	Depth	Depth	Depth	Offset	Reference	Offset	Highside	Offset Wellbore Centre	Distance	Between	Minimum	Separation		
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Toolface	+N/S	+E/W	Centres	Separation	Factor		
(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(uft)	(°)	(uft)	(uft)	(uft)	(uft)			
14,400.00	9,073.25	7,365.00	7,365.00	7,361.16	144.05	12.85	2.27	-982.88	-448.83	5,995.53	5,957.68	41.85	143.356		
14,500.00	9,074.63	7,365.00	7,365.00	7,361.16	146.66	12.85	2.27	-982.88	-448.83	6,095.79	6,053.85	41.94	145.333		
14,600.00	9,076.02	7,365.00	7,365.00	7,361.16	149.27	12.85	2.27	-982.88	-448.83	6,192.17	6,150.14	42.04	147.307		
14,700.00	9,077.40	7,365.00	7,365.00	7,361.16	151.88	12.85	2.27	-982.88	-448.83	6,288.67	6,246.54	42.13	149.276		
14,800.00	9,078.78	7,365.00	7,365.00	7,361.16	154.48	12.85	2.27	-982.88	-448.83	6,385.27	6,343.05	42.22	151.242		
14,900.00	9,080.17	7,365.00	7,365.00	7,361.16	157.10	12.85	2.27	-982.88	-448.83	6,481.97	6,439.66	42.31	153.203		
15,000.00	9,081.55	7,365.00	7,365.00	7,361.16	159.72	12.85	2.27	-982.88	-448.83	6,578.77	6,536.37	42.40	155.160		
15,100.00	9,082.94	7,365.00	7,365.00	7,361.16	162.33	12.85	2.27	-982.88	-448.83	6,675.67	6,633.18	42.49	157.111		
15,200.00	9,084.32	7,365.00	7,365.00	7,361.16	164.95	12.85	2.27	-982.88	-448.83	6,772.65	6,730.07	42.58	159.057		
15,300.00	9,085.71	7,365.00	7,365.00	7,361.16	167.56	12.85	2.27	-982.88	-448.83	6,869.73	6,827.06	42.67	160.996		
15,400.00	9,087.09	7,365.00	7,365.00	7,361.16	170.18	12.85	2.27	-982.88	-448.83	6,966.88	6,924.12	42.76	162.933		
15,500.00	9,088.48	7,365.00	7,365.00	7,361.16	172.80	12.85	2.27	-982.88	-448.83	7,064.12	7,021.27	42.85	164.862		
15,600.00	9,089.86	7,365.00	7,365.00	7,361.16	175.41	12.85	2.27	-982.88	-448.83	7,161.43	7,118.49	42.94	166.785		
15,700.00	9,091.25	7,365.00	7,365.00	7,361.16	178.03	12.85	2.27	-982.88	-448.83	7,258.81	7,215.79	43.03	168.701		
15,800.00	9,092.63	7,365.00	7,365.00	7,361.16	180.65	12.85	2.27	-982.88	-448.83	7,356.27	7,313.15	43.12	170.610		
15,900.00	9,094.02	7,365.00	7,365.00	7,361.16	183.27	12.85	2.27	-982.88	-448.83	7,453.79	7,410.58	43.21	172.513		
16,000.00	9,095.40	7,365.00	7,365.00	7,361.16	185.89	12.85	2.27	-982.88	-448.83	7,551.38	7,508.08	43.30	174.409		
16,100.00	9,096.79	7,365.00	7,365.00	7,361.16	188.51	12.85	2.27	-982.88	-448.83	7,649.03	7,605.64	43.39	176.297		
16,200.00	9,098.17	7,365.00	7,365.00	7,361.16	191.13	12.85	2.27	-982.88	-448.83	7,746.74	7,703.26	43.48	178.179		
16,300.00	9,099.56	7,349.66	7,349.66	7,346.29	193.75	12.85	2.22	-982.07	-445.13	7,844.21	7,800.61	43.60	179.813		
16,400.00	9,100.94	7,348.60	7,348.60	7,345.26	196.37	12.85	2.22	-982.02	-444.89	7,941.99	7,898.30	43.69	181.767		
16,500.00	9,102.33	7,333.00	7,333.00	7,330.01	198.99	12.84	2.17	-981.17	-441.73	8,040.09	7,996.27	43.62	183.491		
16,600.00	9,103.71	7,333.00	7,333.00	7,330.01	201.61	12.84	2.17	-981.17	-441.73	8,137.94	8,094.03	43.91	185.335		
16,693.00	9,105.00	7,333.00	7,333.00	7,330.01	204.05	12.84	2.17	-981.17	-441.73	8,228.98	8,184.98	43.96	187.044		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Slat: Onyx PMU 29-28
 Site Error: 0.00 uft
 Reference Well: 12H
 Well Error: 0.00 uft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
 MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
 North Reference: Gnd
 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										Parway West (Offsets) - 16' OH - OH										100-MHO-SCVMA									
Survey Program:										Offset Site Error:										Offset Well Error:									
Reference										Separation Factor										Minimum Separation									
