

Submit 1 Copy To Appropriate District Office
 District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III – (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

WELL API NO. 30-015-49187
5. Indicate Type of Lease STATE ☐ FEE ☒
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Astrodog Fee 0809
8. Well Number 111H
9. OGRID Number 372920
10. Pool name or Wildcat Culebra Bluff; Bone Spring South

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐	
2. Name of Operator Novo Oil & Gas Northern Delaware, LLC	
3. Address of Operator 1001 West Wilshire Blvd Suite 206 Oklahoma City OK 73116	
4. Well Location Unit Letter C <u>575 feet from the North line and 2118 feet from the West line</u> Section <u>8</u> Township <u>23S</u> Range <u>29E</u> NMPM <u>County Eddy</u>	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 2984	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☒	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Request to change well name to Astrodog 0810 Fee 111H (well was incorrectly labeled by NMOCD).

Request to move the Surface Hole Location from 575' FNL & 2118' FWL, Section 8, T 23S, R 29E to 1663' FNL & 1756' FWL, Section 8, T 23S, R 29E

Request to move the Bottom Hole Location from 330' FNL & 2630' FWL, Section 10, T 23S, R 29E to 707' FNL & 2630' FWL, Section 10, T 23S, R 29E

Please see attached drill plan for detailed information regarding changes to casing, cement, and mud program. Also attached are revised plat, directional plan, and Anti-Collision report.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

Cory Walk

DATE 8/7/23

Type or print name Cory Walk E-mail address: cory@permitswest.com PHONE: 505-466-8120

For State Use Only

APPROVED BY: Dean R McClure TITLE Petroleum Engineer DATE 01/17/2024

Conditions of Approval (if any):

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

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-49187	² Pool Code 15011	³ Pool Name CULEBRA BLUFF; BONE SPRING, SOUTH
⁴ Property Code 327177	⁵ Property Name ASTRODOG 0810 FEE	⁶ Well Number 111H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 2981.3

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	8	23 S	29 E		1663	NORTH	1756	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	10	23 S	29 E		707	NORTH	2630	WEST	EDDY

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <u>Cory Walk</u> Date: <u>7-21-2023</u> Printed Name: <u>Cory Walk</u> E-mail Address: <u>cory@permitswest.com</u> 18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. May 12, 2023 Date of Survey Signature and Seal of Professional Surveyor: <u>[Signature]</u> Certificate Number: <u>12797</u> Surveyor: <u>JOSEPH E. JARAMILLO, PLS 12797</u> Survey No. <u>9126B</u>
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Intent ☐ As Drilled ☐

API #		
Operator Name: NOVO OIL & GAS NORTHERN DELAWARE, LLC	Property Name: ASTRODOG 0810 FEE	Well Number 111H

Kick Off Point (KOP)

UL C	Section 8	Township 23S	Range 29E	Lot	Feet 1072	From N/S NORTH	Feet 2390	From E/W WEST	County EDDY
Latitude 32.3240829					Longitude 104.0079025			NAD 83	

First Take Point (FTP)

UL B	Section 8	Township 23S	Range 29E	Lot	Feet 707	From N/S NORTH	Feet 2540	From E/W EAST	County EDDY
Latitude 32.3250974					Longitude 104.0067084			NAD 83	

Last Take Point (LTP)

UL C	Section 10	Township 23S	Range 29E	Lot	Feet 707	From N/S NORTH	Feet 2540	From E/W WEST	County EDDY
Latitude 32.3251185					Longitude 103.9730451			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

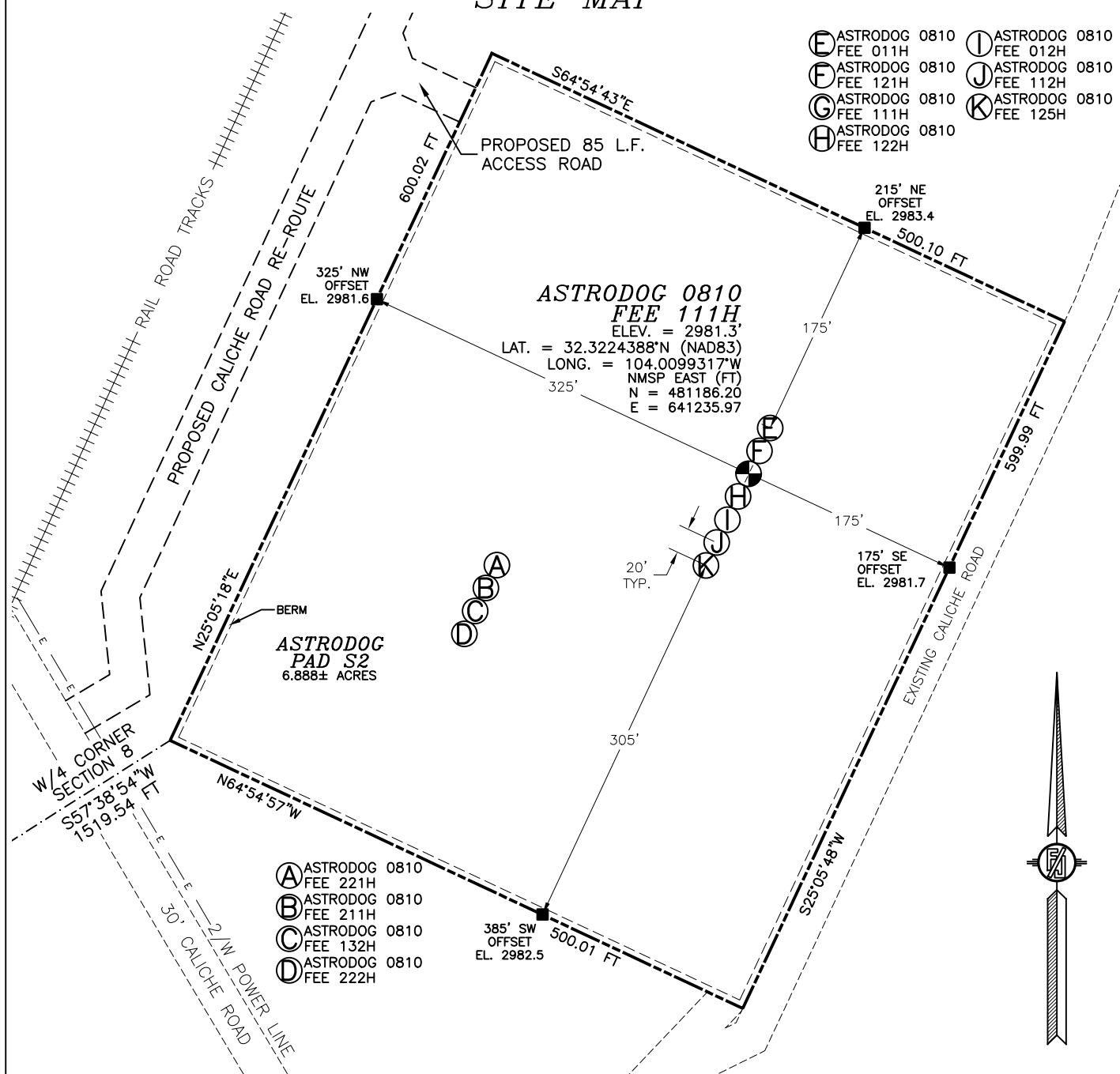
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

(E) ASTRODOG 0810 FEE 011H
 (F) ASTRODOG 0810 FEE 121H
 (G) ASTRODOG 0810 FEE 111H
 (H) ASTRODOG 0810 FEE 122H
 (I) ASTRODOG 0810 FEE 012H
 (J) ASTRODOG 0810 FEE 112H
 (K) ASTRODOG 0810 FEE 125H



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM STATE HWY 31 AND REFINERY ROAD, GO NORTH-NORTHEAST ON HWY 31 1.1 MILES, TURN RIGHT ON CALICHE ROAD (POTASH MINE ROAD) AND GO SOUTH-SOUTHEAST APPROX. 0.7 MILES CROSS RAILROAD TRACKS, TURN LEFT AND GO NORTHEAST 356' TO THE SOUTH CORNER OF PAD FOR THIS LOCATION.

I, FILIMON F. JARAMILA, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DEEMED MYSELF RESPONSIBLE FOR THIS SURVEY AND THAT I HAVE NOT BEEN REJECTED TO THE BEST OF MY KNOWLEDGE AND BELIEF. I HAVE OBSERVED AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILA 2797

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3327

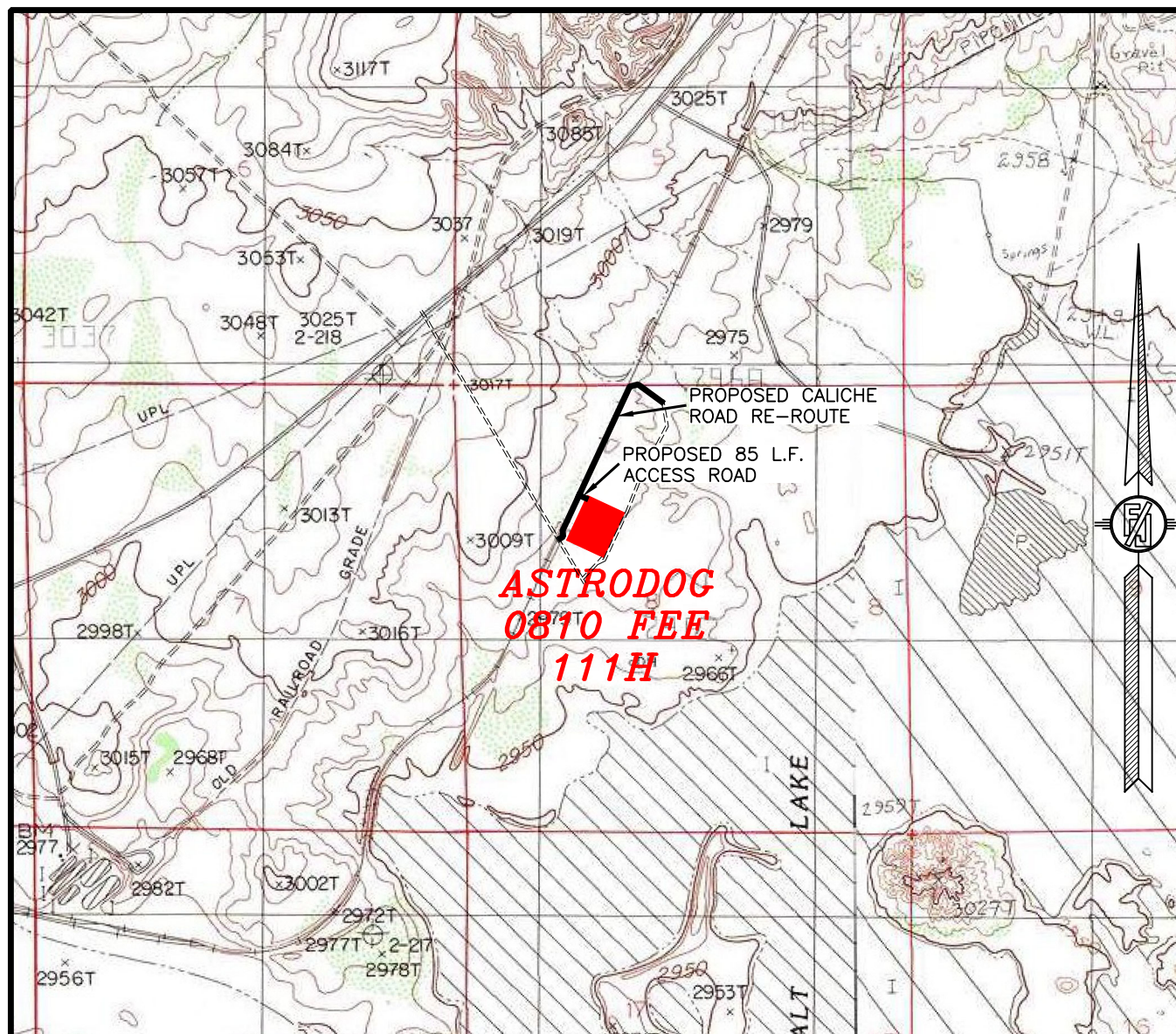
NOVO OIL & GAS NORTHERN DELAWARE, LLC
ASTRODOG 0810 FEE 111H
LOCATED 1663 FT. FROM THE NORTH LINE
AND 1756 FT. FROM THE WEST LINE OF
SECTION 8, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 12, 2023

SURVEY NO. 9126B

CARLSBAD, NEW MEXICO

SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LOCATION VERIFICATION MAP



USGS QUAD MAP:
 LOVING

NOT TO SCALE

NOVO OIL & GAS NORTHERN DELAWARE, LLC
ASTRODOG 0810 FEE 111H
 LOCATED 1663 FT. FROM THE NORTH LINE
 AND 1756 FT. FROM THE WEST LINE OF
 SECTION 8, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

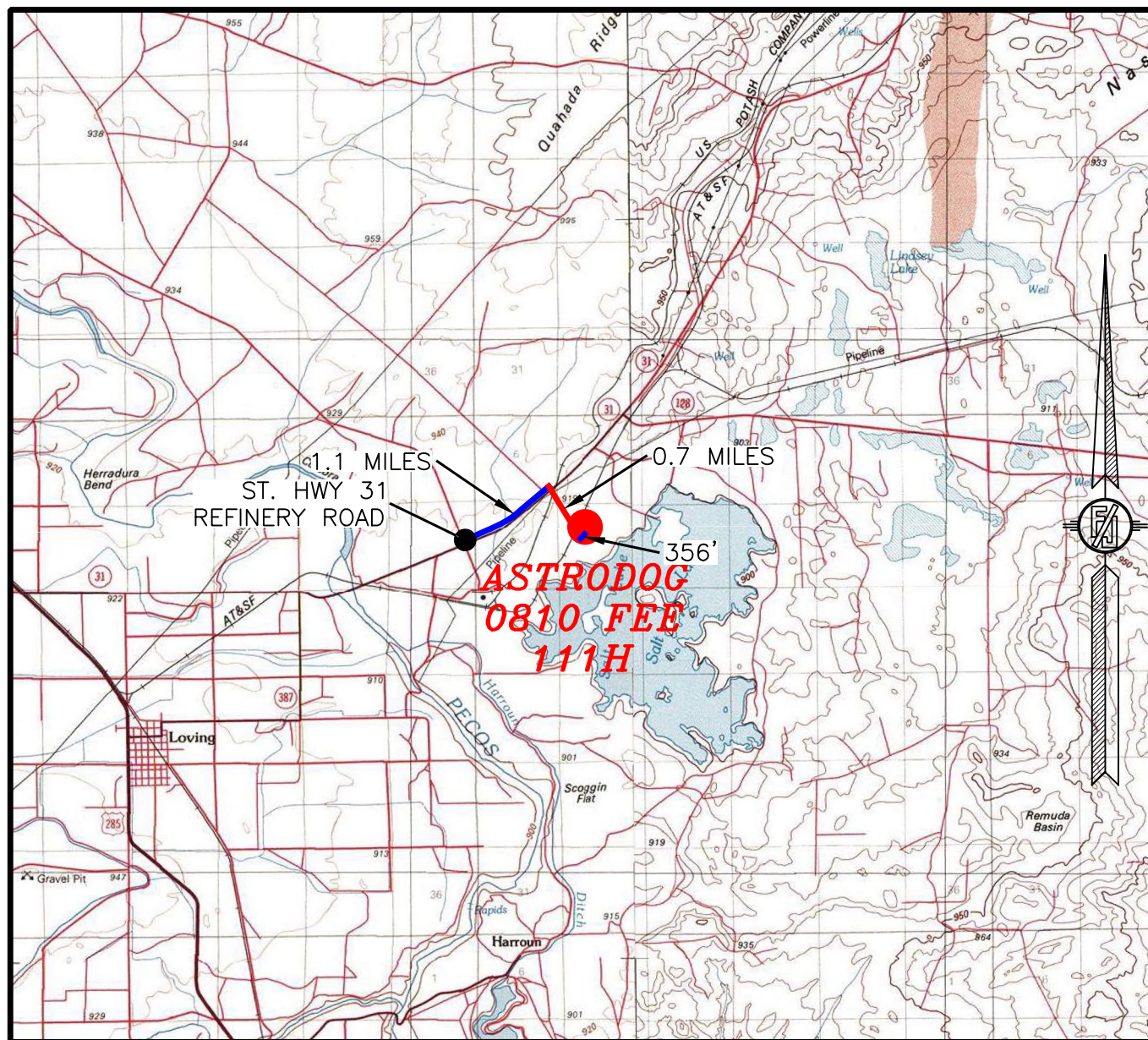
MAY 12, 2023

MADRON SURVEYING, INC.

301 SOUTH CANAL
 (575) 234-3327

SURVEY NO. 9126B
 CARLSBAD, NEW MEXICO

SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM STATE HWY 31 AND REFINERY ROAD, GO NORTH-NORTHEAST ON HWY 31 1.1 MILES, TURN RIGHT ON CALICHE ROAD (POTASH MINE ROAD) AND GO SOUTH-SOUTHEAST APPROX. 0.7 MILES CROSS RAILROAD TRACKS, TURN LEFT AND GO NORTHEAST 356' TO THE SOUTH CORNER OF PAD FOR THIS LOCATION.

NOVO OIL & GAS NORTHERN DELAWARE, LLC

ASTRODOG 0810 FEE 111H

LOCATED 1663 FT. FROM THE NORTH LINE
 AND 1756 FT. FROM THE WEST LINE OF
 SECTION 8, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MAY 12, 2023

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327

SURVEY NO. 9126B
 CARLSBAD, NEW MEXICO

SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 AERIAL PHOTO



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 DEC. 2019

NOVO OIL & GAS NORTHERN DELAWARE, LLC
ASTRODOG 0810 FEE 111H
 LOCATED 1663 FT. FROM THE NORTH LINE
 AND 1756 FT. FROM THE WEST LINE OF
 SECTION 8, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

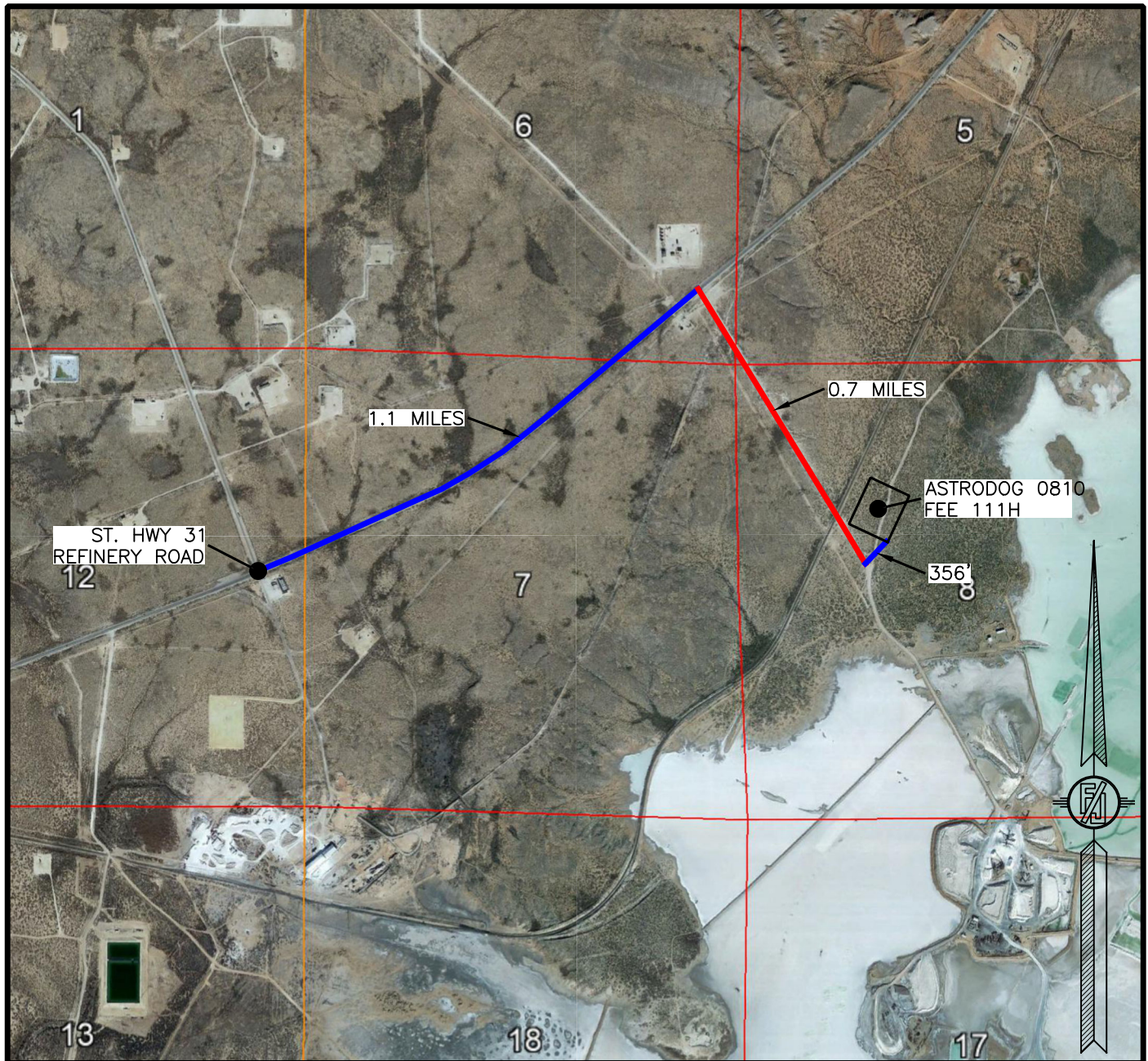
MAY 12, 2023

SURVEY NO. 9126B

MADRON SURVEYING, INC. 301 SOUTH CANAL
 (575) 234-3327

CARLSBAD, NEW MEXICO

SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 AERIAL ACCESS ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 DEC. 2019

NOVO OIL & GAS NORTHERN DELAWARE, LLC
ASTRODOG 0810 FEE 111H
 LOCATED 1663 FT. FROM THE NORTH LINE
 AND 1756 FT. FROM THE WEST LINE OF
 SECTION 8, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

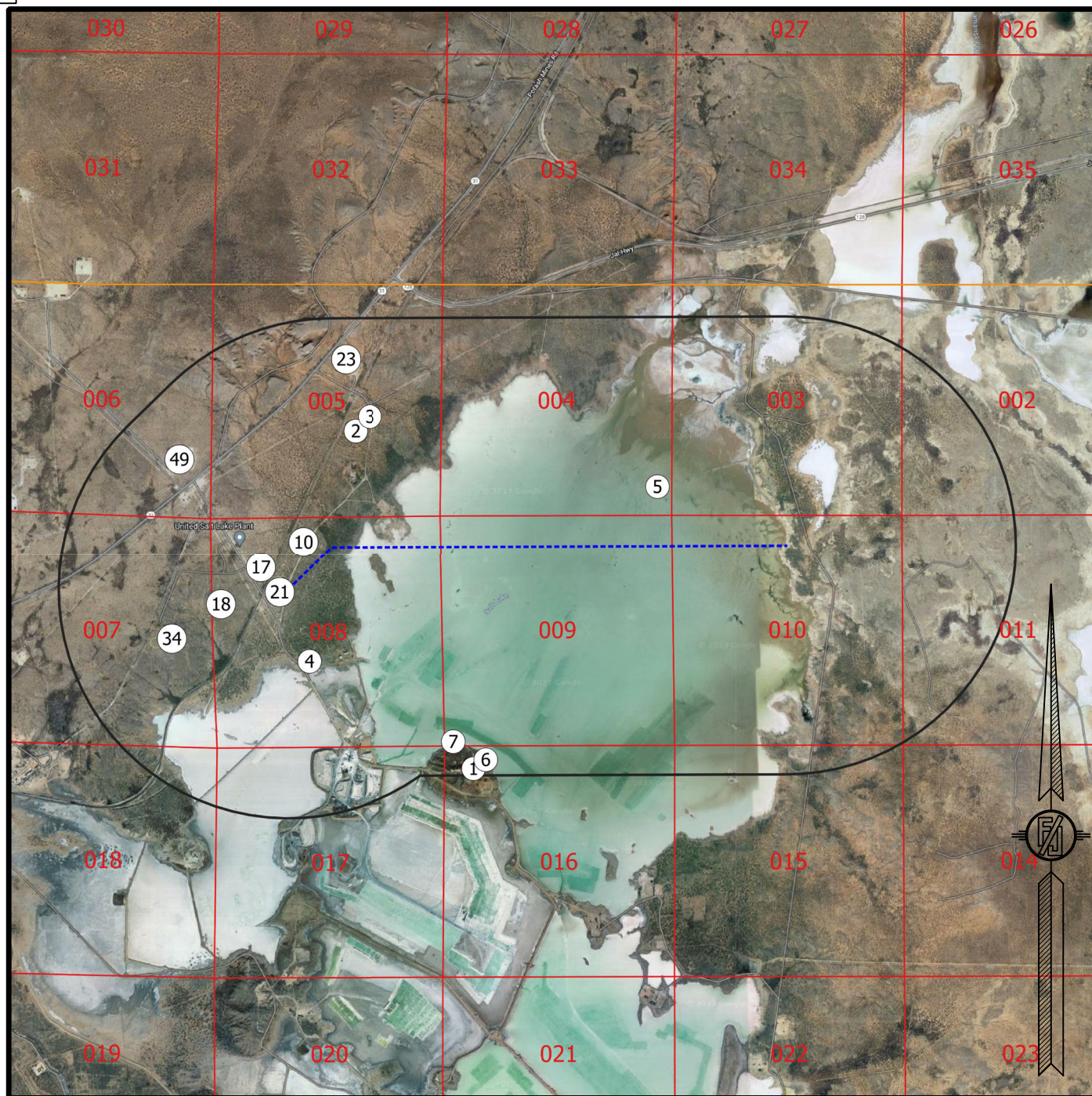
MAY 12, 2023

MADRON SURVEYING, INC.

301 SOUTH CANAL
 (575) 234-3327

SURVEY NO. 9126B
 CARLSBAD, NEW MEXICO

1-MILE WELL MAP



WELL DATA FROM NMOCD GIS - 1/16/23

⊗ WELLS WITHIN 1 MILE

----- WELL PATH
 _____ 1-MILE BOUNDARY

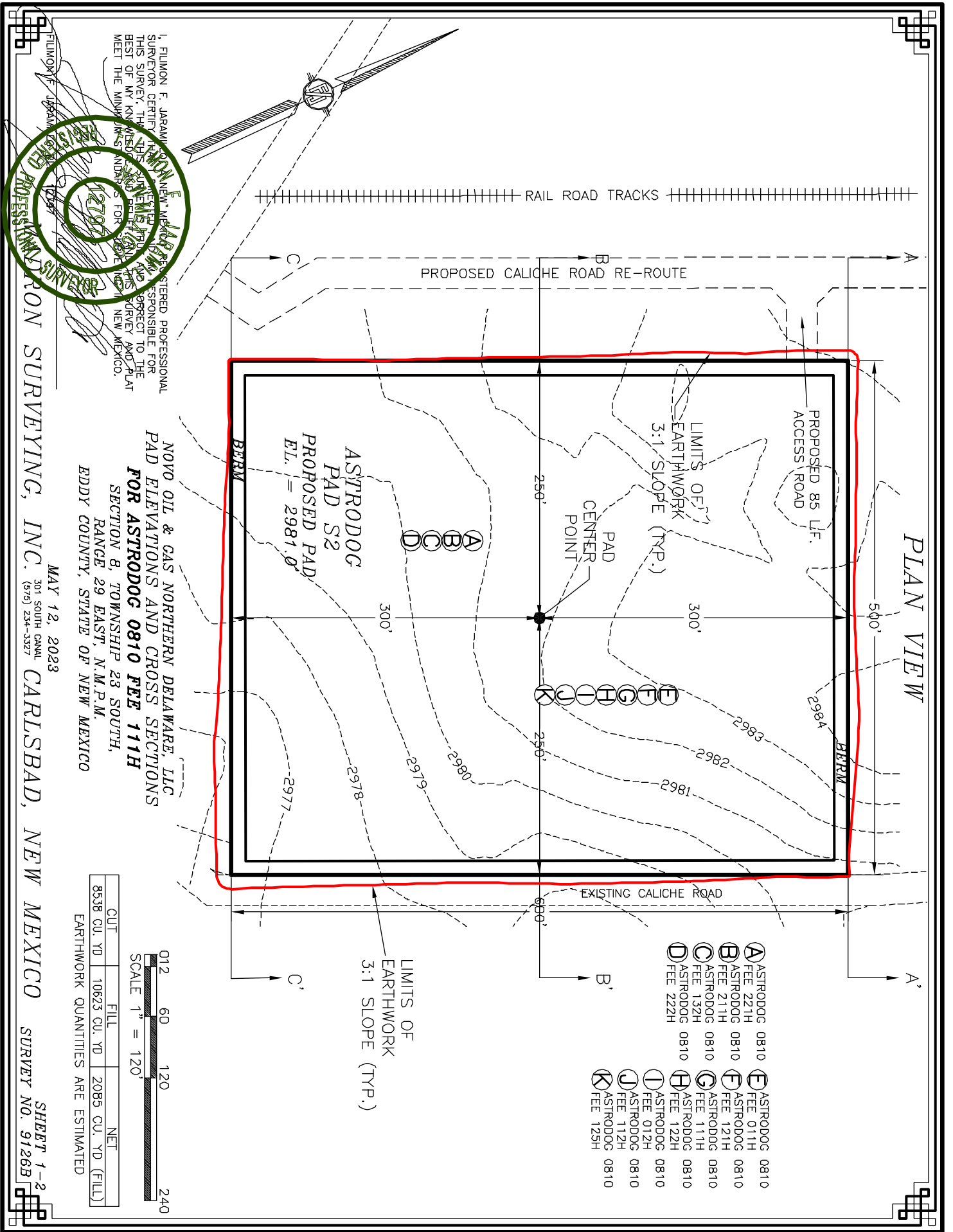
NOVO OIL & GAS NORTHERN DELAWARE, LLC
ASTRODOG 0810 FEE 111H
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 SECTION 8, TOWNSHIP 23 SOUTH,
 RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MAY 12, 2023

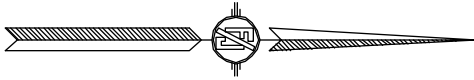
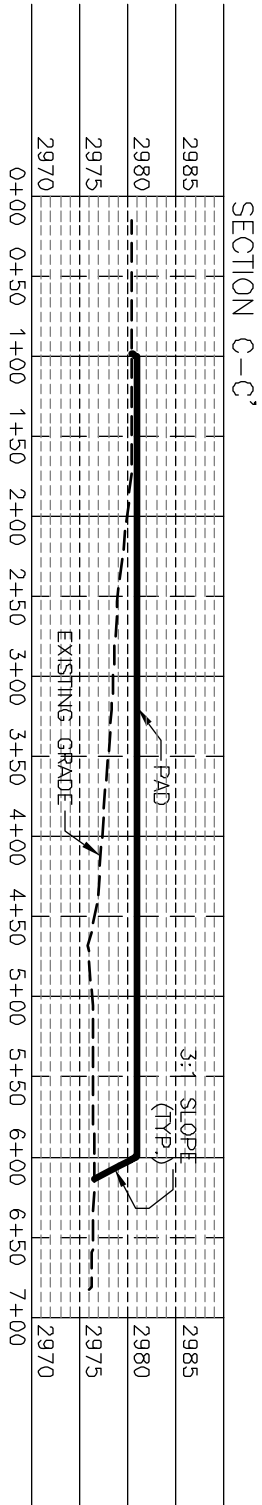
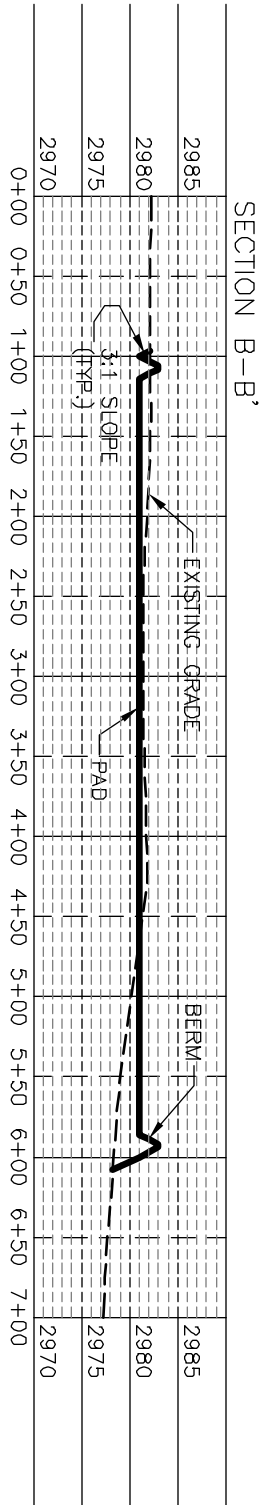
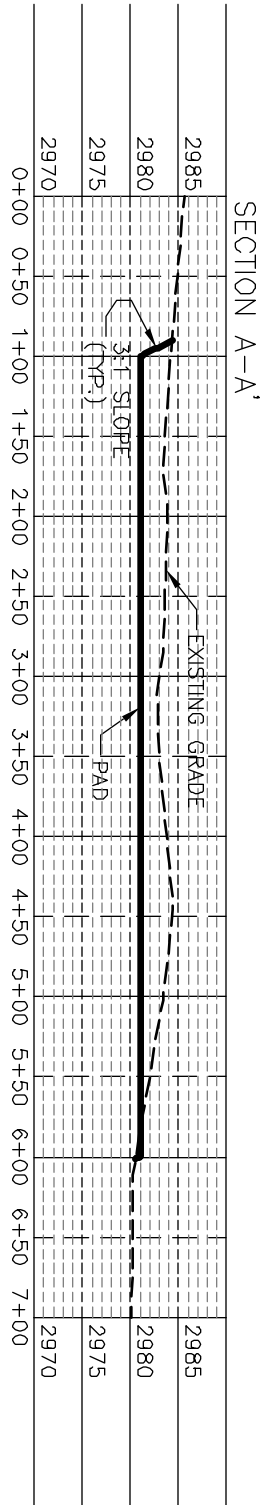
SURVEY NO. 9126B

MADRON SURVEYING, INC. 301 SOUTH CANAL
 (575) 234-3327

CARLSBAD, NEW MEXICO



CROSS-SECTIONS



I, FILMON F. JARAMA, NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFICATE NO. 12297, AM RESPONSIBLE FOR THIS SURVEY, THAT THE SURVEY WAS MADE IN ACCORDANCE WITH THE BEST OF MY KNOWLEDGE AND SKILL, AND THAT THE SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

NOVO OIL & GAS NORTHERN DELAWARE, LLC
PAD ELEVATIONS AND CROSS SECTIONS
FOR ASTRODDG 0810 FEE 111H
SECTION 8, TOWNSHIP 28 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
8638 CU. YD	10623 CU. YD	2085 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

MAY 12, 2023
301 SOUTH CANAL
CARLSBAD, NEW MEXICO
SURVEY NO. 9126B

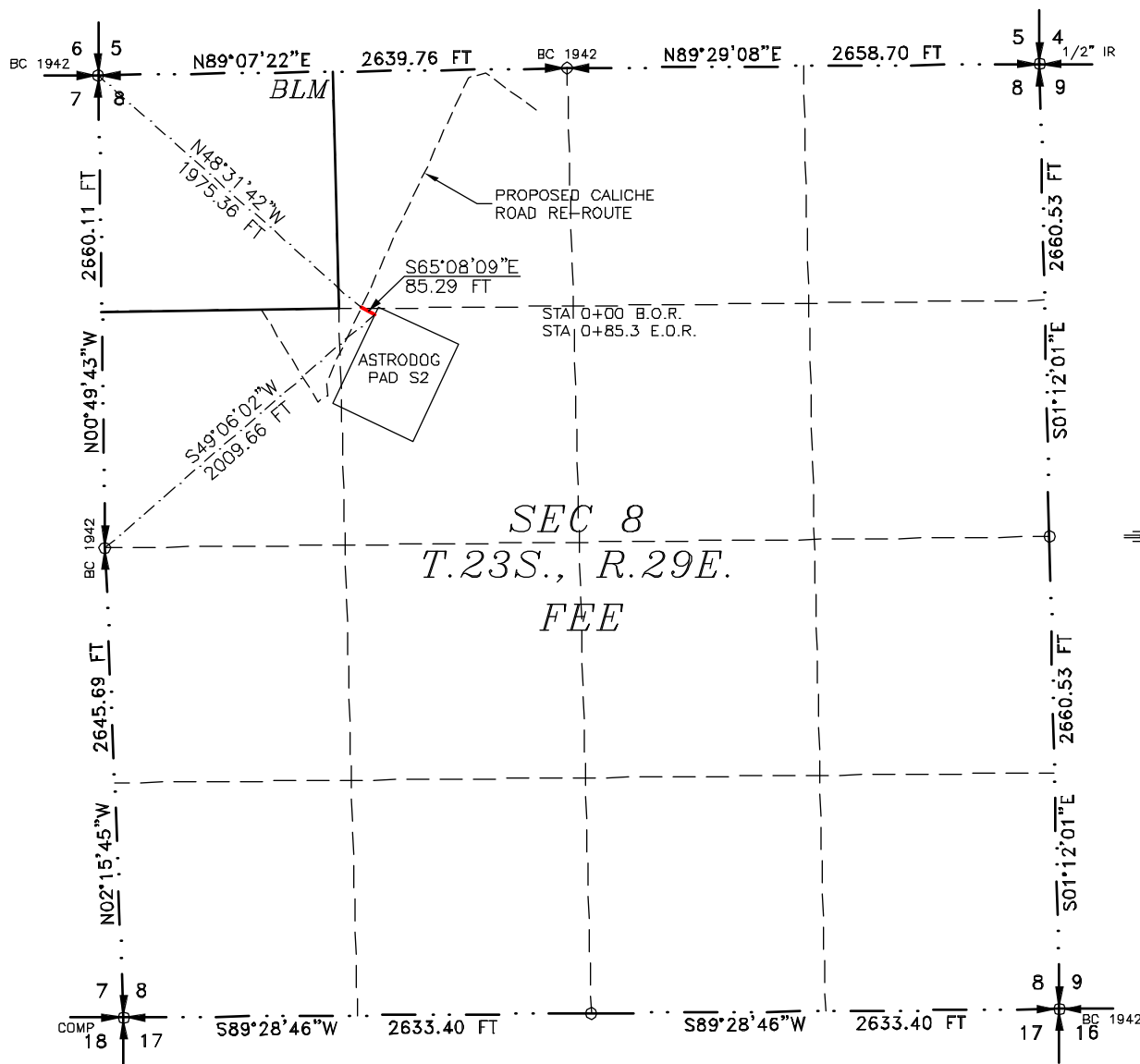
FILMON F. JARAMA, NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR
IRON SURVEYING, INC.

ACCESS ROAD PLAT

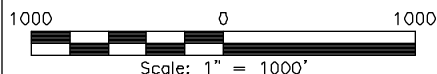
ACCESS ROAD FOR ASTRODOG PAD S2

(ASTRODOG 0810 FEE 221H, 211H, 132H, 222H, 011H, 121H, 111H, 122H, 012H, 112H, & 125H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 12, 2023



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. 301 SOUTH CANAL CARLSBAD, NEW MEXICO (575) 234-3327

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 14th DAY OF MAY 2023

FILMON F. JARAMILLO
 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3327

SURVEY NO. 9126B

ACCESS ROAD PLAT

ACCESS ROAD FOR ASTRODOG PAD S2

(ASTRODOG 0810 FEE 221H, 211H, 132H, 222H, 011H, 121H, 111H, 122H, 012H, 112H, & 125H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 12, 2023

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 8, TOWNSHIP 23 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 NE/4 NW/4 OF SAID SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS N48°31'42"W, A DISTANCE OF 1975.36 FEET;
 THENCE S65°08'09"E A DISTANCE OF 85.29 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE WEST QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S49°06'02"W, A DISTANCE OF 2009.65 FEET;

SAID STRIP OF LAND BEING 85.29 FEET OR 5.17 RODS IN LENGTH, CONTAINING 0.059 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4	9.39 L.F.	0.57 RODS	0.006 ACRES
SE/4 NW/4	75.90 L.F.	4.60 RODS	0.052 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 14th DAY OF MAY 2023

FILIMON F. JARAMILLO
 12797
 NEW MEXICO PROFESSIONAL SURVEYOR
 MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3327

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

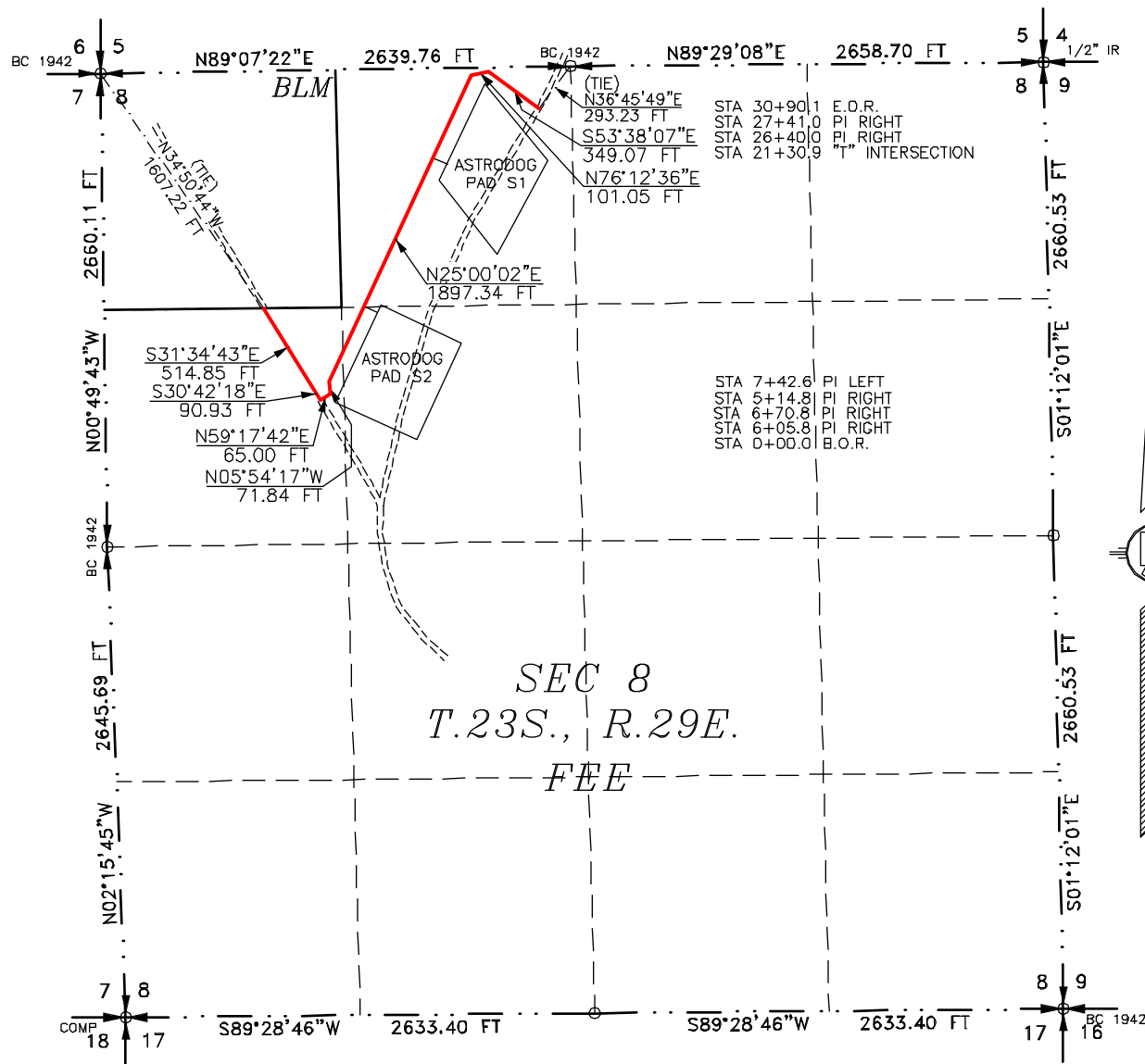
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
 (575) 234-3327

SURVEY NO. 9126B

ROAD RE-ROUTE PLAT

RE-ROUTE EXISTING CALICHE ROAD AROUND ASTRODOG PADS S1 & S2

NOVO OIL & GAS NORTHERN DELAWARE, LLC
 CENTERLINE SURVEY OF A ROAD CROSSING
 SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 MAY 12, 2023

**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 14th DAY OF MAY 2023

FILMON F. JARAMILLO
 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3327

SURVEY NO. 9126B

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

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

ROAD RE-ROUTE PLAT

RE-ROUTE EXISTING CALICHE ROAD AROUND ASTRODOG PADS S1 & S2

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF A ROAD CROSSING
SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 12, 2023

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 8, TOWNSHIP 23 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 SW/4 NW/4 OF SAID SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS N34°50'44"W, A DISTANCE OF 1607.22 FEET;
 THENCE S31°34'43"E A DISTANCE OF 514.85 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE S30°42'18"E A DISTANCE OF 90.93 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE N59°17'42"E A DISTANCE OF 65.00 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE N05°54'17"W A DISTANCE OF 71.84 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE N25°00'02"E A DISTANCE OF 1897.34 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE N76°12'36"E A DISTANCE OF 101.05 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE S53°38'07"E A DISTANCE OF 349.07 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 8, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS N36°45'51"E, A DISTANCE OF 293.23 FEET;

SAID STRIP OF LAND BEING 3090.08 FEET OR 187.28 RODS IN LENGTH, CONTAINING 2.128 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4	928.47 L.F.	56.27 RODS	0.639 ACRES
SE/4 NW/4	276.38 L.F.	16.75 RODS	0.190 ACRES
NE/4 NW/4	1885.23 L.F.	114.26 RODS	1.298 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 14th DAY OF MAY 2023

FILIMON F. JARAMILLO
 12797
 MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3327

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 CARLSBAD, NEW MEXICO
 (575) 234-3327

SURVEY NO. 9126B



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 08-T23S-R29E

ASTRODOG-FEE-0810-111H

Wellbore #1

Plan 1

Anticollision Report

19 April, 2023





Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Reference	Plan 1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum centre distance of 2,500.00usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	4/19/2023
From (usft)	To (usft)	Survey (Wellbore)
0.00	18,366.97	Plan 1 (Wellbore #1)
		Tool Name
		MWD+HRGM
		Description
		OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC 01-23S-28E						
RANA-SALADA-0503-FED-COM-114H - Wellbore #1 - PL	8,533.24	8,528.99	1,224.46	1,160.71	19.207	CC
RANA-SALADA-0503-FED-COM-114H - Wellbore #1 - PL	17,100.00	17,187.25	1,276.43	939.00	3.783	ES, SF
RANA-SALADA-0503-FED-COM-124H - Wellbore #1 - P	2,188.97	2,050.86	1,246.19	1,231.32	83.837	CC
RANA-SALADA-0503-FED-COM-124H - Wellbore #1 - P	2,200.00	2,058.66	1,246.20	1,231.28	83.493	ES
RANA-SALADA-0503-FED-COM-124H - Wellbore #1 - P	17,200.00	18,278.83	1,609.55	1,333.00	5.820	SF
RANA-SALADA-0503-FED-COM-134H - Wellbore #1 - P	6,100.00	6,000.69	1,091.39	1,050.11	26.440	CC, ES
RANA-SALADA-0503-FED-COM-134H - Wellbore #1 - P	17,300.00	18,972.92	2,410.30	2,211.10	12.100	SF
SEC 02-T23S-R28E						
Offset-Culebra 'BLV' Federal 1H - Wellbore #1 - Wellbore	6,270.02	12,707.00	390.01	180.88	1.865	Collision Risk Procedures R
SEC 08-T23S-R29E						
Astrodog Fed Com 0810 231H - Wellbore #1 - FINAL SU	7,203.11	7,288.73	181.26	134.66	3.890	CC, ES, SF
Astrodog Fed Com 0810 232H - Wellbore #1 - FINAL SU	5,153.50	5,230.84	318.09	279.42	8.225	CC
Astrodog Fed Com 0810 232H - Wellbore #1 - FINAL SU	5,300.00	5,375.90	318.96	278.40	7.864	ES
Astrodog Fed Com 0810 232H - Wellbore #1 - FINAL SU	7,200.00	7,251.62	348.44	289.82	5.944	SF
Astrodog Fed Com 0810 235H - Wellbore #1 - FINAL SU	3,636.16	3,773.96	486.01	457.17	16.853	CC
Astrodog Fed Com 0810 235H - Wellbore #1 - FINAL SU	3,700.00	3,834.66	486.51	456.77	16.357	ES
Astrodog Fed Com 0810 235H - Wellbore #1 - FINAL SU	4,300.00	4,395.39	536.61	498.90	14.228	SF
ASTRODOG_FEE_0810_132H - Wellbore #1 - Plan 5	1,947.60	1,985.96	240.81	226.84	17.234	CC
ASTRODOG_FEE_0810_132H - Wellbore #1 - Plan 5	2,200.00	2,247.41	241.45	226.05	15.676	ES
ASTRODOG_FEE_0810_132H - Wellbore #1 - Plan 5	18,367.04	20,232.43	2,428.33	2,140.72	8.443	SF
ASTRODOG_FEE_0810_132H - Wellbore #1 - Wellbore	0.00	1.10	242.12			
ASTRODOG_FEE_0810_132H - Wellbore #1 - Wellbore	1,700.00	1,717.86	243.51	232.46	22.032	ES
ASTRODOG_FEE_0810_132H - Wellbore #1 - Wellbore	2,900.00	2,947.15	267.00	248.66	14.557	SF
ASTRODOG_FEE_0810_211H - Wellbore #1 - Plan 4	3,928.75	3,977.44	157.83	131.43	5.978	CC
ASTRODOG_FEE_0810_211H - Wellbore #1 - Plan 4	4,000.00	4,048.45	157.94	131.26	5.920	ES
ASTRODOG_FEE_0810_211H - Wellbore #1 - Plan 4	7,700.00	7,663.38	271.68	223.15	5.598	SF
ASTRODOG_FEE_0810_211H - Wellbore #1 - Wellbore	1,772.71	1,794.00	201.16	188.76	16.222	CC, ES
ASTRODOG_FEE_0810_211H - Wellbore #1 - Wellbore	1,800.00	1,794.00	203.13	190.58	16.188	SF
ASTRODOG_FEE_0810_221H - Wellbore #1 - Plan 5	2,884.76	2,929.93	120.62	104.41	7.444	CC
ASTRODOG_FEE_0810_221H - Wellbore #1 - Plan 5	2,900.00	2,944.99	120.64	104.33	7.396	ES
ASTRODOG_FEE_0810_221H - Wellbore #1 - Plan 5	3,400.00	3,438.86	144.97	122.87	6.559	SF
ASTRODOG_FEE_0810_221H - Wellbore #1 - Wellbore	2,914.82	2,958.99	104.53	84.70	5.272	CC, ES, SF
ASTRODOG_FEE_0810_222H - Wellbore #1 - Plan 5	1,501.18	1,502.08	258.11	248.69	27.415	CC, ES
ASTRODOG_FEE_0810_222H - Wellbore #1 - Plan 5	2,000.00	2,021.03	279.66	266.45	21.177	SF
ASTRODOG_FEE_0810_222H - Wellbore #1 - Wellbore	962.81	964.06	256.14	248.87	35.218	CC

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC 08-T23S-R29E						
ASTRODOG_FEE_0810_222H - Wellbore #1 - Wellbore	1,600.00	1,610.22	257.00	247.21	26.242	ES
ASTRODOG_FEE_0810_222H - Wellbore #1 - Wellbore	2,000.00	2,016.22	282.22	269.27	21.790	SF
ASTRODOG-FEE-0810-011H - Wellbore #1 - Plan 1	1,000.00	999.90	39.89	32.39	5.320	CC, ES
ASTRODOG-FEE-0810-011H - Wellbore #1 - Plan 1	1,100.00	1,098.50	41.59	33.48	5.126	SF
ASTRODOG-FEE-0810-012H - Wellbore #1 - Plan 1	1,500.00	1,500.00	40.11	30.70	4.263	CC, ES
ASTRODOG-FEE-0810-012H - Wellbore #1 - Plan 1	1,600.00	1,600.13	41.56	31.69	4.210	SF
ASTRODOG-FEE-0810-112H - Wellbore #1 - Plan 1	1,500.00	1,500.00	59.97	50.56	6.373	CC, ES
ASTRODOG-FEE-0810-112H - Wellbore #1 - Plan 1	18,367.04	18,416.13	1,413.91	901.62	2.760	SF
ASTRODOG-FEE-0810-121H - Wellbore #1 - Plan 1	1,203.50	1,203.40	19.93	11.61	2.397	CC, ES
ASTRODOG-FEE-0810-121H - Wellbore #1 - Plan 1	1,300.00	1,299.56	20.35	11.75	2.366	SF
ASTRODOG-FEE-0810-122H - Wellbore #1 - Plan 1	1,500.00	1,500.00	19.89	10.48	2.114	CC, ES, SF
ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1	1,416.60	1,416.80	80.07	70.96	8.786	CC
ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1	1,500.00	1,500.00	80.07	70.66	8.509	ES
ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1	18,367.04	19,533.52	1,780.59	1,342.80	4.067	SF
Road Lizard 5 Fed Com 002H - Wellbore #1 - Wellbore #	8,347.27	12,740.25	1,034.36	982.97	20.126	CC, ES
Road Lizard 5 Fed Com 002H - Wellbore #1 - Wellbore #	9,100.00	12,738.12	1,277.67	1,193.52	15.182	SF
SEC 22-T23S-R29E						
Cassius Fed Com 1510 014H C-102 - Wellbore #1 - Plan	18,367.04	16,549.36	1,362.69	1,197.68	8.258	CC, ES, SF
Cassius Fed Com 1510 113H - Wellbore #1 - Plan 3	18,367.04	17,630.05	806.50	690.31	6.941	CC, ES, SF
Cassius Fed Com 1510 123H - Wellbore #1 - Plan 4	18,367.04	18,618.93	1,275.70	1,125.43	8.489	CC, ES, SF

