

Well Name: GOONCH FED COM 04	Well Location: T23S / R28E / SEC 4 / LOT 2 /	County or Parish/State:
Well Number: 225H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM18038	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547969	Well Status: Approved Application for Permit to Drill	Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 04/08/2021	Time Sundry Submitted: 09:24
Date proposed operation will begin: 04/14/2021	

Procedure Description: Novo Oil & Gas Northern Delaware, LLC respectfully requests the following APD changes: Change the BHL to 130' FSL & 2,310' FEL, Sec. 9, T23S, R28E, from the previously approved location of 130' FSL & 1,914' FWL, Sec. 4, T23S, R28E. Change the intermediate casing size to 8-5/8" from the previously approved 9-5/8". See attachments for technical details.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- NOVO_Goonch_Fed_Com_0409_225H_Plot_Plan_0_20210408092355.pdf
- NOVO_Goonch_Fed_Com_0409_225H_Plan_0_20210408092350.xlsx
- NOVO_Goonch_Fed_Com_0409_225H_Plan_0_20210408092343.pdf
- NOVO_Goonch_Fed_Com_0409_225H_AC_Report_Plan_0_20210408092335.pdf
- 5.500_20_P110EC_DWC_C_IS_PLUS_20210408092320.pdf
- 8.625_32.00_P110HSCY_TLW_20210408092314.pdf
- GOONCH_FED_COM_04_225H_signed_20210408092307.pdf
- Drill_Plan_3S_10K_GOONCH_FED_COM_04_225H_031121_20210408092255.pdf
- Goonch_04_225H_Change_to_Sundry_Request_v.2_20210408092247.pdf

Well Name: GOONCH FED COM 04

Well Location: T23S / R28E / SEC 4 / LOT 2 /

County or Parish/State:

Well Number: 225H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMNM18038

Unit or CA Name:

Unit or CA Number:

US Well Number: 3001547969

Well Status: Approved Application for Permit to Drill

Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: JUSTIN CARTER

Signed on: APR 08, 2021 09:24 AM

Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Title: Landman

Street Address: 1001 West Wilshire Boulevard Suite 206

City: Oklahoma City State: OK

Phone: (405) 286-3375

Email address: JCARTER@NOVOOG.COM

Field Representative

Representative Name:

Street Address:

City: State: Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 04/26/2021

Signature: Chris Walls

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 30-015-47969	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp Gas Pool
⁴ Property Code	⁵ Property Name GOONCH FED COM 0409	⁶ Well Number 225H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3035.1

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
2	4	23 S	28 E		370	NORTH	1317	EAST	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
O	9	23 S	28 E		130	SOUTH	2310	EAST	EDDY
¹² Dedicated Acres 640.45	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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. <i>Justin Carter</i> 4/1/2021 Signature Date Justin Carter Printed Name jcarter@novoog.com E-mail Address
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. FEBRUARY 22, 2021 Date of Survey <i>[Signature]</i> Signature and Seal of Professional Surveyor Certificate Number: 12797 PLS 12797 SURVEY NO. 7267D

Intent ☐ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number
NOVO OIL & GAS NORTHERN DELAWARE, LLC	GOONCH FED COM 0409	225H

Kick Off Point (KOP)

UL	Section 4	Township 23S	Range 28E	Lot 2	Feet 370	From N/S NORTH	Feet 1317	From E/W EAST	County EDDY
Latitude 32.3408974					Longitude 104.0881204			NAD 83	

First Take Point (FTP)

UL	Section 4	Township 23S	Range 28E	Lot 2	Feet 330	From N/S NORTH	Feet 2310	From E/W EAST	County EDDY
Latitude 32.3410116					Longitude 104.0913365			NAD 83	

Last Take Point (LTP)

UL O	Section 9	Township 23S	Range 28E	Lot	Feet 330	From N/S SOUTH	Feet 2310	From E/W EAST	County EDDY
Latitude 32.3135162					Longitude 104.0914105			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

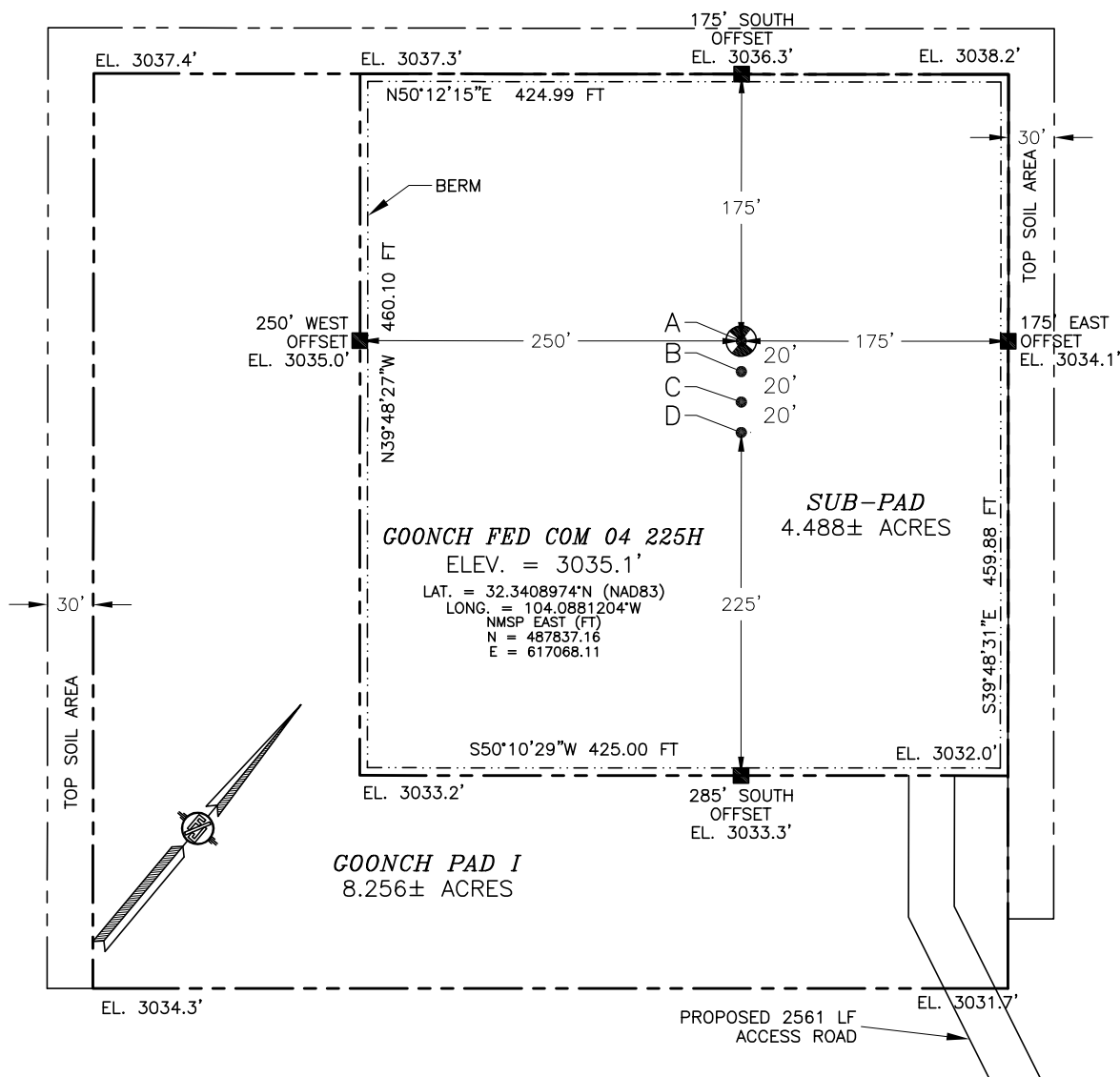
KZ 06/29/2018

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 SITE MAP

- A - GOONCH FED COM 04 225H
 B - GOONCH FED COM 0409 236H
 C - GOONCH FED COM 04 235H
 D - GOONCH FED COM 0409 136H

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD83.

SEC. 33
 SEC. 4



012 60 120 240
 SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM STATE ROAD 31 (POTASH MINES) & CR 605 (REFINERY) GO NORTHWEST ON REFINERY ROAD APPROX 3.57 MILES TO HERRADURA BEND ROAD, TURN LEFT AND GO WEST-SOUTHWEST ON HERRADURA BEND ROAD APPROX. 0.66 OF A MILE, TURN LEFT AND GO SOUTH-SOUTHEAST APPROX. 0.59 OF A MILE TO A PROPOSED ROAD, GO SOUTHWEST-NORTHWEST 2561' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO, NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DESIGNED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY WAS DONE AND COMPLETED TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT THE SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, 12797

MADONNA SURVEYING, INC.

301 SOUTH CANAL
 (575) 234-3341

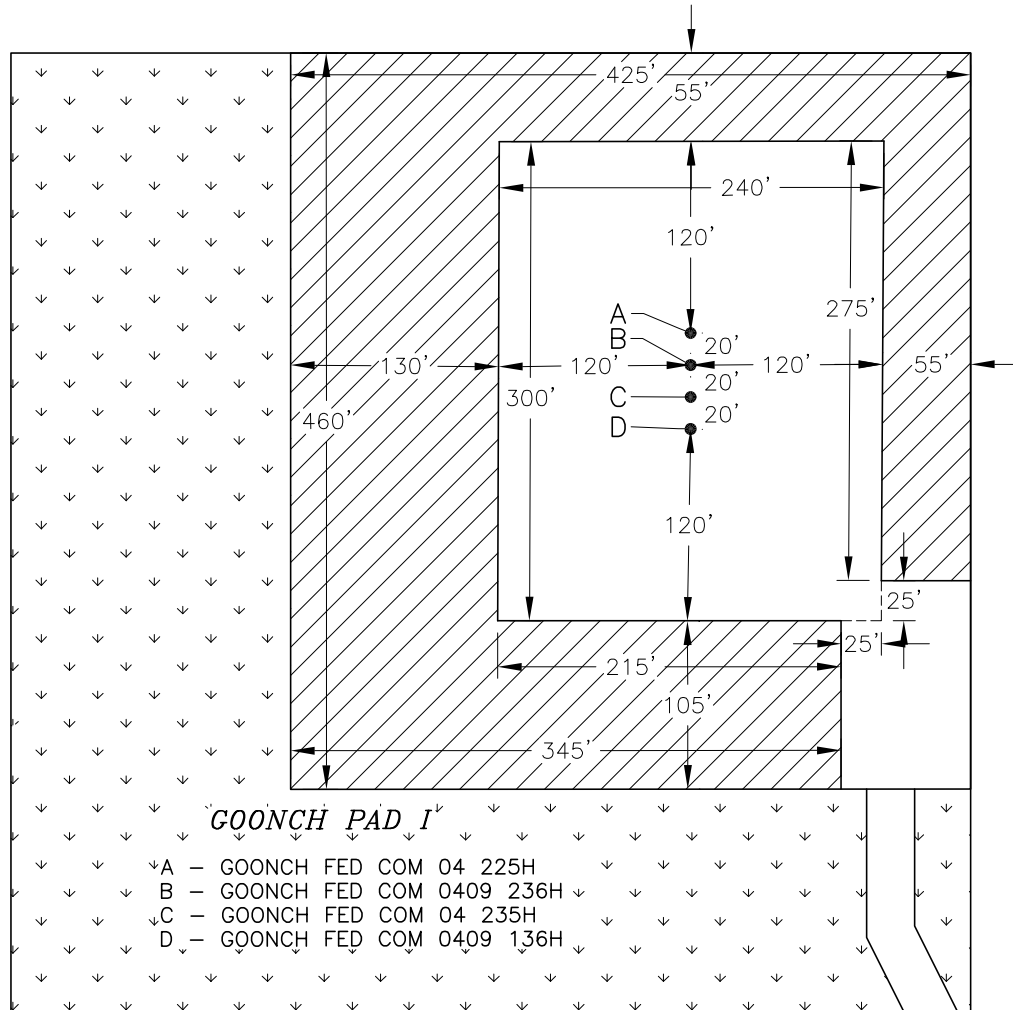
NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 225H
 LOCATED 370 FT. FROM THE NORTH LINE
 AND 1317 FT. FROM THE EAST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 22, 2021

SURVEY NO. 7267D

CARLSBAD, NEW MEXICO

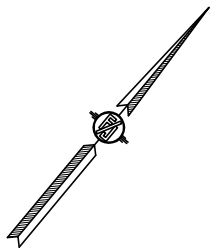
SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 INTERIM SITE BUILD PLAN



GOONCH PAD I

- A - GOONCH FED COM 04 225H
- B - GOONCH FED COM 0409 236H
- C - GOONCH FED COM 04 235H
- D - GOONCH FED COM 0409 136H

PROPOSED 2561 LF
ACCESS ROAD



012 60 120 240
 SCALE 1" = 120'

2.610± ACRES INTERIM PAD RECLAMATION AREA
 3.668± ACRES GRADING SITE RECLAMATION AREA
 1.978± ACRES NON-RECLAIMED AREA
 8.256± ACRES GOONCH PAD I

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 225H
 LOCATED 370 FT. FROM THE NORTH LINE
 AND 1317 FT. FROM THE EAST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 22, 2021

SURVEY NO. 7267D

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

CARLSBAD, NEW MEXICO

Topographic map of the Goonah area. The map shows contour lines, a river, and various spot heights. A red square marks the proposed 2561 LF access road location. An arrow points from a text box labeled "PROPOSED 2561 LF ACCESS ROAD" to the red square. The map also features a north arrow and a scale bar.

Key features and labels on the map include:

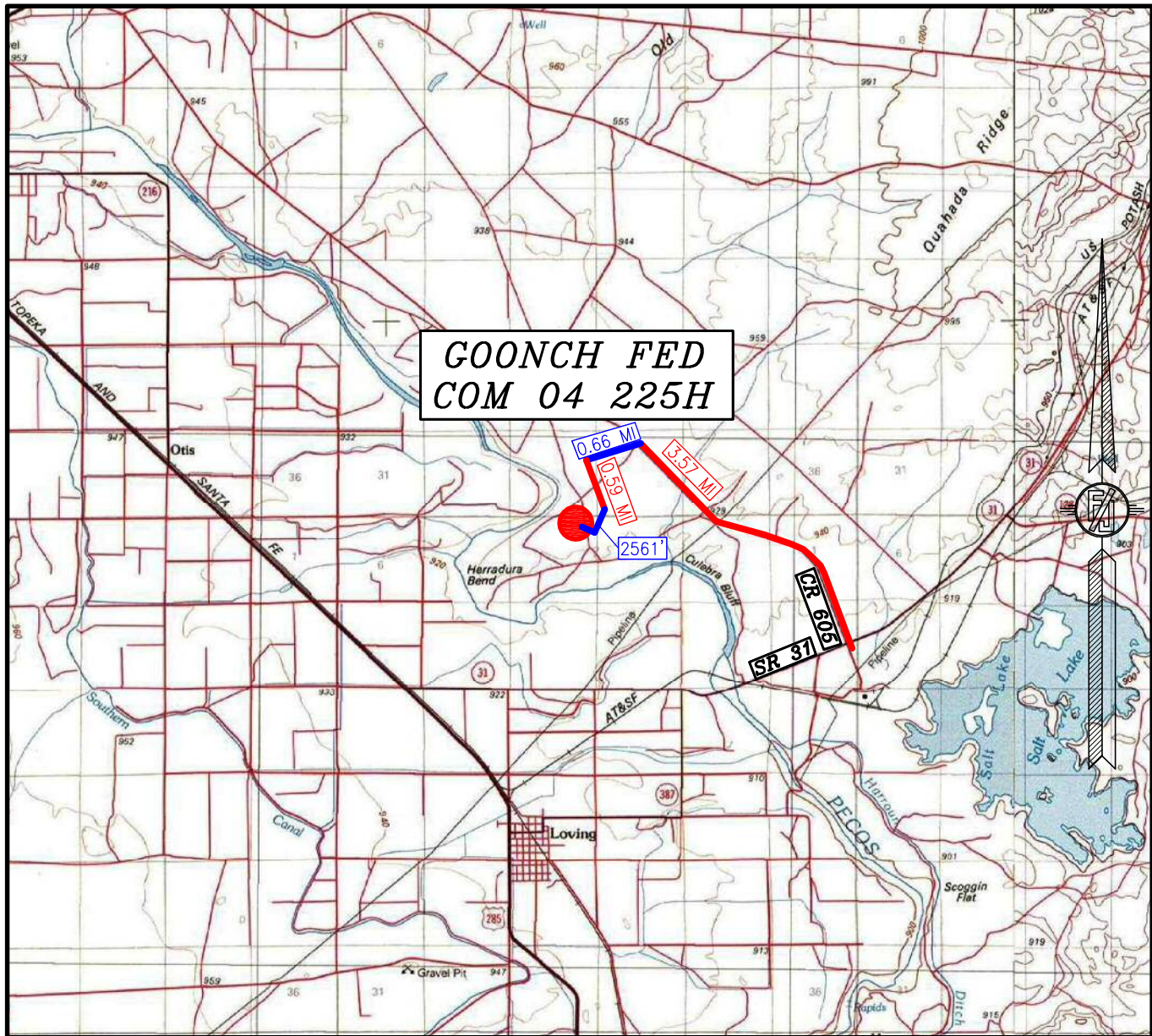
- Spot Heights:** 3022T, 3058T, 3042T, 3034T, 3023T, 3062T, 3056, 3048T, 3041T, 3038T, 3037T, 3024T, 3028T, 3013T, 3042T, 3038T, 3012T, 3009T, 3002T, 3017T, 3013T, 3007T, 3006T, 3000, 2993T.
- Contours:** 3000, 3010, 3020, 3030, 3040, 3050, 3060.
- Other Labels:** UPL, Herradura Bend, 32, 34, 3-22, 3-21, 3037, 3041, 3057T, 3076.
- Proposed Road:** Indicated by a red square and labeled "PROPOSED 2561 LF ACCESS ROAD".
- North Arrow:** Located in the bottom right corner.
- Scale Bar:** Located in the bottom right corner.

NOT TO SCALE

FEBRUARY 22, 2021

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

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 225H

LOCATED 370 FT. FROM THE NORTH LINE
 AND 1317 FT. FROM THE EAST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

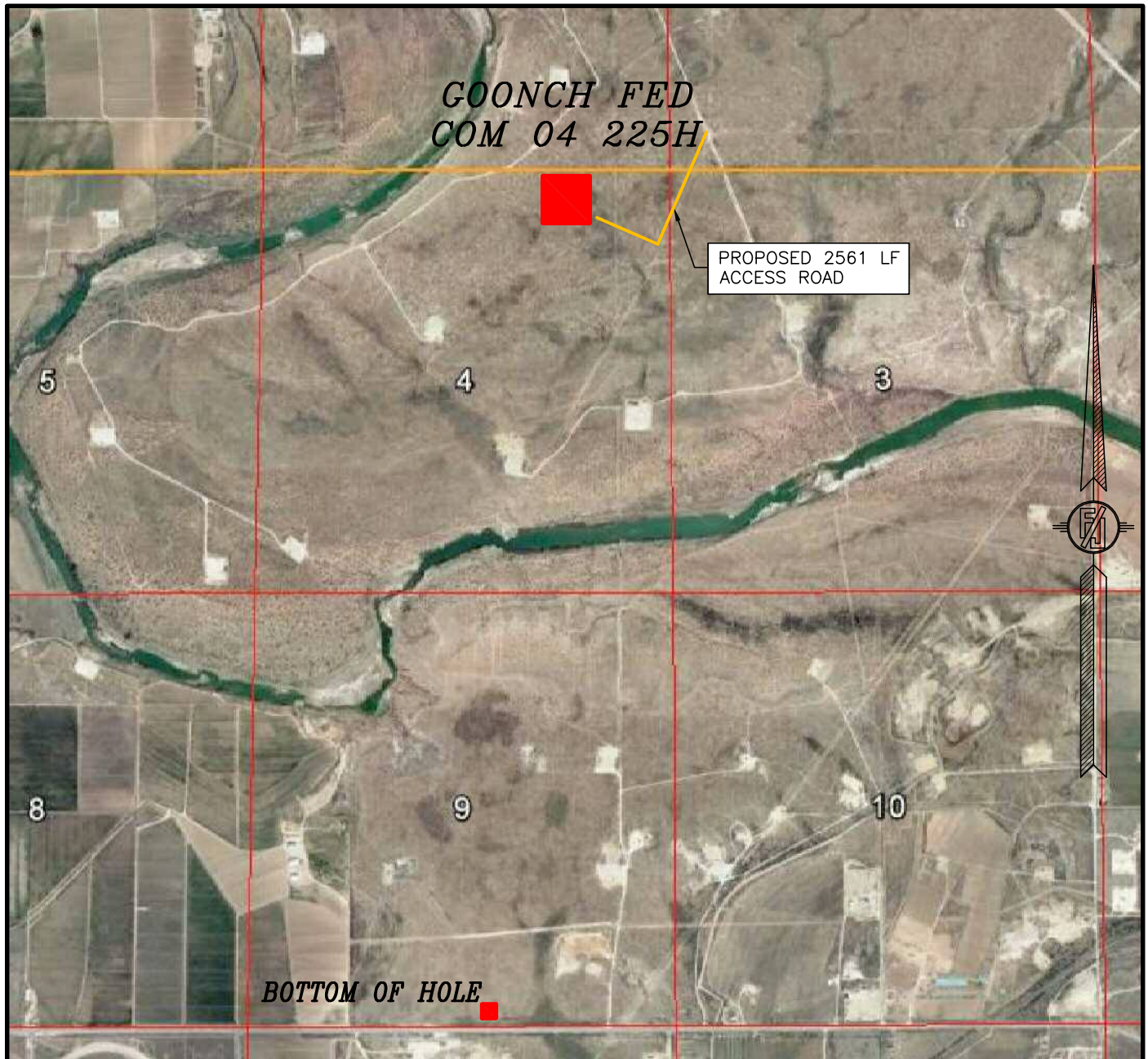
FROM STATE ROAD 31 (POTASH MINES) & CR 605 (REFINERY) GO
 NORTHWEST ON REFINERY ROAD APPROX 3.57 MILES TO HERRADURA BEND
 ROAD, TURN LEFT AND GO WEST-SOUTHWEST ON HERRADURA BEND ROAD
 APPROX. 0.66 OF A MILE, TURN LEFT AND GO SOUTH-SOUTHEAST APPROX.
 0.59 OF A MILE TO A PROPOSED ROAD, GO SOUTHWEST-NORTHWEST 2561'
 TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

FEBRUARY 22, 2021

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

SURVEY NO. 7267D
 CARLSBAD, NEW MEXICO

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 AERIAL PHOTO



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 MARCH 2016

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 225H
 LOCATED 370 FT. FROM THE NORTH LINE
 AND 1317 FT. FROM THE EAST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

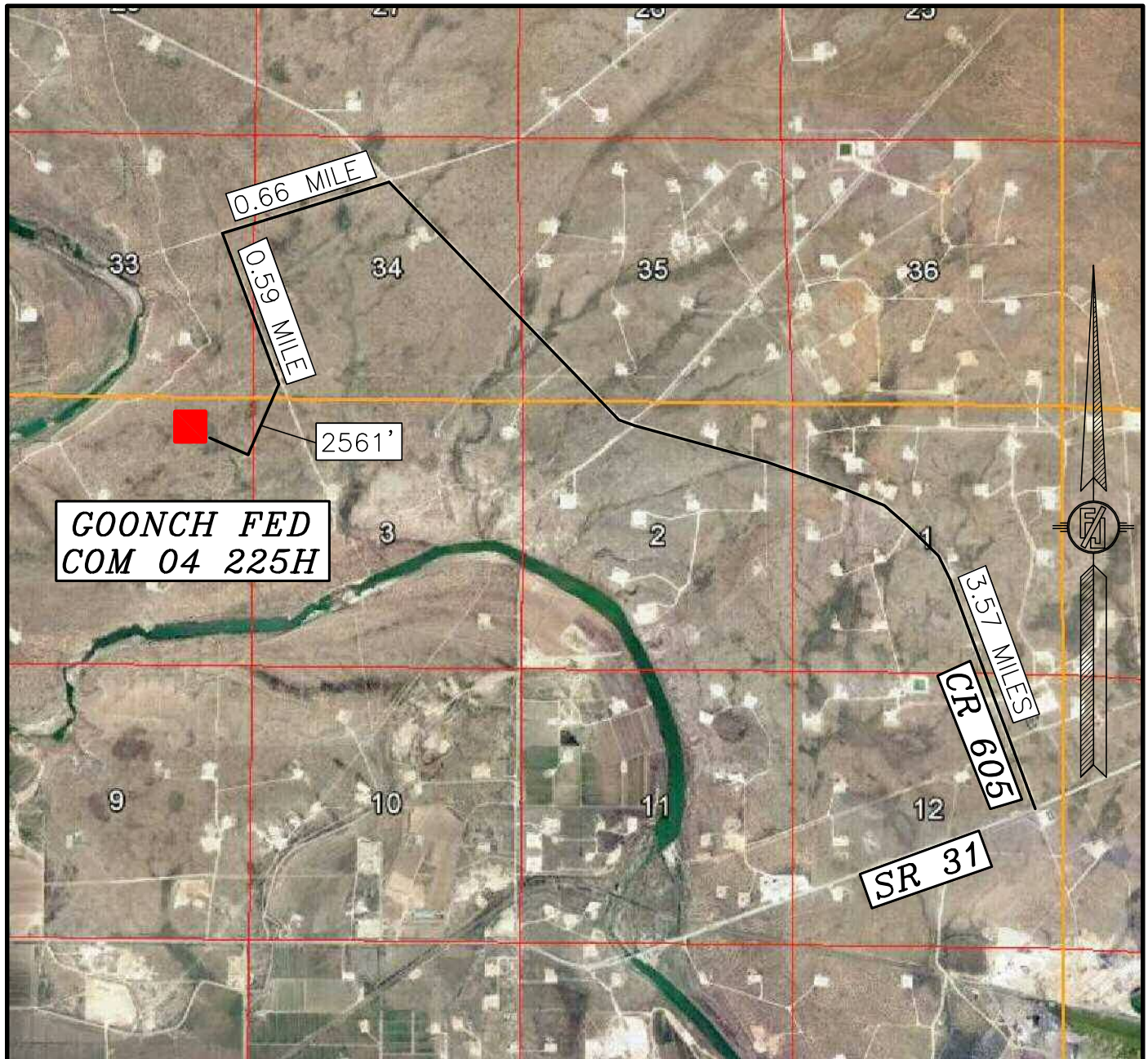
FEBRUARY 22, 2021

MADRON SURVEYING, INC.

301 SOUTH CANAL
 (575) 234-3341

SURVEY NO. 7267D
 CARLSBAD, NEW MEXICO

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 MARCH 2016

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 225H
 LOCATED 370 FT. FROM THE NORTH LINE
 AND 1317 FT. FROM THE EAST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

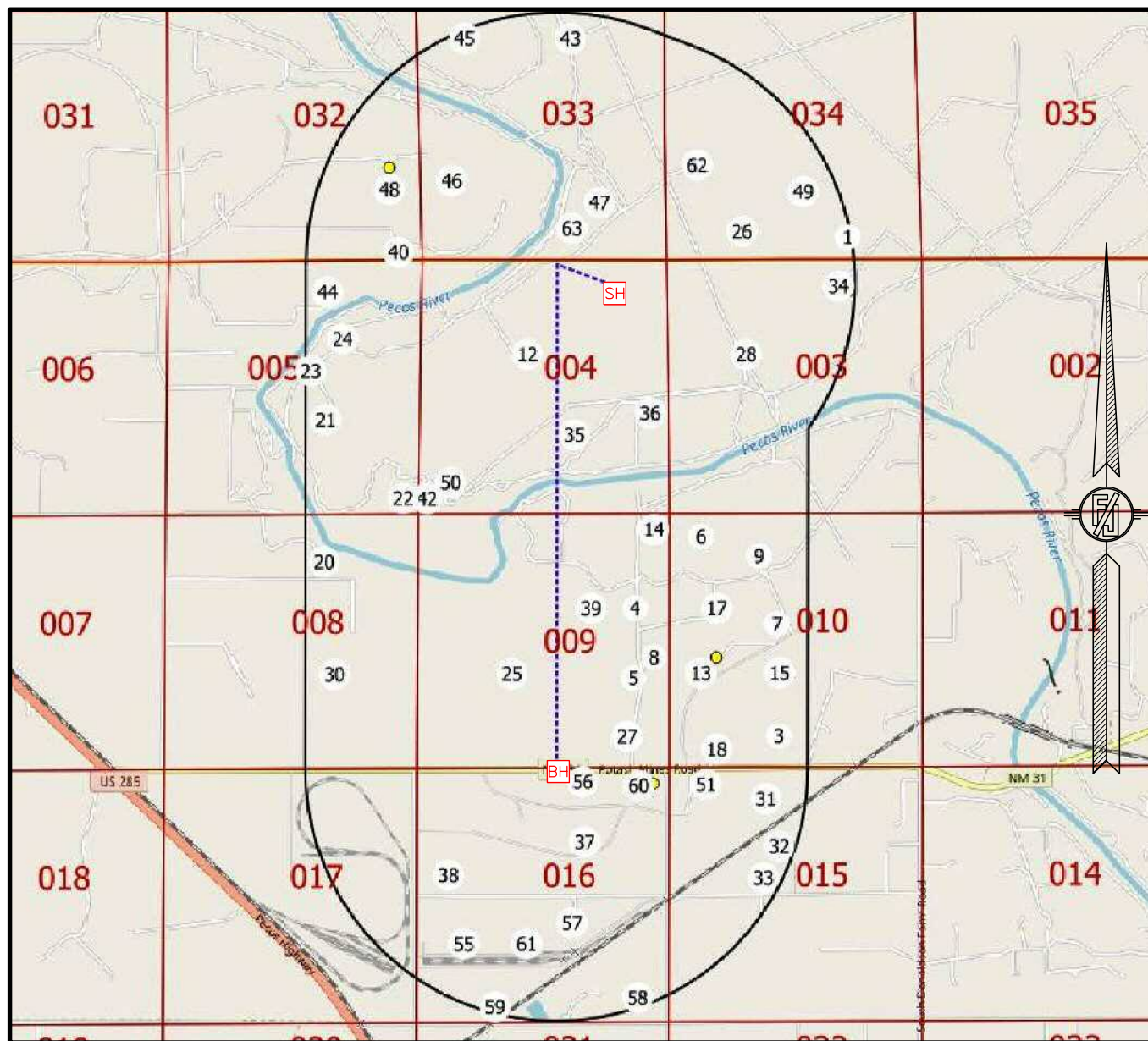
FEBRUARY 22, 2021

MADRON SURVEYING, INC.