Measured Depth (ft)										Separation Factor										Minimum Separation									
Vertical Depth (ft)										Separation Factor										Minimum Separation									
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Local Co-ordinate Reference: Well 12H
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 North Reference: Gnd
 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		Parkway West (Offsets) - 16'-OH - OH										Offset Site Error:							
Survey Program:		100-MWD-JSCMFA										Offset Wall Error:							
Reference		Semi Major Axis																	
		Vertical Offset																	
Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical	Measured	Vertical						
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth						
(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)	(unit)						
5.000	4.960	16	5.212	91	5.211	12	13.20	10.89	-107.76	-240.75	8.163	31	8.327	65	8.303	80	23.86	349	161
5.100	5.058	71	5.309	24	5.307	36	13.54	11.10	-107.89	-237.77	8.180	25	8.329	78	8.305	40	24.39	341	488
5.200	5.157	26	5.410	32	5.408	33	13.89	11.32	-108.02	-234.51	8.177	03	8.331	96	8.307	01	24.96	334	006
5.300	5.255	81	5.509	58	5.507	48	14.24	11.54	-108.16	-231.09	8.173	84	8.334	16	8.308	66	25.50	326	872
5.400	5.354	36	5.606	25	5.604	10	14.58	11.80	-108.32	-228.52	8.169	93	8.336	29	8.310	20	26.06	319	586
5.500	5.452	91	5.744	35	5.741	86	14.93	12.07	-108.49	-226.55	8.165	62	8.338	22	8.311	54	26.68	312	565
5.600	5.551	46	5.868	27	5.865	53	15.28	12.33	-108.66	-214.18	8.161	21	8.340	01	8.312	74	27.26	305	917
5.700	5.650	01	5.961	19	5.958	20	15.63	12.56	-108.81	-208.35	8.157	06	8.341	69	8.313	87	27.83	299	777
5.800	5.748	56	6.063	47	6.060	23	15.98	12.77	-108.95	-203.82	8.153	34	8.343	46	8.315	09	28.37	294	108
5.900	5.847	11	6.151	20	6.147	71	16.33	12.98	-108.10	-197.04	8.149	47	8.345	34	8.316	42	28.92	288	586
6.000	5.945	67	6.247	5	6.250	99	16.68	13.23	-109.27	-190.68	8.144	86	8.347	18	8.317	89	29.50	282	995
6.100	6.044	22	6.353	43	6.349	47	17.03	13.43	-109.40	-186.07	8.141	16	8.348	95	8.318	94	30.03	278	032
6.200	6.142	77	6.453	84	6.419	75	17.38	13.58	-109.50	-182.77	8.138	46	8.351	05	8.320	52	30.53	273	554
6.300	6.241	32	6.500	00	6.495	90	17.73	13.75	-109.61	-179.41	8.135	87	8.353	59	8.322	56	31.04	269	147
6.400	6.338	87	6.541	01	6.536	75	18.08	13.84	-109.67	-177.67	8.134	67	8.356	60	8.325	12	31.48	265	457
6.500	6.436	42	6.600	00	6.595	88	18.43	13.97	-109.75	-175.30	8.133	25	8.360	20	8.328	24	31.96	261	599
6.600	6.535	97	6.659	96	6.635	80	18.78	14.05	-109.80	-173.78	8.132	53	8.362	40	8.332	00	32.40	258	165
6.700	6.635	52	6.700	00	6.695	59	19.13	14.18	-109.88	-171.51	8.131	87	8.369	30	8.336	43	32.88	254	568
6.800	6.734	07	6.782	89	6.726	46	19.49	14.25	-109.93	-170.29	8.131	71	8.374	80	8.341	50	33.30	251	473
6.900	6.832	62	6.800	00	6.795	53	19.84	14.39	-110.02	-167.84	8.131	78	8.380	97	8.347	18	33.78	248	020
7.000	6.931	17	6.864	92	6.860	40	20.19	14.53	-110.10	-165.53	8.132	10	8.387	56	8.353	28	34.26	244	712
7.100	7.028	72	6.967	07	6.961	50	20.55	14.74	-110.24	-162.05	8.132	59	8.394	24	8.359	41	34.83	241	035
7.200	7.128	27	7.064	10	7.079	46	20.90	14.99	-110.39	-158.17	8.133	03	8.400	85	8.365	44	35.41	237	267
7.300	7.230	25	7.158	09	7.170	36	21.01	15.06	-110.44	-157.04	8.133	10	8.402	80	8.367	21	35.99	236	132
7.400	7.300	72	7.201	30	7.216	31	21.22	15.23	-110.59	-154.87	8.132	25	8.407	09	8.371	13	36.85	233	865
7.500	7.400	73	7.325	78	7.321	14	21.46	15.46	-110.75	-152.87	8.133	25	8.412	59	8.376	17	36.42	230	626
7.600	7.500	04	7.424	91	7.413	13	21.70	15.68	-110.89	-151.45	8.132	27	8.417	44	8.380	59	36.86	228	368
7.700	7.600	75	7.524	25	7.588	23	21.82	16.04	-111.07	-146.19	8.132	64							