Offset Design: SEC 01-23S-28E - RANA-SALADA-0503-FED-COM-114H - Wellbore #1 - PLAN 1

Survey Program: Reference		0-MWD+IFR1+MS Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Rule Assigned: Distance				Offset Well Error: 0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	82.70	0.00	0.50	0.61	23.19	1,159.50	496.68	1,261.40				
100.00	100.00	182.70	100.00	0.66	1.21	23.19	1,159.50	496.68	1,261.40	1,259.53	1.87	675.045	
200.00	200.00	282.70	200.00	1.35	1.73	23.19	1,159.50	496.68	1,261.40	1,258.32	3.08	409.754	
300.00	300.00	382.70	300.00	1.82	2.12	23.19	1,159.50	496.68	1,261.40	1,257.46	3.94	320.282	
400.00	400.00	482.70	400.00	2.19	2.45	23.19	1,159.50	496.68	1,261.40	1,256.76	4.64	271.700	
500.00	500.00	582.70	500.00	2.51	2.75	23.19	1,159.50	496.68	1,261.40	1,256.15	5.26	239.953	
600.00	600.00	682.70	600.00	2.80	3.01	23.19	1,159.50	496.68	1,261.40	1,255.59	5.81	217.092	
700.00	700.00	782.70	700.00	3.06	3.26	23.19	1,159.50	496.68	1,261.40	1,255.08	6.32	199.602	
800.00	800.00	882.70	800.00	3.30	3.49	23.19	1,159.50	496.68	1,261.40	1,254.61	6.79	185.653	
900.00	900.00	982.70	900.00	3.53	3.71	23.19	1,159.50	496.68	1,261.40	1,254.16	7.24	174.185	
1,000.00	1,000.00	1,082.70	1,000.00	3.75	3.92	23.19	1,159.50	496.68	1,261.40	1,253.74	7.67	164.537	
1,100.00	1,100.00	1,182.70	1,100.00	3.96	4.12	23.19	1,159.50	496.68	1,261.40	1,253.33	8.07	156.270	
1,200.00	1,200.00	1,259.61	1,176.91	4.15	4.39	23.17	1,160.12	496.62	1,262.16	1,253.65	8.51	148.239	
1,300.00	1,300.00	1,331.63	1,248.88	4.34	4.77	23.12	1,162.51	496.40	1,265.09	1,256.07	9.03	140.107	
1,400.00	1,400.00	1,400.00	1,317.14	4.53	5.25	23.04	1,166.45	496.04	1,270.25	1,260.63	9.61	132.145	
1,500.00	1,500.00	1,475.06	1,391.94	4.70	5.73	22.91	1,172.64	495.46	1,277.60	1,267.40	10.20	125.253	
1,600.00	1,599.98	1,546.39	1,462.84	5.04	6.18	22.71	1,180.33	494.75	1,285.56	1,274.67	10.89	118.025	
1,700.00	1,699.84	1,617.46	1,533.29	5.68	6.60	22.42	1,189.74	493.88	1,292.56	1,280.74	11.82	109.314	
1,800.00	1,799.45	1,700.00	1,614.77	6.28	7.08	21.99	1,202.84	492.67	1,298.69	1,285.91	12.79	101.576	
1,900.00	1,898.70	1,758.64	1,672.40	6.85	7.42	21.55	1,213.57	491.68	1,303.78	1,290.21	13.57	96.048	
2,000.00	1,997.47	1,828.63	1,740.90	7.40	7.79	20.97	1,227.91	490.35	1,308.09	1,293.69	14.40	90.837	
2,100.00	2,095.71	1,901.44	1,811.76	7.63	8.11	20.28	1,244.56	488.81	1,312.00	1,297.11	14.89	88.133	
2,200.00	2,193.87	1,999.60	1,907.09	7.86	8.36	19.46	1,267.89	486.65	1,316.61	1,301.25	15.36	85.699	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-0503-FED-COM-114H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
17,800.00	7,781.10	17,187.25	7,710.10	242.04	110.78	-31.00	2,278.80	10,150.67	1,484.04	1,171.40	312.64	4.747	
17,900.00	7,782.85	17,187.25	7,710.10	244.34	110.78	-34.20	2,278.80	10,150.67	1,537.61	1,232.60	305.01	5.041	
18,000.00	7,784.59	17,187.25	7,710.10	246.63	110.78	-37.18	2,278.80	10,150.67	1,595.66	1,298.56	297.10	5.371	
18,100.00	7,786.34	17,187.25	7,710.10	248.93	110.78	-39.95	2,278.80	10,150.67	1,657.71	1,368.64	289.08	5.735	
18,200.00	7,788.08	17,187.25	7,710.10	251.23	110.78	-42.51	2,278.80	10,150.67	1,723.33	1,442.25	281.08	6.131	
18,300.00	7,789.83	17,187.25	7,710.10	253.53	110.78	-44.88	2,278.80	10,150.67	1,792.14	1,518.91	273.23	6.559	
18,367.04	7,791.00	17,187.25	7,710.10	255.07	110.78	-46.37	2,278.80	10,150.67	1,839.86	1,571.79	268.07	6.863	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-0503-FED-COM-124H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,400.00	7,739.21	16,613.25	8,704.10	187.02	94.77	-1.30	2,269.60	8,485.55	1,596.13	1,369.42	226.71	7.040	
15,500.00	7,740.96	16,713.25	8,706.36	189.31	95.83	-1.30	2,270.15	8,585.52	1,596.56	1,367.04	229.53	6.956	
15,600.00	7,742.70	16,813.25	8,708.62	191.60	96.88	-1.30	2,270.70	8,685.49	1,596.99	1,364.65	232.34	6.874	
15,700.00	7,744.45	16,913.25	8,710.89	193.89	97.94	-1.30	2,271.25	8,785.46	1,597.43	1,362.27	235.16	6.793	
15,800.00	7,746.19	17,013.25	8,713.15	196.18	99.00	-1.30	2,271.81	8,885.44	1,597.86	1,359.89	237.97	6.714	
15,900.00	7,747.94	17,113.25	8,715.41	198.47	100.07	-1.30	2,272.36	8,985.41	1,598.29	1,357.50	240.79	6.638	
16,000.00	7,749.69	17,213.24	8,717.68	200.76	101.13	-1.30	2,272.91	9,085.38	1,598.73	1,355.12	243.61	6.563	
16,100.00	7,751.43	17,313.24	8,719.94	203.05	102.19	-1.30	2,273.47	9,185.35	1,599.16	1,352.73	246.43	6.489	
16,200.00	7,753.18	17,413.24	8,722.21	205.34	103.26	-1.30	2,274.02	9,285.32	1,599.59	1,350.34	249.25	6.418	
16,300.00	7,754.92	17,513.24	8,724.47	207.63	104.32	-1.31	2,274.57	9,385.29	1,600.03	1,347.96	252.07	6.348	
16,400.00	7,756.67	17,613.24	8,726.73	209.92	105.39	-1.31	2,275.12	9,485.26	1,600.46	1,345.57	254.89	6.279	
16,500.00	7,758.41	17,713.24	8,729.00	212.21	106.46	-1.31	2,275.68	9,585.23	1,600.89	1,343.18	257.71	6.212	
16,600.00	7,760.16	17,813.24	8,731.26	214.51	107.53	-1.31	2,276.23	9,685.21	1,601.33	1,340.79	260.53	6.146	
16,700.00	7,761.90	17,913.23	8,733.52	216.80	108.60	-1.31	2,276.78	9,785.18	1,601.76	1,338.40	263.36	6.082	
16,800.00	7,763.65	18,013.23	8,735.79	219.09	109.67	-1.31	2,277.33	9,885.15	1,602.19	1,336.02	266.18	6.019	
16,900.00	7,765.39	18,113.23	8,738.05	221.38	110.75	-1.31	2,277.89	9,985.12	1,602.63	1,333.63	269.00	5.958	
17,000.00	7,767.14	18,213.23	8,740.32	223.68	111.82	-1.31	2,278.44	10,085.09	1,603.06	1,331.24	271.82	5.897	
17,100.00	7,768.89	18,278.83	8,741.80	225.97	112.52	-2.85	2,278.80	10,150.67	1,603.86	1,329.27	274.59	5.841	
17,200.00	7,770.63	18,278.83	8,741.80	228.27	112.52	-7.32	2,278.80	10,150.67	1,609.55	1,333.00	276.55	5.820 SF	
17,300.00	7,772.38	18,278.83	8,741.80	230.56	112.52	-11.70	2,278.80	10,150.67	1,621.40	1,343.91	277.49	5.843	
17,400.00	7,774.12	18,278.83	8,741.80	232.86	112.52	-15.94	2,278.80	10,150.67	1,639.27	1,361.84	277.43	5.909	
17,500.00	7,775.87	18,278.83	8,741.80	235.15	112.52	-20.02	2,278.80	10,150.67	1,662.97	1,386.53	276.44	6.016	
17,600.00	7,777.61	18,278.83	8,741.80	237.45	112.52	-23.90	2,278.80	10,150.67	1,692.26	1,417.65	274.61	6.162	
17,700.00	7,779.36	18,278.83	8,741.80	239.74	112.52	-27.56	2,278.80	10,150.67	1,726.85	1,454.81	272.04	6.348	
17,800.00	7,781.10	18,278.83	8,741.80	242.04	112.52	-31.00	2,278.80	10,150.67	1,766.43	1,497.58	268.85	6.570	
17,900.00	7,782.85	18,278.83	8,741.80	244.34	112.52	-34.20	2,278.80	10,150.67	1,810.68	1,545.53	265.15	6.829	
18,000.00	7,784.59	18,278.83	8,741.80	246.63	112.52	-37.18	2,278.80	10,150.67	1,859.25	1,598.21	261.05	7.122	
18,100.00	7,786.34	18,278.83	8,741.80	248.93	112.52	-39.95	2,278.80	10,150.67	1,911.83	1,655.18	256.65	7.449	
18,200.00	7,788.08	18,278.83	8,741.80	251.23	112.52	-42.51	2,278.80	10,150.67	1,968.09	1,716.04	252.05	7.808	
18,300.00	7,789.83	18,278.83	8,741.80	253.53	112.52	-44.88	2,278.80	10,150.67	2,027.72	1,780.39	247.33	8.199	
18,367.04	7,791.00	18,278.83	8,741.80	255.07	112.52	-46.37	2,278.80	10,150.67	2,069.44	1,825.32	244.12	8.477	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-0503-FED-COM-134H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+IFR1+MS				Rule Assigned:				Offset Well Error:		0.50 usft		
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N-/S (usft)	+E-/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	7,648.45	12,202.39	9,752.63	69.98	43.85	-2.85	2,030.11	3,262.92	2,353.36	2,291.40	61.95	37.986		
10,300.00	7,650.20	12,302.39	9,754.90	72.15	44.59	-2.85	2,030.55	3,362.89	2,353.84	2,290.25	63.59	37.014		
10,400.00	7,651.94	12,402.39	9,757.16	74.32	45.35	-2.85	2,030.99	3,462.86	2,354.32	2,289.07	65.26	36.078		
10,500.00	7,653.69	12,502.39	9,759.43	76.50	46.12	-2.85	2,031.43	3,562.83	2,354.81	2,287.86	66.94	35.177		
10,600.00	7,655.43	12,602.38	9,761.70	78.68	46.91	-2.85	2,031.87	3,662.81	2,355.29	2,286.64	68.65	34.308		
10,700.00	7,657.18	12,702.38	9,763.96	80.88	47.71	-2.85	2,032.31	3,762.78	2,355.77	2,285.39	70.38	33.473		
10,800.00	7,658.92	12,802.38	9,766.23	83.07	48.53	-2.85	2,032.75	3,862.75	2,356.25	2,284.13	72.13	32.669		
10,900.00	7,660.67	12,902.38	9,768.50	85.28	49.36	-2.85	2,033.19	3,962.72	2,356.74	2,282.85	73.89	31.895		
11,000.00	7,662.41	13,002.38	9,770.77	87.49	50.20	-2.85	2,033.63	4,062.69	2,357.22	2,281.55	75.67	31.151		
11,100.00	7,664.16	13,102.38	9,773.03	89.70	51.05	-2.85	2,034.07	4,162.67	2,357.70	2,280.24	77.47	30.435		
11,200.00	7,665.91	13,202.38	9,775.30	91.92	51.91	-2.85	2,034.51	4,262.64	2,358.19	2,278.91	79.28	29.746		
11,300.00	7,667.65	13,302.38	9,777.57	94.14	52.78	-2.85	2,034.95	4,362.61	2,358.67	2,277.57	81.10	29.083		
11,400.00	7,669.40	13,402.37	9,779.83	96.37	53.66	-2.85	2,035.39	4,462.58	2,359.15	2,276.22	82.94	28.445		
11,500.00	7,671.14	13,502.37	9,782.10	98.59	54.55	-2.85	2,035.83	4,562.55	2,359.64	2,274.85	84.78	27.831		
11,600.00	7,672.89	13,602.37	9,784.37	100.83	55.45	-2.85	2,036.27	4,662.53	2,360.12	2,273.48	86.64	27.240		
11,700.00	7,674.63	13,702.37	9,786.63	103.06	56.35	-2.86	2,036.71	4,762.50	2,360.60	2,272.09	88.51	26.670		
11,800.00	7,676.38	13,802.37	9,788.90	105.30	57.27	-2.86	2,037.15	4,862.47	2,361.09	2,270.69	90.39	26.121		
11,900.00	7,678.12	13,902.37	9,791.17	107.54	58.19	-2.86	2,037.59	4,962.44	2,361.57	2,269.29	92.28	25.592		
12,000.00	7,679.87	14,002.37	9,793.43	109.79	59.12	-2.86	2,038.03	5,062.41	2,362.05	2,267.88	94.17	25.082		
12,100.00	7,681.61	14,102.36	9,795.70	112.04	60.05	-2.86	2,038.46	5,162.39	2,362.54	2,266.46	96.08	24.589		
12,200.00	7,683.36	14,202.36	9,797.97	114.29	60.99	-2.86	2,038.90	5,262.36	2,363.02	2,265.03	97.99	24.115		
12,300.00	7,685.10	14,302.36	9,800.23	116.54	61.94	-2.86	2,039.34	5,362.33	2,363.50	2,263.59	99.91	23.656		
12,400.00	7,686.85	14,402.36	9,802.50	118.79	62.90	-2.86	2,039.78	5,462.30	2,363.99	2,262.15	101.84	23.214		
12,500.00	7,688.60	14,502.36	9,804.77	121.05	63.85	-2.86	2,040.22	5,562.27	2,364.47	2,260.70	103.77	22.786		
12,600.00	7,690.34	14,602.36	9,807.04	123.30	64.82	-2.86	2,040.66	5,662.24	2,364.95	2,259.25	105.70	22.373		
12,700.00	7,692.09	14,702.36	9,809.30	125.56	65.79	-2.86	2,041.10	5,762.22	2,365.44	2,257.79	107.65	21.974		
12,800.00	7,693.83	14,802.35	9,811.57	127.83	66.76	-2.86	2,041.54	5,862.19	2,365.92	2,256.32	109.60	21.588		
12,900.00	7,695.58	14,902.35	9,813.84	130.09	67.74	-2.86	2,041.98	5,962.16	2,366.40	2,254.85	111.55	21.214		
13,000.00	7,697.32	15,002.35	9,816.10	132.35	68.72	-2.86	2,042.42	6,062.13	2,366.89	2,253.38	113.51	20.852		
13,100.00	7,699.07	15,102.35	9,818.37	134.62	69.71	-2.86	2,042.86	6,162.10	2,367.37	2,251.90	115.47	20.502		
13,200.00	7,700.81	15,202.35	9,820.64	136.89	70.70	-2.86	2,043.30	6,262.08	2,367.85	2,250.41	117.44	20.163		
13,300.00	7,702.56	15,302.35	9,822.90	139.15	71.70	-2.86	2,043.74	6,362.05	2,368.34	2,248.93	119.41	19.834		
13,400.00	7,704.30	15,402.35	9,825.17	141.42	72.69	-2.86	2,044.18	6,462.02	2,368.82	2,247.44	121.38	19.515		
13,500.00	7,706.05	15,502.35	9,827.44	143.70	73.70	-2.86	2,044.62	6,561.99	2,369.30	2,245.94	123.36	19.206		
13,600.00	7,707.80	15,602.34	9,829.70	145.97	74.70	-2.87	2,045.06	6,661.96	2,369.79	2,244.44	125.34	18.906		
13,700.00	7,709.54	15,702.34	9,831.97	148.24	75.71	-2.87	2,045.50	6,761.94	2,370.27	2,242.94	127.33	18.615		
13,800.00	7,711.29	15,802.34	9,834.24	150.52	76.72	-2.87	2,045.94	6,861.91	2,370.75	2,241.44	129.32	18.333		
13,900.00	7,713.03	15,902.34	9,836.50	152.79	77.74	-2.87	2,046.38	6,961.88	2,371.24	2,239.93	131.31	18.059		
14,000.00	7,714.78	16,002.34	9,838.77	155.07	78.75	-2.87	2,046.82	7,061.85	2,371.72	2,238.42	133.30	17.792		
14,100.00	7,716.52	16,102.34	9,841.04	157.35	79.77	-2.87	2,047.26	7,161.82	2,372.20	2,236.91	135.30	17.533		
14,200.00	7,718.27	16,202.34	9,843.30	159.62	80.80	-2.87	2,047.70	7,261.80	2,372.69	2,235.39	137.30	17.282		
14,300.00	7,720.01	16,302.33	9,845.57	161.90	81.82	-2.87	2,048.14	7,361.77	2,373.17	2,233.87	139.30	17.037		
14,400.00	7,721.76	16,402.33	9,847.84	164.18	82.85	-2.87	2,048.58	7,461.74	2,373.66	2,232.35	141.30	16.799		
14,500.00	7,723.50	16,502.33	9,850.11	166.46	83.88	-2.87	2,049.02	7,561.71	2,374.14	2,230.83	143.31	16.567		
14,600.00	7,725.25	16,602.33	9,852.37	168.75	84.91	-2.87	2,049.46	7,661.68	2,374.62	2,229.31	145.31	16.341		
14,700.00	7,726.99	16,702.33	9,854.64	171.03	85.95	-2.87	2,049.90	7,761.66	2,375.11	2,227.78	147.32	16.122		
14,800.00	7,728.74	16,802.33	9,856.91	173.31	86.98	-2.87	2,050.34	7,861.63	2,375.59	2,226.25	149.34	15.908		
14,900.00	7,730.49	16,902.33	9,859.17	175.60	88.02	-2.87	2,050.78	7,961.60	2,376.07	2,224.73	151.35	15.699		
15,000.00	7,732.23	17,002.32	9,861.44	177.88	89.06	-2.87	2,051.22	8,061.57	2,376.56	2,223.19	153.36	15.496		
15,100.00	7,733.98	17,102.32	9,863.71	180.17	90.10	-2.87	2,051.66	8,161.54	2,377.04	2,221.66	155.38	15.298		
15,200.00	7,735.72	17,202.32	9,865.97	182.45	91.15	-2.87	2,052.10	8,261.52	2,377.53	2,220.13	157.40	15.105		
15,300.00	7,737.47	17,302.32	9,868.24	184.74	92.19	-2.87	2,052.54	8,361.49	2,378.01	2,218.59	159.42	14.917		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-0503-FED-COM-134H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft		
Survey Program: 0-MWD+IFR1+MS				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:		0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
15,400.00	7,739.21	17,402.32	9,870.51	187.02	93.24	-2.88	2,052.98	8,461.46	2,378.49	2,217.05	161.44	14.733				
15,500.00	7,740.96	17,502.32	9,872.77	189.31	94.29	-2.88	2,053.42	8,561.43	2,378.98	2,215.52	163.46	14.554				
15,600.00	7,742.70	17,602.32	9,875.04	191.60	95.34	-2.88	2,053.86	8,661.40	2,379.46	2,213.98	165.49	14.379				
15,700.00	7,744.45	17,702.32	9,877.31	193.89	96.40	-2.88	2,054.30	8,761.38	2,379.94	2,212.43	167.51	14.208				
15,800.00	7,746.19	17,802.31	9,879.57	196.18	97.45	-2.88	2,054.74	8,861.35	2,380.43	2,210.89	169.54	14.041				
15,900.00	7,747.94	17,902.31	9,881.84	198.47	98.50	-2.88	2,055.18	8,961.32	2,380.91	2,209.35	171.56	13.878				
16,000.00	7,749.69	18,002.31	9,884.11	200.76	99.56	-2.88	2,055.62	9,061.29	2,381.40	2,207.80	173.59	13.718				
16,100.00	7,751.43	18,102.31	9,886.37	203.05	100.62	-2.88	2,056.06	9,161.26	2,381.88	2,206.26	175.62	13.563				
16,200.00	7,753.18	18,202.31	9,888.64	205.34	101.68	-2.88	2,056.50	9,261.24	2,382.36	2,204.71	177.65	13.410				
16,300.00	7,754.92	18,302.31	9,890.91	207.63	102.74	-2.88	2,056.94	9,361.21	2,382.85	2,203.17	179.68	13.261				
16,400.00	7,756.67	18,402.31	9,893.18	209.92	103.80	-2.88	2,057.38	9,461.18	2,383.33	2,201.62	181.71	13.116				
16,500.00	7,758.41	18,502.30	9,895.44	212.21	104.86	-2.88	2,057.82	9,561.15	2,383.82	2,200.07	183.75	12.973				
16,600.00	7,760.16	18,602.30	9,897.71	214.51	105.93	-2.88	2,058.25	9,661.12	2,384.30	2,198.52	185.78	12.834				
16,700.00	7,761.90	18,702.30	9,899.98	216.80	106.99	-2.88	2,058.69	9,761.10	2,384.78	2,196.97	187.81	12.698				
16,800.00	7,763.65	18,802.30	9,902.24	219.09	108.06	-2.88	2,059.13	9,861.07	2,385.27	2,195.42	189.85	12.564				
16,900.00	7,765.39	18,902.30	9,904.51	221.38	109.13	-2.88	2,059.57	9,961.04	2,385.75	2,193.87	191.89	12.433				
17,000.00	7,767.14	18,972.92	9,906.11	223.68	109.88	-4.47	2,059.88	10,031.64	2,386.42	2,192.43	193.98	12.302				
17,100.00	7,768.89	18,972.92	9,906.11	225.97	109.88	-9.82	2,059.88	10,031.64	2,390.22	2,194.19	196.04	12.193				
17,200.00	7,770.63	18,972.92	9,906.11	228.27	109.88	-15.00	2,059.88	10,031.64	2,398.20	2,200.42	197.78	12.126				
17,300.00	7,772.38	18,972.92	9,906.11	230.56	109.88	-19.95	2,059.88	10,031.64	2,410.30	2,211.10	199.20	12.100 SF				
17,400.00	7,774.12	18,972.92	9,906.11	232.86	109.88	-24.61	2,059.88	10,031.64	2,426.46	2,226.16	200.30	12.114				
17,500.00	7,775.87	18,972.92	9,906.11	235.15	109.88	-28.95	2,059.88	10,031.64	2,446.61	2,245.51	201.10	12.166				
17,600.00	7,777.61	18,972.92	9,906.11	237.45	109.88	-32.96	2,059.88	10,031.64	2,470.65	2,269.05	201.59	12.256				
17,700.00	7,779.36	18,972.92	9,906.11	239.74	109.88	-36.64	2,059.88	10,031.64	2,498.46	2,296.65	201.81	12.380				