301 SOUTH CANAL
 (575) 234-3341

SURVEY NO. 7267D
 CARLSBAD, NEW MEXICO

1-MILE MAP



NOT TO SCALE

[SH] SURFACE LOCATION

[BH] BOTTOM OF HOLE

[XX] WELLS WITHIN 1 MILE

--- WELL PATH

— 1-MILE BOUNDARY

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 225H
 LOCATED 370 FT. FROM THE NORTH LINE
 AND 1317 FT. FROM THE EAST LINE OF
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 22, 2021

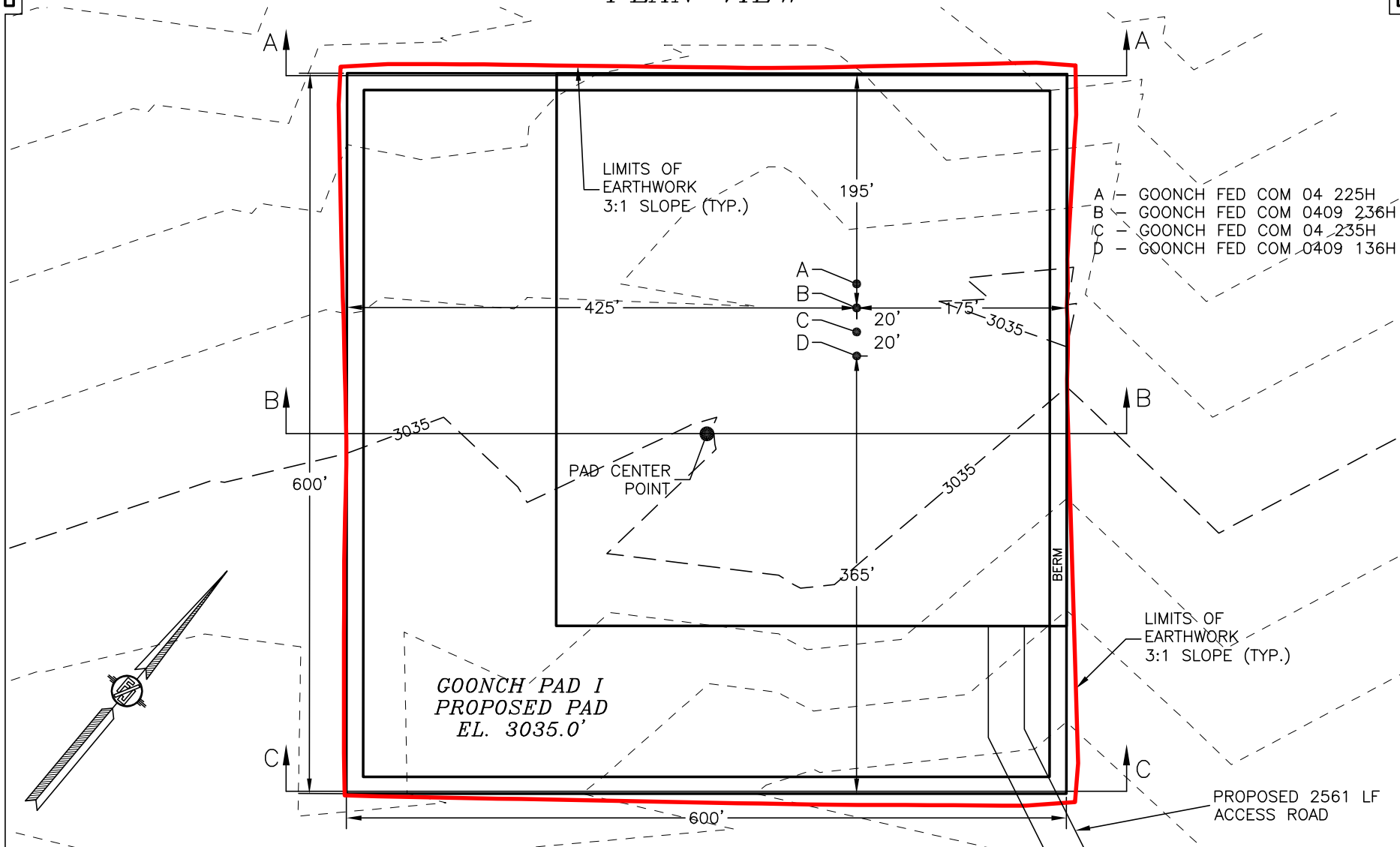
SURVEY NO. 7267D

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

PLAN VIEW

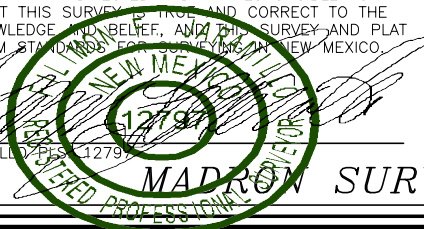


I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GRADING PLAN AND CROSS SECTIONS
FOR GOONCH FED COM 04 225H
 SECTION 4, TOWNSHIP 23 SOUTH,
 RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 22, 2021

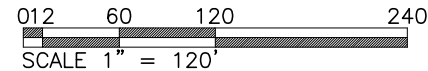
FILIMON F. JARAMILLO 12797



MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

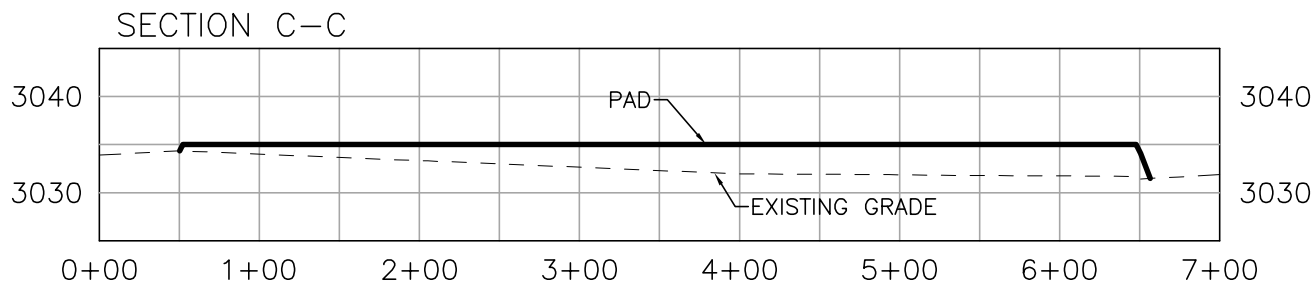
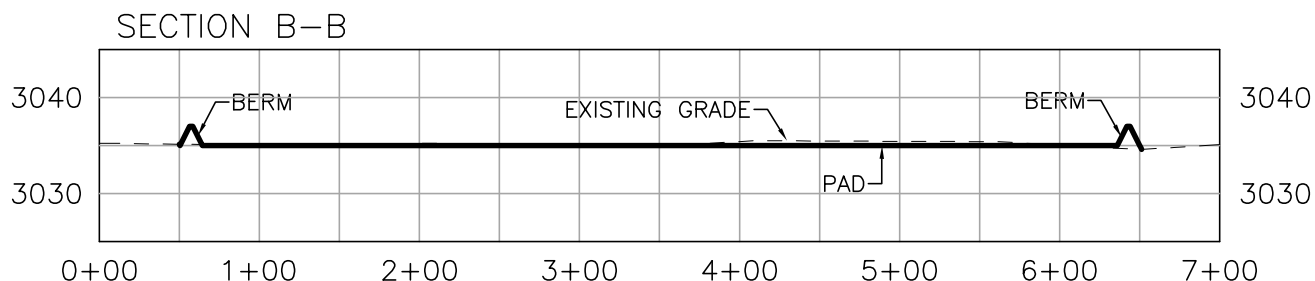
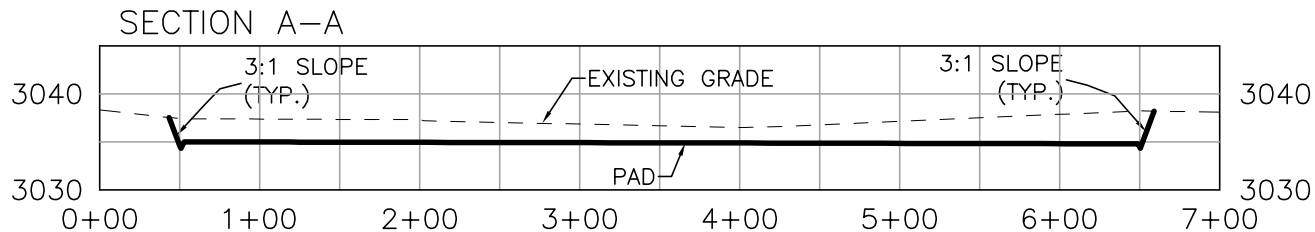


CUT	FILL	NET
6849 CU. YD	7927 CU. YD	1078 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 1-2
 SURVEY NO. 7267D

CROSS SECTIONS



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, PLS. 2797

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GRADING PLAN AND CROSS SECTIONS
FOR GOONCH FED COM 04 225H
SECTION 4, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 22, 2021

301 SOUTH CANAL
(575) 234-3341

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

CUT	FILL	NET
6849 CU. YD	7927 CU. YD	1078 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 2-2
SURVEY NO. 7267D

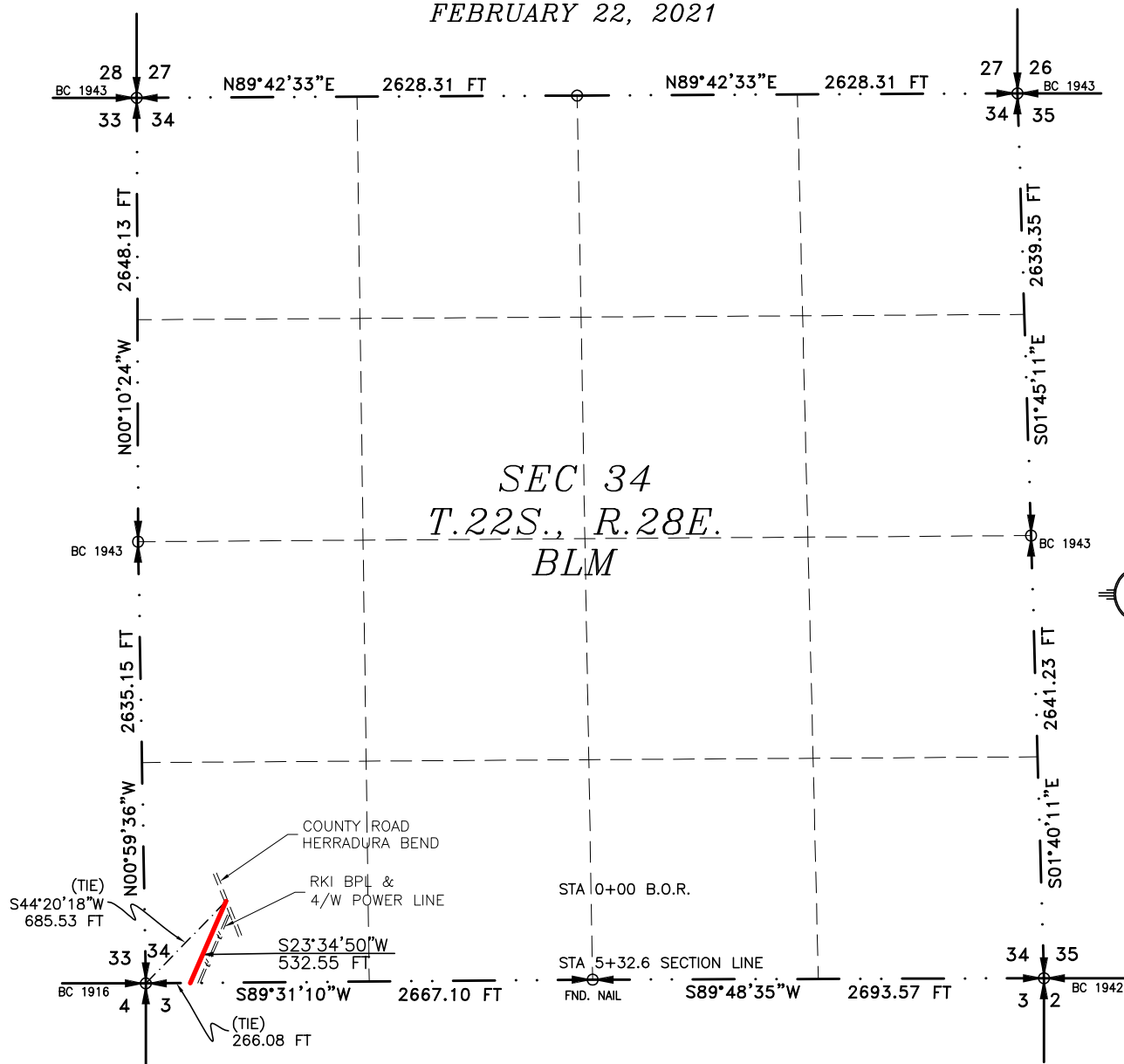
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

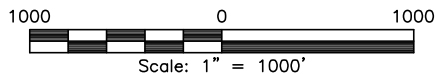
ACCESS ROAD TO THE GOONCH PAD I

(GOONCH FED COM 0409 236H, 136H, AND GOONCH FED COM 04 235H, 225H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 34, TOWNSHIP 22 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 22, 2021



SEE NEXT SHEET (2-6) 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: 1-6

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

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 22 DAY OF MARCH 2021

FILMON F. JARAMILLO, PLS. 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

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

SURVEY NO. 7267D

ACCESS ROAD PLAT

ACCESS ROAD TO THE GOONCH PAD I

(GOONCH FED COM 0409 236H, 136H, AND GOONCH FED COM 04 235H, 225H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 34, TOWNSHIP 22 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 22, 2021

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 34, TOWNSHIP 22 SOUTH, RANGE 28 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 SW/4 OF SAID SECTION 34, TOWNSHIP 22 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE SOUTHWEST CORNER OF SAID SECTION 34, TOWNSHIP 22 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S44°20'18"W, A DISTANCE OF 685.53 FEET;
 THENCE S23°34'50"W A DISTANCE OF 532.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 34, TOWNSHIP 22 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S89°31'10"W, A DISTANCE OF 266.08 FEET;

SAID STRIP OF LAND BEING 532.55 FEET OR 32.28 RODS IN LENGTH, CONTAINING 0.367 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SW/4 532.55 L.F. 32.28 RODS 0.367 ACRES

GENERAL NOTES

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

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

SHEET: 2-6

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

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 22 DAY OF MARCH 2021

FILIMON F. JARAMILLO PLS. 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

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

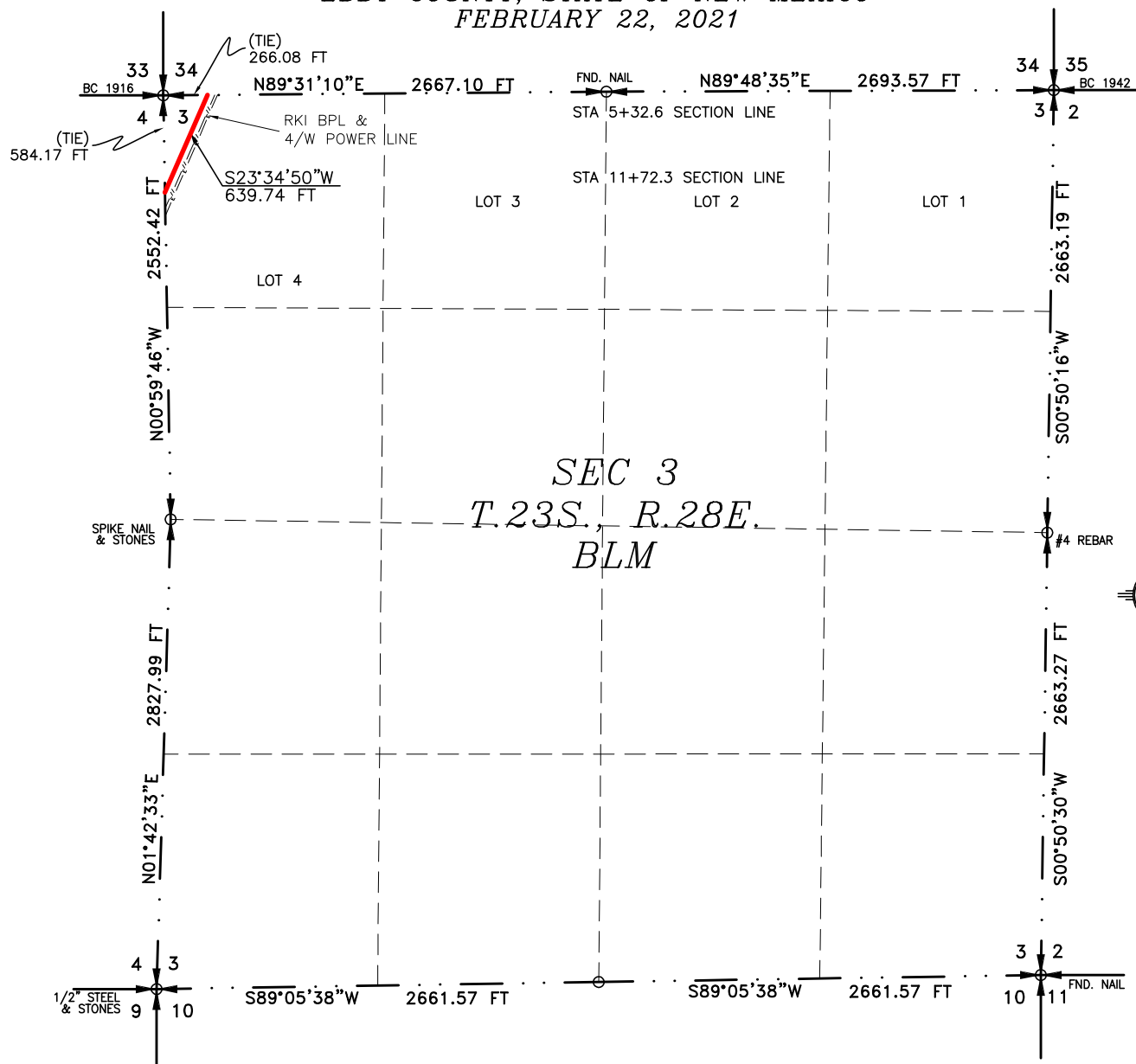
SURVEY NO. 7267D

ACCESS ROAD PLAT

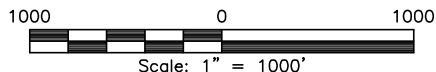
ACCESS ROAD TO THE GOONCH PAD I

(GOONCH FED COM 0409 236H, 136H, AND GOONCH FED COM 04 235H, 225H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 3, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 22, 2021



SEE NEXT SHEET (4-6) 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: 3-6

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

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 22 DAY OF MARCH 2021

FILMON F. JARAMILLO, PLS. 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

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

SURVEY NO. 7267D

ACCESS ROAD PLAT

ACCESS ROAD TO THE GOONCH PAD I

(GOONCH FED COM 0409 236H, 136H, AND GOONCH FED COM 04 235H, 225H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 3, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 22, 2021

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 3, TOWNSHIP 23 SOUTH, RANGE 28 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 LOT 4 OF SAID SECTION 3, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 3, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S89°31'10"W, A DISTANCE OF 266.08 FEET; THENCE S23°34'50"W A DISTANCE OF 639.74 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 3, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS N00°59'46"W, A DISTANCE OF 584.17 FEET;

SAID STRIP OF LAND BEING 639.74 FEET OR 38.77 RODS IN LENGTH, CONTAINING 0.441 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 4 639.74 L.F. 38.77 RODS 0.441 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 15TH DAY OF MARCH 2021

GENERAL NOTES

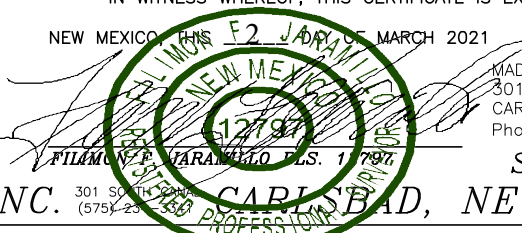
1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

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: 4-6

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

SURVEY NO. 7267D

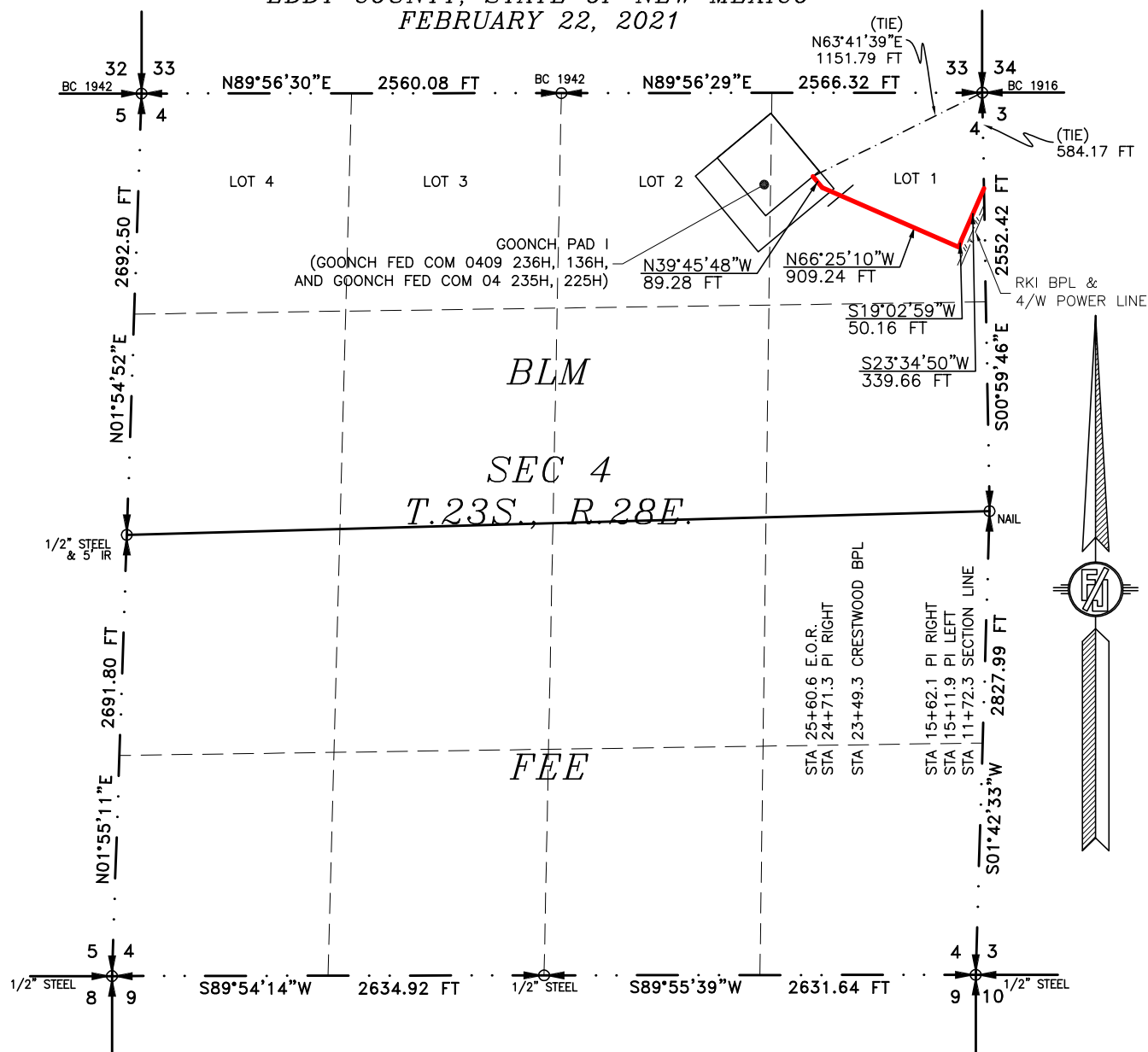


ACCESS ROAD PLAT

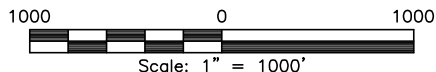
ACCESS ROAD TO THE GOONCH PAD I

(GOONCH FED COM 0409 236H, 136H, AND GOONCH FED COM 04 235H, 225H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 22, 2021



SEE NEXT SHEET (6-6) 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: 5-6

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

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 22 DAY OF MARCH 2021

FILIMON F. JARAMILLO, PLS. 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

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

SURVEY NO. 7267D

ACCESS ROAD PLAT

ACCESS ROAD TO THE GOONCH PAD I

(GOONCH FED COM 0409 236H, 136H, AND GOONCH FED COM 04 235H, 225H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 22, 2021

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 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 LOT 1 OF SAID SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS N00°59'46"W, A DISTANCE OF 584.17 FEET;
 THENCE S23°34'50"W A DISTANCE OF 339.66 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE S19°02'59"W A DISTANCE OF 50.16 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE N66°25'10"W A DISTANCE OF 909.24 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
 THENCE N39°45'48"W A DISTANCE OF 89.28 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS N63°41'39"E, A DISTANCE OF 1151.79 FEET;

SAID STRIP OF LAND BEING 1388.34 FEET OR 84.14 RODS IN LENGTH, CONTAINING 0.956 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 1 1388.34 L.F. 84.14 RODS 0.956 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 12TH DAY OF MARCH 2021

(Signature of Filimon F. Jaramillo)
 FILIMON F. JARAMILLO PLS. 12797
 NEW MEXICO PROFESSIONAL SURVEYOR

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

SURVEY NO. 7267D

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: 6-6

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

Goonch Fed Com 04 225H

CHANGE TO PLANS

Move Bottom Hole Location

From: 130' FSL & 1,914' FWL, Section 4, T-23-S, R-28-E, SESW

To: 130' FSL & 2,310' FEL, Section 9, T-23-S, R-28-E, SWSE

Casing Substitution

Hole Size: 9-7/8", Casing: 8-5/8", 32 ppf, P-110, TLW to be set at 9,016' TMD.

Design Safety Factors: Burst 5.95, Collapse 1.46, Tension 3.24 (Casing Specification Sheet is attached)

Hole Size: 7-7/8", Casing: 5-1/2", 20 ppf, P-110, DWC/C IS+ to be set at 21,000' TMD.

Design Safety Factors: Burst 1.25, Collapse 2.86, Tension 2.75 (Casing Specification Sheet is attached)

Single Stage Cement Job for 8-5/8" Intermediate Casing String (TOC = Surface)

Lead: 610 Sacks; 2,182.8 cu. ft.; 100% excess; 3.58 cu.ft./sx; 10 ppg; Class C + retarder + LCM + beads; 900 psi 24-hour compressive strength.

Tail: 130 Sacks; 180.7 cu. ft; 50% excess; 1.39 cu.ft./sx; 13.80 ppg; Class C + retarder + LCM; 1,200 psi 24-hour compressive strength.

Singe Stage Cement Job for 5-1/2" Production Casing String (TOC = Surface)

Lead: 697 Sacks; 1,476.9 cu. ft.; 20% excess; 2.12 cu.ft./sx; 11.91 ppg; Class C + retarder; 1,200 psi 24-hour compressive strength.

Tail: 2,049 Sacks; 3,258.4 cu. ft; 20% excess; 1.59 cu.ft./sx; 13.20 ppg; Class C + retarder; 1,200 psi 24-hour compressive strength.



NOVO OIL & GAS NORTHERN DELAWARE, LLC

Goonch Fed Com 04 225H

SHL: 370' FNL & 1317' FEL Section 4-23S-28E

BHL: 130' FSL & 2,310' FEL Section 9-23S-28E

Eddy County, New Mexico

DRILLING OPERATIONS PLAN**Standard Wolfcamp 3-STRING CASING DESIGN (Not Secretary's Potash or R-111-P)****Estimated Drilling Conditions**

Target Formation	Wolfcamp A
Target Depth - TVD (ft)	9716
Planned MD (ft)	21000
Anticipated Bottom-Hole Pressure (psi)	6315.4
Anticipated Maximum Surface Pressure (psi)	4177.88
Abnormal Pressure (Yes/No)	No
Anticipated Bottom-Hole Temperature (deg F)	215 deg F
H2S Contingency Plan Required (Yes/No)	Yes

Geologic Formations

	GR	KB (25')	
Elevation	3,036	3,061	
Formation Tops	TVDss	TVD - KB	Mineral Resources
Rustler	2,639	422	Water
Bell Canyon (base of salt)	500	2,561	Water
Cherry Canyon	-575	3,636	Water
Brushy Canyon	-1,588	4,649	Oil, Gas, Water
Bone Spring Lime	-3,031	6,092	Oil, Gas, Water
Lower Avalon	-3,539	6,600	Oil, Gas, Water
1st Bone Spring Sand	-3,998	7,059	Oil, Gas, Water
2nd Bone Spring Carbonate	-4,211	7,272	Oil, Gas, Water
2nd Bone Spring Sand	-4,746	7,807	Oil, Gas, Water
3rd Bone Spring Carbonate	-5,043	8,104	Oil, Gas, Water
3rd Bone Spring Sand	-6,090	9,151	Oil, Gas, Water
Wolfcamp XY	-6,370	9,431	Oil, Gas, Water
Wolfcamp A	-6,575	9,636	Oil, Gas, Water
Wolfcamp B	-6,780	9,841	Oil, Gas, Water
Wolfcamp B Flow Unit	-7,115	10,176	Oil, Gas, Water
Wolfcamp C	-7,233	10,294	Oil, Gas, Water

Pressure Control Equipment and Pressure Testing Procedure

A 13-5/8" 5M Blowout Preventer system will be installed on a multi-bowl wellhead with a 13-5/8 flanged casing spool.

The top flange of casing spool will be set in a cellar below ground level. The blowout preventor system will consist of a single pipe ram on bottom, mud cross, double pipe ram with blind rams on bottom and pipe rams on top and annular preventer. The blowout preventer will be installed on top of the 13-3/8" surface casing and will remain installed to total depth of the well. Wellhead, blowout preventer and choke manifold diagrams have been included. A co-flex line will be used between the BOP system and the choke manifold. A pressure test certification form for the co-flex hose will be available on the location at the time of the BOP testing.

The BOP system will be isolated with a test plug and tested by an independent tester to 250 psi low and 5,000 psi high for 10 minutes.

The Surface Casing will be pressure tested to 250 psi low and 1500 psi high. Intermediate Casing will be pressure tested to 250 psi low and (.22 psi x Shoe TVD, which is equivalent to 1983.52 psi) high for 30 minutes

Drilling Fluid Program

Depth Interval (ft)	Hole Size (in.)	Fluid Type	Mud Weight (ppg)	Funnel Viscosity (sec/qt)	API Fluid Loss (ml/30min)	Total Solids (%)
0 - 472	17-1/2	Water Based Spud Mud	8.3	30-60	N/C	2.0-8.0
472 - 9,016	9-7/8"	Brine Diesel Emulsion or Brine	8.8-9.6	35-45	N/C	1.0-4.0
9,016 - 21,000	7-7/8"	Oil Based Mud	12-13.5	35-65	4-6 cc's	1.0-8.0
Drilling Fluid System		A closed loop drilling system will be used.				

Casing Program

Depth Interval	Length (ft)	Hole Size	Casing Size	Weight (ppf)	Grade	Coupling	Notes
0' - 472'	472	17-1/2	13-3/8"	54.50	J-55	BTC	
0' - 9,016'	9,016	9-7/8"	8-5/8"	32.00	P-110	TLW	
0' - 21,000'	21,000	7-7/8"	5-1/2"	20.00	P-110	DWC/C IS+	

Casing Centralizers

Surface Casing: Centralizers will be run on the bottom 3 joints of casing and then 1 centralizer per joint to surface.

Casing Performance Properties and Design Criteria

Depth Interval	Collapse (psi)	Burst (psi)	Joint Strength (1000 lbs)	Actual Design Safety Factors			Notes
				Collapse	Burst	Tension	
0' - 472'	1,130	2,730	853	5.53	1.82	6.97	
0' - 9,016'	4,230	8,930	1144	1.46	5.95	3.34	Collapse: 1/3 fluid filled at all times
0' - 21,000'	12,090	14,360	729	2.86	1.25	2.75	
Design Safety Factors		Design safety factors will meet or exceed as shown.					

Surface Casing

Collapse: $DF_C = 1.125$

- Full Internal Evacuation: Collapse force is equal to mud gradient (0.433 psi/ft) in which the casing will be run and internal evacuation of casing.
- Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.718 psi/ft) in which the casing will be run and internal force equivalent to fresh water displacement gradient (0.433 psi/ft).

Burst: $DF_B = 1.125$

- Casing Pressure Test: According to BLM Onshore Order No. 2 with 0.22 psi/ft or 1500 psi, whichever is greater but not to exceed 70 percent of the minimum internal yield.

Tensile: $DF_T = 1.60$

- Overpull: A tensile force of 100,000 lbs over string weight with a bouyancy factor of 0.8727 in water (8.33 ppg).

Intermediate Casing

Collapse: $DF_C = 1.125$

- Partial (2/3rd) Internal Evacuation: Casing will remain greater than 1/3 fluid filled at all times with a mud weight greater than 11 ppg**
- Collapse force is equal to mud gradient (0.531 psi/ft) in which the casing will be run.
- Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.626 psi/ft) in which the casing will be run and internal force equivalent to the displacement fluid gradient.

Burst: $DF_B = 1.125$

- Casing Pressure Test: According to BLM Onshore Order No. 2 with 0.22 psi/ft or 1500 psi, whichever is greater but not to exceed 70 percent of the minimum internal yield.
- Gas Kick: Internal burst load of a 50 bbl gas kick at the casing with drillpipe in the hole. External force will be 10.2 ppg brine water gradient (0.531 psi/ft) and internal force will be with 10.0 ppg brine water gradient (0.521 psi/ft) with gas kick.

Tensile: $DF_T = 1.60$

- Overpull: A tensile force of 100,000 lbs over string weight with a bouyancy factor of 0.8441 in brine water (10.2 ppg).

Production CasingCollapse: $DF_C = 1.125$

- a. Full Internal Evacuation: Collapse force is equal to mud gradient (0.531 psi/ft) in which the casing will be run and internal evacuation of casing.
- b. Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.688 psi/ft) in which the casing will be run and internal force equivalent to fresh water displacement gradient (0.433 psi/ft).

Burst: $DF_B = 1.125$

- a. Pressure Test: Pressure test will be to 80% of Internal Yield Pressure of casing intended for fracture stimulation.

Tensile: $DF_T = 1.60$

- a. Overpull: A tensile force of 100,000 lbs over string weight with a bouyancy factor of 0.8472 in oil-based mud (10.0 ppg).

Cementing Program**Surface Casing Cement:**

0' - 472'

Top of Cement: Surface

Cement	Amount (sacks)	Slurry Volume (cu. ft.)	Slurry Volume (bbls)	Weight (ppg)	Yield (cu. ft./sx)	Mix Water (gal/sx)	24hr 115deg Strength (psi)	Excess Cement (%)
Lead								
Tail	404	655.1	116.7	13.80	1.62	7.67	1,200	100.0%

Lead: N/A

Tail: Class C Cement with Gel, Accelerator, LCM

Intermediate Casing Cement:

Top of Lead 0

Top of Tail 8,016

Surface Shoe Depth

472

Intermediate Shoe Depth

9,016

Cement	Amount (sacks)	Slurry Volume (cu. ft.)	Slurry Volume (bbls)	Weight (ppg)	Yield (cu. ft./sx)	Mix Water (gal/sx)	24hr 115deg Strength (psi)	Excess Cement (%)
Lead	610	2182.8	388.7	10.00	3.58	19.15	900	100.0%
Tail	130.0	180.7	32.2	13.80	1.39	6.57	1,200	50.0%

Lead: Class C or H Cement with Fluid Loss, Retarder, LCM, Possibly beaded for desired compressive strength

Tail: Class C or H Cement with Fluid Loss, Retarder, LCM

Production Casing Cement:

0' - 21,000'

Top of Cement/Lead: 0'

Top of Tail: 7,016'

Cement	Amount (sacks)	Slurry Volume (cu. ft.)	Slurry Volume (bbls)	Weight (ppg)	Yield (cu. ft./sx)	Mix Water (gal/sx)	24hr 115deg Strength (psi)	Excess Cement (%)
Lead	697	1476.9	263.0	12.00	2.12	11.91	1,200	20.0%
Tail	2049	3258.4	580.3	13.20	1.59	7.98	1,200	20.0%

Lead: Class H Cement with Fluid Loss, Retarder, LCM

Tail: Class H Cement with Fluid Loss, Retarder, LCM

Logging, Testing & Coring Program

A gamma ray log will be acquired by directional drilling Measure While Drilling tools from the intermediate casing to Total Depth.



TEC-LOCK WEDGE

8.625" 32.00 LB/FT (.352" Wall)
BORUSAN MANNESMANN P110 HSCY

Pipe Body Data

Nominal OD:	8.625	in
Nominal Wall:	.352	in
Nominal Weight:	32.00	lb/ft
Plain End Weight:	31.13	lb/ft
Material Grade:	P110 HSCY	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	125,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	7.921	in
API Drift Diameter:	7.796	in
Special Drift Diameter:	7.875	in
RBW:	87.5 %	
Body Yield:	1,144,000	lbf
Burst:	8,930	psi
Collapse:	4,230	psi

Connection Data

Standard OD:	9.000	in
Pin Bored ID:	7.921	in
Critical Section Area:	8.61433	in ²
Tensile Efficiency:	94.2 %	
Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	1,077,000	lbf
Compressive Limit:	1,144,000	lbf
Internal Pressure Rating:	8,930	psi
External Pressure Rating:	4,230	psi
Maximum Bend:	62.6	°/100

Operational Data

Minimum Makeup Torque:	29,900	ft*lb
Optimum Makeup Torque:	37,375	ft*lb
Maximum Makeup Torque:	80,900	ft*lb
Minimum Yield:	89,900	ft*lb
Makeup Loss:	5.97	in

Notes

Operational Torque is equivalent to the Maximum Make-Up Torque.



Technical Specifications

Connection Type: DWC/C-IS PLUS Casing STANDARD	Size(O.D.): 5-1/2 in	Weight (Wall): 20.00 lb/ft (0.361 in)	Grade: VST P110 EC
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Material	
VST P110 EC	Grade
125,000	Minimum Yield Strength (psi.)
135,000	Minimum Ultimate Strength (psi.)

Pipe Dimensions	
5.500	Nominal Pipe Body O.D. (in.)
4.778	Nominal Pipe Body I.D. (in.)
0.361	Nominal Wall Thickness (in.)
20.00	Nominal Weight (lbs./ft.)
19.83	Plain End Weight (lbs./ft.)
5.828	Nominal Pipe Body Area (sq. in.)

Pipe Body Performance Properties	
729,000	Minimum Pipe Body Yield Strength (lbs.)
12,090	Minimum Collapse Pressure (psi.)
14,360	Minimum Internal Yield Pressure (psi.)
13,100	Hydrostatic Test Pressure (psi.)

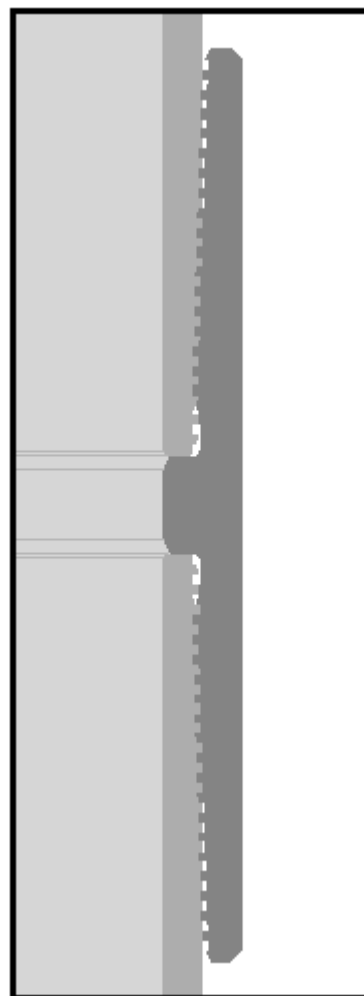
Connection Dimensions	
6.300	Connection O.D. (in.)
4.778	Connection I.D. (in.)
4.653	Connection Drift Diameter (in.)
4.13	Make-up Loss (in.)
5.828	Critical Area (sq. in.)
100.0	Joint Efficiency (%)

Connection Performance Properties	
729,000	Joint Strength (lbs.)
26,040	Reference String Length (ft) 1.4 Design Factor
728,000	API Joint Strength (lbs.)
729,000	Compression Rating (lbs.)
12,090	API Collapse Pressure Rating (psi.)
14,360	API Internal Pressure Resistance (psi.)
104.2	Maximum Uniaxial Bend Rating [degrees/100 ft]

Approximated Field End Torque Values	
16,600	Minimum Final Torque (ft.-lbs.)
19,100	Maximum Final Torque (ft.-lbs.)
21,600	Connection Yield Torque (ft.-lbs.)



VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com



For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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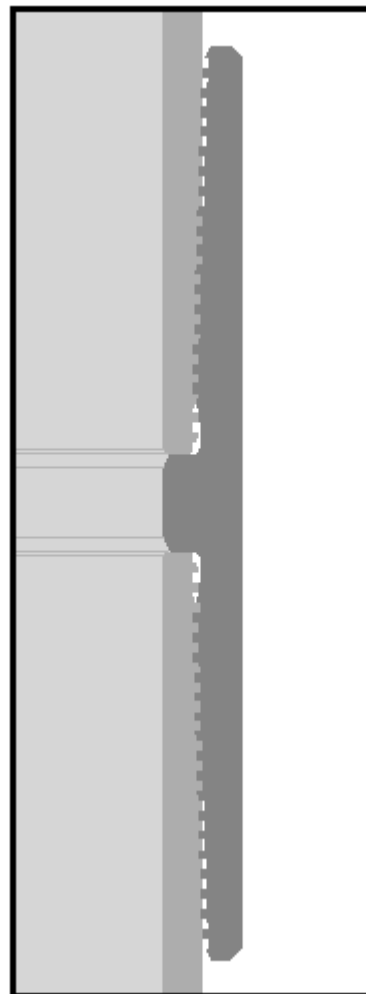
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VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com

DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a given pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

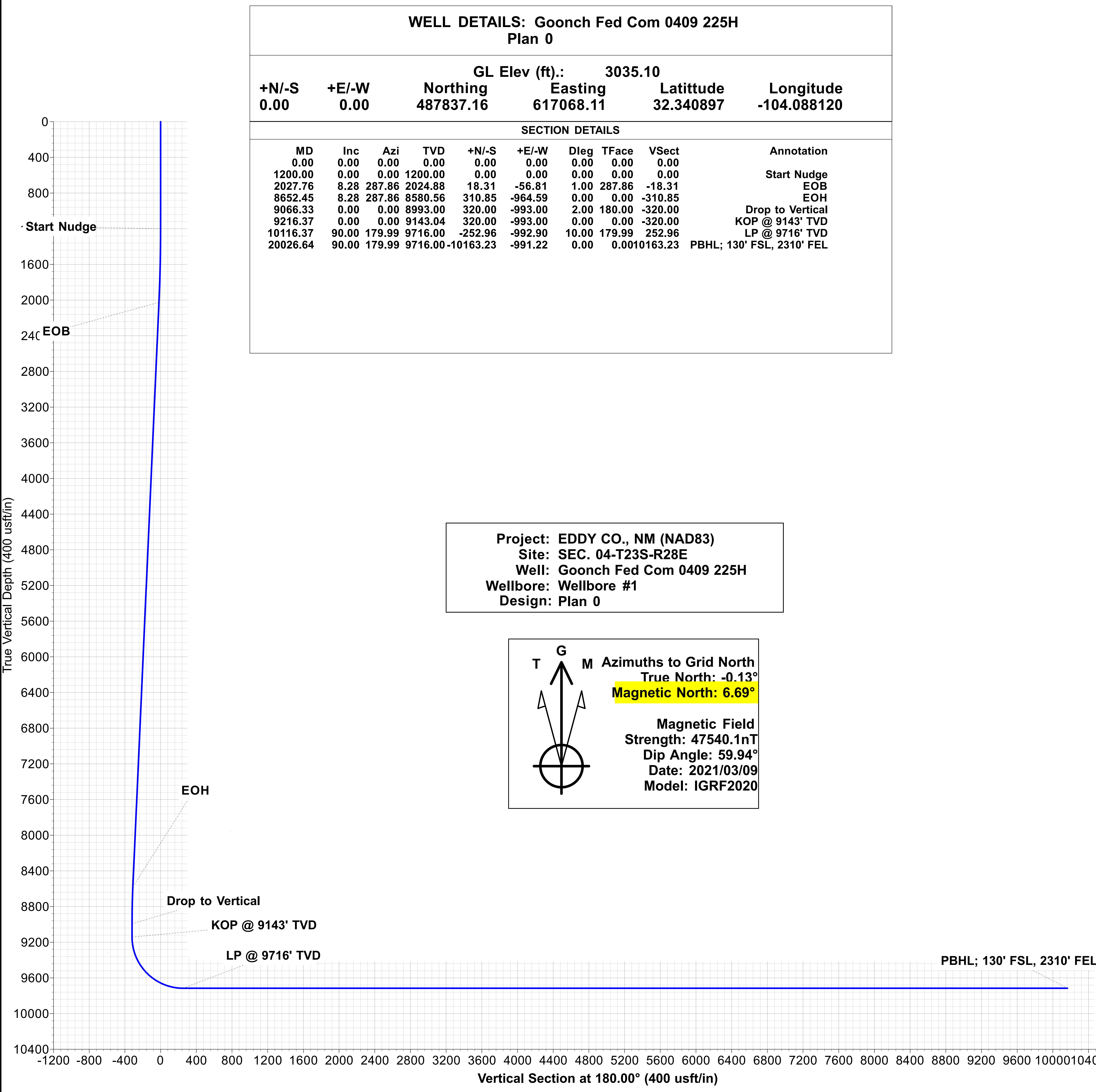
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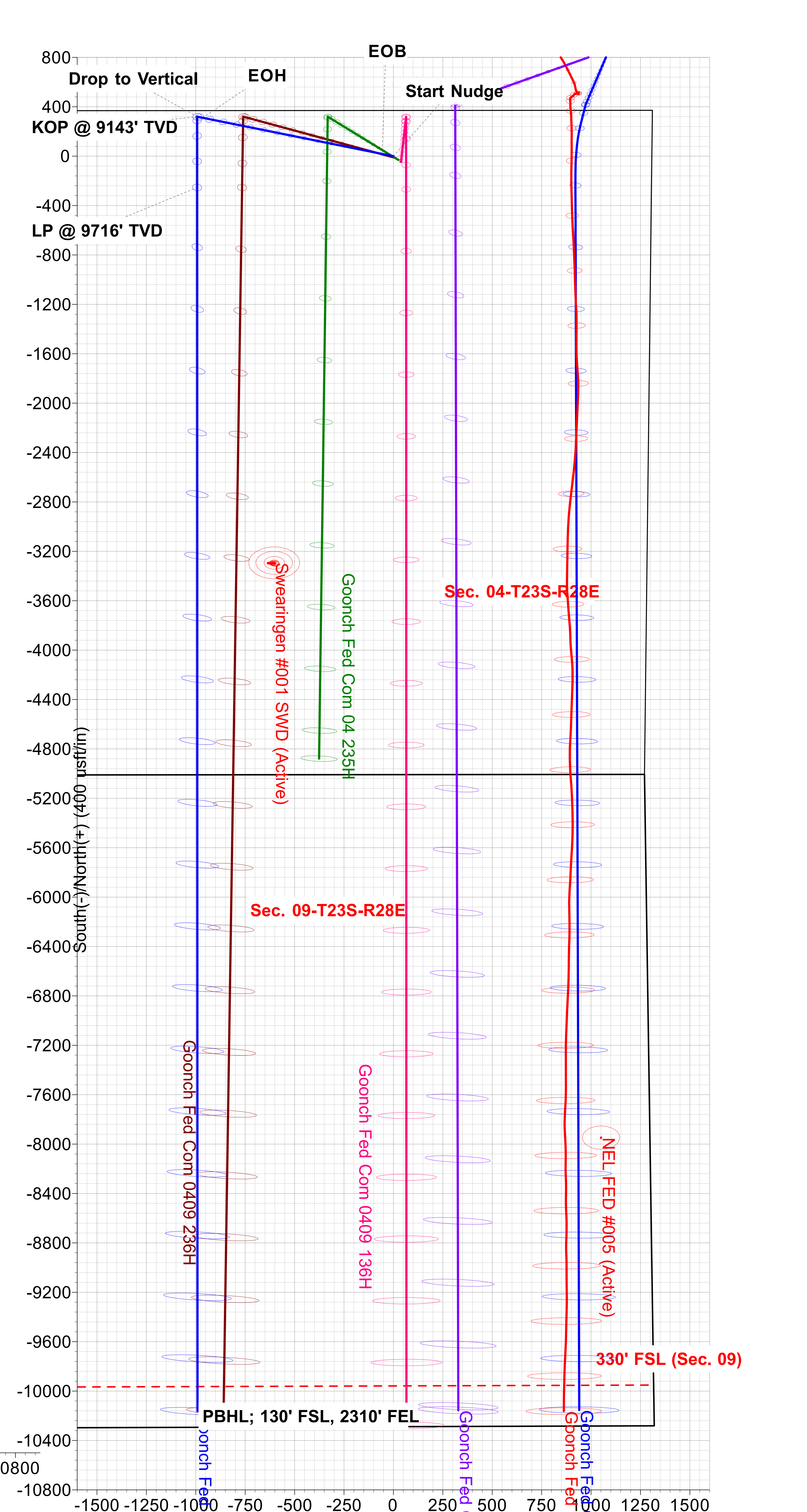
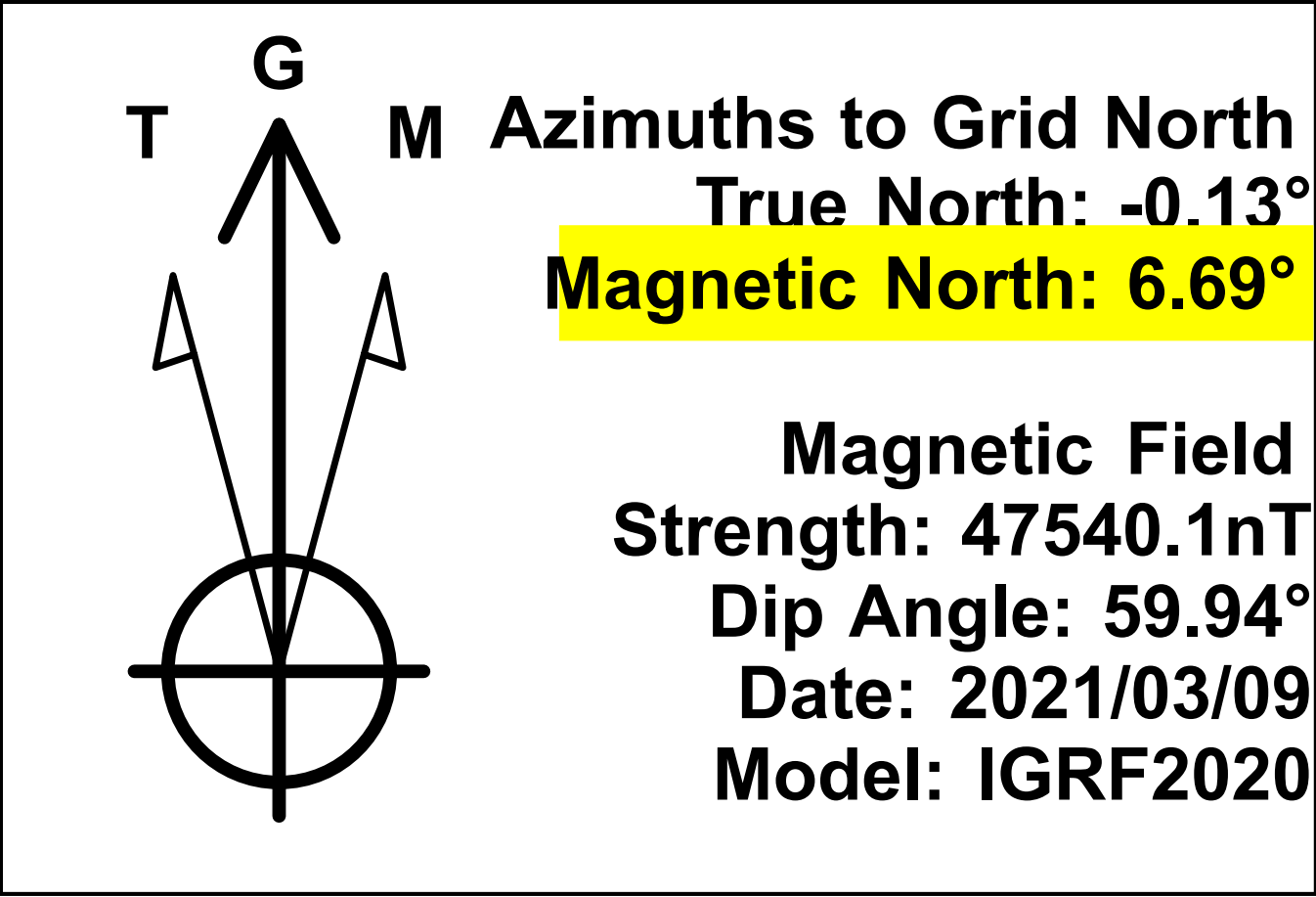
Goonch Fed Com 0409 225H

PRECISION RIG #596



WELL DETAILS: Goonch Fed Com 0409 225H									
Plan 0									
GL Elev (ft).: 3035.10									
+N/-S	+E/-W	Northing		Easting		Latitude		Longitude	
0.00	0.00	487837.16		617068.11		32.340897		-104.088120	
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Nudge
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
2027.76	8.28	287.86	2024.88	18.31	-56.81	1.00	287.86	-18.31	EOB
8652.45	8.28	287.86	8580.56	310.85	-964.59	0.00	0.00	-310.85	EOH
9066.33	0.00	0.00	8993.00	320.00	-993.00	2.00	180.00	-320.00	Drop to Vertical
9216.37	0.00	0.00	9143.04	320.00	-993.00	0.00	0.00	-320.00	KOP @ 9143' TVD
10116.37	90.00	179.99	9716.00	-252.96	-992.90	10.00	179.99	252.96	LP @ 9716' TVD
20026.64	90.00	179.99	9716.00	-10163.23	-991.22	0.00	0.00	10163.23	PBHL; 130' FSL, 2310' FEL

Project: EDDY CO., NM (NAD83)
Site: SEC. 04-T23S-R28E
Well: Goonch Fed Com 0409 225H
Wellbore: Wellbore #1
Design: Plan 0





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC. 04-T23S-R28E

Goonch Fed Com 0409 225H

Wellbore #1

Plan 0

Anticollision Report

10 March, 2021





SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Reference	Plan 0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,500.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	2021/03/10		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,026.64	Plan 0 (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC. 04-T23S-R28E						
Apollo Fee 23-28 4 WA 005H - Wellbore #1 - Wellbore #1						Out of range
Goonch Fed 0409 214H - Wellbore #1 - Wellbore #1	1,309.95	1,325.71	1,167.71	1,162.17	210.575	CC, ES
Goonch Fed 0409 214H - Wellbore #1 - Wellbore #1	5,400.00	5,405.32	1,493.17	1,467.62	58.448	SF
Goonch Fed Com 04 132H - Wellbore #1 - Plan 2	14,823.06	9,872.46	787.84	664.66	6.396	CC, ES
Goonch Fed Com 04 132H - Wellbore #1 - Plan 2	14,900.00	9,866.24	791.56	667.08	6.359	SF
Goonch Fed Com 04 211H - Wellbore #1 - Plan 1						Out of range
Goonch Fed Com 04 212H - Wellbore #1 - Plan 1	9,600.00	14,601.39	516.59	410.88	4.887	ES, SF
Goonch Fed Com 04 212H - Wellbore #1 - Plan 1	9,616.41	14,591.03	516.43	410.90	4.893	CC
Goonch Fed Com 04 221H - Wellbore #1 - Plan 1						Out of range
Goonch Fed Com 04 222H - Wellbore #1 - Plan 1	9,750.00	14,593.48	1,181.63	1,077.77	11.377	ES
Goonch Fed Com 04 222H - Wellbore #1 - Plan 1	9,800.67	14,551.56	1,181.17	1,077.90	11.437	CC
Goonch Fed Com 04 222H - Wellbore #1 - Plan 1	14,900.00	9,629.02	1,348.60	1,227.09	11.098	SF
Goonch Fed Com 04 231H - Wellbore #1 - Plan 1						Out of range
Goonch Fed Com 04 232H - Wellbore #1 - Plan 1						Out of range
Goonch Fed Com 04 235H - Wellbore #1 - Plan 0	1,200.00	1,200.30	39.99	34.78	7.674	CC, ES
Goonch Fed Com 04 235H - Wellbore #1 - Plan 0	14,741.66	14,527.23	636.79	458.05	3.563	SF
Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0	6,019.57	6,159.95	1,272.64	1,243.68	43.937	CC
Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0	20,026.64	20,133.98	1,320.21	930.21	3.385	ES, SF
Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0	1,200.00	1,200.30	59.98	54.77	11.511	CC, ES
Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0	20,026.64	20,494.52	1,182.46	838.25	3.435	SF
Goonch Fed Com 0409 234H - Wellbore #1 - Plan 0	1,200.00	1,203.40	1,378.16	1,372.94	264.127	CC, ES
Goonch Fed Com 0409 234H - Wellbore #1 - Plan 0	3,700.00	3,751.63	1,494.40	1,477.56	88.769	SF
Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0	1,200.00	1,200.30	19.99	14.78	3.837	CC, ES
Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0	20,025.33	20,509.20	526.51	345.54	2.909	SF
Jack Sleeper State Com 9 201H - Wellbore #1 - Wellbore						Out of range
Jack Sleeper State Com 9 215H - Wellbore #1 - Wellbore						Out of range
Jack Sleeper State Com 9 221H - Wellbore #1 - Wellbore						Out of range
Loving Federal Com #001 (Active) - Wellbore #1 - Wellbo	11,475.67	9,701.81	629.27	401.85	2.767	CC
Loving Federal Com #001 (Active) - Wellbore #1 - Wellbo	11,500.00	9,701.81	629.74	401.52	2.759	ES, SF
Swearingen #001 SWD (Active) - Wellbore #1 - Wellbore	13,155.85	9,785.62	389.45	260.68	3.024	CC, ES, SF
SEC. 09-T23S-R28E						
NEL FED #005 (Active) - Wellbore #1 - Wellbore #1						Out of range

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed 0409 214H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 100-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	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	
0.00	0.00	5.46	5.46	0.50	0.50	44.02	845.93	817.48	1,176.38				
100.00	100.00	100.00	100.00	0.51	0.51	44.04	845.82	818.08	1,176.74	1,175.72	1.01	1,160.131	
200.00	200.00	208.54	208.54	0.59	0.59	44.05	845.87	818.40	1,176.98	1,175.80	1.18	1,001.526	
300.00	300.00	305.78	305.78	0.73	0.71	44.06	845.75	818.41	1,176.90	1,175.45	1.45	813.780	
325.90	325.90	332.64	332.63	0.77	0.76	44.06	845.67	818.49	1,176.89	1,175.36	1.53	768.771	
400.00	400.00	409.50	409.50	0.91	0.88	44.06	845.63	818.31	1,176.75	1,174.96	1.79	656.848	
500.00	500.00	518.45	518.44	1.10	1.08	44.02	845.57	817.17	1,175.97	1,173.79	2.18	538.930	
600.00	600.00	615.59	615.57	1.31	1.26	43.99	845.40	816.06	1,175.06	1,172.49	2.57	457.217	
700.00	700.00	716.50	716.47	1.52	1.46	43.96	845.25	815.01	1,174.22	1,171.25	2.98	394.341	
800.00	800.00	818.02	817.99	1.73	1.67	43.92	844.98	813.83	1,173.23	1,169.83	3.40	345.516	
900.00	900.00	920.22	920.18	1.95	1.87	43.89	844.68	812.56	1,172.15	1,168.33	3.82	306.871	
1,000.00	1,000.00	1,022.93	1,022.88	2.17	2.09	43.84	844.33	810.91	1,170.79	1,166.54	4.25	275.374	
1,100.00	1,100.00	1,118.20	1,118.13	2.38	2.29	43.79	844.23	809.21	1,169.49	1,164.82	4.67	250.572	
1,200.00	1,200.00	1,220.66	1,220.57	2.61	2.50	43.72	844.37	807.45	1,168.40	1,163.30	5.10	229.164	
1,300.00	1,299.99	1,315.92	1,315.83	2.82	2.69	115.85	844.40	805.95	1,167.72	1,162.21	5.51	212.115	
1,309.95	1,309.94	1,325.71	1,325.61	2.84	2.71	115.85	844.40	805.84	1,167.71	1,162.17	5.55	210.575 CC, ES	
1,400.00	1,399.96	1,414.41	1,414.31	3.02	2.89	115.91	844.48	804.76	1,168.08	1,162.17	5.91	197.629	
1,500.00	1,499.86	1,513.90	1,513.78	3.23	3.10	116.04	844.65	803.55	1,169.28	1,162.95	6.33	184.786	
1,600.00	1,599.68	1,610.00	1,609.88	3.45	3.30	116.23	844.94	802.44	1,171.38	1,164.64	6.74	173.694	
1,700.00	1,699.37	1,702.59	1,702.46	3.67	3.49	116.49	845.41	801.96	1,174.87	1,167.71	7.16	164.172	
1,800.00	1,798.90	1,797.62	1,797.50	3.91	3.69	116.85	845.48	802.37	1,179.55	1,171.97	7.58	155.655	
1,900.00	1,898.26	1,890.48	1,890.33	4.16	3.87	117.34	844.87	804.25	1,185.70	1,177.70	8.00	148.134	
2,000.00	1,997.40	1,989.61	1,989.41	4.42	4.08	117.97	843.50	807.24	1,193.00	1,184.55	8.46	141.095	
2,027.76	2,024.88	2,017.51	2,017.30	4.49	4.13	118.17	843.05	808.11	1,195.19	1,186.60	8.58	139.237	
2,100.00	2,096.37	2,080.68	2,080.42	4.69	4.26	118.65	842.16	810.14	1,201.18	1,192.28	8.90	134.942	
2,200.00	2,195.33	2,181.09	2,180.76	4.98	4.47	119.41	841.20	813.90	1,210.33	1,200.96	9.38	129.100	
2,300.00	2,294.29	2,287.41	2,286.98	5.27	4.69	120.24	838.87	817.81	1,218.82	1,208.96	9.87	123.532	
2,400.00	2,393.25	2,389.83	2,389.35	5.57	4.90	120.99	837.05	820.69	1,227.16	1,216.81	10.35	118.514	
2,500.00	2,492.20	2,491.24	2,490.72	5.87	5.12	121.68	835.61	822.81	1,235.38	1,224.53	10.84	113.918	
2,600.00	2,591.16	2,587.53	2,586.98	6.18	5.32	122.34	834.27	824.86	1,243.81	1,232.49	11.32	109.833	
2,700.00	2,690.12	2,686.50	2,685.91	6.49	5.53	123.00	832.89	826.93	1,252.38	1,240.57	11.81	106.021	
2,800.00	2,789.08	2,782.20	2,781.59	6.80	5.73	123.63	831.62	829.16	1,261.35	1,249.06	12.29	102.595	
2,900.00	2,888.04	2,882.95	2,882.30	7.12	5.94	124.28	830.44	831.34	1,270.45	1,257.66	12.79	99.332	
3,000.00	2,986.99	2,990.08	2,989.39	7.44	6.17	124.97	828.84	833.48	1,279.38	1,266.08	13.30	96.194	
3,100.00	3,085.95	3,103.25	3,102.43	7.76	6.41	125.81	824.28	836.48	1,287.51	1,273.69	13.82	93.140	
3,200.00	3,184.91	3,215.32	3,214.16	8.08	6.65	126.76	816.41	840.28	1,294.74	1,280.39	14.34	90.260	
3,300.00	3,283.87	3,323.68	3,321.92	8.41	6.90	127.80	806.00	844.67	1,301.36	1,286.49	14.87	87.542	
3,400.00	3,382.83	3,425.29	3,422.75	8.74	7.14	128.84	794.29	849.29	1,307.70	1,292.32	15.37	85.061	
3,500.00	3,481.79	3,522.13	3,518.85	9.06	7.37	129.81	783.17	853.58	1,314.38	1,298.51	15.87	82.800	
3,600.00	3,580.74	3,620.84	3,616.85	9.39	7.61	130.79	772.06	857.78	1,321.44	1,305.06	16.38	80.669	
3,700.00	3,679.70	3,720.30	3,715.59	9.72	7.85	131.76	760.82	861.85	1,328.71	1,311.82	16.89	78.670	
3,800.00	3,778.66	3,817.62	3,812.23	10.06	8.09	132.68	750.00	865.62	1,336.27	1,318.87	17.40	76.816	
3,900.00	3,877.62	3,915.14	3,909.14	10.39	8.33	133.58	739.64	869.13	1,344.18	1,326.28	17.90	75.086	
4,000.00	3,976.58	4,014.58	4,007.94	10.72	8.58	134.49	728.96	872.67	1,352.35	1,333.93	18.41	73.447	
4,100.00	4,075.54	4,113.37	4,106.03	11.06	8.83	135.40	717.80	876.31	1,360.71	1,341.79	18.92	71.912	
4,200.00	4,174.49	4,210.95	4,202.86	11.39	9.09	136.31	706.38	880.04	1,369.37	1,349.94	19.43	70.471	
4,300.00	4,273.45	4,309.39	4,300.51	11.73	9.35	137.23	694.55	883.90	1,378.34	1,358.39	19.94	69.109	
4,400.00	4,372.41	4,409.04	4,399.36	12.06	9.62	138.14	682.46	887.69	1,387.51	1,367.05	20.46	67.807	
4,500.00	4,471.37	4,506.77	4,496.29	12.40	9.88	139.03	670.56	891.28	1,396.90	1,375.92	20.98	66.596	
4,600.00	4,570.33	4,603.48	4,592.20	12.73	10.14	139.91	658.70	894.88	1,406.64	1,385.15	21.49	65.470	
4,700.00	4,669.28	4,700.26	4,688.18	13.07	10.41	140.77	646.81	898.52	1,416.75	1,394.76	21.99	64.426	
4,800.00	4,768.24	4,797.10	4,784.23	13.41	10.67	141.62	635.00	902.15	1,427.20	1,404.71	22.49	63.450	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed 0409 214H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 100-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
4,900.00	4,867.20	4,894.13	4,880.52	13.75	10.92	142.44	623.51	905.67	1,437.99	1,415.00	22.99	62.545	
5,000.00	4,966.16	4,991.76	4,977.47	14.09	11.18	143.24	612.56	909.01	1,449.07	1,425.58	23.49	61.688	
5,100.00	5,065.12	5,091.51	5,076.58	14.42	11.45	144.01	601.80	912.16	1,460.33	1,436.34	23.99	60.861	
5,200.00	5,164.08	5,194.67	5,179.13	14.76	11.72	144.79	590.98	915.10	1,471.65	1,447.14	24.51	60.047	
5,300.00	5,263.03	5,303.66	5,287.48	15.10	12.02	145.59	579.47	917.50	1,482.58	1,457.54	25.04	59.211	
5,400.00	5,361.99	5,405.32	5,388.56	15.44	12.29	146.33	568.69	919.13	1,493.17	1,467.62	25.55	58.448 SF	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 132H - Wellbore #1 - Plan 2													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD		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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
9,000.00	8,926.68	15,351.16	10,219.00	27.30	85.35	-26.19	238.56	-1,640.09	1,466.75	1,398.41	68.33	21.465			
9,066.33	8,993.00	15,351.16	10,219.00	27.39	85.35	-97.17	238.56	-1,640.09	1,407.34	1,337.91	69.44	20.268			
9,100.00	9,026.67	15,351.16	10,219.00	27.44	85.35	-97.17	238.56	-1,640.09	1,377.59	1,307.55	70.05	19.667			
9,200.00	9,126.67	15,351.16	10,219.00	27.60	85.35	-97.17	238.56	-1,640.09	1,290.38	1,218.35	72.03	17.915			
9,216.37	9,143.04	15,351.16	10,219.00	27.62	85.35	-97.17	238.56	-1,640.09	1,276.28	1,203.90	72.38	17.633			
9,250.00	9,176.65	15,351.16	10,219.00	27.67	85.35	88.42	238.56	-1,640.09	1,247.44	1,174.32	73.13	17.059			
9,300.00	9,226.37	15,351.16	10,219.00	27.72	85.35	96.44	238.56	-1,640.09	1,205.01	1,130.68	74.32	16.213			
9,350.00	9,275.46	15,351.16	10,219.00	27.76	85.35	103.80	238.56	-1,640.09	1,163.44	1,087.82	75.62	15.385			
9,400.00	9,323.54	15,351.16	10,219.00	27.79	85.35	110.29	238.56	-1,640.09	1,123.18	1,046.17	77.01	14.584			
9,450.00	9,370.25	15,351.16	10,219.00	27.80	85.35	115.84	238.56	-1,640.09	1,084.69	1,006.19	78.50	13.817			
9,500.00	9,415.23	15,351.16	10,219.00	27.81	85.35	120.48	238.56	-1,640.09	1,048.48	968.41	80.07	13.095			
9,550.00	9,458.13	15,351.16	10,219.00	27.80	85.35	124.27	238.56	-1,640.09	1,015.08	933.37	81.70	12.424			
9,600.00	9,498.64	15,326.31	10,219.00	27.80	84.92	126.19	213.72	-1,640.76	984.72	901.94	82.78	11.895			
9,650.00	9,536.44	15,293.62	10,219.00	27.78	84.36	127.40	181.04	-1,641.64	957.18	873.52	83.66	11.441			
9,700.00	9,571.25	15,257.76	10,219.00	27.77	83.75	128.22	145.20	-1,642.60	932.57	848.13	84.44	11.045			
9,750.00	9,602.80	15,219.01	10,219.00	27.76	83.08	128.73	106.46	-1,643.64	910.96	825.88	85.08	10.707			
9,800.00	9,630.85	15,177.65	10,219.00	27.76	82.38	129.01	65.11	-1,644.76	892.38	806.79	85.59	10.427			
9,850.00	9,655.19	15,134.01	10,219.00	27.76	81.63	129.10	21.49	-1,645.93	876.82	790.88	85.94	10.202			
9,900.00	9,675.63	15,088.41	10,219.00	27.77	80.85	129.08	-24.09	-1,647.16	864.26	778.11	86.14	10.033			
9,950.00	9,692.01	15,041.21	10,219.00	27.81	80.05	128.97	-71.28	-1,648.43	854.62	768.43	86.19	9.915			
10,000.00	9,704.22	14,992.75	10,219.00	27.86	79.22	128.82	-119.72	-1,649.73	847.86	761.78	86.08	9.849			
10,050.00	9,712.16	14,943.42	10,219.00	27.93	78.39	128.66	-169.03	-1,651.06	843.91	758.09	85.82	9.833			
10,096.87	9,715.67	14,896.71	10,219.00	28.03	77.59	128.51	-215.72	-1,652.31	842.71	757.26	85.45	9.862			
10,100.00	9,715.76	14,893.59	10,219.00	28.03	77.54	128.50	-218.85	-1,652.40	842.71	757.30	85.42	9.866			
10,116.37	9,716.00	14,877.22	10,219.00	28.07	77.26	128.46	-235.20	-1,652.84	842.92	757.66	85.25	9.887			
10,200.00	9,716.00	14,793.62	10,219.00	28.32	75.85	128.36	-318.77	-1,655.08	844.69	760.26	84.43	10.005			
10,300.00	9,716.00	14,693.66	10,219.00	28.73	74.16	128.25	-418.70	-1,657.77	846.81	763.27	83.54	10.137			
10,400.00	9,716.00	14,593.70	10,219.00	29.26	72.48	128.13	-518.63	-1,660.46	848.94	766.18	82.76	10.257			
10,500.00	9,716.00	14,493.73	10,219.00	29.90	70.81	128.02	-618.55	-1,663.15	851.07	768.99	82.09	10.368			
10,600.00	9,716.00	14,393.77	10,219.00	30.65	69.14	127.91	-718.48	-1,665.84	853.21	771.70	81.50	10.468			
10,700.00	9,716.00	14,293.81	10,219.00	31.50	67.48	127.80	-818.41	-1,668.53	855.34	774.34	81.00	10.559			
10,800.00	9,716.00	14,193.84	10,219.00	32.44	65.83	127.69	-918.34	-1,671.21	857.48	776.90	80.58	10.641			
10,900.00	9,716.00	14,093.88	10,219.00	33.46	64.19	127.58	-1,018.26	-1,673.90	859.63	779.40	80.23	10.715			
11,000.00	9,716.00	13,993.92	10,219.00	34.56	62.55	127.47	-1,118.19	-1,676.59	861.77	781.84	79.94	10.781			
11,100.00	9,716.00	13,893.95	10,219.00	35.71	60.93	127.36	-1,218.12	-1,679.28	863.92	784.22	79.71	10.839			
11,200.00	9,716.00	13,793.99	10,219.00	36.93	59.32	127.25	-1,318.05	-1,681.97	866.08	786.55	79.53	10.890			
11,300.00	9,716.00	13,694.03	10,219.00	38.20	57.71	127.14	-1,417.97	-1,684.66	868.23	788.84	79.39	10.936			
11,400.00	9,716.00	13,594.06	10,219.00	39.51	56.13	127.03	-1,517.90	-1,687.34	870.39	791.08	79.31	10.975			
11,500.00	9,716.00	13,494.10	10,219.00	40.86	54.55	126.93	-1,617.83	-1,690.03	872.55	793.29	79.26	11.009			
11,600.00	9,716.00	13,394.14	10,219.00	42.25	52.99	126.82	-1,717.75	-1,692.72	874.72	795.47	79.25	11.037			
11,700.00	9,716.00	13,294.17	10,219.00	43.68	51.44	126.71	-1,817.68	-1,695.41	876.89	797.60	79.28	11.060			
11,800.00	9,716.00	13,194.21	10,219.00	45.13	49.91	126.61	-1,917.61	-1,698.10	879.06	799.71	79.35	11.078			
11,900.00	9,716.00	13,094.25	10,219.00	46.61	48.40	126.50	-2,017.54	-1,700.79	881.23	801.78	79.45	11.092			
12,000.00	9,716.00	12,994.28	10,219.00	48.12	46.91	126.40	-2,117.46	-1,703.47	883.41	803.83	79.58	11.101			
12,100.00	9,716.00	12,894.32	10,219.00	49.64	45.44	126.30	-2,217.39	-1,706.16	885.59	805.84	79.75	11.105			
12,200.00	9,716.00	12,794.36	10,219.00	51.19	44.00	126.19	-2,317.32	-1,708.85	887.77	807.82	79.95	11.104			
12,300.00	9,716.00	12,694.39	10,219.00	52.76	42.58	126.09	-2,417.24	-1,711.54	889.96	809.77	80.19	11.098			
12,400.00	9,716.00	12,594.43	10,219.00	54.34	41.19	125.99	-2,517.17	-1,714.23	892.15	811.68	80.46	11.088			
12,500.00	9,716.00	12,494.47	10,219.00	55.94	39.84	125.89	-2,617.10	-1,716.91	894.34	813.56	80.77	11.072			
12,600.00	9,716.00	12,394.50	10,219.00	57.55	38.51	125.78	-2,717.03	-1,719.60	896.53	815.41	81.12	11.051			
12,700.00	9,716.00	12,294.54	10,219.00	59.17	37.23	125.68	-2,816.95	-1,722.29	898.73	817.21	81.52	11.025			
12,800.00	9,716.00	12,194.58	10,219.00	60.81	35.99	125.58	-2,916.88	-1,724.98	900.93	818.98	81.95	10.994			