Company:	Devon Energy
Project:	Eddy County, NM (NAD-83)
Reference Site:	Omyx PMU 29-28
Site Error:	0.00 usft
Reference Well:	12H
Well Error:	0.00 usft
Reference Wellbore:	OH
Reference Design:	Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset: Offset Default

[illegible]

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 uft
Reference Well: 12H
Well Error: 0.00 uft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40uft
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										Parkway West (Offsets) - 16 - OH - OH				Offset Site Error:		Offset Well Error:	
Survey Program: 100-MWD-SCWSA										Well Major Axis				0.00 uft		0.00 uft	
Measured Depth (uft)	Vertical Depth (uft)	Offset Depth (uft)	Measured Depth (uft)	Vertical Depth (uft)	Offset Depth (uft)	Reference Depth (uft)	Offset Depth (uft)	Highside Toolbars (")	Offset Wellbore Centre -CL-W (uft)	Distance		Between Centres (uft)	Between Ellipses (uft)	Minimum Separation (uft)	Separation Factor	Warning	
14,300.00	9,071.86	9,121.65	9,116.37	141.44	19.24	-90.88	-162.99	8,110.00	3,007.28	2,939.53	67.75	44.388					
14,400.00	9,073.25	9,121.70	9,116.43	144.05	19.24	-90.88	-162.99	8,110.00	2,910.59	2,841.22	69.37	41.958					
14,500.00	9,074.63	9,121.76	9,116.49	146.66	19.24	-90.89	-163.00	8,110.00	2,814.13	2,743.02	71.11	39.575					
14,600.00	9,076.02	9,121.82	9,116.55	149.27	19.24	-90.89	-163.00	8,110.00	2,717.93	2,644.95	72.98	37.240					
14,700.00	9,077.40	9,121.88	9,116.60	151.88	19.24	-90.90	-163.00	8,110.00	2,622.01	2,547.01	75.01	34.950					
14,800.00	9,078.78	9,121.93	9,116.66	154.49	19.24	-90.90	-163.00	8,110.00	2,526.41	2,449.22	77.19	32.730					
14,900.00	9,080.17	9,121.99	9,116.72	157.10	19.24	-90.91	-163.00	8,110.00	2,431.17	2,351.61	79.56	30.559					
15,000.00	9,081.55	9,122.05	9,116.78	159.72	19.24	-90.91	-163.00	8,110.00	2,336.32	2,254.20	82.12	28.450					
15,100.00	9,082.94	9,122.11	9,116.83	162.33	19.24	-90.92	-163.00	8,109.99	2,241.92	2,157.01	84.91	26.404					
15,200.00	9,084.32	9,122.16	9,116.89	164.95	19.24	-90.92	-163.00	8,109.99	2,148.03	2,060.08	87.95	24.424					
15,300.00	9,085.71	9,122.22	9,116.95	167.56	19.24	-90.92	-163.00	8,109.99	2,054.71	1,963.44	91.27	22.514					
15,400.00	9,087.09	9,122.28	9,117.01	170.18	19.24	-90.93	-163.00	8,109.99	1,962.05	1,867.15	94.90	20.675					
15,500.00	9,088.48	9,122.33	9,117.06	172.80	19.24	-90.93	-163.01	8,109.99	1,870.15	1,771.27	98.88	18.913					
15,600.00	9,089.86	9,122.39	9,117.12	175.41	19.24	-90.94	-163.01	8,109.99	1,779.12	1,675.96	103.26	17.230					
15,700.00	9,091.25	9,122.45	9,117.18	178.03	19.24	-90.94	-163.01	8,109.99	1,688.10	1,581.02	108.08	15.628					
15,800.00	9,092.63	9,122.51	9,117.23	180.65	19.24	-90.95	-163.01	8,109.99	1,590.28	1,486.87	113.41	14.111					
15,900.00	9,094.02	9,122.57	9,117.29	183.27	19.24	-90.95	-163.01	8,109.99	1,512.84	1,393.55	119.29	12.682					
16,000.00	9,095.40	9,122.62	9,117.35	185.89	19.24	-90.95	-163.01	8,109.99	1,427.06	1,301.25	125.81	11.343					
16,100.00	9,096.79	9,122.68	9,117.41	188.51	19.24	-90.96	-163.01	8,109.99	1,343.26	1,210.23	133.03	10.098					
16,200.00	9,098.17	9,122.74	9,117.47	191.13	19.24	-90.96	-163.01	8,109.99	1,261.80	1,120.79	141.01	8.948					
16,300.00	9,099.56	9,122.80	9,117.52	193.75	19.24	-90.97	-163.01	8,109.99	1,183.19	1,033.38	148.81	7.889					
16,400.00	9,100.94	9,122.85	9,117.58	196.37	19.24	-90.97	-163.01	8,109.98	1,108.04	948.57	159.48	6.948					
16,500.00	9,102.33	9,122.91	9,117.64	198.99	19.24	-90.98	-163.02	8,109.98	1,037.10	867.13	169.97	6.102					
16,600.00	9,103.71	9,122.97	9,117.70	201.61	19.24	-90.98	-163.02	8,109.98	971.26	790.09	181.19	5.361					
16,693.00	9,105.00	9,123.02	9,117.75	204.05	19.24	-90.98	-163.02	8,109.98	915.64	723.58	192.07	4.767 CC. SF					