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 02-T23S-R28E - Offset-Culebra 'BLV' Federal 1H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 200-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
8,900.00	7,625.76	12,805.00	6,163.26	43.09	192.05	-89.75	978.03	702.45	1,965.45	1,909.92	55.52	35.399	
9,000.00	7,627.51	12,805.00	6,163.26	45.03	192.05	-89.78	978.03	702.45	2,034.86	1,980.14	54.71	37.190	
9,100.00	7,629.25	12,805.00	6,163.26	47.00	192.05	-89.81	978.03	702.45	2,106.73	2,052.79	53.94	39.056	
9,200.00	7,631.00	12,805.00	6,163.26	49.00	192.05	-89.84	978.03	702.45	2,180.82	2,127.61	53.20	40.989	
9,300.00	7,632.74	12,805.00	6,163.26	51.03	192.05	-89.86	978.03	702.45	2,256.91	2,204.40	52.50	42.985	
9,400.00	7,634.49	12,805.00	6,163.26	53.07	192.05	-89.88	978.03	702.45	2,334.80	2,282.96	51.84	45.038	
9,500.00	7,636.23	12,805.00	6,163.26	55.14	192.05	-89.90	978.03	702.45	2,414.32	2,363.11	51.21	47.142	
9,600.00	7,637.98	12,805.00	6,163.26	57.22	192.05	-89.92	978.03	702.45	2,495.32	2,444.70	50.62	49.293	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - Astrodog Fed Com 0810 231H - Wellbore #1 - FINAL SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 100-MWD+IGRF													Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	7.95	0.45	0.50	0.50	-49.51	541.92	-634.82	834.67					
100.00	100.00	113.69	106.19	0.66	0.53	-49.49	541.89	-634.27	834.25	833.06	1.19	700.313		
200.00	200.00	216.34	208.83	1.35	0.74	-49.51	541.03	-633.71	833.30	831.21	2.09	398.822		
300.00	300.00	312.52	305.00	1.82	1.02	-49.59	539.67	-633.96	832.57	829.74	2.83	293.746		
400.00	400.00	417.48	409.95	2.19	1.36	-49.69	537.93	-634.11	831.60	828.05	3.55	234.516		
500.00	500.00	507.55	500.00	2.51	1.66	-49.77	536.80	-634.51	831.11	826.94	4.17	199.352		
600.00	600.00	609.26	601.71	2.80	2.01	-49.86	535.67	-635.28	830.98	826.17	4.80	172.986		
700.00	700.00	708.62	701.06	3.06	2.35	-49.98	534.27	-636.22	830.80	825.38	5.41	153.519		
800.00	800.00	808.43	800.85	3.30	2.70	-50.12	532.64	-637.48	830.71	824.71	6.01	138.317		
893.61	893.61	901.24	893.61	3.52	3.03	-50.30	530.56	-639.10	830.63	824.08	6.55	126.836		
900.00	900.00	907.49	899.86	3.53	3.05	-50.32	530.40	-639.24	830.63	824.04	6.59	126.126		
1,000.00	1,000.00	1,006.60	998.89	3.75	3.41	-50.59	527.44	-641.80	830.72	823.57	7.16	116.074		
1,100.00	1,100.00	1,106.74	1,098.89	3.96	3.77	-50.95	523.47	-645.22	830.86	823.14	7.73	107.546		
1,200.00	1,200.00	1,209.68	1,201.63	4.15	4.15	-51.40	518.29	-649.33	830.82	822.52	8.30	100.085		
1,234.30	1,234.30	1,242.45	1,234.30	4.22	4.27	-51.57	516.41	-650.79	830.79	822.30	8.49	97.876		
1,300.00	1,300.00	1,304.65	1,296.30	4.34	4.50	-51.92	512.53	-654.01	830.92	822.07	8.84	93.943		
1,400.00	1,400.00	1,395.87	1,387.26	4.53	4.84	-52.39	507.69	-658.89	831.90	822.53	9.37	88.798		
1,500.00	1,500.00	1,484.43	1,475.61	4.70	5.17	-52.79	504.16	-664.00	834.06	824.19	9.87	84.481		
1,600.00	1,599.98	1,566.44	1,557.34	5.04	5.48	-53.31	501.54	-670.14	838.40	828.07	10.33	81.143		
1,700.00	1,699.84	1,662.73	1,653.38	5.68	5.82	-53.96	500.99	-676.89	844.60	833.75	10.85	77.810		
1,800.00	1,799.45	1,763.03	1,753.52	6.28	6.16	-54.56	503.99	-681.59	851.71	840.34	11.37	74.886		
1,900.00	1,898.70	1,879.88	1,870.15	6.85	6.54	-55.08	510.61	-683.53	858.67	846.73	11.94	71.912		
2,000.00	1,997.47	2,004.36	1,994.23	7.40	6.93	-55.45	519.80	-679.85	863.51	850.98	12.53	68.931		
2,100.00	2,095.71	2,126.73	2,115.94	7.63	7.32	-55.83	529.46	-671.68	866.27	853.24	13.03	66.484		
2,200.00	2,193.87	2,234.02	2,222.67	7.86	7.67	-56.37	536.29	-663.16	867.30	853.74	13.56	63.948		
2,300.00	2,292.03	2,340.02	2,328.09	8.13	8.02	-56.92	542.87	-654.31	868.04	853.92	14.12	61.472		
2,400.00	2,390.19	2,480.93	2,467.68	8.41	8.50	-57.02	552.30	-637.62	866.24	851.46	14.78	58.615		
2,500.00	2,488.36	2,625.05	2,609.30	8.70	9.01	-56.86	561.02	-612.45	859.31	843.88	15.43	55.680		
2,600.00	2,586.52	2,753.42	2,734.43	9.02	9.49	-56.77	566.41	-584.38	847.51	831.45	16.06	52.779		
2,700.00	2,684.68	2,846.30	2,824.94	9.34	9.86	-57.13	568.91	-563.71	834.74	818.09	16.65	50.138		
2,800.00	2,782.84	2,940.84	2,917.42	9.67	10.24	-57.55	571.33	-544.16	823.26	806.00	17.25	47.718		
2,900.00	2,881.00	3,061.14	3,034.66	10.02	10.75	-57.68	574.30	-517.45	810.47	792.57	17.90	45.279		
3,000.00	2,979.17	3,169.47	3,139.81	10.38	11.23	-57.90	576.08	-491.44	795.69	777.15	18.54	42.919		
3,100.00	3,077.33	3,262.66	3,230.12	10.74	11.66	-58.25	578.05	-468.52	780.68	761.51	19.18	40.708		
3,200.00	3,175.49	3,360.64	3,325.06	11.11	12.12	-58.51	581.04	-444.50	766.24	746.41	19.83	38.639		
3,300.00	3,273.65	3,458.88	3,420.11	11.49	12.60	-58.69	584.94	-420.00	751.89	731.39	20.50	36.684		
3,400.00	3,371.81	3,560.08	3,517.86	11.87	13.12	-58.77	589.69	-394.24	737.45	716.27	21.18	34.825		
3,500.00	3,469.98	3,659.09	3,613.26	12.26	13.63	-58.80	594.97	-368.26	722.63	700.77	21.86	33.051		
3,600.00	3,568.14	3,751.10	3,702.04	12.66	14.11	-58.95	600.22	-344.68	708.53	685.97	22.55	31.415		
3,700.00	3,666.30	3,846.42	3,794.20	13.06	14.62	-59.06	605.81	-320.97	695.18	671.93	23.25	29.898		
3,800.00	3,764.46	3,944.42	3,888.96	13.46	15.14	-59.13	611.91	-296.77	682.16	658.20	23.96	28.470		
3,900.00	3,862.62	4,046.32	3,987.37	13.87	15.69	-59.07	618.81	-271.23	669.09	644.41	24.68	27.109		
4,000.00	3,960.79	4,146.16	4,083.56	14.28	16.24	-58.98	626.00	-245.47	655.58	630.17	25.41	25.799		
4,100.00	4,058.95	4,250.00	4,183.60	14.70	16.83	-58.84	633.12	-218.57	641.81	615.66	26.15	24.547		
4,200.00	4,157.11	4,357.59	4,287.47	15.12	17.43	-58.88	637.55	-190.90	626.85	599.98	26.87	23.328		
4,300.00	4,255.27	4,456.99	4,383.68	15.54	17.98	-59.28	639.03	-165.94	611.15	583.57	27.58	22.157		
4,400.00	4,353.43	4,553.96	4,477.67	15.96	18.51	-59.81	640.00	-142.13	595.74	567.45	28.29	21.056		
4,500.00	4,451.59	4,654.64	4,575.20	16.39	19.07	-60.29	641.24	-117.18	580.29	551.28	29.01	20.006		
4,600.00	4,549.76	4,757.74	4,674.87	16.81	19.65	-60.70	642.84	-90.86	564.37	534.65	29.72	18.988		
4,700.00	4,647.92	4,860.25	4,773.64	17.24	20.25	-61.03	644.83	-63.50	547.61	517.17	30.44	17.987		
4,800.00	4,746.08	4,959.31	4,868.95	17.68	20.83	-61.41	646.88	-36.55	530.49	499.31	31.18	17.015		
4,900.00	4,844.24	5,060.16	4,965.87	18.11	21.44	-61.74	649.18	-8.76	513.16	481.25	31.91	16.082		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - Astrodog Fed Com 0810 232H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 100-MWD+IGRF												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	7.20	0.20	0.50	0.50	-50.56	522.01	-634.69	821.78				
100.00	100.00	110.51	103.51	0.66	0.53	-50.55	522.06	-634.38	821.58	820.40	1.19	691.952	
200.00	200.00	213.17	206.16	1.35	0.73	-50.55	521.53	-633.78	820.80	818.71	2.08	394.167	
300.00	300.00	312.36	305.36	1.82	1.02	-50.55	521.14	-633.42	820.27	817.43	2.84	288.988	
400.00	400.00	420.69	413.68	2.19	1.37	-50.60	519.93	-632.94	819.22	815.66	3.56	230.015	
500.00	500.00	535.52	528.47	2.51	1.76	-50.60	517.98	-630.71	816.64	812.37	4.27	191.215	
600.00	600.00	639.20	632.06	2.80	2.13	-50.54	516.09	-626.95	812.67	807.76	4.92	165.336	
700.00	700.00	733.19	725.99	3.06	2.46	-50.50	514.33	-623.96	809.04	803.53	5.51	146.919	
800.00	800.00	836.67	829.41	3.30	2.83	-50.49	512.36	-621.21	805.78	799.66	6.11	131.790	
900.00	900.00	961.15	953.70	3.53	3.28	-50.33	509.92	-614.85	800.59	793.81	6.78	118.112	
1,000.00	1,000.00	1,082.97	1,074.98	3.75	3.73	-49.92	508.11	-603.78	792.68	785.26	7.42	106.831	
1,100.00	1,100.00	1,214.07	1,204.96	3.96	4.25	-49.31	504.78	-587.02	781.29	773.21	8.08	96.701	
1,200.00	1,200.00	1,339.01	1,328.07	4.15	4.78	-48.53	500.46	-566.19	766.44	757.72	8.72	87.921	
1,300.00	1,300.00	1,446.86	1,433.54	4.34	5.27	-47.60	496.70	-544.00	748.65	739.34	9.31	80.398	
1,400.00	1,400.00	1,542.56	1,527.10	4.53	5.72	-46.72	493.51	-524.13	731.04	721.16	9.88	74.002	
1,500.00	1,500.00	1,632.98	1,615.70	4.70	6.15	-45.93	490.16	-506.37	714.18	703.75	10.43	68.472	
1,600.00	1,599.98	1,720.59	1,701.85	5.04	6.55	-45.39	486.76	-490.89	698.82	687.86	10.96	63.781	
1,700.00	1,699.84	1,816.13	1,796.11	5.68	6.99	-45.17	482.81	-475.78	684.77	673.27	11.50	59.552	
1,800.00	1,799.45	1,925.66	1,904.14	6.28	7.49	-45.22	477.18	-458.66	670.29	658.22	12.07	55.528	
1,900.00	1,898.70	2,032.18	2,008.79	6.85	8.01	-45.45	471.85	-439.54	654.36	641.72	12.64	51.760	
2,000.00	1,997.47	2,131.53	2,106.33	7.40	8.49	-46.07	466.45	-421.45	638.19	624.99	13.20	48.354	
2,100.00	2,095.71	2,228.28	2,201.35	7.63	8.97	-47.08	460.63	-404.12	622.18	608.50	13.68	45.487	
2,200.00	2,193.87	2,318.05	2,289.60	7.86	9.40	-48.21	455.91	-388.47	607.26	593.04	14.21	42.733	
2,300.00	2,292.03	2,415.30	2,385.31	8.13	9.87	-49.18	452.82	-371.45	593.83	579.04	14.79	40.156	
2,400.00	2,390.19	2,527.42	2,495.14	8.41	10.44	-49.82	450.21	-349.07	579.21	563.79	15.42	37.570	
2,500.00	2,488.36	2,627.40	2,592.80	8.70	10.96	-50.64	446.86	-327.95	563.15	547.12	16.03	35.141	
2,600.00	2,586.52	2,720.00	2,683.45	9.02	11.43	-51.69	443.40	-309.38	547.83	531.21	16.62	32.960	
2,700.00	2,684.68	2,810.00	2,771.84	9.34	11.88	-52.87	440.47	-292.69	534.15	516.94	17.21	31.035	
2,800.00	2,782.84	2,899.00	2,859.47	9.67	12.31	-54.11	438.39	-277.24	522.19	504.39	17.80	29.334	
2,900.00	2,881.00	2,990.06	2,949.34	10.02	12.73	-55.42	436.77	-262.71	511.93	493.53	18.40	27.826	
3,000.00	2,979.17	3,083.64	3,041.95	10.38	13.15	-56.82	435.34	-249.29	503.40	484.40	19.00	26.492	
3,100.00	3,077.33	3,180.84	3,138.21	10.74	13.58	-58.25	434.12	-235.85	495.75	476.13	19.62	25.261	
3,200.00	3,175.49	3,281.44	3,237.84	11.11	14.02	-59.70	432.93	-222.04	488.54	468.27	20.27	24.102	
3,300.00	3,273.65	3,393.24	3,348.32	11.49	14.54	-61.09	430.90	-205.02	480.02	459.06	20.96	22.904	
3,400.00	3,371.81	3,498.69	3,452.10	11.87	15.05	-62.51	428.37	-186.54	469.50	447.86	21.64	21.694	
3,500.00	3,469.98	3,601.18	3,552.82	12.26	15.56	-63.98	426.00	-167.72	458.60	436.27	22.33	20.534	
3,600.00	3,568.14	3,701.61	3,651.38	12.66	16.06	-65.57	423.05	-148.67	447.20	424.16	23.04	19.411	
3,700.00	3,666.30	3,804.63	3,752.43	13.06	16.59	-67.36	418.88	-128.99	435.62	411.86	23.77	18.329	
3,800.00	3,764.46	3,908.77	3,854.27	13.46	17.14	-69.26	414.20	-107.80	423.14	398.62	24.52	17.258	
3,900.00	3,862.62	4,007.33	3,950.54	13.87	17.66	-71.27	409.76	-87.14	410.58	385.28	25.30	16.230	
4,000.00	3,960.79	4,107.10	4,047.89	14.28	18.20	-73.33	405.64	-65.69	398.11	372.01	26.10	15.252	
4,100.00	4,058.95	4,203.90	4,142.35	14.70	18.73	-75.49	401.88	-44.84	386.19	359.25	26.94	14.335	
4,200.00	4,157.11	4,302.19	4,238.34	15.12	19.26	-77.90	397.41	-24.21	375.22	347.40	27.83	13.484	
4,300.00	4,255.27	4,399.04	4,332.88	15.54	19.78	-80.54	392.40	-3.81	364.75	335.98	28.77	12.678	
4,400.00	4,353.43	4,494.59	4,426.32	15.96	20.29	-83.26	387.94	15.67	355.79	326.04	29.76	11.957	
4,500.00	4,451.59	4,591.11	4,520.82	16.39	20.79	-86.06	383.71	34.83	348.21	317.42	30.79	11.308	
4,600.00	4,549.76	4,690.95	4,618.59	16.81	21.32	-89.03	379.16	54.55	341.56	309.67	31.89	10.711	
4,700.00	4,647.92	4,791.78	4,717.20	17.24	21.85	-92.07	374.86	75.16	335.10	302.07	33.04	10.143	
4,800.00	4,746.08	4,889.40	4,812.62	17.68	22.38	-95.14	371.03	95.37	329.30	295.07	34.23	9.620	
4,900.00	4,844.24	4,987.31	4,908.39	18.11	22.90	-98.24	367.51	115.45	324.59	289.12	35.46	9.153	
5,000.00	4,942.40	5,085.30	5,004.27	18.55	23.41	-101.38	364.22	135.41	320.92	284.19	36.73	8.737	
5,100.00	5,040.57	5,181.18	5,098.18	18.98	23.91	-104.42	361.58	154.53	318.47	280.46	38.00	8.380	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - Astrodog Fed Com 0810 232H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 100-MWD+IGRF												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,153.50	5,093.08	5,230.84	5,146.96	19.22	24.17	-105.95	360.50	163.82	318.09	279.42	38.67	8.225 CC	
5,200.00	5,138.73	5,276.59	5,191.95	19.42	24.39	-107.29	359.57	172.09	318.21	278.94	39.26	8.104	
5,300.00	5,236.89	5,375.90	5,289.55	19.86	24.89	-110.24	357.15	190.27	318.96	278.40	40.56	7.864 ES	
5,400.00	5,335.05	5,473.87	5,385.70	20.30	25.39	-113.36	353.74	208.70	320.46	278.56	41.89	7.649	
5,500.00	5,433.21	5,572.35	5,482.21	20.74	25.91	-116.74	348.70	227.69	323.16	279.88	43.29	7.466	
5,600.00	5,531.38	5,667.97	5,575.74	21.18	26.41	-120.21	342.55	246.58	327.19	282.50	44.69	7.322	
5,700.00	5,629.54	5,767.12	5,672.82	21.63	26.93	-123.60	336.29	265.70	332.74	286.67	46.07	7.222	
5,800.00	5,727.70	5,866.00	5,769.48	22.07	27.46	-126.98	329.74	285.51	338.99	291.55	47.44	7.146	
5,900.00	5,825.86	5,962.88	5,864.20	22.52	27.98	-130.13	323.41	304.82	346.38	297.65	48.74	7.107	
6,000.00	5,924.02	6,059.82	5,959.13	22.97	28.49	-133.03	317.35	323.48	355.13	305.17	49.96	7.108	
6,100.00	6,022.31	6,160.69	6,057.94	23.40	29.02	-135.87	311.31	342.90	363.94	312.78	51.16	7.114	
6,200.00	6,121.14	6,263.40	6,158.16	23.89	29.58	-138.87	305.18	364.50	369.13	316.72	52.41	7.043	
6,300.00	6,220.44	6,361.84	6,254.05	24.40	30.13	-141.81	299.45	386.01	371.18	317.58	53.60	6.925	
6,400.00	6,320.09	6,459.34	6,349.34	24.87	30.66	-144.54	294.54	406.04	370.92	316.25	54.67	6.785	
6,500.00	6,419.97	6,556.19	6,444.23	25.29	31.16	-147.20	290.11	424.88	368.37	312.77	55.61	6.625	
6,600.00	6,519.95	6,655.82	6,542.26	25.49	31.66	-149.76	286.65	442.32	363.40	307.12	56.29	6.456	
6,700.00	6,619.95	6,749.66	6,634.66	25.53	32.12	-152.25	283.29	458.34	358.19	301.50	56.69	6.318	
6,800.00	6,719.95	6,846.51	6,729.97	25.57	32.59	-154.96	278.70	474.93	354.76	297.68	57.08	6.215	
6,900.00	6,819.95	6,947.10	6,829.12	25.61	33.07	-157.68	274.49	491.34	352.00	294.56	57.44	6.128	
7,000.00	6,919.95	7,046.28	6,927.48	25.65	33.50	-159.72	272.00	503.79	349.76	292.01	57.75	6.057	
7,100.00	7,019.95	7,148.23	7,028.89	25.70	33.90	-161.39	270.94	514.17	347.34	289.28	58.06	5.982	
7,127.32	7,047.27	7,175.78	7,056.30	25.79	34.01	-161.76	270.76	516.95	346.99	288.79	58.20	5.962	
7,200.00	7,119.66	7,251.62	7,131.76	26.02	34.30	-162.28	270.61	524.54	348.44	289.82	58.62	5.944 SF	
7,300.00	7,216.87	7,350.13	7,229.87	26.70	34.66	-160.78	271.74	533.24	359.83	300.20	59.63	6.034	
7,400.00	7,308.61	7,440.00	7,319.53	27.39	34.97	-157.24	272.53	539.37	384.26	323.45	60.81	6.319	
7,500.00	7,392.10	7,522.60	7,402.02	28.04	35.25	-152.57	272.84	543.61	422.96	361.00	61.96	6.826	
7,600.00	7,464.80	7,596.11	7,475.34	28.62	35.51	-147.91	271.86	548.71	475.83	412.92	62.92	7.563	
7,700.00	7,524.52	7,657.08	7,536.12	29.10	35.73	-143.56	270.33	553.31	541.91	478.31	63.61	8.520	
7,800.00	7,569.42	7,703.63	7,582.53	29.48	35.90	-139.69	268.93	556.67	619.29	555.27	64.02	9.674	
7,900.00	7,598.15	7,737.00	7,615.81	29.77	36.02	-136.39	267.88	558.90	705.36	641.15	64.21	10.985	
8,000.00	7,609.83	7,750.17	7,628.95	29.98	36.07	-133.62	267.46	559.74	797.06	732.93	64.13	12.429	
8,100.00	7,611.63	7,756.42	7,635.18	30.26	36.09	-131.24	267.26	560.14	890.51	826.54	63.97	13.921	
8,200.00	7,613.39	7,762.82	7,641.56	30.89	36.11	-129.04	267.05	560.54	983.51	919.71	63.80	15.415	
8,300.00	7,615.17	7,769.39	7,648.11	32.01	36.13	-126.95	266.85	560.95	1,075.94	1,012.33	63.62	16.913	
8,400.00	7,616.95	7,776.10	7,654.81	33.57	36.16	-124.95	266.63	561.36	1,167.72	1,104.31	63.41	18.415	
8,500.00	7,618.73	7,782.93	7,661.62	35.37	36.18	-123.03	266.42	561.78	1,258.75	1,195.56	63.19	19.919	
8,600.00	7,620.50	7,789.85	7,668.53	37.29	36.21	-121.16	266.20	562.20	1,348.97	1,286.00	62.96	21.425	
8,700.00	7,622.27	7,796.85	7,675.51	39.27	36.23	-119.34	265.98	562.62	1,438.29	1,375.57	62.72	22.931	
8,800.00	7,624.02	7,803.89	7,682.54	41.18	36.25	-117.57	265.77	563.04	1,526.80	1,464.35	62.44	24.451	
8,900.00	7,625.76	7,810.87	7,689.50	43.09	36.28	-115.95	265.55	563.45	1,616.13	1,553.95	62.17	25.994	
9,000.00	7,627.51	7,817.74	7,696.36	45.03	36.30	-114.51	265.34	563.85	1,706.61	1,644.68	61.93	27.556	
9,100.00	7,629.25	7,827.00	7,705.59	47.00	36.34	-113.21	265.05	564.39	1,798.08	1,736.33	61.75	29.120	
9,200.00	7,631.00	7,827.00	7,705.59	49.00	36.34	-112.03	265.05	564.39	1,890.38	1,828.91	61.47	30.752	
9,300.00	7,632.74	7,836.87	7,715.44	51.03	36.37	-110.97	264.75	564.95	1,983.40	1,922.06	61.34	32.335	
9,400.00	7,634.49	7,842.76	7,721.32	53.07	36.39	-110.00	264.57	565.28	2,077.05	2,015.87	61.18	33.950	
9,500.00	7,636.23	7,848.55	7,727.10	55.14	36.41	-109.11	264.39	565.60	2,171.25	2,110.21	61.04	35.573	
9,600.00	7,637.98	7,854.22	7,732.76	57.22	36.43	-108.30	264.21	565.91	2,265.93	2,205.02	60.91	37.201	
9,700.00	7,639.72	7,859.80	7,738.33	59.31	36.45	-107.55	264.03	566.22	2,361.03	2,300.23	60.80	38.834	
9,800.00	7,641.47	7,865.27	7,743.79	61.42	36.47	-106.86	263.86	566.51	2,456.50	2,395.80	60.70	40.470	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - Astrodog Fed Com 0810 235H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 100-MWD+IGRF												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	7.00	0.10	0.50	0.50	-51.66	501.97	-634.79	809.28				
100.00	100.00	108.71	101.81	0.66	0.53	-51.65	502.04	-634.60	809.17	807.99	1.19	682.787	
200.00	200.00	212.86	205.96	1.35	0.73	-51.68	501.45	-634.43	808.70	806.62	2.08	389.173	
300.00	300.00	314.20	307.29	1.82	1.02	-51.68	500.88	-633.69	807.78	804.94	2.84	284.516	
400.00	400.00	411.39	404.48	2.19	1.34	-51.68	500.40	-633.13	807.02	803.49	3.53	228.840	
500.00	500.00	532.45	525.52	2.51	1.75	-51.66	499.24	-631.32	805.27	801.01	4.26	189.155	
600.00	600.00	639.09	632.07	2.80	2.12	-51.62	497.15	-627.62	801.31	796.40	4.91	163.129	
700.00	700.00	732.85	725.77	3.06	2.45	-51.60	495.18	-624.77	797.63	792.13	5.50	144.949	
800.00	800.00	828.34	821.22	3.30	2.79	-51.62	493.27	-622.76	794.73	788.65	6.08	130.657	
900.00	900.00	920.92	913.77	3.53	3.12	-51.68	491.25	-621.69	792.48	785.84	6.64	119.407	
1,000.00	1,000.00	1,012.55	1,005.38	3.75	3.44	-51.79	489.42	-621.73	791.27	784.10	7.17	110.320	
1,100.00	1,100.00	1,111.51	1,104.33	3.96	3.78	-51.90	487.91	-622.22	790.72	783.00	7.72	102.389	
1,200.00	1,200.00	1,210.79	1,203.60	4.15	4.13	-51.98	486.70	-622.54	790.22	781.95	8.27	95.580	
1,300.00	1,300.00	1,315.94	1,308.73	4.34	4.50	-52.08	485.24	-622.96	789.69	780.87	8.83	89.458	
1,400.00	1,400.00	1,449.98	1,442.70	4.53	4.98	-52.15	481.94	-620.26	786.65	777.17	9.48	82.974	
1,500.00	1,500.00	1,582.29	1,574.60	4.70	5.47	-52.18	475.37	-612.39	778.83	768.71	10.11	77.025	
1,600.00	1,599.98	1,690.87	1,682.61	5.04	5.88	-52.40	467.64	-604.40	768.90	758.25	10.65	72.170	
1,700.00	1,699.84	1,798.69	1,789.73	5.68	6.29	-52.90	459.10	-595.61	758.43	747.22	11.21	67.662	
1,800.00	1,799.45	1,909.55	1,899.70	6.28	6.73	-53.57	450.61	-584.54	747.31	735.54	11.77	63.482	
1,900.00	1,898.70	2,041.56	2,030.06	6.85	7.27	-54.58	437.79	-568.24	733.85	721.47	12.39	59.252	
2,000.00	1,997.47	2,168.81	2,154.74	7.40	7.84	-56.07	420.77	-549.35	717.35	704.35	13.00	55.188	
2,100.00	2,095.71	2,300.05	2,281.92	7.63	8.47	-58.02	399.10	-525.40	697.59	684.05	13.54	51.527	
2,200.00	2,193.87	2,427.38	2,403.63	7.86	9.15	-60.22	374.41	-497.36	674.03	659.89	14.14	47.677	
2,300.00	2,292.03	2,530.96	2,501.47	8.13	9.75	-62.60	351.70	-472.07	648.03	633.25	14.78	43.846	
2,400.00	2,390.19	2,616.47	2,582.22	8.41	10.27	-65.07	332.56	-451.42	623.12	607.65	15.48	40.266	
2,500.00	2,488.36	2,701.32	2,662.70	8.70	10.78	-67.70	314.03	-431.97	600.73	584.51	16.22	37.041	
2,600.00	2,586.52	2,792.52	2,749.52	9.02	11.34	-70.54	294.75	-411.75	580.61	563.60	17.01	34.127	
2,700.00	2,684.68	2,881.95	2,834.77	9.34	11.88	-73.52	276.11	-392.21	562.34	544.47	17.86	31.478	
2,800.00	2,782.84	2,967.30	2,916.47	9.67	12.40	-76.53	259.05	-374.34	546.73	527.96	18.76	29.136	
2,900.00	2,881.00	3,057.96	3,003.71	10.02	12.94	-79.66	242.13	-356.40	534.13	514.41	19.72	27.089	
3,000.00	2,979.17	3,155.65	3,097.69	10.38	13.52	-83.01	223.97	-336.88	523.03	502.29	20.74	25.215	
3,100.00	3,077.33	3,253.84	3,191.96	10.74	14.12	-86.55	205.30	-316.71	513.12	491.27	21.84	23.492	
3,200.00	3,175.49	3,350.76	3,284.81	11.11	14.72	-90.23	186.47	-296.27	504.56	481.55	23.01	21.927	
3,300.00	3,273.65	3,447.12	3,376.98	11.49	15.33	-94.02	167.52	-275.54	497.65	473.41	24.24	20.528	
3,400.00	3,371.81	3,545.06	3,470.48	11.87	15.96	-97.98	147.92	-253.95	492.43	466.89	25.54	19.279	
3,500.00	3,469.98	3,645.05	3,565.42	12.26	16.63	-102.20	126.88	-230.66	488.49	461.57	26.92	18.144	
3,600.00	3,568.14	3,740.66	3,655.82	12.66	17.29	-106.40	106.25	-207.39	486.20	457.86	28.33	17.161	
3,636.16	3,603.63	3,773.96	3,687.32	12.80	17.52	-107.88	99.11	-199.28	486.01	457.17	28.84	16.853 CC	
3,700.00	3,666.30	3,834.66	3,744.75	13.06	17.94	-110.53	86.12	-184.50	486.51	456.77	29.74	16.357 ES	
3,800.00	3,764.46	3,931.20	3,835.83	13.46	18.62	-114.76	65.10	-160.40	489.03	457.85	31.17	15.689	
3,900.00	3,862.62	4,027.50	3,926.33	13.87	19.31	-119.00	43.67	-135.40	493.57	460.98	32.59	15.144	
4,000.00	3,960.79	4,124.36	4,016.76	14.28	20.04	-123.31	21.18	-109.00	500.25	466.24	34.01	14.711	
4,100.00	4,058.95	4,217.62	4,103.24	14.70	20.77	-127.49	-1.30	-82.29	509.18	473.82	35.36	14.401	
4,200.00	4,157.11	4,305.33	4,184.54	15.12	21.45	-131.27	-22.70	-57.27	521.24	484.66	36.58	14.249	
4,300.00	4,255.27	4,395.39	4,268.59	15.54	22.14	-134.78	-44.06	-33.00	536.61	498.90	37.71	14.228 SF	
4,400.00	4,353.43	4,487.10	4,354.89	15.96	22.81	-137.96	-64.62	-9.72	554.34	515.57	38.77	14.299	
4,500.00	4,451.59	4,580.82	4,443.58	16.39	23.48	-140.84	-84.74	12.88	573.95	534.20	39.76	14.436	
4,600.00	4,549.76	4,674.33	4,532.83	16.81	24.11	-143.30	-103.34	33.69	594.92	554.24	40.68	14.625	
4,700.00	4,647.92	4,768.25	4,622.66	17.24	24.74	-145.55	-121.73	54.04	617.07	575.51	41.56	14.847	
4,800.00	4,746.08	4,862.74	4,712.94	17.68	25.37	-147.68	-140.38	74.72	640.23	597.80	42.43	15.091	
4,900.00	4,844.24	4,959.33	4,805.55	18.11	26.00	-149.62	-158.78	95.08	664.06	620.78	43.28	15.343	
5,000.00	4,942.40	5,054.48	4,896.90	18.55	26.62	-151.37	-176.53	114.96	688.39	644.29	44.10	15.609	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - Astrodog Fed Com 0810 235H - Wellbore #1 - FINAL SURVEYS													Offset Site Error: 0.00 usft		
Survey Program: 100-MWD+IGRF				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.50 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,040.57	5,146.34	4,984.67	18.98	27.23	-153.03	-194.44	135.29	713.55	668.67	44.87	15.901			
5,200.00	5,138.73	5,239.38	5,073.56	19.42	27.85	-154.61	-212.79	155.75	739.62	693.97	45.65	16.203			
5,300.00	5,236.89	5,335.66	5,166.00	19.86	28.48	-156.03	-231.13	175.42	766.23	719.79	46.44	16.498			
5,400.00	5,335.05	5,435.76	5,262.49	20.30	29.10	-157.33	-249.25	194.94	792.78	745.51	47.27	16.772			
5,500.00	5,433.21	5,535.62	5,359.03	20.74	29.72	-158.49	-266.43	213.83	819.06	770.98	48.08	17.034			
5,600.00	5,531.38	5,627.04	5,447.42	21.18	30.28	-159.44	-281.95	231.27	845.38	796.56	48.81	17.319			
5,700.00	5,629.54	5,712.84	5,529.96	21.63	30.82	-160.33	-297.75	248.55	872.93	823.46	49.48	17.643			
5,800.00	5,727.70	5,807.01	5,620.31	22.07	31.43	-161.34	-315.92	267.88	901.48	851.25	50.23	17.948			
5,900.00	5,825.86	5,903.84	5,713.44	22.52	32.05	-162.29	-334.02	287.29	929.87	878.87	51.01	18.231			
6,000.00	5,924.02	5,995.44	5,801.70	22.97	32.63	-163.07	-351.06	304.87	958.63	906.91	51.73	18.532			
6,100.00	6,022.31	6,087.26	5,890.35	23.40	33.19	-163.77	-368.23	321.55	987.37	934.94	52.43	18.832			
6,200.00	6,121.14	6,184.24	5,983.89	23.89	33.80	-164.61	-386.56	339.46	1,013.75	960.55	53.20	19.055			
6,300.00	6,220.44	6,276.46	6,072.64	24.40	34.38	-165.49	-404.14	357.29	1,037.45	983.56	53.89	19.250			
6,400.00	6,320.09	6,367.06	6,159.59	24.87	34.97	-166.46	-421.99	375.42	1,059.05	1,004.56	54.49	19.435			
6,500.00	6,419.97	6,471.16	6,259.53	25.29	35.65	-167.66	-442.46	396.19	1,078.15	1,023.00	55.15	19.549			
6,600.00	6,519.95	6,568.00	6,352.57	25.49	36.27	-168.84	-460.98	415.62	1,094.32	1,038.79	55.53	19.705			
6,700.00	6,619.95	6,663.68	6,444.34	25.53	36.90	-170.04	-479.44	435.42	1,109.94	1,054.20	55.74	19.912			
6,800.00	6,719.95	6,774.83	6,551.24	25.57	37.61	-171.36	-500.07	457.81	1,125.42	1,069.32	56.10	20.060			
6,900.00	6,819.95	6,893.28	6,665.87	25.61	38.33	-172.63	-519.90	480.06	1,139.71	1,083.19	56.52	20.166			
7,000.00	6,919.95	7,013.62	6,783.15	25.65	39.00	-173.75	-537.48	500.51	1,152.42	1,095.49	56.93	20.242			
7,100.00	7,019.95	7,147.27	6,914.55	25.70	39.66	-174.75	-553.29	518.96	1,162.94	1,105.52	57.42	20.254			
7,200.00	7,119.66	7,283.69	7,049.81	26.02	40.23	-175.20	-564.69	532.41	1,173.22	1,115.10	58.11	20.188			
7,300.00	7,216.87	7,409.15	7,174.78	26.70	40.67	-174.66	-571.45	541.09	1,188.65	1,129.45	59.19	20.081			
7,400.00	7,308.61	7,521.95	7,287.42	27.39	41.01	-173.26	-574.83	545.97	1,210.10	1,149.52	60.58	19.976			
7,500.00	7,392.10	7,607.06	7,372.48	28.04	41.24	-171.17	-576.45	548.28	1,239.42	1,177.28	62.14	19.947			
7,600.00	7,464.80	7,675.13	7,440.54	28.62	41.42	-168.60	-577.74	548.84	1,278.07	1,214.27	63.81	20.030			
7,700.00	7,524.52	7,724.00	7,489.40	29.10	41.53	-165.74	-578.71	548.60	1,326.20	1,260.73	65.46	20.258			
7,800.00	7,569.42	7,765.61	7,531.00	29.48	41.63	-162.79	-579.67	548.14	1,383.15	1,316.09	67.06	20.625			
7,900.00	7,598.15	7,788.37	7,553.75	29.77	41.68	-159.89	-580.28	547.87	1,447.56	1,379.11	68.45	21.147			
8,000.00	7,609.83	7,796.39	7,561.76	29.98	41.70	-157.15	-580.51	547.78	1,517.41	1,447.80	69.61	21.800			
8,100.00	7,611.63	7,796.03	7,561.41	30.26	41.70	-154.58	-580.50	547.78	1,589.16	1,518.57	70.59	22.513			
8,200.00	7,613.39	7,795.76	7,561.13	30.89	41.70	-152.11	-580.50	547.78	1,660.35	1,588.80	71.54	23.207			
8,300.00	7,615.17	7,795.60	7,560.97	32.01	41.70	-149.71	-580.49	547.79	1,730.83	1,658.42	72.41	23.902			
8,400.00	7,616.95	7,795.55	7,560.93	33.57	41.70	-147.38	-580.49	547.79	1,800.53	1,727.34	73.20	24.599			
8,500.00	7,618.73	7,795.62	7,560.99	35.37	41.70	-145.11	-580.49	547.79	1,869.34	1,795.44	73.90	25.296			
8,600.00	7,620.50	7,795.80	7,561.17	37.29	41.70	-142.90	-580.50	547.78	1,937.18	1,862.65	74.53	25.993			
8,700.00	7,622.27	7,796.09	7,561.46	39.27	41.70	-140.74	-580.50	547.78	2,003.98	1,928.89	75.09	26.688			
8,800.00	7,624.02	7,796.48	7,561.85	41.18	41.70	-138.62	-580.52	547.78	2,069.87	1,994.36	75.51	27.411			
8,900.00	7,625.76	7,796.90	7,562.27	43.09	41.70	-136.61	-580.53	547.77	2,137.60	2,061.76	75.84	28.185			
9,000.00	7,627.51	7,797.31	7,562.68	45.03	41.70	-134.73	-580.54	547.76	2,207.78	2,131.67	76.11	29.007			
9,100.00	7,629.25	7,797.72	7,563.09	47.00	41.70	-132.97	-580.55	547.76	2,280.19	2,203.87	76.33	29.874			
9,200.00	7,631.00	7,798.13	7,563.50	49.00	41.71	-131.32	-580.56	547.75	2,354.62	2,278.12	76.50	30.781			
9,300.00	7,632.74	7,798.54	7,563.91	51.03	41.71	-129.77	-580.58	547.75	2,430.89	2,354.26	76.63	31.724			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_132H - Wellbore #1 - Plan 5													Offset Site Error:	0.00 usft	
Survey Program: 0-MWD+HRGM				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,000.00	4,942.40	5,022.62	4,946.00	18.55	18.99	175.19	-24.76	482.04	452.72	423.72	28.99	15.615			
5,100.00	5,040.57	5,121.73	5,042.71	18.98	19.44	174.34	-22.17	503.62	464.01	434.47	29.54	15.710			
5,200.00	5,138.73	5,220.85	5,139.41	19.42	19.88	173.53	-19.59	525.21	475.40	445.32	30.08	15.802			
5,300.00	5,236.89	5,319.96	5,236.11	19.86	20.33	172.76	-17.00	546.80	486.89	456.25	30.64	15.893			
5,400.00	5,335.05	5,419.08	5,332.81	20.30	20.78	172.02	-14.41	568.39	498.46	467.27	31.19	15.981			
5,500.00	5,433.21	5,518.19	5,429.51	20.74	21.23	171.32	-11.83	589.97	510.13	478.37	31.75	16.066			
5,600.00	5,531.38	5,617.31	5,526.21	21.18	21.68	170.64	-9.24	611.56	521.86	489.55	32.31	16.149			
5,700.00	5,629.54	5,716.42	5,622.91	21.63	22.13	170.00	-6.66	633.15	533.67	500.79	32.88	16.230			
5,800.00	5,727.70	5,815.54	5,719.61	22.07	22.59	169.39	-4.07	654.73	545.55	512.10	33.45	16.309			
5,900.00	5,825.86	5,914.65	5,816.31	22.52	23.04	168.80	-1.48	676.32	557.49	523.47	34.02	16.386			
6,000.00	5,924.02	6,013.77	5,913.01	22.97	23.50	168.23	1.10	697.91	569.49	534.89	34.60	16.460			
6,100.00	6,022.31	6,112.89	6,009.72	23.40	23.95	167.64	3.69	719.50	581.20	546.06	35.14	16.538			
6,200.00	6,121.14	6,211.97	6,106.39	23.89	24.41	166.80	6.28	741.08	591.36	555.69	35.67	16.578			
6,300.00	6,220.44	6,310.92	6,202.93	24.40	24.87	165.71	8.86	762.63	599.94	563.79	36.15	16.595			
6,400.00	6,320.09	6,409.60	6,299.20	24.87	25.32	164.36	11.43	784.12	607.12	570.55	36.57	16.603			
6,500.00	6,419.97	6,508.92	6,396.14	25.29	25.78	162.75	14.01	805.64	613.06	576.15	36.91	16.610			
6,600.00	6,519.95	6,611.63	6,496.91	25.49	26.28	161.06	16.37	825.30	617.48	580.28	37.20	16.601			
6,700.00	6,619.95	6,715.44	6,599.42	25.53	26.82	159.58	18.31	841.52	621.02	583.60	37.42	16.597			
6,800.00	6,719.95	6,820.32	6,703.52	25.57	27.34	158.45	19.82	854.15	624.01	586.36	37.65	16.575			
6,900.00	6,819.95	6,926.00	6,808.82	25.61	27.83	157.66	20.89	863.04	626.22	588.36	37.87	16.537			
7,000.00	6,919.95	7,032.20	6,914.89	25.65	28.26	157.21	21.49	868.09	627.52	589.46	38.06	16.487			
7,100.00	7,019.95	7,137.28	7,019.95	25.70	28.52	157.10	21.64	869.31	627.84	589.63	38.21	16.432			
7,100.46	7,020.41	7,137.74	7,020.41	25.70	28.52	157.10	21.64	869.31	627.84	589.63	38.21	16.432			
7,200.00	7,119.66	7,236.99	7,119.66	26.02	28.54	157.65	21.64	869.31	627.88	589.53	38.36	16.370			
7,300.00	7,216.87	7,334.19	7,216.87	26.70	28.57	159.74	21.64	869.31	628.56	589.80	38.76	16.217			
7,400.00	7,308.61	7,425.93	7,308.61	27.39	28.60	163.32	21.64	869.31	631.68	592.17	39.51	15.988			
7,500.00	7,392.10	7,509.42	7,392.10	28.04	28.63	168.20	21.64	869.31	640.03	599.32	40.71	15.723			
7,600.00	7,464.80	7,582.13	7,464.80	28.62	28.65	174.07	21.64	869.31	656.77	614.36	42.41	15.487			
7,700.00	7,524.52	7,641.84	7,524.52	29.10	28.67	-179.51	21.64	869.31	684.56	640.03	44.53	15.374			
7,800.00	7,569.42	7,686.74	7,569.42	29.48	28.68	-173.03	21.64	869.31	724.75	677.90	46.84	15.472			
7,900.00	7,598.15	7,715.47	7,598.15	29.77	28.69	-166.91	21.64	869.31	776.96	727.89	49.07	15.832			
8,000.00	7,609.83	7,727.16	7,609.83	29.98	28.70	-161.43	21.64	869.31	839.22	788.23	51.00	16.456			
8,100.00	7,611.63	7,728.95	7,611.63	30.26	28.70	-156.60	21.64	869.31	907.07	854.46	52.61	17.242			
8,200.00	7,613.39	7,730.72	7,613.39	30.89	28.70	-152.25	21.64	869.31	976.93	922.88	54.04	18.077			
8,300.00	7,615.17	7,732.50	7,615.17	32.01	28.70	-148.28	21.64	869.31	1,048.21	992.95	55.26	18.968			
8,400.00	7,616.95	7,734.28	7,616.95	33.57	28.70	-144.63	21.64	869.31	1,120.48	1,064.19	56.29	19.906			
8,500.00	7,618.73	7,736.06	7,618.73	35.37	28.70	-141.24	21.64	869.31	1,193.36	1,136.21	57.15	20.880			
8,600.00	7,620.50	7,737.83	7,620.50	37.29	28.70	-138.06	21.64	869.31	1,266.58	1,208.70	57.88	21.884			
8,700.00	7,622.27	7,739.59	7,622.27	39.27	28.70	-135.07	21.64	869.31	1,339.89	1,281.41	58.48	22.913			
8,800.00	7,624.02	7,741.34	7,624.02	41.18	28.70	-132.25	21.64	869.31	1,413.30	1,354.38	58.92	23.988			
8,900.00	7,625.76	7,743.09	7,625.76	43.09	28.70	-129.67	21.64	869.31	1,489.08	1,429.85	59.24	25.138			
9,000.00	7,627.51	7,744.83	7,627.51	45.03	28.70	-127.35	21.64	869.31	1,567.59	1,508.11	59.48	26.356			
9,100.00	7,629.25	7,746.58	7,629.25	47.00	28.70	-125.25	21.64	869.31	1,648.42	1,588.76	59.65	27.633			
9,200.00	7,631.00	7,748.32	7,631.00	49.00	28.70	-123.35	21.64	869.31	1,731.25	1,671.47	59.78	28.960			
9,300.00	7,632.74	7,750.07	7,632.74	51.03	28.70	-121.63	21.64	869.31	1,815.81	1,755.94	59.87	30.330			
9,400.00	7,634.49	7,751.81	7,634.49	53.07	28.70	-120.06	21.64	869.31	1,901.87	1,841.94	59.93	31.736			
9,500.00	7,636.23	7,753.56	7,636.23	55.14	28.71	-118.63	21.64	869.31	1,989.23	1,929.26	59.96	33.174			
9,600.00	7,637.98	7,755.30	7,637.98	57.22	28.71	-117.32	21.64	869.31	2,077.73	2,017.74	59.98	34.639			
9,700.00	7,639.72	7,757.05	7,639.72	59.31	28.71	-116.11	21.64	869.31	2,167.23	2,107.24	59.99	36.127			
9,800.00	7,641.47	7,758.80	7,641.47	61.42	28.71	-115.00	21.64	869.31	2,257.60	2,197.62	59.98	37.636			
9,900.00	7,643.21	7,760.54	7,643.21	63.55	28.71	-113.98	21.64	869.31	2,348.76	2,288.79	59.97	39.163			
10,000.00	7,644.96	11,821.67	9,806.98	65.68	62.61	-175.76	-55.41	3,038.70	2,396.96	2,315.92	81.04	29.576			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_132H - Wellbore #1 - Plan 5													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
15,300.00	7,737.47	17,165.39	9,900.42	184.74	184.11	-178.26	-104.55	8,380.87	2,428.01	2,217.02	210.98	11.508	
15,400.00	7,739.21	17,265.39	9,902.17	187.02	186.41	-178.26	-104.16	8,480.85	2,428.02	2,214.55	213.47	11.374	
15,500.00	7,740.96	17,365.39	9,903.92	189.31	188.71	-178.26	-103.77	8,580.84	2,428.03	2,212.07	215.96	11.243	
15,600.00	7,742.70	17,465.39	9,905.66	191.60	191.01	-178.26	-103.38	8,680.82	2,428.04	2,209.59	218.45	11.115	
15,700.00	7,744.45	17,565.39	9,907.41	193.89	193.31	-178.26	-103.00	8,780.80	2,428.05	2,207.11	220.94	10.990	
15,800.00	7,746.19	17,665.39	9,909.16	196.18	195.61	-178.26	-102.61	8,880.79	2,428.06	2,204.63	223.43	10.867	
15,900.00	7,747.94	17,765.39	9,910.91	198.47	197.90	-178.26	-102.22	8,980.77	2,428.07	2,202.15	225.92	10.747	
16,000.00	7,749.69	17,865.39	9,912.66	200.76	200.20	-178.26	-101.84	9,080.75	2,428.08	2,199.67	228.41	10.630	
16,100.00	7,751.43	17,965.39	9,914.41	203.05	202.50	-178.26	-101.45	9,180.74	2,428.09	2,197.18	230.91	10.516	
16,200.00	7,753.18	18,065.39	9,916.16	205.34	204.80	-178.26	-101.06	9,280.72	2,428.10	2,194.70	233.40	10.403	
16,300.00	7,754.92	18,165.39	9,917.91	207.63	207.10	-178.26	-100.68	9,380.71	2,428.11	2,192.22	235.90	10.293	
16,400.00	7,756.67	18,265.39	9,919.66	209.92	209.40	-178.26	-100.29	9,480.69	2,428.12	2,189.73	238.39	10.185	
16,500.00	7,758.41	18,365.39	9,921.41	212.21	211.70	-178.26	-99.90	9,580.67	2,428.13	2,187.25	240.89	10.080	
16,600.00	7,760.16	18,465.39	9,923.16	214.51	214.00	-178.26	-99.51	9,680.66	2,428.14	2,184.76	243.38	9.977	
16,700.00	7,761.90	18,565.39	9,924.91	216.80	216.30	-178.26	-99.13	9,780.64	2,428.15	2,182.27	245.88	9.875	
16,800.00	7,763.65	18,665.39	9,926.66	219.09	218.61	-178.26	-98.74	9,880.63	2,428.17	2,179.78	248.38	9.776	
16,900.00	7,765.39	18,765.39	9,928.41	221.38	220.91	-178.26	-98.35	9,980.61	2,428.18	2,177.30	250.88	9.679	
17,000.00	7,767.14	18,865.39	9,930.16	223.68	223.21	-178.26	-97.97	10,080.59	2,428.19	2,174.81	253.38	9.583	
17,100.00	7,768.89	18,965.39	9,931.90	225.97	225.51	-178.26	-97.58	10,180.58	2,428.20	2,172.32	255.88	9.490	
17,200.00	7,770.63	19,065.39	9,933.65	228.27	227.81	-178.26	-97.19	10,280.56	2,428.21	2,169.83	258.38	9.398	
17,300.00	7,772.38	19,165.39	9,935.40	230.56	230.11	-178.26	-96.80	10,380.55	2,428.22	2,167.33	260.88	9.308	
17,400.00	7,774.12	19,265.39	9,937.15	232.86	232.42	-178.26	-96.42	10,480.53	2,428.23	2,164.84	263.39	9.219	
17,500.00	7,775.87	19,365.39	9,938.90	235.15	234.72	-178.26	-96.03	10,580.51	2,428.24	2,162.35	265.89	9.133	
17,600.00	7,777.61	19,465.39	9,940.65	237.45	237.02	-178.26	-95.64	10,680.50	2,428.25	2,159.86	268.39	9.047	
17,700.00	7,779.36	19,565.39	9,942.40	239.74	239.32	-178.26	-95.26	10,780.48	2,428.26	2,157.36	270.90	8.964	
17,800.00	7,781.10	19,665.39	9,944.15	242.04	241.63	-178.26	-94.87	10,880.47	2,428.27	2,154.87	273.40	8.882	
17,900.00	7,782.85	19,765.39	9,945.90	244.34	243.93	-178.26	-94.48	10,980.45	2,428.28	2,152.38	275.91	8.801	
18,000.00	7,784.59	19,865.39	9,947.65	246.63	246.23	-178.26	-94.09	11,080.43	2,428.29	2,149.88	278.41	8.722	
18,100.00	7,786.34	19,965.39	9,949.40	248.93	248.53	-178.26	-93.71	11,180.42	2,428.30	2,147.39	280.92	8.644	
18,200.00	7,788.08	20,065.39	9,951.15	251.23	250.84	-178.26	-93.32	11,280.40	2,428.32	2,144.89	283.43	8.568	
18,300.00	7,789.83	20,165.39	9,952.90	253.53	253.14	-178.26	-92.93	11,380.39	2,428.33	2,142.39	285.93	8.493	
18,367.04	7,791.00	20,232.43	9,954.07	255.07	254.68	-178.26	-92.67	11,447.41	2,428.33	2,140.72	287.61	8.443 SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_132H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 166-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,942.40	2,968.00	2,937.26	18.55	9.51	-142.17	-88.50	44.31	2,108.44	2,096.15	12.28	171.644	
5,100.00	5,040.57	2,968.00	2,937.26	18.98	9.51	-141.93	-88.50	44.31	2,207.66	2,195.25	12.41	177.887	
5,200.00	5,138.73	2,968.00	2,937.26	19.42	9.51	-141.71	-88.50	44.31	2,306.96	2,294.41	12.54	183.910	
5,300.00	5,236.89	2,968.00	2,937.26	19.86	9.51	-141.50	-88.50	44.31	2,406.31	2,393.63	12.68	189.719	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_211H - Wellbore #1 - Plan 4													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	1.30	0.00	0.50	0.50	-113.48	-90.34	-207.99	226.76				
100.00	100.00	101.30	100.00	0.66	0.66	-113.48	-90.34	-207.99	226.76	225.45	1.32	172.358	
200.00	200.00	201.30	200.00	1.35	1.35	-113.48	-90.34	-207.99	226.76	224.07	2.70	84.089	
300.00	300.00	301.30	300.00	1.82	1.82	-113.48	-90.34	-207.99	226.76	223.13	3.63	62.398	
400.00	400.00	401.30	400.00	2.19	2.19	-113.48	-90.34	-207.99	226.76	222.38	4.38	51.760	
500.00	500.00	501.30	500.00	2.51	2.51	-113.48	-90.34	-207.99	226.76	221.74	5.02	45.143	
600.00	600.00	601.30	600.00	2.80	2.80	-113.48	-90.34	-207.99	226.76	221.17	5.60	40.516	
700.00	700.00	701.30	700.00	3.06	3.06	-113.48	-90.34	-207.99	226.76	220.64	6.12	37.045	
800.00	800.00	801.30	800.00	3.30	3.30	-113.48	-90.34	-207.99	226.76	220.15	6.61	34.315	
900.00	900.00	901.30	900.00	3.53	3.53	-113.48	-90.34	-207.99	226.76	219.70	7.07	32.095	
1,000.00	1,000.00	1,001.30	1,000.00	3.75	3.75	-113.48	-90.34	-207.99	226.76	219.26	7.50	30.242	
1,100.00	1,100.00	1,101.30	1,100.00	3.96	3.96	-113.48	-90.34	-207.99	226.76	218.85	7.91	28.664	
1,200.00	1,200.00	1,201.30	1,200.00	4.15	4.15	-113.48	-90.34	-207.99	226.76	218.46	8.31	27.300	
1,300.00	1,300.00	1,301.30	1,300.00	4.34	4.34	-113.48	-90.34	-207.99	226.76	218.08	8.69	26.104	
1,400.00	1,400.00	1,401.30	1,400.00	4.53	4.53	-113.48	-90.34	-207.99	226.76	217.71	9.05	25.045	
1,500.00	1,500.00	1,501.41	1,500.11	4.70	4.71	-113.48	-90.34	-207.99	226.76	217.35	9.41	24.094	
1,600.00	1,599.98	1,609.99	1,608.66	5.04	5.08	-113.61	-89.40	-206.10	226.46	216.39	10.07	22.487	
1,700.00	1,699.84	1,718.53	1,717.02	5.68	5.76	-113.99	-86.65	-200.52	225.65	214.31	11.34	19.901	
1,800.00	1,799.45	1,827.01	1,825.00	6.28	6.41	-114.65	-82.08	-191.28	224.36	211.84	12.52	17.914	
1,900.00	1,898.70	1,935.38	1,932.40	6.85	7.02	-115.58	-75.71	-178.39	222.64	208.97	13.66	16.297	
2,000.00	1,997.47	2,043.62	2,039.06	7.40	7.61	-116.82	-67.56	-161.89	220.53	205.76	14.77	14.932	
2,100.00	2,095.71	2,151.68	2,144.78	7.63	8.17	-118.35	-57.65	-141.82	217.71	202.19	15.52	14.025	
2,200.00	2,193.87	2,254.55	2,244.71	7.86	8.52	-120.01	-46.86	-119.97	212.41	196.30	16.11	13.183	
2,300.00	2,292.03	2,354.21	2,341.46	8.13	8.77	-121.75	-36.27	-98.54	207.00	190.33	16.67	12.421	
2,400.00	2,390.19	2,453.87	2,438.22	8.41	9.05	-123.58	-25.68	-77.11	201.77	184.51	17.26	11.691	
2,500.00	2,488.36	2,553.53	2,534.97	8.70	9.35	-125.51	-15.10	-55.68	196.76	178.88	17.88	11.005	
2,600.00	2,586.52	2,653.19	2,631.72	9.02	9.66	-127.53	-4.51	-34.25	191.96	173.44	18.52	10.365	
2,700.00	2,684.68	2,752.85	2,728.48	9.34	9.99	-129.66	6.08	-12.82	187.40	168.22	19.18	9.771	
2,800.00	2,782.84	2,852.52	2,825.23	9.67	10.33	-131.88	16.66	8.61	183.10	163.25	19.85	9.225	
2,900.00	2,881.00	2,952.18	2,921.98	10.02	10.68	-134.21	27.25	30.04	179.07	158.55	20.52	8.725	
3,000.00	2,979.17	3,051.84	3,018.73	10.38	11.04	-136.63	37.84	51.46	175.34	154.14	21.20	8.272	
3,100.00	3,077.33	3,151.50	3,115.49	10.74	11.41	-139.15	48.43	72.89	171.92	150.05	21.86	7.863	
3,200.00	3,175.49	3,251.16	3,212.24	11.11	11.79	-141.77	59.01	94.32	168.83	146.31	22.52	7.498	
3,300.00	3,273.65	3,350.82	3,308.99	11.49	12.18	-144.47	69.60	115.75	166.08	142.94	23.15	7.175	
3,400.00	3,371.81	3,450.48	3,405.74	11.87	12.57	-147.25	80.19	137.18	163.71	139.96	23.76	6.891	
3,500.00	3,469.98	3,550.15	3,502.50	12.26	12.97	-150.09	90.77	158.61	161.72	137.39	24.34	6.646	
3,600.00	3,568.14	3,649.81	3,599.25	12.66	13.38	-153.00	101.36	180.04	160.13	135.25	24.88	6.436	
3,700.00	3,666.30	3,749.47	3,696.00	13.06	13.79	-155.94	111.95	201.47	158.95	133.56	25.39	6.261	
3,800.00	3,764.46	3,849.13	3,792.75	13.46	14.21	-158.91	122.53	222.90	158.19	132.33	25.86	6.118	
3,900.00	3,862.62	3,948.79	3,889.51	13.87	14.63	-161.89	133.12	244.33	157.85	131.56	26.29	6.005	
3,928.75	3,890.84	3,977.44	3,917.32	13.99	14.75	-162.75	136.16	250.49	157.83	131.43	26.40	5.978 CC	
4,000.00	3,960.79	4,048.45	3,986.26	14.28	15.05	-164.87	143.71	265.76	157.94	131.26	26.68	5.920 ES	
4,100.00	4,058.95	4,148.11	4,083.01	14.70	15.48	-167.83	154.30	287.19	158.46	131.42	27.04	5.861	
4,200.00	4,157.11	4,247.78	4,179.77	15.12	15.91	-170.75	164.88	308.62	159.40	132.04	27.36	5.826	
4,300.00	4,255.27	4,347.44	4,276.52	15.54	16.35	-173.63	175.47	330.05	160.76	133.10	27.66	5.812	
4,400.00	4,353.43	4,447.10	4,373.27	15.96	16.79	-176.44	186.06	351.48	162.52	134.58	27.94	5.817	
4,500.00	4,451.59	4,546.76	4,470.02	16.39	17.23	-179.17	196.64	372.91	164.67	136.47	28.21	5.838	
4,600.00	4,549.76	4,646.42	4,566.78	16.81	17.67	-178.18	207.23	394.34	167.21	138.74	28.46	5.874	
4,700.00	4,647.92	4,746.08	4,663.53	17.24	18.12	-175.61	217.82	415.77	170.10	141.38	28.72	5.922	
4,800.00	4,746.08	4,845.74	4,760.28	17.68	18.57	-173.14	228.40	437.20	173.33	144.35	28.98	5.981	
4,900.00	4,844.24	4,945.40	4,857.03	18.11	19.02	-170.78	238.99	458.63	176.89	147.64	29.25	6.047	
5,000.00	4,942.40	5,045.07	4,953.79	18.55	19.47	-168.51	249.58	480.06	180.75	151.21	29.54	6.119	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_211H - Wellbore #1 - Plan 4												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,040.57	5,144.73	5,050.54	18.98	19.93	166.34	260.16	501.49	184.90	155.06	29.84	6.196	
5,200.00	5,138.73	5,244.39	5,147.29	19.42	20.38	164.27	270.75	522.92	189.31	159.15	30.16	6.277	
5,300.00	5,236.89	5,344.05	5,244.04	19.86	20.84	162.30	281.34	544.35	193.97	163.47	30.50	6.359	
5,400.00	5,335.05	5,443.71	5,340.80	20.30	21.30	160.43	291.93	565.78	198.86	167.99	30.87	6.442	
5,500.00	5,433.21	5,543.37	5,437.55	20.74	21.76	158.65	302.51	587.21	203.97	172.71	31.26	6.525	
5,600.00	5,531.38	5,643.03	5,534.30	21.18	22.22	156.95	313.10	608.64	209.27	177.60	31.67	6.607	
5,700.00	5,629.54	5,742.70	5,631.05	21.63	22.68	155.35	323.69	630.07	214.76	182.65	32.11	6.688	
5,800.00	5,727.70	5,842.36	5,727.81	22.07	23.14	153.82	334.27	651.50	220.42	187.85	32.57	6.767	
5,900.00	5,825.86	5,942.02	5,824.56	22.52	23.61	152.37	344.86	672.93	226.24	193.19	33.05	6.845	
6,000.00	5,924.02	6,041.68	5,921.31	22.97	24.08	151.00	355.45	694.36	232.20	198.65	33.55	6.920	
6,100.00	6,022.31	6,141.31	6,018.04	23.40	24.54	149.54	366.03	715.78	238.15	204.11	34.03	6.997	
6,200.00	6,121.14	6,240.74	6,114.56	23.89	25.01	147.43	376.59	737.16	243.62	209.13	34.49	7.063	
6,300.00	6,220.44	6,339.83	6,210.76	24.40	25.47	144.65	387.12	758.47	248.91	213.97	34.94	7.124	
6,400.00	6,320.09	6,438.47	6,306.52	24.87	25.93	141.23	397.60	779.68	254.48	219.04	35.44	7.181	
6,500.00	6,419.97	6,539.03	6,404.51	25.29	26.41	137.43	407.60	799.92	260.45	224.40	36.05	7.225	
6,600.00	6,519.95	6,640.40	6,504.02	25.49	26.94	133.73	416.13	817.19	266.46	229.68	36.77	7.246	
6,700.00	6,619.95	6,742.76	6,605.15	25.53	27.47	130.59	423.16	831.42	272.21	234.70	37.52	7.255	
6,800.00	6,719.95	6,846.16	6,707.80	25.57	27.98	128.24	428.63	842.49	277.16	238.96	38.20	7.255	
6,900.00	6,819.95	6,950.32	6,811.59	25.61	28.46	126.63	432.48	850.29	280.87	242.12	38.75	7.248	
7,000.00	6,919.95	7,054.98	6,916.13	25.65	28.88	125.75	434.66	854.70	283.04	243.92	39.12	7.235	
7,100.00	7,019.95	7,158.82	7,019.95	25.70	29.10	125.53	435.19	855.77	283.58	244.30	39.28	7.219	
7,200.00	7,119.66	7,258.53	7,119.66	26.02	29.13	126.57	435.19	855.77	280.51	241.24	39.27	7.143	
7,300.00	7,216.87	7,355.73	7,216.87	26.70	29.16	130.78	435.19	855.77	269.61	230.67	38.94	6.923	
7,400.00	7,308.61	7,447.47	7,308.61	27.39	29.20	138.78	435.19	855.77	254.65	216.11	38.54	6.607	
7,500.00	7,392.10	7,530.96	7,392.10	28.04	29.22	151.14	435.19	855.77	243.15	203.83	39.32	6.184	
7,538.46	7,421.47	7,560.33	7,421.47	28.27	29.23	157.00	435.19	855.77	241.88	201.53	40.35	5.994	
7,600.00	7,464.80	7,603.67	7,464.80	28.62	29.25	167.23	435.19	855.77	245.78	202.86	42.92	5.727	
7,700.00	7,524.52	7,663.38	7,524.52	29.10	29.27	-175.91	435.19	855.77	271.68	223.15	48.53	5.598 SF	
7,800.00	7,569.42	7,708.28	7,569.42	29.48	29.29	-161.64	435.19	855.77	322.24	268.91	53.33	6.043	
7,900.00	7,598.15	7,737.01	7,598.15	29.77	29.30	-151.09	435.19	855.77	392.07	335.80	56.27	6.968	
8,000.00	7,609.83	7,748.70	7,609.83	29.98	29.30	-143.68	435.19	855.77	474.10	416.30	57.79	8.203	
8,100.00	7,611.63	7,750.49	7,611.63	30.26	29.30	-138.27	435.19	855.77	561.41	502.84	58.56	9.586	
8,200.00	7,613.39	7,752.26	7,613.39	30.89	29.30	-133.92	435.19	855.77	650.25	591.24	59.01	11.019	
8,300.00	7,615.17	7,754.03	7,615.17	32.01	29.30	-130.26	435.19	855.77	739.86	680.62	59.25	12.488	
8,400.00	7,616.95	7,755.81	7,616.95	33.57	29.30	-127.06	435.19	855.77	829.79	770.45	59.34	13.983	
8,500.00	7,618.73	7,757.59	7,618.73	35.37	29.30	-124.20	435.19	855.77	919.74	860.39	59.34	15.498	
8,600.00	7,620.50	7,759.37	7,620.50	37.29	29.30	-121.58	435.19	855.77	1,009.48	950.20	59.28	17.030	
8,700.00	7,622.27	7,761.13	7,622.27	39.27	29.30	-119.14	435.19	855.77	1,098.85	1,039.70	59.16	18.575	
8,800.00	7,624.02	7,762.88	7,624.02	41.18	29.30	-116.86	435.19	855.77	1,187.86	1,128.89	58.97	20.144	
8,900.00	7,625.76	7,764.63	7,625.76	43.09	29.31	-114.85	435.19	855.77	1,278.03	1,219.27	58.76	21.750	
9,000.00	7,627.51	7,766.37	7,627.51	45.03	29.31	-113.11	435.19	855.77	1,369.56	1,311.00	58.56	23.389	
9,100.00	7,629.25	7,768.12	7,629.25	47.00	29.31	-111.58	435.19	855.77	1,462.19	1,403.83	58.36	25.055	
9,200.00	7,631.00	7,769.86	7,631.00	49.00	29.31	-110.24	435.19	855.77	1,555.74	1,497.57	58.18	26.742	
9,300.00	7,632.74	7,771.61	7,632.74	51.03	29.31	-109.05	435.19	855.77	1,650.04	1,592.04	58.01	28.446	
9,400.00	7,634.49	7,773.35	7,634.49	53.07	29.31	-108.00	435.19	855.77	1,744.98	1,687.13	57.85	30.164	
9,500.00	7,636.23	7,775.10	7,636.23	55.14	29.31	-107.05	435.19	855.77	1,840.45	1,782.74	57.71	31.894	
9,600.00	7,637.98	7,776.84	7,637.98	57.22	29.31	-106.19	435.19	855.77	1,936.38	1,878.80	57.58	33.632	
9,700.00	7,639.72	7,778.59	7,639.72	59.31	29.31	-105.41	435.19	855.77	2,032.69	1,975.24	57.46	35.378	
9,800.00	7,641.47	7,780.33	7,641.47	61.42	29.31	-104.71	435.19	855.77	2,129.35	2,072.00	57.35	37.129	
9,900.00	7,643.21	7,782.08	7,643.21	63.55	29.31	-104.07	435.19	855.77	2,226.30	2,169.05	57.25	38.886	
10,000.00	7,644.96	7,783.83	7,644.96	65.68	29.31	-103.48	435.19	855.77	2,323.50	2,266.34	57.17	40.645	
10,100.00	7,646.71	12,173.98	9,979.62	67.83	66.63	-173.73	617.91	3,175.83	2,360.73	2,294.08	66.66	35.416	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_211H - Wellbore #1 - Plan 4											Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM											Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre	Rule Assigned:				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,400.00	7,739.21	17,473.98	10,072.27	187.02	186.30	-173.76	637.70	8,474.98	2,361.11	2,210.51	15.677
15,500.00	7,740.96	17,573.98	10,074.02	189.31	188.59	-173.76	638.08	8,574.97	2,361.12	2,208.86	15.507
15,600.00	7,742.70	17,673.98	10,075.77	191.60	190.88	-173.76	638.45	8,674.95	2,361.13	2,207.20	15.339
15,700.00	7,744.45	17,773.98	10,077.52	193.89	193.17	-173.76	638.82	8,774.93	2,361.14	2,205.55	15.176
15,800.00	7,746.19	17,873.98	10,079.26	196.18	195.46	-173.76	639.20	8,874.92	2,361.14	2,203.90	15.016
15,900.00	7,747.94	17,973.98	10,081.01	198.47	197.75	-173.76	639.57	8,974.90	2,361.15	2,202.24	14.859
16,000.00	7,749.69	18,073.98	10,082.76	200.76	200.05	-173.76	639.94	9,074.89	2,361.16	2,200.59	14.705
16,100.00	7,751.43	18,173.98	10,084.51	203.05	202.34	-173.76	640.32	9,174.87	2,361.16	2,198.93	14.554
16,200.00	7,753.18	18,273.98	10,086.26	205.34	204.64	-173.76	640.69	9,274.85	2,361.17	2,197.27	14.406
16,300.00	7,754.92	18,373.98	10,088.00	207.63	206.93	-173.76	641.06	9,374.84	2,361.18	2,195.61	14.261
16,400.00	7,756.67	18,473.98	10,089.75	209.92	209.22	-173.77	641.44	9,474.82	2,361.19	2,193.95	14.119
16,500.00	7,758.41	18,573.98	10,091.50	212.21	211.52	-173.77	641.81	9,574.81	2,361.19	2,192.29	13.980
16,600.00	7,760.16	18,673.98	10,093.25	214.51	213.81	-173.77	642.18	9,674.79	2,361.20	2,190.63	13.843
16,700.00	7,761.90	18,773.98	10,095.00	216.80	216.11	-173.77	642.56	9,774.77	2,361.21	2,188.97	13.709
16,800.00	7,763.65	18,873.98	10,096.74	219.09	218.41	-173.77	642.93	9,874.76	2,361.21	2,187.30	13.577
16,900.00	7,765.39	18,973.98	10,098.49	221.38	220.70	-173.77	643.30	9,974.74	2,361.22	2,185.64	13.448
17,000.00	7,767.14	19,073.98	10,100.24	223.68	223.00	-173.77	643.68	10,074.73	2,361.23	2,183.97	13.321
17,100.00	7,768.89	19,173.98	10,101.99	225.97	225.29	-173.77	644.05	10,174.71	2,361.24	2,182.31	13.197
17,200.00	7,770.63	19,273.98	10,103.74	228.27	227.59	-173.77	644.43	10,274.69	2,361.24	2,180.64	13.074
17,300.00	7,772.38	19,373.98	10,105.49	230.56	229.89	-173.77	644.80	10,374.68	2,361.25	2,178.97	12.954
17,400.00	7,774.12	19,473.98	10,107.23	232.86	232.19	-173.77	645.17	10,474.66	2,361.26	2,177.31	12.836
17,500.00	7,775.87	19,573.98	10,108.98	235.15	234.48	-173.77	645.55	10,574.65	2,361.27	2,175.64	12.720
17,600.00	7,777.61	19,673.98	10,110.73	237.45	236.78	-173.77	645.92	10,674.63	2,361.27	2,173.97	12.607
17,700.00	7,779.36	19,773.98	10,112.48	239.74	239.08	-173.77	646.29	10,774.61	2,361.28	2,172.30	12.495
17,800.00	7,781.10	19,873.98	10,114.23	242.04	241.38	-173.77	646.67	10,874.60	2,361.29	2,170.63	12.385
17,900.00	7,782.85	19,973.98	10,115.97	244.34	243.68	-173.77	647.04	10,974.58	2,361.29	2,168.96	12.277
18,000.00	7,784.59	20,073.98	10,117.72	246.63	245.98	-173.77	647.41	11,074.57	2,361.30	2,167.28	12.171
18,100.00	7,786.34	20,173.98	10,119.47	248.93	248.27	-173.77	647.79	11,174.55	2,361.31	2,165.61	12.066
18,200.00	7,788.08	20,273.98	10,121.22	251.23	250.57	-173.77	648.16	11,274.53	2,361.32	2,163.94	11.964
18,206.73	7,788.20	20,280.70	10,121.34	251.38	250.73	-173.77	648.19	11,281.26	2,361.32	2,163.83	11.957
18,300.00	7,789.83	20,365.04	10,122.81	253.53	252.67	-172.38	648.50	11,365.58	2,361.34	2,162.26	11.861
18,367.04	7,791.00	20,365.04	10,122.81	255.07	252.67	-162.31	648.50	11,365.58	2,362.55	2,162.27	11.796

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_211H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 169-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	1.29	-0.01	0.50	0.50	-113.48	-90.34	-207.99	226.76				
100.00	100.00	100.84	99.54	0.66	0.76	-113.48	-90.40	-208.07	226.86	225.44	1.42	159.471	
200.00	200.00	201.78	200.48	1.35	1.27	-113.50	-90.55	-208.24	227.07	224.49	2.58	88.113	
300.00	300.00	304.33	303.02	1.82	1.94	-113.51	-90.20	-207.33	226.12	222.67	3.45	65.615	
400.00	400.00	405.95	404.63	2.19	2.40	-113.68	-90.15	-205.57	224.52	220.37	4.15	54.123	
500.00	500.00	506.72	505.36	2.51	2.59	-114.12	-90.79	-202.75	222.22	217.49	4.72	47.056	
600.00	600.00	606.68	605.27	2.80	2.85	-114.61	-91.49	-199.73	219.75	214.42	5.33	41.251	
700.00	700.00	705.31	703.84	3.06	3.13	-115.22	-92.71	-196.81	217.59	211.70	5.89	36.952	
800.00	800.00	803.20	801.70	3.30	3.42	-115.83	-94.24	-194.69	216.31	209.91	6.39	33.841	
865.03	865.03	866.56	865.03	3.45	3.60	-116.31	-95.75	-193.65	216.03	209.35	6.68	32.341	
900.00	900.00	900.46	898.92	3.53	3.69	-116.50	-96.42	-193.41	216.12	209.29	6.82	31.671	
1,000.00	1,000.00	997.88	996.34	3.75	3.91	-116.67	-97.51	-194.10	217.24	210.04	7.20	30.174	
1,100.00	1,100.00	1,096.78	1,095.22	3.96	4.10	-116.56	-98.02	-196.06	219.25	211.71	7.54	29.078	
1,200.00	1,200.00	1,193.98	1,192.38	4.15	4.24	-116.43	-98.75	-198.66	221.98	214.11	7.87	28.212	
1,300.00	1,300.00	1,299.15	1,297.51	4.34	4.44	-116.49	-100.12	-200.88	224.46	216.20	8.26	27.159	
1,400.00	1,400.00	1,408.80	1,407.14	4.53	5.03	-116.72	-100.49	-199.59	223.57	214.74	8.83	25.334	
1,500.00	1,500.00	1,520.64	1,518.76	4.70	6.32	-116.51	-96.73	-193.89	217.49	207.49	10.00	21.751	
1,600.00	1,599.98	1,623.01	1,620.67	5.04	6.63	-116.21	-91.00	-186.07	209.82	198.95	10.86	19.314	
1,700.00	1,699.84	1,725.74	1,722.85	5.68	6.73	-116.16	-84.85	-177.51	204.68	192.97	11.71	17.480	
1,772.71	1,772.29	1,794.00	1,790.54	6.11	6.82	-116.35	-79.93	-170.16	201.16	188.76	12.40	16.222 CC, ES	
1,800.00	1,799.45	1,794.00	1,790.54	6.28	6.82	-116.58	-79.93	-170.16	203.13	190.58	12.55	16.188 SF	
1,900.00	1,898.70	1,794.00	1,790.54	6.85	6.82	-117.54	-79.93	-170.16	240.32	228.43	11.88	20.224	
2,000.00	1,997.47	1,794.00	1,790.54	7.40	6.82	-118.64	-79.93	-170.16	309.13	298.42	10.71	28.875	
2,100.00	2,095.71	1,794.00	1,790.54	7.63	6.82	-119.77	-79.93	-170.16	393.05	383.30	9.74	40.334	
2,200.00	2,193.87	1,794.00	1,790.54	7.86	6.82	-120.77	-79.93	-170.16	483.29	474.16	9.13	52.914	
2,300.00	2,292.03	1,794.00	1,790.54	8.13	6.82	-121.64	-79.93	-170.16	576.76	568.01	8.75	65.883	
2,400.00	2,390.19	1,794.00	1,790.54	8.41	6.82	-122.40	-79.93	-170.16	672.11	663.60	8.52	78.900	
2,500.00	2,488.36	1,794.00	1,790.54	8.70	6.82	-123.07	-79.93	-170.16	768.65	760.27	8.38	91.776	
2,600.00	2,586.52	1,794.00	1,790.54	9.02	6.82	-123.67	-79.93	-170.16	865.97	857.68	8.29	104.406	
2,700.00	2,684.68	1,794.00	1,790.54	9.34	6.82	-124.20	-79.93	-170.16	963.84	955.58	8.26	116.731	
2,800.00	2,782.84	1,794.00	1,790.54	9.67	6.82	-124.69	-79.93	-170.16	1,062.11	1,053.86	8.25	128.719	
2,900.00	2,881.00	1,794.00	1,790.54	10.02	6.82	-125.12	-79.93	-170.16	1,160.67	1,152.40	8.27	140.352	
3,000.00	2,979.17	1,794.00	1,790.54	10.38	6.82	-125.52	-79.93	-170.16	1,259.46	1,251.15	8.31	151.621	
3,100.00	3,077.33	1,794.00	1,790.54	10.74	6.82	-125.88	-79.93	-170.16	1,358.43	1,350.07	8.36	162.523	
3,200.00	3,175.49	1,794.00	1,790.54	11.11	6.82	-126.22	-79.93	-170.16	1,457.54	1,449.11	8.42	173.056	
3,300.00	3,273.65	1,794.00	1,790.54	11.49	6.82	-126.52	-79.93	-170.16	1,556.76	1,548.26	8.50	183.224	
3,400.00	3,371.81	1,794.00	1,790.54	11.87	6.82	-126.81	-79.93	-170.16	1,656.07	1,647.49	8.58	193.031	
3,500.00	3,469.98	1,794.00	1,790.54	12.26	6.82	-127.07	-79.93	-170.16	1,755.47	1,746.80	8.67	202.482	
3,600.00	3,568.14	1,794.00	1,790.54	12.66	6.82	-127.31	-79.93	-170.16	1,854.92	1,846.16	8.77	211.582	
3,700.00	3,666.30	1,794.00	1,790.54	13.06	6.82	-127.54	-79.93	-170.16	1,954.44	1,945.57	8.87	220.339	
3,800.00	3,764.46	1,794.00	1,790.54	13.46	6.82	-127.75	-79.93	-170.16	2,054.00	2,045.02	8.98	228.760	
3,900.00	3,862.62	1,794.00	1,790.54	13.87	6.82	-127.95	-79.93	-170.16	2,153.60	2,144.51	9.09	236.852	
4,000.00	3,960.79	1,794.00	1,790.54	14.28	6.82	-128.13	-79.93	-170.16	2,253.24	2,244.03	9.21	244.622	
4,100.00	4,058.95	1,794.00	1,790.54	14.70	6.82	-128.30	-79.93	-170.16	2,352.91	2,343.57	9.33	252.079	
4,200.00	4,157.11	1,794.00	1,790.54	15.12	6.82	-128.47	-79.93	-170.16	2,452.60	2,443.14	9.46	259.230	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_221H - Wellbore #1 - Plan 5											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM											Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre	Distance		Minimum Separation	Separation Factor	Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)			Warning	
0.00	0.00	1.60	0.00	0.50	0.50	-109.90	-72.23	-199.51	212.18			
100.00	100.00	101.60	100.00	0.66	0.66	-109.90	-72.23	-199.51	212.18	210.87	1.32	161.078
200.00	200.00	201.60	200.00	1.35	1.35	-109.90	-72.23	-199.51	212.18	209.48	2.70	78.642
300.00	300.00	301.60	300.00	1.82	1.82	-109.90	-72.23	-199.51	212.18	208.55	3.64	58.368
400.00	400.00	401.60	400.00	2.19	2.19	-109.90	-72.23	-199.51	212.18	207.80	4.38	48.422
500.00	500.00	501.60	500.00	2.51	2.51	-109.90	-72.23	-199.51	212.18	207.16	5.02	42.233
600.00	600.00	601.60	600.00	2.80	2.80	-109.90	-72.23	-199.51	212.18	206.58	5.60	37.906
700.00	700.00	701.60	700.00	3.06	3.06	-109.90	-72.23	-199.51	212.18	206.06	6.12	34.659
800.00	800.00	801.60	800.00	3.30	3.30	-109.90	-72.23	-199.51	212.18	205.57	6.61	32.106
900.00	900.00	901.60	900.00	3.53	3.53	-109.90	-72.23	-199.51	212.18	205.12	7.07	30.028
1,000.00	1,000.00	1,001.60	1,000.00	3.75	3.75	-109.90	-72.23	-199.51	212.18	204.68	7.50	28.295
1,100.00	1,100.00	1,101.60	1,100.00	3.96	3.95	-109.90	-72.23	-199.51	212.18	204.27	7.91	26.825
1,200.00	1,200.00	1,203.57	1,201.97	4.15	4.08	-109.78	-71.74	-199.42	211.94	203.73	8.21	25.806
1,300.00	1,300.00	1,307.00	1,305.32	4.34	4.60	-108.89	-68.00	-198.76	210.14	201.48	8.67	24.249
1,400.00	1,400.00	1,406.86	1,405.04	4.53	4.99	-107.62	-62.86	-197.86	207.66	198.59	9.08	22.882
1,500.00	1,500.00	1,507.32	1,505.37	4.70	5.22	-106.32	-57.67	-196.94	205.28	195.83	9.44	21.734
1,600.00	1,599.98	1,615.88	1,613.61	5.04	5.72	-104.76	-50.17	-193.74	202.12	192.01	10.11	19.996
1,700.00	1,699.84	1,724.08	1,721.03	5.68	6.55	-102.98	-39.38	-186.70	197.90	186.70	11.20	17.669
1,800.00	1,799.45	1,831.84	1,827.31	6.28	7.36	-100.95	-25.35	-175.87	192.69	180.49	12.20	15.793
1,900.00	1,898.70	1,939.10	1,932.17	6.85	8.14	-98.61	-8.18	-161.33	186.54	173.43	13.11	14.226
2,000.00	1,997.47	2,045.78	2,035.33	7.40	8.87	-95.92	12.05	-143.18	179.55	165.63	13.92	12.896
2,100.00	2,095.71	2,151.76	2,136.45	7.63	9.58	-92.71	35.20	-121.55	171.50	157.12	14.38	11.924
2,200.00	2,193.87	2,253.57	2,232.33	7.86	10.13	-88.67	59.91	-97.85	161.17	146.49	14.67	10.983
2,300.00	2,292.03	2,352.34	2,325.16	8.13	10.47	-84.28	84.22	-74.47	151.27	136.45	14.82	10.208
2,400.00	2,390.19	2,451.12	2,418.00	8.41	10.78	-79.35	108.52	-51.09	142.39	127.49	14.90	9.555
2,500.00	2,488.36	2,549.89	2,510.84	8.70	11.10	-73.88	132.82	-27.71	134.74	119.76	14.98	8.992
2,600.00	2,586.52	2,648.67	2,603.68	9.02	11.44	-67.87	157.13	-4.32	128.55	113.45	15.10	8.512
2,700.00	2,684.68	2,747.44	2,696.52	9.34	11.79	-61.41	181.43	19.06	124.02	108.70	15.32	8.096
2,800.00	2,782.84	2,846.21	2,789.36	9.67	12.16	-54.62	205.74	42.44	121.34	105.64	15.70	7.728
2,884.76	2,866.04	2,929.93	2,868.04	9.97	12.47	-48.73	226.34	62.26	120.62	104.41	16.20	7.444 CC
2,900.00	2,881.00	2,944.99	2,882.19	10.02	12.53	-47.66	230.04	65.82	120.64	104.33	16.31	7.396 ES
3,000.00	2,979.17	3,043.76	2,975.03	10.38	12.91	-40.75	254.34	89.20	121.95	104.78	17.17	7.103
3,100.00	3,077.33	3,142.54	3,067.87	10.74	13.31	-34.07	278.65	112.58	125.21	106.97	18.24	6.865
3,200.00	3,175.49	3,241.31	3,160.71	11.11	13.71	-27.79	302.95	135.96	130.27	110.81	19.46	6.693
3,300.00	3,273.65	3,340.08	3,253.55	11.49	14.11	-21.99	327.25	159.34	136.93	116.16	20.77	6.593
3,400.00	3,371.81	3,438.86	3,346.39	11.87	14.53	-16.74	351.56	182.73	144.97	122.87	22.10	6.559 SF
3,500.00	3,469.98	3,537.63	3,439.22	12.26	14.95	-12.03	375.86	206.11	154.18	130.76	23.43	6.581
3,600.00	3,568.14	3,636.41	3,532.06	12.66	15.38	-7.84	400.17	229.49	164.36	139.64	24.72	6.649
3,700.00	3,666.30	3,735.18	3,624.90	13.06	15.81	-4.13	424.47	252.87	175.34	149.37	25.97	6.751
3,800.00	3,764.46	3,833.95	3,717.74	13.46	16.25	-0.84	448.77	276.25	186.98	159.79	27.18	6.878
3,900.00	3,862.62	3,932.73	3,810.58	13.87	16.69	2.07	473.08	299.63	199.16	170.80	28.36	7.022
4,000.00	3,960.79	4,031.50	3,903.42	14.28	17.14	4.66	497.38	323.01	211.79	182.29	29.50	7.178
4,100.00	4,058.95	4,130.28	3,996.25	14.70	17.59	6.97	521.69	346.39	224.80	194.18	30.62	7.342
4,200.00	4,157.11	4,229.05	4,089.09	15.12	18.05	9.03	545.99	369.77	238.12	206.41	31.71	7.509
4,300.00	4,255.27	4,327.83	4,181.93	15.54	18.50	10.87	570.29	393.16	251.70	218.92	32.79	7.677
4,400.00	4,353.43	4,426.60	4,274.77	15.96	18.97	12.53	594.60	416.54	265.51	231.67	33.84	7.845
4,500.00	4,451.59	4,525.37	4,367.61	16.39	19.43	14.03	618.90	439.92	279.51	244.62	34.89	8.011
4,600.00	4,549.76	4,624.15	4,460.45	16.81	19.90	15.39	643.21	463.30	293.67	257.74	35.93	8.174
4,700.00	4,647.92	4,722.92	4,553.28	17.24	20.37	16.63	667.51	486.68	307.97	271.01	36.95	8.334
4,800.00	4,746.08	4,821.70	4,646.12	17.68	20.84	17.76	691.81	510.06	322.39	284.42	37.97	8.490
4,900.00	4,844.24	4,920.47	4,738.96	18.11	21.31	18.79	716.12	533.44	336.92	297.93	38.99	8.642
5,000.00	4,942.40	5,019.24	4,831.80	18.55	21.79	19.74	740.42	556.82	351.54	311.54	40.00	8.789