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 132H - Wellbore #1 - Plan 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,900.00	9,716.00	12,094.61	10,219.00	62.45	34.80	125.48	-3,016.81	-1,727.67	903.13	820.70	82.43	10.956	
13,000.00	9,716.00	11,994.65	10,219.00	64.11	33.67	125.38	-3,116.74	-1,730.36	905.34	822.37	82.97	10.912	
13,100.00	9,716.00	11,894.69	10,219.00	65.77	32.60	125.28	-3,216.66	-1,733.04	907.55	823.99	83.56	10.862	
13,200.00	9,716.00	11,794.72	10,219.00	67.45	31.62	125.19	-3,316.59	-1,735.73	909.76	825.55	84.20	10.804	
13,300.00	9,716.00	11,694.76	10,219.00	69.13	30.75	125.09	-3,416.52	-1,738.42	911.97	827.06	84.91	10.740	
13,400.00	9,716.00	11,594.80	10,219.00	70.82	30.08	124.99	-3,516.44	-1,741.11	914.19	828.49	85.69	10.668	
13,500.00	9,716.00	11,494.83	10,219.00	72.52	29.67	124.89	-3,616.37	-1,743.80	916.40	829.86	86.54	10.589	
13,600.00	9,716.00	11,394.87	10,219.00	74.22	29.56	124.80	-3,716.30	-1,746.49	918.63	831.15	87.48	10.502	
13,700.00	9,716.00	11,294.91	10,219.00	75.93	29.61	124.70	-3,816.23	-1,749.17	920.85	832.36	88.49	10.406	
13,800.00	9,716.00	11,194.94	10,219.00	77.64	29.78	124.61	-3,916.15	-1,751.86	923.08	833.48	89.60	10.303	
13,900.00	9,716.00	11,094.98	10,219.00	79.36	30.01	124.51	-4,016.08	-1,754.55	925.30	834.51	90.79	10.191	
14,000.00	9,716.00	10,995.02	10,219.00	81.08	30.30	124.42	-4,116.01	-1,757.24	927.54	835.45	92.09	10.072	
14,100.00	9,716.00	10,895.05	10,219.00	82.81	30.64	124.32	-4,215.93	-1,759.93	929.77	836.28	93.49	9.945	
14,200.00	9,716.00	10,795.09	10,219.00	84.55	31.02	124.23	-4,315.86	-1,762.62	932.01	837.02	94.99	9.812	
14,300.00	9,716.00	10,436.80	10,149.64	86.28	32.68	120.25	-4,662.44	-1,771.94	930.49	833.87	96.62	9.630	
14,400.00	9,716.00	10,032.86	9,852.51	88.02	34.04	101.33	-4,923.56	-1,778.96	890.86	787.37	103.49	8.609	
14,500.00	9,716.00	9,943.40	9,766.89	89.77	34.12	95.22	-4,949.16	-1,779.65	850.31	740.88	109.43	7.771	
14,600.00	9,716.00	9,906.77	9,730.86	91.51	34.13	92.61	-4,955.73	-1,779.83	818.39	703.57	114.82	7.128	
14,700.00	9,716.00	9,887.01	9,711.27	93.27	34.12	91.19	-4,958.32	-1,779.90	797.29	677.97	119.33	6.682	
14,800.00	9,716.00	9,874.67	9,699.00	95.02	34.12	90.30	-4,959.59	-1,779.93	788.17	665.55	122.62	6.428	
14,823.06	9,716.00	9,872.46	9,696.79	95.42	34.12	90.14	-4,959.79	-1,779.94	787.84	664.66	123.18	6.396 CC, ES	
14,900.00	9,716.00	9,866.24	9,690.60	96.78	34.11	89.69	-4,960.31	-1,779.95	791.56	667.08	124.48	6.359 SF	
15,000.00	9,716.00	9,860.12	9,684.50	98.53	34.11	89.24	-4,960.75	-1,779.97	807.34	682.44	124.90	6.464	
15,100.00	9,716.00	9,850.00	9,674.39	100.30	34.11	88.51	-4,961.34	-1,779.98	834.87	710.78	124.09	6.728	
15,200.00	9,716.00	9,850.00	9,674.39	102.06	34.11	88.51	-4,961.34	-1,779.98	872.97	750.62	122.35	7.135	
15,300.00	9,716.00	9,850.00	9,674.39	103.83	34.11	88.51	-4,961.34	-1,779.98	920.41	800.39	120.02	7.669	
15,400.00	9,716.00	9,850.00	9,674.39	105.60	34.11	88.51	-4,961.34	-1,779.98	975.83	858.43	117.40	8.312	
15,500.00	9,716.00	9,850.00	9,674.39	107.37	34.11	88.51	-4,961.34	-1,779.98	1,037.94	923.27	114.67	9.052	
15,600.00	9,716.00	9,850.00	9,674.39	109.14	34.11	88.51	-4,961.34	-1,779.98	1,105.62	993.64	111.98	9.873	
15,700.00	9,716.00	9,841.26	9,665.66	110.91	34.10	87.87	-4,961.70	-1,779.99	1,177.83	1,068.42	109.40	10.766	
15,800.00	9,716.00	9,839.97	9,664.38	112.69	34.10	87.78	-4,961.75	-1,779.99	1,253.90	1,146.92	106.99	11.720	
15,900.00	9,716.00	9,838.85	9,663.25	114.47	34.09	87.70	-4,961.78	-1,779.99	1,333.14	1,228.40	104.75	12.727	
16,000.00	9,716.00	9,837.85	9,662.25	116.25	34.09	87.63	-4,961.81	-1,779.99	1,415.01	1,312.33	102.68	13.781	
16,100.00	9,716.00	9,836.96	9,661.37	118.03	34.09	87.56	-4,961.84	-1,779.99	1,499.08	1,398.30	100.78	14.875	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 212H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD					Rule Assigned:							Offset Well Error:	0.50 usft
Reference	Offset	Semi Maior Axis		Offset Wellbore Centre		Distance				Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
8,300.00	8,231.78	14,629.92	9,504.00	25.35	85.44	-33.60	238.69	-1,508.04	1,421.57	1,356.20	65.37	21.746			
8,400.00	8,330.74	14,629.92	9,504.00	25.70	85.44	-33.60	238.69	-1,508.04	1,326.49	1,259.91	66.57	19.925			
8,500.00	8,429.70	14,629.92	9,504.00	26.04	85.44	-33.60	238.69	-1,508.04	1,232.19	1,164.24	67.95	18.134			
8,600.00	8,528.65	14,629.92	9,504.00	26.38	85.44	-33.60	238.69	-1,508.04	1,138.86	1,069.32	69.53	16.378			
8,652.45	8,580.56	14,629.92	9,504.00	26.56	85.44	-33.60	238.69	-1,508.04	1,090.38	1,019.91	70.47	15.474			
8,700.00	8,627.67	14,629.92	9,504.00	26.70	85.44	-32.43	238.69	-1,508.04	1,046.89	975.50	71.39	14.663			
8,800.00	8,727.05	14,629.92	9,504.00	26.94	85.44	-30.37	238.69	-1,508.04	957.72	884.00	73.72	12.992			
8,900.00	8,826.76	14,629.92	9,504.00	27.14	85.44	-28.76	238.69	-1,508.04	872.51	795.87	76.64	11.384			
9,000.00	8,926.68	14,629.92	9,504.00	27.30	85.44	-27.50	238.69	-1,508.04	792.66	712.39	80.27	9.875			
9,066.33	8,993.00	14,629.92	9,504.00	27.39	85.44	-98.97	238.69	-1,508.04	743.56	660.46	83.10	8.948			
9,100.00	9,026.67	14,629.92	9,504.00	27.44	85.44	-98.97	238.69	-1,508.04	719.94	635.29	84.65	8.505			
9,200.00	9,126.67	14,629.92	9,504.00	27.60	85.44	-98.97	238.69	-1,508.04	655.01	565.43	89.58	7.312			
9,216.37	9,143.04	14,629.92	9,504.00	27.62	85.44	-98.97	238.69	-1,508.04	645.23	554.81	90.42	7.136			
9,250.00	9,176.65	14,629.92	9,504.00	27.67	85.44	83.38	238.69	-1,508.04	625.89	533.72	92.17	6.791			
9,300.00	9,226.37	14,629.92	9,504.00	27.72	85.44	86.54	238.69	-1,508.04	599.14	504.30	94.84	6.317			
9,350.00	9,275.46	14,629.92	9,504.00	27.76	85.44	89.26	238.69	-1,508.04	575.26	477.74	97.52	5.899			
9,400.00	9,323.54	14,629.92	9,504.00	27.79	85.44	91.50	238.69	-1,508.04	554.81	454.71	100.10	5.543			
9,450.00	9,370.25	14,629.92	9,504.00	27.80	85.44	93.24	238.69	-1,508.04	538.35	435.91	102.44	5.255			
9,500.00	9,415.23	14,629.92	9,504.00	27.81	85.44	94.47	238.69	-1,508.04	526.38	421.97	104.40	5.042			
9,550.00	9,458.13	14,629.92	9,504.00	27.80	85.44	95.19	238.69	-1,508.04	519.30	413.43	105.88	4.905			
9,600.00	9,498.64	14,601.39	9,504.00	27.80	84.95	92.90	210.18	-1,508.81	516.59	410.88	105.71	4.887 ES, SF			
9,616.41	9,511.36	14,591.03	9,504.00	27.79	84.77	92.02	199.81	-1,509.09	516.43	410.90	105.53	4.893 CC			
9,650.00	9,536.44	14,568.70	9,504.00	27.78	84.39	90.11	177.50	-1,509.69	517.07	412.06	105.02	4.924			
9,700.00	9,571.25	14,532.84	9,504.00	27.77	83.78	87.05	141.65	-1,510.65	520.11	416.17	103.94	5.004			
9,750.00	9,602.80	14,494.09	9,504.00	27.76	83.11	83.89	102.91	-1,511.69	525.01	422.40	102.61	5.117			
9,800.00	9,630.85	14,452.73	9,504.00	27.76	82.40	80.78	61.57	-1,512.81	531.09	429.94	101.15	5.251			
9,850.00	9,655.19	14,409.09	9,504.00	27.76	81.66	77.90	17.94	-1,513.98	537.70	438.03	99.67	5.395			
9,900.00	9,675.63	14,363.49	9,504.00	27.77	80.88	75.35	-27.64	-1,515.21	544.27	446.02	98.25	5.540			
9,950.00	9,692.01	14,316.29	9,504.00	27.81	80.07	73.23	-74.83	-1,516.48	550.30	453.35	96.95	5.676			
10,000.00	9,704.22	14,267.83	9,504.00	27.86	79.25	71.61	-123.26	-1,517.78	555.41	459.58	95.83	5.796			
10,050.00	9,712.16	14,218.50	9,504.00	27.93	78.41	70.52	-172.58	-1,519.11	559.31	464.41	94.90	5.894			
10,100.00	9,715.76	14,168.67	9,504.00	28.03	77.56	69.98	-222.39	-1,520.45	561.80	467.63	94.17	5.966			
10,116.37	9,716.00	14,152.30	9,504.00	28.07	77.29	69.93	-238.75	-1,520.89	562.30	468.32	93.98	5.983			
10,200.00	9,716.00	14,068.70	9,504.00	28.32	75.87	70.01	-322.32	-1,523.14	564.43	471.32	93.11	6.062			
10,300.00	9,716.00	13,968.74	9,504.00	28.73	74.18	70.10	-422.25	-1,525.82	566.97	474.80	92.17	6.152			
10,400.00	9,716.00	13,868.78	9,504.00	29.26	72.50	70.20	-522.17	-1,528.51	569.52	478.18	91.33	6.236			
10,500.00	9,716.00	13,768.81	9,504.00	29.90	70.82	70.29	-622.10	-1,531.20	572.06	481.46	90.60	6.314			
10,600.00	9,716.00	13,668.85	9,504.00	30.65	69.16	70.38	-722.03	-1,533.89	574.61	484.66	89.96	6.388			
10,700.00	9,716.00	13,568.89	9,504.00	31.50	67.49	70.47	-821.96	-1,536.58	577.16	487.77	89.40	6.456			
10,800.00	9,716.00	13,468.92	9,504.00	32.44	65.84	70.56	-921.88	-1,539.27	579.71	490.80	88.91	6.520			
10,900.00	9,716.00	13,368.96	9,504.00	33.46	64.20	70.65	-1,021.81	-1,541.96	582.27	493.77	88.50	6.580			
11,000.00	9,716.00	13,269.00	9,504.00	34.56	62.56	70.73	-1,121.74	-1,544.65	584.82	496.68	88.14	6.635			
11,100.00	9,716.00	13,169.03	9,504.00	35.71	60.93	70.82	-1,221.66	-1,547.34	587.38	499.54	87.84	6.687			
11,200.00	9,716.00	13,069.07	9,504.00	36.93	59.32	70.91	-1,321.59	-1,550.02	589.94	502.34	87.60	6.735			
11,300.00	9,716.00	12,969.11	9,504.00	38.20	57.71	70.99	-1,421.52	-1,552.71	592.49	505.09	87.40	6.779			
11,400.00	9,716.00	12,869.14	9,504.00	39.51	56.12	71.08	-1,521.45	-1,555.40	595.05	507.81	87.25	6.820			
11,500.00	9,716.00	12,769.18	9,504.00	40.86	54.54	71.16	-1,621.37	-1,558.09	597.62	510.48	87.14	6.858			
11,600.00	9,716.00	12,669.22	9,504.00	42.25	52.97	71.25	-1,721.30	-1,560.78	600.18	513.11	87.07	6.893			
11,700.00	9,716.00	12,569.25	9,504.00	43.68	51.42	71.33	-1,821.23	-1,563.47	602.74	515.70	87.04	6.925			
11,800.00	9,716.00	12,469.29	9,504.00	45.13	49.89	71.41	-1,921.16	-1,566.16	605.31	518.26	87.05	6.954			
11,900.00	9,716.00	12,369.33	9,504.00	46.61	48.37	71.49	-2,021.08	-1,568.85	607.87	520.78	87.09	6.980			
12,000.00	9,716.00	12,269.36	9,504.00	48.12	46.88	71.57	-2,121.01	-1,571.54	610.44	523.27	87.18	7.002			

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 212H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
12,100.00	9,716.00	12,169.40	9,504.00	49.64	45.40	71.65	-2,220.94	-1,574.22	613.01	525.71	87.30	7.022		
12,200.00	9,716.00	12,069.44	9,504.00	51.19	43.95	71.73	-2,320.86	-1,576.91	615.58	528.13	87.45	7.039		
12,300.00	9,716.00	11,969.47	9,504.00	52.76	42.53	71.81	-2,420.79	-1,579.60	618.15	530.50	87.65	7.052		
12,400.00	9,716.00	11,869.51	9,504.00	54.34	41.14	71.89	-2,520.72	-1,582.29	620.72	532.83	87.90	7.062		
12,500.00	9,716.00	11,769.55	9,504.00	55.94	39.77	71.97	-2,620.65	-1,584.98	623.30	535.12	88.18	7.068		
12,600.00	9,716.00	11,669.58	9,504.00	57.55	38.45	72.04	-2,720.57	-1,587.67	625.87	537.36	88.51	7.071		
12,700.00	9,716.00	11,569.62	9,504.00	59.17	37.16	72.12	-2,820.50	-1,590.36	628.45	539.55	88.90	7.069		
12,800.00	9,716.00	11,469.66	9,504.00	60.81	35.92	72.19	-2,920.43	-1,593.05	631.02	541.68	89.34	7.063		
12,900.00	9,716.00	11,369.69	9,504.00	62.45	34.73	72.27	-3,020.35	-1,595.73	633.60	543.76	89.84	7.052		
13,000.00	9,716.00	11,269.73	9,504.00	64.11	33.61	72.34	-3,120.28	-1,598.42	636.18	545.77	90.41	7.037		
13,100.00	9,716.00	11,169.77	9,504.00	65.77	32.56	72.42	-3,220.21	-1,601.11	638.76	547.71	91.05	7.016		
13,200.00	9,716.00	11,069.80	9,504.00	67.45	31.63	72.49	-3,320.14	-1,603.80	641.34	549.57	91.77	6.989		
13,300.00	9,716.00	10,969.84	9,504.00	69.13	30.84	72.56	-3,420.06	-1,606.49	643.92	551.34	92.58	6.955		
13,400.00	9,716.00	10,869.88	9,504.00	70.82	30.26	72.63	-3,519.99	-1,609.18	646.51	553.02	93.48	6.916		
13,500.00	9,716.00	10,769.91	9,504.00	72.52	29.92	72.71	-3,619.92	-1,611.87	649.09	554.60	94.49	6.869		
13,600.00	9,716.00	10,669.95	9,504.00	74.22	29.83	72.78	-3,719.84	-1,614.56	651.67	556.06	95.61	6.816		
13,700.00	9,716.00	10,569.99	9,504.00	75.93	29.87	72.85	-3,819.77	-1,617.25	654.26	557.41	96.85	6.755		
13,800.00	9,716.00	10,470.02	9,504.00	77.64	30.03	72.92	-3,919.70	-1,619.93	656.85	558.63	98.22	6.688		
13,900.00	9,716.00	10,370.06	9,504.00	79.36	30.26	72.99	-4,019.63	-1,622.62	659.44	559.72	99.72	6.613		
14,000.00	9,716.00	10,270.10	9,504.00	81.08	30.54	73.05	-4,119.55	-1,625.31	662.02	560.68	101.35	6.532		
14,100.00	9,716.00	10,170.13	9,504.00	82.81	30.88	73.12	-4,219.48	-1,628.00	664.61	561.50	103.12	6.445		
14,200.00	9,716.00	10,070.17	9,504.00	84.55	31.27	73.19	-4,319.41	-1,630.69	667.21	562.18	105.02	6.353		
14,300.00	9,716.00	9,977.81	9,503.56	86.28	31.68	73.21	-4,411.73	-1,633.17	669.97	562.93	107.04	6.259		
14,400.00	9,716.00	9,900.00	9,495.24	88.02	32.05	72.59	-4,489.00	-1,635.25	675.63	566.84	108.80	6.210		
14,500.00	9,716.00	9,833.14	9,479.78	89.77	32.37	71.39	-4,553.99	-1,637.00	685.41	575.33	110.08	6.226		
14,600.00	9,716.00	9,767.22	9,457.22	91.51	32.69	69.66	-4,615.88	-1,638.67	700.01	589.22	110.79	6.318		
14,700.00	9,716.00	9,700.00	9,427.07	93.27	33.01	67.40	-4,675.88	-1,640.28	720.24	609.38	110.85	6.497		
14,800.00	9,716.00	9,650.00	9,400.19	95.02	33.23	65.44	-4,718.01	-1,641.42	746.60	636.26	110.34	6.766		
14,900.00	9,716.00	9,600.00	9,369.74	96.78	33.45	63.29	-4,757.63	-1,642.48	779.65	670.38	109.27	7.135		
15,000.00	9,716.00	9,564.12	9,345.81	98.53	33.59	61.66	-4,784.36	-1,643.20	819.33	711.48	107.85	7.597		
15,100.00	9,716.00	9,527.37	9,319.63	100.30	33.74	59.94	-4,810.11	-1,643.89	865.51	759.36	106.15	8.154		
15,200.00	9,716.00	9,500.00	9,299.08	102.06	33.84	58.62	-4,828.19	-1,644.38	917.76	813.39	104.37	8.793		
15,300.00	9,716.00	9,466.72	9,272.97	103.83	33.95	57.00	-4,848.80	-1,644.93	975.45	872.95	102.50	9.517		
15,400.00	9,716.00	9,450.00	9,259.40	105.60	34.00	56.18	-4,858.58	-1,645.20	1,038.15	937.39	100.76	10.303		
15,500.00	9,716.00	9,419.48	9,233.94	107.37	34.09	54.69	-4,875.39	-1,645.65	1,105.00	1,006.01	98.99	11.162		
15,600.00	9,716.00	9,400.00	9,217.23	109.14	34.14	53.73	-4,885.40	-1,645.92	1,175.69	1,078.31	97.38	12.073		
15,700.00	9,716.00	9,382.12	9,201.60	110.91	34.18	52.86	-4,894.09	-1,646.15	1,249.64	1,153.78	95.86	13.036		
15,800.00	9,716.00	9,350.00	9,172.88	112.69	34.26	51.31	-4,908.45	-1,646.54	1,326.71	1,232.35	94.37	14.059		
15,900.00	9,716.00	9,350.00	9,172.88	114.47	34.26	51.31	-4,908.45	-1,646.54	1,405.64	1,312.50	93.14	15.092		
16,000.00	9,716.00	9,350.00	9,172.88	116.25	34.26	51.31	-4,908.45	-1,646.54	1,487.10	1,395.14	91.96	16.171		

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 222H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,900.00	8,826.76	14,710.94	9,664.00	27.14	84.25	-22.73	238.02	-2,168.28	1,460.10	1,369.81	90.29	16.171	
9,000.00	8,926.68	14,710.94	9,664.00	27.30	84.25	-22.16	238.02	-2,168.28	1,400.66	1,307.87	92.80	15.094	
9,066.33	8,993.00	14,710.94	9,664.00	27.39	84.25	-93.99	238.02	-2,168.28	1,365.37	1,270.88	94.49	14.450	
9,100.00	9,026.67	14,710.94	9,664.00	27.44	84.25	-93.99	238.02	-2,168.28	1,348.67	1,253.31	95.35	14.144	
9,200.00	9,126.67	14,710.94	9,664.00	27.60	84.25	-93.99	238.02	-2,168.28	1,302.93	1,205.07	97.86	13.314	
9,216.37	9,143.04	14,710.94	9,664.00	27.62	84.25	-93.99	238.02	-2,168.28	1,296.02	1,197.76	98.25	13.190	
9,250.00	9,176.65	14,710.94	9,664.00	27.67	84.25	87.52	238.02	-2,168.28	1,282.32	1,183.26	99.05	12.946	
9,300.00	9,226.37	14,710.94	9,664.00	27.72	84.25	89.59	238.02	-2,168.28	1,263.19	1,162.99	100.20	12.607	
9,350.00	9,275.46	14,710.94	9,664.00	27.76	84.25	91.45	238.02	-2,168.28	1,245.74	1,144.47	101.27	12.301	
9,400.00	9,323.54	14,710.94	9,664.00	27.79	84.25	93.09	238.02	-2,168.28	1,230.19	1,127.93	102.26	12.030	
9,450.00	9,370.25	14,710.94	9,664.00	27.80	84.25	94.48	238.02	-2,168.28	1,216.72	1,113.56	103.16	11.795	
9,500.00	9,415.23	14,710.94	9,664.00	27.81	84.25	95.63	238.02	-2,168.28	1,205.50	1,101.56	103.94	11.598	
9,550.00	9,458.13	14,710.94	9,664.00	27.80	84.25	96.52	238.02	-2,168.28	1,196.70	1,092.09	104.61	11.439	
9,600.00	9,498.64	14,700.79	9,664.00	27.80	84.07	96.76	227.88	-2,168.55	1,190.38	1,085.43	104.95	11.342	
9,650.00	9,536.44	14,668.10	9,664.00	27.78	83.51	96.01	195.20	-2,169.43	1,185.98	1,081.26	104.72	11.325	
9,700.00	9,571.25	14,632.24	9,664.00	27.77	82.88	95.08	159.35	-2,170.39	1,183.15	1,078.80	104.35	11.338	
9,750.00	9,602.80	14,593.48	9,664.00	27.76	82.21	94.05	120.61	-2,171.43	1,181.63	1,077.77	103.86	11.377	ES
9,800.00	9,630.85	14,552.13	9,664.00	27.76	81.49	92.97	79.27	-2,172.54	1,181.17	1,077.89	103.28	11.436	
9,800.67	9,631.20	14,551.56	9,664.00	27.76	81.48	92.96	78.70	-2,172.56	1,181.17	1,077.90	103.28	11.437	CC
9,850.00	9,655.19	14,508.48	9,664.00	27.76	80.74	91.90	35.64	-2,173.72	1,181.53	1,078.88	102.64	11.511	
9,900.00	9,675.63	14,462.89	9,664.00	27.77	79.95	90.91	-9.94	-2,174.94	1,182.45	1,080.49	101.97	11.597	
9,950.00	9,692.01	14,415.68	9,664.00	27.81	79.13	90.03	-57.13	-2,176.21	1,183.74	1,082.47	101.27	11.689	
10,000.00	9,704.22	14,367.23	9,664.00	27.86	78.29	89.31	-105.56	-2,177.51	1,185.20	1,084.63	100.57	11.784	
10,050.00	9,712.16	14,317.90	9,664.00	27.93	77.44	88.78	-154.88	-2,178.84	1,186.71	1,086.81	99.89	11.880	
10,100.00	9,715.76	14,268.06	9,664.00	28.03	76.58	88.47	-204.69	-2,180.17	1,188.15	1,088.91	99.24	11.973	
10,116.37	9,716.00	14,251.70	9,664.00	28.07	76.30	88.41	-221.05	-2,180.61	1,188.59	1,089.56	99.03	12.002	
10,200.00	9,716.00	14,168.10	9,664.00	28.32	74.86	88.42	-304.62	-2,182.86	1,190.85	1,092.83	98.02	12.149	
10,300.00	9,716.00	14,068.14	9,664.00	28.73	73.15	88.42	-404.55	-2,185.54	1,193.56	1,096.61	96.94	12.312	
10,400.00	9,716.00	13,968.17	9,664.00	29.26	71.44	88.42	-504.47	-2,188.23	1,196.26	1,100.27	95.99	12.463	
10,500.00	9,716.00	13,868.21	9,664.00	29.90	69.73	88.43	-604.40	-2,190.91	1,198.96	1,103.82	95.14	12.602	
10,600.00	9,716.00	13,768.25	9,664.00	30.65	68.03	88.43	-704.33	-2,193.60	1,201.66	1,107.26	94.40	12.729	
10,700.00	9,716.00	13,668.28	9,664.00	31.50	66.34	88.43	-804.26	-2,196.28	1,204.36	1,110.61	93.75	12.846	
10,800.00	9,716.00	13,568.32	9,664.00	32.44	64.66	88.44	-904.18	-2,198.97	1,207.06	1,113.87	93.19	12.953	
10,900.00	9,716.00	13,468.36	9,664.00	33.46	62.98	88.44	-1,004.11	-2,201.65	1,209.76	1,117.06	92.70	13.050	
11,000.00	9,716.00	13,368.39	9,664.00	34.56	61.31	88.44	-1,104.04	-2,204.33	1,212.47	1,120.18	92.29	13.138	
11,100.00	9,716.00	13,268.43	9,664.00	35.71	59.64	88.45	-1,203.97	-2,207.02	1,215.17	1,123.24	91.93	13.218	
11,200.00	9,716.00	13,168.47	9,664.00	36.93	57.99	88.45	-1,303.89	-2,209.70	1,217.87	1,126.24	91.63	13.291	
11,300.00	9,716.00	13,068.50	9,664.00	38.20	56.35	88.45	-1,403.82	-2,212.39	1,220.57	1,129.18	91.39	13.356	
11,400.00	9,716.00	12,968.54	9,664.00	39.51	54.72	88.46	-1,503.75	-2,215.07	1,223.27	1,132.08	91.19	13.415	
11,500.00	9,716.00	12,868.58	9,664.00	40.86	53.10	88.46	-1,603.68	-2,217.76	1,225.97	1,134.94	91.04	13.467	
11,600.00	9,716.00	12,768.61	9,664.00	42.25	51.49	88.47	-1,703.60	-2,220.44	1,228.67	1,137.75	90.93	13.513	
11,700.00	9,716.00	12,668.65	9,664.00	43.68	49.89	88.47	-1,803.53	-2,223.13	1,231.38	1,140.52	90.86	13.553	
11,800.00	9,716.00	12,568.69	9,664.00	45.13	48.32	88.47	-1,903.46	-2,225.81	1,234.08	1,143.25	90.83	13.587	
11,900.00	9,716.00	12,468.72	9,664.00	46.61	46.76	88.48	-2,003.39	-2,228.50	1,236.78	1,145.94	90.84	13.615	
12,000.00	9,716.00	12,368.76	9,664.00	48.12	45.21	88.48	-2,103.31	-2,231.18	1,239.48	1,148.59	90.89	13.637	
12,100.00	9,716.00	12,268.80	9,664.00	49.64	43.69	88.48	-2,203.24	-2,233.87	1,242.18	1,151.21	90.97	13.654	
12,200.00	9,716.00	12,168.83	9,664.00	51.19	42.19	88.49	-2,303.17	-2,236.55	1,244.88	1,153.78	91.10	13.665	
12,300.00	9,716.00	12,068.87	9,664.00	52.76	40.72	88.49	-2,403.09	-2,239.23	1,247.59	1,156.32	91.27	13.670	
12,400.00	9,716.00	11,968.90	9,664.00	54.34	39.27	88.49	-2,503.02	-2,241.92	1,250.29	1,158.81	91.47	13.668	
12,500.00	9,716.00	11,868.94	9,664.00	55.94	37.86	88.49	-2,602.95	-2,244.60	1,252.99	1,161.26	91.73	13.660	
12,600.00	9,716.00	11,768.98	9,664.00	57.55	36.48	88.50	-2,702.88	-2,247.29	1,255.69	1,163.66	92.03	13.645	
12,700.00	9,716.00	11,669.01	9,664.00	59.17	35.13	88.50	-2,802.80	-2,249.97	1,258.39	1,166.02	92.38	13.623	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 222H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,800.00	9,716.00	11,569.05	9,664.00	60.81	33.83	88.50	-2,902.73	-2,252.66	1,261.09	1,168.31	92.78	13.592	
12,900.00	9,716.00	11,469.09	9,664.00	62.45	32.57	88.51	-3,002.66	-2,255.34	1,263.80	1,170.55	93.24	13.554	
13,000.00	9,716.00	11,369.12	9,664.00	64.11	31.37	88.51	-3,102.59	-2,258.03	1,266.50	1,172.72	93.77	13.506	
13,100.00	9,716.00	11,269.16	9,664.00	65.77	30.23	88.51	-3,202.51	-2,260.71	1,269.20	1,174.82	94.37	13.449	
13,200.00	9,716.00	11,169.20	9,664.00	67.45	29.15	88.52	-3,302.44	-2,263.40	1,271.90	1,176.85	95.05	13.381	
13,300.00	9,716.00	11,069.23	9,664.00	69.13	28.14	88.52	-3,402.37	-2,266.08	1,274.60	1,178.79	95.82	13.303	
13,400.00	9,716.00	10,969.27	9,664.00	70.82	27.22	88.52	-3,502.30	-2,268.76	1,277.30	1,180.63	96.67	13.213	
13,500.00	9,716.00	10,869.31	9,664.00	72.52	26.39	88.53	-3,602.22	-2,271.45	1,280.01	1,182.37	97.63	13.110	
13,600.00	9,716.00	10,769.34	9,664.00	74.22	25.69	88.53	-3,702.15	-2,274.13	1,282.71	1,184.01	98.70	12.996	
13,700.00	9,716.00	10,669.38	9,664.00	75.93	25.14	88.53	-3,802.08	-2,276.82	1,285.41	1,185.52	99.89	12.868	
13,800.00	9,716.00	10,569.42	9,664.00	77.64	24.80	88.54	-3,902.01	-2,279.50	1,288.11	1,186.90	101.21	12.728	
13,900.00	9,716.00	10,469.45	9,664.00	79.36	24.69	88.54	-4,001.93	-2,282.19	1,290.81	1,188.16	102.65	12.575	
14,000.00	9,716.00	10,369.49	9,664.00	81.08	24.76	88.54	-4,101.86	-2,284.87	1,293.51	1,189.28	104.24	12.410	
14,100.00	9,716.00	10,269.53	9,664.00	82.81	24.96	88.55	-4,201.79	-2,287.56	1,296.22	1,190.26	105.96	12.233	
14,200.00	9,716.00	10,169.56	9,664.00	84.55	25.27	88.55	-4,301.72	-2,290.24	1,298.92	1,191.10	107.82	12.047	
14,300.00	9,716.00	10,070.27	9,663.88	86.28	25.65	88.55	-4,400.97	-2,292.91	1,301.62	1,191.81	109.81	11.853	
14,400.00	9,716.00	9,976.93	9,654.39	88.02	26.08	88.13	-4,493.69	-2,295.40	1,304.62	1,192.68	111.94	11.655	
14,500.00	9,716.00	9,888.86	9,631.76	89.77	26.51	87.14	-4,578.68	-2,297.68	1,308.43	1,194.30	114.13	11.465	
14,600.00	9,716.00	9,809.31	9,600.33	91.51	26.91	85.78	-4,651.67	-2,299.64	1,313.81	1,197.52	116.29	11.298	
14,700.00	9,716.00	9,739.66	9,564.74	93.27	27.26	84.24	-4,711.46	-2,301.25	1,321.71	1,203.41	118.30	11.172	
14,800.00	9,716.00	9,679.87	9,528.59	95.02	27.54	82.68	-4,759.04	-2,302.53	1,333.06	1,212.99	120.07	11.102	
14,900.00	9,716.00	9,629.02	9,494.08	96.78	27.77	81.21	-4,796.35	-2,303.53	1,348.60	1,227.09	121.51	11.098 SF	
15,000.00	9,716.00	9,585.89	9,462.31	98.53	27.96	79.86	-4,825.50	-2,304.31	1,368.86	1,246.27	122.59	11.166	
15,100.00	9,716.00	9,550.00	9,434.27	100.30	28.10	78.69	-4,847.87	-2,304.91	1,394.16	1,270.88	123.27	11.309	
15,200.00	9,716.00	9,517.94	9,408.07	102.06	28.21	77.60	-4,866.34	-2,305.41	1,424.60	1,301.03	123.58	11.528	
15,300.00	9,716.00	9,500.00	9,392.97	103.83	28.27	76.97	-4,876.03	-2,305.67	1,460.23	1,336.71	123.52	11.822	