Company:	Devon Energy
Project:	Eddy County, NM (NAD-83)
Reference Site:	Onyx PMU 29-28
Site Error:	0.00 uft
Reference Well:	12H
Well Error:	0.00 uft
Reference Wellbore:	OH
Reference Design:	Plan #2

Well 12H
3307.9' GE + 23.5' KB @ 3331.40usft
3307.9' GE + 23.5' KB @ 3331.40usft
Gnd
Minimum Curvature
2.00 sigma
EDM 5000.1 Multi User Db
Offset Datum

[illegible]

Company:	Devon Energy	Well 12H
Project:	Eddy County, NM (NAD-83)	3307' 9" GE + 23.5' KB @ 3331.40usft
Reference Site:	Onyx PWU 29-28	3307' 9" GE + 23.5' KB @ 3331.40usft
Site Error:	0.00 usft	Grid
Reference Well:	12H	Minimum Curvature
Well Error:	0.00 usft	2.00 sigma
Reference Wellbore	OH	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset Datum
Survey Calculation Method:	Output errors are at	
North Reference:	Survey Calculation Method:	
MD Reference:	Database:	
Local Co-ordinate Reference:	Offset TVD Reference:	
TVD Reference:		

[illegible]

Local Co-ordinates Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
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

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: Eddy County, NM (NAD-83)
Reference Site: Onyx PWU 29-28
Site Error: 0.00 usft
Reference Well: 12H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well 12H
TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
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