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_221H - Wellbore #1 - Plan 5													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM						Rule Assigned:						Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance			Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)				
5,100.00	5,040.57	5,118.02	4,924.64	18.98	22.26	20.62	764.73	580.21	366.24	325.23	41.00	8.932			
5,200.00	5,138.73	5,216.79	5,017.48	19.42	22.74	21.42	789.03	603.59	381.01	339.00	42.01	9.070			
5,300.00	5,236.89	5,315.57	5,110.31	19.86	23.23	22.17	813.33	626.97	395.85	352.84	43.01	9.204			
5,400.00	5,335.05	5,414.34	5,203.15	20.30	23.71	22.87	837.64	650.35	410.74	366.74	44.01	9.333			
5,500.00	5,433.21	5,513.11	5,295.99	20.74	24.19	23.51	861.94	673.73	425.69	380.68	45.01	9.458			
5,600.00	5,531.38	5,611.89	5,388.83	21.18	24.68	24.12	886.24	697.11	440.68	394.68	46.01	9.579			
5,700.00	5,629.54	5,710.66	5,481.67	21.63	25.17	24.68	910.55	720.49	455.72	408.72	47.00	9.696			
5,800.00	5,727.70	5,809.44	5,574.51	22.07	25.66	25.21	934.85	743.87	470.79	422.79	48.00	9.809			
5,900.00	5,825.86	5,908.21	5,667.34	22.52	26.15	25.71	959.16	767.25	485.90	436.90	48.99	9.918			
6,000.00	5,924.02	6,006.98	5,760.18	22.97	26.64	26.17	983.46	790.64	501.03	451.04	49.99	10.023			
6,100.00	6,022.31	6,105.65	5,852.92	23.40	27.13	26.64	1,007.74	813.99	516.83	465.86	50.97	10.140			
6,200.00	6,121.14	6,203.73	5,945.11	23.89	27.62	27.18	1,031.87	837.21	535.68	483.67	52.01	10.300			
6,300.00	6,220.44	6,301.08	6,036.61	24.40	28.11	27.81	1,055.82	860.25	557.83	504.77	53.05	10.515			
6,400.00	6,320.09	6,397.58	6,127.30	24.87	28.59	28.49	1,079.57	883.09	583.26	529.21	54.06	10.789			
6,500.00	6,419.97	6,506.12	6,229.55	25.29	29.12	29.30	1,105.81	908.34	611.46	556.30	55.16	11.085			
6,600.00	6,519.95	6,627.70	6,345.51	25.49	29.78	30.12	1,132.14	933.67	639.44	583.23	56.21	11.376			
6,700.00	6,619.95	6,751.82	6,465.36	25.53	30.47	30.80	1,155.34	955.99	664.72	607.71	57.02	11.658			
6,800.00	6,719.95	6,878.62	6,589.14	25.57	31.15	31.33	1,175.16	975.06	685.90	628.19	57.71	11.885			
6,900.00	6,819.95	7,007.71	6,716.26	25.61	31.81	31.73	1,191.26	990.54	702.82	644.55	58.27	12.061			
7,000.00	6,919.95	7,138.59	6,846.05	25.65	32.44	32.01	1,203.35	1,002.18	715.37	656.69	58.68	12.191			
7,100.00	7,019.95	7,270.75	6,977.75	25.70	33.02	32.19	1,211.21	1,009.74	723.46	664.53	58.93	12.276			
7,200.00	7,119.66	7,403.35	7,110.26	26.02	33.51	32.00	1,214.70	1,013.09	722.12	662.92	59.20	12.198			
7,300.00	7,216.87	7,509.96	7,216.87	26.70	33.58	30.93	1,214.88	1,013.27	703.63	644.03	59.61	11.805			
7,400.00	7,308.61	7,601.70	7,308.61	27.39	33.61	28.95	1,214.88	1,013.27	672.13	612.09	60.04	11.196			
7,500.00	7,392.10	7,685.20	7,392.10	28.04	33.63	25.87	1,214.88	1,013.27	629.88	569.61	60.27	10.451			
7,600.00	7,464.80	7,757.90	7,464.80	28.62	33.66	21.42	1,214.88	1,013.27	580.05	519.85	60.20	9.636			
7,700.00	7,524.52	7,817.61	7,524.52	29.10	33.68	15.19	1,214.88	1,013.27	527.13	467.43	59.69	8.830			
7,800.00	7,569.42	7,862.52	7,569.42	29.48	33.69	6.74	1,214.88	1,013.27	477.15	418.48	58.67	8.133			
7,900.00	7,598.15	7,891.24	7,598.15	29.77	33.70	-4.20	1,214.88	1,013.27	437.65	380.43	57.21	7.649			
8,000.00	7,609.83	7,902.93	7,609.83	29.98	33.71	-17.23	1,214.88	1,013.27	416.40	360.62	55.78	7.465			
8,034.86	7,610.80	7,903.90	7,610.80	30.06	33.71	-22.03	1,214.88	1,013.27	414.65	359.19	55.46	7.477			
8,100.00	7,611.63	7,904.73	7,611.63	30.26	33.71	-30.94	1,214.88	1,013.27	420.57	365.47	55.11	7.632			
8,200.00	7,613.39	7,906.49	7,613.39	30.89	33.71	-43.41	1,214.88	1,013.27	452.42	396.90	55.51	8.150			
8,300.00	7,615.17	7,908.27	7,615.17	32.01	33.71	-53.47	1,214.88	1,013.27	506.67	450.27	56.40	8.983			
8,400.00	7,616.95	7,910.05	7,616.95	33.57	33.71	-61.01	1,214.88	1,013.27	576.93	519.60	57.33	10.064			
8,500.00	7,618.73	7,911.83	7,618.73	35.37	33.71	-66.46	1,214.88	1,013.27	657.93	599.83	58.10	11.324			
8,600.00	7,620.50	7,913.60	7,620.50	37.29	33.71	-70.34	1,214.88	1,013.27	745.99	687.31	58.68	12.712			
8,700.00	7,622.27	7,915.36	7,622.27	39.27	33.71	-73.05	1,214.88	1,013.27	838.70	779.59	59.11	14.189			
8,800.00	7,624.02	7,917.11	7,624.02	41.18	33.71	-74.92	1,214.88	1,013.27	934.37	874.97	59.40	15.730			
8,900.00	7,625.76	7,918.86	7,625.76	43.09	33.71	-76.39	1,214.88	1,013.27	1,031.15	971.52	59.63	17.293			
9,000.00	7,627.51	7,920.60	7,627.51	45.03	33.71	-77.61	1,214.88	1,013.27	1,128.48	1,068.66	59.83	18.863			
9,100.00	7,629.25	7,922.35	7,629.25	47.00	33.71	-78.63	1,214.88	1,013.27	1,226.24	1,166.25	60.00	20.438			
9,200.00	7,631.00	7,924.09	7,631.00	49.00	33.71	-79.50	1,214.88	1,013.27	1,324.34	1,264.19	60.15	22.017			
9,300.00	7,632.74	7,925.84	7,632.74	51.03	33.72	-80.25	1,214.88	1,013.27	1,422.70	1,362.41	60.29	23.599			
9,400.00	7,634.49	7,927.59	7,634.49	53.07	33.72	-80.90	1,214.88	1,013.27	1,521.26	1,460.86	60.41	25.183			
9,500.00	7,636.23	7,929.33	7,636.23	55.14	33.72	-81.47	1,214.88	1,013.27	1,620.01	1,559.49	60.52	26.767			
9,600.00	7,637.98	7,931.08	7,637.98	57.22	33.72	-81.98	1,214.88	1,013.27	1,718.89	1,658.27	60.63	28.353			
9,700.00	7,639.72	7,932.82	7,639.72	59.31	33.72	-82.43	1,214.88	1,013.27	1,817.90	1,757.18	60.72	29.938			
9,800.00	7,641.47	7,934.57	7,641.47	61.42	33.72	-82.84	1,214.88	1,013.27	1,917.01	1,856.19	60.81	31.522			
9,900.00	7,643.21	7,936.31	7,643.21	63.55	33.72	-83.20	1,214.88	1,013.27	2,016.20	1,955.30	60.90	33.106			
10,000.00	7,644.96	7,938.06	7,644.96	65.68	33.72	-83.54	1,214.88	1,013.27	2,115.47	2,054.49	60.98	34.689			
10,100.00	7,646.71	7,939.80	7,646.71	67.83	33.72	-83.84	1,214.88	1,013.27	2,214.81	2,153.74	61.06	36.271			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_221H - Wellbore #1 - Plan 5													Offset Site Error: 0.00 usft		
Survey Program: 0-MWD+HRGM				Rule Assigned:										Offset Well Error: 0.50 usft	
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
10,200.00	7,648.45	7,941.55	7,648.45	69.98	33.72		-84.11	1,214.88	1,013.27	2,314.20	2,253.06	61.14		37.852	
10,300.00	7,650.20	7,943.29	7,650.20	72.15	33.72		-84.37	1,214.88	1,013.27	2,413.64	2,352.42	61.21		39.431	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_221H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 169-MWD+IGRF													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,942.40	2,961.00	2,901.44	18.55	12.48	-119.98	211.99	72.50	2,085.57	2,074.05	11.51	181.132	
5,100.00	5,040.57	2,961.00	2,901.44	18.98	12.48	-120.56	211.99	72.50	2,185.45	2,173.77	11.67	187.202	
5,200.00	5,138.73	2,961.00	2,901.44	19.42	12.48	-121.10	211.99	72.50	2,285.34	2,273.50	11.84	193.054	
5,300.00	5,236.89	2,961.00	2,901.44	19.86	12.48	-121.60	211.99	72.50	2,385.24	2,373.23	12.00	198.692	
5,400.00	5,335.05	2,961.00	2,901.44	20.30	12.48	-122.06	211.99	72.50	2,485.15	2,472.97	12.17	204.122	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_222H - Wellbore #1 - Plan 5												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.80	0.00	0.50	0.50	-119.36	-126.56	-224.95	258.11	258.11	1.31	196.584	
100.00	100.00	100.80	100.00	0.66	0.65	-119.36	-126.56	-224.95	258.11	256.80	2.69	95.795	
200.00	200.00	200.80	200.00	1.35	1.35	-119.36	-126.56	-224.95	258.11	255.41	3.63	71.060	
300.00	300.00	300.80	300.00	1.82	1.82	-119.36	-126.56	-224.95	258.11	254.48	4.38	58.937	
400.00	400.00	400.80	400.00	2.19	2.19	-119.36	-126.56	-224.95	258.11	253.73	5.02	51.398	
500.00	500.00	500.80	500.00	2.51	2.51	-119.36	-126.56	-224.95	258.11	253.09	5.60	46.128	
600.00	600.00	600.80	600.00	2.80	2.80	-119.36	-126.56	-224.95	258.11	252.51	6.12	42.174	
700.00	700.00	700.80	700.00	3.06	3.06	-119.36	-126.56	-224.95	258.11	251.99	6.61	39.065	
800.00	800.00	800.80	800.00	3.30	3.30	-119.36	-126.56	-224.95	258.11	251.50	7.06	36.537	
900.00	900.00	900.80	900.00	3.53	3.53	-119.36	-126.56	-224.95	258.11	251.04	7.50	34.427	
1,000.00	1,000.00	1,000.80	1,000.00	3.75	3.75	-119.36	-126.56	-224.95	258.11	250.61	7.91	32.631	
1,100.00	1,100.00	1,100.80	1,100.00	3.96	3.95	-119.36	-126.56	-224.95	258.11	250.20	8.31	31.077	
1,200.00	1,200.00	1,200.80	1,200.00	4.15	4.15	-119.36	-126.56	-224.95	258.11	249.80	8.69	29.716	
1,300.00	1,300.00	1,300.80	1,300.00	4.34	4.34	-119.36	-126.56	-224.95	258.11	249.42	9.05	28.510	
1,400.00	1,400.00	1,400.80	1,400.00	4.53	4.53	-119.36	-126.56	-224.95	258.11	249.06	9.41	27.430	
1,500.00	1,500.00	1,500.84	1,500.04	4.70	4.70	-119.36	-126.56	-224.95	258.11	248.70	9.41	27.415 CC, ES	
1,501.18	1,501.18	1,502.08	1,501.28	4.71	4.71	-119.36	-126.56	-224.95	258.11	248.69	9.92	26.075	
1,600.00	1,599.98	1,605.99	1,605.16	5.04	4.98	-119.82	-127.46	-223.21	258.78	248.86	10.83	24.083	
1,700.00	1,699.84	1,710.85	1,709.86	5.68	5.64	-121.17	-130.13	-218.06	260.94	250.10	11.68	22.672	
1,800.00	1,799.45	1,815.15	1,813.72	6.28	6.25	-123.35	-134.53	-209.58	264.84	253.16	12.47	21.725	
1,900.00	1,898.70	1,918.63	1,916.34	6.85	6.83	-126.27	-140.62	-197.84	270.91	258.44	13.21	21.177 SF	
2,000.00	1,997.47	2,021.03	2,017.36	7.40	7.39	-129.77	-148.31	-183.00	279.66	266.45	13.57	21.453	
2,100.00	2,095.71	2,122.16	2,116.48	7.63	7.93	-133.68	-157.54	-165.21	291.20	277.63	13.90	21.834	
2,200.00	2,193.87	2,222.13	2,213.71	7.86	8.39	-137.85	-168.24	-144.58	303.46	289.56	14.21	22.292	
2,300.00	2,292.03	2,319.02	2,307.43	8.13	8.62	-141.92	-179.56	-122.75	316.77	302.56	14.61	22.705	
2,400.00	2,390.19	2,415.52	2,400.76	8.41	8.87	-145.63	-190.85	-100.97	331.61	317.00	15.05	23.110	
2,500.00	2,488.36	2,512.02	2,494.09	8.70	9.15	-149.00	-202.14	-79.20	347.80	332.75	15.53	23.513	
2,600.00	2,586.52	2,608.52	2,587.42	9.02	9.44	-152.05	-213.43	-57.43	365.15	349.62	16.04	23.909	
2,700.00	2,684.68	2,705.02	2,680.75	9.34	9.75	-154.83	-224.72	-35.65	383.52	367.48	16.58	24.295	
2,800.00	2,782.84	2,801.52	2,774.07	9.67	10.07	-157.34	-236.01	-13.88	402.76	386.18	17.14	24.669	
2,900.00	2,881.00	2,898.01	2,867.40	10.02	10.40	-159.63	-247.30	7.89	422.75	405.61	17.71	25.030	
3,000.00	2,979.17	2,994.51	2,960.73	10.38	10.74	-161.70	-258.59	29.66	443.39	425.68	18.31	25.376	
3,100.00	3,077.33	3,091.01	3,054.06	10.74	11.10	-163.59	-269.88	51.44	464.60	446.29	18.92	25.709	
3,200.00	3,175.49	3,187.51	3,147.39	11.11	11.46	-165.31	-281.17	73.21	486.29	467.38	19.53	26.026	
3,300.00	3,273.65	3,284.01	3,240.72	11.49	11.83	-166.89	-292.46	94.98	508.42	488.88	20.16	26.330	
3,400.00	3,371.81	3,380.51	3,334.05	11.87	12.21	-168.33	-303.75	116.76	530.92	510.75	20.80	26.619	
3,500.00	3,469.98	3,477.00	3,427.38	12.26	12.60	-169.66	-315.04	138.53	553.74	532.94	21.45	26.895	
3,600.00	3,568.14	3,573.50	3,520.71	12.66	12.99	-170.89	-326.34	160.30	576.86	555.41	22.10	27.157	
3,700.00	3,666.30	3,670.00	3,614.04	13.06	13.39	-172.02	-337.63	182.08	600.23	578.13	22.76	27.407	
3,800.00	3,764.46	3,766.50	3,707.37	13.46	13.79	-173.06	-348.92	203.85	623.83	601.07	23.43	27.645	
3,900.00	3,862.62	3,863.00	3,800.70	13.87	14.20	-174.03	-360.21	225.62	647.64	624.21	24.10	27.871	
4,000.00	3,960.79	3,959.50	3,894.03	14.28	14.61	-174.93	-371.50	247.40	671.62	647.52	24.77	28.086	
4,100.00	4,058.95	4,055.99	3,987.36	14.70	15.02	-175.77	-382.79	269.17	695.76	670.99	25.45	28.291	
4,200.00	4,157.11	4,152.49	4,080.69	15.12	15.44	-176.55	-394.08	290.94	720.06	694.60	26.13	28.486	
4,300.00	4,255.27	4,248.99	4,174.02	15.54	15.87	-177.29	-405.37	312.72	744.48	718.34	26.82	28.672	
4,400.00	4,353.43	4,345.49	4,267.35	15.96	16.29	-177.97	-416.66	334.49	769.02	742.20	27.51	28.849	
4,500.00	4,451.59	4,441.99	4,360.68	16.39	16.72	-178.62	-427.95	356.26	793.67	766.16	28.20	29.017	
4,600.00	4,549.76	4,538.49	4,454.01	16.81	17.15	-179.22	-439.24	378.03	818.42	790.22	28.90	29.178	
4,700.00	4,647.92	4,634.98	4,547.33	17.24	17.59	-179.79	-450.53	399.81	843.26	814.36	29.60	29.331	
4,800.00	4,746.08	4,731.48	4,640.66	17.68	18.02	-179.67	-461.82	421.58	868.18	838.58	30.30	29.478	
4,900.00	4,844.24	4,827.98	4,733.99	18.11	18.46	-179.16	-473.11	443.35	893.17	862.87	31.00	29.618	
5,000.00	4,942.40	4,924.48	4,827.32	18.55	18.90	-178.68	-484.40	465.13	918.24	887.23			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_222H - Wellbore #1 - Plan 5													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,040.57	5,020.98	4,920.65	18.98	19.34	178.22	-495.69	486.90	943.36	911.66	31.71	29.751			
5,200.00	5,138.73	5,117.48	5,013.98	19.42	19.79	177.79	-506.99	508.67	968.55	936.14	32.42	29.879			
5,300.00	5,236.89	5,213.98	5,107.31	19.86	20.23	177.38	-518.28	530.45	993.79	960.67	33.12	30.002			
5,400.00	5,335.05	5,310.47	5,200.64	20.30	20.68	176.99	-529.57	552.22	1,019.08	985.25	33.84	30.119			
5,500.00	5,433.21	5,406.97	5,293.97	20.74	21.13	176.62	-540.86	573.99	1,044.42	1,009.87	34.55	30.231			
5,600.00	5,531.38	5,503.47	5,387.30	21.18	21.58	176.27	-552.15	595.77	1,069.80	1,034.54	35.26	30.338			
5,700.00	5,629.54	5,599.97	5,480.63	21.63	22.03	175.93	-563.44	617.54	1,095.22	1,059.24	35.98	30.442			
5,800.00	5,727.70	5,696.47	5,573.96	22.07	22.48	175.61	-574.73	639.31	1,120.67	1,083.98	36.69	30.541			
5,900.00	5,825.86	5,792.97	5,667.29	22.52	22.94	175.30	-586.02	661.09	1,146.17	1,108.75	37.41	30.636			
6,000.00	5,924.02	5,889.46	5,760.62	22.97	23.39	175.00	-597.31	682.86	1,171.69	1,133.56	38.13	30.727			
6,100.00	6,022.31	5,986.03	5,854.01	23.40	23.85	174.69	-608.61	704.65	1,196.86	1,158.03	38.83	30.824			
6,200.00	6,121.14	6,082.86	5,947.66	23.89	24.31	174.28	-619.94	726.49	1,220.18	1,180.64	39.54	30.858			
6,300.00	6,220.44	6,179.86	6,041.47	24.40	24.77	173.75	-631.29	748.38	1,241.54	1,201.30	40.24	30.855			
6,400.00	6,320.09	6,276.91	6,135.34	24.87	25.23	173.11	-642.64	770.28	1,261.00	1,220.10	40.89	30.835			
6,500.00	6,419.97	6,373.91	6,229.15	25.29	25.69	172.36	-653.99	792.16	1,278.60	1,237.10	41.50	30.807			
6,600.00	6,519.95	6,490.56	6,342.20	25.49	26.24	171.35	-667.22	817.68	1,294.05	1,251.92	42.13	30.718			
6,700.00	6,619.95	6,625.37	6,474.10	25.53	26.95	170.36	-680.03	842.37	1,306.52	1,263.77	42.75	30.559			
6,800.00	6,719.95	6,762.60	6,609.55	25.57	27.67	169.60	-690.11	861.83	1,316.31	1,272.97	43.34	30.373			
6,900.00	6,819.95	6,901.65	6,747.72	25.61	28.35	169.06	-697.28	875.64	1,323.24	1,279.39	43.85	30.177			
7,000.00	6,919.95	7,041.90	6,887.67	25.65	28.94	168.76	-701.37	883.53	1,327.19	1,282.94	44.25	29.991			
7,100.00	7,019.95	7,174.21	7,019.95	25.70	29.24	168.69	-702.37	885.46	1,328.16	1,283.70	44.46	29.876			
7,200.00	7,119.66	7,273.92	7,119.66	26.02	29.26	168.94	-702.37	885.46	1,329.38	1,284.78	44.60	29.808			
7,300.00	7,216.87	7,371.12	7,216.87	26.70	29.28	169.91	-702.37	885.46	1,334.32	1,289.38	44.94	29.690			
7,400.00	7,308.61	7,462.86	7,308.61	27.39	29.30	171.55	-702.37	885.46	1,343.69	1,298.23	45.46	29.557			
7,500.00	7,392.10	7,546.35	7,392.10	28.04	29.32	173.79	-702.37	885.46	1,358.49	1,312.34	46.15	29.435			
7,600.00	7,464.80	7,619.06	7,464.80	28.62	29.34	176.51	-702.37	885.46	1,379.82	1,332.83	47.00	29.361			
7,700.00	7,524.52	7,678.77	7,524.52	29.10	29.35	179.58	-702.37	885.46	1,408.58	1,360.62	47.96	29.371			
7,800.00	7,569.42	7,723.67	7,569.42	29.48	29.36	-177.15	-702.37	885.46	1,445.19	1,396.20	48.99	29.501			
7,900.00	7,598.15	7,752.40	7,598.15	29.77	29.37	-173.84	-702.37	885.46	1,489.38	1,439.36	50.02	29.776			
8,000.00	7,609.83	7,764.08	7,609.83	29.98	29.37	-170.62	-702.37	885.46	1,540.15	1,489.16	50.99	30.206			
8,100.00	7,611.63	7,765.88	7,611.63	30.26	29.37	-167.54	-702.37	885.46	1,594.07	1,542.16	51.91	30.707			
8,200.00	7,613.39	7,767.65	7,613.39	30.89	29.37	-164.56	-702.37	885.46	1,648.05	1,595.14	52.91	31.145			
8,300.00	7,615.17	7,769.42	7,615.17	32.01	29.37	-161.68	-702.37	885.46	1,701.92	1,648.03	53.89	31.581			
8,400.00	7,616.95	7,771.20	7,616.95	33.57	29.37	-158.88	-702.37	885.46	1,755.55	1,700.72	54.83	32.016			
8,500.00	7,618.73	7,772.98	7,618.73	35.37	29.38	-156.16	-702.37	885.46	1,808.82	1,753.08	55.75	32.448			
8,600.00	7,620.50	7,774.76	7,620.50	37.29	29.38	-153.51	-702.37	885.46	1,861.63	1,805.00	56.63	32.876			
8,700.00	7,622.27	7,776.52	7,622.27	39.27	29.38	-150.92	-702.37	885.46	1,913.87	1,856.39	57.48	33.298			
8,800.00	7,624.02	7,778.27	7,624.02	41.18	29.38	-148.40	-702.37	885.46	1,965.71	1,907.50	58.21	33.769			
8,900.00	7,625.76	7,780.01	7,625.76	43.09	29.38	-145.99	-702.37	885.46	2,020.23	1,961.36	58.87	34.315			
9,000.00	7,627.51	7,781.76	7,627.51	45.03	29.38	-143.71	-702.37	885.46	2,078.13	2,018.64	59.49	34.931			
9,100.00	7,629.25	7,783.51	7,629.25	47.00	29.38	-141.56	-702.37	885.46	2,139.15	2,079.08	60.07	35.612			
9,200.00	7,631.00	7,785.25	7,631.00	49.00	29.38	-139.53	-702.37	885.46	2,203.01	2,142.41	60.60	36.352			
9,300.00	7,632.74	7,787.00	7,632.74	51.03	29.38	-137.61	-702.37	885.46	2,269.48	2,208.39	61.09	37.148			
9,400.00	7,634.49	7,788.74	7,634.49	53.07	29.38	-135.81	-702.37	885.46	2,338.34	2,276.79	61.54	37.994			
9,500.00	7,636.23	7,790.49	7,636.23	55.14	29.38	-134.11	-702.37	885.46	2,409.38	2,347.42	61.96	38.886			
9,600.00	7,637.98	7,792.23	7,637.98	57.22	29.38	-132.51	-702.37	885.46	2,482.42	2,420.08	62.34	39.820			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG_FEE_0810_222H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 127-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,900.00	4,844.24	2,642.00	2,621.47	18.11	11.06	-143.91	-231.65	-39.64	2,361.64	2,349.51	12.13	194.673	
5,000.00	4,942.40	2,642.00	2,621.47	18.55	11.06	-143.68	-231.65	-39.64	2,460.43	2,448.18	12.25	200.889	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-011H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Offset	Offset	Offset	Offset	Offset	Offset	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Offset	Offset	Offset	Offset	Offset	Offset	Warning	
0.00	0.00	0.00	0.10	0.50	0.50	24.97	36.16	16.84	39.89	38.57	1.32	30.292	
100.00	100.00	99.90	100.00	0.66	0.66	24.97	36.16	16.84	39.89	37.20	2.70	14.794	
200.00	200.00	199.90	200.00	1.35	1.35	24.97	36.16	16.84	39.89	36.26	3.63	10.978	
300.00	300.00	299.90	300.00	1.82	1.82	24.97	36.16	16.84	39.89	35.51	4.38	9.107	
400.00	400.00	399.90	400.00	2.19	2.19	24.97	36.16	16.84	39.89	34.87	5.02	7.942	
500.00	500.00	499.90	500.00	2.51	2.51	24.97	36.16	16.84	39.89	34.30	5.60	7.128	
600.00	600.00	599.90	600.00	2.80	2.80	24.97	36.16	16.84	39.89	33.77	6.12	6.517	
700.00	700.00	699.90	700.00	3.06	3.06	24.97	36.16	16.84	39.89	33.28	6.61	6.037	
800.00	800.00	799.90	800.00	3.30	3.30	24.97	36.16	16.84	39.89	32.83	7.07	5.646	
900.00	900.00	899.90	900.00	3.53	3.53	24.97	36.16	16.84	39.89	32.39	7.50	5.320 CC, ES	
1,000.00	1,000.00	999.90	1,000.00	3.75	3.75	24.97	36.16	16.84	39.89	33.48	8.11	5.126 SF	
1,100.00	1,100.00	1,098.50	1,098.58	3.96	4.17	24.65	37.78	17.34	41.59	37.67	9.03	5.170	
1,200.00	1,200.00	1,196.87	1,196.81	4.15	4.91	23.85	42.62	18.84	46.71	45.35	9.88	5.591	
1,300.00	1,300.00	1,294.77	1,294.35	4.34	5.57	22.83	50.64	21.32	55.23	56.48	10.66	6.298	
1,400.00	1,400.00	1,391.99	1,390.87	4.53	6.19	21.85	61.74	24.76	67.14	71.01	11.40	7.229	
1,500.00	1,500.00	1,488.31	1,486.05	4.70	6.77	21.01	75.82	29.11	82.41	87.20	12.24	8.125	
1,600.00	1,599.98	1,583.81	1,579.88	5.04	7.33	19.87	92.79	34.37	99.44	103.43	13.28	8.790	
1,700.00	1,699.84	1,678.68	1,672.45	5.68	7.87	18.21	112.60	40.50	116.71	120.06	14.24	9.430	
1,800.00	1,799.45	1,772.90	1,763.66	6.28	8.39	16.22	135.16	47.48	134.30	137.14	15.14	10.056	
1,900.00	1,898.70	1,866.46	1,853.41	6.85	8.90	14.00	160.38	55.28	152.29	154.75	15.99	10.680	
2,000.00	1,997.47	1,959.32	1,941.59	7.40	9.41	11.62	188.18	63.88	170.74	173.62	16.47	11.545	
2,100.00	2,095.71	2,051.43	2,028.08	7.63	9.84	9.20	218.42	73.24	190.09	194.69	16.92	12.504	
2,200.00	2,193.87	2,147.14	2,117.14	7.86	10.17	7.28	251.90	83.61	211.62	215.99	17.45	13.381	
2,300.00	2,292.03	2,244.57	2,207.76	8.13	10.48	5.75	286.10	94.19	233.44	237.37	18.01	14.180	
2,400.00	2,390.19	2,342.00	2,298.38	8.41	10.81	4.48	320.29	104.77	255.38	258.81	18.60	14.911	
2,500.00	2,488.36	2,439.43	2,389.00	8.70	11.16	3.41	354.48	115.35	277.41	280.29	19.23	15.577	
2,600.00	2,586.52	2,536.86	2,479.62	9.02	11.52	2.51	388.67	125.93	299.52	301.80	19.88	16.183	
2,700.00	2,684.68	2,634.30	2,570.24	9.34	11.89	1.73	422.86	136.51	321.68	323.34	20.55	16.736	
2,800.00	2,782.84	2,731.73	2,660.86	9.67	12.28	1.05	457.05	147.09	343.89	344.90	21.24	17.240	
2,900.00	2,881.00	2,829.16	2,751.48	10.02	12.67	0.45	491.25	157.67	366.14	366.47	21.95	17.699	
3,000.00	2,979.17	2,926.59	2,842.10	10.38	13.07	-0.08	525.44	168.26	388.41	388.05	22.67	18.119	
3,100.00	3,077.33	3,024.03	2,932.72	10.74	13.48	-0.55	559.63	178.84	410.72	409.64	23.40	18.502	
3,200.00	3,175.49	3,121.46	3,023.34	11.11	13.89	-0.97	593.82	189.42	433.04	431.23	24.15	18.854	
3,300.00	3,273.65	3,218.89	3,113.96	11.49	14.31	-1.35	628.01	200.00	455.38	452.83	24.91	19.176	
3,400.00	3,371.81	3,316.32	3,204.58	11.87	14.74	-1.70	662.20	210.58	477.74	474.43	25.68	19.472	
3,500.00	3,469.98	3,413.75	3,295.20	12.26	15.18	-2.01	696.39	221.16	500.12	496.04	26.46	19.745	
3,600.00	3,568.14	3,511.19	3,385.82	12.66	15.61	-2.30	730.59	231.74	522.51	517.65	27.25	19.996	
3,700.00	3,666.30	3,608.62	3,476.44	13.06	16.06	-2.56	764.78	242.32	544.90	539.26	28.05	20.228	
3,800.00	3,764.46	3,706.05	3,567.06	13.46	16.50	-2.80	798.97	252.91	567.31	560.88	28.85	20.443	
3,900.00	3,862.62	3,803.48	3,657.68	13.87	16.96	-3.03	833.16	263.49	589.72	582.49	29.66	20.642	
4,000.00	3,960.79	3,900.92	3,748.30	14.28	17.41	-3.23	867.35	274.07	612.15	604.10	30.47	20.827	
4,100.00	4,058.95	3,998.35	3,838.92	14.70	17.87	-3.42	901.54	284.65	634.57	625.72	31.29	20.999	
4,200.00	4,157.11	4,095.78	3,929.54	15.12	18.33	-3.60	935.74	295.23	657.01	647.34	32.11	21.159	
4,300.00	4,255.27	4,193.21	4,020.16	15.54	18.79	-3.77	969.93	305.81	679.45	668.95	32.94	21.309	
4,400.00	4,353.43	4,290.64	4,110.78	15.96	19.26	-3.93	1,004.12	316.39	701.89	690.57	33.77	21.448	
4,500.00	4,451.59	4,388.08	4,201.40	16.39	19.73	-4.07	1,038.31	326.97	724.34	712.19	34.61	21.579	
4,600.00	4,549.76	4,485.51	4,292.02	16.81	20.20	-4.21	1,072.50	337.56	746.80	733.81	35.45	21.702	
4,700.00	4,647.92	4,582.94	4,382.64	17.24	20.68	-4.34	1,106.69	348.14	769.25	755.42	36.29	21.817	
4,800.00	4,746.08	4,680.37	4,473.26	17.68	21.15	-4.47	1,140.89	358.72	791.71	775.99	37.34	21.779	
4,900.00	4,844.24	4,800.10	4,585.06	18.11	21.74	-4.39	1,181.81	371.38	813.33	792.42	38.56	21.552	
5,000.00	4,942.40	4,934.65	4,712.62	18.55	22.51	-4.32	1,222.66	384.02	830.97	804.59	39.67	21.280	
5,100.00	5,040.57	5,070.89	4,843.69	18.98	23.29	-4.39	1,258.14	395.01	844.26				