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 235H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.30	0.30	0.50	0.50	140.08	-30.67	25.66	39.99				
100.00	100.00	100.30	100.30	0.51	0.51	140.08	-30.67	25.66	39.99	38.97	1.01	39.428	
200.00	200.00	200.30	200.30	0.59	0.59	140.08	-30.67	25.66	39.99	38.81	1.18	34.005	
300.00	300.00	300.30	300.30	0.73	0.73	140.08	-30.67	25.66	39.99	38.53	1.46	27.327	
400.00	400.00	400.30	400.30	0.91	0.91	140.08	-30.67	25.66	39.99	38.17	1.82	22.000	
500.00	500.00	500.30	500.30	1.10	1.10	140.08	-30.67	25.66	39.99	37.78	2.21	18.119	
600.00	600.00	600.30	600.30	1.31	1.31	140.08	-30.67	25.66	39.99	37.37	2.62	15.288	
700.00	700.00	700.30	700.30	1.52	1.52	140.08	-30.67	25.66	39.99	36.95	3.04	13.172	
800.00	800.00	800.30	800.30	1.73	1.73	140.08	-30.67	25.66	39.99	36.53	3.46	11.546	
900.00	900.00	900.30	900.30	1.95	1.95	140.08	-30.67	25.66	39.99	36.09	3.90	10.264	
1,000.00	1,000.00	1,000.30	1,000.30	2.17	2.17	140.08	-30.67	25.66	39.99	35.66	4.33	9.231	
1,100.00	1,100.00	1,100.30	1,100.30	2.38	2.39	140.08	-30.67	25.66	39.99	35.22	4.77	8.382	
1,200.00	1,200.00	1,200.30	1,200.30	2.61	2.61	140.08	-30.67	25.66	39.99	34.78	5.21	7.674 CC, ES	
1,300.00	1,299.99	1,300.29	1,300.29	2.82	2.83	-148.43	-30.67	25.66	40.73	35.09	5.64	7.217	
1,400.00	1,399.96	1,400.26	1,400.26	3.02	3.05	-150.25	-30.67	25.66	42.98	36.91	6.07	7.081	
1,500.00	1,499.86	1,500.16	1,500.16	3.23	3.27	-152.88	-30.67	25.66	46.82	40.32	6.50	7.202	
1,600.00	1,599.68	1,599.98	1,599.98	3.45	3.49	-155.90	-30.67	25.66	52.33	45.39	6.94	7.545	
1,700.00	1,699.37	1,699.67	1,699.67	3.67	3.71	-158.96	-30.67	25.66	59.58	52.21	7.37	8.082	
1,800.00	1,798.90	1,799.20	1,799.20	3.91	3.94	-161.80	-30.67	25.66	68.61	60.80	7.81	8.783	
1,900.00	1,898.26	1,898.56	1,898.56	4.16	4.16	-164.32	-30.67	25.66	79.45	71.20	8.25	9.626	
2,000.00	1,997.40	2,000.82	2,000.80	4.42	4.38	-166.81	-29.43	24.39	90.42	81.72	8.69	10.399	
2,027.76	2,024.88	2,029.30	2,029.26	4.49	4.44	-167.54	-28.63	23.58	93.18	84.36	8.82	10.569	
2,100.00	2,096.37	2,103.62	2,103.45	4.69	4.61	-169.48	-25.61	20.49	99.35	90.22	9.13	10.885	
2,200.00	2,195.33	2,203.59	2,203.14	4.98	4.83	-172.01	-20.41	15.20	106.51	96.94	9.57	11.135	
2,300.00	2,294.29	2,303.23	2,302.51	5.27	5.05	-174.21	-15.22	9.90	113.83	103.82	10.01	11.374	
2,400.00	2,393.25	2,402.87	2,401.87	5.57	5.28	-176.14	-10.03	4.61	121.30	110.85	10.45	11.604	
2,500.00	2,492.20	2,502.52	2,501.24	5.87	5.51	-177.85	-4.84	-0.69	128.90	117.99	10.90	11.823	
2,600.00	2,591.16	2,602.16	2,600.61	6.18	5.74	-179.37	0.35	-5.98	136.59	125.24	11.35	12.030	
2,700.00	2,690.12	2,701.80	2,699.97	6.49	5.98	-179.28	5.54	-11.27	144.37	132.56	11.81	12.226	
2,800.00	2,789.08	2,801.44	2,799.34	6.80	6.21	-178.06	10.73	-16.57	152.22	139.95	12.27	12.410	
2,900.00	2,888.04	2,901.08	2,898.70	7.12	6.45	-176.97	15.92	-21.86	160.13	147.41	12.73	12.582	
3,000.00	2,986.99	3,000.73	2,998.07	7.44	6.69	-175.97	21.11	-27.16	168.10	154.91	13.19	12.744	
3,100.00	3,085.95	3,100.37	3,097.43	7.76	6.93	-175.07	26.30	-32.45	176.11	162.45	13.66	12.896	
3,200.00	3,184.91	3,200.01	3,196.80	8.08	7.18	-174.25	31.49	-37.74	184.16	170.04	14.12	13.039	
3,300.00	3,283.87	3,299.65	3,296.17	8.41	7.42	-173.49	36.68	-43.04	192.25	177.65	14.59	13.173	
3,400.00	3,382.83	3,399.29	3,395.53	8.74	7.67	-172.80	41.88	-48.33	200.36	185.30	15.07	13.299	
3,500.00	3,481.79	3,498.94	3,494.90	9.06	7.91	-172.16	47.07	-53.63	208.50	192.96	15.54	13.417	
3,600.00	3,580.74	3,598.58	3,594.26	9.39	8.16	-171.57	52.26	-58.92	216.67	200.65	16.02	13.529	
3,700.00	3,679.70	3,698.22	3,693.63	9.72	8.41	-171.02	57.45	-64.21	224.86	208.37	16.49	13.633	
3,800.00	3,778.66	3,797.86	3,793.00	10.06	8.65	-170.51	62.64	-69.51	233.07	216.09	16.97	13.732	
3,900.00	3,877.62	3,897.50	3,892.36	10.39	8.90	-170.03	67.83	-74.80	241.29	223.84	17.45	13.825	
4,000.00	3,976.58	3,997.15	3,991.73	10.72	9.15	-169.59	73.02	-80.10	249.53	231.59	17.93	13.913	
4,100.00	4,075.54	4,096.79	4,091.09	11.06	9.40	-169.18	78.21	-85.39	257.78	239.36	18.42	13.996	
4,200.00	4,174.49	4,196.43	4,190.46	11.39	9.65	-168.79	83.40	-90.68	266.05	247.15	18.90	14.075	
4,300.00	4,273.45	4,296.07	4,289.82	11.73	9.90	-168.42	88.59	-95.98	274.33	254.94	19.39	14.150	
4,400.00	4,372.41	4,395.71	4,389.19	12.06	10.15	-168.07	93.78	-101.27	282.61	262.74	19.87	14.220	
4,500.00	4,471.37	4,495.36	4,488.56	12.40	10.41	-167.75	98.97	-106.57	290.91	270.55	20.36	14.288	
4,600.00	4,570.33	4,595.00	4,587.92	12.73	10.66	-167.44	104.16	-111.86	299.22	278.37	20.85	14.351	
4,700.00	4,669.28	4,694.64	4,687.29	13.07	10.91	-167.15	109.35	-117.15	307.53	286.19	21.34	14.412	
4,800.00	4,768.24	4,794.28	4,786.65	13.41	11.16	-166.88	114.54	-122.45	315.85	294.03	21.83	14.470	
4,900.00	4,867.20	4,893.92	4,886.02	13.75	11.42	-166.62	119.73	-127.74	324.18	301.86	22.32	14.525	
5,000.00	4,966.16	4,993.57	4,985.38	14.09	11.67	-166.37	124.92	-133.04	332.52	309.71	22.81	14.578	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 235H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Rule Assigned:													Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,065.12	5,093.21	5,084.75	14.42	11.92	166.13	130.11	-138.33	340.86	317.56	23.30	14.628	
5,200.00	5,164.08	5,192.85	5,184.12	14.76	12.18	165.91	135.30	-143.62	349.21	325.41	23.79	14.676	
5,300.00	5,263.03	5,292.49	5,283.48	15.10	12.43	165.69	140.49	-148.92	357.56	333.27	24.29	14.721	
5,400.00	5,361.99	5,392.13	5,382.85	15.44	12.68	165.49	145.68	-154.21	365.91	341.13	24.78	14.765	
5,500.00	5,460.95	5,491.78	5,482.21	15.78	12.94	165.29	150.87	-159.50	374.27	349.00	25.28	14.807	
5,600.00	5,559.91	5,591.42	5,581.58	16.12	13.19	165.11	156.06	-164.80	382.64	356.87	25.77	14.848	
5,700.00	5,658.87	5,691.06	5,680.94	16.46	13.45	164.93	161.26	-170.09	391.01	364.74	26.27	14.886	
5,800.00	5,757.82	5,790.70	5,780.31	16.80	13.70	164.76	166.45	-175.39	399.38	372.62	26.76	14.923	
5,900.00	5,856.78	5,890.34	5,879.68	17.14	13.96	164.59	171.64	-180.68	407.75	380.50	27.26	14.959	
6,000.00	5,955.74	5,989.99	5,979.04	17.48	14.21	164.44	176.83	-185.97	416.13	388.38	27.76	14.993	
6,100.00	6,054.70	6,089.63	6,078.41	17.82	14.47	164.28	182.02	-191.27	424.52	396.26	28.25	15.026	
6,200.00	6,153.66	6,189.27	6,177.77	18.17	14.72	164.14	187.21	-196.56	432.90	404.15	28.75	15.058	
6,300.00	6,252.62	6,288.91	6,277.14	18.51	14.98	164.00	192.40	-201.86	441.29	412.04	29.25	15.088	
6,400.00	6,351.57	6,388.55	6,376.51	18.85	15.24	163.86	197.59	-207.15	449.68	419.93	29.75	15.118	
6,500.00	6,450.53	6,488.19	6,475.87	19.19	15.49	163.74	202.78	-212.44	458.07	427.83	30.24	15.146	
6,600.00	6,549.49	6,587.84	6,575.24	19.53	15.75	163.61	207.97	-217.74	466.46	435.72	30.74	15.173	
6,700.00	6,648.45	6,687.48	6,674.60	19.87	16.00	163.49	213.16	-223.03	474.86	443.62	31.24	15.200	
6,800.00	6,747.41	6,787.12	6,773.97	20.21	16.26	163.37	218.35	-228.33	483.26	451.52	31.74	15.225	
6,900.00	6,846.37	6,886.76	6,873.33	20.56	16.52	163.26	223.54	-233.62	491.66	459.42	32.24	15.250	
7,000.00	6,945.32	6,986.40	6,972.70	20.90	16.77	163.15	228.73	-238.91	500.06	467.32	32.74	15.274	
7,100.00	7,044.28	7,086.05	7,072.07	21.24	17.03	163.05	233.92	-244.21	508.47	475.23	33.24	15.297	
7,200.00	7,143.24	7,185.69	7,171.43	21.58	17.29	162.94	239.11	-249.50	516.87	483.13	33.74	15.319	
7,300.00	7,242.20	7,285.33	7,270.80	21.93	17.54	162.85	244.30	-254.80	525.28	491.04	34.24	15.341	
7,400.00	7,341.16	7,384.97	7,370.16	22.27	17.80	162.75	249.49	-260.09	533.69	498.95	34.74	15.362	
7,500.00	7,440.11	7,484.61	7,469.53	22.61	18.06	162.66	254.68	-265.38	542.10	506.86	35.24	15.382	
7,600.00	7,539.07	7,584.26	7,568.89	22.95	18.31	162.57	259.87	-270.68	550.51	514.77	35.74	15.402	
7,700.00	7,638.03	7,683.90	7,668.26	23.30	18.57	162.48	265.06	-275.97	558.92	522.68	36.24	15.421	
7,800.00	7,736.99	7,783.54	7,767.63	23.64	18.83	162.40	270.25	-281.27	567.34	530.59	36.75	15.439	
7,900.00	7,835.95	7,883.18	7,866.99	23.98	19.08	162.32	275.44	-286.56	575.75	538.50	37.25	15.457	
8,000.00	7,934.91	7,982.82	7,966.36	24.32	19.34	162.24	280.64	-291.85	584.17	546.42	37.75	15.475	
8,100.00	8,033.86	8,082.47	8,065.72	24.67	19.60	162.16	285.83	-297.15	592.59	554.33	38.25	15.492	
8,200.00	8,132.82	8,182.11	8,165.09	25.01	19.86	162.08	291.02	-302.44	601.00	562.25	38.75	15.508	
8,300.00	8,231.78	8,281.75	8,264.45	25.35	20.11	162.01	296.21	-307.74	609.42	570.17	39.26	15.524	
8,400.00	8,330.74	8,381.39	8,363.82	25.70	20.37	161.94	301.40	-313.03	617.84	578.09	39.76	15.540	
8,500.00	8,429.70	8,481.03	8,463.19	26.04	20.63	161.87	306.59	-318.32	626.27	586.00	40.26	15.555	
8,600.00	8,528.65	8,580.68	8,562.55	26.38	20.89	161.80	311.78	-323.62	634.69	593.92	40.76	15.570	
8,652.45	8,580.56	8,632.94	8,614.67	26.56	21.02	161.77	314.50	-326.39	639.11	598.08	41.03	15.577	
8,700.00	8,627.67	8,674.54	8,656.17	26.70	21.12	161.77	316.51	-328.44	642.93	601.71	41.22	15.597	
8,800.00	8,727.05	8,760.49	8,742.03	26.94	21.28	161.83	319.32	-331.31	650.09	608.54	41.55	15.645	
8,900.00	8,826.76	8,846.38	8,827.90	27.14	21.43	161.95	320.33	-332.34	656.07	614.23	41.84	15.680	
9,000.00	8,926.68	8,945.46	8,926.98	27.30	21.61	162.08	320.33	-332.34	659.93	617.74	42.19	15.640	
9,066.33	8,993.00	9,011.89	8,993.40	27.39	21.74	89.98	320.24	-332.34	660.66	618.22	42.44	15.568	
9,100.00	9,026.67	9,045.82	9,027.29	27.44	21.80	90.12	318.62	-332.35	660.65	618.11	42.54	15.529	
9,137.79	9,064.46	9,083.52	9,064.76	27.50	21.84	90.48	314.47	-332.39	660.63	618.01	42.62	15.500	
9,200.00	9,126.67	9,143.93	9,123.99	27.60	21.89	91.50	302.72	-332.49	660.75	618.06	42.69	15.478	
9,216.37	9,143.04	9,159.36	9,138.89	27.62	21.90	91.84	298.73	-332.52	660.84	618.14	42.69	15.479	
9,250.00	9,176.65	9,190.60	9,168.71	27.67	21.91	-87.39	289.41	-332.60	661.12	618.43	42.69	15.488	
9,300.00	9,226.37	9,236.26	9,211.27	27.72	21.92	-86.28	272.91	-332.74	661.71	619.06	42.66	15.513	
9,350.00	9,275.46	9,281.06	9,251.62	27.76	21.92	-85.21	253.48	-332.90	662.51	619.90	42.61	15.550	
9,400.00	9,323.54	9,325.08	9,289.68	27.79	21.91	-84.18	231.37	-333.08	663.46	620.92	42.54	15.595	
9,450.00	9,370.25	9,368.39	9,325.35	27.80	21.89	-83.19	206.84	-333.29	664.55	622.08	42.47	15.647	
9,500.00	9,415.23	9,411.06	9,358.59	27.81	21.87	-82.25	180.09	-333.51	665.74	623.34	42.40	15.703	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 235H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,550.00	9,458.13	9,450.00	9,387.11	27.80	21.85	-81.42	153.59	-333.73	666.99	624.68	42.31	15.765	
9,600.00	9,498.64	9,494.74	9,417.56	27.80	21.83	-80.54	120.84	-334.01	668.25	626.00	42.25	15.817	
9,650.00	9,536.44	9,535.87	9,443.23	27.78	21.81	-79.78	88.72	-334.28	669.50	627.31	42.19	15.869	
9,700.00	9,571.25	9,576.59	9,466.30	27.77	21.79	-79.09	55.18	-334.56	670.70	628.56	42.14	15.914	
9,750.00	9,602.80	9,616.95	9,486.77	27.76	21.77	-78.46	20.39	-334.85	671.82	629.70	42.12	15.950	
9,800.00	9,630.85	9,657.01	9,504.61	27.76	21.77	-77.91	-15.46	-335.15	672.82	630.70	42.12	15.973	
9,850.00	9,655.19	9,700.00	9,520.92	27.76	21.77	-77.41	-55.22	-335.48	673.70	631.52	42.18	15.974	
9,900.00	9,675.63	9,736.39	9,532.37	27.77	21.78	-77.04	-89.76	-335.77	674.38	632.16	42.22	15.972	
9,950.00	9,692.01	9,775.78	9,542.26	27.81	21.83	-76.73	-127.88	-336.09	674.89	632.55	42.34	15.941	
10,000.00	9,704.22	9,815.04	9,549.48	27.86	21.90	-76.49	-166.46	-336.41	675.19	632.71	42.49	15.891	
10,050.00	9,712.16	9,850.00	9,553.68	27.93	21.99	-76.35	-201.16	-336.70	675.30	632.65	42.65	15.834	
10,100.00	9,715.76	9,893.29	9,555.94	28.03	22.14	-76.27	-244.38	-337.06	675.15	632.22	42.93	15.726	
10,116.37	9,716.00	9,907.36	9,556.00	28.07	22.20	-76.26	-258.44	-337.18	675.05	632.02	43.04	15.685	
10,200.00	9,716.00	9,990.98	9,556.00	28.32	22.60	-76.25	-342.07	-337.88	674.36	630.57	43.79	15.400	
10,300.00	9,716.00	10,090.98	9,556.00	28.73	23.22	-76.23	-442.06	-338.72	673.53	628.60	44.93	14.990	
10,400.00	9,716.00	10,190.98	9,556.00	29.26	23.96	-76.21	-542.05	-339.55	672.70	626.38	46.32	14.522	
10,500.00	9,716.00	10,290.97	9,556.00	29.90	24.81	-76.20	-642.05	-340.39	671.87	623.94	47.94	14.016	
10,600.00	9,716.00	10,390.97	9,556.00	30.65	25.76	-76.18	-742.04	-341.23	671.04	621.29	49.76	13.487	
10,700.00	9,716.00	10,490.97	9,556.00	31.50	26.80	-76.16	-842.03	-342.06	670.21	618.46	51.76	12.950	
10,800.00	9,716.00	10,590.96	9,556.00	32.44	27.91	-76.14	-942.02	-342.90	669.39	615.47	53.92	12.415	
10,900.00	9,716.00	10,690.96	9,556.00	33.46	29.10	-76.13	-1,042.02	-343.74	668.56	612.33	56.22	11.891	
11,000.00	9,716.00	10,790.95	9,556.00	34.56	30.36	-76.11	-1,142.01	-344.57	667.73	609.07	58.65	11.384	
11,100.00	9,716.00	10,890.95	9,556.00	35.71	31.66	-76.09	-1,242.00	-345.41	666.90	605.70	61.20	10.898	
11,200.00	9,716.00	10,990.95	9,556.00	36.93	33.02	-76.07	-1,342.00	-346.25	666.07	602.24	63.84	10.434	
11,300.00	9,716.00	11,090.94	9,556.00	38.20	34.42	-76.06	-1,441.99	-347.08	665.24	598.68	66.56	9.994	
11,400.00	9,716.00	11,190.94	9,556.00	39.51	35.86	-76.04	-1,541.98	-347.92	664.41	595.05	69.36	9.579	
11,500.00	9,716.00	11,290.94	9,556.00	40.86	37.33	-76.02	-1,641.97	-348.76	663.59	591.36	72.23	9.187	
11,600.00	9,716.00	11,390.93	9,556.00	42.25	38.83	-76.00	-1,741.97	-349.59	662.76	587.60	75.16	8.818	
11,700.00	9,716.00	11,490.93	9,556.00	43.68	40.36	-75.98	-1,841.96	-350.43	661.93	583.79	78.14	8.471	
11,800.00	9,716.00	11,590.93	9,556.00	45.13	41.91	-75.97	-1,941.95	-351.27	661.10	579.94	81.16	8.145	
11,900.00	9,716.00	11,690.92	9,556.00	46.61	43.49	-75.95	-2,041.95	-352.10	660.27	576.04	84.23	7.839	
12,000.00	9,716.00	11,790.92	9,556.00	48.12	45.08	-75.93	-2,141.94	-352.94	659.45	572.11	87.34	7.551	
12,100.00	9,716.00	11,890.91	9,556.00	49.64	46.69	-75.91	-2,241.93	-353.78	658.62	568.14	90.47	7.280	
12,200.00	9,716.00	11,990.91	9,556.00	51.19	48.32	-75.89	-2,341.92	-354.61	657.79	564.15	93.64	7.025	
12,300.00	9,716.00	12,090.91	9,556.00	52.76	49.96	-75.88	-2,441.92	-355.45	656.96	560.13	96.84	6.784	
12,400.00	9,716.00	12,190.90	9,556.00	54.34	51.61	-75.86	-2,541.91	-356.29	656.13	556.08	100.05	6.558	
12,500.00	9,716.00	12,290.90	9,556.00	55.94	53.27	-75.84	-2,641.90	-357.12	655.31	552.01	103.29	6.344	
12,600.00	9,716.00	12,390.90	9,556.00	57.55	54.95	-75.82	-2,741.90	-357.96	654.48	547.93	106.55	6.142	
12,700.00	9,716.00	12,490.89	9,556.00	59.17	56.63	-75.80	-2,841.89	-358.79	653.65	543.82	109.83	5.951	
12,800.00	9,716.00	12,590.89	9,556.00	60.81	58.32	-75.79	-2,941.88	-359.63	652.82	539.70	113.13	5.771	
12,900.00	9,716.00	12,690.89	9,556.00	62.45	60.02	-75.77	-3,041.87	-360.47	652.00	535.56	116.44	5.600	
13,000.00	9,716.00	12,790.88	9,556.00	64.11	61.73	-75.75	-3,141.87	-361.30	651.17	531.41	119.76	5.437	
13,100.00	9,716.00	12,890.88	9,556.00	65.77	63.44	-75.73	-3,241.86	-362.14	650.34	527.25	123.10	5.283	
13,200.00	9,716.00	12,990.87	9,556.00	67.45	65.16	-75.71	-3,341.85	-362.98	649.52	523.07	126.44	5.137	
13,300.00	9,716.00	13,090.87	9,556.00	69.13	66.89	-75.69	-3,441.85	-363.81	648.69	518.89	129.80	4.998	
13,400.00	9,716.00	13,190.87	9,556.00	70.82	68.62	-75.67	-3,541.84	-364.65	647.86	514.69	133.17	4.865	
13,500.00	9,716.00	13,290.86	9,556.00	72.52	70.35	-75.66	-3,641.83	-365.49	647.03	510.49	136.54	4.739	
13,600.00	9,716.00	13,390.86	9,556.00	74.22	72.09	-75.64	-3,741.82	-366.32	646.21	506.28	139.93	4.618	
13,700.00	9,716.00	13,490.86	9,556.00	75.93	73.84	-75.62	-3,841.82	-367.16	645.38	502.06	143.32	4.503	
13,800.00	9,716.00	13,590.85	9,556.00	77.64	75.59	-75.60	-3,941.81	-368.00	644.55	497.83	146.72	4.393	
13,900.00	9,716.00	13,690.85	9,556.00	79.36	77.34	-75.58	-4,041.80	-368.83	643.73	493.60	150.13	4.288	
14,000.00	9,716.00	13,790.85	9,556.00	81.08	79.09	-75.56	-4,141.80	-369.67	642.90	489.36	153.54	4.187	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 04 235H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,100.00	9,716.00	13,890.84	9,556.00	82.81	80.85	-75.54	-4,241.79	-370.51	642.07	485.12	156.95	4.091	
14,200.00	9,716.00	13,990.84	9,556.00	84.55	82.62	-75.52	-4,341.78	-371.34	641.25	480.87	160.38	3.998	
14,300.00	9,716.00	14,090.83	9,556.00	86.28	84.38	-75.50	-4,441.77	-372.18	640.42	476.62	163.80	3.910	
14,400.00	9,716.00	14,190.83	9,556.00	88.02	86.15	-75.48	-4,541.77	-373.02	639.59	472.36	167.24	3.824	
14,500.00	9,716.00	14,290.83	9,556.00	89.77	87.92	-75.47	-4,641.76	-373.85	638.77	468.10	170.67	3.743	
14,600.00	9,716.00	14,390.82	9,556.00	91.51	89.69	-75.45	-4,741.75	-374.69	637.94	463.83	174.11	3.664	
14,700.00	9,716.00	14,490.82	9,556.00	93.27	91.46	-75.43	-4,841.75	-375.53	637.12	459.56	177.56	3.588	
14,741.66	9,716.00	14,527.23	9,556.00	94.00	92.11	-75.42	-4,878.15	-375.83	636.79	458.05	178.74	3.563 SF	
14,800.00	9,716.00	14,527.23	9,556.00	95.02	92.11	-75.42	-4,878.15	-375.83	639.46	462.25	177.21	3.608	
14,900.00	9,716.00	14,527.23	9,556.00	96.78	92.11	-75.42	-4,878.15	-375.83	656.18	484.56	171.62	3.823	
15,000.00	9,716.00	14,527.23	9,556.00	98.53	92.11	-75.42	-4,878.15	-375.83	687.20	524.06	163.14	4.212	
15,100.00	9,716.00	14,527.23	9,556.00	100.30	92.11	-75.42	-4,878.15	-375.83	730.69	577.67	153.02	4.775	
15,200.00	9,716.00	14,527.23	9,556.00	102.06	92.11	-75.42	-4,878.15	-375.83	784.59	642.19	142.39	5.510	
15,300.00	9,716.00	14,527.23	9,556.00	103.83	92.11	-75.42	-4,878.15	-375.83	846.90	714.85	132.05	6.413	
15,400.00	9,716.00	14,527.23	9,556.00	105.60	92.11	-75.42	-4,878.15	-375.83	915.92	793.46	122.46	7.480	
15,500.00	9,716.00	14,527.23	9,556.00	107.37	92.11	-75.42	-4,878.15	-375.83	990.24	876.44	113.80	8.701	
15,600.00	9,716.00	14,527.23	9,556.00	109.14	92.11	-75.42	-4,878.15	-375.83	1,068.76	962.62	106.14	10.070	
15,700.00	9,716.00	14,527.23	9,556.00	110.91	92.11	-75.42	-4,878.15	-375.83	1,150.61	1,051.21	99.41	11.575	
15,800.00	9,716.00	14,527.23	9,556.00	112.69	92.11	-75.42	-4,878.15	-375.83	1,235.14	1,141.61	93.53	13.206	
15,900.00	9,716.00	14,527.23	9,556.00	114.47	92.11	-75.42	-4,878.15	-375.83	1,321.83	1,233.42	88.41	14.951	
16,000.00	9,716.00	14,527.23	9,556.00	116.25	92.11	-75.42	-4,878.15	-375.83	1,410.29	1,326.34	83.95	16.799	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	3.40	3.40	0.50	0.50	51.61	846.17	1,067.80	1,362.42				
100.00	100.00	103.40	103.40	0.51	0.51	51.61	846.17	1,067.80	1,362.42	1,361.41	1.02	1,341.715	
200.00	200.00	203.40	203.40	0.59	0.59	51.61	846.17	1,067.80	1,362.42	1,361.24	1.18	1,154.927	
300.00	300.00	303.40	303.40	0.73	0.74	51.61	846.17	1,067.80	1,362.42	1,360.96	1.47	927.817	
400.00	400.00	403.40	403.40	0.91	0.91	51.61	846.17	1,067.80	1,362.42	1,360.60	1.82	747.157	
500.00	500.00	503.40	503.40	1.10	1.11	51.61	846.17	1,067.80	1,362.42	1,360.21	2.21	615.603	
600.00	600.00	603.40	603.40	1.31	1.31	51.61	846.17	1,067.80	1,362.42	1,359.80	2.62	519.601	
700.00	700.00	703.40	703.40	1.52	1.52	51.61	846.17	1,067.80	1,362.42	1,359.38	3.04	447.805	
800.00	800.00	803.40	803.40	1.73	1.74	51.61	846.17	1,067.80	1,362.42	1,358.95	3.47	392.613	
900.00	900.00	903.40	903.40	1.95	1.96	51.61	846.17	1,067.80	1,362.42	1,358.52	3.90	349.092	
1,000.00	1,000.00	1,003.40	1,003.40	2.17	2.17	51.61	846.17	1,067.80	1,362.42	1,358.09	4.34	314.008	
1,100.00	1,100.00	1,103.40	1,103.40	2.38	2.39	51.61	846.17	1,067.80	1,362.42	1,357.65	4.78	285.183	
1,200.00	1,200.00	1,203.40	1,203.40	2.61	2.61	51.61	846.17	1,067.80	1,362.42	1,357.21	5.22	261.111	
1,300.00	1,299.99	1,303.39	1,303.39	2.82	2.83	123.77	846.17	1,067.80	1,362.91	1,357.26	5.65	241.217	
1,400.00	1,399.96	1,403.36	1,403.36	3.02	3.05	123.85	846.17	1,067.80	1,364.37	1,358.29	6.08	224.528	
1,500.00	1,499.86	1,506.18	1,506.18	3.23	3.28	123.99	846.17	1,067.79	1,366.80	1,360.29	6.51	209.870	
1,600.00	1,599.68	1,605.39	1,605.24	3.45	3.65	124.35	842.88	1,062.01	1,366.75	1,359.67	7.08	193.093	
1,700.00	1,699.37	1,685.40	1,684.42	3.67	3.99	124.75	834.71	1,047.63	1,361.32	1,353.73	7.59	179.243	
1,800.00	1,798.90	1,965.00	1,963.30	3.91	4.22	125.07	828.81	1,037.25	1,354.89	1,346.87	8.02	169.003	
1,900.00	1,898.26	2,064.56	2,062.14	4.16	4.45	125.44	822.91	1,026.86	1,349.49	1,341.04	8.45	159.682	
2,000.00	1,997.40	2,164.04	2,160.91	4.42	4.69	125.86	817.01	1,016.49	1,345.16	1,336.26	8.90	151.156	
2,027.76	2,024.88	2,191.64	2,188.31	4.49	4.76	125.99	815.38	1,013.61	1,344.15	1,335.12	9.03	148.932	
2,100.00	2,096.37	2,263.46	2,259.60	4.69	4.94	126.30	811.12	1,006.12	1,341.65	1,332.29	9.36	143.349	
2,200.00	2,195.33	2,362.87	2,358.30	4.98	5.20	126.74	805.23	995.75	1,338.26	1,328.43	9.83	136.146	
2,300.00	2,294.29	2,462.28	2,456.99	5.27	5.46	127.18	799.34	985.38	1,334.94	1,324.64	10.31	129.521	
2,400.00	2,393.25	2,561.69	2,555.68	5.57	5.73	127.62	793.45	975.02	1,331.71	1,320.92	10.79	123.426	
2,500.00	2,492.20	2,661.10	2,654.38	5.87	6.00	128.07	787.56	964.65	1,328.56	1,317.28	11.28	117.809	
2,600.00	2,591.16	2,760.51	2,753.07	6.18	6.28	128.51	781.67	954.28	1,325.49	1,313.72	11.77	112.628	
2,700.00	2,690.12	2,859.92	2,851.76	6.49	6.56	128.96	775.78	943.91	1,322.50	1,310.24	12.26	107.841	
2,800.00	2,789.08	2,959.34	2,950.46	6.80	6.84	129.41	769.89	933.55	1,319.60	1,306.84	12.76	103.409	
2,900.00	2,888.04	3,058.75	3,049.15	7.12	7.13	129.86	763.99	923.18	1,316.77	1,303.51	13.26	99.300	
3,000.00	2,986.99	3,158.16	3,147.84	7.44	7.42	130.32	758.10	912.81	1,314.03	1,300.27	13.76	95.484	
3,100.00	3,085.95	3,257.57	3,246.54	7.76	7.71	130.77	752.21	902.44	1,311.38	1,297.11	14.26	91.932	
3,200.00	3,184.91	3,356.98	3,345.23	8.08	8.00	131.23	746.32	892.07	1,308.80	1,294.04	14.77	88.622	
3,300.00	3,283.87	3,456.39	3,443.92	8.41	8.29	131.69	740.43	881.71	1,306.32	1,291.04	15.27	85.531	
3,400.00	3,382.83	3,555.80	3,542.62	8.74	8.59	132.15	734.54	871.34	1,303.92	1,288.14	15.78	82.639	
3,500.00	3,481.79	3,655.21	3,641.31	9.06	8.89	132.62	728.65	860.97	1,301.60	1,285.32	16.28	79.930	
3,600.00	3,580.74	3,754.63	3,740.00	9.39	9.18	133.08	722.76	850.60	1,299.37	1,282.58	16.79	77.389	
3,700.00	3,679.70	3,854.04	3,838.70	9.72	9.48	133.55	716.87	840.24	1,297.23	1,279.93	17.30	75.000	
3,800.00	3,778.66	3,953.45	3,937.39	10.06	9.78	134.01	710.97	829.87	1,295.17	1,277.37	17.80	72.752	
3,900.00	3,877.62	4,052.86	4,036.08	10.39	10.08	134.48	705.08	819.50	1,293.20	1,274.89	18.31	70.633	
4,000.00	3,976.58	4,152.27	4,134.78	10.72	10.39	134.95	699.19	809.13	1,291.32	1,272.51	18.81	68.633	
4,100.00	4,075.54	4,251.68	4,233.47	11.06	10.69	135.43	693.30	798.77	1,289.53	1,270.21	19.32	66.743	
4,200.00	4,174.49	4,351.09	4,332.16	11.39	10.99	135.90	687.41	788.40	1,287.82	1,268.00	19.83	64.955	
4,300.00	4,273.45	4,450.50	4,430.86	11.73	11.30	136.37	681.52	778.03	1,286.21	1,265.88	20.33	63.261	
4,400.00	4,372.41	4,549.91	4,529.55	12.06	11.60	136.85	675.63	767.66	1,284.69	1,263.85	20.84	61.655	
4,500.00	4,471.37	4,649.33	4,628.24	12.40	11.91	137.33	669.74	757.30	1,283.25	1,261.91	21.34	60.129	
4,600.00	4,570.33	4,748.74	4,726.94	12.73	12.21	137.80	663.85	746.93	1,281.90	1,260.06	21.85	58.680	
4,700.00	4,669.28	4,848.15	4,825.63	13.07	12.52	138.28	657.96	736.56	1,280.65	1,258.30	22.35	57.301	
4,800.00	4,768.24	4,947.56	4,924.32	13.41	12.82	138.76	652.06	726.19	1,279.48	1,256.63	22.85	55.987	
4,900.00	4,867.20	5,046.97	5,023.02	13.75	13.13	139.24	646.17	715.83	1,278.41	1,255.05	23.36	54.735	
5,000.00	4,966.16	5,146.38	5,121.71	14.09	13.44	139.72	640.28	705.46	1,277.43	1,253.57	23.86	53.541	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,065.12	5,245.79	5,220.40	14.42	13.74	140.20	634.39	695.09	1,276.54	1,252.18	24.36	52.400	
5,200.00	5,164.08	5,345.20	5,319.10	14.76	14.05	140.69	628.50	684.72	1,275.74	1,250.87	24.86	51.310	
5,300.00	5,263.03	5,444.61	5,417.79	15.10	14.36	141.17	622.61	674.35	1,275.03	1,249.66	25.36	50.268	
5,400.00	5,361.99	5,544.03	5,516.48	15.44	14.67	141.65	616.72	663.99	1,274.41	1,248.54	25.87	49.270	
5,500.00	5,460.95	5,643.44	5,615.18	15.78	14.98	142.14	610.83	653.62	1,273.89	1,247.52	26.37	48.314	
5,600.00	5,559.91	5,742.85	5,713.87	16.12	15.29	142.62	604.94	643.25	1,273.45	1,246.59	26.87	47.398	
5,700.00	5,658.87	5,842.26	5,812.56	16.46	15.60	143.11	599.05	632.88	1,273.11	1,245.74	27.37	46.519	
5,800.00	5,757.82	5,941.67	5,911.26	16.80	15.91	143.59	593.15	622.52	1,272.86	1,245.00	27.87	45.675	
5,900.00	5,856.78	6,041.08	6,009.95	17.14	16.21	144.08	587.26	612.15	1,272.71	1,244.34	28.37	44.865	
6,000.00	5,955.74	6,140.49	6,108.65	17.48	16.52	144.56	581.37	601.78	1,272.64	1,243.78	28.87	44.086	
6,019.57	5,975.11	6,159.95	6,127.96	17.55	16.59	144.66	580.22	599.75	1,272.64	1,243.68	28.97	43.937 CC	
6,100.00	6,054.70	6,239.90	6,207.34	17.82	16.83	145.05	575.48	591.41	1,272.67	1,243.30	29.37	43.337	
6,200.00	6,153.66	6,339.31	6,306.03	18.17	17.14	145.53	569.59	581.05	1,272.79	1,242.92	29.87	42.616	
6,300.00	6,252.62	6,438.73	6,404.73	18.51	17.46	146.02	563.70	570.68	1,273.00	1,242.64	30.37	41.922	
6,400.00	6,351.57	6,538.14	6,503.42	18.85	17.77	146.50	557.81	560.31	1,273.31	1,242.44	30.87	41.254	
6,500.00	6,450.53	6,637.55	6,602.11	19.19	18.08	146.98	551.92	549.94	1,273.71	1,242.34	31.36	40.610	
6,600.00	6,549.49	6,736.96	6,700.81	19.53	18.39	147.47	546.03	539.58	1,274.19	1,242.33	31.86	39.989	
6,700.00	6,648.45	6,836.37	6,799.50	19.87	18.70	147.95	540.14	529.21	1,274.78	1,242.41	32.36	39.390	
6,800.00	6,747.41	6,935.78	6,898.19	20.21	19.01	148.44	534.24	518.84	1,275.45	1,242.59	32.86	38.811	
6,900.00	6,846.37	7,035.19	6,996.89	20.56	19.32	148.92	528.35	508.47	1,276.21	1,242.85	33.36	38.253	
7,000.00	6,945.32	7,134.60	7,095.58	20.90	19.63	149.40	522.46	498.10	1,277.07	1,243.21	33.86	37.714	
7,100.00	7,044.28	7,234.01	7,194.27	21.24	19.94	149.88	516.57	487.74	1,278.02	1,243.65	34.36	37.192	
7,200.00	7,143.24	7,333.43	7,292.97	21.58	20.25	150.36	510.68	477.37	1,279.05	1,244.19	34.86	36.688	
7,300.00	7,242.20	7,432.84	7,391.66	21.93	20.57	150.84	504.79	467.00	1,280.18	1,244.82	35.36	36.200	
7,400.00	7,341.16	7,532.25	7,490.35	22.27	20.88	151.32	498.90	456.63	1,281.40	1,245.54	35.86	35.729	
7,500.00	7,440.11	7,631.66	7,589.05	22.61	21.19	151.80	493.01	446.27	1,282.71	1,246.35	36.37	35.272	
7,600.00	7,539.07	7,731.07	7,687.74	22.95	21.50	152.28	487.12	435.90	1,284.11	1,247.24	36.87	34.830	
7,700.00	7,638.03	7,830.48	7,786.43	23.30	21.81	152.75	481.23	425.53	1,285.60	1,248.23	37.37	34.401	
7,800.00	7,736.99	7,929.89	7,885.13	23.64	22.13	153.23	475.33	415.16	1,287.18	1,249.31	37.87	33.986	
7,900.00	7,835.95	8,029.30	7,983.82	23.98	22.44	153.70	469.44	404.80	1,288.85	1,250.47	38.38	33.583	
8,000.00	7,934.91	8,128.72	8,082.51	24.32	22.75	154.17	463.55	394.43	1,290.61	1,251.73	38.88	33.193	
8,100.00	8,033.86	8,228.13	8,181.21	24.67	23.06	154.64	457.66	384.06	1,292.45	1,253.07	39.39	32.814	
8,200.00	8,132.82	8,327.54	8,279.90	25.01	23.37	155.11	451.77	373.69	1,294.39	1,254.50	39.89	32.447	
8,300.00	8,231.78	8,426.95	8,378.59	25.35	23.69	155.58	445.88	363.33	1,296.41	1,256.01	40.40	32.090	
8,400.00	8,330.74	8,526.36	8,477.29	25.70	24.00	156.05	439.99	352.96	1,298.52	1,257.61	40.91	31.744	
8,500.00	8,429.70	8,625.77	8,575.98	26.04	24.31	156.51	434.10	342.59	1,300.72	1,259.30	41.41	31.408	
8,600.00	8,528.65	8,725.18	8,674.67	26.38	24.62	156.98	428.21	332.22	1,303.00	1,261.08	41.92	31.081	
8,652.45	8,580.56	8,766.08	8,715.29	26.56	24.74	157.16	425.85	328.07	1,304.40	1,262.24	42.16	30.940	
8,700.00	8,627.67	8,800.00	8,749.02	26.70	24.83	157.32	424.09	324.98	1,305.83	1,263.48	42.35	30.836	
8,800.00	8,727.05	8,869.99	8,818.75	26.94	24.98	157.58	421.10	319.71	1,308.14	1,265.47	42.67	30.656	
8,900.00	8,826.76	8,940.61	8,889.23	27.14	25.11	157.76	418.93	315.90	1,309.49	1,266.53	42.96	30.478	
9,000.00	8,926.68	9,000.00	8,948.57	27.30	25.21	157.85	417.77	313.86	1,309.93	1,266.74	43.19	30.330	
9,066.33	8,993.00	9,058.25	9,006.81	27.39	25.31	85.74	417.22	312.90	1,309.55	1,266.16	43.39	30.181	
9,100.00	9,026.67	9,083.44	9,032.00	27.44	25.35	85.74	417.17	312.80	1,309.41	1,265.93	43.48	30.115	
9,133.99	9,060.66	9,115.50	9,064.06	27.49	25.40	85.74	417.17	312.80	1,309.41	1,265.81	43.60	30.034	
9,200.00	9,126.67	9,181.51	9,130.07	27.60	25.50	85.74	417.17	312.80	1,309.41	1,265.57	43.84	29.870	
9,216.37	9,143.04	9,197.88	9,146.44	27.62	25.52	85.74	417.17	312.80	1,309.41	1,265.51	43.90	29.830	
9,250.00	9,176.65	9,231.49	9,180.05	27.67	25.57	-94.28	417.17	312.80	1,309.48	1,265.47	44.01	29.754	
9,300.00	9,226.37	9,291.27	9,239.73	27.72	25.69	-94.40	414.26	312.80	1,309.69	1,265.47	44.22	29.619	
9,350.00	9,275.46	9,351.79	9,299.51	27.76	25.83	-94.48	405.00	312.82	1,309.84	1,265.40	44.44	29.476	
9,400.00	9,323.54	9,412.51	9,358.17	27.79	26.02	-94.52	389.43	312.84	1,309.93	1,265.25	44.67	29.323	
9,450.00	9,370.25	9,473.29	9,414.91	27.80	26.23	-94.51	367.71	312.87	1,309.94	1,265.02	44.92	29.159	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD					Rule Assigned:							Offset Well Error:	0.50 usft
Reference	Offset	Reference	Offset	Semi Major Axis	Offset	Highside	Offset Wellbore Centre		Distance			Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)				
9,500.00	9,415.23	9,533.99	9,468.96	27.81	26.48	-94.46	340.15	312.91	1,309.89	1,264.70	45.20	28.981			
9,550.00	9,458.13	9,594.46	9,519.61	27.80	26.76	-94.37	307.17	312.96	1,309.78	1,264.28	45.51	28.783			
9,600.00	9,498.64	9,654.58	9,566.25	27.80	27.08	-94.24	269.26	313.02	1,309.61	1,263.75	45.86	28.560			
9,650.00	9,536.44	9,714.23	9,608.33	27.78	27.44	-94.07	227.04	313.08	1,309.39	1,263.13	46.26	28.307			
9,700.00	9,571.25	9,773.29	9,645.46	27.77	27.82	-93.87	181.14	313.15	1,309.13	1,262.41	46.71	28.025			
9,750.00	9,602.80	9,831.67	9,677.33	27.76	28.25	-93.63	132.26	313.22	1,308.84	1,261.61	47.23	27.714			
9,800.00	9,630.85	9,889.30	9,703.75	27.76	28.70	-93.36	81.07	313.30	1,308.53	1,260.73	47.80	27.376			
9,850.00	9,655.19	9,946.11	9,724.63	27.76	29.19	-93.06	28.26	313.38	1,308.22	1,259.79	48.43	27.013			
9,900.00	9,675.63	10,002.06	9,739.99	27.77	29.70	-92.74	-25.52	313.46	1,307.92	1,258.81	49.11	26.632			
9,950.00	9,692.01	10,057.14	9,749.92	27.81	30.23	-92.40	-79.67	313.54	1,307.64	1,257.80	49.84	26.236			
10,000.00	9,704.22	10,111.32	9,754.57	27.86	30.78	-92.05	-133.63	313.62	1,307.39	1,256.78	50.60	25.835			
10,050.00	9,712.16	10,162.49	9,755.00	27.93	31.32	-91.73	-184.80	313.69	1,307.20	1,255.84	51.36	25.451			
10,089.26	9,715.36	10,201.61	9,755.00	28.01	31.74	-91.59	-223.92	313.75	1,307.16	1,255.20	51.97	25.154			
10,100.00	9,715.76	10,212.34	9,755.00	28.03	31.86	-91.57	-234.65	313.77	1,307.17	1,255.03	52.14	25.071			
10,116.37	9,716.00	10,228.71	9,755.00	28.07	32.04	-91.56	-251.02	313.79	1,307.18	1,254.77	52.41	24.942			
10,200.00	9,716.00	10,312.34	9,755.00	28.32	33.00	-91.56	-334.65	313.92	1,307.29	1,253.44	53.85	24.275			
10,300.00	9,716.00	10,412.34	9,755.00	28.73	34.19	-91.56	-434.65	314.06	1,307.42	1,251.67	55.76	23.449			
10,400.00	9,716.00	10,512.34	9,755.00	29.26	35.45	-91.56	-534.65	314.21	1,307.55	1,249.72	57.83	22.611			
10,500.00	9,716.00	10,612.34	9,755.00	29.90	36.75	-91.56	-634.65	314.36	1,307.68	1,247.63	60.06	21.774			
10,600.00	9,716.00	10,712.34	9,755.00	30.65	38.09	-91.56	-734.65	314.51	1,307.82	1,245.39	62.43	20.950			
10,700.00	9,716.00	10,812.34	9,755.00	31.50	39.47	-91.56	-834.65	314.66	1,307.95	1,243.03	64.92	20.148			
10,800.00	9,716.00	10,912.34	9,755.00	32.44	40.89	-91.56	-934.65	314.81	1,308.08	1,240.56	67.52	19.373			
10,900.00	9,716.00	11,012.34	9,755.00	33.46	42.34	-91.56	-1,034.65	314.95	1,308.21	1,237.99	70.22	18.629			
11,000.00	9,716.00	11,112.34	9,755.00	34.56	43.82	-91.56	-1,134.65	315.10	1,308.34	1,235.33	73.01	17.919			
11,100.00	9,716.00	11,212.34	9,755.00	35.71	45.33	-91.56	-1,234.65	315.25	1,308.47	1,232.59	75.88	17.244			
11,200.00	9,716.00	11,312.34	9,755.00	36.93	46.85	-91.56	-1,334.65	315.40	1,308.60	1,229.79	78.82	16.603			
11,300.00	9,716.00	11,412.34	9,755.00	38.20	48.40	-91.56	-1,434.65	315.55	1,308.74	1,226.92	81.82	15.996			
11,400.00	9,716.00	11,512.34	9,755.00	39.51	49.97	-91.56	-1,534.65	315.70	1,308.87	1,224.00	84.87	15.422			
11,500.00	9,716.00	11,612.34	9,755.00	40.86	51.55	-91.56	-1,634.65	315.84	1,309.00	1,221.03	87.97	14.880			
11,600.00	9,716.00	11,712.34	9,755.00	42.25	53.15	-91.56	-1,734.65	315.99	1,309.13	1,218.02	91.11	14.368			
11,700.00	9,716.00	11,812.34	9,755.00	43.68	54.77	-91.56	-1,834.65	316.14	1,309.26	1,214.96	94.30	13.884			
11,800.00	9,716.00	11,912.34	9,755.00	45.13	56.40	-91.56	-1,934.65	316.29	1,309.39	1,211.88	97.52	13.427			
11,900.00	9,716.00	12,012.34	9,755.00	46.61	58.04	-91.56	-2,034.65	316.44	1,309.52	1,208.76	100.77	12.996			
12,000.00	9,716.00	12,112.34	9,755.00	48.12	59.69	-91.56	-2,134.65	316.59	1,309.65	1,205.61	104.04	12.587			
12,100.00	9,716.00	12,212.34	9,755.00	49.64	61.35	-91.56	-2,234.65	316.74	1,309.79	1,202.44	107.35	12.201			
12,200.00	9,716.00	12,312.34	9,755.00	51.19	63.02	-91.56	-2,334.64	316.88	1,309.92	1,199.24	110.68	11.836			
12,300.00	9,716.00	12,412.34	9,755.00	52.76	64.70	-91.56	-2,434.64	317.03	1,310.05	1,196.02	114.02	11.489			
12,400.00	9,716.00	12,512.34	9,755.00	54.34	66.39	-91.56	-2,534.64	317.18	1,310.18	1,192.79	117.39	11.161			
12,500.00	9,716.00	12,612.34	9,755.00	55.94	68.08	-91.56	-2,634.64	317.33	1,310.31	1,189.53	120.78	10.849			
12,600.00	9,716.00	12,712.34	9,755.00	57.55	69.78	-91.56	-2,734.64	317.48	1,310.44	1,186.26	124.18	10.553			
12,700.00	9,716.00	12,812.34	9,755.00	59.17	71.49	-91.56	-2,834.64	317.63	1,310.57	1,182.98	127.59	10.271			
12,800.00	9,716.00	12,912.34	9,755.00	60.81	73.20	-91.56	-2,934.64	317.77	1,310.71	1,179.68	131.02	10.004			
12,900.00	9,716.00	13,012.34	9,755.00	62.45	74.92	-91.56	-3,034.64	317.92	1,310.84	1,176.37	134.47	9.748			
13,000.00	9,716.00	13,112.34	9,755.00	64.11	76.65	-91.56	-3,134.64	318.07	1,310.97	1,173.05	137.92	9.505			
13,100.00	9,716.00	13,212.34	9,755.00	65.77	78.38	-91.56	-3,234.64	318.22	1,311.10	1,169.72	141.38	9.273			
13,200.00	9,716.00	13,312.34	9,755.00	67.45	80.11	-91.56	-3,334.64	318.37	1,311.23	1,166.37	144.86	9.052			
13,300.00	9,716.00	13,412.34	9,755.00	69.13	81.85	-91.56	-3,434.64	318.52	1,311.36	1,163.02	148.34	8.840			
13,400.00	9,716.00	13,512.34	9,755.00	70.82	83.59	-91.56	-3,534.64	318.66	1,311.49	1,159.66	151.83	8.638			
13,500.00	9,716.00	13,612.34	9,755.00	72.52	85.34	-91.56	-3,634.64	318.81	1,311.63	1,156.29	155.33	8.444			
13,600.00	9,716.00	13,712.34	9,755.00	74.22	87.08	-91.56	-3,734.64	318.96	1,311.76	1,152.92	158.84	8.258			
13,700.00	9,716.00	13,812.34	9,755.00	75.93	88.84	-91.55	-3,834.64	319.11	1,311.89	1,149.53	162.35	8.080			
13,800.00	9,716.00	13,912.34	9,755.00	77.64	90.59	-91.55	-3,934.64	319.26	1,312.02	1,146.15	165.87	7.910			