Parkway West (Offsets) - Unit 28 3 - OH - OH										0.00 unit						
Survey Program: 100-MWD-SCVSA										0.00 unit						
Measured Depth (usft)	Vertical Depth (usft)	Vertical Depth (usft)	Offset Depth (usft)	Reference Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore +N/-S (usft)	+E/-W (usft)	Distance		Minimum Separation (usft)	Separation Factor	Warning	Offset Site Error:	Offset Well Error:
					(usft)	(usft)				Between Centres (usft)	Between Ellipses (usft)					
14,500.00	9,074.63	9,056.23	9,054.77	146.86	18.84	-88.70	70.46	6,266.19	1,314.65	1,179.89	134.76	9.756				
14,600.00	9,076.02	9,058.01	9,056.54	149.27	18.84	-88.80	70.47	6,266.19	1,251.00	1,109.10	141.90	8.816				
14,700.00	9,077.40	9,059.79	9,058.32	151.88	18.85	-88.90	70.48	6,266.20	1,192.35	1,043.06	149.29	7.987				
14,800.00	9,078.78	9,061.57	9,060.10	154.49	18.85	-89.01	70.50	6,266.21	1,139.47	992.69	156.78	7.268				
14,900.00	9,080.17	9,063.36	9,061.89	157.10	18.85	-89.11	70.51	6,266.22	1,093.19	928.03	164.16	6.659				
15,000.00	9,081.55	9,065.15	9,063.68	159.72	18.86	-89.21	70.52	6,266.23	1,054.39	883.25	171.14	6.161				
15,100.00	9,082.94	9,066.95	9,065.48	162.33	18.86	-89.32	70.53	6,266.23	1,023.92	846.53	177.39	5.772				
15,200.00	9,084.32	9,068.75	9,067.28	164.95	18.87	-89.42	70.55	6,266.24	1,002.53	819.96	182.58	5.491				
15,300.00	9,085.71	9,070.56	9,069.09	167.56	18.87	-89.53	70.56	6,266.25	980.62	804.46	186.37	5.316				
15,366.76	9,086.63	9,071.77	9,070.30	169.31	18.87	-89.60	70.57	6,266.26	968.57	800.55	188.02	5.258 CC ES				
15,400.00	9,087.09	9,072.38	9,070.91	170.18	18.87	-89.63	70.57	6,266.26	965.13	800.57	188.56	5.248 SF				
15,500.00	9,088.46	9,074.20	9,072.73	172.80	18.88	-89.74	70.58	6,266.27	957.51	808.44	189.07	5.276				
15,600.00	9,089.86	9,076.02	9,074.55	175.41	18.88	-89.84	70.60	6,266.27	1,015.71	827.75	187.96	5.404				
15,700.00	9,091.25	9,077.85	9,076.38	178.03	18.88	-89.95	70.61	6,266.28	1,043.21	857.79	185.42	5.626				
15,800.00	9,092.63	9,079.69	9,078.22	180.65	18.89	-90.06	70.62	6,266.29	1,079.31	897.56	181.75	5.939				
15,900.00	9,094.02	9,081.53	9,080.06	183.27	18.89	-90.16	70.64	6,266.30	1,123.18	945.94	177.24	6.337				
16,000.00	9,095.40	9,083.38	9,081.91	185.89	18.90	-90.27	70.65	6,266.31	1,173.94	1,001.75	172.19	6.818				
16,100.00	9,096.79	9,085.23	9,083.76	188.51	18.90	-90.38	70.66	6,266.32	1,230.75	1,063.88	166.86	7.376				
16,200.00	9,098.17	9,087.09	9,085.62	191.13	18.90	-90.49	70.68	6,266.33	1,292.80	1,131.35	161.45	8.007				
16,300.00	9,099.56	9,088.95	9,087.48	193.75	18.91	-90.59	70.69	6,266.34	1,359.38	1,203.28	156.10	8.708				
16,400.00	9,100.94	9,090.82	9,089.35	196.37	18.91	-90.70	70.70	6,266.34	1,428.86	1,278.94	150.92	9.474				
16,500.00	9,102.33	9,092.70	9,091.23	198.98	18.92	-90.81	70.72	6,266.35	1,503.69	1,357.72	145.96	10.302				
16,600.00	9,103.71	9,094.58	9,093.11	201.61	18.92	-90.92	70.73	6,266.36	1,580.39	1,439.12	141.27	11.187				
16,693.00	9,105.00	9,096.33	9,094.86	204.05	18.92	-91.02	70.74	6,266.37	1,653.96	1,516.81	137.15	12.058				

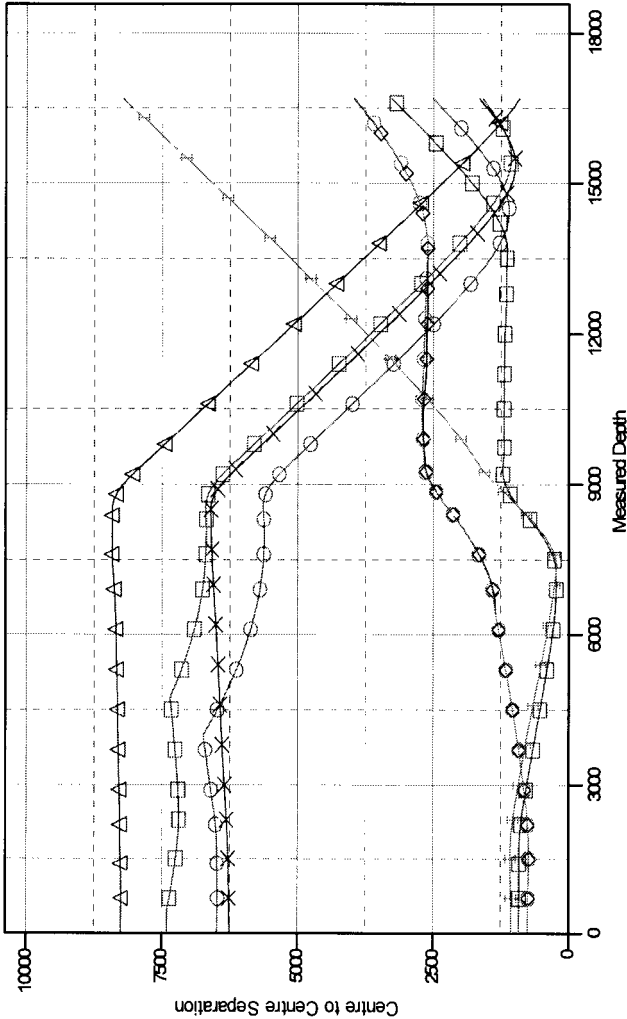
LEAM Drilling Systems LLC
Anticollision Report