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-011H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.00	5,138.73	5,208.23	4,977.45	19.42	24.05	-4.62	1,287.85	404.20	853.17	812.51	40.66	20.982	
5,300.00	5,236.89	5,346.05	5,113.02	19.86	24.78	-5.00	1,311.47	411.51	857.69	816.18	41.50	20.666	
5,400.00	5,335.05	5,483.71	5,249.46	20.30	25.47	-5.53	1,328.82	416.88	857.86	815.67	42.19	20.335	
5,500.00	5,433.21	5,620.57	5,385.82	20.74	26.09	-6.24	1,339.84	420.29	853.77	811.08	42.69	19.998	
5,600.00	5,531.38	5,756.03	5,521.18	21.18	26.56	-7.13	1,344.61	421.77	845.56	802.61	42.95	19.687	
5,700.00	5,629.54	5,864.39	5,629.54	21.63	26.67	-8.17	1,344.85	421.84	834.46	791.37	43.09	19.364	
5,800.00	5,727.70	5,962.56	5,727.70	22.07	26.71	-9.25	1,344.85	421.84	823.48	780.22	43.26	19.036	
5,900.00	5,825.86	6,073.44	5,838.52	22.52	26.78	-10.20	1,344.86	424.14	812.50	769.22	43.28	18.772	
6,000.00	5,924.02	6,204.10	5,966.20	22.97	27.00	-9.48	1,344.96	450.51	798.44	755.00	43.44	18.379	
6,100.00	6,022.31	6,324.84	6,076.09	23.40	27.27	-7.01	1,345.15	499.98	781.55	737.30	44.25	17.663	
6,200.00	6,121.14	6,426.57	6,158.95	23.89	27.51	-3.54	1,345.38	558.78	765.95	720.17	45.78	16.732	
6,300.00	6,220.44	6,507.18	6,216.41	24.40	27.74	0.05	1,345.60	615.21	755.63	707.88	47.75	15.825	
6,365.55	6,285.73	6,550.00	6,243.56	24.71	27.87	2.25	1,345.72	648.32	753.47	704.38	49.09	15.350	
6,400.00	6,320.09	6,589.19	6,254.90	24.87	27.94	3.30	1,345.78	663.80	754.12	704.36	49.76	15.154	
6,500.00	6,419.97	6,616.46	6,280.59	25.29	28.12	6.07	1,345.94	703.46	763.91	712.46	51.45	14.848	
6,600.00	6,519.95	6,650.00	6,296.79	25.49	28.27	8.22	1,346.05	732.82	786.14	733.71	52.43	14.994	
6,700.00	6,619.95	6,680.99	6,310.21	25.53	28.43	10.31	1,346.16	760.75	819.22	766.40	52.82	15.510	
6,800.00	6,719.95	6,700.00	6,317.68	25.57	28.53	11.60	1,346.22	778.23	861.48	808.91	52.58	16.386	
6,900.00	6,819.95	6,723.66	6,326.17	25.61	28.68	13.22	1,346.31	800.31	911.88	859.72	52.16	17.481	
7,000.00	6,919.95	6,750.00	6,334.54	25.65	28.85	15.02	1,346.41	825.28	969.51	917.87	51.64	18.775	
7,100.00	7,019.95	6,750.00	6,334.54	25.70	28.85	15.02	1,346.41	825.28	1,032.97	982.55	50.42	20.486	
7,200.00	7,119.66	6,768.03	6,339.60	26.02	28.98	15.91	1,346.47	842.59	1,098.74	1,049.08	49.66	22.125	
7,300.00	7,216.87	6,800.00	6,347.23	26.70	29.22	16.80	1,346.59	873.63	1,160.26	1,111.00	49.26	23.555	
7,400.00	7,308.61	6,800.00	6,347.23	27.39	29.22	14.46	1,346.59	873.63	1,215.29	1,167.23	48.06	25.287	
7,500.00	7,392.10	6,830.39	6,352.87	28.04	29.49	13.30	1,346.71	903.48	1,263.03	1,215.46	47.57	26.549	
7,600.00	7,464.80	6,850.00	6,355.66	28.62	29.66	10.25	1,346.78	922.90	1,302.45	1,255.62	46.84	27.809	
7,700.00	7,524.52	6,881.88	6,358.78	29.10	29.98	7.07	1,346.90	954.62	1,332.59	1,286.17	46.42	28.706	
7,800.00	7,569.42	6,912.09	6,360.10	29.48	30.29	2.60	1,347.02	984.80	1,352.93	1,306.95	45.98	29.421	
7,900.00	7,598.15	6,991.98	6,361.49	29.77	31.21	1.95	1,347.33	1,064.68	1,361.38	1,314.79	46.59	29.218	
8,000.00	7,609.83	7,083.62	6,363.09	29.98	32.40	2.13	1,347.68	1,156.30	1,355.06	1,307.57	47.49	28.533	
8,100.00	7,611.63	7,176.67	6,364.71	30.26	33.73	2.30	1,348.04	1,249.33	1,341.31	1,293.18	48.14	27.864	
8,200.00	7,613.39	7,271.49	6,366.37	30.89	35.17	2.47	1,348.40	1,344.14	1,330.07	1,281.19	48.88	27.209	
8,300.00	7,615.17	7,367.85	6,368.05	32.01	36.71	2.64	1,348.77	1,440.48	1,321.12	1,271.39	49.73	26.568	
8,400.00	7,616.95	7,465.47	6,369.75	33.57	38.34	2.79	1,349.15	1,538.09	1,314.22	1,263.55	50.68	25.933	
8,500.00	7,618.73	7,564.09	6,371.47	35.37	40.04	2.91	1,349.53	1,636.69	1,309.18	1,257.42	51.76	25.292	
8,600.00	7,620.50	7,663.44	6,373.20	37.29	41.82	3.01	1,349.91	1,736.03	1,305.84	1,252.84	53.00	24.640	
8,700.00	7,622.27	7,763.24	6,374.94	39.27	43.64	3.06	1,350.30	1,835.81	1,304.07	1,249.67	54.40	23.971	
8,800.00	7,624.02	7,863.23	6,376.69	41.18	45.51	3.07	1,350.68	1,935.78	1,303.74	1,247.77	55.97	23.293	
8,900.00	7,625.76	7,963.23	6,378.43	43.09	47.42	3.07	1,351.07	2,035.77	1,303.74	1,246.14	57.60	22.634	
9,000.00	7,627.51	8,063.23	6,380.18	45.03	49.36	3.07	1,351.45	2,135.75	1,303.73	1,244.48	59.26	22.002	
9,100.00	7,629.25	8,163.23	6,381.92	47.00	51.33	3.07	1,351.83	2,235.74	1,303.73	1,242.79	60.93	21.395	
9,200.00	7,631.00	8,263.23	6,383.66	49.00	53.33	3.07	1,352.22	2,335.72	1,303.72	1,241.09	62.63	20.815	
9,300.00	7,632.74	8,363.23	6,385.41	51.03	55.34	3.07	1,352.60	2,435.70	1,303.72	1,239.37	64.35	20.259	
9,400.00	7,634.49	8,463.23	6,387.15	53.07	57.38	3.07	1,352.99	2,535.69	1,303.72	1,237.63	66.09	19.728	
9,500.00	7,636.23	8,563.23	6,388.90	55.14	59.44	3.07	1,353.37	2,635.67	1,303.71	1,235.88	67.84	19.218	
9,600.00	7,637.98	8,663.23	6,390.64	57.22	61.51	3.07	1,353.76	2,735.66	1,303.71	1,234.11	69.60	18.731	
9,700.00	7,639.72	8,763.23	6,392.38	59.31	63.60	3.07	1,354.14	2,835.64	1,303.70	1,232.32	71.38	18.264	
9,800.00	7,641.47	8,863.23	6,394.13	61.42	65.71	3.07	1,354.53	2,935.62	1,303.70	1,230.53	73.17	17.817	
9,900.00	7,643.21	8,963.23	6,395.87	63.55	67.82	3.07	1,354.91	3,035.61	1,303.70	1,228.72	74.98	17.388	
10,000.00	7,644.96	9,063.23	6,397.62	65.68	69.95	3.07	1,355.30	3,135.59	1,303.69	1,226.90	76.79	16.977	
10,100.00	7,646.71	9,163.23	6,399.36	67.83	72.09	3.07	1,355.68	3,235.58	1,303.69	1,225.08	78.61	16.583	
10,200.00	7,648.45	9,263.23	6,401.10	69.98	74.24	3.07	1,356.07	3,335.56	1,303.69	1,223.24	80.45	16.205	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-011H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,500.00	7,740.96	14,563.23	6,493.54	189.31	193.41	3.08	1,376.47	8,634.71	1,303.48	1,120.27	183.21	7.115	
15,600.00	7,742.70	14,663.23	6,495.28	191.60	195.70	3.08	1,376.85	8,734.70	1,303.48	1,118.28	185.20	7.038	
15,700.00	7,744.45	14,763.23	6,497.02	193.89	197.99	3.08	1,377.23	8,834.68	1,303.47	1,116.29	187.18	6.964	
15,800.00	7,746.19	14,863.23	6,498.77	196.18	200.28	3.08	1,377.62	8,934.67	1,303.47	1,114.31	189.16	6.891	
15,900.00	7,747.94	14,963.23	6,500.51	198.47	202.56	3.08	1,378.00	9,034.65	1,303.46	1,112.32	191.15	6.819	
16,000.00	7,749.69	15,063.23	6,502.26	200.76	204.85	3.08	1,378.39	9,134.63	1,303.46	1,110.33	193.13	6.749	
16,100.00	7,751.43	15,163.23	6,504.00	203.05	207.14	3.08	1,378.77	9,234.62	1,303.46	1,108.34	195.12	6.680	
16,200.00	7,753.18	15,263.23	6,505.74	205.34	209.43	3.08	1,379.16	9,334.60	1,303.45	1,106.35	197.10	6.613	
16,300.00	7,754.92	15,363.23	6,507.49	207.63	211.72	3.08	1,379.54	9,434.59	1,303.45	1,104.36	199.09	6.547	
16,400.00	7,756.67	15,463.23	6,509.23	209.92	214.01	3.08	1,379.93	9,534.57	1,303.44	1,102.37	201.08	6.482	
16,500.00	7,758.41	15,563.23	6,510.98	212.21	216.30	3.08	1,380.31	9,634.56	1,303.44	1,100.38	203.06	6.419	
16,600.00	7,760.16	15,663.23	6,512.72	214.51	218.60	3.08	1,380.70	9,734.54	1,303.44	1,098.39	205.05	6.357	
16,700.00	7,761.90	15,763.23	6,514.46	216.80	220.89	3.08	1,381.08	9,834.52	1,303.43	1,096.39	207.04	6.296	
16,800.00	7,763.65	15,863.23	6,516.21	219.09	223.18	3.08	1,381.47	9,934.51	1,303.43	1,094.40	209.03	6.236	
16,900.00	7,765.39	15,963.23	6,517.95	221.38	225.47	3.08	1,381.85	10,034.49	1,303.43	1,092.41	211.02	6.177	
17,000.00	7,767.14	16,063.23	6,519.70	223.68	227.77	3.08	1,382.24	10,134.48	1,303.42	1,090.41	213.01	6.119	
17,100.00	7,768.89	16,163.23	6,521.44	225.97	230.06	3.08	1,382.62	10,234.46	1,303.42	1,088.42	215.00	6.062	
17,200.00	7,770.63	16,263.23	6,523.18	228.27	232.35	3.08	1,383.01	10,334.44	1,303.41	1,086.43	216.99	6.007	
17,300.00	7,772.38	16,363.23	6,524.93	230.56	234.65	3.08	1,383.39	10,434.43	1,303.41	1,084.43	218.98	5.952	
17,400.00	7,774.12	16,463.23	6,526.67	232.86	236.94	3.08	1,383.78	10,534.41	1,303.41	1,082.44	220.97	5.899	
17,500.00	7,775.87	16,563.23	6,528.42	235.15	239.24	3.08	1,384.16	10,634.40	1,303.40	1,080.44	222.96	5.846	
17,600.00	7,777.61	16,663.23	6,530.16	237.45	241.53	3.08	1,384.55	10,734.38	1,303.40	1,078.45	224.95	5.794	
17,700.00	7,779.36	16,763.23	6,531.90	239.74	243.83	3.08	1,384.93	10,834.36	1,303.39	1,076.45	226.94	5.743	
17,800.00	7,781.10	16,863.23	6,533.65	242.04	246.12	3.08	1,385.32	10,934.35	1,303.39	1,074.45	228.94	5.693	
17,900.00	7,782.85	16,963.23	6,535.39	244.34	248.42	3.08	1,385.70	11,034.33	1,303.39	1,072.46	230.93	5.644	
18,000.00	7,784.59	17,063.23	6,537.14	246.63	250.71	3.08	1,386.09	11,134.32	1,303.38	1,070.46	232.92	5.596	
18,100.00	7,786.34	17,163.23	6,538.88	248.93	253.01	3.08	1,386.47	11,234.30	1,303.38	1,068.46	234.91	5.548	
18,200.00	7,788.08	17,263.23	6,540.62	251.23	255.31	3.08	1,386.86	11,334.28	1,303.37	1,066.47	236.91	5.502	
18,300.00	7,789.83	17,363.23	6,542.37	253.53	257.60	3.08	1,387.24	11,434.27	1,303.37	1,064.47	238.90	5.456	
18,340.91	7,790.54	17,404.14	6,543.08	254.47	258.54	3.08	1,387.40	11,475.17	1,303.37	1,063.65	239.72	5.437	
18,367.04	7,791.00	17,405.23	6,543.10	255.07	258.57	-0.72	1,387.40	11,476.26	1,303.61	1,063.76	239.85	5.435	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-012H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	-154.94	-36.34	-16.99	40.11				
100.00	100.00	100.00	100.00	0.66	0.66	-154.94	-36.34	-16.99	40.11	38.80	1.32	30.454	
200.00	200.00	200.00	200.00	1.35	1.35	-154.94	-36.34	-16.99	40.11	37.42	2.70	14.872	
300.00	300.00	300.00	300.00	1.82	1.82	-154.94	-36.34	-16.99	40.11	36.48	3.63	11.038	
400.00	400.00	400.00	400.00	2.19	2.19	-154.94	-36.34	-16.99	40.11	35.73	4.38	9.156	
500.00	500.00	500.00	500.00	2.51	2.51	-154.94	-36.34	-16.99	40.11	35.09	5.02	7.986	
600.00	600.00	600.00	600.00	2.80	2.80	-154.94	-36.34	-16.99	40.11	34.52	5.60	7.167	
700.00	700.00	700.00	700.00	3.06	3.06	-154.94	-36.34	-16.99	40.11	33.99	6.12	6.553	
800.00	800.00	800.00	800.00	3.30	3.30	-154.94	-36.34	-16.99	40.11	33.51	6.61	6.070	
900.00	900.00	900.00	900.00	3.53	3.53	-154.94	-36.34	-16.99	40.11	33.05	7.07	5.678	
1,000.00	1,000.00	1,000.00	1,000.00	3.75	3.75	-154.94	-36.34	-16.99	40.11	32.61	7.50	5.350	
1,100.00	1,100.00	1,100.00	1,100.00	3.96	3.96	-154.94	-36.34	-16.99	40.11	32.20	7.91	5.071	
1,200.00	1,200.00	1,200.00	1,200.00	4.15	4.15	-154.94	-36.34	-16.99	40.11	31.81	8.31	4.829	
1,300.00	1,300.00	1,300.00	1,300.00	4.34	4.34	-154.94	-36.34	-16.99	40.11	31.43	8.69	4.618	
1,400.00	1,400.00	1,400.00	1,400.00	4.53	4.53	-154.94	-36.34	-16.99	40.11	31.06	9.05	4.430	
1,500.00	1,500.00	1,500.00	1,500.00	4.70	4.70	-154.94	-36.34	-16.99	40.11	30.70	9.41	4.263 CC, ES	
1,600.00	1,599.98	1,600.13	1,600.11	5.04	4.96	-156.47	-36.89	-15.33	41.56	31.69	9.87	4.210 SF	
1,700.00	1,699.84	1,700.06	1,699.89	5.68	5.59	-160.45	-38.56	-10.37	46.05	35.49	10.56	4.362	
1,800.00	1,799.45	1,799.59	1,799.05	6.28	6.18	-165.52	-41.32	-2.15	53.90	42.75	11.15	4.835	
1,900.00	1,898.70	1,898.56	1,897.27	6.85	6.74	-170.43	-45.15	9.25	65.38	53.69	11.69	5.594	
2,000.00	1,997.47	1,996.96	1,994.50	7.40	7.00	-174.44	-49.97	23.60	80.54	68.41	12.14	6.637	
2,100.00	2,095.71	2,095.31	2,091.55	7.63	7.20	-176.40	-55.03	38.67	98.37	85.94	12.43	7.914	
2,200.00	2,193.87	2,193.61	2,188.56	7.86	7.43	-177.60	-60.09	53.74	116.59	103.79	12.79	9.114	
2,300.00	2,292.03	2,291.91	2,285.57	8.13	7.69	-178.47	-65.14	68.80	134.84	121.65	13.19	10.221	
2,400.00	2,390.19	2,390.21	2,382.58	8.41	7.95	-179.14	-70.20	83.86	153.12	139.50	13.61	11.246	
2,500.00	2,488.36	2,488.51	2,479.59	8.70	8.24	-179.67	-75.26	98.93	171.41	157.36	14.06	12.195	
2,600.00	2,586.52	2,586.81	2,576.59	9.02	8.53	179.91	-80.32	113.99	189.72	175.21	14.52	13.071	
2,700.00	2,684.68	2,685.11	2,673.60	9.34	8.84	179.56	-85.37	129.05	208.04	193.05	14.99	13.880	
2,800.00	2,782.84	2,783.41	2,770.61	9.67	9.16	179.27	-90.43	144.12	226.36	210.89	15.47	14.628	
2,900.00	2,881.00	2,881.71	2,867.62	10.02	9.49	179.02	-95.49	159.18	244.69	228.71	15.97	15.319	
3,000.00	2,979.17	2,980.01	2,964.63	10.38	9.83	178.80	-100.55	174.24	263.02	246.54	16.48	15.958	
3,100.00	3,077.33	3,078.31	3,061.63	10.74	10.17	178.62	-105.61	189.31	281.35	264.35	17.00	16.550	
3,200.00	3,175.49	3,176.61	3,158.64	11.11	10.53	178.45	-110.66	204.37	299.69	282.16	17.53	17.098	
3,300.00	3,273.65	3,274.91	3,255.65	11.49	10.89	178.31	-115.72	219.43	318.03	299.97	18.06	17.607	
3,400.00	3,371.81	3,373.22	3,352.66	11.87	11.25	178.18	-120.78	234.50	336.37	317.77	18.61	18.080	
3,500.00	3,469.98	3,471.52	3,449.67	12.26	11.62	178.06	-125.84	249.56	354.72	335.56	19.15	18.519	
3,600.00	3,568.14	3,569.82	3,546.67	12.66	12.00	177.96	-130.90	264.62	373.06	353.35	19.71	18.929	
3,700.00	3,666.30	3,668.12	3,643.68	13.06	12.38	177.87	-135.95	279.68	391.41	371.14	20.27	19.310	
3,800.00	3,764.46	3,766.42	3,740.69	13.46	12.76	177.78	-141.01	294.75	409.76	388.92	20.83	19.667	
3,900.00	3,862.62	3,864.72	3,837.70	13.87	13.15	177.70	-146.07	309.81	428.10	406.70	21.40	20.000	
4,000.00	3,960.79	3,963.02	3,934.71	14.28	13.54	177.63	-151.13	324.87	446.45	424.47	21.98	20.313	
4,100.00	4,058.95	4,061.32	4,031.71	14.70	13.93	177.56	-156.18	339.94	464.80	442.24	22.56	20.605	
4,200.00	4,157.11	4,159.62	4,128.72	15.12	14.33	177.50	-161.24	355.00	483.15	460.01	23.14	20.880	
4,300.00	4,255.27	4,257.92	4,225.73	15.54	14.73	177.44	-166.30	370.06	501.50	477.78	23.72	21.139	
4,400.00	4,353.43	4,356.22	4,322.74	15.96	15.13	177.39	-171.36	385.13	519.85	495.54	24.31	21.382	
4,500.00	4,451.59	4,454.52	4,419.74	16.39	15.53	177.34	-176.42	400.19	538.20	513.30	24.90	21.611	
4,600.00	4,549.76	4,552.82	4,516.75	16.81	15.93	177.30	-181.47	415.25	556.55	531.07	25.49	21.836	
4,700.00	4,647.92	4,657.30	4,620.04	17.24	16.37	177.27	-186.46	430.11	574.49	548.39	26.09	22.017	
4,800.00	4,746.08	4,763.69	4,725.73	17.68	16.90	177.57	-190.33	441.62	591.13	564.41	26.72	22.122	
4,900.00	4,844.24	4,870.12	4,831.84	18.11	17.43	178.20	-192.94	449.42	606.51	579.18	27.33	22.194	
5,000.00	4,942.40	4,976.31	4,937.93	18.55	17.90	179.14	-194.30	453.46	620.74	592.84	27.90	22.251	
5,100.00	5,040.57	5,078.95	5,040.57	18.98	18.06	-179.66	-194.52	454.10	634.10	605.73	28.37	22.355	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-012H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft	
Survey Program: 0-MWD+HRGM				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,138.73	5,177.11	5,138.73	19.42	18.09	-178.45	-194.52	454.10	647.54	618.72	28.82	22.469			
5,300.00	5,236.89	5,275.27	5,236.89	19.86	18.13	-177.29	-194.52	454.10	661.26	631.97	29.29	22.575			
5,400.00	5,335.05	5,373.43	5,335.05	20.30	18.17	-176.17	-194.52	454.10	675.24	645.47	29.78	22.677			
5,500.00	5,433.21	5,471.59	5,433.21	20.74	18.21	-175.10	-194.52	454.10	689.47	659.20	30.27	22.777			
5,600.00	5,531.38	5,569.76	5,531.38	21.18	18.26	-174.08	-194.52	454.10	703.93	673.15	30.77	22.875			
5,700.00	5,629.54	5,667.92	5,629.54	21.63	18.30	-173.10	-194.52	454.10	718.60	687.32	31.28	22.971			
5,800.00	5,727.70	5,766.08	5,727.70	22.07	18.34	-172.15	-194.52	454.10	733.47	701.67	31.80	23.065			
5,900.00	5,825.86	5,871.55	5,833.14	22.52	18.48	-171.33	-194.51	455.23	748.40	716.07	32.33	23.148			
6,000.00	5,924.02	5,995.56	5,955.10	22.97	19.35	-172.03	-194.43	476.31	760.94	727.98	32.96	23.086			
6,100.00	6,022.31	6,112.42	6,063.39	23.40	20.24	-174.38	-194.27	519.72	770.34	736.75	33.60	22.929			
6,200.00	6,121.14	6,213.29	6,148.13	23.89	20.95	-177.65	-194.06	574.20	777.01	742.74	34.27	22.672			
6,300.00	6,220.44	6,295.00	6,208.93	24.40	21.45	178.97	-193.85	628.68	784.04	749.13	34.91	22.458			
6,400.00	6,320.09	6,358.98	6,250.76	24.87	21.79	175.91	-193.67	677.05	794.45	759.03	35.41	22.434			
6,500.00	6,419.97	6,408.41	6,279.22	25.29	22.02	173.28	-193.51	717.43	810.38	774.70	35.68	22.714			
6,600.00	6,519.95	6,450.00	6,300.41	25.49	22.19	170.82	-193.38	753.22	833.12	797.45	35.67	23.359			
6,700.00	6,619.95	6,476.80	6,312.66	25.53	22.29	169.15	-193.29	777.04	864.20	828.92	35.29	24.490			
6,800.00	6,719.95	6,500.00	6,322.36	25.57	22.37	167.69	-193.21	798.12	904.01	869.20	34.80	25.976			
6,900.00	6,819.95	6,522.39	6,330.91	25.61	22.44	166.27	-193.13	818.81	951.73	917.41	34.31	27.737			
7,000.00	6,919.95	6,550.00	6,340.32	25.65	22.52	164.51	-193.03	844.77	1,006.56	972.60	33.96	29.639			
7,100.00	7,019.95	6,550.00	6,340.32	25.70	22.52	164.51	-193.03	844.77	1,067.29	1,034.14	33.15	32.198			
7,200.00	7,119.66	6,569.80	6,346.29	26.02	22.57	163.66	-192.96	863.65	1,133.56	1,100.75	32.81	34.548			
7,300.00	7,216.87	6,600.00	6,354.14	26.70	22.65	163.30	-192.85	892.80	1,203.79	1,170.99	32.81	36.692			
7,400.00	7,308.61	6,600.00	6,354.14	27.39	22.65	165.97	-192.85	892.80	1,274.62	1,242.29	32.34	39.417			
7,500.00	7,392.10	6,650.00	6,363.72	28.04	22.76	166.40	-192.66	941.86	1,343.84	1,310.85	32.98	40.744			
7,600.00	7,464.80	6,650.00	6,363.72	28.62	22.76	170.81	-192.66	941.86	1,408.81	1,376.02	32.80	42.958			
7,700.00	7,524.52	6,700.00	6,368.99	29.10	22.86	172.62	-192.47	991.57	1,468.46	1,434.72	33.74	43.527			
7,800.00	7,569.42	6,714.10	6,369.69	29.48	22.89	177.03	-192.42	1,005.65	1,520.86	1,486.74	34.12	44.571			
7,900.00	7,598.15	6,778.89	6,370.93	29.77	23.09	178.52	-192.17	1,070.43	1,564.83	1,529.29	35.54	44.028			
8,000.00	7,609.83	6,870.53	6,372.53	29.98	23.78	178.56	-191.82	1,162.05	1,596.75	1,559.08	37.67	42.391			
8,100.00	7,611.63	6,963.57	6,374.16	30.26	25.13	178.60	-191.47	1,255.08	1,620.27	1,580.45	39.82	40.691			
8,200.00	7,613.39	7,058.39	6,375.81	30.89	26.86	178.63	-191.11	1,349.89	1,641.00	1,598.76	42.25	38.844			
8,300.00	7,615.17	7,154.75	6,377.50	32.01	28.75	178.66	-190.74	1,446.23	1,658.73	1,613.89	44.84	36.993			
8,400.00	7,616.95	7,252.37	6,379.20	33.57	30.74	178.68	-190.37	1,543.83	1,673.26	1,625.71	47.56	35.186			
8,500.00	7,618.73	7,350.99	6,380.92	35.37	32.80	178.70	-189.99	1,642.43	1,684.44	1,634.08	50.36	33.447			
8,600.00	7,620.50	7,450.34	6,382.66	37.29	34.90	178.71	-189.61	1,741.76	1,692.16	1,638.94	53.22	31.794			
8,700.00	7,622.27	7,550.14	6,384.40	39.27	37.04	178.71	-189.23	1,841.55	1,696.34	1,640.23	56.11	30.235			
8,800.00	7,624.02	7,650.13	6,386.15	41.18	39.21	178.71	-188.85	1,941.52	1,697.13	1,638.23	58.90	28.812			
8,900.00	7,625.76	7,750.13	6,387.89	43.09	41.39	178.71	-188.47	2,041.51	1,697.15	1,635.44	61.71	27.501			
9,000.00	7,627.51	7,850.13	6,389.64	45.03	43.58	178.71	-188.09	2,141.49	1,697.16	1,632.59	64.58	26.281			
9,100.00	7,629.25	7,950.13	6,391.38	47.00	45.79	178.72	-187.71	2,241.47	1,697.18	1,629.69	67.49	25.147			
9,200.00	7,631.00	8,050.13	6,393.13	49.00	48.01	178.72	-187.33	2,341.46	1,697.19	1,626.75	70.44	24.094			
9,300.00	7,632.74	8,150.13	6,394.88	51.03	50.23	178.72	-186.95	2,441.44	1,697.21	1,623.78	73.43	23.114			
9,400.00	7,634.49	8,250.13	6,396.62	53.07	52.47	178.72	-186.57	2,541.43	1,697.22	1,620.78	76.45	22.202			
9,500.00	7,636.23	8,350.13	6,398.37	55.14	54.71	178.72	-186.19	2,641.41	1,697.24	1,617.75	79.49	21.351			
9,600.00	7,637.98	8,450.13	6,400.11	57.22	56.95	178.72	-185.81	2,741.39	1,697.25	1,614.69	82.56	20.558			
9,700.00	7,639.72	8,550.13	6,401.86	59.31	59.20	178.72	-185.43	2,841.38	1,697.27	1,611.61	85.65	19.816			
9,800.00	7,641.47	8,650.13	6,403.61	61.42	61.46	178.72	-185.05	2,941.36	1,697.28	1,608.52	88.76	19.121			
9,900.00	7,643.21	8,750.13	6,405.35	63.55	63.72	178.72	-184.67	3,041.35	1,697.30	1,605.40	91.89	18.470			
10,000.00	7,644.96	8,850.13	6,407.10	65.68	65.98	178.72	-184.29	3,141.33	1,697.31	1,602.27	95.04	17.859			
10,100.00	7,646.71	8,950.13	6,408.85	67.83	68.25	178.72	-183.91	3,241.31	1,697.33	1,599.13	98.20	17.285			
10,200.00	7,648.45	9,050.13	6,410.59	69.98	70.52	178.72	-183.52	3,341.30	1,697.34	1,595.97	101.37	16.744			
10,300.00	7,650.20	9,150.13	6,412.34	72.15	72.79	178.72	-183.14	3,441.28	1,697.36	1,592.80	104.55	16.235			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-012H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,400.00	7,651.94	9,250.13	6,414.08	74.32	75.06	178.72	-182.76	3,541.27	1,697.37	1,589.62	107.75	15.753			
10,500.00	7,653.69	9,350.13	6,415.83	76.50	77.34	178.72	-182.38	3,641.25	1,697.38	1,586.43	110.95	15.299			
10,600.00	7,655.43	9,450.13	6,417.58	78.68	79.62	178.72	-182.00	3,741.23	1,697.40	1,583.24	114.16	14.868			
10,700.00	7,657.18	9,550.13	6,419.32	80.88	81.90	178.72	-181.62	3,841.22	1,697.41	1,580.03	117.39	14.460			
10,800.00	7,658.92	9,650.13	6,421.07	83.07	84.18	178.72	-181.24	3,941.20	1,697.43	1,576.81	120.61	14.073			
10,900.00	7,660.67	9,750.13	6,422.81	85.28	86.46	178.72	-180.86	4,041.19	1,697.44	1,573.59	123.85	13.706			
11,000.00	7,662.41	9,850.13	6,424.56	87.49	88.75	178.72	-180.48	4,141.17	1,697.46	1,570.37	127.09	13.356			
11,100.00	7,664.16	9,950.13	6,426.31	89.70	91.03	178.72	-180.10	4,241.16	1,697.47	1,567.13	130.34	13.023			
11,200.00	7,665.91	10,050.13	6,428.05	91.92	93.32	178.72	-179.72	4,341.14	1,697.49	1,563.89	133.59	12.706			
11,300.00	7,667.65	10,150.13	6,429.80	94.14	95.61	178.72	-179.34	4,441.12	1,697.50	1,560.65	136.85	12.404			
11,400.00	7,669.40	10,250.13	6,431.55	96.37	97.90	178.72	-178.96	4,541.11	1,697.52	1,557.40	140.12	12.115			
11,500.00	7,671.14	10,350.13	6,433.29	98.59	100.19	178.72	-178.58	4,641.09	1,697.53	1,554.15	143.39	11.839			
11,600.00	7,672.89	10,450.13	6,435.04	100.83	102.48	178.72	-178.19	4,741.08	1,697.55	1,550.89	146.66	11.575			
11,700.00	7,674.63	10,550.13	6,436.78	103.06	104.77	178.72	-177.81	4,841.06	1,697.56	1,547.63	149.93	11.322			
11,800.00	7,676.38	10,650.13	6,438.53	105.30	107.06	178.72	-177.43	4,941.04	1,697.58	1,544.36	153.21	11.080			
11,900.00	7,678.12	10,750.13	6,440.28	107.54	109.36	178.72	-177.05	5,041.03	1,697.59	1,541.09	156.50	10.847			
12,000.00	7,679.87	10,850.13	6,442.02	109.79	111.65	178.72	-176.67	5,141.01	1,697.61	1,537.82	159.78	10.624			
12,100.00	7,681.61	10,950.13	6,443.77	112.04	113.94	178.72	-176.29	5,241.00	1,697.62	1,534.55	163.07	10.410			
12,200.00	7,683.36	11,050.13	6,445.51	114.29	116.24	178.72	-175.91	5,340.98	1,697.63	1,531.27	166.36	10.204			
12,300.00	7,685.10	11,150.13	6,447.26	116.54	118.54	178.72	-175.53	5,440.96	1,697.65	1,527.99	169.66	10.006			
12,400.00	7,686.85	11,250.13	6,449.01	118.79	120.83	178.72	-175.15	5,540.95	1,697.66	1,524.71	172.96	9.816			
12,500.00	7,688.60	11,350.13	6,450.75	121.05	123.13	178.72	-174.77	5,640.93	1,697.68	1,521.42	176.26	9.632			
12,600.00	7,690.34	11,450.13	6,452.50	123.30	125.43	178.72	-174.39	5,740.92	1,697.69	1,518.14	179.56	9.455			
12,700.00	7,692.09	11,550.13	6,454.24	125.56	127.73	178.72	-174.01	5,840.90	1,697.71	1,514.85	182.86	9.284			
12,800.00	7,693.83	11,650.13	6,455.99	127.83	130.02	178.72	-173.63	5,940.88	1,697.72	1,511.56	186.17	9.119			
12,900.00	7,695.58	11,750.13	6,457.74	130.09	132.32	178.72	-173.25	6,040.87	1,697.74	1,508.26	189.47	8.960			
13,000.00	7,697.32	11,850.13	6,459.48	132.35	134.62	178.72	-172.87	6,140.85	1,697.75	1,504.97	192.78	8.806			
13,100.00	7,699.07	11,950.13	6,461.23	134.62	136.92	178.72	-172.48	6,240.84	1,697.77	1,501.67	196.10	8.658			
13,200.00	7,700.81	12,050.13	6,462.98	136.89	139.22	178.72	-172.10	6,340.82	1,697.78	1,498.37	199.41	8.514			
13,300.00	7,702.56	12,150.13	6,464.72	139.15	141.52	178.72	-171.72	6,440.80	1,697.80	1,495.07	202.72	8.375			
13,400.00	7,704.30	12,250.13	6,466.47	141.42	143.82	178.72	-171.34	6,540.79	1,697.81	1,491.77	206.04	8.240			
13,500.00	7,706.05	12,350.13	6,468.21	143.70	146.13	178.72	-170.96	6,640.77	1,697.83	1,488.47	209.36	8.110			
13,600.00	7,707.80	12,450.13	6,469.96	145.97	148.43	178.72	-170.58	6,740.76	1,697.84	1,485.17	212.67	7.983			
13,700.00	7,709.54	12,550.13	6,471.71	148.24	150.73	178.72	-170.20	6,840.74	1,697.86	1,481.86	215.99	7.861			
13,800.00	7,711.29	12,650.13	6,473.45	150.52	153.03	178.72	-169.82	6,940.72	1,697.87	1,478.55	219.32	7.742			
13,900.00	7,713.03	12,750.13	6,475.20	152.79	155.33	178.72	-169.44	7,040.71	1,697.89	1,475.25	222.64	7.626			
14,000.00	7,714.78	12,850.13	6,476.94	155.07	157.64	178.72	-169.06	7,140.69	1,697.90	1,471.94	225.96	7.514			
14,100.00	7,716.52	12,950.13	6,478.69	157.35	159.94	178.72	-168.68	7,240.68	1,697.91	1,468.63	229.29	7.405			
14,200.00	7,718.27	13,050.13	6,480.44	159.62	162.24	178.72	-168.30	7,340.66	1,697.93	1,465.32	232.61	7.299			
14,300.00	7,720.01	13,150.13	6,482.18	161.90	164.54	178.72	-167.92	7,440.64	1,697.94	1,462.01	235.94	7.197			
14,400.00	7,721.76	13,250.13	6,483.93	164.18	166.85	178.72	-167.54	7,540.63	1,697.96	1,458.69	239.27	7.097			
14,500.00	7,723.50	13,350.13	6,485.68	166.46	169.15	178.72	-167.16	7,640.61	1,697.97	1,455.38	242.59	6.999			
14,600.00	7,725.25	13,450.13	6,487.42	168.75	171.45	178.72	-166.77	7,740.60	1,697.99	1,452.06	245.92	6.905			
14,700.00	7,726.99	13,550.13	6,489.17	171.03	173.76	178.72	-166.39	7,840.58	1,698.00	1,448.75	249.25	6.812			
14,800.00	7,728.74	13,650.13	6,490.91	173.31	176.06	178.72	-166.01	7,940.56	1,698.02	1,445.43	252.59	6.723			
14,900.00	7,730.49	13,750.13	6,492.66	175.60	178.37	178.72	-165.63	8,040.55	1,698.03	1,442.12	255.92	6.635			
15,000.00	7,732.23	13,850.13	6,494.41	177.88	180.67	178.72	-165.25	8,140.53	1,698.05	1,438.80	259.25	6.550			
15,100.00	7,733.98	13,950.13	6,496.15	180.17	182.98	178.72	-164.87	8,240.52	1,698.06	1,435.48	262.58	6.467			
15,200.00	7,735.72	14,050.13	6,497.90	182.45	185.28	178.72	-164.49	8,340.50	1,698.08	1,432.16	265.92	6.386			
15,300.00	7,737.47	14,150.13	6,499.64	184.74	187.59	178.72	-164.11	8,440.48	1,698.09	1,428.84	269.25	6.307			
15,400.00	7,739.21	14,250.13	6,501.39	187.02	189.89	178.72	-163.73	8,540.47	1,698.11	1,425.52	272.59	6.230			
15,500.00	7,740.96	14,350.13	6,503.14	189.31	192.20	178.72	-163.35	8,640.45	1,698.12	1,422.20	275.92	6.154			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-012H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,600.00	7,742.70	14,450.13	6,504.88	191.60	194.50	178.72	-162.97	8,740.44	1,698.14	1,418.88	279.26	6.081	
15,700.00	7,744.45	14,550.13	6,506.63	193.89	196.81	178.72	-162.59	8,840.42	1,698.15	1,415.55	282.60	6.009	
15,800.00	7,746.19	14,650.13	6,508.38	196.18	199.11	178.72	-162.21	8,940.40	1,698.17	1,412.23	285.93	5.939	
15,900.00	7,747.94	14,750.13	6,510.12	198.47	201.42	178.72	-161.83	9,040.39	1,698.18	1,408.91	289.27	5.871	
16,000.00	7,749.69	14,850.13	6,511.87	200.76	203.72	178.72	-161.44	9,140.37	1,698.19	1,405.58	292.61	5.804	
16,100.00	7,751.43	14,950.13	6,513.61	203.05	206.03	178.72	-161.06	9,240.36	1,698.21	1,402.26	295.95	5.738	
16,200.00	7,753.18	15,050.13	6,515.36	205.34	208.33	178.72	-160.68	9,340.34	1,698.22	1,398.93	299.29	5.674	
16,300.00	7,754.92	15,150.13	6,517.11	207.63	210.64	178.72	-160.30	9,440.32	1,698.24	1,395.61	302.63	5.612	
16,400.00	7,756.67	15,250.13	6,518.85	209.92	212.95	178.72	-159.92	9,540.31	1,698.25	1,392.28	305.97	5.550	
16,500.00	7,758.41	15,350.13	6,520.60	212.21	215.25	178.72	-159.54	9,640.29	1,698.27	1,388.95	309.31	5.490	
16,600.00	7,760.16	15,450.13	6,522.34	214.51	217.56	178.72	-159.16	9,740.28	1,698.28	1,385.63	312.66	5.432	
16,700.00	7,761.90	15,550.13	6,524.09	216.80	219.87	178.72	-158.78	9,840.26	1,698.30	1,382.30	316.00	5.374	
16,800.00	7,763.65	15,650.13	6,525.84	219.09	222.17	178.72	-158.40	9,940.24	1,698.31	1,378.97	319.34	5.318	
16,900.00	7,765.39	15,750.13	6,527.58	221.38	224.48	178.72	-158.02	10,040.23	1,698.33	1,375.64	322.68	5.263	
17,000.00	7,767.14	15,850.13	6,529.33	223.68	226.79	178.72	-157.64	10,140.21	1,698.34	1,372.32	326.03	5.209	
17,100.00	7,768.89	15,950.13	6,531.07	225.97	229.09	178.72	-157.26	10,240.20	1,698.36	1,368.99	329.37	5.156	
17,200.00	7,770.63	16,050.13	6,532.82	228.27	231.40	178.72	-156.88	10,340.18	1,698.37	1,365.66	332.71	5.105	
17,300.00	7,772.38	16,150.13	6,534.57	230.56	233.71	178.72	-156.50	10,440.16	1,698.39	1,362.33	336.06	5.054	
17,400.00	7,774.12	16,250.13	6,536.31	232.86	236.01	178.72	-156.12	10,540.15	1,698.40	1,359.00	339.40	5.004	
17,500.00	7,775.87	16,350.13	6,538.06	235.15	238.32	178.72	-155.73	10,640.13	1,698.42	1,355.67	342.75	4.955	
17,600.00	7,777.61	16,450.13	6,539.81	237.45	240.63	178.72	-155.35	10,740.12	1,698.43	1,352.33	346.10	4.907	
17,700.00	7,779.36	16,550.13	6,541.55	239.74	242.93	178.72	-154.97	10,840.10	1,698.44	1,349.00	349.44	4.860	
17,800.00	7,781.10	16,650.13	6,543.30	242.04	245.24	178.72	-154.59	10,940.08	1,698.46	1,345.67	352.79	4.814	
17,900.00	7,782.85	16,750.13	6,545.04	244.34	247.55	178.72	-154.21	11,040.07	1,698.47	1,342.34	356.13	4.769	
18,000.00	7,784.59	16,850.13	6,546.79	246.63	249.86	178.72	-153.83	11,140.05	1,698.49	1,339.01	359.48	4.725	
18,100.00	7,786.34	16,950.13	6,548.54	248.93	252.16	178.72	-153.45	11,240.04	1,698.50	1,335.68	362.83	4.681	
18,200.00	7,788.08	17,050.13	6,550.28	251.23	254.47	178.72	-153.07	11,340.02	1,698.52	1,332.34	366.18	4.639	
18,300.00	7,789.83	17,150.13	6,552.03	253.53	256.44	178.72	-152.69	11,440.01	1,698.53	1,329.28	369.26	4.600	
18,301.90	7,789.86	17,152.03	6,552.06	253.57	256.47	178.72	-152.68	11,441.91	1,698.53	1,329.22	369.31	4.599	
18,367.04	7,791.00	17,205.78	6,553.00	255.07	257.34	179.28	-152.48	11,495.65	1,698.58	1,327.72	370.86	4.580	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-112H - Wellbore #1 - Plan 1														Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HRGM				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.50 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.50	0.50	-154.92	-54.32	-25.42	59.97						
100.00	100.00	100.00	100.00	0.66	0.66	-154.92	-54.32	-25.42	59.97	58.65	1.32	45.530			
200.00	200.00	200.00	200.00	1.35	1.35	-154.92	-54.32	-25.42	59.97	57.27	2.70	22.234			
300.00	300.00	300.00	300.00	1.82	1.82	-154.92	-54.32	-25.42	59.97	56.34	3.63	16.502			
400.00	400.00	400.00	400.00	2.19	2.19	-154.92	-54.32	-25.42	59.97	55.59	4.38	13.689			
500.00	500.00	500.00	500.00	2.51	2.51	-154.92	-54.32	-25.42	59.97	54.95	5.02	11.939			
600.00	600.00	600.00	600.00	2.80	2.80	-154.92	-54.32	-25.42	59.97	54.37	5.60	10.716			
700.00	700.00	700.00	700.00	3.06	3.06	-154.92	-54.32	-25.42	59.97	53.85	6.12	9.797			
800.00	800.00	800.00	800.00	3.30	3.30	-154.92	-54.32	-25.42	59.97	53.36	6.61	9.075			
900.00	900.00	900.00	900.00	3.53	3.53	-154.92	-54.32	-25.42	59.97	52.91	7.07	8.488			
1,000.00	1,000.00	1,000.00	1,000.00	3.75	3.75	-154.92	-54.32	-25.42	59.97	52.47	7.50	7.998			
1,100.00	1,100.00	1,100.00	1,100.00	3.96	3.96	-154.92	-54.32	-25.42	59.97	52.06	7.91	7.581			
1,200.00	1,200.00	1,200.00	1,200.00	4.15	4.15	-154.92	-54.32	-25.42	59.97	51.67	8.31	7.220			
1,300.00	1,300.00	1,300.00	1,300.00	4.34	4.34	-154.92	-54.32	-25.42	59.97	51.28	8.69	6.904			
1,400.00	1,400.00	1,400.00	1,400.00	4.53	4.53	-154.92	-54.32	-25.42	59.97	50.92	9.05	6.624			
1,500.00	1,500.00	1,500.00	1,500.00	4.70	4.70	-154.92	-54.32	-25.42	59.97	50.56	9.41	6.373 CC, ES			
1,600.00	1,599.98	1,599.62	1,599.60	5.04	4.94	-155.92	-55.29	-23.99	61.89	52.03	9.85	6.281			
1,700.00	1,699.84	1,698.95	1,698.79	5.68	5.56	-158.57	-58.21	-19.72	67.73	57.16	10.58	6.404			
1,800.00	1,799.45	1,797.71	1,797.17	6.28	6.14	-162.03	-63.03	-12.65	77.72	66.47	11.25	6.906			
1,900.00	1,898.70	1,895.88	1,894.63	6.85	6.45	-165.48	-69.66	-2.94	91.99	80.17	11.82	7.782			
2,000.00	1,997.47	1,994.22	1,992.14	7.40	6.62	-167.47	-76.85	7.61	109.74	97.35	12.39	8.858			
2,100.00	2,095.71	2,092.13	2,089.22	7.63	6.84	-168.12	-84.02	18.12	130.02	117.29	12.74	10.208			
2,200.00	2,193.87	2,189.97	2,186.23	7.86	7.07	-168.50	-91.18	28.61	150.67	137.56	13.12	11.487			
2,300.00	2,292.03	2,287.81	2,283.24	8.13	7.32	-168.78	-98.34	39.11	171.33	157.80	13.53	12.662			
2,400.00	2,390.19	2,385.65	2,380.26	8.41	7.58	-169.01	-105.50	49.61	191.99	178.02	13.96	13.749			
2,500.00	2,488.36	2,483.49	2,477.27	8.70	7.86	-169.19	-112.66	60.10	212.65	198.23	14.42	14.752			
2,600.00	2,586.52	2,581.33	2,574.28	9.02	8.14	-169.34	-119.82	70.60	233.31	218.43	14.88	15.677			
2,700.00	2,684.68	2,679.17	2,671.29	9.34	8.44	-169.47	-126.99	81.09	253.97	238.61	15.36	16.530			
2,800.00	2,782.84	2,777.01	2,768.30	9.67	8.75	-169.57	-134.15	91.59	274.64	258.78	15.86	17.316			
2,900.00	2,881.00	2,874.85	2,865.31	10.02	9.07	-169.66	-141.31	102.09	295.30	278.94	16.37	18.042			
3,000.00	2,979.17	2,972.69	2,962.33	10.38	9.39	-169.74	-148.47	112.58	315.97	299.09	16.89	18.713			
3,100.00	3,077.33	3,070.53	3,059.34	10.74	9.73	-169.81	-155.63	123.08	336.64	319.22	17.41	19.332			
3,200.00	3,175.49	3,168.37	3,156.35	11.11	10.07	-169.87	-162.79	133.57	357.30	339.35	17.95	19.906			
3,300.00	3,273.65	3,266.21	3,253.36	11.49	10.41	-169.93	-169.95	144.07	377.97	359.48	18.49	20.437			
3,400.00	3,371.81	3,364.05	3,350.37	11.87	10.76	-169.98	-177.11	154.57	398.64	379.59	19.05	20.930			
3,500.00	3,469.98	3,461.89	3,447.39	12.26	11.11	-170.02	-184.27	165.06	419.31	399.70	19.61	21.387			
3,600.00	3,568.14	3,559.73	3,544.40	12.66	11.47	-170.06	-191.43	175.56	439.98	419.81	20.17	21.813			
3,700.00	3,666.30	3,657.57	3,641.41	13.06	11.83	-170.10	-198.59	186.05	460.65	439.90	20.74	22.209			
3,800.00	3,764.46	3,755.41	3,738.42	13.46	12.20	-170.13	-205.75	196.55	481.31	460.00	21.32	22.579			
3,900.00	3,862.62	3,853.25	3,835.43	13.87	12.57	-170.16	-212.91	207.05	501.98	480.09	21.90	22.924			
4,000.00	3,960.79	3,951.10	3,932.44	14.28	12.94	-170.19	-220.08	217.54	522.65	500.17	22.48	23.246			
4,100.00	4,058.95	4,048.94	4,029.46	14.70	13.32	-170.22	-227.24	228.04	543.32	520.25	23.07	23.549			
4,200.00	4,157.11	4,146.78	4,126.47	15.12	13.69	-170.24	-234.40	238.53	563.99	540.33	23.67	23.832			
4,300.00	4,255.27	4,244.62	4,223.48	15.54	14.07	-170.27	-241.56	249.03	584.66	560.40	24.26	24.098			
4,400.00	4,353.43	4,342.46	4,320.49	15.96	14.45	-170.29	-248.72	259.53	605.33	580.47	24.86	24.348			
4,500.00	4,451.59	4,440.30	4,417.50	16.39	14.84	-170.31	-255.88	270.02	626.00	600.54	25.46	24.584			
4,600.00	4,549.76	4,538.14	4,514.51	16.81	15.22	-170.32	-263.04	280.52	646.67	620.60	26.07	24.806			
4,700.00	4,647.92	4,635.98	4,611.53	17.24	15.61	-170.34	-270.20	291.01	667.34	640.66	26.68	25.015			
4,800.00	4,746.08	4,733.82	4,708.54	17.68	16.00	-170.36	-277.36	301.51	688.01	660.72	27.29	25.213			
4,900.00	4,844.24	4,831.66	4,805.55	18.11	16.39	-170.37	-284.52	312.01	708.68	680.78	27.90	25.400			
5,000.00	4,942.40	4,929.50	4,902.56	18.55	16.78	-170.39	-291.68	322.50	729.35	700.83	28.52	25.577			
5,100.00	5,040.57	5,027.34	4,999.57	18.98	17.17	-170.40	-298.84	333.00	750.02	720.89	29.13	25.745			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-112H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,138.73	5,125.18	5,096.59	19.42	17.56	-170.41	-306.00	343.49	770.69	740.94	29.75	25.905	
5,300.00	5,236.89	5,223.02	5,193.60	19.86	17.96	-170.43	-313.17	353.99	791.36	760.99	30.37	26.056	
5,400.00	5,335.05	5,320.86	5,290.61	20.30	18.36	-170.44	-320.33	364.48	812.03	781.04	30.99	26.200	
5,500.00	5,433.21	5,418.70	5,387.62	20.74	18.75	-170.45	-327.49	374.98	832.70	801.08	31.62	26.337	
5,600.00	5,531.38	5,516.54	5,484.63	21.18	19.15	-170.46	-334.65	385.48	853.37	821.13	32.24	26.467	
5,700.00	5,629.54	5,614.38	5,581.64	21.63	19.55	-170.47	-341.81	395.97	874.04	841.17	32.87	26.592	
5,800.00	5,727.70	5,712.22	5,678.66	22.07	19.95	-170.48	-348.97	406.47	894.71	861.21	33.50	26.710	
5,900.00	5,825.86	5,810.06	5,775.67	22.52	20.35	-170.49	-356.13	416.96	915.38	881.25	34.13	26.824	
6,000.00	5,924.02	5,907.90	5,872.68	22.97	20.75	-170.50	-363.29	427.46	936.05	901.29	34.76	26.932	
6,100.00	6,022.31	6,005.85	5,969.80	23.40	21.15	-170.53	-370.46	437.97	956.20	920.83	35.37	27.036	
6,200.00	6,121.14	6,104.24	6,067.36	23.89	21.55	-170.68	-377.66	448.52	973.82	937.80	36.02	27.035	
6,300.00	6,220.44	6,210.44	6,172.71	24.40	21.98	-170.97	-385.19	459.56	988.56	951.87	36.69	26.943	
6,400.00	6,320.09	6,327.29	6,289.05	24.87	22.49	-171.24	-391.26	468.46	999.12	961.73	37.39	26.722	
6,500.00	6,419.97	6,444.90	6,406.50	25.29	23.01	-171.38	-394.67	473.45	1,005.16	967.15	38.01	26.445	
6,600.00	6,519.95	6,558.36	6,519.95	25.49	23.27	-171.41	-395.44	474.58	1,006.74	968.39	38.35	26.254	
6,700.00	6,619.95	6,658.36	6,619.95	25.53	23.29	-171.41	-395.44	474.58	1,006.74	968.31	38.43	26.200	
6,800.00	6,719.95	6,758.36	6,719.95	25.57	23.31	-171.41	-395.44	474.58	1,006.74	968.22	38.52	26.137	
6,900.00	6,819.95	6,858.36	6,819.95	25.61	23.34	-171.41	-395.44	474.58	1,006.74	968.13	38.61	26.074	
7,000.00	6,919.95	6,958.36	6,919.95	25.65	23.37	-171.41	-395.44	474.58	1,006.74	968.03	38.71	26.010	
7,100.00	7,019.95	7,058.36	7,019.95	25.70	23.40	-171.41	-395.44	474.58	1,006.74	967.94	38.79	25.951	
7,200.00	7,119.66	7,173.46	7,134.57	26.02	23.80	-171.59	-395.95	482.91	1,009.24	970.15	39.09	25.818	
7,300.00	7,216.87	7,289.94	7,246.56	26.70	24.55	-172.24	-397.86	514.15	1,018.91	979.15	39.76	25.625	
7,400.00	7,308.61	7,402.84	7,346.92	27.39	25.27	-173.20	-400.99	565.38	1,035.71	995.04	40.67	25.465	
7,500.00	7,392.10	7,511.10	7,431.93	28.04	25.90	-174.23	-405.07	632.02	1,059.32	1,017.48	41.83	25.324	
7,600.00	7,464.80	7,614.38	7,499.98	28.62	26.42	-175.15	-409.80	709.38	1,089.16	1,045.91	43.25	25.183	
7,700.00	7,524.52	7,712.99	7,550.98	29.10	26.84	-175.83	-414.94	793.48	1,124.40	1,079.45	44.95	25.017	
7,800.00	7,569.42	7,807.68	7,585.67	29.48	27.17	-176.26	-420.31	881.31	1,163.94	1,117.03	46.91	24.812	
7,900.00	7,598.15	7,899.43	7,605.04	29.77	27.45	-176.46	-425.78	970.72	1,206.52	1,157.40	49.11	24.566	
8,000.00	7,609.83	8,007.77	7,610.74	29.98	27.81	-177.34	-432.07	1,078.65	1,250.58	1,198.77	51.81	24.137	
8,100.00	7,611.63	8,162.62	7,613.43	30.26	28.79	179.82	-435.09	1,233.43	1,289.24	1,233.57	55.67	23.158	
8,200.00	7,613.39	8,257.42	7,615.08	30.89	29.79	179.82	-434.80	1,328.21	1,321.02	1,262.19	58.83	22.454	
8,300.00	7,615.17	8,353.76	7,616.76	32.01	31.10	179.82	-434.50	1,424.53	1,347.80	1,285.60	62.20	21.669	
8,400.00	7,616.95	8,451.36	7,618.46	33.57	32.66	179.82	-434.20	1,522.12	1,369.50	1,303.76	65.74	20.831	
8,500.00	7,618.73	8,549.97	7,620.17	35.37	34.40	179.82	-433.90	1,620.72	1,386.07	1,316.63	69.44	19.960	
8,600.00	7,620.50	8,649.31	7,621.90	37.29	36.26	179.82	-433.59	1,720.04	1,397.45	1,324.18	73.26	19.074	
8,700.00	7,622.27	8,749.11	7,623.64	39.27	38.21	179.82	-433.28	1,819.82	1,403.61	1,326.42	77.19	18.183	
8,800.00	7,624.02	8,849.09	7,625.37	41.18	40.21	179.82	-432.98	1,919.79	1,404.85	1,323.75	81.10	17.323	
8,900.00	7,625.76	8,949.09	7,627.11	43.09	42.26	179.82	-432.67	2,019.78	1,404.94	1,319.91	85.03	16.523	
9,000.00	7,627.51	9,049.09	7,628.85	45.03	44.35	179.82	-432.36	2,119.76	1,405.04	1,316.00	89.03	15.781	
9,100.00	7,629.25	9,149.09	7,630.59	47.00	46.46	179.82	-432.05	2,219.74	1,405.13	1,312.04	93.09	15.094	
9,200.00	7,631.00	9,249.09	7,632.33	49.00	48.59	179.82	-431.74	2,319.73	1,405.23	1,308.02	97.20	14.457	
9,300.00	7,632.74	9,349.09	7,634.07	51.03	50.74	179.82	-431.44	2,419.71	1,405.32	1,303.97	101.36	13.865	
9,400.00	7,634.49	9,449.09	7,635.81	53.07	52.90	179.82	-431.13	2,519.70	1,405.42	1,299.87	105.55	13.316	
9,500.00	7,636.23	9,549.09	7,637.55	55.14	55.08	179.82	-430.82	2,619.68	1,405.51	1,295.74	109.77	12.804	
9,600.00	7,637.98	9,649.09	7,639.29	57.22	57.27	179.82	-430.51	2,719.67	1,405.61	1,291.58	114.03	12.327	
9,700.00	7,639.72	9,749.09	7,641.03	59.31	59.46	179.82	-430.20	2,819.65	1,405.70	1,287.39	118.31	11.881	
9,800.00	7,641.47	9,849.09	7,642.77	61.42	61.67	179.82	-429.89	2,919.64	1,405.79	1,283.17	122.62	11.464	
9,900.00	7,643.21	9,949.09	7,644.51	63.55	63.88	179.82	-429.59	3,019.62	1,405.89	1,278.94	126.95	11.074	
10,000.00	7,644.96	10,049.09	7,646.24	65.68	66.11	179.82	-429.28	3,119.60	1,405.98	1,274.68	131.30	10.708	
10,100.00	7,646.71	10,149.09	7,647.98	67.83	68.33	179.82	-428.97	3,219.59	1,406.08	1,270.41	135.67	10.364	
10,200.00	7,648.45	10,249.09	7,649.72	69.98	70.57	179.82	-428.66	3,319.57	1,406.17	1,266.12	140.06	10.040	
10,300.00	7,650.20	10,349.09	7,651.46	72.15	72.80	179.82	-428.35	3,419.56	1,406.27	1,261.81	144.46	9.735	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-112H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,400.00	7,651.94	10,449.09	7,653.20	74.32	75.05	179.82	-428.04	3,519.54	1,406.36	1,257.50	148.87	9.447	
10,500.00	7,653.89	10,549.09	7,654.94	76.50	77.29	179.82	-427.74	3,619.53	1,406.46	1,253.17	153.29	9.175	
10,600.00	7,655.43	10,649.09	7,656.68	78.68	79.54	179.82	-427.43	3,719.51	1,406.55	1,248.82	157.73	8.918	
10,700.00	7,657.18	10,749.09	7,658.42	80.88	81.80	179.82	-427.12	3,819.49	1,406.65	1,244.47	162.18	8.674	
10,800.00	7,658.92	10,849.09	7,660.16	83.07	84.05	179.82	-426.81	3,919.48	1,406.74	1,240.11	166.63	8.442	
10,900.00	7,660.67	10,949.09	7,661.90	85.28	86.31	179.82	-426.50	4,019.46	1,406.84	1,235.74	171.10	8.222	
11,000.00	7,662.41	11,049.09	7,663.64	87.49	88.58	179.82	-426.20	4,119.45	1,406.93	1,231.36	175.57	8.014	
11,100.00	7,664.16	11,149.09	7,665.38	89.70	90.84	179.82	-425.89	4,219.43	1,407.03	1,226.98	180.05	7.815	
11,200.00	7,665.91	11,249.09	7,667.12	91.92	93.11	179.82	-425.58	4,319.42	1,407.12	1,222.58	184.54	7.625	
11,300.00	7,667.65	11,349.09	7,668.85	94.14	95.38	179.82	-425.27	4,419.40	1,407.22	1,218.18	189.03	7.444	
11,400.00	7,669.40	11,449.09	7,670.59	96.37	97.65	179.82	-424.96	4,519.39	1,407.31	1,213.78	193.53	7.272	
11,500.00	7,671.14	11,549.09	7,672.33	98.59	99.92	179.82	-424.65	4,619.37	1,407.41	1,209.37	198.04	7.107	
11,600.00	7,672.89	11,649.09	7,674.07	100.83	102.20	179.82	-424.35	4,719.35	1,407.50	1,204.95	202.55	6.949	
11,700.00	7,674.63	11,749.09	7,675.81	103.06	104.47	179.82	-424.04	4,819.34	1,407.59	1,200.53	207.06	6.798	
11,800.00	7,676.38	11,849.09	7,677.55	105.30	106.75	179.82	-423.73	4,919.32	1,407.69	1,196.11	211.58	6.653	
11,900.00	7,678.12	11,949.09	7,679.29	107.54	109.03	179.82	-423.42	5,019.31	1,407.78	1,191.68	216.11	6.514	
12,000.00	7,679.87	12,049.09	7,681.03	109.79	111.31	179.82	-423.11	5,119.29	1,407.88	1,187.24	220.64	6.381	
12,100.00	7,681.61	12,149.09	7,682.77	112.04	113.59	179.82	-422.80	5,219.28	1,407.97	1,182.80	225.17	6.253	
12,200.00	7,683.36	12,249.09	7,684.51	114.29	115.87	179.82	-422.50	5,319.26	1,408.07	1,178.36	229.70	6.130	
12,300.00	7,685.10	12,349.09	7,686.25	116.54	118.16	179.82	-422.19	5,419.24	1,408.16	1,173.92	234.24	6.012	
12,400.00	7,686.85	12,449.09	7,687.99	118.79	120.44	179.82	-421.88	5,519.23	1,408.26	1,169.47	238.79	5.898	
12,500.00	7,688.60	12,549.09	7,689.73	121.05	122.73	179.82	-421.57	5,619.21	1,408.35	1,165.02	243.33	5.788	
12,600.00	7,690.34	12,649.09	7,691.46	123.30	125.01	179.82	-421.26	5,719.20	1,408.45	1,160.57	247.88	5.682	
12,700.00	7,692.09	12,749.09	7,693.20	125.56	127.30	179.82	-420.96	5,819.18	1,408.54	1,156.11	252.43	5.580	
12,800.00	7,693.83	12,849.09	7,694.94	127.83	129.59	179.82	-420.65	5,919.17	1,408.64	1,151.65	256.98	5.481	
12,900.00	7,695.58	12,949.09	7,696.68	130.09	131.88	179.82	-420.34	6,019.15	1,408.73	1,147.19	261.54	5.386	
13,000.00	7,697.32	13,049.09	7,698.42	132.35	134.17	179.82	-420.03	6,119.13	1,408.83	1,142.73	266.10	5.294	
13,100.00	7,699.07	13,149.09	7,700.16	134.62	136.46	179.82	-419.72	6,219.12	1,408.92	1,138.26	270.66	5.206	
13,200.00	7,700.81	13,249.09	7,701.90	136.89	138.75	179.82	-419.41	6,319.10	1,409.02	1,133.80	275.22	5.120	
13,300.00	7,702.56	13,349.09	7,703.64	139.15	141.04	179.82	-419.11	6,419.09	1,409.11	1,129.33	279.78	5.036	
13,400.00	7,704.30	13,449.09	7,705.38	141.42	143.33	179.82	-418.80	6,519.07	1,409.20	1,124.85	284.35	4.956	
13,500.00	7,706.05	13,549.09	7,707.12	143.70	145.63	179.82	-418.49	6,619.06	1,409.30	1,120.38	288.92	4.878	
13,600.00	7,707.80	13,649.09	7,708.86	145.97	147.92	179.82	-418.18	6,719.04	1,409.39	1,115.91	293.49	4.802	
13,700.00	7,709.54	13,749.09	7,710.60	148.24	150.21	179.82	-417.87	6,819.03	1,409.49	1,111.43	298.06	4.729	
13,800.00	7,711.29	13,849.09	7,712.34	150.52	152.51	179.82	-417.56	6,919.01	1,409.58	1,106.95	302.63	4.658	
13,900.00	7,713.03	13,949.09	7,714.07	152.79	154.80	179.82	-417.26	7,018.99	1,409.68	1,102.47	307.20	4.589	
14,000.00	7,714.78	14,049.09	7,715.81	155.07	157.10	179.82	-416.95	7,118.98	1,409.77	1,097.99	311.78	4.522	
14,100.00	7,716.52	14,149.09	7,717.55	157.35	159.39	179.82	-416.64	7,218.96	1,409.87	1,093.51	316.36	4.457	
14,200.00	7,718.27	14,249.09	7,719.29	159.62	161.69	179.82	-416.33	7,318.95	1,409.96	1,089.03	320.94	4.393	
14,300.00	7,720.01	14,349.09	7,721.03	161.90	163.99	179.82	-416.02	7,418.93	1,410.06	1,084.54	325.51	4.332	
14,400.00	7,721.76	14,449.09	7,722.77	164.18	166.28	179.82	-415.72	7,518.92	1,410.15	1,080.06	330.09	4.272	
14,500.00	7,723.50	14,549.09	7,724.51	166.46	168.58	179.82	-415.41	7,618.90	1,410.25	1,075.57	334.68	4.214	
14,600.00	7,725.25	14,649.09	7,726.25	168.75	170.88	179.82	-415.10	7,718.88	1,410.34	1,071.08	339.26	4.157	
14,700.00	7,726.99	14,749.09	7,727.99	171.03	173.18	179.82	-414.79	7,818.87	1,410.44	1,066.59	343.84	4.102	
14,800.00	7,728.74	14,849.09	7,729.73	173.31	175.48	179.82	-414.48	7,918.85	1,410.53	1,062.10	348.43	4.048	
14,900.00	7,730.49	14,949.09	7,731.47	175.60	177.77	179.82	-414.17	8,018.84	1,410.63	1,057.61	353.01	3.996	
15,000.00	7,732.23	15,049.09	7,733.21	177.88	180.07	179.82	-413.87	8,118.82	1,410.72	1,053.12	357.60	3.945	
15,100.00	7,733.98	15,149.09	7,734.94	180.17	182.37	179.82	-413.56	8,218.81	1,410.82	1,048.63	362.19	3.895	
15,200.00	7,735.72	15,249.09	7,736.68	182.45	184.67	179.82	-413.25	8,318.79	1,410.91	1,044.13	366.78	3.847	
15,300.00	7,737.47	15,349.09	7,738.42	184.74	186.97	179.82	-412.94	8,418.78	1,411.00	1,039.64	371.36	3.800	
15,400.00	7,739.21	15,449.09	7,740.16	187.02	189.27	179.82	-412.63	8,518.76	1,411.10	1,035.15	375.95	3.753	
15,500.00	7,740.96	15,549.09	7,741.90	189.31	191.57	179.82	-412.32	8,618.74	1,411.19	1,030.65	380.54	3.708	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-112H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,600.00	7,742.70	15,649.09	7,743.64	191.60	193.87	179.82	-412.02	8,718.73	1,411.29	1,026.15	385.14	3.664	
15,700.00	7,744.45	15,749.09	7,745.38	193.89	196.17	179.82	-411.71	8,818.71	1,411.38	1,021.66	389.73	3.621	
15,800.00	7,746.19	15,849.09	7,747.12	196.18	198.48	179.82	-411.40	8,918.70	1,411.48	1,017.16	394.32	3.580	
15,900.00	7,747.94	15,949.09	7,748.86	198.47	200.78	179.82	-411.09	9,018.68	1,411.57	1,012.66	398.91	3.539	
16,000.00	7,749.69	16,049.09	7,750.60	200.76	203.08	179.82	-410.78	9,118.67	1,411.67	1,008.16	403.51	3.498	
16,100.00	7,751.43	16,149.09	7,752.34	203.05	205.38	179.82	-410.48	9,218.65	1,411.76	1,003.66	408.10	3.459	
16,200.00	7,753.18	16,249.09	7,754.08	205.34	207.68	179.82	-410.17	9,318.63	1,411.86	999.16	412.70	3.421	
16,300.00	7,754.92	16,349.09	7,755.82	207.63	209.98	179.82	-409.86	9,418.62	1,411.95	994.66	417.29	3.384	
16,400.00	7,756.67	16,449.09	7,757.55	209.92	212.29	179.82	-409.55	9,518.60	1,412.05	990.16	421.89	3.347	
16,500.00	7,758.41	16,549.09	7,759.29	212.21	214.59	179.82	-409.24	9,618.59	1,412.14	985.65	426.49	3.311	
16,600.00	7,760.16	16,649.09	7,761.03	214.51	216.89	179.82	-408.93	9,718.57	1,412.24	981.15	431.09	3.276	
16,700.00	7,761.90	16,749.09	7,762.77	216.80	219.19	179.82	-408.63	9,818.56	1,412.33	976.65	435.68	3.242	
16,800.00	7,763.65	16,849.09	7,764.51	219.09	221.50	179.82	-408.32	9,918.54	1,412.43	972.14	440.28	3.208	
16,900.00	7,765.39	16,949.09	7,766.25	221.38	223.80	179.82	-408.01	10,018.52	1,412.52	967.64	444.88	3.175	
17,000.00	7,767.14	17,049.09	7,767.99	223.68	226.10	179.82	-407.70	10,118.51	1,412.61	963.13	449.48	3.143	
17,100.00	7,768.89	17,149.09	7,769.73	225.97	228.41	179.82	-407.39	10,218.49	1,412.71	958.63	454.08	3.111	
17,200.00	7,770.63	17,249.09	7,771.47	228.27	230.71	179.82	-407.08	10,318.48	1,412.80	954.12	458.68	3.080	
17,300.00	7,772.38	17,349.09	7,773.21	230.56	233.02	179.82	-406.78	10,418.46	1,412.90	949.62	463.28	3.050	
17,400.00	7,774.12	17,449.09	7,774.95	232.86	235.32	179.82	-406.47	10,518.45	1,412.99	945.11	467.88	3.020	
17,500.00	7,775.87	17,549.09	7,776.69	235.15	237.62	179.82	-406.16	10,618.43	1,413.09	940.60	472.48	2.991	
17,600.00	7,777.61	17,649.09	7,778.43	237.45	239.93	179.82	-405.85	10,718.42	1,413.18	936.10	477.09	2.962	
17,700.00	7,779.36	17,749.09	7,780.16	239.74	242.23	179.82	-405.54	10,818.40	1,413.28	931.59	481.69	2.934	
17,800.00	7,781.10	17,849.09	7,781.90	242.04	244.54	179.82	-405.24	10,918.38	1,413.37	927.08	486.29	2.906	
17,900.00	7,782.85	17,949.09	7,783.64	244.34	246.84	179.82	-404.93	11,018.37	1,413.47	922.57	490.89	2.879	
18,000.00	7,784.59	18,049.09	7,785.38	246.63	249.14	179.82	-404.62	11,118.35	1,413.56	918.06	495.50	2.853	
18,100.00	7,786.34	18,149.09	7,787.12	248.93	251.45	179.82	-404.31	11,218.34	1,413.66	913.56	500.10	2.827	
18,200.00	7,788.08	18,249.09	7,788.86	251.23	253.75	179.82	-404.00	11,318.32	1,413.75	909.05	504.70	2.801	
18,300.00	7,789.83	18,349.09	7,790.60	253.53	256.06	179.82	-403.69	11,418.31	1,413.85	904.54	509.31	2.776	
18,367.04	7,791.00	18,416.13	7,791.77	255.07	257.50	179.82	-403.49	11,485.33	1,413.91	901.62	512.29	2.760 SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-121H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.10	0.50	0.50	24.86	18.08	8.38	19.93				
100.00	100.00	99.90	100.00	0.66	0.66	24.86	18.08	8.38	19.93	18.61	1.32	15.134	
200.00	200.00	199.90	200.00	1.35	1.35	24.86	18.08	8.38	19.93	17.23	2.70	7.391	
300.00	300.00	299.90	300.00	1.82	1.82	24.86	18.08	8.38	19.93	16.30	3.63	5.485	
400.00	400.00	399.90	400.00	2.19	2.19	24.86	18.08	8.38	19.93	15.55	4.38	4.550	
500.00	500.00	499.90	500.00	2.51	2.51	24.86	18.08	8.38	19.93	14.91	5.02	3.968	
600.00	600.00	599.90	600.00	2.80	2.80	24.86	18.08	8.38	19.93	14.33	5.60	3.561	
700.00	700.00	699.90	700.00	3.06	3.06	24.86	18.08	8.38	19.93	13.81	6.12	3.256	
800.00	800.00	799.90	800.00	3.30	3.30	24.86	18.08	8.38	19.93	13.32	6.61	3.016	
900.00	900.00	899.90	900.00	3.53	3.53	24.86	18.08	8.38	19.93	12.87	7.07	2.821	
1,000.00	1,000.00	999.90	1,000.00	3.75	3.75	24.86	18.08	8.38	19.93	12.43	7.50	2.658	
1,100.00	1,100.00	1,099.90	1,100.00	3.96	3.96	24.86	18.08	8.38	19.93	12.02	7.91	2.519	
1,200.00	1,200.00	1,199.90	1,200.00	4.15	4.15	24.86	18.08	8.38	19.93	11.62	8.31	2.400	
1,203.50	1,203.50	1,203.40	1,203.50	4.16	4.16	24.86	18.08	8.38	19.93	11.61	8.32	2.397 CC, ES	
1,300.00	1,300.00	1,299.56	1,299.66	4.34	4.26	24.61	18.50	8.47	20.35	11.75	8.60	2.366 SF	
1,400.00	1,400.00	1,398.75	1,398.79	4.53	4.75	22.91	21.85	9.23	23.75	14.50	9.26	2.566	
1,500.00	1,500.00	1,497.59	1,497.39	4.70	5.43	20.64	28.51	10.74	30.58	20.48	10.10	3.028	
1,600.00	1,599.98	1,596.00	1,595.26	5.04	6.06	17.49	38.44	12.99	39.32	28.29	11.03	3.566	
1,700.00	1,699.84	1,694.01	1,692.34	5.68	6.66	13.16	51.57	15.96	48.59	36.48	12.10	4.015	
1,800.00	1,799.45	1,791.58	1,788.46	6.28	7.23	8.32	67.86	19.65	58.64	45.61	13.03	4.499	
1,900.00	1,898.70	1,888.66	1,883.49	6.85	7.78	3.31	87.23	24.04	69.71	55.89	13.83	5.041	
2,000.00	1,997.47	1,985.21	1,977.26	7.40	8.32	-1.66	109.59	29.10	82.01	67.51	14.50	5.655	
2,100.00	2,095.71	2,081.15	2,069.64	7.63	8.84	-6.24	134.85	34.82	95.95	81.06	14.89	6.443	
2,200.00	2,193.87	2,176.28	2,160.33	7.86	9.35	-9.30	162.87	41.16	113.10	97.74	15.36	7.361	
2,300.00	2,292.03	2,270.39	2,249.05	8.13	9.86	-11.09	193.45	48.09	133.43	117.52	15.92	8.384	
2,400.00	2,390.19	2,363.29	2,335.58	8.41	10.34	-12.02	226.42	55.55	156.75	140.24	16.52	9.490	
2,500.00	2,488.36	2,456.61	2,421.43	8.70	10.71	-12.32	262.11	63.63	182.79	165.72	17.07	10.706	
2,600.00	2,586.52	2,552.99	2,509.83	9.02	11.02	-12.32	299.56	72.11	209.45	191.78	17.67	11.853	
2,700.00	2,684.68	2,649.38	2,598.23	9.34	11.35	-12.32	337.02	80.59	236.11	217.81	18.30	12.901	
2,800.00	2,782.84	2,745.76	2,686.63	9.67	11.70	-12.32	374.47	89.07	262.77	243.82	18.95	13.863	
2,900.00	2,881.00	2,842.14	2,775.03	10.02	12.06	-12.31	411.93	97.55	289.43	269.80	19.63	14.746	
3,000.00	2,979.17	2,938.52	2,863.43	10.38	12.43	-12.31	449.38	106.03	316.09	295.77	20.32	15.557	
3,100.00	3,077.33	3,034.90	2,951.83	10.74	12.81	-12.31	486.84	114.51	342.75	321.72	21.03	16.302	
3,200.00	3,175.49	3,131.28	3,040.22	11.11	13.19	-12.31	524.29	122.99	369.41	347.66	21.75	16.987	
3,300.00	3,273.65	3,227.66	3,128.62	11.49	13.59	-12.31	561.75	131.47	396.07	373.59	22.48	17.618	
3,400.00	3,371.81	3,324.04	3,217.02	11.87	14.00	-12.31	599.20	139.95	422.73	399.50	23.23	18.200	
3,500.00	3,469.98	3,420.42	3,305.42	12.26	14.41	-12.31	636.66	148.43	449.39	425.40	23.98	18.738	
3,600.00	3,568.14	3,516.80	3,393.82	12.66	14.83	-12.31	674.11	156.91	476.05	451.30	24.75	19.235	
3,700.00	3,666.30	3,613.18	3,482.22	13.06	15.25	-12.31	711.56	165.39	502.71	477.18	25.52	19.695	
3,800.00	3,764.46	3,709.56	3,570.62	13.46	15.68	-12.31	749.02	173.88	529.36	503.06	26.31	20.122	
3,900.00	3,862.62	3,805.95	3,659.02	13.87	16.11	-12.31	786.47	182.36	556.02	528.93	27.10	20.519	
4,000.00	3,960.79	3,902.33	3,747.42	14.28	16.55	-12.31	823.93	190.84	582.68	554.79	27.90	20.888	
4,100.00	4,058.95	3,998.71	3,835.82	14.70	17.00	-12.31	861.38	199.32	609.34	580.64	28.70	21.232	
4,200.00	4,157.11	4,095.09	3,924.22	15.12	17.45	-12.31	898.84	207.80	636.00	606.49	29.51	21.553	
4,300.00	4,255.27	4,191.47	4,012.62	15.54	17.90	-12.31	936.29	216.28	662.66	632.34	30.32	21.854	
4,400.00	4,353.43	4,287.85	4,101.02	15.96	18.35	-12.31	973.75	224.76	689.32	658.18	31.14	22.135	
4,500.00	4,451.59	4,384.23	4,189.42	16.39	18.81	-12.31	1,011.20	233.24	715.98	684.02	31.97	22.398	
4,600.00	4,549.76	4,480.61	4,277.82	16.81	19.27	-12.31	1,048.66	241.72	742.64	709.85	32.79	22.646	
4,700.00	4,647.92	4,576.99	4,366.22	17.24	19.74	-12.31	1,086.11	250.20	769.30	735.68	33.63	22.878	
4,800.00	4,746.08	4,683.83	4,464.33	17.68	20.24	-12.18	1,127.37	259.54	795.76	761.20	34.56	23.026	
4,900.00	4,844.24	4,815.04	4,586.52	18.11	20.95	-11.90	1,173.95	270.09	819.12	783.35	35.77	22.900	
5,000.00	4,942.40	4,948.58	4,713.00	18.55	21.72	-11.78	1,215.71	279.54	838.33	801.39	36.95	22.691	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-121H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,040.57	5,083.92	4,843.08	18.98	22.49	-11.82	1,252.12	287.79	853.33	815.32	38.02	22.447			
5,200.00	5,138.73	5,220.50	4,975.98	19.42	23.25	-12.03	1,282.75	294.72	864.08	825.12	38.96	22.180			
5,300.00	5,236.89	5,357.69	5,110.84	19.86	23.97	-12.41	1,307.26	300.27	870.57	830.80	39.76	21.894			
5,400.00	5,335.05	5,494.88	5,246.74	20.30	24.66	-12.96	1,325.45	304.39	872.84	832.42	40.42	21.594			
5,500.00	5,433.21	5,631.43	5,382.74	20.74	25.29	-13.70	1,337.23	307.05	870.99	830.08	40.91	21.293			
5,600.00	5,531.38	5,766.73	5,517.92	21.18	25.81	-14.63	1,342.65	308.28	865.14	823.95	41.19	21.002			
5,700.00	5,629.54	5,878.36	5,629.54	21.63	25.97	-15.73	1,343.08	308.38	856.27	814.96	41.31	20.728			
5,800.00	5,727.70	5,976.52	5,727.70	22.07	26.01	-16.87	1,343.08	308.38	847.45	806.00	41.45	20.444			
5,900.00	5,825.86	6,074.68	5,825.86	22.52	26.05	-18.03	1,343.08	308.38	838.97	797.38	41.58	20.175			
6,000.00	5,924.02	6,172.84	5,924.02	22.97	26.09	-19.21	1,343.08	308.38	830.84	789.13	41.71	19.920			
6,100.00	6,022.31	6,271.13	6,022.31	23.40	26.13	-20.38	1,343.08	308.38	823.33	781.53	41.80	19.695			
6,200.00	6,121.14	6,369.95	6,121.14	23.89	26.17	-21.36	1,343.08	308.38	817.39	775.46	41.93	19.492			
6,300.00	6,220.44	6,469.25	6,220.44	24.40	26.21	-22.12	1,343.08	308.38	812.96	770.89	42.08	19.321			
6,400.00	6,320.09	6,568.90	6,320.09	24.87	26.26	-22.67	1,343.08	308.38	809.93	767.71	42.22	19.182			
6,500.00	6,419.97	6,668.78	6,419.97	25.29	26.30	-22.99	1,343.08	308.38	808.21	765.83	42.37	19.073			
6,600.00	6,519.95	6,768.77	6,519.95	25.49	26.34	-23.08	1,343.08	308.38	807.73	765.21	42.52	18.997			
6,700.00	6,619.95	6,868.77	6,619.95	25.53	26.39	-23.08	1,343.08	308.38	807.73	765.11	42.62	18.952			
6,800.00	6,719.95	6,968.77	6,719.95	25.57	26.43	-23.08	1,343.08	308.38	807.73	765.00	42.73	18.905			
6,900.00	6,819.95	7,068.77	6,819.95	25.61	26.47	-23.08	1,343.08	308.38	807.73	764.89	42.83	18.858			
7,000.00	6,919.95	7,168.77	6,919.95	25.65	26.52	-23.08	1,343.08	308.38	807.73	764.79	42.94	18.811			
7,100.00	7,019.95	7,268.77	7,019.95	25.70	26.56	-23.08	1,343.08	308.38	807.73	764.68	43.05	18.764			
7,100.40	7,020.35	7,269.17	7,020.35	25.70	26.56	-23.08	1,343.08	308.38	807.73	764.68	43.05	18.764			
7,200.00	7,119.66	7,368.48	7,119.66	26.02	26.60	-23.50	1,343.08	308.38	807.76	764.67	43.09	18.746			
7,300.00	7,216.87	7,465.68	7,216.87	26.70	26.65	-25.13	1,343.08	308.38	808.28	765.24	43.05	18.777			
7,400.00	7,308.61	7,557.42	7,308.61	27.39	26.69	-27.92	1,343.08	308.38	810.71	767.74	42.97	18.868			
7,500.00	7,392.10	7,640.91	7,392.10	28.04	26.73	-31.75	1,343.08	308.38	817.23	774.27	42.96	19.023			
7,600.00	7,464.80	7,713.62	7,464.80	28.62	26.76	-36.42	1,343.08	308.38	830.41	787.25	43.16	19.238			
7,700.00	7,524.52	7,773.33	7,524.52	29.10	26.78	-41.66	1,343.08	308.38	852.56	808.87	43.69	19.516			
7,800.00	7,569.42	7,818.24	7,569.42	29.48	26.81	-47.14	1,343.08	308.38	885.15	840.62	44.53	19.877			
7,900.00	7,598.15	7,846.96	7,598.15	29.77	26.82	-52.54	1,343.08	308.38	928.39	882.79	45.60	20.360			
8,000.00	7,609.83	7,858.65	7,609.83	29.98	26.82	-57.58	1,343.08	308.38	981.09	934.36	46.73	20.993			
8,100.00	7,611.63	7,860.45	7,611.63	30.26	26.82	-62.04	1,343.08	308.38	1,042.83	994.99	47.84	21.799			
8,200.00	7,613.39	9,600.18	8,607.67	30.89	36.22	-2.31	1,354.60	1,305.32	1,099.24	1,061.64	37.60	29.232			
8,300.00	7,615.17	9,696.52	8,609.35	32.01	37.76	-2.43	1,354.91	1,401.64	1,088.02	1,049.39	38.63	28.166			
8,400.00	7,616.95	9,794.13	8,611.06	33.57	39.39	-2.55	1,355.22	1,499.23	1,079.32	1,039.57	39.75	27.152			
8,500.00	7,618.73	9,892.74	8,612.78	35.37	41.10	-2.65	1,355.54	1,597.83	1,072.94	1,031.97	40.97	26.190			
8,600.00	7,620.50	9,992.08	8,614.51	37.29	42.86	-2.72	1,355.86	1,697.15	1,068.68	1,026.40	42.28	25.277			
8,700.00	7,622.27	10,091.88	8,616.25	39.27	44.68	-2.76	1,356.18	1,796.93	1,066.41	1,022.72	43.69	24.407			
8,800.00	7,624.02	10,191.86	8,617.99	41.18	46.55	-2.77	1,356.51	1,896.90	1,065.97	1,020.78	45.19	23.589			
8,900.00	7,625.76	10,291.86	8,619.74	43.09	48.45	-2.77	1,356.83	1,996.89	1,065.94	1,019.19	46.75	22.802			
9,000.00	7,627.51	10,391.86	8,621.48	45.03	50.38	-2.77	1,357.15	2,096.87	1,065.91	1,017.55	48.36	22.040			
9,100.00	7,629.25	10,491.86	8,623.23	47.00	52.34	-2.77	1,357.47	2,196.86	1,065.88	1,015.86	50.02	21.309			
9,200.00	7,631.00	10,591.86	8,624.97	49.00	54.33	-2.77	1,357.80	2,296.84	1,065.85	1,014.12	51.72	20.607			
9,300.00	7,632.74	10,691.86	8,626.71	51.03	56.34	-2.77	1,358.12	2,396.83	1,065.82	1,012.36	53.46	19.937			
9,400.00	7,634.49	10,791.86	8,628.46	53.07	58.37	-2.77	1,358.44	2,496.81	1,065.79	1,010.56	55.23	19.297			
9,500.00	7,636.23	10,891.86	8,630.20	55.14	60.42	-2.77	1,358.76	2,596.79	1,065.76	1,008.72	57.03	18.687			
9,600.00	7,637.98	10,991.86	8,631.95	57.22	62.49	-2.77	1,359.09	2,696.78	1,065.73	1,006.86	58.86	18.106			
9,700.00	7,639.72	11,091.86	8,633.69	59.31	64.57	-2.77	1,359.41	2,796.76	1,065.70	1,004.98	60.72	17.552			
9,800.00	7,641.47	11,191.86	8,635.43	61.42	66.67	-2.77	1,359.73	2,896.75	1,065.67	1,003.07	62.59	17.026			
9,900.00	7,643.21	11,291.86	8,637.18	63.55	68.78	-2.77	1,360.05	2,996.73	1,065.64	1,001.15	64.49	16.524			
10,000.00	7,644.96	11,391.86	8,638.92	65.68	70.90	-2.77	1,360.37	3,096.72	1,065.61	999.20	66.41	16.047			
10,100.00	7,646.71	11,491.86	8,640.67	67.83	73.03	-2.77	1,360.70	3,196.70	1,065.57	997.24	68.34	15.592			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-121H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.00	7,648.45	11,591.86	8,642.41	69.98	75.17	-2.77	1,361.02	3,296.68	1,065.54	995.26	70.29	15.160	