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD		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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
13,900.00	9,716.00	14,012.34	9,755.00	79.36	92.35	-91.55	-4,034.64	319.41	1,312.15	1,142.75	169.40	7.746			
14,000.00	9,716.00	14,112.34	9,755.00	81.08	94.11	-91.55	-4,134.64	319.55	1,312.28	1,139.35	172.93	7.588			
14,100.00	9,716.00	14,212.34	9,755.00	82.81	95.87	-91.55	-4,234.64	319.70	1,312.41	1,135.94	176.47	7.437			
14,200.00	9,716.00	14,312.34	9,755.00	84.55	97.64	-91.55	-4,334.64	319.85	1,312.54	1,132.53	180.01	7.291			
14,300.00	9,716.00	14,412.34	9,755.00	86.28	99.41	-91.55	-4,434.64	320.00	1,312.68	1,129.12	183.56	7.151			
14,400.00	9,716.00	14,512.34	9,755.00	88.02	101.18	-91.55	-4,534.64	320.15	1,312.81	1,125.70	187.11	7.016			
14,500.00	9,716.00	14,612.34	9,755.00	89.77	102.95	-91.55	-4,634.64	320.30	1,312.94	1,122.27	190.67	6.886			
14,600.00	9,716.00	14,712.34	9,755.00	91.51	104.73	-91.55	-4,734.64	320.44	1,313.07	1,118.84	194.23	6.761			
14,700.00	9,716.00	14,812.34	9,755.00	93.27	106.50	-91.55	-4,834.64	320.59	1,313.20	1,115.41	197.79	6.639			
14,800.00	9,716.00	14,912.34	9,755.00	95.02	108.28	-91.55	-4,934.64	320.74	1,313.33	1,111.98	201.36	6.522			
14,900.00	9,716.00	15,012.34	9,755.00	96.78	110.06	-91.55	-5,034.64	320.89	1,313.46	1,108.54	204.93	6.409			
15,000.00	9,716.00	15,112.34	9,755.00	98.53	111.84	-91.55	-5,134.64	321.04	1,313.60	1,105.10	208.50	6.300			
15,100.00	9,716.00	15,212.34	9,755.00	100.30	113.63	-91.55	-5,234.64	321.19	1,313.73	1,101.65	212.08	6.195			
15,200.00	9,716.00	15,312.34	9,755.00	102.06	115.41	-91.55	-5,334.64	321.34	1,313.86	1,098.20	215.65	6.092			
15,300.00	9,716.00	15,412.34	9,755.00	103.83	117.20	-91.55	-5,434.64	321.48	1,313.99	1,094.75	219.24	5.993			
15,400.00	9,716.00	15,512.34	9,755.00	105.60	118.99	-91.55	-5,534.64	321.63	1,314.12	1,091.30	222.82	5.898			
15,500.00	9,716.00	15,612.34	9,755.00	107.37	120.77	-91.55	-5,634.64	321.78	1,314.25	1,087.85	226.41	5.805			
15,600.00	9,716.00	15,712.34	9,755.00	109.14	122.56	-91.55	-5,734.64	321.93	1,314.38	1,084.39	230.00	5.715			
15,700.00	9,716.00	15,812.34	9,755.00	110.91	124.36	-91.55	-5,834.64	322.08	1,314.52	1,080.93	233.59	5.628			
15,800.00	9,716.00	15,912.34	9,755.00	112.69	126.15	-91.55	-5,934.64	322.23	1,314.65	1,077.47	237.18	5.543			
15,900.00	9,716.00	16,012.34	9,755.00	114.47	127.94	-91.55	-6,034.64	322.37	1,314.78	1,074.00	240.78	5.461			
16,000.00	9,716.00	16,112.34	9,755.00	116.25	129.74	-91.55	-6,134.64	322.52	1,314.91	1,070.54	244.37	5.381			
16,100.00	9,716.00	16,212.34	9,755.00	118.03	131.53	-91.55	-6,234.64	322.67	1,315.04	1,067.07	247.97	5.303			
16,200.00	9,716.00	16,312.34	9,755.00	119.81	133.33	-91.55	-6,334.64	322.82	1,315.17	1,063.60	251.57	5.228			
16,300.00	9,716.00	16,412.34	9,755.00	121.59	135.13	-91.55	-6,434.64	322.97	1,315.30	1,060.13	255.18	5.154			
16,400.00	9,716.00	16,512.34	9,755.00	123.38	136.92	-91.55	-6,534.64	323.12	1,315.43	1,056.65	258.78	5.083			
16,500.00	9,716.00	16,612.34	9,755.00	125.17	138.72	-91.55	-6,634.64	323.26	1,315.57	1,053.18	262.39	5.014			
16,600.00	9,716.00	16,712.33	9,755.00	126.95	140.52	-91.55	-6,734.64	323.41	1,315.70	1,049.70	265.99	4.946			
16,700.00	9,716.00	16,812.33	9,755.00	128.74	142.32	-91.55	-6,834.64	323.56	1,315.83	1,046.23	269.60	4.881			
16,800.00	9,716.00	16,912.33	9,755.00	130.53	144.12	-91.55	-6,934.64	323.71	1,315.96	1,042.75	273.21	4.817			
16,900.00	9,716.00	17,012.33	9,755.00	132.32	145.93	-91.55	-7,034.64	323.86	1,316.09	1,039.27	276.82	4.754			
17,000.00	9,716.00	17,112.33	9,755.00	134.12	147.73	-91.55	-7,134.64	324.01	1,316.22	1,035.79	280.44	4.693			
17,100.00	9,716.00	17,212.33	9,755.00	135.91	149.53	-91.55	-7,234.64	324.15	1,316.35	1,032.30	284.05	4.634			
17,200.00	9,716.00	17,312.33	9,755.00	137.70	151.34	-91.55	-7,334.64	324.30	1,316.49	1,028.82	287.67	4.576			
17,300.00	9,716.00	17,412.33	9,755.00	139.50	153.14	-91.55	-7,434.63	324.45	1,316.62	1,025.34	291.28	4.520			
17,400.00	9,716.00	17,512.33	9,755.00	141.30	154.95	-91.55	-7,534.63	324.60	1,316.75	1,021.85	294.90	4.465			
17,500.00	9,716.00	17,612.33	9,755.00	143.09	156.75	-91.55	-7,634.63	324.75	1,316.88	1,018.36	298.52	4.411			
17,600.00	9,716.00	17,712.33	9,755.00	144.89	158.56	-91.55	-7,734.63	324.90	1,317.01	1,014.87	302.14	4.359			
17,700.00	9,716.00	17,812.33	9,755.00	146.69	160.37	-91.55	-7,834.63	325.04	1,317.14	1,011.39	305.76	4.308			
17,800.00	9,716.00	17,912.33	9,755.00	148.49	162.17	-91.55	-7,934.63	325.19	1,317.27	1,007.90	309.38	4.258			
17,900.00	9,716.00	18,012.33	9,755.00	150.29	163.98	-91.55	-8,034.63	325.34	1,317.41	1,004.41	313.00	4.209			
18,000.00	9,716.00	18,112.33	9,755.00	152.09	165.79	-91.55	-8,134.63	325.49	1,317.54	1,000.91	316.62	4.161			
18,100.00	9,716.00	18,212.33	9,755.00	153.89	167.60	-91.55	-8,234.63	325.64	1,317.67	997.42	320.25	4.115			
18,200.00	9,716.00	18,312.33	9,755.00	155.69	169.41	-91.55	-8,334.63	325.79	1,317.80	993.93	323.87	4.069			
18,300.00	9,716.00	18,412.33	9,755.00	157.50	171.22	-91.55	-8,434.63	325.94	1,317.93	990.43	327.50	4.024			
18,400.00	9,716.00	18,512.33	9,755.00	159.30	173.03	-91.55	-8,534.63	326.08	1,318.06	986.94	331.12	3.981			
18,500.00	9,716.00	18,612.33	9,755.00	161.10	174.84	-91.55	-8,634.63	326.23	1,318.19	983.44	334.75	3.938			
18,600.00	9,716.00	18,712.33	9,755.00	162.91	176.65	-91.55	-8,734.63	326.38	1,318.32	979.95	338.38	3.896			
18,700.00	9,716.00	18,812.33	9,755.00	164.71	178.46	-91.55	-8,834.63	326.53	1,318.46	976.45	342.01	3.855			
18,800.00	9,716.00	18,912.33	9,755.00	166.52	180.28	-91.55	-8,934.63	326.68	1,318.59	972.95	345.63	3.815			
18,900.00	9,716.00	19,012.33	9,755.00	168.32	182.09	-91.55	-9,034.63	326.83	1,318.72	969.45	349.26	3.776			
19,000.00	9,716.00	19,112.33	9,755.00	170.13	183.90	-91.55	-9,134.63	326.97	1,318.85	965.96	352.89	3.737			

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 134H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,100.00	9,716.00	19,212.33	9,755.00	171.94	185.71	-91.55	-9,234.63	327.12	1,318.98	962.46	356.53	3.700	
19,200.00	9,716.00	19,312.33	9,755.00	173.75	187.53	-91.55	-9,334.63	327.27	1,319.11	958.96	360.16	3.663	
19,300.00	9,716.00	19,412.33	9,755.00	175.55	189.34	-91.55	-9,434.63	327.42	1,319.24	955.46	363.79	3.626	
19,400.00	9,716.00	19,512.33	9,755.00	177.36	191.16	-91.55	-9,534.63	327.57	1,319.38	951.95	367.42	3.591	
19,500.00	9,716.00	19,612.33	9,755.00	179.17	192.97	-91.55	-9,634.63	327.72	1,319.51	948.45	371.05	3.556	
19,600.00	9,716.00	19,712.33	9,755.00	180.98	194.79	-91.55	-9,734.63	327.86	1,319.64	944.95	374.69	3.522	
19,700.00	9,716.00	19,812.33	9,755.00	182.79	196.60	-91.55	-9,834.63	328.01	1,319.77	941.45	378.32	3.488	
19,800.00	9,716.00	19,912.33	9,755.00	184.60	198.42	-91.55	-9,934.63	328.16	1,319.90	937.94	381.96	3.456	
19,900.00	9,716.00	20,012.33	9,755.00	186.41	200.23	-91.55	-10,034.63	328.31	1,320.03	934.44	385.59	3.423	
20,000.00	9,716.00	20,112.33	9,755.00	188.22	202.05	-91.55	-10,134.63	328.46	1,320.16	930.94	389.23	3.392	
20,026.64	9,716.00	20,133.98	9,755.00	188.71	202.44	-91.55	-10,156.28	328.49	1,320.21	930.21	390.00	3.385 ES, SF	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.30	0.30	0.50	0.50	140.12	-46.03	38.46	59.98				
100.00	100.00	100.30	100.30	0.51	0.51	140.12	-46.03	38.46	59.98	58.97	1.01	59.142	
200.00	200.00	200.30	200.30	0.59	0.59	140.12	-46.03	38.46	59.98	58.81	1.18	51.007	
300.00	300.00	300.30	300.30	0.73	0.73	140.12	-46.03	38.46	59.98	58.52	1.46	40.991	
400.00	400.00	400.30	400.30	0.91	0.91	140.12	-46.03	38.46	59.98	58.17	1.82	33.000	
500.00	500.00	500.30	500.30	1.10	1.10	140.12	-46.03	38.46	59.98	57.78	2.21	27.179	
600.00	600.00	600.30	600.30	1.31	1.31	140.12	-46.03	38.46	59.98	57.37	2.62	22.933	
700.00	700.00	700.30	700.30	1.52	1.52	140.12	-46.03	38.46	59.98	56.95	3.04	19.758	
800.00	800.00	800.30	800.30	1.73	1.73	140.12	-46.03	38.46	59.98	56.52	3.46	17.319	
900.00	900.00	900.30	900.30	1.95	1.95	140.12	-46.03	38.46	59.98	56.09	3.90	15.396	
1,000.00	1,000.00	1,000.30	1,000.30	2.17	2.17	140.12	-46.03	38.46	59.98	55.65	4.33	13.846	
1,100.00	1,100.00	1,100.30	1,100.30	2.38	2.39	140.12	-46.03	38.46	59.98	55.21	4.77	12.574	
1,200.00	1,200.00	1,200.30	1,200.30	2.61	2.61	140.12	-46.03	38.46	59.98	54.77	5.21	11.511	CC, ES
1,300.00	1,299.99	1,300.29	1,300.29	2.82	2.83	-148.18	-46.03	38.46	60.72	55.08	5.64	10.760	
1,400.00	1,399.96	1,400.26	1,400.26	3.02	3.05	-149.42	-46.03	38.46	62.96	56.89	6.07	10.372	
1,500.00	1,499.86	1,500.16	1,500.16	3.23	3.27	-151.31	-46.03	38.46	66.75	60.25	6.50	10.268	
1,600.00	1,599.68	1,599.98	1,599.98	3.45	3.49	-153.61	-46.03	38.46	72.17	65.24	6.94	10.406	
1,700.00	1,699.37	1,699.67	1,699.67	3.67	3.71	-156.10	-46.03	38.46	79.28	71.91	7.37	10.752	
1,800.00	1,798.90	1,799.20	1,799.20	3.91	3.94	-158.59	-46.03	38.46	88.13	80.32	7.81	11.279	
1,900.00	1,898.26	1,898.56	1,898.56	4.16	4.16	-160.95	-46.03	38.46	98.76	90.51	8.26	11.962	
2,000.00	1,997.40	1,997.70	1,997.70	4.42	4.38	-163.11	-46.03	38.46	111.19	102.49	8.70	12.778	
2,027.76	2,024.88	2,025.18	2,025.18	4.49	4.44	-163.67	-46.03	38.46	114.96	106.14	8.83	13.024	
2,100.00	2,096.37	2,096.67	2,096.67	4.69	4.60	-165.01	-46.03	38.46	124.98	115.84	9.15	13.662	
2,200.00	2,195.33	2,195.63	2,195.63	4.98	4.82	-166.54	-46.03	38.46	138.95	129.36	9.60	14.481	
2,300.00	2,294.29	2,294.59	2,294.59	5.27	5.04	-167.80	-46.03	38.46	153.00	142.95	10.04	15.234	
2,400.00	2,393.25	2,393.55	2,393.55	5.57	5.26	-168.84	-46.03	38.46	167.10	156.61	10.49	15.926	
2,500.00	2,492.20	2,492.50	2,492.50	5.87	5.48	-169.72	-46.03	38.46	181.25	170.31	10.94	16.563	
2,600.00	2,591.16	2,591.46	2,591.46	6.18	5.71	-170.47	-46.03	38.46	195.44	184.04	11.40	17.150	
2,700.00	2,690.12	2,690.42	2,690.42	6.49	5.93	-171.13	-46.03	38.46	209.66	197.81	11.85	17.694	
2,800.00	2,789.08	2,789.38	2,789.38	6.80	6.15	-171.69	-46.03	38.46	223.89	211.59	12.30	18.198	
2,900.00	2,888.04	2,888.34	2,888.34	7.12	6.37	-172.19	-46.03	38.46	238.15	225.39	12.76	18.667	
3,000.00	2,986.99	2,987.29	2,987.29	7.44	6.59	-172.64	-46.03	38.46	252.43	239.21	13.21	19.103	
3,100.00	3,085.95	3,086.25	3,086.25	7.76	6.81	-173.03	-46.03	38.46	266.71	253.04	13.67	19.510	
3,200.00	3,184.91	3,185.21	3,185.21	8.08	7.04	-173.39	-46.03	38.46	281.01	266.88	14.13	19.890	
3,300.00	3,283.87	3,284.17	3,284.17	8.41	7.26	-173.71	-46.03	38.46	295.32	280.73	14.59	20.247	
3,400.00	3,382.83	3,383.13	3,383.13	8.74	7.48	-174.00	-46.03	38.46	309.63	294.59	15.04	20.581	
3,500.00	3,481.79	3,482.09	3,482.09	9.06	7.70	-174.27	-46.03	38.46	323.96	308.45	15.50	20.895	
3,600.00	3,580.74	3,581.04	3,581.04	9.39	7.93	-174.72	-44.79	38.55	337.90	321.92	15.97	21.154	
3,700.00	3,679.70	3,680.00	3,680.00	9.72	8.16	-175.70	-39.96	38.89	350.75	334.31	16.44	21.338	
3,800.00	3,778.66	3,778.96	3,778.96	10.06	8.38	-176.81	-33.77	39.33	363.25	346.36	16.89	21.504	
3,900.00	3,877.62	3,877.92	3,877.92	10.39	8.61	-177.84	-27.58	39.77	375.87	358.52	17.35	21.666	
4,000.00	3,976.58	3,976.88	3,976.88	10.72	8.83	-178.81	-21.39	40.21	388.60	370.79	17.81	21.823	
4,100.00	4,075.54	4,075.84	4,075.84	11.06	9.05	-179.71	-15.21	40.65	401.44	383.17	18.27	21.975	
4,200.00	4,174.49	4,174.79	4,174.79	11.39	9.28	-179.44	-9.02	41.09	414.36	395.63	18.73	22.122	
4,300.00	4,273.45	4,273.75	4,273.75	11.73	9.50	-178.64	-2.83	41.53	427.38	408.18	19.20	22.264	
4,400.00	4,372.41	4,372.71	4,372.71	12.06	9.73	-177.89	3.36	41.97	440.46	420.80	19.66	22.401	
4,500.00	4,471.37	4,471.67	4,471.67	12.40	9.96	-177.18	9.54	42.41	453.62	433.49	20.13	22.533	
4,600.00	4,570.33	4,570.63	4,570.63	12.73	10.19	-176.52	15.73	42.85	466.85	446.25	20.60	22.660	
4,700.00	4,669.28	4,669.58	4,669.58	13.07	10.42	-175.89	21.92	43.29	480.13	459.06	21.07	22.782	
4,800.00	4,768.24	4,768.54	4,768.54	13.41	10.65	-175.29	28.11	43.73	493.47	471.92	21.55	22.900	
4,900.00	4,867.20	4,867.50	4,867.50	13.75	10.88	-174.72	34.29	44.17	506.85	484.83	22.02	23.013	
5,000.00	4,966.16	4,966.46	4,966.46	14.09	11.11	-174.19	40.48	44.61	520.29	497.79	22.50	23.122	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD						Rule Assigned:						Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,100.00	5,065.12	5,072.67	5,069.81	14.42	11.34	173.68	46.67	45.05	533.76	510.78	22.98	23.227			
5,200.00	5,164.08	5,171.65	5,168.60	14.76	11.58	173.19	52.86	45.48	547.28	523.82	23.46	23.328			
5,300.00	5,263.03	5,270.63	5,267.38	15.10	11.81	172.73	59.04	45.92	560.83	536.89	23.94	23.426			
5,400.00	5,361.99	5,369.60	5,366.17	15.44	12.04	172.29	65.23	46.36	574.41	549.99	24.42	23.520			
5,500.00	5,460.95	5,468.58	5,464.95	15.78	12.28	171.88	71.42	46.80	588.03	563.13	24.91	23.610			
5,600.00	5,559.91	5,567.56	5,563.73	16.12	12.51	171.48	77.61	47.24	601.68	576.29	25.39	23.698			
5,700.00	5,658.87	5,666.54	5,662.52	16.46	12.75	171.09	83.79	47.68	615.35	589.48	25.87	23.782			
5,800.00	5,757.82	5,765.52	5,761.30	16.80	12.99	170.73	89.98	48.12	629.05	602.69	26.36	23.863			
5,900.00	5,856.78	5,864.50	5,860.09	17.14	13.22	170.38	96.17	48.56	642.78	615.93	26.85	23.941			
6,000.00	5,955.74	5,963.48	5,958.87	17.48	13.46	170.04	102.36	49.00	656.52	629.19	27.34	24.017			
6,100.00	6,054.70	6,062.46	6,057.66	17.82	13.70	169.72	108.54	49.44	670.29	642.47	27.82	24.090			
6,200.00	6,153.66	6,161.44	6,156.44	18.17	13.93	169.41	114.73	49.88	684.08	655.77	28.31	24.161			
6,300.00	6,252.62	6,260.41	6,255.22	18.51	14.17	169.12	120.92	50.32	697.89	669.08	28.80	24.229			
6,400.00	6,351.57	6,359.39	6,354.01	18.85	14.41	168.83	127.11	50.76	711.71	682.42	29.29	24.295			
6,500.00	6,450.53	6,458.37	6,452.79	19.19	14.65	168.56	133.29	51.20	725.55	695.77	29.79	24.359			
6,600.00	6,549.49	6,557.35	6,551.58	19.53	14.88	168.29	139.48	51.64	739.41	709.13	30.28	24.421			
6,700.00	6,648.45	6,656.33	6,650.36	19.87	15.12	168.04	145.67	52.08	753.28	722.51	30.77	24.480			
6,800.00	6,747.41	6,755.31	6,749.15	20.21	15.36	167.79	151.86	52.52	767.16	735.90	31.26	24.538			
6,900.00	6,846.37	6,854.29	6,847.93	20.56	15.60	167.56	158.04	52.96	781.06	749.31	31.76	24.595			
7,000.00	6,945.32	6,953.27	6,946.71	20.90	15.84	167.33	164.23	53.40	794.97	762.72	32.25	24.649			
7,100.00	7,044.28	7,052.25	7,045.50	21.24	16.08	167.11	170.42	53.84	808.90	776.15	32.75	24.702			
7,200.00	7,143.24	7,151.22	7,144.28	21.58	16.32	166.90	176.60	54.28	822.83	789.59	33.24	24.753			
7,300.00	7,242.20	7,250.20	7,243.07	21.93	16.56	166.69	182.79	54.72	836.78	803.04	33.74	24.803			
7,400.00	7,341.16	7,349.18	7,341.85	22.27	16.80	166.49	188.98	55.15	850.73	816.50	34.23	24.851			
7,500.00	7,440.11	7,448.16	7,440.64	22.61	17.04	166.30	195.17	55.59	864.70	829.97	34.73	24.898			
7,600.00	7,539.07	7,547.14	7,539.42	22.95	17.28	166.11	201.35	56.03	878.67	843.45	35.23	24.943			
7,700.00	7,638.03	7,646.12	7,638.20	23.30	17.52	165.93	207.54	56.47	892.66	856.93	35.72	24.987			
7,800.00	7,736.99	7,745.10	7,736.99	23.64	17.76	165.76	213.73	56.91	906.65	870.43	36.22	25.030			
7,900.00	7,835.95	7,844.08	7,835.77	23.98	18.00	165.59	219.92	57.35	920.65	883.93	36.72	25.072			
8,000.00	7,934.91	7,943.06	7,934.56	24.32	18.24	165.42	226.10	57.79	934.66	897.44	37.22	25.112			
8,100.00	8,033.86	8,042.03	8,033.34	24.67	18.48	165.26	232.29	58.23	948.67	910.95	37.72	25.152			
8,200.00	8,132.82	8,141.01	8,132.13	25.01	18.73	165.11	238.48	58.67	962.69	924.48	38.22	25.190			
8,300.00	8,231.78	8,239.99	8,230.91	25.35	18.97	164.96	244.67	59.11	976.72	938.01	38.72	25.228			
8,400.00	8,330.74	8,338.97	8,329.69	25.70	19.21	164.81	250.85	59.55	990.76	951.54	39.22	25.264			
8,500.00	8,429.70	8,437.95	8,428.48	26.04	19.45	164.67	257.04	59.99	1,004.80	965.08	39.72	25.300			
8,600.00	8,528.65	8,536.93	8,527.26	26.38	19.69	164.53	263.23	60.43	1,018.84	978.63	40.22	25.334			
8,652.45	8,580.56	8,588.84	8,579.08	26.56	19.82	164.46	266.47	60.66	1,026.21	985.74	40.48	25.352			
8,700.00	8,627.67	8,635.96	8,626.10	26.70	19.93	164.42	269.42	60.87	1,032.52	991.82	40.70	25.366			
8,800.00	8,727.05	8,735.31	8,725.26	26.94	20.18	164.30	275.63	61.31	1,043.33	1,002.17	41.15	25.353			
8,900.00	8,826.76	8,834.94	8,824.69	27.14	20.42	164.11	281.86	61.75	1,050.80	1,009.21	41.59	25.264			
9,000.00	8,926.68	8,934.72	8,924.27	27.30	20.66	163.85	288.10	62.20	1,054.94	1,012.92	42.03	25.102			
9,066.33	8,993.00	9,000.92	8,990.34	27.39	20.83	91.51	292.23	62.49	1,055.86	1,013.55	42.31	24.953			
9,100.00	9,026.67	9,034.52	9,023.88	27.44	20.91	91.39	294.34	62.64	1,055.96	1,013.49	42.46	24.867			
9,200.00	9,126.67	9,134.33	9,123.49	27.60	21.15	91.05	300.57	63.08	1,056.27	1,013.35	42.92	24.611			
9,216.37	9,143.04	9,150.67	9,139.79	27.62	21.19	91.00	301.60	63.15	1,056.32	1,013.33	42.99	24.569			
9,250.00	9,176.65	9,184.15	9,173.21	27.67	21.27	-89.15	303.69	63.30	1,056.42	1,013.28	43.14	24.487			
9,300.00	9,226.37	9,233.45	9,222.42	27.72	21.39	-89.57	306.77	63.52	1,056.55	1,013.20	43.35	24.370			
9,350.00	9,275.46	9,281.86	9,270.73	27.76	21.51	-90.21	309.80	63.74	1,056.76	1,013.20	43.56	24.261			
9,400.00	9,323.54	9,328.99	9,317.77	27.79	21.63	-91.01	312.74	63.95	1,057.19	1,013.43	43.76	24.161			
9,450.00	9,370.25	9,375.34	9,364.03	27.80	21.74	-91.97	315.57	64.15	1,058.02	1,014.07	43.94	24.078			
9,500.00	9,415.23	9,421.31	9,409.95	27.81	21.83	-93.02	317.74	64.30	1,059.40	1,015.29	44.11	24.019			
9,550.00	9,458.13	9,465.79	9,454.40	27.80	21.90	-94.10	319.15	64.40	1,061.53	1,017.27	44.26	23.986			