Company:	Devon Energy	Well 12H
Project:	Eddy County, NM (NAD-83)	3307.9' GE + 23.5' KB @ 3331.40usft
Reference Site:	Onyx PMU 29-28	3307.9' GE + 23.5' KB @ 3331.40usft
Site Error:	0.00 usft	Grid
Reference Well:	12H	Minimum Curvature
Well Error:	0.00 usft	2.00 sigma
Reference Wellbore:	OH	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset Datum

Reference Depths are relative to 3307.9' GE + 23.5' KB @ 3331.40usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 12H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.12°

Ladder Plot



LEGEND

- 1H, OH, OH V0
- 2H, OH, OH V0
- Onyx PMU 29 #4H, OH, OH V0
- 7H, OH, OH (Actual) V0
- 7H, OH, Plan #1 - Draft #4 V0
- Mirage 30 PM State Com 1H (Offset), OH, OH V0
- 16, OH, OH V0
- Unit 283, OH, OH V0

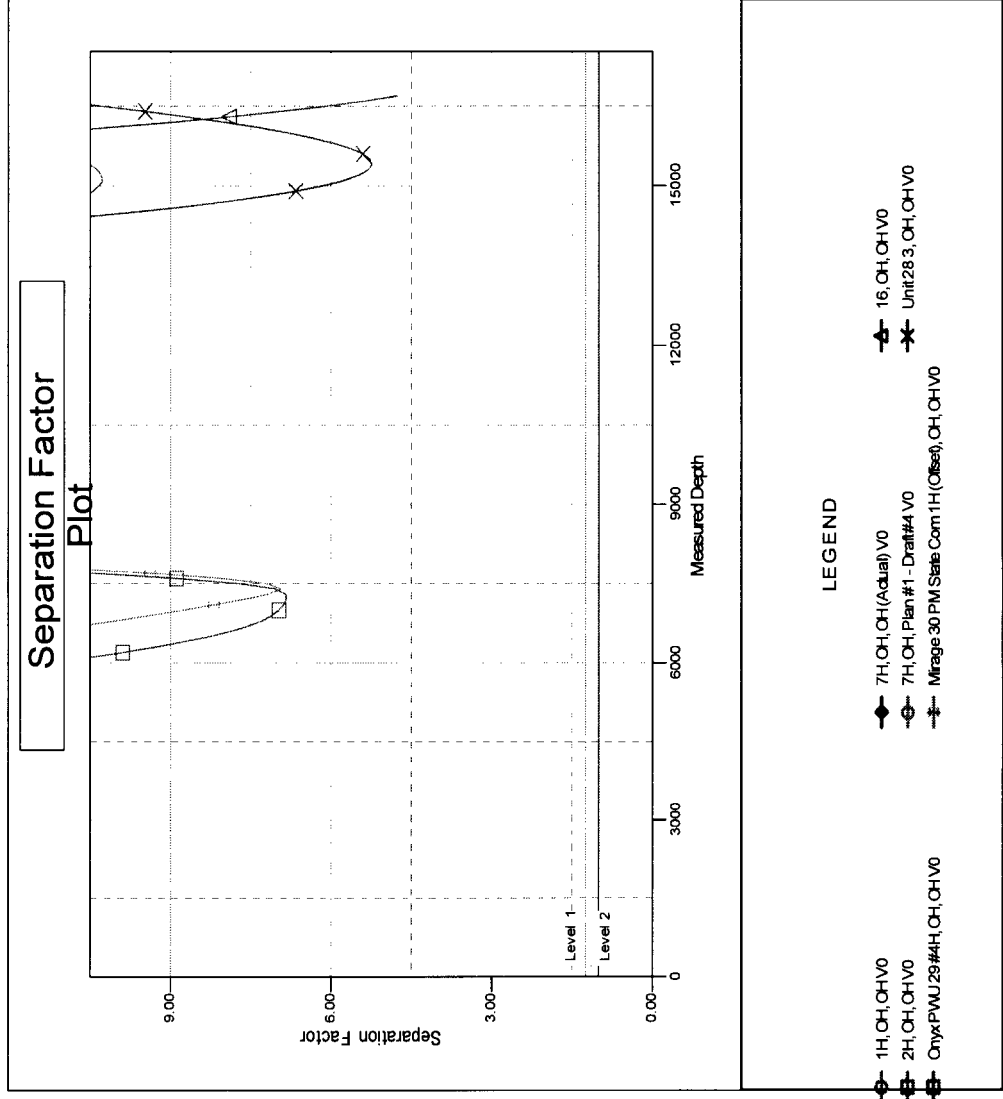
LEAM Drilling Systems LLC Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Onyx PMU 29-28
 Site Error: 0.00 usft
 Reference Well: 12H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #2

Local Co-ordinate Reference:
 TVD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 MD Reference: 3307.9' GE + 23.5' KB @ 3331.40usft
 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 3307.9' GE + 23.5' KB @ 3331.40usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 12H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.12"