10,300.00	7,650.20	11,691.86	8,644.16	72.15	77.33	-2.77	1,361.34	3,396.67	1,065.51	993.26	72.25	14.747	
10,400.00	7,651.94	11,791.86	8,645.90	74.32	79.49	-2.77	1,361.66	3,496.65	1,065.48	991.26	74.23	14.354	
10,500.00	7,653.69	11,891.86	8,647.64	76.50	81.66	-2.77	1,361.99	3,596.64	1,065.45	989.24	76.22	13.979	
10,600.00	7,655.43	11,991.86	8,649.39	78.68	83.83	-2.78	1,362.31	3,696.62	1,065.42	987.21	78.22	13.621	
10,700.00	7,657.18	12,091.86	8,651.13	80.88	86.02	-2.78	1,362.63	3,796.61	1,065.39	985.17	80.23	13.280	
10,800.00	7,658.92	12,191.86	8,652.88	83.07	88.20	-2.78	1,362.95	3,896.59	1,065.36	983.12	82.25	12.953	
10,900.00	7,660.67	12,291.86	8,654.62	85.28	90.40	-2.78	1,363.28	3,996.57	1,065.33	981.06	84.28	12.641	
11,000.00	7,662.41	12,391.86	8,656.36	87.49	92.60	-2.78	1,363.60	4,096.56	1,065.30	978.99	86.31	12.342	
11,100.00	7,664.16	12,491.86	8,658.11	89.70	94.81	-2.78	1,363.92	4,196.54	1,065.27	976.92	88.36	12.056	
11,200.00	7,665.91	12,591.86	8,659.85	91.92	97.02	-2.78	1,364.24	4,296.53	1,065.24	974.83	90.41	11.783	
11,300.00	7,667.65	12,691.86	8,661.60	94.14	99.23	-2.78	1,364.57	4,396.51	1,065.21	972.75	92.47	11.520	
11,400.00	7,669.40	12,791.86	8,663.34	96.37	101.45	-2.78	1,364.89	4,496.49	1,065.18	970.65	94.53	11.268	
11,500.00	7,671.14	12,891.86	8,665.09	98.59	103.67	-2.78	1,365.21	4,596.48	1,065.15	968.55	96.60	11.026	
11,600.00	7,672.89	12,991.86	8,666.83	100.83	105.90	-2.78	1,365.53	4,696.46	1,065.12	966.45	98.68	10.794	
11,700.00	7,674.63	13,091.86	8,668.57	103.06	108.13	-2.78	1,365.86	4,796.45	1,065.09	964.34	100.76	10.571	
11,800.00	7,676.38	13,191.86	8,670.32	105.30	110.36	-2.78	1,366.18	4,896.43	1,065.06	962.22	102.84	10.357	
11,900.00	7,678.12	13,291.86	8,672.06	107.54	112.60	-2.78	1,366.50	4,996.42	1,065.03	960.10	104.93	10.150	
12,000.00	7,679.87	13,391.86	8,673.81	109.79	114.84	-2.78	1,366.82	5,096.40	1,065.00	957.98	107.02	9.951	
12,100.00	7,681.61	13,491.86	8,675.55	112.04	117.08	-2.78	1,367.15	5,196.38	1,064.97	955.86	109.12	9.760	
12,200.00	7,683.36	13,591.86	8,677.29	114.29	119.32	-2.78	1,367.47	5,296.37	1,064.94	953.73	111.22	9.575	
12,300.00	7,685.10	13,691.86	8,679.04	116.54	121.57	-2.78	1,367.79	5,396.35	1,064.91	951.59	113.32	9.397	
12,400.00	7,686.85	13,791.86	8,680.78	118.79	123.82	-2.78	1,368.11	5,496.34	1,064.88	949.46	115.43	9.226	
12,500.00	7,688.60	13,891.86	8,682.53	121.05	126.07	-2.79	1,368.44	5,596.32	1,064.85	947.32	117.54	9.060	
12,600.00	7,690.34	13,991.86	8,684.27	123.30	128.32	-2.79	1,368.76	5,696.31	1,064.82	945.17	119.65	8.900	
12,700.00	7,692.09	14,091.86	8,686.02	125.56	130.58	-2.79	1,369.08	5,796.29	1,064.79	943.03	121.76	8.745	
12,800.00	7,693.83	14,191.86	8,687.76	127.83	132.83	-2.79	1,369.40	5,896.27	1,064.76	940.88	123.88	8.595	
12,900.00	7,695.58	14,291.86	8,689.50	130.09	135.09	-2.79	1,369.73	5,996.26	1,064.73	938.73	126.00	8.450	
13,000.00	7,697.32	14,391.86	8,691.25	132.35	137.35	-2.79	1,370.05	6,096.24	1,064.70	936.58	128.12	8.310	
13,100.00	7,699.07	14,491.86	8,692.99	134.62	139.61	-2.79	1,370.37	6,196.23	1,064.67	934.43	130.24	8.174	
13,200.00	7,700.81	14,591.86	8,694.74	136.89	141.88	-2.79	1,370.69	6,296.21	1,064.64	932.27	132.37	8.043	
13,300.00	7,702.56	14,691.86	8,696.48	139.15	144.14	-2.79	1,371.02	6,396.20	1,064.61	930.12	134.50	7.916	
13,400.00	7,704.30	14,791.86	8,698.23	141.42	146.41	-2.79	1,371.34	6,496.18	1,064.58	927.96	136.63	7.792	
13,500.00	7,706.05	14,891.86	8,699.97	143.70	148.68	-2.79	1,371.66	6,596.16	1,064.55	925.80	138.76	7.672	
13,600.00	7,707.80	14,991.86	8,701.71	145.97	150.95	-2.79	1,371.98	6,696.15	1,064.52	923.64	140.89	7.556	
13,700.00	7,709.54	15,091.86	8,703.46	148.24	153.22	-2.79	1,372.31	6,796.13	1,064.49	921.47	143.02	7.443	
13,800.00	7,711.29	15,191.86	8,705.20	150.52	155.49	-2.79	1,372.63	6,896.12	1,064.46	919.31	145.16	7.333	
13,900.00	7,713.03	15,291.86	8,706.95	152.79	157.76	-2.79	1,372.95	6,996.10	1,064.43	917.14	147.29	7.227	
14,000.00	7,714.78	15,391.86	8,708.69	155.07	160.03	-2.79	1,373.27	7,096.09	1,064.40	914.97	149.43	7.123	
14,100.00	7,716.52	15,491.86	8,710.43	157.35	162.31	-2.79	1,373.60	7,196.07	1,064.37	912.81	151.57	7.022	
14,200.00	7,718.27	15,591.86	8,712.18	159.62	164.58	-2.79	1,373.92	7,296.05	1,064.34	910.64	153.71	6.925	
14,300.00	7,720.01	15,691.86	8,713.92	161.90	166.86	-2.80	1,374.24	7,396.04	1,064.31	908.47	155.85	6.829	
14,400.00	7,721.76	15,791.86	8,715.67	164.18	169.14	-2.80	1,374.56	7,496.02	1,064.28	906.30	157.99	6.737	
14,500.00	7,723.50	15,891.86	8,717.41	166.46	171.42	-2.80	1,374.89	7,596.01	1,064.25	904.12	160.13	6.646	
14,600.00	7,725.25	15,991.86	8,719.16	168.75	173.70	-2.80	1,375.21	7,695.99	1,064.22	901.95	162.27	6.558	
14,700.00	7,726.99	16,091.86	8,720.90	171.03	175.98	-2.80	1,375.53	7,795.97	1,064.19	899.78	164.42	6.473	
14,800.00	7,728.74	16,191.86	8,722.64	173.31	178.26	-2.80	1,375.85	7,895.96	1,064.16	897.60	166.56	6.389	
14,900.00	7,730.49	16,291.86	8,724.39	175.60	180.54	-2.80	1,376.18	7,995.94	1,064.13	895.43	168.71	6.308	
15,000.00	7,732.23	16,391.86	8,726.13	177.88	182.82	-2.80	1,376.50	8,095.93	1,064.10	893.25	170.85	6.228	
15,100.00	7,733.98	16,491.86	8,727.88	180.17	185.10	-2.80	1,376.82	8,195.91	1,064.07	891.08	173.00	6.151	
15,200.00	7,735.72	16,591.86	8,729.62	182.45	187.39	-2.80	1,377.14	8,295.90	1,064.04	888.90	175.14	6.075	
15,300.00	7,737.47	16,691.86	8,731.36	184.74	189.67	-2.80	1,377.46	8,395.88	1,064.01	886.72	177.29	6.001	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-121H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,400.00	7,739.21	16,791.86	8,733.11	187.02	191.96	-2.80	1,377.79	8,495.86	1,063.98	884.54	179.44	5.929	
15,500.00	7,740.96	16,891.86	8,734.85	189.31	194.24	-2.80	1,378.11	8,595.85	1,063.95	882.37	181.59	5.859	
15,600.00	7,742.70	16,991.86	8,736.60	191.60	196.53	-2.80	1,378.43	8,695.83	1,063.92	880.19	183.74	5.790	
15,700.00	7,744.45	17,091.86	8,738.34	193.89	198.81	-2.80	1,378.75	8,795.82	1,063.89	878.01	185.89	5.723	
15,800.00	7,746.19	17,191.86	8,740.09	196.18	201.10	-2.80	1,379.08	8,895.80	1,063.87	875.83	188.04	5.658	
15,900.00	7,747.94	17,291.86	8,741.83	198.47	203.39	-2.80	1,379.40	8,995.79	1,063.84	873.65	190.19	5.594	
16,000.00	7,749.69	17,391.86	8,743.57	200.76	205.68	-2.80	1,379.72	9,095.77	1,063.81	871.47	192.34	5.531	
16,100.00	7,751.43	17,491.86	8,745.32	203.05	207.97	-2.81	1,380.04	9,195.75	1,063.78	869.29	194.49	5.470	
16,200.00	7,753.18	17,591.86	8,747.06	205.34	210.25	-2.81	1,380.37	9,295.74	1,063.75	867.11	196.64	5.410	
16,300.00	7,754.92	17,691.86	8,748.81	207.63	212.54	-2.81	1,380.69	9,395.72	1,063.72	864.93	198.79	5.351	
16,400.00	7,756.67	17,791.86	8,750.55	209.92	214.83	-2.81	1,381.01	9,495.71	1,063.69	862.74	200.94	5.294	
16,500.00	7,758.41	17,891.86	8,752.29	212.21	217.12	-2.81	1,381.33	9,595.69	1,063.66	860.56	203.09	5.237	
16,600.00	7,760.16	17,991.86	8,754.04	214.51	219.42	-2.81	1,381.66	9,695.68	1,063.63	858.38	205.25	5.182	
16,700.00	7,761.90	18,091.86	8,755.78	216.80	221.71	-2.81	1,381.98	9,795.66	1,063.60	856.20	207.40	5.128	
16,800.00	7,763.65	18,191.86	8,757.53	219.09	224.00	-2.81	1,382.30	9,895.64	1,063.57	854.02	209.55	5.075	
16,900.00	7,765.39	18,291.86	8,759.27	221.38	226.29	-2.81	1,382.62	9,995.63	1,063.54	851.84	211.70	5.024	
17,000.00	7,767.14	18,391.86	8,761.02	223.68	228.58	-2.81	1,382.95	10,095.61	1,063.51	849.65	213.85	4.973	
17,100.00	7,768.89	18,491.86	8,762.76	225.97	230.88	-2.81	1,383.27	10,195.60	1,063.48	847.47	216.01	4.923	
17,200.00	7,770.63	18,591.86	8,764.50	228.27	233.17	-2.81	1,383.59	10,295.58	1,063.45	845.29	218.16	4.875	
17,300.00	7,772.38	18,691.86	8,766.25	230.56	235.46	-2.81	1,383.91	10,395.56	1,063.42	843.11	220.31	4.827	
17,400.00	7,774.12	18,791.86	8,767.99	232.86	237.76	-2.81	1,384.24	10,495.55	1,063.39	840.92	222.47	4.780	
17,500.00	7,775.87	18,891.86	8,769.74	235.15	240.05	-2.81	1,384.56	10,595.53	1,063.36	838.74	224.62	4.734	
17,600.00	7,777.61	18,991.86	8,771.48	237.45	242.35	-2.81	1,384.88	10,695.52	1,063.33	836.56	226.77	4.689	
17,700.00	7,779.36	19,091.86	8,773.22	239.74	244.64	-2.81	1,385.20	10,795.50	1,063.30	834.37	228.92	4.645	
17,800.00	7,781.10	19,191.86	8,774.97	242.04	246.94	-2.81	1,385.53	10,895.49	1,063.27	832.19	231.08	4.601	
17,900.00	7,782.85	19,291.86	8,776.71	244.34	249.23	-2.82	1,385.85	10,995.47	1,063.24	830.01	233.23	4.559	
18,000.00	7,784.59	19,391.86	8,778.46	246.63	251.53	-2.82	1,386.17	11,095.45	1,063.21	827.83	235.38	4.517	
18,100.00	7,786.34	19,491.86	8,780.20	248.93	253.82	-2.82	1,386.49	11,195.44	1,063.18	825.64	237.54	4.476	
18,200.00	7,788.08	19,591.86	8,781.95	251.23	256.12	-2.82	1,386.82	11,295.42	1,063.15	823.46	239.69	4.436	
18,300.00	7,789.83	19,691.86	8,783.69	253.53	258.41	-2.82	1,387.14	11,395.41	1,063.12	821.28	241.84	4.396	
18,367.04	7,791.00	19,758.90	8,784.86	255.07	259.95	-2.82	1,387.35	11,462.44	1,063.10	819.82	243.29	4.370	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-122H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	0.50	-154.60	-17.97	-8.53	19.89				
100.00	100.00	100.00	100.00	0.66	0.66	-154.60	-17.97	-8.53	19.89	18.57	1.32	15.100	
200.00	200.00	200.00	200.00	1.35	1.35	-154.60	-17.97	-8.53	19.89	17.19	2.70	7.374	
300.00	300.00	300.00	300.00	1.82	1.82	-154.60	-17.97	-8.53	19.89	16.26	3.63	5.473	
400.00	400.00	400.00	400.00	2.19	2.19	-154.60	-17.97	-8.53	19.89	15.51	4.38	4.540	
500.00	500.00	500.00	500.00	2.51	2.51	-154.60	-17.97	-8.53	19.89	14.87	5.02	3.960	
600.00	600.00	600.00	600.00	2.80	2.80	-154.60	-17.97	-8.53	19.89	14.29	5.60	3.554	
700.00	700.00	700.00	700.00	3.06	3.06	-154.60	-17.97	-8.53	19.89	13.77	6.12	3.249	
800.00	800.00	800.00	800.00	3.30	3.30	-154.60	-17.97	-8.53	19.89	13.28	6.61	3.010	
900.00	900.00	900.00	900.00	3.53	3.53	-154.60	-17.97	-8.53	19.89	12.82	7.07	2.815	
1,000.00	1,000.00	1,000.00	1,000.00	3.75	3.75	-154.60	-17.97	-8.53	19.89	12.39	7.50	2.653	
1,100.00	1,100.00	1,100.00	1,100.00	3.96	3.96	-154.60	-17.97	-8.53	19.89	11.98	7.91	2.514	
1,200.00	1,200.00	1,200.00	1,200.00	4.15	4.15	-154.60	-17.97	-8.53	19.89	11.58	8.31	2.395	
1,300.00	1,300.00	1,300.00	1,300.00	4.34	4.34	-154.60	-17.97	-8.53	19.89	11.20	8.69	2.290	
1,400.00	1,400.00	1,400.00	1,400.00	4.53	4.53	-154.60	-17.97	-8.53	19.89	10.84	9.05	2.197	
1,500.00	1,500.00	1,500.00	1,500.00	4.70	4.70	-154.60	-17.97	-8.53	19.89	10.48	9.41	2.114 CC, ES, SF	
1,600.00	1,599.98	1,599.98	1,599.98	5.04	4.88	-152.96	-17.97	-8.53	21.53	11.62	9.91	2.173	
1,700.00	1,699.84	1,700.55	1,700.53	5.68	5.18	-151.60	-17.26	-6.91	25.13	14.35	10.78	2.332	
1,800.00	1,799.45	1,801.21	1,801.04	6.28	5.81	-152.80	-15.15	-2.05	29.30	17.54	11.76	2.491	
1,900.00	1,898.70	1,901.93	1,901.37	6.85	6.39	-155.56	-11.64	6.05	34.09	21.46	12.63	2.699	
2,000.00	1,997.47	2,002.69	2,001.36	7.40	6.96	-159.19	-6.71	17.39	39.62	26.24	13.38	2.961	
2,100.00	2,095.71	2,103.47	2,100.88	7.63	7.50	-163.46	-0.39	31.95	45.62	31.90	13.72	3.326	
2,200.00	2,193.87	2,204.27	2,199.80	7.86	8.03	-169.68	7.32	49.71	50.11	36.24	13.87	3.614	
2,300.00	2,292.03	2,304.12	2,297.34	8.13	8.24	-176.70	15.82	69.29	54.02	40.23	13.79	3.917	
2,400.00	2,390.19	2,403.84	2,394.74	8.41	8.48	-177.33	24.33	88.88	58.62	44.79	13.83	4.239	
2,500.00	2,488.36	2,503.55	2,492.15	8.70	8.76	-172.29	32.83	108.47	63.78	49.82	13.96	4.570	
2,600.00	2,586.52	2,603.27	2,589.55	9.02	9.04	-168.04	41.34	128.05	69.38	55.22	14.16	4.899	
2,700.00	2,684.68	2,702.99	2,686.95	9.34	9.35	-164.45	49.84	147.64	75.31	60.88	14.43	5.220	
2,800.00	2,782.84	2,802.70	2,784.36	9.67	9.67	-161.39	58.35	167.23	81.50	66.76	14.75	5.527	
2,900.00	2,881.00	2,902.42	2,881.76	10.02	10.00	-158.78	66.85	186.82	87.91	72.80	15.11	5.818	
3,000.00	2,979.17	3,002.14	2,979.16	10.38	10.34	-156.52	75.36	206.40	94.48	78.97	15.50	6.093	
3,100.00	3,077.33	3,101.85	3,076.57	10.74	10.69	-154.56	83.86	225.99	101.18	85.25	15.93	6.352	
3,200.00	3,175.49	3,201.57	3,173.97	11.11	11.05	-152.85	92.37	245.58	107.99	91.61	16.38	6.594	
3,300.00	3,273.65	3,301.28	3,271.37	11.49	11.42	-151.33	100.87	265.17	114.89	98.04	16.84	6.821	
3,400.00	3,371.81	3,401.00	3,368.77	11.87	11.80	-150.00	109.38	284.75	121.86	104.54	17.33	7.033	
3,500.00	3,469.98	3,500.72	3,466.18	12.26	12.18	-148.80	117.88	304.34	128.90	111.08	17.82	7.232	
3,600.00	3,568.14	3,600.43	3,563.58	12.66	12.57	-147.73	126.39	323.93	135.99	117.66	18.33	7.418	
3,700.00	3,666.30	3,700.15	3,660.98	13.06	12.97	-146.77	134.89	343.51	143.12	124.27	18.85	7.592	
3,800.00	3,764.46	3,799.87	3,758.39	13.46	13.37	-145.90	143.40	363.10	150.30	130.91	19.38	7.755	
3,900.00	3,862.62	3,899.58	3,855.79	13.87	13.78	-145.10	151.90	382.69	157.50	137.58	19.92	7.908	
4,000.00	3,960.79	3,999.30	3,953.19	14.28	14.19	-144.38	160.41	402.28	164.73	144.27	20.46	8.052	
4,100.00	4,058.95	4,099.02	4,050.60	14.70	14.61	-143.72	168.91	421.86	171.99	150.98	21.01	8.186	
4,200.00	4,157.11	4,198.73	4,148.00	15.12	15.03	-143.11	177.42	441.45	179.27	157.71	21.56	8.313	
4,300.00	4,255.27	4,298.45	4,245.40	15.54	15.45	-142.55	185.92	461.04	186.57	164.45	22.12	8.433	
4,400.00	4,353.43	4,398.16	4,342.81	15.96	15.87	-142.03	194.43	480.63	193.89	171.20	22.69	8.545	
4,500.00	4,451.59	4,497.88	4,440.21	16.39	16.30	-141.55	202.93	500.21	201.23	177.97	23.26	8.651	
4,600.00	4,549.76	4,597.60	4,537.61	16.81	16.73	-141.10	211.44	519.80	208.57	184.74	23.83	8.752	
4,700.00	4,647.92	4,697.31	4,635.01	17.24	17.17	-140.68	219.94	539.39	215.93	191.52	24.41	8.846	
4,800.00	4,746.08	4,797.03	4,732.42	17.68	17.60	-140.29	228.45	558.97	223.30	198.31	24.99	8.936	
4,900.00	4,844.24	4,896.75	4,829.82	18.11	18.04	-139.93	236.95	578.56	230.68	205.11	25.57	9.021	
5,000.00	4,942.40	4,996.46	4,927.22	18.55	18.48	-139.58	245.46	598.15	238.07	211.92	26.16	9.102	
5,100.00	5,040.57	5,096.18	5,024.63	18.98	18.92	-139.26	253.96	617.74	245.47	218.72	26.75	9.178	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-122H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.00	5,138.73	5,195.90	5,122.03	19.42	19.36	138.96	262.47	637.32	252.88	225.54	27.34	9.250	
5,300.00	5,236.89	5,295.61	5,219.43	19.86	19.81	138.67	270.97	656.91	260.29	232.36	27.93	9.319	
5,400.00	5,335.05	5,395.33	5,316.84	20.30	20.26	138.40	279.48	676.50	267.71	239.18	28.52	9.385	
5,500.00	5,433.21	5,495.95	5,415.16	20.74	20.69	138.14	288.00	696.13	275.09	245.98	29.10	9.452	
5,600.00	5,531.38	5,598.92	5,516.32	21.18	21.19	138.31	295.65	713.75	281.61	251.96	29.65	9.497	
5,700.00	5,629.54	5,701.82	5,618.03	21.63	21.74	139.17	301.84	728.01	287.05	256.91	30.14	9.524	
5,800.00	5,727.70	5,804.37	5,719.89	22.07	22.25	140.69	306.57	738.88	291.56	261.01	30.55	9.543	
5,900.00	5,825.86	5,906.32	5,821.50	22.52	22.74	142.86	309.82	746.36	295.43	264.51	30.92	9.554	
6,000.00	5,924.02	6,007.42	5,922.50	22.97	23.15	145.65	311.62	750.51	299.05	267.75	31.29	9.556	
6,100.00	6,022.31	6,107.24	6,022.31	23.40	23.31	148.90	312.03	751.47	302.76	271.08	31.68	9.556	
6,200.00	6,121.14	6,206.07	6,121.14	23.89	23.35	151.68	312.03	751.47	306.48	274.34	32.14	9.535	
6,300.00	6,220.44	6,305.37	6,220.44	24.40	23.39	153.78	312.03	751.47	309.84	277.22	32.61	9.501	
6,400.00	6,320.09	6,405.02	6,320.09	24.87	23.43	155.23	312.03	751.47	312.45	279.42	33.03	9.459	
6,500.00	6,419.97	6,504.90	6,419.97	25.29	23.47	156.06	312.03	751.47	314.05	280.69	33.36	9.413	
6,600.00	6,519.95	6,604.89	6,519.95	25.49	23.51	156.29	312.03	751.47	314.52	280.94	33.58	9.367	
6,700.00	6,619.95	6,704.89	6,619.95	25.53	23.55	156.29	312.03	751.47	314.52	280.82	33.70	9.334	
6,800.00	6,719.95	6,804.89	6,719.95	25.57	23.60	156.29	312.03	751.47	314.52	280.69	33.82	9.299	
6,900.00	6,819.95	6,904.89	6,819.95	25.61	23.64	156.29	312.03	751.47	314.52	280.56	33.95	9.264	
7,000.00	6,919.95	7,004.89	6,919.95	25.65	23.68	156.29	312.03	751.47	314.52	280.44	34.08	9.229	
7,100.00	7,019.95	7,104.89	7,019.95	25.70	23.72	156.29	312.03	751.47	314.52	280.31	34.21	9.195	
7,173.48	7,093.29	7,178.23	7,093.29	25.94	23.76	157.00	312.03	751.47	314.49	280.08	34.41	9.139	
7,200.00	7,119.66	7,204.60	7,119.66	26.02	23.77	157.38	312.03	751.47	314.50	279.99	34.51	9.114	
7,300.00	7,216.87	7,301.80	7,216.87	26.70	23.81	161.55	312.03	751.47	315.48	279.98	35.51	8.885	
7,400.00	7,308.61	7,393.54	7,308.61	27.39	23.85	168.59	312.03	751.47	321.04	283.56	37.48	8.567	
7,500.00	7,392.10	7,477.03	7,392.10	28.04	23.89	177.77	312.03	751.47	336.36	295.88	40.48	8.309	
7,600.00	7,464.80	7,549.74	7,464.80	28.62	23.92	-172.16	312.03	751.47	366.29	322.25	44.04	8.317	
7,700.00	7,524.52	7,609.45	7,524.52	29.10	23.94	-162.58	312.03	751.47	413.09	365.75	47.33	8.727	
7,800.00	7,569.42	7,654.35	7,569.42	29.48	23.96	-154.37	312.03	751.47	475.80	425.94	49.86	9.544	
7,900.00	7,598.15	7,683.08	7,598.15	29.77	23.98	-147.79	312.03	751.47	551.22	499.67	51.54	10.695	
8,000.00	7,609.83	7,694.77	7,609.83	29.98	23.98	-142.68	312.03	751.47	635.20	582.65	52.55	12.087	
8,100.00	7,611.63	7,696.56	7,611.63	30.26	23.98	-138.60	312.03	751.47	722.75	669.60	53.16	13.596	
8,200.00	7,613.39	7,698.33	7,613.39	30.89	23.98	-135.07	312.03	751.47	810.97	757.38	53.59	15.134	
8,300.00	7,615.17	7,700.11	7,615.17	32.01	23.98	-131.95	312.03	751.47	899.44	845.57	53.87	16.696	
8,400.00	7,616.95	7,701.89	7,616.95	33.57	23.98	-129.12	312.03	751.47	987.88	933.83	54.05	18.278	
8,500.00	7,618.73	7,703.66	7,618.73	35.37	23.99	-126.50	312.03	751.47	1,076.10	1,021.95	54.15	19.874	
8,600.00	7,620.50	9,403.86	8,607.03	37.29	33.48	-179.09	434.95	1,707.38	1,119.39	1,065.33	54.06	20.705	
8,700.00	7,622.27	9,496.31	8,608.65	39.27	35.24	-178.32	435.50	1,799.82	1,122.15	1,065.95	56.21	19.964	
8,800.00	7,624.02	9,596.30	8,610.40	41.18	37.21	-178.32	435.79	1,899.79	1,122.75	1,064.52	58.23	19.282	
8,900.00	7,625.76	9,696.30	8,612.14	43.09	39.22	-178.32	436.08	1,999.77	1,122.81	1,062.56	60.25	18.635	
9,000.00	7,627.51	9,796.30	8,613.89	45.03	41.26	-178.32	436.36	2,099.76	1,122.87	1,060.54	62.33	18.016	
9,100.00	7,629.25	9,896.30	8,615.64	47.00	43.34	-178.32	436.65	2,199.74	1,122.92	1,058.48	64.44	17.426	
9,200.00	7,631.00	9,996.30	8,617.39	49.00	45.43	-178.32	436.94	2,299.73	1,122.98	1,056.39	66.59	16.864	
9,300.00	7,632.74	10,096.30	8,619.14	51.03	47.55	-178.33	437.23	2,399.71	1,123.04	1,054.26	68.77	16.330	
9,400.00	7,634.49	10,196.30	8,620.88	53.07	49.68	-178.33	437.52	2,499.70	1,123.09	1,052.11	70.98	15.822	
9,500.00	7,636.23	10,296.30	8,622.63	55.14	51.83	-178.33	437.81	2,599.68	1,123.15	1,049.93	73.22	15.339	
9,600.00	7,637.98	10,396.30	8,624.38	57.22	53.99	-178.33	438.10	2,699.66	1,123.21	1,047.72	75.49	14.880	
9,700.00	7,639.72	10,496.30	8,626.13	59.31	56.17	-178.33	438.39	2,799.65	1,123.26	1,045.49	77.77	14.443	
9,800.00	7,641.47	10,596.30	8,627.87	61.42	58.35	-178.33	438.67	2,899.63	1,123.32	1,043.24	80.08	14.027	
9,900.00	7,643.21	10,696.30	8,629.62	63.55	60.54	-178.33	438.96	2,999.62	1,123.38	1,040.97	82.41	13.632	
10,000.00	7,644.96	10,796.30	8,631.37	65.68	62.75	-178.33	439.25	3,099.60	1,123.43	1,038.68	84.75	13.256	
10,100.00	7,646.71	10,896.30	8,633.12	67.83	64.95	-178.33	439.54	3,199.59	1,123.49	1,036.38	87.11	12.897	
10,200.00	7,648.45	10,996.30	8,634.86	69.98	67.17	-178.33	439.83	3,299.57	1,123.55	1,034.06	89.49	12.556	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-122H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference	Offset	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.00	7,650.20	11,096.30	8,636.61	72.15	69.39	-178.33	440.12	3,399.55	1,123.60	1,031.73	91.87	12.230	
10,400.00	7,651.94	11,196.30	8,638.36	74.32	71.62	-178.33	440.41	3,499.54	1,123.66	1,029.38	94.28	11.919	
10,500.00	7,653.69	11,296.30	8,640.11	76.50	73.85	-178.33	440.70	3,599.52	1,123.72	1,027.03	96.69	11.622	
10,600.00	7,655.43	11,396.30	8,641.86	78.68	76.09	-178.33	440.98	3,699.51	1,123.77	1,024.66	99.11	11.338	
10,700.00	7,657.18	11,496.30	8,643.60	80.88	78.33	-178.33	441.27	3,799.49	1,123.83	1,022.28	101.55	11.067	
10,800.00	7,658.92	11,596.30	8,645.35	83.07	80.57	-178.33	441.56	3,899.48	1,123.89	1,019.89	103.99	10.807	
10,900.00	7,660.67	11,696.30	8,647.10	85.28	82.82	-178.33	441.85	3,999.46	1,123.94	1,017.49	106.45	10.559	
11,000.00	7,662.41	11,796.30	8,648.85	87.49	85.07	-178.33	442.14	4,099.44	1,124.00	1,015.09	108.91	10.320	
11,100.00	7,664.16	11,896.30	8,650.59	89.70	87.33	-178.33	442.43	4,199.43	1,124.06	1,012.68	111.38	10.092	
11,200.00	7,665.91	11,996.30	8,652.34	91.92	89.58	-178.33	442.72	4,299.41	1,124.11	1,010.26	113.86	9.873	
11,300.00	7,667.65	12,096.30	8,654.09	94.14	91.84	-178.33	443.01	4,399.40	1,124.17	1,007.83	116.34	9.663	
11,400.00	7,669.40	12,196.30	8,655.84	96.37	94.10	-178.33	443.29	4,499.38	1,124.23	1,005.39	118.83	9.461	
11,500.00	7,671.14	12,296.30	8,657.59	98.59	96.37	-178.33	443.58	4,599.36	1,124.28	1,002.95	121.33	9.266	
11,600.00	7,672.89	12,396.30	8,659.33	100.83	98.64	-178.33	443.87	4,699.35	1,124.34	1,000.51	123.83	9.079	
11,700.00	7,674.63	12,496.30	8,661.08	103.06	100.90	-178.33	444.16	4,799.33	1,124.40	998.06	126.34	8.900	
11,800.00	7,676.38	12,596.30	8,662.83	105.30	103.17	-178.33	444.45	4,899.32	1,124.45	995.60	128.86	8.726	
11,900.00	7,678.12	12,696.30	8,664.58	107.54	105.45	-178.34	444.74	4,999.30	1,124.51	993.14	131.37	8.560	
12,000.00	7,679.87	12,796.30	8,666.32	109.79	107.72	-178.34	445.03	5,099.29	1,124.57	990.67	133.90	8.399	
12,100.00	7,681.61	12,896.30	8,668.07	112.04	109.99	-178.34	445.31	5,199.27	1,124.62	988.20	136.43	8.243	
12,200.00	7,683.36	12,996.30	8,669.82	114.29	112.27	-178.34	445.60	5,299.25	1,124.68	985.72	138.96	8.094	
12,300.00	7,685.10	13,096.30	8,671.57	116.54	114.55	-178.34	445.89	5,399.24	1,124.74	983.24	141.50	7.949	
12,400.00	7,686.85	13,196.30	8,673.32	118.79	116.83	-178.34	446.18	5,499.22	1,124.80	980.76	144.04	7.809	
12,500.00	7,688.60	13,296.30	8,675.06	121.05	119.11	-178.34	446.47	5,599.21	1,124.85	978.27	146.58	7.674	
12,600.00	7,690.34	13,396.30	8,676.81	123.30	121.39	-178.34	446.76	5,699.19	1,124.91	975.78	149.13	7.543	
12,700.00	7,692.09	13,496.30	8,678.56	125.56	123.67	-178.34	447.05	5,799.18	1,124.97	973.29	151.68	7.417	
12,800.00	7,693.83	13,596.30	8,680.31	127.83	125.96	-178.34	447.34	5,899.16	1,125.02	970.79	154.23	7.294	
12,900.00	7,695.58	13,696.30	8,682.05	130.09	128.24	-178.34	447.62	5,999.14	1,125.08	968.29	156.79	7.176	
13,000.00	7,697.32	13,796.30	8,683.80	132.35	130.53	-178.34	447.91	6,099.13	1,125.14	965.79	159.35	7.061	
13,100.00	7,699.07	13,896.30	8,685.55	134.62	132.81	-178.34	448.20	6,199.11	1,125.19	963.28	161.92	6.949	
13,200.00	7,700.81	13,996.30	8,687.30	136.89	135.10	-178.34	448.49	6,299.10	1,125.25	960.77	164.48	6.841	
13,300.00	7,702.56	14,096.30	8,689.05	139.15	137.39	-178.34	448.78	6,399.08	1,125.31	958.26	167.05	6.736	
13,400.00	7,704.30	14,196.29	8,690.79	141.42	139.68	-178.34	449.07	6,499.07	1,125.37	955.74	169.62	6.635	
13,500.00	7,706.05	14,296.29	8,692.54	143.70	141.96	-178.34	449.36	6,599.05	1,125.42	953.23	172.20	6.536	
13,600.00	7,707.80	14,396.29	8,694.29	145.97	144.25	-178.34	449.65	6,699.03	1,125.48	950.71	174.77	6.440	
13,700.00	7,709.54	14,496.29	8,696.04	148.24	146.55	-178.34	449.93	6,799.02	1,125.54	948.18	177.35	6.346	
13,800.00	7,711.29	14,596.29	8,697.78	150.52	148.84	-178.34	450.22	6,899.00	1,125.59	945.66	179.93	6.256	
13,900.00	7,713.03	14,696.29	8,699.53	152.79	151.13	-178.34	450.51	6,998.99	1,125.65	943.13	182.52	6.167	
14,000.00	7,714.78	14,796.29	8,701.28	155.07	153.42	-178.34	450.80	7,098.97	1,125.71	940.61	185.10	6.082	
14,100.00	7,716.52	14,896.29	8,703.03	157.35	155.71	-178.34	451.09	7,198.96	1,125.76	938.08	187.69	5.998	
14,200.00	7,718.27	14,996.29	8,704.78	159.62	158.01	-178.34	451.38	7,298.94	1,125.82	935.54	190.28	5.917	
14,300.00	7,720.01	15,096.29	8,706.52	161.90	160.30	-178.34	451.67	7,398.92	1,125.88	933.01	192.87	5.837	
14,400.00	7,721.76	15,196.29	8,708.27	164.18	162.59	-178.34	451.96	7,498.91	1,125.94	930.47	195.46	5.760	
14,500.00	7,723.50	15,296.29	8,710.02	166.46	164.89	-178.34	452.24	7,598.89	1,125.99	927.93	198.06	5.685	
14,600.00	7,725.25	15,396.29	8,711.77	168.75	167.18	-178.35	452.53	7,698.88	1,126.05	925.39	200.66	5.612	
14,700.00	7,726.99	15,496.29	8,713.51	171.03	169.48	-178.35	452.82	7,798.86	1,126.11	922.85	203.25	5.540	
14,800.00	7,728.74	15,596.29	8,715.26	173.31	171.78	-178.35	453.11	7,898.85	1,126.16	920.31	205.85	5.471	
14,900.00	7,730.49	15,696.29	8,717.01	175.60	174.07	-178.35	453.40	7,998.83	1,126.22	917.77	208.46	5.403	
15,000.00	7,732.23	15,796.29	8,718.76	177.88	176.37	-178.35	453.69	8,098.81	1,126.28	915.22	211.06	5.336	
15,100.00	7,733.98	15,896.29	8,720.51	180.17	178.67	-178.35	453.98	8,198.80	1,126.34	912.67	213.66	5.272	
15,200.00	7,735.72	15,996.29	8,722.25	182.45	180.96	-178.35	454.27	8,298.78	1,126.39	910.12	216.27	5.208	
15,300.00	7,737.47	16,096.29	8,724.00	184.74	183.26	-178.35	454.55	8,398.77	1,126.45	907.57	218.88	5.146	
15,400.00	7,739.21	16,196.29	8,725.75	187.02	185.56	-178.35	454.84	8,498.75	1,126.51	905.02	221.49	5.086	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-122H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,500.00	7,740.96	16,296.29	8,727.50	189.31	187.86	-178.35	455.13	8,598.73	1,126.56	902.46	224.10	5.027	
15,600.00	7,742.70	16,396.29	8,729.24	191.60	190.16	-178.35	455.42	8,698.72	1,126.62	899.91	226.71	4.969	
15,700.00	7,744.45	16,496.29	8,730.99	193.89	192.46	-178.35	455.71	8,798.70	1,126.68	897.35	229.33	4.913	
15,800.00	7,746.19	16,596.29	8,732.74	196.18	194.75	-178.35	456.00	8,898.69	1,126.74	894.80	231.94	4.858	
15,900.00	7,747.94	16,696.29	8,734.49	198.47	197.05	-178.35	456.29	8,998.67	1,126.79	892.24	234.56	4.804	
16,000.00	7,749.69	16,796.29	8,736.24	200.76	199.35	-178.35	456.58	9,098.66	1,126.85	889.68	237.17	4.751	
16,100.00	7,751.43	16,896.29	8,737.98	203.05	201.65	-178.35	456.86	9,198.64	1,126.91	887.11	239.79	4.700	
16,200.00	7,753.18	16,996.29	8,739.73	205.34	203.95	-178.35	457.15	9,298.62	1,126.96	884.55	242.41	4.649	
16,300.00	7,754.92	17,096.29	8,741.48	207.63	206.26	-178.35	457.44	9,398.61	1,127.02	881.99	245.03	4.599	
16,400.00	7,756.67	17,196.29	8,743.23	209.92	208.56	-178.35	457.73	9,498.59	1,127.08	879.42	247.66	4.551	
16,500.00	7,758.41	17,296.29	8,744.97	212.21	210.86	-178.35	458.02	9,598.58	1,127.14	876.86	250.28	4.503	
16,600.00	7,760.16	17,396.29	8,746.72	214.51	213.16	-178.35	458.31	9,698.56	1,127.19	874.29	252.91	4.457	
16,700.00	7,761.90	17,496.29	8,748.47	216.80	215.46	-178.35	458.60	9,798.55	1,127.25	871.72	255.53	4.411	
16,800.00	7,763.65	17,596.29	8,750.22	219.09	217.76	-178.35	458.88	9,898.53	1,127.31	869.15	258.16	4.367	
16,900.00	7,765.39	17,696.29	8,751.97	221.38	220.06	-178.35	459.17	9,998.51	1,127.37	866.58	260.79	4.323	
17,000.00	7,767.14	17,796.29	8,753.71	223.68	222.36	-178.35	459.46	10,098.50	1,127.42	864.01	263.42	4.280	
17,100.00	7,768.89	17,896.29	8,755.46	225.97	224.67	-178.35	459.75	10,198.48	1,127.48	861.43	266.05	4.238	
17,200.00	7,770.63	17,996.29	8,757.21	228.27	226.97	-178.36	460.04	10,298.47	1,127.54	858.86	268.68	4.197	
17,300.00	7,772.38	18,096.29	8,758.96	230.56	229.27	-178.36	460.33	10,398.45	1,127.59	856.29	271.31	4.156	
17,400.00	7,774.12	18,196.29	8,760.70	232.86	231.57	-178.36	460.62	10,498.44	1,127.65	853.71	273.94	4.116	
17,500.00	7,775.87	18,296.29	8,762.45	235.15	233.88	-178.36	460.91	10,598.42	1,127.71	851.13	276.58	4.077	
17,600.00	7,777.61	18,396.29	8,764.20	237.45	236.18	-178.36	461.19	10,698.40	1,127.77	848.55	279.21	4.039	
17,700.00	7,779.36	18,496.29	8,765.95	239.74	238.48	-178.36	461.48	10,798.39	1,127.82	845.98	281.85	4.002	
17,800.00	7,781.10	18,596.29	8,767.70	242.04	240.79	-178.36	461.77	10,898.37	1,127.88	843.40	284.49	3.965	
17,900.00	7,782.85	18,696.29	8,769.44	244.34	243.09	-178.36	462.06	10,998.36	1,127.94	840.81	287.12	3.928	
18,000.00	7,784.59	18,796.29	8,771.19	246.63	245.39	-178.36	462.35	11,098.34	1,128.00	838.23	289.76	3.893	
18,100.00	7,786.34	18,896.29	8,772.94	248.93	247.70	-178.36	462.64	11,198.33	1,128.05	835.65	292.40	3.858	
18,200.00	7,788.08	18,996.29	8,774.69	251.23	250.00	-178.36	462.93	11,298.31	1,128.11	833.07	295.04	3.824	
18,300.00	7,789.83	19,096.29	8,776.43	253.53	252.30	-178.36	463.22	11,398.29	1,128.17	830.48	297.69	3.790	
18,367.04	7,791.00	19,163.33	8,777.61	255.07	253.85	-178.36	463.41	11,465.32	1,128.21	828.75	299.46	3.768	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.20	0.00	0.50	0.50	-154.91	-72.52	-33.95	80.07				
100.00	100.00	100.20	100.00	0.66	0.66	-154.91	-72.52	-33.95	80.07	78.75	1.32	60.740	
200.00	200.00	200.20	200.00	1.35	1.35	-154.91	-72.52	-33.95	80.07	77.37	2.70	29.676	
300.00	300.00	300.20	300.00	1.82	1.82	-154.91	-72.52	-33.95	80.07	76.44	3.63	22.028	
400.00	400.00	400.20	400.00	2.19	2.19	-154.91	-72.52	-33.95	80.07	75.69	4.38	18.275	
500.00	500.00	500.20	500.00	2.51	2.51	-154.91	-72.52	-33.95	80.07	75.05	5.02	15.939	
600.00	600.00	600.20	600.00	2.80	2.80	-154.91	-72.52	-33.95	80.07	74.47	5.60	14.306	
700.00	700.00	700.20	700.00	3.06	3.06	-154.91	-72.52	-33.95	80.07	73.95	6.12	13.080	
800.00	800.00	800.20	800.00	3.30	3.30	-154.91	-72.52	-33.95	80.07	73.46	6.61	12.116	
900.00	900.00	900.20	900.00	3.53	3.53	-154.91	-72.52	-33.95	80.07	73.01	7.07	11.332	
1,000.00	1,000.00	1,000.20	1,000.00	3.75	3.75	-154.91	-72.52	-33.95	80.07	72.57	7.50	10.678	
1,100.00	1,100.00	1,100.20	1,100.00	3.96	3.96	-154.91	-72.52	-33.95	80.07	72.16	7.91	10.121	
1,200.00	1,200.00	1,200.20	1,200.00	4.15	4.15	-154.91	-72.52	-33.95	80.07	71.76	8.31	9.640	
1,300.00	1,300.00	1,300.20	1,300.00	4.34	4.34	-154.91	-72.52	-33.95	80.07	71.38	8.69	9.217	
1,400.00	1,400.00	1,400.20	1,400.00	4.53	4.53	-154.91	-72.52	-33.95	80.07	71.02	9.05	8.843	
1,416.60	1,416.60	1,416.80	1,416.60	4.56	4.56	-154.91	-72.52	-33.95	80.07	70.96	9.11	8.786 CC	
1,500.00	1,500.00	1,500.00	1,499.80	4.70	4.70	-154.91	-72.52	-33.95	80.07	70.66	9.41	8.509 ES	
1,600.00	1,599.98	1,599.00	1,598.78	5.04	4.92	-155.56	-73.81	-32.83	82.41	72.56	9.85	8.363	
1,700.00	1,699.84	1,697.44	1,697.08	5.68	5.53	-157.28	-77.67	-29.51	89.48	78.83	10.66	8.395	
1,800.00	1,799.45	1,795.13	1,794.41	6.28	6.11	-159.56	-84.02	-24.03	101.39	89.96	11.43	8.873	
1,900.00	1,898.70	1,892.31	1,890.90	6.85	6.37	-161.89	-92.73	-16.53	118.14	106.10	12.04	9.812	
2,000.00	1,997.47	1,990.17	1,987.97	7.40	6.54	-163.25	-102.14	-8.42	138.47	125.83	12.64	10.951	
2,100.00	2,095.71	2,087.49	2,084.50	7.63	6.75	-163.70	-111.50	-0.36	161.43	148.41	13.01	12.407	
2,200.00	2,193.87	2,184.73	2,180.95	7.86	6.98	-163.96	-120.85	7.70	184.75	171.35	13.41	13.782	
2,300.00	2,292.03	2,281.96	2,277.41	8.13	7.22	-164.17	-130.20	15.76	208.08	194.25	13.83	15.041	
2,400.00	2,390.19	2,379.20	2,373.86	8.41	7.48	-164.33	-139.55	23.82	231.41	217.13	14.29	16.199	
2,500.00	2,488.36	2,476.44	2,470.31	8.70	7.76	-164.47	-148.90	31.87	254.75	239.99	14.76	17.262	
2,600.00	2,586.52	2,573.68	2,566.76	9.02	8.04	-164.58	-158.25	39.93	278.08	262.83	15.25	18.237	
2,700.00	2,684.68	2,670.92	2,663.21	9.34	8.34	-164.67	-167.60	47.99	301.42	285.66	15.75	19.132	
2,800.00	2,782.84	2,768.15	2,759.66	9.67	8.64	-164.75	-176.95	56.04	324.75	308.48	16.28	19.953	
2,900.00	2,881.00	2,865.39	2,856.11	10.02	8.95	-164.82	-186.30	64.10	348.09	331.28	16.81	20.706	
3,000.00	2,979.17	2,962.63	2,952.57	10.38	9.28	-164.88	-195.65	72.16	371.43	354.07	17.36	21.398	
3,100.00	3,077.33	3,059.87	3,049.02	10.74	9.60	-164.94	-205.00	80.21	394.77	376.85	17.92	22.034	
3,200.00	3,175.49	3,157.11	3,145.47	11.11	9.94	-164.99	-214.35	88.27	418.10	399.62	18.48	22.619	
3,300.00	3,273.65	3,254.34	3,241.92	11.49	10.28	-165.03	-223.70	96.33	441.44	422.38	19.06	23.158	
3,400.00	3,371.81	3,351.58	3,338.37	11.87	10.62	-165.07	-233.04	104.39	464.78	445.13	19.65	23.655	
3,500.00	3,469.98	3,448.82	3,434.82	12.26	10.97	-165.10	-242.39	112.44	488.12	467.88	20.24	24.115	
3,600.00	3,568.14	3,546.06	3,531.27	12.66	11.33	-165.14	-251.74	120.50	511.46	490.62	20.84	24.540	
3,700.00	3,666.30	3,643.30	3,627.73	13.06	11.68	-165.16	-261.09	128.56	534.80	513.35	21.45	24.934	
3,800.00	3,764.46	3,740.53	3,724.18	13.46	12.05	-165.19	-270.44	136.61	558.14	536.08	22.06	25.299	
3,900.00	3,862.62	3,837.77	3,820.63	13.87	12.41	-165.22	-279.79	144.67	581.48	558.80	22.68	25.639	
4,000.00	3,960.79	3,935.01	3,917.08	14.28	12.78	-165.24	-289.14	152.73	604.82	581.51	23.30	25.955	
4,100.00	4,058.95	4,032.25	4,013.53	14.70	13.15	-165.26	-298.49	160.79	628.16	604.23	23.93	26.250	
4,200.00	4,157.11	4,129.49	4,109.98	15.12	13.52	-165.28	-307.84	168.84	651.50	626.93	24.56	26.525	
4,300.00	4,255.27	4,226.72	4,206.43	15.54	13.90	-165.30	-317.19	176.90	674.84	649.64	25.20	26.782	
4,400.00	4,353.43	4,323.96	4,302.89	15.96	14.27	-165.31	-326.54	184.96	698.18	672.34	25.84	27.023	
4,500.00	4,451.59	4,421.20	4,399.34	16.39	14.65	-165.33	-335.89	193.01	721.52	695.04	26.48	27.249	
4,600.00	4,549.76	4,518.44	4,495.79	16.81	15.03	-165.34	-345.24	201.07	744.86	717.73	27.12	27.460	
4,700.00	4,647.92	4,615.68	4,592.24	17.24	15.41	-165.36	-354.59	209.13	768.20	740.42	27.77	27.659	
4,800.00	4,746.08	4,712.91	4,688.69	17.68	15.80	-165.37	-363.94	217.19	791.54	763.11	28.42	27.847	
4,900.00	4,844.24	4,810.15	4,785.14	18.11	16.18	-165.38	-373.29	225.24	814.88	785.80	29.08	28.023	
5,000.00	4,942.40	4,907.39	4,881.60	18.55	16.57	-165.39	-382.64	233.30	838.22	808.48	29.73	28.190	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,040.57	5,004.63	4,978.05	18.98	16.96	-165.40	-391.99	241.36	861.56	831.16	30.39	28.347	
5,200.00	5,138.73	5,101.86	5,074.50	19.42	17.35	-165.42	-401.34	249.41	884.90	853.84	31.05	28.496	
5,300.00	5,236.89	5,199.10	5,170.95	19.86	17.74	-165.43	-410.69	257.47	908.24	876.52	31.72	28.637	
5,400.00	5,335.05	5,296.34	5,267.40	20.30	18.13	-165.43	-420.04	265.53	931.58	899.20	32.38	28.770	
5,500.00	5,433.21	5,393.58	5,363.85	20.74	18.52	-165.44	-429.39	273.58	954.92	921.87	33.05	28.896	
5,600.00	5,531.38	5,490.82	5,460.30	21.18	18.91	-165.45	-438.74	281.64	978.26	944.54	33.71	29.016	
5,700.00	5,629.54	5,588.05	5,556.76	21.63	19.31	-165.46	-448.09	289.70	1,001.60	967.21	34.38	29.130	
5,800.00	5,727.70	5,685.29	5,653.21	22.07	19.70	-165.47	-457.43	297.76	1,024.94	989.88	35.05	29.239	
5,900.00	5,825.86	5,782.53	5,749.66	22.52	20.10	-165.48	-466.78	305.81	1,048.28	1,012.55	35.73	29.342	
6,000.00	5,924.02	5,879.77	5,846.11	22.97	20.49	-165.48	-476.13	313.87	1,071.62	1,035.22	36.40	29.441	
6,100.00	6,022.31	5,978.97	5,944.51	23.40	20.89	-165.52	-485.66	322.08	1,094.40	1,057.35	37.05	29.536	
6,200.00	6,121.14	6,105.06	6,069.93	23.89	21.42	-165.65	-495.42	330.49	1,113.12	1,075.21	37.91	29.362	
6,300.00	6,220.44	6,232.75	6,197.40	24.40	22.00	-165.64	-501.03	335.32	1,126.41	1,087.66	38.75	29.067	
6,400.00	6,320.09	6,355.46	6,320.09	24.87	22.31	-165.50	-502.42	336.52	1,134.28	1,094.91	39.37	28.808	
6,500.00	6,419.97	6,455.34	6,419.97	25.29	22.33	-165.37	-502.42	336.52	1,138.38	1,098.63	39.76	28.633	
6,600.00	6,519.95	6,555.33	6,519.95	25.49	22.35	-165.34	-502.42	336.52	1,139.54	1,099.55	39.98	28.500	
6,700.00	6,619.95	6,655.33	6,619.95	25.53	22.38	-165.34	-502.42	336.52	1,139.54	1,099.47	40.06	28.443	
6,800.00	6,719.95	6,755.33	6,719.95	25.57	22.41	-165.34	-502.42	336.52	1,139.54	1,099.39	40.15	28.382	
6,900.00	6,819.95	6,855.33	6,819.95	25.61	22.44	-165.34	-502.42	336.52	1,139.54	1,099.30	40.24	28.321	
7,000.00	6,919.95	6,955.33	6,919.95	25.65	22.47	-165.34	-502.42	336.52	1,139.54	1,099.21	40.32	28.260	
7,100.00	7,019.95	7,055.33	7,019.95	25.70	22.49	-165.34	-502.42	336.52	1,139.54	1,099.13	40.41	28.199	
7,200.00	7,119.66	7,155.04	7,119.66	26.02	22.52	-165.10	-502.42	336.52	1,143.20	1,102.54	40.66	28.118	
7,300.00	7,216.87	7,252.24	7,216.87	26.70	22.55	-164.20	-502.42	336.52	1,157.44	1,116.30	41.14	28.135	
7,400.00	7,308.61	7,343.98	7,308.61	27.39	22.58	-162.71	-502.42	336.52	1,182.57	1,140.89	41.68	28.372	
7,500.00	7,392.10	7,427.47	7,392.10	28.04	22.60	-160.75	-502.42	336.52	1,218.73	1,176.47	42.25	28.843	
7,600.00	7,464.80	7,500.18	7,464.80	28.62	22.62	-158.45	-502.42	336.52	1,265.78	1,222.96	42.82	29.558	
7,700.00	7,524.52	7,559.89	7,524.52	29.10	22.64	-155.98	-502.42	336.52	1,323.18	1,279.82	43.36	30.517	
7,800.00	7,569.42	7,604.79	7,569.42	29.48	22.65	-153.47	-502.42	336.52	1,389.77	1,345.95	43.82	31.713	
7,900.00	7,598.15	7,633.52	7,598.15	29.77	22.66	-151.04	-502.42	336.52	1,463.86	1,419.66	44.19	33.123	
8,000.00	7,609.83	7,645.21	7,609.83	29.98	22.67	-148.77	-502.42	336.52	1,543.18	1,498.73	44.45	34.716	
8,100.00	7,611.63	7,647.00	7,611.63	30.26	22.67	-146.64	-502.42	336.52	1,624.08	1,579.42	44.65	36.371	
8,200.00	7,613.39	7,648.77	7,613.39	30.89	22.67	-144.58	-502.42	336.52	1,704.04	1,659.14	44.90	37.949	
8,300.00	7,615.17	9,471.11	8,618.68	32.01	33.05	-179.50	-498.39	1,408.20	1,732.06	1,674.40	57.65	30.043	
8,400.00	7,616.95	9,568.73	8,620.38	33.57	34.75	-179.52	-498.02	1,505.80	1,749.69	1,689.03	60.66	28.843	
8,500.00	7,618.73	9,667.35	8,622.10	35.37	36.56	-179.52	-497.65	1,604.41	1,763.20	1,699.41	63.79	27.642	
8,600.00	7,620.50	9,766.70	8,623.84	37.29	38.44	-179.53	-497.28	1,703.74	1,772.49	1,705.49	67.00	26.456	
8,700.00	7,622.27	9,866.50	8,625.58	39.27	40.39	-179.53	-496.90	1,803.52	1,777.50	1,707.24	70.27	25.296	
8,800.00	7,624.02	9,966.49	8,627.32	41.18	42.39	-179.53	-496.53	1,903.49	1,778.47	1,704.97	73.50	24.198	
8,900.00	7,625.76	10,066.49	8,629.07	43.09	44.43	-179.53	-496.15	2,003.48	1,778.49	1,701.74	76.75	23.172	
9,000.00	7,627.51	10,166.49	8,630.81	45.03	46.49	-179.53	-495.78	2,103.46	1,778.51	1,698.44	80.07	22.213	
9,100.00	7,629.25	10,266.49	8,632.56	47.00	48.58	-179.53	-495.40	2,203.45	1,778.53	1,695.10	83.44	21.316	
9,200.00	7,631.00	10,366.49	8,634.30	49.00	50.69	-179.53	-495.02	2,303.43	1,778.56	1,691.70	86.85	20.478	
9,300.00	7,632.74	10,466.49	8,636.05	51.03	52.82	-179.53	-494.65	2,403.41	1,778.58	1,688.27	90.31	19.695	
9,400.00	7,634.49	10,566.49	8,637.79	53.07	54.97	-179.53	-494.27	2,503.40	1,778.60	1,684.80	93.80	18.962	
9,500.00	7,636.23	10,666.49	8,639.54	55.14	57.13	-179.53	-493.90	2,603.38	1,778.62	1,681.30	97.32	18.275	
9,600.00	7,637.98	10,766.49	8,641.28	57.22	59.30	-179.53	-493.52	2,703.37	1,778.64	1,677.77	100.88	17.632	
9,700.00	7,639.72	10,866.49	8,643.03	59.31	61.48	-179.53	-493.14	2,803.35	1,778.67	1,674.21	104.46	17.027	
9,800.00	7,641.47	10,966.49	8,644.77	61.42	63.67	-179.53	-492.77	2,903.33	1,778.69	1,670.63	108.06	16.460	
9,900.00	7,643.21	11,066.49	8,646.52	63.55	65.87	-179.53	-492.39	3,003.32	1,778.71	1,667.02	111.69	15.922	
10,000.00	7,644.96	11,166.49	8,648.26	65.68	68.08	-179.53	-492.02	3,103.30	1,778.73	1,663.40	115.33	15.426	
10,100.00	7,646.71	11,266.49	8,650.01	67.83	70.29	-179.53	-491.64	3,203.29	1,778.76	1,659.76	119.00	14.948	
10,200.00	7,648.45	11,366.49	8,651.75	69.98	72.51	-179.53	-491.27	3,303.27	1,778.78	1,656.10	122.67	14.500	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.00	7,650.20	11,466.49	8,653.50	72.15	74.74	-179.53	-490.89	3,403.25	1,778.80	1,652.43	126.37	14.076	
10,400.00	7,651.94	11,566.49	8,655.24	74.32	76.97	-179.53	-490.51	3,503.24	1,778.82	1,648.75	130.07	13.675	
10,500.00	7,653.69	11,666.49	8,656.99	76.50	79.20	-179.53	-490.14	3,603.22	1,778.84	1,645.05	133.79	13.295	
10,600.00	7,655.43	11,766.49	8,658.73	78.68	81.44	-179.53	-489.76	3,703.21	1,778.87	1,641.34	137.52	12.935	
10,700.00	7,657.18	11,866.49	8,660.48	80.88	83.69	-179.53	-489.39	3,803.19	1,778.89	1,637.62	141.26	12.593	
10,800.00	7,658.92	11,966.49	8,662.22	83.07	85.93	-179.53	-489.01	3,903.18	1,778.91	1,633.89	145.02	12.267	
10,900.00	7,660.67	12,066.49	8,663.97	85.28	88.18	-179.53	-488.63	4,003.16	1,778.93	1,630.16	148.77	11.957	
11,000.00	7,662.41	12,166.49	8,665.71	87.49	90.44	-179.53	-488.26	4,103.14	1,778.95	1,626.41	152.54	11.662	
11,100.00	7,664.16	12,266.49	8,667.46	89.70	92.69	-179.53	-487.88	4,203.13	1,778.98	1,622.66	156.32	11.381	
11,200.00	7,665.91	12,366.49	8,669.20	91.92	94.95	-179.53	-487.51	4,303.11	1,779.00	1,618.90	160.10	11.112	
11,300.00	7,667.65	12,466.49	8,670.95	94.14	97.21	-179.53	-487.13	4,403.10	1,779.02	1,615.13	163.89	10.855	
11,400.00	7,669.40	12,566.49	8,672.69	96.37	99.48	-179.53	-486.76	4,503.08	1,779.04	1,611.36	167.68	10.609	
11,500.00	7,671.14	12,666.49	8,674.44	98.59	101.74	-179.53	-486.38	4,603.06	1,779.07	1,607.58	171.49	10.374	
11,600.00	7,672.89	12,766.49	8,676.18	100.83	104.01	-179.53	-486.00	4,703.05	1,779.09	1,603.80	175.29	10.149	
11,700.00	7,674.63	12,866.49	8,677.93	103.06	106.28	-179.53	-485.63	4,803.03	1,779.11	1,600.01	179.10	9.933	
11,800.00	7,676.38	12,966.49	8,679.67	105.30	108.55	-179.53	-485.25	4,903.02	1,779.13	1,596.21	182.92	9.726	
11,900.00	7,678.12	13,066.49	8,681.42	107.54	110.83	-179.53	-484.88	5,003.00	1,779.15	1,592.41	186.74	9.527	
12,000.00	7,679.87	13,166.49	8,683.16	109.79	113.10	-179.53	-484.50	5,102.98	1,779.18	1,588.61	190.56	9.336	
12,100.00	7,681.61	13,266.49	8,684.91	112.04	115.38	-179.53	-484.13	5,202.97	1,779.20	1,584.80	194.39	9.153	
12,200.00	7,683.36	13,366.49	8,686.65	114.29	117.65	-179.53	-483.75	5,302.95	1,779.22	1,580.99	198.23	8.976	
12,300.00	7,685.10	13,466.49	8,688.40	116.54	119.93	-179.53	-483.37	5,402.94	1,779.24	1,577.18	202.06	8.805	
12,400.00	7,686.85	13,566.49	8,690.14	118.79	122.21	-179.53	-483.00	5,502.92	1,779.26	1,573.36	205.90	8.641	
12,500.00	7,688.60	13,666.49	8,691.89	121.05	124.49	-179.53	-482.62	5,602.90	1,779.29	1,569.54	209.74	8.483	
12,600.00	7,690.34	13,766.49	8,693.63	123.30	126.77	-179.53	-482.25	5,702.89	1,779.31	1,565.72	213.59	8.330	
12,700.00	7,692.09	13,866.49	8,695.38	125.56	129.06	-179.53	-481.87	5,802.87	1,779.33	1,561.89	217.44	8.183	
12,800.00	7,693.83	13,966.49	8,697.12	127.83	131.34	-179.53	-481.49	5,902.86	1,779.35	1,558.06	221.29	8.041	
12,900.00	7,695.58	14,066.49	8,698.87	130.09	133.63	-179.53	-481.12	6,002.84	1,779.38	1,554.23	225.14	7.903	
13,000.00	7,697.32	14,166.49	8,700.61	132.35	135.91	-179.53	-480.74	6,102.82	1,779.40	1,550.40	229.00	7.770	
13,100.00	7,699.07	14,266.49	8,702.36	134.62	138.20	-179.53	-480.37	6,202.81	1,779.42	1,546.56	232.86	7.642	
13,200.00	7,700.81	14,366.49	8,704.10	136.89	140.49	-179.53	-479.99	6,302.79	1,779.44	1,542.72	236.72	7.517	
13,300.00	7,702.56	14,466.49	8,705.85	139.15	142.77	-179.53	-479.62	6,402.78	1,779.46	1,538.88	240.58	7.397	
13,400.00	7,704.30	14,566.49	8,707.59	141.42	145.06	-179.53	-479.24	6,502.76	1,779.49	1,535.04	244.45	7.280	
13,500.00	7,706.05	14,666.49	8,709.34	143.70	147.35	-179.53	-478.86	6,602.74	1,779.51	1,531.20	248.31	7.166	
13,600.00	7,707.80	14,766.49	8,711.08	145.97	149.64	-179.53	-478.49	6,702.73	1,779.53	1,527.35	252.18	7.057	
13,700.00	7,709.54	14,866.49	8,712.83	148.24	151.93	-179.53	-478.11	6,802.71	1,779.55	1,523.50	256.05	6.950	
13,800.00	7,711.29	14,966.49	8,714.57	150.52	154.22	-179.53	-477.74	6,902.70	1,779.58	1,519.65	259.92	6.847	
13,900.00	7,713.03	15,066.49	8,716.32	152.79	156.52	-179.53	-477.36	7,002.68	1,779.60	1,515.80	263.80	6.746	
14,000.00	7,714.78	15,166.49	8,718.06	155.07	158.81	-179.53	-476.98	7,102.67	1,779.62	1,511.95	267.67	6.649	
14,100.00	7,716.52	15,266.49	8,719.81	157.35	161.10	-179.53	-476.61	7,202.65	1,779.64	1,508.09	271.55	6.554	
14,200.00	7,718.27	15,366.49	8,721.55	159.62	163.39	-179.53	-476.23	7,302.63	1,779.66	1,504.24	275.43	6.462	
14,300.00	7,720.01	15,466.49	8,723.30	161.90	165.69	-179.53	-475.86	7,402.62	1,779.69	1,500.38	279.30	6.372	
14,400.00	7,721.76	15,566.49	8,725.04	164.18	167.98	-179.53	-475.48	7,502.60	1,779.71	1,496.52	283.19	6.285	
14,500.00	7,723.50	15,666.49	8,726.79	166.46	170.28	-179.53	-475.11	7,602.59	1,779.73	1,492.66	287.07	6.200	
14,600.00	7,725.25	15,766.49	8,728.53	168.75	172.57	-179.53	-474.73	7,702.57	1,779.75	1,488.80	290.95	6.117	
14,700.00	7,726.99	15,866.49	8,730.28	171.03	174.87	-179.53	-474.35	7,802.55	1,779.77	1,484.94	294.83	6.037	
14,800.00	7,728.74	15,966.49	8,732.02	173.31	177.16	-179.53	-473.98	7,902.54	1,779.80	1,481.08	298.72	5.958	
14,900.00	7,730.49	16,066.49	8,733.77	175.60	179.46	-179.53	-473.60	8,002.52	1,779.82	1,477.21	302.61	5.882	
15,000.00	7,732.23	16,166.49	8,735.51	177.88	181.76	-179.53	-473.23	8,102.51	1,779.84	1,473.35	306.49	5.807	
15,100.00	7,733.98	16,266.49	8,737.26	180.17	184.05	-179.53	-472.85	8,202.49	1,779.86	1,469.48	310.38	5.734	
15,200.00	7,735.72	16,366.49	8,739.00	182.45	186.35	-179.53	-472.47	8,302.47	1,779.89	1,465.62	314.27	5.664	
15,300.00	7,737.47	16,466.49	8,740.75	184.74	188.65	-179.53	-472.10	8,402.46	1,779.91	1,461.75	318.16	5.594	
15,400.00	7,739.21	16,566.49	8,742.49	187.02	190.95	-179.53	-471.72	8,502.44	1,779.93	1,457.88	322.05	5.527	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - ASTRODOG-FEE-0810-125H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,500.00	7,740.96	16,666.49	8,744.24	189.31	193.24	-179.53	-471.35	8,602.43	1,779.95	1,454.01	325.94	5.461	
15,600.00	7,742.70	16,766.49	8,745.98	191.60	195.54	-179.53	-470.97	8,702.41	1,779.97	1,450.14	329.83	5.397	
15,700.00	7,744.45	16,866.49	8,747.73	193.89	197.84	-179.53	-470.60	8,802.39	1,780.00	1,446.27	333.73	5.334	
15,800.00	7,746.19	16,966.49	8,749.47	196.18	200.14	-179.53	-470.22	8,902.38	1,780.02	1,442.40	337.62	5.272	
15,900.00	7,747.94	17,066.49	8,751.22	198.47	202.44	-179.53	-469.84	9,002.36	1,780.04	1,438.52	341.52	5.212	
16,000.00	7,749.69	17,166.49	8,752.96	200.76	204.74	-179.53	-469.47	9,102.35	1,780.06	1,434.65	345.41	5.153	
16,100.00	7,751.43	17,266.49	8,754.71	203.05	207.04	-179.53	-469.09	9,202.33	1,780.09	1,430.78	349.31	5.096	
16,200.00	7,753.18	17,366.49	8,756.45	205.34	209.34	-179.53	-468.72	9,302.31	1,780.11	1,426.90	353.21	5.040	
16,300.00	7,754.92	17,466.49	8,758.20	207.63	211.64	-179.53	-468.34	9,402.30	1,780.13	1,423.03	357.10	4.985	
16,400.00	7,756.67	17,566.49	8,759.94	209.92	213.94	-179.53	-467.96	9,502.28	1,780.15	1,419.15	361.00	4.931	
16,500.00	7,758.41	17,666.49	8,761.69	212.21	216.24	-179.53	-467.59	9,602.27	1,780.17	1,415.27	364.90	4.879	
16,600.00	7,760.16	17,766.49	8,763.43	214.51	218.54	-179.53	-467.21	9,702.25	1,780.20	1,411.39	368.80	4.827	
16,700.00	7,761.90	17,866.49	8,765.18	216.80	220.84	-179.53	-466.84	9,802.23	1,780.22	1,407.52	372.70	4.777	
16,800.00	7,763.65	17,966.49	8,766.92	219.09	223.15	-179.53	-466.46	9,902.22	1,780.24	1,403.64	376.60	4.727	
16,900.00	7,765.39	18,066.49	8,768.67	221.38	225.45	-179.53	-466.09	10,002.20	1,780.26	1,399.76	380.50	4.679	
17,000.00	7,767.14	18,166.49	8,770.41	223.68	227.75	-179.53	-465.71	10,102.19	1,780.28	1,395.88	384.40	4.631	
17,100.00	7,768.89	18,266.49	8,772.16	225.97	230.05	-179.53	-465.33	10,202.17	1,780.31	1,392.00	388.31	4.585	
17,200.00	7,770.63	18,366.49	8,773.90	228.27	232.35	-179.53	-464.96	10,302.16	1,780.33	1,388.12	392.21	4.539	
17,300.00	7,772.38	18,466.49	8,775.65	230.56	234.65	-179.53	-464.58	10,402.14	1,780.35	1,384.24	396.11	4.495	
17,400.00	7,774.12	18,566.49	8,777.39	232.86	236.96	-179.53	-464.21	10,502.12	1,780.37	1,380.36	400.02	4.451	
17,500.00	7,775.87	18,666.49	8,779.14	235.15	239.26	-179.53	-463.83	10,602.11	1,780.40	1,376.47	403.92	4.408	
17,600.00	7,777.61	18,766.49	8,780.88	237.45	241.56	-179.53	-463.45	10,702.09	1,780.42	1,372.59	407.83	4.366	
17,700.00	7,779.36	18,866.49	8,782.63	239.74	243.87	-179.53	-463.08	10,802.08	1,780.44	1,368.71	411.73	4.324	
17,800.00	7,781.10	18,966.49	8,784.37	242.04	246.17	-179.53	-462.70	10,902.06	1,780.46	1,364.83	415.64	4.284	
17,900.00	7,782.85	19,066.49	8,786.12	244.34	248.47	-179.53	-462.33	11,002.04	1,780.48	1,360.94	419.54	4.244	
18,000.00	7,784.59	19,166.49	8,787.86	246.63	250.77	-179.53	-461.95	11,102.03	1,780.51	1,357.06	423.45	4.205	
18,100.00	7,786.34	19,266.49	8,789.61	248.93	253.08	-179.53	-461.58	11,202.01	1,780.53	1,353.17	427.36	4.166	
18,200.00	7,788.08	19,366.49	8,791.35	251.23	255.38	-179.53	-461.20	11,302.00	1,780.55	1,349.29	431.26	4.129	
18,300.00	7,789.83	19,466.49	8,793.10	253.53	257.69	-179.53	-460.82	11,401.98	1,780.57	1,345.40	435.17	4.092	
18,367.04	7,791.00	19,533.52	8,794.27	255.07	259.23	-179.53	-460.57	11,469.01	1,780.59	1,342.80	437.79	4.067 SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 08-T23S-R29E - Road Lizard 5 Fed Com 002H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 2922-MWD												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,400.00	6,320.09	13,001.00	8,648.77	24.87	82.84	85.93	655.78	1,465.40	2,477.93	2,424.39	53.54	46.282	
6,500.00	6,419.97	13,001.00	8,648.77	25.29	82.84	86.14	655.78	1,465.40	2,383.00	2,328.62	54.38	43.820	
6,600.00	6,519.95	13,001.00	8,648.77	25.49	82.84	86.20	655.78	1,465.40	2,289.38	2,234.05	55.32	41.382	
6,700.00	6,619.95	13,001.00	8,648.77	25.53	82.84	86.20	655.78	1,465.40	2,196.70	2,140.33	56.36	38.973	
6,800.00	6,719.95	13,001.00	8,648.77	25.57	82.84	86.20	655.78	1,465.40	2,104.69	2,047.19	57.50	36.603	
6,900.00	6,819.95	13,001.00	8,648.77	25.61	82.84	86.20	655.78	1,465.40	2,013.44	1,954.70	58.74	34.275	
7,000.00	6,919.95	13,001.00	8,648.77	25.65	82.84	86.20	655.78	1,465.40	1,923.07	1,862.96	60.11	31.995	
7,100.00	7,019.95	13,001.00	8,648.77	25.70	82.84	86.20	655.78	1,465.40	1,833.69	1,772.09	61.60	29.766	
7,200.00	7,119.66	13,001.00	8,648.77	26.02	82.84	86.34	655.78	1,465.40	1,743.01	1,679.84	63.16	27.595	
7,300.00	7,216.87	13,001.00	8,648.77	26.70	82.84	86.87	655.78	1,465.40	1,647.59	1,583.19	64.41	25.581	
7,400.00	7,308.61	12,986.92	8,648.84	27.39	82.60	86.82	669.83	1,464.48	1,549.54	1,484.56	64.98	23.848	
7,500.00	7,392.10	12,969.98	8,648.94	28.04	82.31	86.95	686.74	1,463.39	1,451.46	1,386.58	64.88	22.371	
7,600.00	7,464.80	12,948.72	8,649.08	28.62	81.95	87.13	707.96	1,462.05	1,356.47	1,292.45	64.02	21.189	
7,700.00	7,524.52	12,923.46	8,649.25	29.10	81.51	87.36	733.17	1,460.52	1,268.24	1,205.88	62.37	20.335	
7,800.00	7,569.42	12,894.83	8,649.45	29.48	81.03	87.63	761.75	1,458.86	1,191.02	1,131.00	60.01	19.845	
7,900.00	7,598.15	12,860.84	8,649.68	29.77	80.45	87.60	795.69	1,456.98	1,129.38	1,072.18	57.20	19.744	
8,000.00	7,609.83	12,821.53	8,649.85	29.98	79.78	86.80	834.92	1,454.60	1,087.69	1,033.31	54.38	20.001	
8,100.00	7,611.63	12,791.20	8,649.92	30.26	79.26	87.17	865.18	1,452.61	1,062.06	1,010.21	51.85	20.483	
8,200.00	7,613.39	12,767.56	8,650.03	30.89	78.86	88.84	888.77	1,451.09	1,044.37	993.84	50.53	20.667	
8,300.00	7,615.17	12,748.00	8,650.15	32.01	78.52	99.63	908.30	1,449.85	1,035.41	984.68	50.72	20.413	
8,347.27	7,616.01	12,740.25	8,650.20	32.70	78.39	-116.01	916.03	1,449.37	1,034.36	982.97	51.39	20.126 CC, ES	
8,400.00	7,616.95	12,732.48	8,650.25	33.57	78.26	-99.47	923.78	1,448.88	1,035.67	983.11	52.57	19.702	
8,500.00	7,618.73	12,721.64	8,650.33	35.37	78.08	-95.95	934.61	1,448.21	1,045.38	989.46	55.92	18.695	
8,600.00	7,620.50	12,717.00	8,650.36	37.29	78.00	-95.25	939.24	1,447.93	1,064.40	1,004.03	60.37	17.631	
8,700.00	7,622.27	12,717.00	8,650.36	39.27	78.00	-94.83	939.24	1,447.93	1,092.28	1,026.89	65.39	16.705	
8,800.00	7,624.02	12,720.23	8,650.34	41.18	78.05	-94.39	936.02	1,448.13	1,128.29	1,057.79	70.51	16.002	
8,900.00	7,625.76	12,726.12	8,650.30	43.09	78.15	-94.25	930.13	1,448.49	1,171.72	1,096.26	75.46	15.529	
9,000.00	7,627.51	12,732.09	8,650.26	45.03	78.25	-94.16	924.18	1,448.86	1,221.77	1,141.74	80.03	15.266	
9,100.00	7,629.25	12,738.12	8,650.21	47.00	78.36	-94.10	918.15	1,449.23	1,277.67	1,193.52	84.16	15.182 SF	
9,200.00	7,631.00	12,744.23	8,650.17	49.00	78.46	-94.06	912.06	1,449.61	1,338.70	1,250.89	87.81	15.245	
9,300.00	7,632.74	12,750.21	8,650.13	51.03	78.56	-94.02	906.09	1,449.99	1,404.17	1,313.16	91.01	15.428	
9,400.00	7,634.49	12,755.94	8,650.09	53.07	78.66	-93.97	900.37	1,450.35	1,473.51	1,379.71	93.80	15.709	
9,500.00	7,636.23	12,761.74	8,650.06	55.14	78.76	-93.93	894.59	1,450.72	1,546.18	1,449.97	96.22	16.070	
9,600.00	7,637.98	12,767.60	8,650.03	57.22	78.86	-93.91	888.74	1,451.09	1,621.75	1,523.43	98.31	16.496	
9,700.00	7,639.72	12,773.52	8,649.99	59.31	78.96	-93.89	882.83	1,451.47	1,699.82	1,599.68	100.13	16.975	
9,800.00	7,641.47	12,779.52	8,649.97	61.42	79.06	-93.87	876.85	1,451.86	1,780.06	1,678.34	101.72	17.500	
9,900.00	7,643.21	12,785.58	8,649.94	63.55	79.16	-93.86	870.80	1,452.25	1,862.20	1,759.10	103.10	18.061	
10,000.00	7,644.96	12,791.71	8,649.92	65.68	79.27	-93.85	864.68	1,452.65	1,945.99	1,841.67	104.32	18.655	
10,100.00	7,646.71	12,797.91	8,649.90	67.83	79.38	-93.85	858.49	1,453.05	2,031.23	1,925.85	105.38	19.275	
10,200.00	7,648.45	12,804.18	8,649.88	69.98	79.48	-93.85	852.23	1,453.47	2,117.74	2,011.42	106.33	19.917	
10,300.00	7,650.20	12,810.53	8,649.87	72.15	79.59	-93.85	845.90	1,453.88	2,205.38	2,098.22	107.17	20.579	
10,400.00	7,651.94	12,811.00	8,649.87	74.32	79.60	-93.69	845.43	1,453.92	2,294.02	2,186.18	107.84	21.273	
10,500.00	7,653.69	12,820.00	8,649.85	76.50	79.75	-93.77	836.45	1,454.50	2,383.54	2,274.99	108.54	21.960	
10,600.00	7,655.43	12,824.47	8,649.84	78.68	79.83	-93.72	831.98	1,454.79	2,473.85	2,364.73	109.12	22.671	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 22-T23S-R29E - Cassius Fed Com 1510 014H C-102 - Wellbore #1 - Plan 3												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
17,000.00	7,767.14	16,550.00	6,692.63	223.68	82.34	89.64	1,018.56	12,287.48	2,424.47	2,287.43	137.05	17.691	
17,100.00	7,768.89	16,549.95	6,692.63	225.97	82.34	89.63	1,018.52	12,287.48	2,336.07	2,197.71	138.36	16.884	
17,200.00	7,770.63	16,549.90	6,692.63	228.27	82.34	89.63	1,018.47	12,287.49	2,248.63	2,108.87	139.76	16.089	
17,300.00	7,772.38	16,549.86	6,692.63	230.56	82.34	89.62	1,018.43	12,287.49	2,162.29	2,021.02	141.27	15.307	
17,400.00	7,774.12	16,549.81	6,692.63	232.86	82.34	89.62	1,018.38	12,287.49	2,077.17	1,934.29	142.88	14.538	
17,500.00	7,775.87	16,549.76	6,692.63	235.15	82.34	89.61	1,018.33	12,287.49	1,993.44	1,848.83	144.61	13.785	
17,600.00	7,777.61	16,549.72	6,692.63	237.45	82.34	89.60	1,018.29	12,287.49	1,911.27	1,764.81	146.46	13.050	
17,700.00	7,779.36	16,549.67	6,692.63	239.74	82.34	89.59	1,018.24	12,287.49	1,830.87	1,682.43	148.44	12.334	
17,800.00	7,781.10	16,549.63	6,692.63	242.04	82.34	89.58	1,018.20	12,287.49	1,752.49	1,601.93	150.57	11.639	
17,900.00	7,782.85	16,549.58	6,692.63	244.34	82.34	89.57	1,018.15	12,287.49	1,676.42	1,523.59	152.83	10.969	
18,000.00	7,784.59	16,549.53	6,692.63	246.63	82.34	89.55	1,018.10	12,287.49	1,602.97	1,447.75	155.22	10.327	
18,100.00	7,786.34	16,549.49	6,692.63	248.93	82.34	89.53	1,018.06	12,287.49	1,532.54	1,374.78	157.75	9.715	
18,200.00	7,788.08	16,549.44	6,692.63	251.23	82.34	89.51	1,018.01	12,287.49	1,465.54	1,305.14	160.40	9.137	
18,300.00	7,789.83	16,549.40	6,692.63	253.53	82.34	89.49	1,017.96	12,287.49	1,402.49	1,239.35	163.14	8.597	
18,367.04	7,791.00	16,549.36	6,692.63	255.07	82.34	89.47	1,017.93	12,287.49	1,362.69	1,197.68	165.01	8.258 CC, ES, SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 22-T23S-R29E - Cassius Fed Com 1510 113H - Wellbore #1 - Plan 3												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,700.00	7,761.90	17,628.91	7,825.65	216.80	82.62	89.81	1,011.86	12,286.74	2,473.36	2,358.17	115.19	21.473	
16,800.00	7,763.65	17,628.98	7,825.65	219.09	82.62	89.81	1,011.93	12,286.74	2,373.36	2,258.10	115.26	20.591	
16,900.00	7,765.39	17,629.05	7,825.65	221.38	82.62	89.81	1,012.00	12,286.74	2,273.37	2,158.03	115.33	19.711	
17,000.00	7,767.14	17,629.12	7,825.65	223.68	82.63	89.81	1,012.07	12,286.74	2,173.37	2,057.96	115.41	18.832	
17,100.00	7,768.89	17,629.19	7,825.65	225.97	82.63	89.81	1,012.14	12,286.74	2,073.38	1,957.89	115.48	17.954	
17,200.00	7,770.63	17,629.26	7,825.65	228.27	82.63	89.81	1,012.20	12,286.74	1,973.38	1,857.83	115.56	17.077	
17,300.00	7,772.38	17,629.32	7,825.65	230.56	82.63	89.81	1,012.27	12,286.74	1,873.39	1,757.76	115.63	16.202	
17,400.00	7,774.12	17,629.39	7,825.65	232.86	82.63	89.81	1,012.34	12,286.74	1,773.39	1,657.70	115.70	15.328	
17,500.00	7,775.87	17,629.46	7,825.65	235.15	82.63	89.81	1,012.41	12,286.74	1,673.40	1,557.63	115.77	14.455	
17,600.00	7,777.61	17,629.53	7,825.65	237.45	82.63	89.81	1,012.48	12,286.74	1,573.41	1,457.58	115.83	13.583	
17,700.00	7,779.36	17,629.60	7,825.65	239.74	82.63	89.81	1,012.55	12,286.74	1,473.42	1,357.52	115.90	12.713	
17,800.00	7,781.10	17,629.67	7,825.65	242.04	82.63	89.81	1,012.61	12,286.74	1,373.43	1,257.47	115.96	11.844	
17,900.00	7,782.85	17,629.73	7,825.65	244.34	82.63	89.81	1,012.68	12,286.74	1,273.44	1,157.42	116.02	10.976	
18,000.00	7,784.59	17,629.80	7,825.65	246.63	82.63	89.81	1,012.75	12,286.74	1,173.46	1,057.39	116.07	10.110	
18,100.00	7,786.34	17,629.87	7,825.65	248.93	82.63	89.81	1,012.82	12,286.74	1,073.47	957.36	116.12	9.245	
18,200.00	7,788.08	17,629.94	7,825.65	251.23	82.63	89.81	1,012.89	12,286.74	973.49	857.34	116.15	8.381	
18,300.00	7,789.83	17,630.01	7,825.65	253.53	82.63	89.82	1,012.96	12,286.74	873.52	757.34	116.18	7.519	
18,367.04	7,791.00	17,630.05	7,825.65	255.07	82.63	89.82	1,013.00	12,286.74	806.50	690.31	116.19	6.941 CC, ES, SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Offset Design: SEC 22-T23S-R29E - Cassius Fed Com 1510 123H - Wellbore #1 - Plan 4												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Azimuth from North (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,900.00	7,765.39	18,619.93	8,779.30	221.38	82.73	89.73	1,015.23	12,287.61	2,489.30	2,371.63	117.66	21.156	
17,000.00	7,767.14	18,619.87	8,779.30	223.68	82.73	89.73	1,015.16	12,287.61	2,397.59	2,279.00	118.58	20.218	
17,100.00	7,768.89	18,619.80	8,779.30	225.97	82.73	89.73	1,015.09	12,287.61	2,306.57	2,186.95	119.62	19.282	
17,200.00	7,770.63	18,619.73	8,779.30	228.27	82.73	89.73	1,015.02	12,287.61	2,216.33	2,095.53	120.80	18.347	
17,300.00	7,772.38	18,619.66	8,779.30	230.56	82.73	89.73	1,014.95	12,287.61	2,126.96	2,004.84	122.12	17.417	
17,400.00	7,774.12	18,619.59	8,779.30	232.86	82.73	89.73	1,014.88	12,287.61	2,038.58	1,914.96	123.61	16.492	
17,500.00	7,775.87	18,619.52	8,779.30	235.15	82.73	89.73	1,014.81	12,287.61	1,951.31	1,826.03	125.29	15.575	
17,600.00	7,777.61	18,619.45	8,779.30	237.45	82.72	89.73	1,014.75	12,287.62	1,865.33	1,738.16	127.17	14.668	
17,700.00	7,779.36	18,619.39	8,779.30	239.74	82.72	89.73	1,014.68	12,287.62	1,780.82	1,651.54	129.27	13.775	
17,800.00	7,781.10	18,619.32	8,779.30	242.04	82.72	89.73	1,014.61	12,287.62	1,697.98	1,566.36	131.62	12.900	
17,900.00	7,782.85	18,619.25	8,779.30	244.34	82.72	89.73	1,014.54	12,287.62	1,617.09	1,482.85	134.24	12.046	
18,000.00	7,784.59	18,619.18	8,779.30	246.63	82.72	89.73	1,014.47	12,287.62	1,538.45	1,401.31	137.14	11.218	
18,100.00	7,786.34	18,619.11	8,779.30	248.93	82.72	89.73	1,014.40	12,287.62	1,462.42	1,322.09	140.32	10.422	
18,200.00	7,788.08	18,619.04	8,779.30	251.23	82.72	89.73	1,014.33	12,287.62	1,389.43	1,245.61	143.81	9.661	
18,300.00	7,789.83	18,618.97	8,779.30	253.53	82.72	89.73	1,014.27	12,287.62	1,319.98	1,172.39	147.59	8.944	
18,367.04	7,791.00	18,618.93	8,779.30	255.07	82.72	89.73	1,014.22	12,287.62	1,275.70	1,125.43	150.27	8.489 CC, ES, SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB 25' + 2981.3' @ 3006.30usft