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,600.00	9,498.64	9,508.54	9,497.15	27.80	21.98	-95.17	319.85	64.45	1,064.63	1,020.23	44.40	23.980	
9,650.00	9,536.44	9,548.13	9,536.74	27.78	22.05	-96.13	319.97	64.46	1,068.93	1,024.41	44.53	24.006	
9,700.00	9,571.25	9,582.94	9,571.55	27.77	22.11	-96.88	319.97	64.46	1,074.76	1,030.11	44.65	24.070	
9,750.00	9,602.80	9,614.49	9,603.10	27.76	22.18	-97.42	319.97	64.46	1,082.36	1,037.59	44.77	24.177	
9,800.00	9,630.85	9,642.54	9,631.15	27.76	22.24	-97.69	319.97	64.46	1,091.93	1,047.05	44.88	24.330	
9,850.00	9,655.19	9,666.88	9,655.49	27.76	22.29	-97.63	319.97	64.46	1,103.63	1,058.65	44.98	24.537	
9,900.00	9,675.63	9,692.25	9,680.86	27.77	22.34	-97.43	319.92	64.46	1,117.53	1,072.45	45.08	24.791	
9,950.00	9,692.01	9,751.37	9,739.82	27.81	22.42	-98.68	316.06	64.46	1,133.29	1,088.06	45.22	25.059	
10,000.00	9,704.22	9,836.58	9,823.40	27.86	22.49	-100.95	299.89	64.46	1,150.39	1,105.12	45.27	25.411	
10,050.00	9,712.16	9,991.37	9,965.51	27.93	22.49	-105.87	239.70	64.47	1,167.88	1,122.95	44.93	25.994	
10,100.00	9,715.76	10,374.04	10,207.80	28.03	22.53	-115.17	-47.29	64.51	1,181.43	1,137.78	43.65	27.068	
10,116.37	9,716.00	10,582.03	10,245.99	28.07	23.06	-116.61	-250.58	64.54	1,182.70	1,138.48	44.22	26.747	
10,200.00	9,716.00	10,667.88	10,246.00	28.32	23.45	-116.61	-336.44	64.55	1,182.69	1,137.69	45.00	26.279	
10,300.00	9,716.00	10,767.88	10,246.00	28.73	24.00	-116.61	-436.44	64.57	1,182.69	1,136.57	46.12	25.644	
10,400.00	9,716.00	10,867.88	10,246.00	29.26	24.68	-116.61	-536.44	64.58	1,182.69	1,135.25	47.44	24.928	
10,500.00	9,716.00	10,967.88	10,246.00	29.90	25.47	-116.61	-636.44	64.60	1,182.69	1,133.73	48.96	24.157	
10,600.00	9,716.00	11,067.88	10,246.00	30.65	26.37	-116.61	-736.44	64.61	1,182.69	1,132.04	50.65	23.350	
10,700.00	9,716.00	11,167.88	10,246.00	31.50	27.36	-116.61	-836.44	64.63	1,182.68	1,130.18	52.50	22.528	
10,800.00	9,716.00	11,267.88	10,246.00	32.44	28.43	-116.61	-936.44	64.64	1,182.68	1,128.19	54.49	21.705	
10,900.00	9,716.00	11,367.88	10,246.00	33.46	29.58	-116.61	-1,036.44	64.65	1,182.68	1,126.07	56.61	20.892	
11,000.00	9,716.00	11,467.88	10,246.00	34.56	30.79	-116.61	-1,136.44	64.67	1,182.68	1,123.84	58.84	20.100	
11,100.00	9,716.00	11,567.88	10,246.00	35.71	32.06	-116.61	-1,236.44	64.68	1,182.67	1,121.50	61.17	19.334	
11,200.00	9,716.00	11,667.88	10,246.00	36.93	33.39	-116.61	-1,336.44	64.70	1,182.67	1,119.08	63.59	18.597	
11,300.00	9,716.00	11,767.88	10,246.00	38.20	34.75	-116.61	-1,436.44	64.71	1,182.67	1,116.57	66.10	17.893	
11,400.00	9,716.00	11,867.88	10,246.00	39.51	36.17	-116.61	-1,536.44	64.73	1,182.67	1,114.00	68.67	17.223	
11,500.00	9,716.00	11,967.88	10,246.00	40.86	37.61	-116.61	-1,636.44	64.74	1,182.66	1,111.36	71.31	16.586	
11,600.00	9,716.00	12,067.88	10,246.00	42.25	39.09	-116.61	-1,736.44	64.75	1,182.66	1,108.66	74.00	15.982	
11,700.00	9,716.00	12,167.88	10,246.00	43.68	40.60	-116.61	-1,836.44	64.77	1,182.66	1,105.92	76.74	15.411	
11,800.00	9,716.00	12,267.88	10,246.00	45.13	42.13	-116.61	-1,936.44	64.78	1,182.66	1,103.12	79.53	14.870	
11,900.00	9,716.00	12,367.88	10,246.00	46.61	43.69	-116.61	-2,036.44	64.80	1,182.65	1,100.29	82.36	14.359	
12,000.00	9,716.00	12,467.88	10,246.00	48.12	45.26	-116.61	-2,136.44	64.81	1,182.65	1,097.42	85.23	13.876	
12,100.00	9,716.00	12,567.88	10,246.00	49.64	46.86	-116.61	-2,236.44	64.83	1,182.65	1,094.52	88.13	13.419	
12,200.00	9,716.00	12,667.88	10,246.00	51.19	48.47	-116.61	-2,336.44	64.84	1,182.65	1,091.59	91.06	12.988	
12,300.00	9,716.00	12,767.88	10,246.00	52.76	50.10	-116.61	-2,436.44	64.86	1,182.65	1,088.63	94.02	12.579	
12,400.00	9,716.00	12,867.88	10,246.00	54.34	51.74	-116.61	-2,536.44	64.87	1,182.64	1,085.64	97.00	12.192	
12,500.00	9,716.00	12,967.88	10,246.00	55.94	53.39	-116.61	-2,636.44	64.88	1,182.64	1,082.64	100.00	11.826	
12,600.00	9,716.00	13,067.88	10,246.00	57.55	55.05	-116.61	-2,736.44	64.90	1,182.64	1,079.61	103.03	11.479	
12,700.00	9,716.00	13,167.88	10,246.00	59.17	56.73	-116.61	-2,836.44	64.91	1,182.64	1,076.56	106.07	11.149	
12,800.00	9,716.00	13,267.88	10,246.00	60.81	58.41	-116.61	-2,936.44	64.93	1,182.63	1,073.50	109.13	10.837	
12,900.00	9,716.00	13,367.88	10,246.00	62.45	60.10	-116.61	-3,036.44	64.94	1,182.63	1,070.42	112.21	10.539	
13,000.00	9,716.00	13,467.88	10,246.00	64.11	61.80	-116.61	-3,136.44	64.96	1,182.63	1,067.33	115.30	10.257	
13,100.00	9,716.00	13,567.88	10,246.00	65.77	63.51	-116.61	-3,236.44	64.97	1,182.63	1,064.22	118.41	9.988	
13,200.00	9,716.00	13,667.88	10,246.00	67.45	65.23	-116.61	-3,336.44	64.98	1,182.62	1,061.10	121.52	9.732	
13,300.00	9,716.00	13,767.88	10,246.00	69.13	66.95	-116.61	-3,436.44	65.00	1,182.62	1,057.97	124.65	9.487	
13,400.00	9,716.00	13,867.88	10,246.00	70.82	68.67	-116.61	-3,536.44	65.01	1,182.62	1,054.83	127.79	9.254	
13,500.00	9,716.00	13,967.88	10,246.00	72.52	70.40	-116.61	-3,636.44	65.03	1,182.62	1,051.68	130.94	9.032	
13,600.00	9,716.00	14,067.88	10,246.00	74.22	72.14	-116.61	-3,736.44	65.04	1,182.61	1,048.52	134.10	8.819	
13,700.00	9,716.00	14,167.88	10,246.00	75.93	73.88	-116.61	-3,836.44	65.06	1,182.61	1,045.35	137.26	8.616	
13,800.00	9,716.00	14,267.88	10,246.00	77.64	75.62	-116.61	-3,936.44	65.07	1,182.61	1,042.17	140.44	8.421	
13,900.00	9,716.00	14,367.88	10,246.00	79.36	77.37	-116.61	-4,036.44	65.08	1,182.61	1,038.99	143.62	8.234	
14,000.00	9,716.00	14,467.88	10,246.00	81.08	79.12	-116.61	-4,136.44	65.10	1,182.61	1,035.80	146.81	8.055	
14,100.00	9,716.00	14,567.88	10,246.00	82.81	80.88	-116.61	-4,236.44	65.11	1,182.60	1,032.60	150.00	7.884	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft		
Survey Program:		0-MWD		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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
14,200.00	9,716.00	14,667.88	10,246.00	84.55	82.64	-116.61	-4,336.44	65.13	1,182.60	1,029.40	153.21	7.719			
14,300.00	9,716.00	14,767.88	10,246.00	86.28	84.40	-116.61	-4,436.44	65.14	1,182.60	1,026.19	156.41	7.561			
14,400.00	9,716.00	14,867.88	10,246.00	88.02	86.17	-116.61	-4,536.44	65.16	1,182.60	1,022.97	159.62	7.409			
14,500.00	9,716.00	14,967.88	10,246.00	89.77	87.93	-116.61	-4,636.44	65.17	1,182.59	1,019.75	162.84	7.262			
14,600.00	9,716.00	15,067.88	10,246.00	91.51	89.70	-116.61	-4,736.44	65.19	1,182.59	1,016.53	166.06	7.121			
14,700.00	9,716.00	15,167.88	10,246.00	93.27	91.48	-116.61	-4,836.44	65.20	1,182.59	1,013.30	169.29	6.986			
14,800.00	9,716.00	15,267.88	10,246.00	95.02	93.25	-116.61	-4,936.44	65.21	1,182.59	1,010.07	172.52	6.855			
14,900.00	9,716.00	15,367.88	10,246.00	96.78	95.03	-116.61	-5,036.44	65.23	1,182.58	1,006.83	175.75	6.729			
15,000.00	9,716.00	15,467.88	10,246.00	98.53	96.81	-116.61	-5,136.44	65.24	1,182.58	1,003.59	178.99	6.607			
15,100.00	9,716.00	15,567.88	10,246.00	100.30	98.59	-116.61	-5,236.44	65.26	1,182.58	1,000.34	182.24	6.489			
15,200.00	9,716.00	15,667.88	10,246.00	102.06	100.37	-116.61	-5,336.44	65.27	1,182.58	997.10	185.48	6.376			
15,300.00	9,716.00	15,767.88	10,246.00	103.83	102.15	-116.61	-5,436.44	65.29	1,182.57	993.85	188.73	6.266			
15,400.00	9,716.00	15,867.88	10,246.00	105.60	103.94	-116.61	-5,536.44	65.30	1,182.57	990.59	191.98	6.160			
15,500.00	9,716.00	15,967.88	10,246.00	107.37	105.73	-116.61	-5,636.44	65.31	1,182.57	987.33	195.24	6.057			
15,600.00	9,716.00	16,067.88	10,246.00	109.14	107.52	-116.61	-5,736.44	65.33	1,182.57	984.08	198.49	5.958			
15,700.00	9,716.00	16,167.88	10,246.00	110.91	109.31	-116.61	-5,836.44	65.34	1,182.57	980.81	201.75	5.861			
15,800.00	9,716.00	16,267.88	10,246.00	112.69	111.10	-116.61	-5,936.44	65.36	1,182.56	977.55	205.01	5.768			
15,900.00	9,716.00	16,367.88	10,246.00	114.47	112.89	-116.61	-6,036.44	65.37	1,182.56	974.28	208.28	5.678			
16,000.00	9,716.00	16,467.88	10,246.00	116.25	114.68	-116.61	-6,136.44	65.39	1,182.56	971.01	211.55	5.590			
16,100.00	9,716.00	16,567.88	10,246.00	118.03	116.48	-116.61	-6,236.44	65.40	1,182.56	967.74	214.82	5.505			
16,200.00	9,716.00	16,667.88	10,246.00	119.81	118.27	-116.61	-6,336.44	65.41	1,182.55	964.47	218.09	5.422			
16,300.00	9,716.00	16,767.88	10,246.00	121.59	120.07	-116.61	-6,436.44	65.43	1,182.55	961.19	221.36	5.342			
16,400.00	9,716.00	16,867.88	10,246.00	123.38	121.87	-116.61	-6,536.44	65.44	1,182.55	957.91	224.63	5.264			
16,500.00	9,716.00	16,967.88	10,246.00	125.17	123.67	-116.61	-6,636.44	65.46	1,182.55	954.63	227.91	5.189			
16,600.00	9,716.00	17,067.88	10,246.00	126.95	125.47	-116.61	-6,736.44	65.47	1,182.54	951.35	231.19	5.115			
16,700.00	9,716.00	17,167.88	10,246.00	128.74	127.27	-116.61	-6,836.44	65.49	1,182.54	948.07	234.47	5.043			
16,800.00	9,716.00	17,267.88	10,246.00	130.53	129.07	-116.61	-6,936.44	65.50	1,182.54	944.79	237.75	4.974			
16,900.00	9,716.00	17,367.88	10,246.00	132.32	130.87	-116.61	-7,036.44	65.52	1,182.54	941.50	241.04	4.906			
17,000.00	9,716.00	17,467.88	10,246.00	134.12	132.68	-116.61	-7,136.44	65.53	1,182.53	938.21	244.32	4.840			
17,100.00	9,716.00	17,567.88	10,246.00	135.91	134.48	-116.61	-7,236.44	65.54	1,182.53	934.93	247.61	4.776			
17,200.00	9,716.00	17,667.88	10,246.00	137.70	136.29	-116.61	-7,336.44	65.56	1,182.53	931.64	250.89	4.713			
17,300.00	9,716.00	17,767.88	10,246.00	139.50	138.09	-116.61	-7,436.44	65.57	1,182.53	928.34	254.18	4.652			
17,400.00	9,716.00	17,867.88	10,246.00	141.30	139.90	-116.61	-7,536.44	65.59	1,182.53	925.05	257.47	4.593			
17,500.00	9,716.00	17,967.88	10,246.00	143.09	141.70	-116.61	-7,636.44	65.60	1,182.52	921.76	260.76	4.535			
17,600.00	9,716.00	18,067.88	10,246.00	144.89	143.51	-116.61	-7,736.44	65.62	1,182.52	918.46	264.06	4.478			
17,700.00	9,716.00	18,167.88	10,246.00	146.69	145.32	-116.61	-7,836.44	65.63	1,182.52	915.17	267.35	4.423			
17,800.00	9,716.00	18,267.88	10,246.00	148.49	147.13	-116.61	-7,936.44	65.64	1,182.52	911.87	270.64	4.369			
17,900.00	9,716.00	18,367.88	10,246.00	150.29	148.93	-116.61	-8,036.44	65.66	1,182.51	908.57	273.94	4.317			
18,000.00	9,716.00	18,467.88	10,246.00	152.09	150.74	-116.61	-8,136.44	65.67	1,182.51	905.27	277.24	4.265			
18,100.00	9,716.00	18,567.88	10,246.00	153.89	152.55	-116.61	-8,236.44	65.69	1,182.51	901.97	280.53	4.215			
18,200.00	9,716.00	18,667.88	10,246.00	155.69	154.36	-116.61	-8,336.44	65.70	1,182.51	898.67	283.83	4.166			
18,300.00	9,716.00	18,767.88	10,246.00	157.50	156.17	-116.61	-8,436.44	65.72	1,182.50	895.37	287.13	4.118			
18,400.00	9,716.00	18,867.88	10,246.00	159.30	157.99	-116.61	-8,536.44	65.73	1,182.50	892.07	290.43	4.072			
18,500.00	9,716.00	18,967.88	10,246.00	161.10	159.80	-116.61	-8,636.44	65.74	1,182.50	888.77	293.73	4.026			
18,600.00	9,716.00	19,067.88	10,246.00	162.91	161.61	-116.61	-8,736.44	65.76	1,182.50	885.46	297.04	3.981			
18,700.00	9,716.00	19,167.88	10,246.00	164.71	163.42	-116.61	-8,836.44	65.77	1,182.49	882.16	300.34	3.937			
18,800.00	9,716.00	19,267.88	10,246.00	166.52	165.24	-116.61	-8,936.44	65.79	1,182.49	878.85	303.64	3.894			
18,900.00	9,716.00	19,367.88	10,246.00	168.32	167.05	-116.61	-9,036.44	65.80	1,182.49	875.54	306.95	3.852			
19,000.00	9,716.00	19,467.88	10,246.00	170.13	168.86	-116.61	-9,136.44	65.82	1,182.49	872.24	310.25	3.811			
19,100.00	9,716.00	19,567.88	10,246.00	171.94	170.68	-116.61	-9,236.44	65.83	1,182.49	868.93	313.56	3.771			
19,200.00	9,716.00	19,667.88	10,246.00	173.75	172.49	-116.61	-9,336.44	65.85	1,182.48	865.62	316.86	3.732			
19,300.00	9,716.00	19,767.88	10,246.00	175.55	174.30	-116.61	-9,436.44	65.86	1,182.48	862.31	320.17	3.693			

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 136H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,400.00	9,716.00	19,867.88	10,246.00	177.36	176.12	-116.61	-9,536.44	65.87	1,182.48	859.00	323.48	3.656	
19,500.00	9,716.00	19,967.88	10,246.00	179.17	177.94	-116.61	-9,636.44	65.89	1,182.48	855.69	326.78	3.619	
19,600.00	9,716.00	20,067.88	10,246.00	180.98	179.75	-116.61	-9,736.44	65.90	1,182.47	852.38	330.09	3.582	
19,700.00	9,716.00	20,167.88	10,246.00	182.79	181.57	-116.61	-9,836.44	65.92	1,182.47	849.07	333.40	3.547	
19,800.00	9,716.00	20,267.88	10,246.00	184.60	183.38	-116.61	-9,936.44	65.93	1,182.47	845.76	336.71	3.512	
19,900.00	9,716.00	20,367.88	10,246.00	186.41	185.20	-116.61	-10,036.44	65.95	1,182.47	842.44	340.02	3.478	
20,000.00	9,716.00	20,467.88	10,246.00	188.22	187.02	-116.61	-10,136.44	65.96	1,182.46	839.13	343.33	3.444	
20,026.64	9,716.00	20,494.52	10,246.00	188.71	187.50	-116.61	-10,163.08	65.96	1,182.46	838.25	344.22	3.435 SF	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 234H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	3.40	3.40	0.50	0.50	52.12	846.19	1,087.79	1,378.16				
100.00	100.00	103.40	103.40	0.51	0.51	52.12	846.19	1,087.79	1,378.16	1,377.14	1.02	1,357.211	
200.00	200.00	203.40	203.40	0.59	0.59	52.12	846.19	1,087.79	1,378.16	1,376.98	1.18	1,168.266	
300.00	300.00	303.40	303.40	0.73	0.74	52.12	846.19	1,087.79	1,378.16	1,376.69	1.47	938.533	
400.00	400.00	403.40	403.40	0.91	0.91	52.12	846.19	1,087.79	1,378.16	1,376.34	1.82	755.786	
500.00	500.00	503.40	503.40	1.10	1.11	52.12	846.19	1,087.79	1,378.16	1,375.95	2.21	622.713	
600.00	600.00	603.40	603.40	1.31	1.31	52.12	846.19	1,087.79	1,378.16	1,375.54	2.62	525.602	
700.00	700.00	703.40	703.40	1.52	1.52	52.12	846.19	1,087.79	1,378.16	1,375.12	3.04	452.977	
800.00	800.00	803.40	803.40	1.73	1.74	52.12	846.19	1,087.79	1,378.16	1,374.69	3.47	397.147	
900.00	900.00	903.40	903.40	1.95	1.96	52.12	846.19	1,087.79	1,378.16	1,374.26	3.90	353.124	
1,000.00	1,000.00	1,003.40	1,003.40	2.17	2.17	52.12	846.19	1,087.79	1,378.16	1,373.82	4.34	317.635	
1,100.00	1,100.00	1,103.40	1,103.40	2.38	2.39	52.12	846.19	1,087.79	1,378.16	1,373.38	4.78	288.477	
1,200.00	1,200.00	1,203.40	1,203.40	2.61	2.61	52.12	846.19	1,087.79	1,378.16	1,372.94	5.22	264.127 CC, ES	
1,300.00	1,299.99	1,303.39	1,303.39	2.82	2.83	124.28	846.19	1,087.79	1,378.65	1,373.00	5.65	244.003	
1,400.00	1,399.96	1,403.36	1,403.36	3.02	3.05	124.36	846.19	1,087.79	1,380.13	1,374.05	6.08	227.123	
1,500.00	1,499.86	1,503.26	1,503.26	3.23	3.28	124.49	846.19	1,087.79	1,382.60	1,376.09	6.51	212.464	
1,600.00	1,599.68	1,603.08	1,603.08	3.45	3.50	124.67	846.19	1,087.79	1,386.06	1,379.12	6.94	199.630	
1,700.00	1,699.37	1,702.77	1,702.77	3.67	3.72	124.90	846.19	1,087.79	1,390.55	1,383.17	7.38	188.304	
1,800.00	1,798.90	1,802.30	1,802.30	3.91	3.94	125.18	846.19	1,087.79	1,396.07	1,388.24	7.83	178.232	
1,900.00	1,898.26	1,901.66	1,901.66	4.16	4.16	125.50	846.19	1,087.79	1,402.65	1,394.36	8.29	169.213	
2,000.00	1,997.40	2,001.30	2,001.30	4.42	4.39	125.87	846.19	1,087.79	1,410.30	1,401.55	8.76	161.073	
2,027.76	2,024.88	2,045.81	2,045.80	4.49	4.47	126.07	845.84	1,087.70	1,412.45	1,403.54	8.91	158.498	
2,100.00	2,096.37	2,161.38	2,161.29	4.69	4.68	126.72	841.80	1,086.61	1,416.63	1,407.33	9.30	152.365	
2,200.00	2,195.33	2,271.26	2,270.94	4.98	4.88	127.41	834.88	1,084.76	1,420.31	1,410.57	9.74	145.763	
2,300.00	2,294.29	2,369.96	2,369.42	5.27	5.05	128.04	828.54	1,083.06	1,424.09	1,413.91	10.18	139.840	
2,400.00	2,393.25	2,468.65	2,467.89	5.57	5.24	128.66	822.20	1,081.36	1,428.04	1,417.41	10.63	134.322	
2,500.00	2,492.20	2,567.34	2,566.36	5.87	5.43	129.27	815.86	1,079.66	1,432.17	1,421.08	11.09	129.182	
2,600.00	2,591.16	2,666.03	2,664.84	6.18	5.63	129.89	809.52	1,077.96	1,436.46	1,424.91	11.55	124.398	
2,700.00	2,690.12	2,764.72	2,763.31	6.49	5.83	130.50	803.17	1,076.26	1,440.92	1,428.91	12.01	119.944	
2,800.00	2,789.08	2,863.41	2,861.78	6.80	6.03	131.11	796.83	1,074.56	1,445.55	1,433.07	12.48	115.794	
2,900.00	2,888.04	2,962.10	2,960.25	7.12	6.24	131.71	790.49	1,072.86	1,450.34	1,437.38	12.96	111.926	
3,000.00	2,986.99	3,060.79	3,058.73	7.44	6.45	132.31	784.15	1,071.16	1,455.30	1,441.86	13.44	108.318	
3,100.00	3,085.95	3,159.49	3,157.20	7.76	6.66	132.90	777.81	1,069.46	1,460.41	1,446.50	13.92	104.948	
3,200.00	3,184.91	3,258.18	3,255.67	8.08	6.88	133.49	771.47	1,067.76	1,465.69	1,451.29	14.40	101.798	
3,300.00	3,283.87	3,356.87	3,354.14	8.41	7.10	134.08	765.12	1,066.06	1,471.12	1,456.24	14.88	98.849	
3,400.00	3,382.83	3,455.56	3,452.62	8.74	7.32	134.66	758.78	1,064.36	1,476.71	1,461.34	15.37	96.086	
3,500.00	3,481.79	3,554.25	3,551.09	9.06	7.55	135.24	752.44	1,062.66	1,482.45	1,466.60	15.86	93.493	
3,600.00	3,580.74	3,652.94	3,649.56	9.39	7.77	135.81	746.10	1,060.96	1,488.35	1,472.00	16.34	91.059	
3,700.00	3,679.70	3,751.63	3,748.03	9.72	8.00	136.38	739.76	1,059.26	1,494.40	1,477.56	16.83	88.769 SF	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.30	0.30	0.50	0.50	139.97	-15.31	12.86	19.99				
100.00	100.00	100.30	100.30	0.51	0.51	139.97	-15.31	12.86	19.99	18.98	1.01	19.714	
200.00	200.00	200.30	200.30	0.59	0.59	139.97	-15.31	12.86	19.99	18.82	1.18	17.003	
300.00	300.00	300.30	300.30	0.73	0.73	139.97	-15.31	12.86	19.99	18.53	1.46	13.664	
400.00	400.00	400.30	400.30	0.91	0.91	139.97	-15.31	12.86	19.99	18.18	1.82	11.000	
500.00	500.00	500.30	500.30	1.10	1.10	139.97	-15.31	12.86	19.99	17.79	2.21	9.060	
600.00	600.00	600.30	600.30	1.31	1.31	139.97	-15.31	12.86	19.99	17.38	2.62	7.644	
700.00	700.00	700.30	700.30	1.52	1.52	139.97	-15.31	12.86	19.99	16.96	3.04	6.586	
800.00	800.00	800.30	800.30	1.73	1.73	139.97	-15.31	12.86	19.99	16.53	3.46	5.773	
900.00	900.00	900.30	900.30	1.95	1.95	139.97	-15.31	12.86	19.99	16.10	3.90	5.132	
1,000.00	1,000.00	1,000.30	1,000.30	2.17	2.17	139.97	-15.31	12.86	19.99	15.66	4.33	4.615	
1,100.00	1,100.00	1,100.30	1,100.30	2.38	2.39	139.97	-15.31	12.86	19.99	15.22	4.77	4.191	
1,200.00	1,200.00	1,200.30	1,200.30	2.61	2.61	139.97	-15.31	12.86	19.99	14.78	5.21	3.837 CC, ES	
1,300.00	1,299.99	1,300.29	1,300.29	2.82	2.83	-149.17	-15.31	12.86	20.74	15.10	5.64	3.675	
1,400.00	1,399.96	1,400.26	1,400.26	3.02	3.05	-152.50	-15.31	12.86	23.03	16.96	6.07	3.793	
1,500.00	1,499.86	1,500.16	1,500.16	3.23	3.27	-156.77	-15.31	12.86	26.97	20.47	6.50	4.149	
1,600.00	1,599.68	1,601.05	1,601.03	3.45	3.49	-160.26	-14.60	11.23	30.96	24.03	6.92	4.471	
1,700.00	1,699.37	1,702.13	1,701.96	3.67	3.70	-162.62	-12.47	6.32	33.25	25.91	7.34	4.531	
1,800.00	1,798.90	1,803.29	1,802.72	3.91	3.92	-164.46	-8.92	-1.85	33.79	26.04	7.75	4.361	
1,838.76	1,837.44	1,842.16	1,841.36	4.00	4.01	-165.13	-7.23	-5.72	33.67	25.76	7.91	4.255	
1,900.00	1,898.26	1,903.39	1,902.23	4.16	4.15	-166.42	-4.57	-11.84	34.00	25.82	8.18	4.157	
2,000.00	1,997.40	2,003.36	2,001.60	4.42	4.39	-168.90	-0.23	-21.83	35.94	27.33	8.61	4.172	
2,027.76	2,024.88	2,031.10	2,029.18	4.49	4.46	-169.63	0.97	-24.60	36.80	28.06	8.74	4.212	
2,100.00	2,096.37	2,103.29	2,100.94	4.69	4.64	-171.42	4.11	-31.81	39.23	30.17	9.05	4.332	
2,200.00	2,195.33	2,203.22	2,200.27	4.98	4.89	-173.56	8.45	-41.80	42.64	33.14	9.50	4.489	
2,300.00	2,294.29	2,303.15	2,299.61	5.27	5.14	-175.38	12.79	-51.78	46.10	36.16	9.94	4.636	
2,400.00	2,393.25	2,403.08	2,398.94	5.57	5.40	-176.94	17.13	-61.77	49.60	39.21	10.39	4.772	
2,500.00	2,492.20	2,503.01	2,498.28	5.87	5.67	-178.30	21.47	-71.75	53.14	42.29	10.85	4.899	
2,600.00	2,591.16	2,602.94	2,597.62	6.18	5.94	-179.49	25.81	-81.74	56.70	45.39	11.30	5.016	
2,700.00	2,690.12	2,702.87	2,696.95	6.49	6.21	-179.47	30.15	-91.72	60.28	48.52	11.76	5.125	
2,800.00	2,789.08	2,802.80	2,796.29	6.80	6.48	-178.54	34.49	-101.71	63.88	51.66	12.22	5.226	
2,900.00	2,888.04	2,902.73	2,895.62	7.12	6.75	-177.71	38.83	-111.69	67.49	54.81	12.69	5.320	
3,000.00	2,986.99	3,002.66	2,994.96	7.44	7.03	-176.96	43.17	-121.68	71.12	57.97	13.15	5.408	
3,100.00	3,085.95	3,102.59	3,094.29	7.76	7.31	-176.29	47.51	-131.67	74.76	61.14	13.62	5.489	
3,200.00	3,184.91	3,202.52	3,193.63	8.08	7.59	-175.68	51.85	-141.65	78.41	64.32	14.09	5.565	
3,300.00	3,283.87	3,302.45	3,292.96	8.41	7.87	-175.12	56.19	-151.64	82.06	67.50	14.56	5.636	
3,400.00	3,382.83	3,402.38	3,392.30	8.74	8.15	-174.61	60.53	-161.62	85.73	70.69	15.03	5.702	
3,500.00	3,481.79	3,502.31	3,491.63	9.06	8.44	-174.15	64.87	-171.61	89.39	73.89	15.51	5.764	
3,600.00	3,580.74	3,602.24	3,590.97	9.39	8.72	-173.72	69.21	-181.59	93.07	77.08	15.98	5.822	
3,700.00	3,679.70	3,702.17	3,690.30	9.72	9.01	-173.32	73.55	-191.58	96.75	80.29	16.46	5.877	
3,800.00	3,778.66	3,802.10	3,789.64	10.06	9.29	-172.95	77.89	-201.56	100.43	83.49	16.94	5.928	
3,900.00	3,877.62	3,902.03	3,888.97	10.39	9.58	-172.61	82.23	-211.55	104.12	86.70	17.42	5.977	
4,000.00	3,976.58	4,001.96	3,988.31	10.72	9.87	-172.29	86.57	-221.53	107.81	89.91	17.90	6.023	
4,100.00	4,075.54	4,101.89	4,087.64	11.06	10.16	-171.99	90.91	-231.52	111.50	93.12	18.38	6.066	
4,200.00	4,174.49	4,201.82	4,186.98	11.39	10.44	-171.72	95.25	-241.50	115.20	96.34	18.87	6.107	
4,300.00	4,273.45	4,301.75	4,286.31	11.73	10.73	-171.45	99.59	-251.49	118.90	99.55	19.35	6.145	
4,400.00	4,372.41	4,401.68	4,385.65	12.06	11.02	-171.21	103.93	-261.47	122.60	102.77	19.83	6.182	
4,500.00	4,471.37	4,501.61	4,484.98	12.40	11.31	-170.98	108.27	-271.46	126.31	105.99	20.32	6.217	
4,600.00	4,570.33	4,601.54	4,584.32	12.73	11.60	-170.76	112.62	-281.44	130.01	109.21	20.80	6.250	
4,700.00	4,669.28	4,701.47	4,683.65	13.07	11.89	-170.55	116.96	-291.43	133.72	112.43	21.29	6.281	
4,800.00	4,768.24	4,801.40	4,782.99	13.41	12.19	-170.36	121.30	-301.41	137.43	115.65	21.78	6.311	
4,900.00	4,867.20	4,901.33	4,882.33	13.75	12.48	-170.18	125.64	-311.40	141.14	118.88	22.26	6.340	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD		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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,000.00	4,966.16	5,001.26	4,981.66	14.09	12.77	170.00	129.98	-321.39	144.85	122.10	22.75	6.367			
5,100.00	5,065.12	5,101.19	5,081.00	14.42	13.06	169.83	134.32	-331.37	148.56	125.33	23.24	6.393			
5,200.00	5,164.08	5,201.12	5,180.33	14.76	13.35	169.68	138.66	-341.36	152.28	128.55	23.73	6.418			
5,300.00	5,263.03	5,301.05	5,279.67	15.10	13.65	169.53	143.00	-351.34	155.99	131.78	24.22	6.442			
5,400.00	5,361.99	5,400.98	5,379.00	15.44	13.94	169.38	147.34	-361.33	159.71	135.00	24.71	6.464			
5,500.00	5,460.95	5,500.91	5,478.34	15.78	14.23	169.24	151.68	-371.31	163.43	138.23	25.20	6.486			
5,600.00	5,559.91	5,600.84	5,577.67	16.12	14.53	169.11	156.02	-381.30	167.15	141.46	25.69	6.507			
5,700.00	5,658.87	5,700.77	5,677.01	16.46	14.82	168.99	160.36	-391.28	170.87	144.69	26.18	6.527			
5,800.00	5,757.82	5,800.70	5,776.34	16.80	15.11	168.87	164.70	-401.27	174.59	147.92	26.67	6.547			
5,900.00	5,856.78	5,900.63	5,875.68	17.14	15.41	168.75	169.04	-411.25	178.31	151.15	27.16	6.565			
6,000.00	5,955.74	6,000.56	5,975.01	17.48	15.70	168.64	173.38	-421.24	182.03	154.38	27.65	6.583			
6,100.00	6,054.70	6,100.49	6,074.35	17.82	16.00	168.54	177.72	-431.22	185.75	157.61	28.14	6.600			
6,200.00	6,153.66	6,200.42	6,173.68	18.17	16.29	168.44	182.06	-441.21	189.47	160.84	28.64	6.617			
6,300.00	6,252.62	6,300.35	6,273.02	18.51	16.58	168.34	186.40	-451.19	193.20	164.07	29.13	6.633			
6,400.00	6,351.57	6,400.29	6,372.35	18.85	16.88	168.24	190.74	-461.18	196.92	167.30	29.62	6.648			
6,500.00	6,450.53	6,500.22	6,471.69	19.19	17.17	168.15	195.08	-471.16	200.64	170.53	30.11	6.663			
6,600.00	6,549.49	6,600.15	6,571.02	19.53	17.47	168.07	199.42	-481.15	204.37	173.76	30.61	6.677			
6,700.00	6,648.45	6,700.08	6,670.36	19.87	17.76	167.98	203.76	-491.13	208.09	176.99	31.10	6.691			
6,800.00	6,747.41	6,800.01	6,769.69	20.21	18.06	167.90	208.10	-501.12	211.82	180.23	31.59	6.705			
6,900.00	6,846.37	6,899.94	6,869.03	20.56	18.35	167.82	212.44	-511.11	215.55	183.46	32.09	6.718			
7,000.00	6,945.32	6,999.87	6,968.37	20.90	18.65	167.75	216.78	-521.09	219.27	186.69	32.58	6.730			
7,100.00	7,044.28	7,099.80	7,067.70	21.24	18.94	167.67	221.12	-531.08	223.00	189.92	33.07	6.742			
7,200.00	7,143.24	7,199.73	7,167.04	21.58	19.24	167.60	225.46	-541.06	226.73	193.16	33.57	6.754			
7,300.00	7,242.20	7,299.66	7,266.37	21.93	19.53	167.53	229.80	-551.05	230.45	196.39	34.06	6.765			
7,400.00	7,341.16	7,399.59	7,365.71	22.27	19.83	167.47	234.14	-561.03	234.18	199.62	34.56	6.777			
7,500.00	7,440.11	7,499.52	7,465.04	22.61	20.13	167.40	238.48	-571.02	237.91	202.86	35.05	6.787			
7,600.00	7,539.07	7,599.45	7,564.38	22.95	20.42	167.34	242.82	-581.00	241.64	206.09	35.55	6.798			
7,700.00	7,638.03	7,699.38	7,663.71	23.30	20.72	167.28	247.16	-590.99	245.37	209.33	36.04	6.808			
7,800.00	7,736.99	7,799.31	7,763.05	23.64	21.01	167.22	251.50	-600.97	249.10	212.56	36.54	6.818			
7,900.00	7,835.95	7,899.24	7,862.38	23.98	21.31	167.17	255.85	-610.96	252.83	215.79	37.03	6.827			
8,000.00	7,934.91	7,999.17	7,961.72	24.32	21.61	167.11	260.19	-620.94	256.56	219.03	37.53	6.836			
8,100.00	8,033.86	8,099.10	8,061.05	24.67	21.90	167.06	264.53	-630.93	260.29	222.26	38.02	6.845			
8,200.00	8,132.82	8,199.03	8,160.39	25.01	22.20	167.01	268.87	-640.91	264.02	225.50	38.52	6.854			
8,300.00	8,231.78	8,298.96	8,259.72	25.35	22.49	166.96	273.21	-650.90	267.75	228.73	39.02	6.863			
8,400.00	8,330.74	8,398.89	8,359.06	25.70	22.79	166.91	277.55	-660.88	271.48	231.96	39.51	6.871			
8,500.00	8,429.70	8,498.82	8,458.39	26.04	23.09	166.86	281.89	-670.87	275.21	235.20	40.01	6.879			
8,600.00	8,528.65	8,598.75	8,557.73	26.38	23.38	166.81	286.23	-680.86	278.94	238.43	40.50	6.887			
8,652.45	8,580.56	8,651.16	8,609.83	26.56	23.54	166.79	288.50	-686.09	280.89	240.13	40.76	6.891			
8,700.00	8,627.67	8,698.69	8,657.08	26.70	23.68	166.75	290.57	-690.84	282.28	241.30	40.99	6.887			
8,800.00	8,727.05	8,798.68	8,756.47	26.94	23.98	166.55	294.91	-700.83	282.70	241.26	41.44	6.822			
8,900.00	8,826.76	8,898.61	8,855.81	27.14	24.27	166.17	299.25	-710.82	279.74	237.83	41.90	6.676			
9,000.00	8,926.68	8,998.37	8,954.97	27.30	24.57	165.58	303.58	-720.79	273.40	231.03	42.37	6.453			
9,066.33	8,993.00	9,064.38	9,020.59	27.39	24.76	92.92	306.45	-727.38	267.36	224.67	42.69	6.263			
9,100.00	9,026.67	9,097.85	9,053.86	27.44	24.86	92.64	307.91	-730.73	263.93	221.07	42.86	6.158			
9,200.00	9,126.67	9,197.26	9,152.68	27.60	25.16	91.77	312.22	-740.66	253.77	210.38	43.38	5.849			
9,216.37	9,143.04	9,213.53	9,168.85	27.62	25.21	91.62	312.93	-742.29	252.11	208.64	43.47	5.800			
9,250.00	9,176.65	9,246.06	9,201.19	27.67	25.30	-89.24	314.33	-745.52	248.71	205.05	43.66	5.696			
9,300.00	9,226.37	9,291.74	9,246.65	27.72	25.41	-91.19	316.11	-749.60	244.23	200.22	44.01	5.550			
9,350.00	9,275.46	9,336.90	9,291.66	27.76	25.51	-93.90	317.58	-752.98	240.90	196.45	44.45	5.420			
9,400.00	9,323.54	9,381.25	9,335.91	27.79	25.60	-97.27	318.75	-755.67	239.27	194.24	45.03	5.314			
9,411.29	9,334.22	9,391.12	9,345.76	27.79	25.61	-98.10	318.97	-756.18	239.21	194.03	45.18	5.295			
9,450.00	9,370.25	9,424.48	9,379.09	27.80	25.67	-101.09	319.62	-757.68	240.03	194.28	45.75	5.247			