Devon Energy

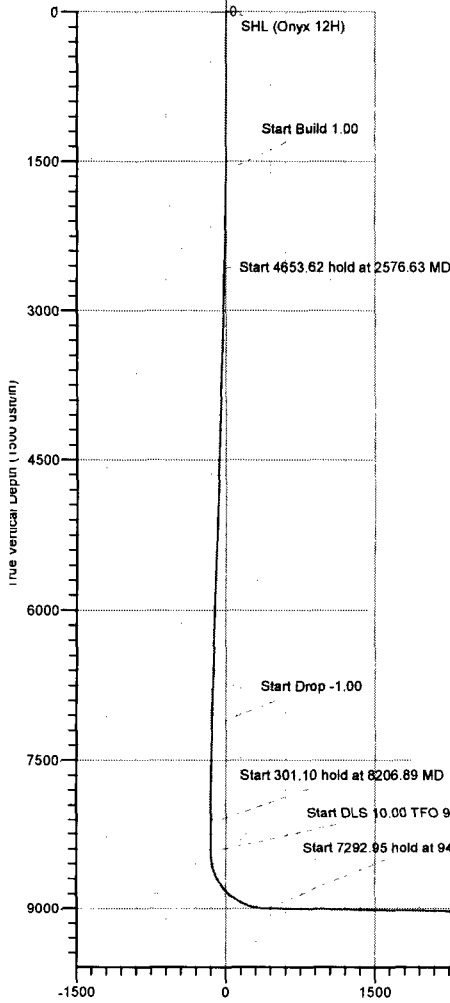
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 12H
Wellbore: OH
Design: Plan #2

3307.9' GE + 23.5' KB @ 3331.40usft
Ground Level: 3307.90



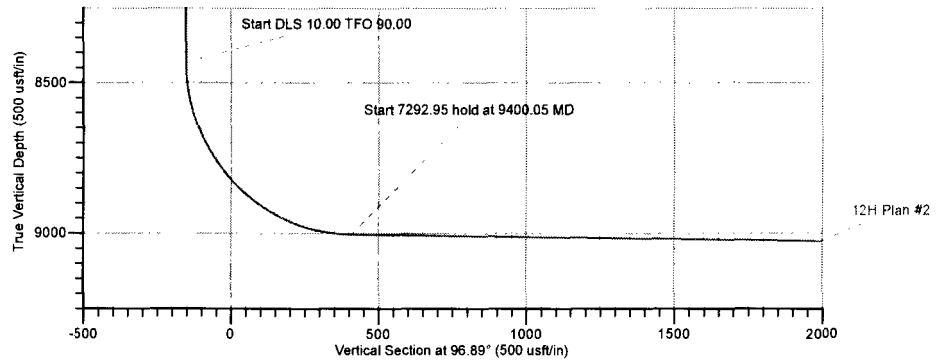
Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.31°
Magnetic Field
Strength: 48198.7anT
Dip Angle: 60.50°
Date: 6/28/2017
Model: HDGM

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



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	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
2576.63	9.77	198.10	2571.91	-79.78	-23.03	1.00	196.10	-13.29	Start 4653.62 hold at 2576.63 MD
7230.25	9.77	198.10	7158.09	-838.20	-241.97	0.00	0.00	-139.61	Start Drop -1.00
8206.89	0.00	0.00	8130.00	-917.98	-265.00	1.00	180.00	-152.89	Start 301.10 hold at 8206.89 MD
8507.99	0.00	0.00	8431.10	-917.98	-265.00	0.00	0.00	-152.89	Start DLS 10.00 TFO 90.00
9400.05	89.21	90.00	9004.00	-917.98	300.02	10.00	90.00	408.04	Start 7292.95 hold at 9400.05 MD
16693.00	89.21	90.00	9105.00	-917.98	7592.27	0.00	0.00	7647.57	TD at 16693.00

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (Onyx 12H)	9105.00	-917.98	7592.27	32° 37' 31.503 N	104° 4' 47.551 W
SHL (Onyx 12H)	0.00	0.00	0.00	32° 37' 40.757 N	104° 6' 16.306 W



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

Plan: Plan #2 (12H/OH)
Onyx PWU 29-28
Created By: Dustin Ault
Date: 12-28, July 28 2017
Approved: _____
Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)