Offset Depths are relative to Offset Datum

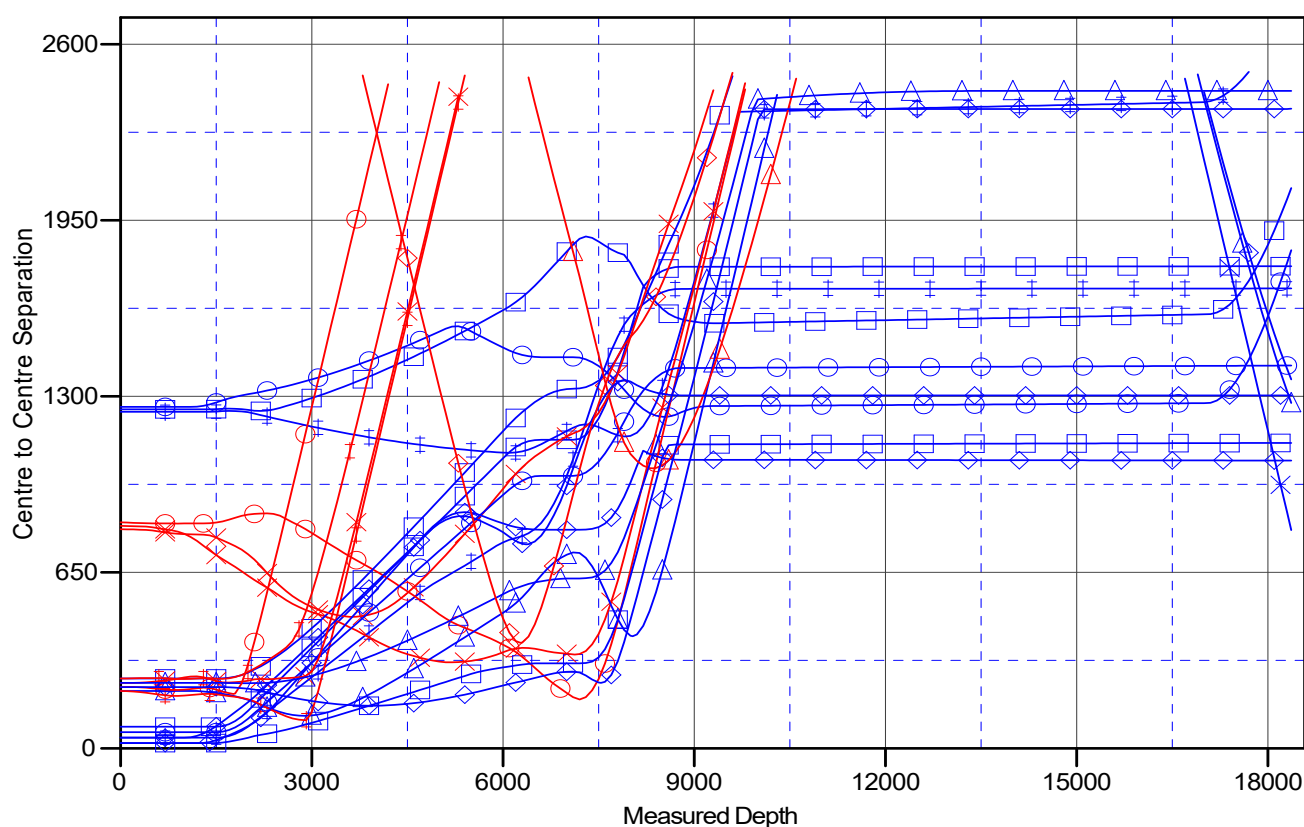
Central Meridian is -104.33333334

Coordinates are relative to: ASTRODOG-FEE-0810-111H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.17°

Ladder Plot



LEGEND

Cassius Fed Com 151 0 113H, Wellbore #1, Plan 3 V0	Astrodog Fed Com 08 10 232H, Wellbore #1, FINAL SURVEYS V0	ASTRODOG-FEE-0810-011H, Wellbore #1, Plan 1 V0
Cassius Fed Com 151 0 123H, Wellbore #1, Plan 4 V0	ASTRODOG_FEE_0810_221H, Wellbore #1, Plan 5 V0	ASTRODOG_FEE_0810_132H, Wellbore #1, Wellbore #1 V0
Cassius Fed Com 151 0 014H C-102, Wellbore #1, Plan 3 V0	ASTRODOG_FEE_0810_221H, Wellbore #1, Wellbore #1 V0	ASTRODOG_FEE_0810_122H, Wellbore #1, Plan 5 V0
RANA-SALADA-0503-FED-COM-134H, Wellbore #1, PLAN 1 V0	ASTRODOG_FEE_0810_222H, Wellbore #1, Plan 5 V0	ASTRODOG-FEE-0810-122H, Wellbore #1, Plan 1 V0
RANA-SALADA-0503-FED-COM-124H, Wellbore #1, PLAN 1 V0	ASTRODOG_FEE_0810_222H, Wellbore #1, Wellbore #1 V0	ASTRODOG_FEE_0810_211H, Wellbore #1, Wellbore #1 V0
RANA-SALADA-0503-FED-COM-114H, Wellbore #1, PLAN 1 V0	Astrodog Fed Com 08 10 235H, Wellbore #1, FINAL SURVEYS V0	ASTRODOG_FEE_0810_211H, Wellbore #1, Plan 4 V0
ASTRODOG-FEE-0810-125H, Wellbore #1, Plan 1 V0	ASTRODOG-FEE-0810-112H, Wellbore #1, Plan 1 V0	Offset-Culebra 'BLV' Fe deral 1H, Wellbore #1, Wellbore #1 V0
ASTRODOG-FEE-0810-012H, Wellbore #1, Plan 1 V0	Road Lizard 5 Fe d Com 002H, Wellbore #1, Wellbore #1 V0	
Astrodog Fed Com 08 10 231H, Wellbore #1, FINAL SURVEYS V0		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Reference Site:	SEC 08-T23S-R29E	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	Plan 1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB 25' + 2981.3' @ 3006.30usft

Offset Depths are relative to Offset Datum

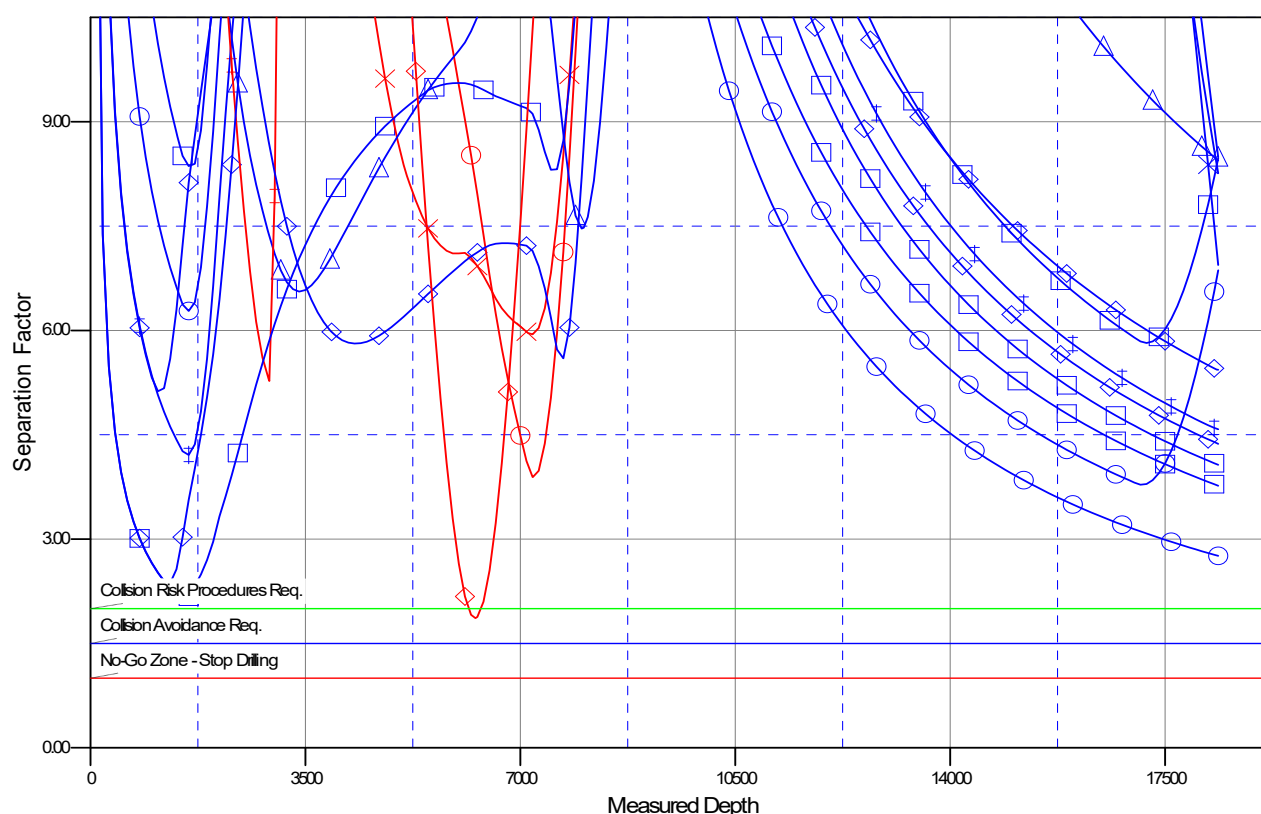
Central Meridian is -104.33333334

Coordinates are relative to: ASTRODOG-FEE-0810-111H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.17°

Separation Factor Plot



LEGEND

	Cassius Fed Com 151 0 113H, Wellbore #1, Plan 3 V0		Astrodogg Fed Com 08 10 232H, Wellbore #1, FINAL SURVEYS V0		ASTRODOG-FEE-0810-011H, Wellbore #1, Plan 1 V0
	Cassius Fed Com 151 0 123H, Wellbore #1, Plan 4 V0		ASTRODOG_FEE_0810_221H, Wellbore #1, Plan 5 V0		ASTRODOG_FEE_0810_132H, Wellbore #1, Wellbore #1 V0
	Cassius Fed Com 151 0 014H C-102, Wellbore #1, Plan 3 V0		ASTRODOG_FEE_0810_221H, Wellbore #1, Wellbore #1 V0		ASTRODOG_FEE_0810_132H, Wellbore #1, Plan 5 V0
	RANA-SALADA-0503-FED-COM-134H, Wellbore #1, PLAN 1 V0		ASTRODOG_FEE_0810_222H, Wellbore #1, Plan 5 V0		ASTRODOG-FEE-0810-122H, Wellbore #1, Plan 1 V0
	RANA-SALADA-0503-FED-COM-124H, Wellbore #1, PLAN 1 V0		ASTRODOG_FEE_0810_222H, Wellbore #1, Wellbore #1 V0		ASTRODOG_FEE_0810_211H, Wellbore #1, Wellbore #1 V0
	RANA-SALADA-0503-FED-COM-114H, Wellbore #1, PLAN 1 V0		Astrodogg Fed Com 08 10 235H, Wellbore #1, FINAL SURVEYS V0		ASTRODOG_FEE_0810_211H, Wellbore #1, Plan 4 V0
	ASTRODOG-FEE-0810-125H, Wellbore #1, Plan 1 V0		ASTRODOG-FEE-0810-112H, Wellbore #1, Plan 1 V0		Offset-Culebra 'BLV' Feral 1H, Wellbore #1, Wellbore #1 V0
	ASTRODOG-FEE-0810-012H, Wellbore #1, Plan 1 V0		ASTRODOG-FEE-0810-121H, Wellbore #1, Plan 1 V0		
	Astrodogg Fed Com 08 10 231H, Wellbore #1, FINAL SURVEYS V0		Road Lizard 5 Fed Com 002H, Wellbore #1, Wellbore #1 V0		

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

Property Name	Astrodog 0810 Fee
Well No.	111H

Location									
	U/L - Lot	Section	Township	Range	FNL/FSL	FEL/FWL	County	Latitude	Longitude
SHL	F	8	23S	29E	1663 FNL	1756 FWL	Eddy	32.3224388	-104.0099317
BHL	C	10	23S	29E	707 FNL	2630 FWL	Eddy	32.3251155	-103.9727538

Pool Name	Culebra Bluff; Bone Spring, South			
Pool Code	15011			
Well Type	O			
Lease Type	P			
Ground Level Elev	2981			
Proposed Depth	TVD:	7791'	MD:	18367'
Target Formation	Bone Spring			
Deepest Formation of interest	Bone Spring			
Spud Date	8/21/2023			

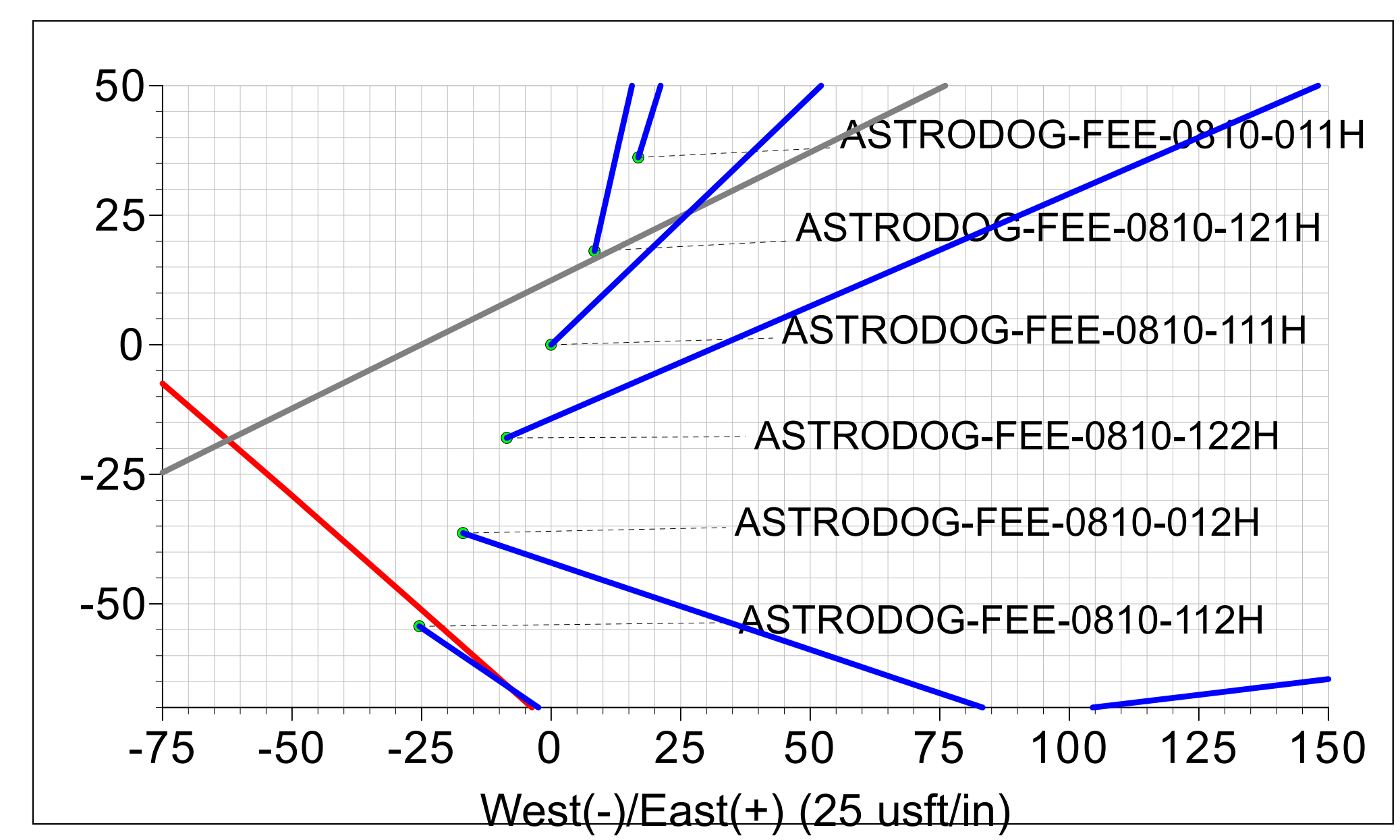
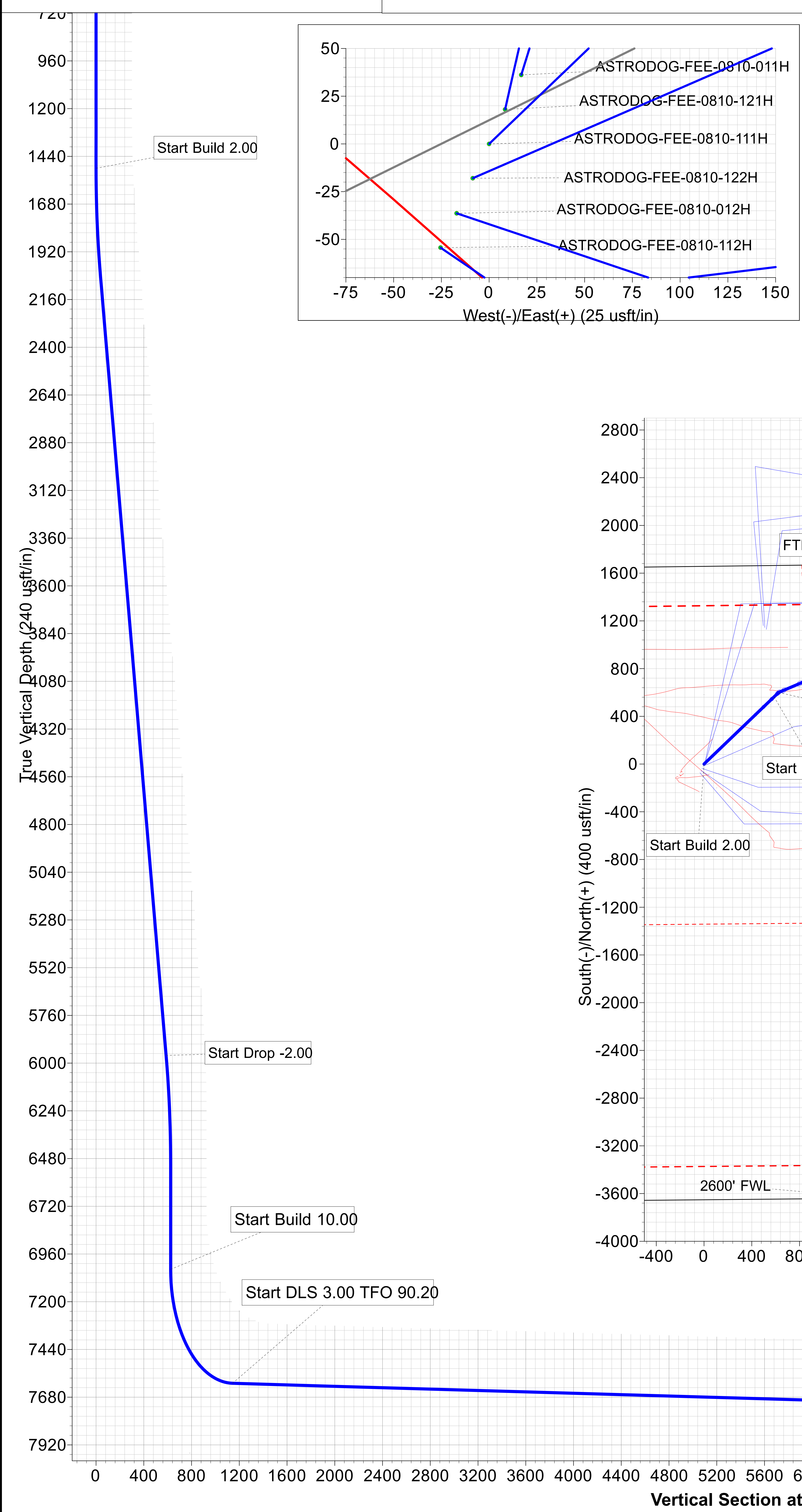
Producing Units	
Section 8	A, B
Section 9	A, B, C, D
Section 10	C, D

Casing/Cement						
Type	Hole Size	Casing Size	Weight	Setting depth	sacks	TOC
Surface	17.5"	13.375"	54.5#; J-55; BTC	0-413' (MD)	354	0
Intermediate	9.875"	8.625"	32#; P110 HP; HTQ	0-3230' (MD)	318	0
Production	7.875"	5.5"	20#; P110 EC; DWC/C-IS+	0-18367' (MD)	2125	0

Casing/Cement: Additional Comments (Mud)
0-413' Spud Mud; 413-3080' Brine; 3080'-18367' OBM

BOP			
Type	Working pressure	Test Pressure	Manufacturer
annular & double rams	5000	5000	TBD

ASTRODOG-FEE-0810-111H



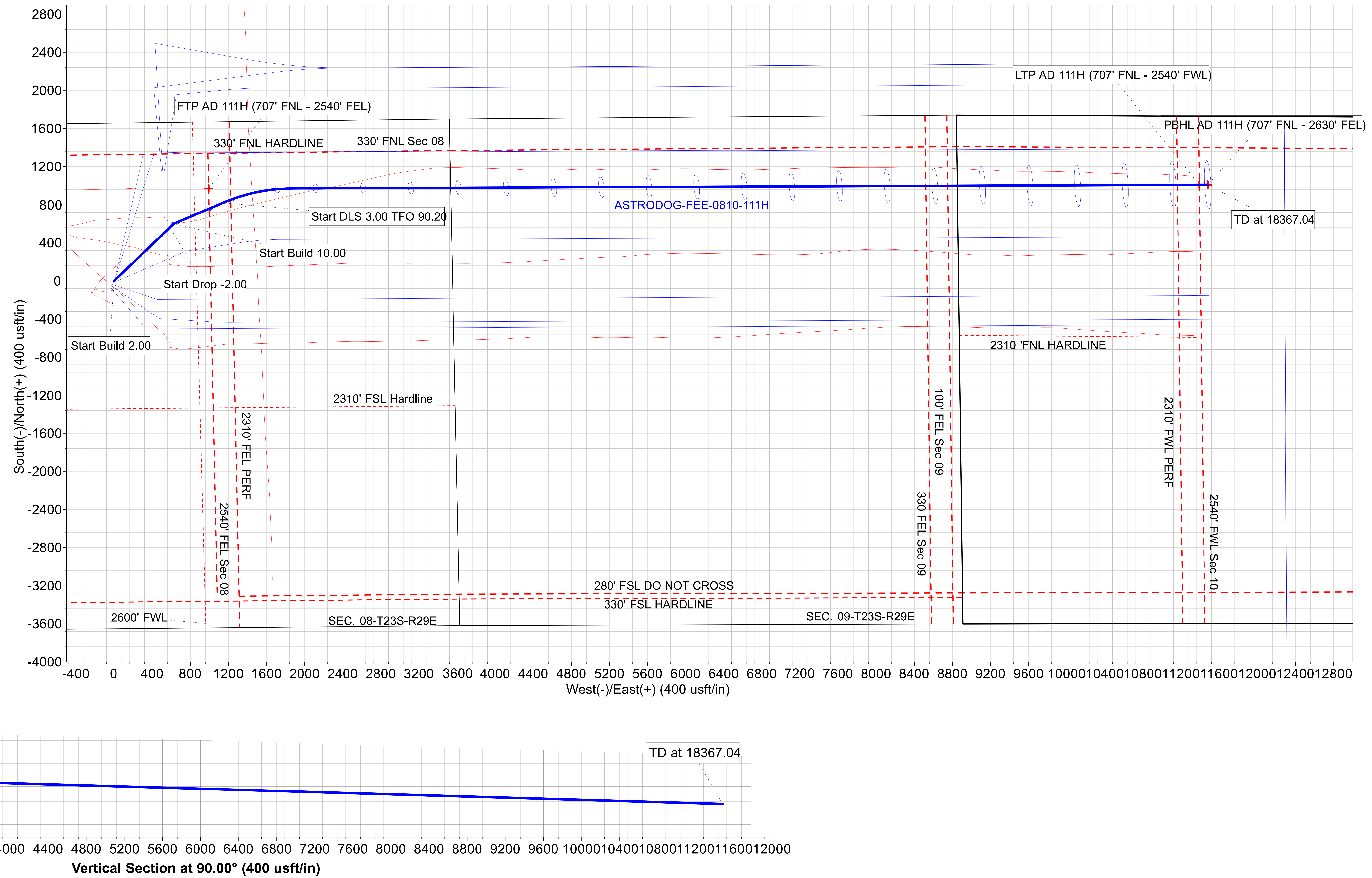
WELL DETAILS: ASTRODOG-FEE-0810-111H									
Plan 1									
		GL Elev (ft):		2981.30					
+N/-S	+E/-W	Northing		Easting		Latitude		Longitude	
0.00	0.00	481186.20		641235.97		32.32243878		-104.00993165	
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	
2050.12	11.00	46.17	2046.74	36.47	37.99	2.00	46.17	37.99	
6037.93	11.00	46.17	5961.26	563.53	587.01	0.00	0.00	587.01	
6588.05	0.00	0.00	6508.00	600.00	625.00	2.00	180.00	625.00	
7117.18	0.00	0.00	7037.13	600.00	625.00	0.00	0.00	625.00	
8007.18	89.00	67.00	7610.00	819.97	1143.21	10.00	67.00	1143.21	
8766.03	89.00	89.77	7623.42	971.73	1881.52	3.00	90.20	1881.52	
18367.04	89.00	89.77	7791.00	1010.42	11480.99	0.00	0.00	11480.99	

Azimuths to Grid North

Magnetic North: 6.37°
Magnetic Field

Strength: 47318.8nT
Dip Angle: 59.86°
Date: 4/17/2023
Model: IGRF2020

Project: EDDY CO., NM (NAD83)
Site: SEC 08-T23S-R29E
Well: ASTRODOG-FEE-0810-111H
Wellbore: Wellbore #1
Design: Plan 1





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 08-T23S-R29E

ASTRODOG-FEE-0810-111H

Wellbore #1

Plan: Plan 1

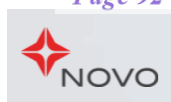
Standard Planning Report

19 April, 2023





Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Project	EDDY CO., NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	SEC 08-T23S-R29E		
Site Position:		Northing:	482,885.93 usft
From:	Map	Easting:	644,753.39 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.32708133
		Longitude:	-103.99852767

Well	ASTRODOG-FEE-0810-111H		
Well Position	+N/-S	0.00 usft	Northing: 481,186.20 usft
	+E/-W	0.00 usft	Easting: 641,235.97 usft
Position Uncertainty	0.50 usft	Wellhead Elevation:	usft
Grid Convergence:	0.17 °	Ground Level:	2,981.30 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	4/17/2023	6.54	59.86	47,318.76287071

Design	Plan 1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	90.00	

Plan Survey Tool Program	Date	4/19/2023			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,366.97	Plan 1 (Wellbore #1)	MWD+HRGM	
			OWSG MWD + HRGM		



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,050.12	11.00	46.17	2,046.74	36.47	37.99	2.00	2.00	0.00	46.17	
6,037.93	11.00	46.17	5,961.26	563.53	587.01	0.00	0.00	0.00	0.00	
6,588.05	0.00	0.00	6,508.00	600.00	625.00	2.00	-2.00	0.00	180.00	
7,117.18	0.00	0.00	7,037.13	600.00	625.00	0.00	0.00	0.00	0.00	
8,007.18	89.00	67.00	7,610.00	819.97	1,143.21	10.00	10.00	0.00	67.00	
8,766.03	89.00	89.77	7,623.42	971.73	1,881.52	3.00	0.00	3.00	90.20	
18,367.04	89.00	89.77	7,791.00	1,010.42	11,480.99	0.00	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	2.00	46.17	1,599.98	1.21	1.26	1.26	2.00	2.00	0.00
1,700.00	4.00	46.17	1,699.84	4.83	5.03	5.03	2.00	2.00	0.00
1,800.00	6.00	46.17	1,799.45	10.87	11.32	11.32	2.00	2.00	0.00
1,900.00	8.00	46.17	1,898.70	19.31	20.11	20.11	2.00	2.00	0.00
2,000.00	10.00	46.17	1,997.47	30.14	31.40	31.40	2.00	2.00	0.00
2,050.12	11.00	46.17	2,046.74	36.47	37.99	37.99	2.00	2.00	0.00
2,100.00	11.00	46.17	2,095.71	43.06	44.85	44.85	0.00	0.00	0.00
2,200.00	11.00	46.17	2,193.87	56.28	58.62	58.62	0.00	0.00	0.00
2,300.00	11.00	46.17	2,292.03	69.49	72.39	72.39	0.00	0.00	0.00
2,400.00	11.00	46.17	2,390.19	82.71	86.16	86.16	0.00	0.00	0.00
2,500.00	11.00	46.17	2,488.36	95.93	99.92	99.92	0.00	0.00	0.00
2,600.00	11.00	46.17	2,586.52	109.14	113.69	113.69	0.00	0.00	0.00
2,700.00	11.00	46.17	2,684.68	122.36	127.46	127.46	0.00	0.00	0.00
2,800.00	11.00	46.17	2,782.84	135.58	141.23	141.23	0.00	0.00	0.00
2,900.00	11.00	46.17	2,881.00	148.79	154.99	154.99	0.00	0.00	0.00
3,000.00	11.00	46.17	2,979.17	162.01	168.76	168.76	0.00	0.00	0.00
3,100.00	11.00	46.17	3,077.33	175.23	182.53	182.53	0.00	0.00	0.00
3,200.00	11.00	46.17	3,175.49	188.45	196.30	196.30	0.00	0.00	0.00
3,300.00	11.00	46.17	3,273.65	201.66	210.07	210.07	0.00	0.00	0.00
3,400.00	11.00	46.17	3,371.81	214.88	223.83	223.83	0.00	0.00	0.00
3,500.00	11.00	46.17	3,469.98	228.10	237.60	237.60	0.00	0.00	0.00
3,600.00	11.00	46.17	3,568.14	241.31	251.37	251.37	0.00	0.00	0.00
3,700.00	11.00	46.17	3,666.30	254.53	265.14	265.14	0.00	0.00	0.00
3,800.00	11.00	46.17	3,764.46	267.75	278.90	278.90	0.00	0.00	0.00
3,900.00	11.00	46.17	3,862.62	280.96	292.67	292.67	0.00	0.00	0.00
4,000.00	11.00	46.17	3,960.79	294.18	306.44	306.44	0.00	0.00	0.00
4,100.00	11.00	46.17	4,058.95	307.40	320.21	320.21	0.00	0.00	0.00
4,200.00	11.00	46.17	4,157.11	320.62	333.97	333.97	0.00	0.00	0.00
4,300.00	11.00	46.17	4,255.27	333.83	347.74	347.74	0.00	0.00	0.00
4,400.00	11.00	46.17	4,353.43	347.05	361.51	361.51	0.00	0.00	0.00
4,500.00	11.00	46.17	4,451.59	360.27	375.28	375.28	0.00	0.00	0.00
4,600.00	11.00	46.17	4,549.76	373.48	389.04	389.04	0.00	0.00	0.00
4,700.00	11.00	46.17	4,647.92	386.70	402.81	402.81	0.00	0.00	0.00
4,800.00	11.00	46.17	4,746.08	399.92	416.58	416.58	0.00	0.00	0.00
4,900.00	11.00	46.17	4,844.24	413.13	430.35	430.35	0.00	0.00	0.00
5,000.00	11.00	46.17	4,942.40	426.35	444.12	444.12	0.00	0.00	0.00
5,100.00	11.00	46.17	5,040.57	439.57	457.88	457.88	0.00	0.00	0.00
5,200.00	11.00	46.17	5,138.73	452.78	471.65	471.65	0.00	0.00	0.00



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	11.00	46.17	5,236.89	466.00	485.42	485.42	0.00	0.00	0.00
5,400.00	11.00	46.17	5,335.05	479.22	499.19	499.19	0.00	0.00	0.00
5,500.00	11.00	46.17	5,433.21	492.44	512.95	512.95	0.00	0.00	0.00
5,600.00	11.00	46.17	5,531.38	505.65	526.72	526.72	0.00	0.00	0.00
5,700.00	11.00	46.17	5,629.54	518.87	540.49	540.49	0.00	0.00	0.00
5,800.00	11.00	46.17	5,727.70	532.09	554.26	554.26	0.00	0.00	0.00
5,900.00	11.00	46.17	5,825.86	545.30	568.02	568.02	0.00	0.00	0.00
6,000.00	11.00	46.17	5,924.02	558.52	581.79	581.79	0.00	0.00	0.00
6,037.93	11.00	46.17	5,961.26	563.53	587.01	587.01	0.00	0.00	0.00
6,100.00	9.76	46.17	6,022.31	571.28	595.08	595.08	2.00	-2.00	0.00
6,200.00	7.76	46.17	6,121.14	581.83	606.07	606.07	2.00	-2.00	0.00
6,300.00	5.76	46.17	6,220.44	589.98	614.56	614.56	2.00	-2.00	0.00
6,400.00	3.76	46.17	6,320.09	595.73	620.55	620.55	2.00	-2.00	0.00
6,500.00	1.76	46.17	6,419.97	599.06	624.02	624.02	2.00	-2.00	0.00
6,588.05	0.00	0.00	6,508.00	600.00	625.00	625.00	2.00	-2.00	0.00
6,600.00	0.00	0.00	6,519.95	600.00	625.00	625.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,619.95	600.00	625.00	625.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,719.95	600.00	625.00	625.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,819.95	600.00	625.00	625.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,919.95	600.00	625.00	625.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,019.95	600.00	625.00	625.00	0.00	0.00	0.00
7,117.18	0.00	0.00	7,037.13	600.00	625.00	625.00	0.00	0.00	0.00
7,150.00	3.28	67.00	7,069.93	600.37	625.87	625.87	10.00	10.00	0.00
7,200.00	8.28	67.00	7,119.66	602.33	630.50	630.50	10.00	10.00	0.00
7,250.00	13.28	67.00	7,168.77	605.99	639.11	639.11	10.00	10.00	0.00
7,300.00	18.28	67.00	7,216.87	611.30	651.62	651.62	10.00	10.00	0.00
7,350.00	23.28	67.00	7,263.60	618.23	667.95	667.95	10.00	10.00	0.00
7,400.00	28.28	67.00	7,308.61	626.72	687.96	687.96	10.00	10.00	0.00
7,450.00	33.28	67.00	7,351.55	636.72	711.51	711.51	10.00	10.00	0.00
7,500.00	38.28	67.00	7,392.10	648.14	738.41	738.41	10.00	10.00	0.00
7,550.00	43.28	67.00	7,429.95	660.90	768.46	768.46	10.00	10.00	0.00
7,600.00	48.28	67.00	7,464.80	674.89	801.44	801.44	10.00	10.00	0.00
7,650.00	53.28	67.00	7,496.41	690.02	837.09	837.09	10.00	10.00	0.00
7,700.00	58.28	67.00	7,524.52	706.17	875.13	875.13	10.00	10.00	0.00
7,750.00	63.28	67.00	7,548.91	723.22	915.29	915.29	10.00	10.00	0.00
7,800.00	68.28	67.00	7,569.42	741.03	957.25	957.25	10.00	10.00	0.00
7,850.00	73.28	67.00	7,585.87	759.47	1,000.70	1,000.70	10.00	10.00	0.00
7,900.00	78.28	67.00	7,598.15	778.41	1,045.30	1,045.30	10.00	10.00	0.00
7,950.00	83.28	67.00	7,606.15	797.68	1,090.71	1,090.71	10.00	10.00	0.00
8,000.00	88.28	67.00	7,609.83	817.16	1,136.60	1,136.60	10.00	10.00	0.00
8,007.18	89.00	67.00	7,610.00	819.97	1,143.21	1,143.21	10.00	10.00	0.00
8,100.00	88.99	69.79	7,611.63	854.14	1,229.48	1,229.48	3.00	-0.01	3.00
8,200.00	88.98	72.79	7,613.39	886.21	1,324.17	1,324.17	3.00	-0.01	3.00
8,300.00	88.98	75.79	7,615.17	913.29	1,420.41	1,420.41	3.00	0.00	3.00
8,400.00	88.98	78.79	7,616.95	935.29	1,517.93	1,517.93	3.00	0.00	3.00
8,500.00	88.98	81.79	7,618.73	952.16	1,616.47	1,616.47	3.00	0.00	3.00
8,600.00	88.99	84.79	7,620.50	963.85	1,715.76	1,715.76	3.00	0.00	3.00
8,700.00	88.99	87.79	7,622.27	970.32	1,815.52	1,815.52	3.00	0.01	3.00
8,766.03	89.00	89.77	7,623.42	971.73	1,881.52	1,881.52	3.00	0.01	3.00
8,800.00	89.00	89.77	7,624.02	971.86	1,915.48	1,915.48	0.00	0.00	0.00
8,900.00	89.00	89.77	7,625.76	972.27	2,015.47	2,015.47	0.00	0.00	0.00
9,000.00	89.00	89.77	7,627.51	972.67	2,115.45	2,115.45	0.00	0.00	0.00
9,100.00	89.00	89.77	7,629.25	973.07	2,215.44	2,215.44	0.00	0.00	0.00
9,200.00	89.00	89.77	7,631.00	973.48	2,315.42	2,315.42	0.00	0.00	0.00



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,300.00	89.00	89.77	7,632.74	973.88	2,415.40	2,415.40	0.00	0.00	0.00	
9,400.00	89.00	89.77	7,634.49	974.28	2,515.39	2,515.39	0.00	0.00	0.00	
9,500.00	89.00	89.77	7,636.23	974.68	2,615.37	2,615.37	0.00	0.00	0.00	
9,600.00	89.00	89.77	7,637.98	975.09	2,715.36	2,715.36	0.00	0.00	0.00	
9,700.00	89.00	89.77	7,639.72	975.49	2,815.34	2,815.34	0.00	0.00	0.00	
9,800.00	89.00	89.77	7,641.47	975.89	2,915.32	2,915.32	0.00	0.00	0.00	
9,900.00	89.00	89.77	7,643.21	976.30	3,015.31	3,015.31	0.00	0.00	0.00	
10,000.00	89.00	89.77	7,644.96	976.70	3,115.29	3,115.29	0.00	0.00	0.00	
10,100.00	89.00	89.77	7,646.71	977.10	3,215.28	3,215.28	0.00	0.00	0.00	
10,200.00	89.00	89.77	7,648.45	977.51	3,315.26	3,315.26	0.00	0.00	0.00	
10,300.00	89.00	89.77	7,650.20	977.91	3,415.24	3,415.24	0.00	0.00	0.00	
10,400.00	89.00	89.77	7,651.94	978.31	3,515.23	3,515.23	0.00	0.00	0.00	
10,500.00	89.00	89.77	7,653.69	978.71	3,615.21	3,615.21	0.00	0.00	0.00	
10,600.00	89.00	89.77	7,655.43	979.12	3,715.20	3,715.20	0.00	0.00	0.00	
10,700.00	89.00	89.77	7,657.18	979.52	3,815.18	3,815.18	0.00	0.00	0.00	
10,800.00	89.00	89.77	7,658.92	979.92	3,915.16	3,915.16	0.00	0.00	0.00	
10,900.00	89.00	89.77	7,660.67	980.33	4,015.15	4,015.15	0.00	0.00	0.00	
11,000.00	89.00	89.77	7,662.41	980.73	4,115.13	4,115.13	0.00	0.00	0.00	
11,100.00	89.00	89.77	7,664.16	981.13	4,215.12	4,215.12	0.00	0.00	0.00	
11,200.00	89.00	89.77	7,665.91	981.54	4,315.10	4,315.10	0.00	0.00	0.00	
11,300.00	89.00	89.77	7,667.65	981.94	4,415.08	4,415.08	0.00	0.00	0.00	
11,400.00	89.00	89.77	7,669.40	982.34	4,515.07	4,515.07	0.00	0.00	0.00	
11,500.00	89.00	89.77	7,671.14	982.74	4,615.05	4,615.05	0.00	0.00	0.00	
11,600.00	89.00	89.77	7,672.89	983.15	4,715.04	4,715.04	0.00	0.00	0.00	
11,700.00	89.00	89.77	7,674.63	983.55	4,815.02	4,815.02	0.00	0.00	0.00	
11,800.00	89.00	89.77	7,676.38	983.95	4,915.00	4,915.00	0.00	0.00	0.00	
11,900.00	89.00	89.77	7,678.12	984.36	5,014.99	5,014.99	0.00	0.00	0.00	
12,000.00	89.00	89.77	7,679.87	984.76	5,114.97	5,114.97	0.00	0.00	0.00	
12,100.00	89.00	89.77	7,681.61	985.16	5,214.96	5,214.96	0.00	0.00	0.00	
12,200.00	89.00	89.77	7,683.36	985.56	5,314.94	5,314.94	0.00	0.00	0.00	
12,300.00	89.00	89.77	7,685.10	985.97	5,414.92	5,414.92	0.00	0.00	0.00	
12,400.00	89.00	89.77	7,686.85	986.37	5,514.91	5,514.91	0.00	0.00	0.00	
12,500.00	89.00	89.77	7,688.60	986.77	5,614.89	5,614.89	0.00	0.00	0.00	
12,600.00	89.00	89.77	7,690.34	987.18	5,714.88	5,714.88	0.00	0.00	0.00	
12,700.00	89.00	89.77	7,692.09	987.58	5,814.86	5,814.86	0.00	0.00	0.00	
12,800.00	89.00	89.77	7,693.83	987.98	5,914.84	5,914.84	0.00	0.00	0.00	
12,900.00	89.00	89.77	7,695.58	988.39	6,014.83	6,014.83	0.00	0.00	0.00	
13,000.00	89.00	89.77	7,697.32	988.79	6,114.81	6,114.81	0.00	0.00	0.00	
13,100.00	89.00	89.77	7,699.07	989.19	6,214.79	6,214.79	0.00	0.00	0.00	
13,200.00	89.00	89.77	7,700.81	989.59	6,314.78	6,314.78	0.00	0.00	0.00	
13,300.00	89.00	89.77	7,702.56	990.00	6,414.76	6,414.76	0.00	0.00	0.00	
13,400.00	89.00	89.77	7,704.30	990.40	6,514.75	6,514.75	0.00	0.00	0.00	
13,500.00	89.00	89.77	7,706.05	990.80	6,614.73	6,614.73	0.00	0.00	0.00	
13,600.00	89.00	89.77	7,707.80	991.21	6,714.71	6,714.71	0.00	0.00	0.00	
13,700.00	89.00	89.77	7,709.54	991.61	6,814.70	6,814.70	0.00	0.00	0.00	
13,800.00	89.00	89.77	7,711.29	992.01	6,914.68	6,914.68	0.00	0.00	0.00	
13,900.00	89.00	89.77	7,713.03	992.42	7,014.67	7,014.67	0.00	0.00	0.00	
14,000.00	89.00	89.77	7,714.78	992.82	7,114.65	7,114.65	0.00	0.00	0.00	
14,100.00	89.00	89.77	7,716.52	993.22	7,214.63	7,214.63	0.00	0.00	0.00	
14,200.00	89.00	89.77	7,718.27	993.62	7,314.62	7,314.62	0.00	0.00	0.00	
14,300.00	89.00	89.77	7,720.01	994.03	7,414.60	7,414.60	0.00	0.00	0.00	
14,400.00	89.00	89.77	7,721.76	994.43	7,514.59	7,514.59	0.00	0.00	0.00	
14,500.00	89.00	89.77	7,723.50	994.83	7,614.57	7,614.57	0.00	0.00	0.00	
14,600.00	89.00	89.77	7,725.25	995.24	7,714.55	7,714.55	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,700.00	89.00	89.77	7,726.99	995.64	7,814.54	7,814.54	0.00	0.00	0.00	
14,800.00	89.00	89.77	7,728.74	996.04	7,914.52	7,914.52	0.00	0.00	0.00	
14,900.00	89.00	89.77	7,730.49	996.44	8,014.51	8,014.51	0.00	0.00	0.00	
15,000.00	89.00	89.77	7,732.23	996.85	8,114.49	8,114.49	0.00	0.00	0.00	
15,100.00	89.00	89.77	7,733.98	997.25	8,214.47	8,214.47	0.00	0.00	0.00	
15,200.00	89.00	89.77	7,735.72	997.65	8,314.46	8,314.46	0.00	0.00	0.00	
15,300.00	89.00	89.77	7,737.47	998.06	8,414.44	8,414.44	0.00	0.00	0.00	
15,400.00	89.00	89.77	7,739.21	998.46	8,514.43	8,514.43	0.00	0.00	0.00	
15,500.00	89.00	89.77	7,740.96	998.86	8,614.41	8,614.41	0.00	0.00	0.00	
15,600.00	89.00	89.77	7,742.70	999.27	8,714.39	8,714.39	0.00	0.00	0.00	
15,700.00	89.00	89.77	7,744.45	999.67	8,814.38	8,814.38	0.00	0.00	0.00	
15,800.00	89.00	89.77	7,746.19	1,000.07	8,914.36	8,914.36	0.00	0.00	0.00	
15,900.00	89.00	89.77	7,747.94	1,000.47	9,014.35	9,014.35	0.00	0.00	0.00	
16,000.00	89.00	89.77	7,749.69	1,000.88	9,114.33	9,114.33	0.00	0.00	0.00	
16,100.00	89.00	89.77	7,751.43	1,001.28	9,214.31	9,214.31	0.00	0.00	0.00	
16,200.00	89.00	89.77	7,753.18	1,001.68	9,314.30	9,314.30	0.00	0.00	0.00	
16,300.00	89.00	89.77	7,754.92	1,002.09	9,414.28	9,414.28	0.00	0.00	0.00	
16,400.00	89.00	89.77	7,756.67	1,002.49	9,514.27	9,514.27	0.00	0.00	0.00	
16,500.00	89.00	89.77	7,758.41	1,002.89	9,614.25	9,614.25	0.00	0.00	0.00	
16,600.00	89.00	89.77	7,760.16	1,003.29	9,714.23	9,714.23	0.00	0.00	0.00	
16,700.00	89.00	89.77	7,761.90	1,003.70	9,814.22	9,814.22	0.00	0.00	0.00	
16,800.00	89.00	89.77	7,763.65	1,004.10	9,914.20	9,914.20	0.00	0.00	0.00	
16,900.00	89.00	89.77	7,765.39	1,004.50	10,014.19	10,014.19	0.00	0.00	0.00	
17,000.00	89.00	89.77	7,767.14	1,004.91	10,114.17	10,114.17	0.00	0.00	0.00	
17,100.00	89.00	89.77	7,768.89	1,005.31	10,214.15	10,214.15	0.00	0.00	0.00	
17,200.00	89.00	89.77	7,770.63	1,005.71	10,314.14	10,314.14	0.00	0.00	0.00	
17,300.00	89.00	89.77	7,772.38	1,006.12	10,414.12	10,414.12	0.00	0.00	0.00	
17,400.00	89.00	89.77	7,774.12	1,006.52	10,514.10	10,514.10	0.00	0.00	0.00	
17,500.00	89.00	89.77	7,775.87	1,006.92	10,614.09	10,614.09	0.00	0.00	0.00	
17,600.00	89.00	89.77	7,777.61	1,007.32	10,714.07	10,714.07	0.00	0.00	0.00	
17,700.00	89.00	89.77	7,779.36	1,007.73	10,814.06	10,814.06	0.00	0.00	0.00	
17,800.00	89.00	89.77	7,781.10	1,008.13	10,914.04	10,914.04	0.00	0.00	0.00	
17,900.00	89.00	89.77	7,782.85	1,008.53	11,014.02	11,014.02	0.00	0.00	0.00	
18,000.00	89.00	89.77	7,784.59	1,008.94	11,114.01	11,114.01	0.00	0.00	0.00	
18,100.00	89.00	89.77	7,786.34	1,009.34	11,213.99	11,213.99	0.00	0.00	0.00	
18,200.00	89.00	89.77	7,788.08	1,009.74	11,313.98	11,313.98	0.00	0.00	0.00	
18,300.00	89.00	89.77	7,789.83	1,010.15	11,413.96	11,413.96	0.00	0.00	0.00	
18,367.04	89.00	89.77	7,791.00	1,010.42	11,480.99	11,480.99	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well ASTRODOG-FEE-0810-111H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + 2981.3' @ 3006.30usft
Site:	SEC 08-T23S-R29E	North Reference:	Grid
Well:	ASTRODOG-FEE-0810-111H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
PBHL AD 111H (707' FN - plan misses target center by 7789.81usft at 18231.05usft MD (7788.63 TVD, 1009.87 N, 11345.02 E) - Point	0.00	0.00	0.00	1,010.42	11,480.99	482,196.62	652,716.96	32.32511550	-103.97275380
LTP AD 111H (707' FNL - plan misses target center by 7788.24usft at 18141.09usft MD (7787.06 TVD, 1009.50 N, 11255.07 E) - Point	0.00	0.00	0.00	1,011.20	11,391.00	482,197.40	652,626.98	32.32511850	-103.97304510
FTP AD 111H (707' FNL - plan misses target center by 1388.08usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	970.20	992.72	482,156.40	642,228.69	32.32509740	-104.00670840

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
18,538.69		20" Casing	20	24

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: _Novo Oil & Gas Northern Delaware, LLC_____ **OGRID:** ___372920_____ **Date:** __8__/_04__/_23_____

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water
Astrodog 0810 Fee 011H	30-015-	F-8-23S-29E	1,627' FNL & 1,773' FWL	500	1,600	2,100
Astrodog 0810 Fee 121H	30-015-49192	F-8-23S-29E	1,645' FNL & 1,765' FWL	1,100	2,000	2,500
Astrodog 0810 Fee 111H	30-015-49187	F-8-23S-29E	1,663' FNL & 1,747' FWL	1,600	5,200	2,800
Astrodog 0810 Fee 122H	30-015-49190	F-8-23S-29E	1,681' FNL & 1,747' FWL	1,100	2,000	2,500
Astrodog 0810 Fee 012H	30-015-	F-8-23S-29E	1,699' FNL & 1,738' FWL	500	1,600	2,100
Astrodog 0810 Fee 112H	30-015-49188	F-8-23S-29E	1,717' FNL & 1,730' FWL	1,600	5,200	2,800
Astrodog 0810 Fee 125H	30-015-	F-8-23S-29E	1,735' FNL & 1,721' FWL	1,100	2,000	2,500

IV. Central Delivery Point Name: _CTB Name: Astrodog Pad S / CTB_____ [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Astrodog 0810 Fee 011H	30-015-	5/1/2024	5/31/2024	12/20/2024	1/24/2025	1/1/2025
Astrodog 0810 Fee 121H	30-015-49192	5/3/2024	6/30/2024	12/20/2024	1/24/2025	1/1/2025
Astrodog 0810 Fee 111H	30-015-49187	5/5/2024	7/30/2024	12/20/2024	1/24/2025	1/1/2025
Astrodog 0810 Fee 122H	30-015-49190	5/7/2024	8/29/2024	12/20/2024	1/24/2025	1/1/2025

Astrodog 0810 Fee 012H	30-015-	5/9/2024	9/28/2024	12/20/2024	1/24/2025	1/1/2025
Astrodog 0810 Fee 112H	30-015-49188	5/11/2024	10/28/2024	12/20/2024	1/24/2025	1/1/2025
Astrodog 0810 Fee 125H	30-015-	5/14/2024	11/27/2024	12/20/2024	1/24/2025	1/1/2025

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan **EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☒ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

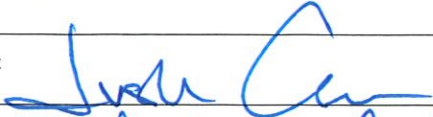
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	
Printed Name:	Justin Carler
Title:	Landman
E-mail Address:	jcarler@novooil.com
Date:	8/7/23
Phone:	405.286.3375

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:
Title:
Approval Date:
Conditions of Approval:

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

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 249239

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372920
	Action Number: 249239
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
dmcclure	None	1/17/2024