Site: Onyx PWU 29-28

Well: 12H

Wellbore: OH

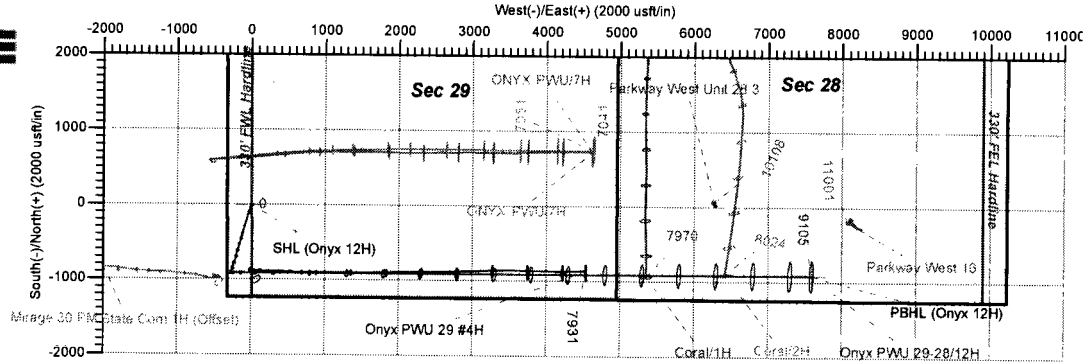
Design: Plan #2

devon



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.31°

Magnetic Field
Strength: 48198.7 nT
Dip Angle: 60.50°
Date: 6/28/2017
Model: HDGM



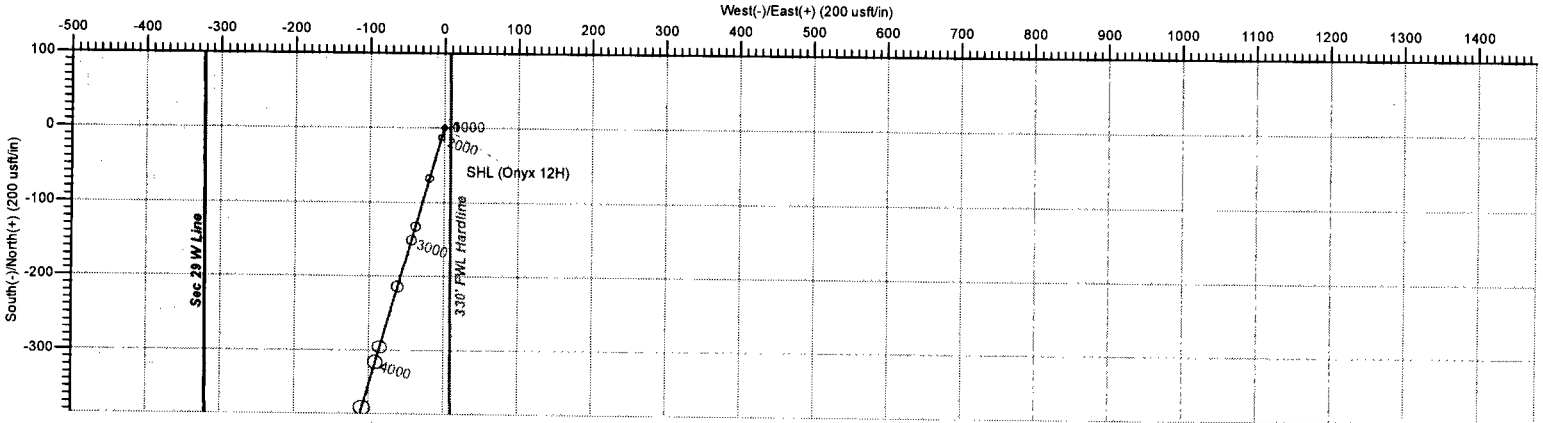
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Onyx 12H)	0.00	0.00	0.00	592268.73	611776.35	32° 37' 40.757 N	104° 6' 16.306 W
PBHL (Onyx 12H)	9105.00	-917.98	7592.27	591350.75	619368.62	32° 37' 31.503 N	104° 4' 47.551 W

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

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
2576.63	9.77	196.10	2571.91	-79.78	-23.03	1.00	196.10	-13.29	Start 4653.62 hold at 2576.63 MD
7230.25	9.77	196.10	7158.09	-838.20	-241.97	0.00	0.00	-139.61	Start Drop -1.00
8206.89	0.00	0.00	8130.00	-917.98	-265.00	1.00	180.00	-152.89	Start 301.10 hold at 8206.89 MD
8507.99	0.00	0.00	8431.10	-917.98	-265.00	0.00	0.00	-152.89	Start DLS 10.00 TFO 90.00
9400.05	89.21	90.00	9004.00	-917.98	300.02	10.00	90.00	408.04	Start 7292.95 hold at 9400.05 MD
16693.00	89.21	90.00	9105.00	-917.98	7592.27	0.00	0.00	7647.57	TD at 16693.00



Onyx PWU 29-28/12H

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

Plan: Plan #2 (12H/OH)
Onyx PWU 29-28
Created By: Dustin Ault
Date: 12-29 July 2017
Approved: _____
Date: _____