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,500.00	9,415.23	9,466.31	9,420.89	27.81	25.74	-105.12	320.22	-759.06	243.95	197.34	46.61	5.233	
9,550.00	9,458.13	9,506.44	9,461.01	27.80	25.81	-109.10	320.57	-759.86	251.75	204.18	47.57	5.292	
9,600.00	9,498.64	9,544.59	9,499.16	27.80	25.87	-112.75	320.69	-760.14	263.99	215.44	48.55	5.437	
9,650.00	9,536.44	9,582.18	9,536.74	27.78	25.93	-116.12	320.69	-760.14	280.88	231.38	49.49	5.675	
9,700.00	9,571.25	9,616.98	9,571.55	27.77	25.99	-118.83	320.69	-760.14	302.40	252.08	50.32	6.009	
9,750.00	9,602.80	9,648.53	9,603.10	27.76	26.04	-120.70	320.69	-760.14	328.49	277.49	51.01	6.440	
9,800.00	9,630.85	9,676.58	9,631.15	27.76	26.09	-121.60	320.69	-760.14	358.88	307.34	51.54	6.963	
9,850.00	9,655.19	9,703.99	9,658.56	27.76	26.14	-121.86	320.66	-760.14	393.11	341.17	51.94	7.569	
9,900.00	9,675.63	9,738.22	9,692.74	27.77	26.18	-122.54	318.92	-760.16	429.55	377.35	52.20	8.229	
9,950.00	9,692.01	9,835.42	9,788.69	27.81	26.28	-131.37	304.40	-760.29	467.02	415.36	51.66	9.041	
10,000.00	9,704.22	9,943.98	9,891.10	27.86	26.33	-138.72	268.89	-760.63	503.82	453.96	49.86	10.105	
10,050.00	9,712.16	10,130.11	10,044.99	27.93	26.31	-148.05	165.65	-761.61	536.90	492.31	44.59	12.041	
10,100.00	9,715.76	10,477.55	10,213.29	28.03	26.38	-155.44	-132.22	-764.42	557.07	521.83	35.24	15.808	
10,116.37	9,716.00	10,601.34	10,226.00	28.07	26.63	-155.96	-255.11	-765.58	558.10	522.83	35.27	15.824	
10,200.00	9,716.00	10,684.96	10,226.00	28.32	26.90	-156.04	-338.73	-766.37	557.77	521.92	35.85	15.560	
10,300.00	9,716.00	10,784.96	10,226.00	28.73	27.36	-156.13	-438.72	-767.32	557.38	520.76	36.62	15.221	
10,400.00	9,716.00	10,884.95	10,226.00	29.26	27.94	-156.22	-538.71	-768.26	556.99	519.51	37.48	14.861	
10,500.00	9,716.00	10,984.95	10,226.00	29.90	28.64	-156.31	-638.70	-769.21	556.60	518.19	38.42	14.488	
10,600.00	9,716.00	11,084.94	10,226.00	30.65	29.45	-156.40	-738.69	-770.16	556.22	516.79	39.43	14.107	
10,700.00	9,716.00	11,184.94	10,226.00	31.50	30.36	-156.49	-838.68	-771.10	555.83	515.33	40.51	13.722	
10,800.00	9,716.00	11,284.94	10,226.00	32.44	31.34	-156.58	-938.67	-772.05	555.45	513.80	41.65	13.337	
10,900.00	9,716.00	11,384.93	10,226.00	33.46	32.41	-156.67	-1,038.67	-772.99	555.07	512.23	42.84	12.957	
11,000.00	9,716.00	11,484.93	10,226.00	34.56	33.54	-156.77	-1,138.66	-773.94	554.69	510.61	44.08	12.583	
11,100.00	9,716.00	11,584.92	10,226.00	35.71	34.74	-156.86	-1,238.65	-774.88	554.31	508.94	45.37	12.218	
11,200.00	9,716.00	11,684.92	10,226.00	36.93	35.99	-156.95	-1,338.64	-775.83	553.93	507.23	46.70	11.862	
11,300.00	9,716.00	11,784.91	10,226.00	38.20	37.28	-157.04	-1,438.63	-776.77	553.56	505.50	48.06	11.518	
11,400.00	9,716.00	11,884.91	10,226.00	39.51	38.62	-157.13	-1,538.62	-777.72	553.18	503.73	49.45	11.186	
11,500.00	9,716.00	11,984.90	10,226.00	40.86	40.00	-157.22	-1,638.61	-778.66	552.81	501.93	50.88	10.865	
11,600.00	9,716.00	12,084.90	10,226.00	42.25	41.41	-157.32	-1,738.60	-779.61	552.44	500.11	52.33	10.557	
11,700.00	9,716.00	12,184.89	10,226.00	43.68	42.86	-157.41	-1,838.59	-780.55	552.07	498.26	53.80	10.261	
11,800.00	9,716.00	12,284.89	10,226.00	45.13	44.33	-157.50	-1,938.58	-781.50	551.70	496.40	55.29	9.978	
11,900.00	9,716.00	12,384.88	10,226.00	46.61	45.83	-157.59	-2,038.57	-782.44	551.33	494.52	56.80	9.706	
12,000.00	9,716.00	12,484.88	10,226.00	48.12	47.35	-157.69	-2,138.57	-783.39	550.96	492.63	58.33	9.445	
12,100.00	9,716.00	12,584.88	10,226.00	49.64	48.89	-157.78	-2,238.56	-784.34	550.60	490.72	59.87	9.196	
12,200.00	9,716.00	12,684.87	10,226.00	51.19	50.46	-157.87	-2,338.55	-785.28	550.23	488.81	61.43	8.957	
12,300.00	9,716.00	12,784.87	10,226.00	52.76	52.04	-157.96	-2,438.54	-786.23	549.87	486.88	62.99	8.729	
12,400.00	9,716.00	12,884.86	10,226.00	54.34	53.63	-158.06	-2,538.53	-787.17	549.51	484.94	64.57	8.511	
12,500.00	9,716.00	12,984.86	10,226.00	55.94	55.24	-158.15	-2,638.52	-788.12	549.15	483.00	66.15	8.302	
12,600.00	9,716.00	13,084.85	10,226.00	57.55	56.86	-158.24	-2,738.51	-789.06	548.80	481.05	67.74	8.101	
12,700.00	9,716.00	13,184.85	10,226.00	59.17	58.50	-158.34	-2,838.50	-790.01	548.44	479.10	69.34	7.910	
12,800.00	9,716.00	13,284.84	10,226.00	60.81	60.14	-158.43	-2,938.49	-790.95	548.09	477.14	70.94	7.726	
12,900.00	9,716.00	13,384.84	10,226.00	62.45	61.80	-158.52	-3,038.48	-791.90	547.73	475.18	72.55	7.550	
13,000.00	9,716.00	13,484.83	10,226.00	64.11	63.46	-158.62	-3,138.47	-792.84	547.38	473.22	74.16	7.381	
13,100.00	9,716.00	13,584.83	10,226.00	65.77	65.13	-158.71	-3,238.47	-793.79	547.03	471.26	75.77	7.219	
13,200.00	9,716.00	13,684.82	10,226.00	67.45	66.82	-158.81	-3,338.46	-794.73	546.68	469.29	77.39	7.064	
13,300.00	9,716.00	13,784.82	10,226.00	69.13	68.51	-158.90	-3,438.45	-795.68	546.33	467.33	79.01	6.915	
13,400.00	9,716.00	13,884.82	10,226.00	70.82	70.20	-158.99	-3,538.44	-796.62	545.99	465.36	80.63	6.772	
13,500.00	9,716.00	13,984.81	10,226.00	72.52	71.90	-159.09	-3,638.43	-797.57	545.64	463.40	82.25	6.634	
13,600.00	9,716.00	14,084.81	10,226.00	74.22	73.61	-159.18	-3,738.42	-798.52	545.30	461.44	83.87	6.502	
13,700.00	9,716.00	14,184.80	10,226.00	75.93	75.33	-159.28	-3,838.41	-799.46	544.96	459.47	85.49	6.375	
13,800.00	9,716.00	14,284.80	10,226.00	77.64	77.04	-159.37	-3,938.40	-800.41	544.62	457.51	87.11	6.252	
13,900.00	9,716.00	14,384.79	10,226.00	79.36	78.77	-159.47	-4,038.39	-801.35	544.28	455.56	88.73	6.134	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD		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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
14,000.00	9,716.00	14,484.79	10,226.00	81.08	80.50	-159.56	-4,138.38	-802.30	543.95	453.60	90.34	6.021			
14,100.00	9,716.00	14,584.78	10,226.00	82.81	82.23	-159.66	-4,238.37	-803.24	543.61	451.65	91.96	5.911			
14,200.00	9,716.00	14,684.78	10,226.00	84.55	83.97	-159.75	-4,338.37	-804.19	543.28	449.70	93.58	5.806			
14,300.00	9,716.00	14,784.77	10,226.00	86.28	85.71	-159.85	-4,438.36	-805.13	542.94	447.76	95.19	5.704			
14,400.00	9,716.00	14,884.77	10,226.00	88.02	87.45	-159.94	-4,538.35	-806.08	542.61	445.81	96.80	5.605			
14,500.00	9,716.00	14,984.76	10,226.00	89.77	89.20	-160.04	-4,638.34	-807.02	542.28	443.88	98.41	5.511			
14,600.00	9,716.00	15,084.76	10,226.00	91.51	90.95	-160.13	-4,738.33	-807.97	541.96	441.94	100.02	5.419			
14,700.00	9,716.00	15,184.76	10,226.00	93.27	92.70	-160.23	-4,838.32	-808.91	541.63	440.01	101.62	5.330			
14,800.00	9,716.00	15,284.75	10,226.00	95.02	94.46	-160.33	-4,938.31	-809.86	541.31	438.09	103.22	5.244			
14,900.00	9,716.00	15,384.75	10,226.00	96.78	96.22	-160.42	-5,038.30	-810.80	540.98	436.17	104.82	5.161			
15,000.00	9,716.00	15,484.74	10,226.00	98.53	97.98	-160.52	-5,138.29	-811.75	540.66	434.25	106.41	5.081			
15,100.00	9,716.00	15,584.74	10,226.00	100.30	99.74	-160.61	-5,238.28	-812.70	540.34	432.34	108.00	5.003			
15,200.00	9,716.00	15,684.73	10,226.00	102.06	101.51	-160.71	-5,338.27	-813.64	540.02	430.43	109.59	4.928			
15,300.00	9,716.00	15,784.73	10,226.00	103.83	103.28	-160.81	-5,438.27	-814.59	539.70	428.53	111.17	4.855			
15,400.00	9,716.00	15,884.72	10,226.00	105.60	105.05	-160.90	-5,538.26	-815.53	539.39	426.64	112.75	4.784			
15,500.00	9,716.00	15,984.72	10,226.00	107.37	106.82	-161.00	-5,638.25	-816.48	539.07	424.75	114.33	4.715			
15,600.00	9,716.00	16,084.71	10,226.00	109.14	108.59	-161.10	-5,738.24	-817.42	538.76	422.86	115.90	4.649			
15,700.00	9,716.00	16,184.71	10,226.00	110.91	110.37	-161.19	-5,838.23	-818.37	538.45	420.98	117.47	4.584			
15,800.00	9,716.00	16,284.70	10,226.00	112.69	112.15	-161.29	-5,938.22	-819.31	538.14	419.11	119.03	4.521			
15,900.00	9,716.00	16,384.70	10,226.00	114.47	113.93	-161.39	-6,038.21	-820.26	537.83	417.24	120.59	4.460			
16,000.00	9,716.00	16,484.69	10,226.00	116.25	115.71	-161.48	-6,138.20	-821.20	537.53	415.38	122.15	4.401			
16,100.00	9,716.00	16,584.69	10,226.00	118.03	117.49	-161.58	-6,238.19	-822.15	537.22	413.52	123.70	4.343			
16,200.00	9,716.00	16,684.69	10,226.00	119.81	119.27	-161.68	-6,338.18	-823.09	536.92	411.67	125.25	4.287			
16,300.00	9,716.00	16,784.68	10,226.00	121.59	121.06	-161.78	-6,438.17	-824.04	536.62	409.83	126.79	4.232			
16,400.00	9,716.00	16,884.68	10,226.00	123.38	122.84	-161.87	-6,538.17	-824.98	536.32	407.99	128.33	4.179			
16,500.00	9,716.00	16,984.67	10,226.00	125.17	124.63	-161.97	-6,638.16	-825.93	536.02	406.16	129.86	4.128			
16,600.00	9,716.00	17,084.67	10,226.00	126.95	126.42	-162.07	-6,738.15	-826.88	535.72	404.33	131.39	4.077			
16,700.00	9,716.00	17,184.66	10,226.00	128.74	128.21	-162.17	-6,838.14	-827.82	535.43	402.51	132.92	4.028			
16,800.00	9,716.00	17,284.66	10,226.00	130.53	130.00	-162.27	-6,938.13	-828.77	535.13	400.70	134.44	3.981			
16,900.00	9,716.00	17,384.65	10,226.00	132.32	131.79	-162.36	-7,038.12	-829.71	534.84	398.89	135.95	3.934			
17,000.00	9,716.00	17,484.65	10,226.00	134.12	133.58	-162.46	-7,138.11	-830.66	534.55	397.08	137.46	3.889			
17,100.00	9,716.00	17,584.64	10,226.00	135.91	135.37	-162.56	-7,238.10	-831.60	534.26	395.29	138.97	3.844			
17,200.00	9,716.00	17,684.64	10,226.00	137.70	137.17	-162.66	-7,338.09	-832.55	533.97	393.50	140.47	3.801			
17,300.00	9,716.00	17,784.63	10,226.00	139.50	138.96	-162.76	-7,438.08	-833.49	533.69	391.72	141.97	3.759			
17,400.00	9,716.00	17,884.63	10,226.00	141.30	140.76	-162.86	-7,538.07	-834.44	533.40	389.94	143.46	3.718			
17,500.00	9,716.00	17,984.63	10,226.00	143.09	142.55	-162.96	-7,638.07	-835.38	533.12	388.17	144.95	3.678			
17,600.00	9,716.00	18,084.62	10,226.00	144.89	144.35	-163.05	-7,738.06	-836.33	532.84	386.40	146.43	3.639			
17,700.00	9,716.00	18,184.62	10,226.00	146.69	146.15	-163.15	-7,838.05	-837.27	532.56	384.65	147.91	3.601			
17,800.00	9,716.00	18,284.61	10,226.00	148.49	147.95	-163.25	-7,938.04	-838.22	532.28	382.89	149.39	3.563			
17,900.00	9,716.00	18,384.61	10,226.00	150.29	149.75	-163.35	-8,038.03	-839.16	532.00	381.15	150.85	3.527			
18,000.00	9,716.00	18,484.60	10,226.00	152.09	151.55	-163.45	-8,138.02	-840.11	531.73	379.41	152.32	3.491			
18,100.00	9,716.00	18,584.60	10,226.00	153.89	153.35	-163.55	-8,238.01	-841.06	531.45	377.68	153.78	3.456			
18,200.00	9,716.00	18,684.59	10,226.00	155.69	155.15	-163.65	-8,338.00	-842.00	531.18	375.95	155.23	3.422			
18,300.00	9,716.00	18,784.59	10,226.00	157.50	156.95	-163.75	-8,437.99	-842.95	530.91	374.23	156.68	3.388			
18,400.00	9,716.00	18,884.58	10,226.00	159.30	158.76	-163.85	-8,537.98	-843.89	530.64	372.51	158.13	3.356			
18,500.00	9,716.00	18,984.58	10,226.00	161.10	160.56	-163.95	-8,637.97	-844.84	530.38	370.81	159.57	3.324			
18,600.00	9,716.00	19,084.57	10,226.00	162.91	162.36	-164.05	-8,737.97	-845.78	530.11	369.10	161.01	3.292			
18,700.00	9,716.00	19,184.57	10,226.00	164.71	164.17	-164.15	-8,837.96	-846.73	529.85	367.41	162.44	3.262			
18,800.00	9,716.00	19,284.57	10,226.00	166.52	165.97	-164.25	-8,937.95	-847.67	529.59	365.72	163.87	3.232			
18,900.00	9,716.00	19,384.56	10,226.00	168.32	167.78	-164.35	-9,037.94	-848.62	529.33	364.04	165.29	3.202			
19,000.00	9,716.00	19,484.56	10,226.00	170.13	169.58	-164.45	-9,137.93	-849.56	529.07	362.36	166.71	3.174			
19,100.00	9,716.00	19,584.55	10,226.00	171.94	171.39	-164.55	-9,237.92	-850.51	528.81	360.69	168.12	3.145			

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



SB Directional

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Goonch Fed Com 0409 236H - Wellbore #1 - Plan 0													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
19,200.00	9,716.00	19,684.55	10,226.00	173.75	173.20	-164.65	-9,337.91	-851.45	528.55	359.02	169.53	3.118	
19,300.00	9,716.00	19,784.54	10,226.00	175.55	175.00	-164.75	-9,437.90	-852.40	528.30	357.37	170.94	3.091	
19,400.00	9,716.00	19,884.54	10,226.00	177.36	176.81	-164.85	-9,537.89	-853.34	528.05	355.71	172.34	3.064	
19,500.00	9,716.00	19,984.53	10,226.00	179.17	178.62	-164.95	-9,637.88	-854.29	527.80	354.07	173.73	3.038	
19,600.00	9,716.00	20,084.53	10,226.00	180.98	180.43	-165.05	-9,737.87	-855.24	527.55	352.43	175.12	3.012	
19,700.00	9,716.00	20,184.52	10,226.00	182.79	182.24	-165.16	-9,837.87	-856.18	527.30	350.79	176.51	2.987	
19,800.00	9,716.00	20,284.52	10,226.00	184.60	184.04	-165.26	-9,937.86	-857.13	527.06	349.16	177.89	2.963	
19,900.00	9,716.00	20,384.51	10,226.00	186.41	185.85	-165.36	-10,037.85	-858.07	526.81	347.54	179.27	2.939	
20,000.00	9,716.00	20,484.51	10,226.00	188.22	187.66	-165.46	-10,137.84	-859.02	526.57	345.93	180.64	2.915	
20,025.33	9,716.00	20,509.20	10,226.00	188.68	188.11	-165.48	-10,162.53	-859.25	526.51	345.54	180.96	2.909 SF	
20,026.64	9,716.00	20,509.20	10,226.00	188.71	188.11	-165.48	-10,162.53	-859.25	526.51	345.58	180.92	2.910	

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Loving Federal Com #001 (Active) - Wellbore #1 - Wellbore #1											Offset Site Error: 0.00 usft	
Survey Program: 125-INC-ONLY										Offset Well Error: 0.50 usft		
Reference		Offset		Semi Major Axis		Highside Toolface (°)	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)		
10,116.37	9,716.00	9,701.81	9,700.90	28.07	189.84	90.00	-1,612.36	-1,621.94	1,497.89	1,281.94	215.95	6.936
10,200.00	9,716.00	9,701.81	9,700.90	28.32	189.84	90.00	-1,612.36	-1,621.94	1,422.43	1,206.90	215.53	6.600
10,300.00	9,716.00	9,701.81	9,700.90	28.73	189.84	90.00	-1,612.36	-1,621.94	1,333.48	1,118.47	215.01	6.202
10,400.00	9,716.00	9,701.81	9,700.90	29.26	189.84	90.00	-1,612.36	-1,621.94	1,246.21	1,031.73	214.48	5.810
10,500.00	9,716.00	9,701.81	9,700.90	29.90	189.84	90.00	-1,612.36	-1,621.94	1,160.99	947.03	213.97	5.426
10,600.00	9,716.00	9,701.81	9,700.90	30.65	189.84	90.00	-1,612.36	-1,621.94	1,078.32	864.81	213.51	5.051
10,700.00	9,716.00	9,701.81	9,700.90	31.50	189.84	90.00	-1,612.36	-1,621.94	998.82	785.65	213.17	4.686
10,800.00	9,716.00	9,701.81	9,700.90	32.44	189.84	90.00	-1,612.36	-1,621.94	923.31	710.24	213.07	4.333
10,900.00	9,716.00	9,701.81	9,700.90	33.46	189.84	90.00	-1,612.36	-1,621.94	852.86	639.51	213.35	3.997
11,000.00	9,716.00	9,701.81	9,700.90	34.56	189.84	90.00	-1,612.36	-1,621.94	788.82	574.61	214.21	3.682
11,100.00	9,716.00	9,701.81	9,700.90	35.71	189.84	90.00	-1,612.36	-1,621.94	732.88	517.07	215.80	3.396
11,200.00	9,716.00	9,701.81	9,700.90	36.93	189.84	90.00	-1,612.36	-1,621.94	687.00	468.80	218.20	3.148
11,300.00	9,716.00	9,701.81	9,700.90	38.20	189.84	90.00	-1,612.36	-1,621.94	653.33	432.02	221.31	2.952
11,400.00	9,716.00	9,701.81	9,700.90	39.51	189.84	90.00	-1,612.36	-1,621.94	633.80	409.01	224.79	2.819
11,475.67	9,716.00	9,701.81	9,700.90	40.53	189.84	90.00	-1,612.36	-1,621.94	629.27	401.85	227.42	2.767 CC
11,500.00	9,716.00	9,701.81	9,700.90	40.86	189.84	90.00	-1,612.36	-1,621.94	629.74	401.52	228.22	2.759 ES, SF
11,600.00	9,716.00	9,701.81	9,700.90	42.25	189.84	90.00	-1,612.36	-1,621.94	641.43	410.25	231.18	2.775
11,700.00	9,716.00	9,701.81	9,700.90	43.68	189.84	90.00	-1,612.36	-1,621.94	668.06	434.65	233.41	2.862
11,800.00	9,716.00	9,701.81	9,700.90	45.13	189.84	90.00	-1,612.36	-1,621.94	707.94	473.05	234.89	3.014
11,900.00	9,716.00	9,701.81	9,700.90	46.61	189.84	90.00	-1,612.36	-1,621.94	758.97	523.26	235.71	3.220
12,000.00	9,716.00	9,701.81	9,700.90	48.12	189.84	90.00	-1,612.36	-1,621.94	819.09	583.03	236.06	3.470
12,100.00	9,716.00	9,701.81	9,700.90	49.64	189.84	90.00	-1,612.36	-1,621.94	886.44	650.37	236.07	3.755
12,200.00	9,716.00	9,701.81	9,700.90	51.19	189.84	90.00	-1,612.36	-1,621.94	959.50	723.62	235.88	4.068
12,300.00	9,716.00	9,701.81	9,700.90	52.76	189.84	90.00	-1,612.36	-1,621.94	1,037.07	801.49	235.57	4.402
12,400.00	9,716.00	9,701.81	9,700.90	54.34	189.84	90.00	-1,612.36	-1,621.94	1,118.20	883.00	235.20	4.754
12,500.00	9,716.00	9,701.81	9,700.90	55.94	189.84	90.00	-1,612.36	-1,621.94	1,202.18	967.37	234.81	5.120
12,600.00	9,716.00	9,701.81	9,700.90	57.55	189.84	90.00	-1,612.36	-1,621.94	1,288.45	1,054.04	234.41	5.496
12,700.00	9,716.00	9,701.81	9,700.90	59.17	189.84	90.00	-1,612.36	-1,621.94	1,376.58	1,142.55	234.03	5.882
12,800.00	9,716.00	9,701.81	9,700.90	60.81	189.84	90.00	-1,612.36	-1,621.94	1,466.23	1,232.57	233.66	6.275

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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Offset Design: SEC. 04-T23S-R28E - Swearingen #001 SWD (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 6925-INC-ONLY												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,800.00	9,716.00	9,785.34	9,784.61	45.13	63.82	-89.96	-3,292.37	-602.93	1,410.68	1,313.02	97.65	14.446	
11,900.00	9,716.00	9,785.36	9,784.63	46.61	63.82	-89.96	-3,292.37	-602.93	1,314.85	1,216.33	98.52	13.346	
12,000.00	9,716.00	9,785.38	9,784.65	48.12	63.82	-89.96	-3,292.37	-602.93	1,219.70	1,120.17	99.53	12.255	
12,100.00	9,716.00	9,785.40	9,784.68	49.64	63.82	-89.97	-3,292.37	-602.93	1,125.39	1,024.67	100.72	11.173	
12,200.00	9,716.00	9,785.42	9,784.70	51.19	63.82	-89.97	-3,292.37	-602.93	1,032.15	930.01	102.13	10.106	
12,300.00	9,716.00	9,785.44	9,784.72	52.76	63.82	-89.97	-3,292.37	-602.93	940.30	836.47	103.83	9.056	
12,400.00	9,716.00	9,785.46	9,784.74	54.34	63.82	-89.98	-3,292.37	-602.93	850.29	744.41	105.87	8.031	
12,500.00	9,716.00	9,785.48	9,784.76	55.94	63.82	-89.98	-3,292.37	-602.93	762.77	654.41	108.36	7.040	
12,600.00	9,716.00	9,785.50	9,784.78	57.55	63.82	-89.98	-3,292.37	-602.93	678.71	567.34	111.37	6.094	
12,700.00	9,716.00	9,785.52	9,784.80	59.17	63.82	-89.99	-3,292.37	-602.93	599.56	484.57	114.99	5.214	
12,800.00	9,716.00	9,785.55	9,784.82	60.81	63.82	-89.99	-3,292.37	-602.93	527.55	408.36	119.19	4.426	
12,900.00	9,716.00	9,785.57	9,784.84	62.45	63.82	-89.99	-3,292.37	-602.93	465.98	342.32	123.65	3.768	
13,000.00	9,716.00	9,785.59	9,784.86	64.11	63.82	-90.00	-3,292.37	-602.93	419.48	291.97	127.52	3.290	
13,100.00	9,716.00	9,785.61	9,784.89	65.77	63.82	-90.00	-3,292.37	-602.93	393.44	264.18	129.26	3.044	
13,155.85	9,716.00	9,785.62	9,784.90	66.71	63.82	-90.00	-3,292.37	-602.93	389.45	260.68	128.77	3.024 CC, ES, SF	
13,200.00	9,716.00	9,785.63	9,784.91	67.45	63.82	-90.00	-3,292.37	-602.93	391.95	264.37	127.57	3.072	
13,300.00	9,716.00	9,785.65	9,784.93	69.13	63.82	-90.00	-3,292.37	-602.93	415.27	292.54	122.73	3.384	
13,400.00	9,716.00	9,785.67	9,784.95	70.82	63.82	-90.01	-3,292.37	-602.93	459.65	343.20	116.45	3.947	
13,500.00	9,716.00	9,785.69	9,784.97	72.52	63.82	-90.01	-3,292.37	-602.93	519.72	409.37	110.35	4.710	
13,600.00	9,716.00	9,785.72	9,784.99	74.22	63.82	-90.01	-3,292.37	-602.93	590.71	485.52	105.19	5.616	
13,700.00	9,716.00	9,785.74	9,785.01	75.93	63.82	-90.02	-3,292.37	-602.93	669.16	568.05	101.11	6.618	
13,800.00	9,716.00	9,785.76	9,785.04	77.64	63.82	-90.02	-3,292.37	-602.93	752.73	654.75	97.97	7.683	
13,900.00	9,716.00	9,785.78	9,785.06	79.36	63.82	-90.02	-3,292.37	-602.93	839.90	744.30	95.60	8.785	
14,000.00	9,716.00	9,785.80	9,785.08	81.08	63.82	-90.03	-3,292.37	-602.93	929.66	835.84	93.81	9.910	
14,100.00	9,716.00	9,785.82	9,785.10	82.81	63.82	-90.03	-3,292.37	-602.93	1,021.32	928.85	92.46	11.046	
14,200.00	9,716.00	9,785.84	9,785.12	84.55	63.83	-90.03	-3,292.37	-602.93	1,114.41	1,022.97	91.44	12.187	
14,300.00	9,716.00	9,785.87	9,785.14	86.28	63.83	-90.04	-3,292.37	-602.93	1,208.61	1,117.94	90.67	13.330	
14,400.00	9,716.00	9,785.89	9,785.17	88.02	63.83	-90.04	-3,292.37	-602.93	1,303.68	1,213.59	90.08	14.472	
14,500.00	9,716.00	9,785.91	9,785.19	89.77	63.83	-90.04	-3,292.37	-602.93	1,399.43	1,309.79	89.64	15.612	
14,600.00	9,716.00	9,785.93	9,785.21	91.51	63.83	-90.05	-3,292.37	-602.93	1,495.74	1,406.43	89.30	16.749	

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



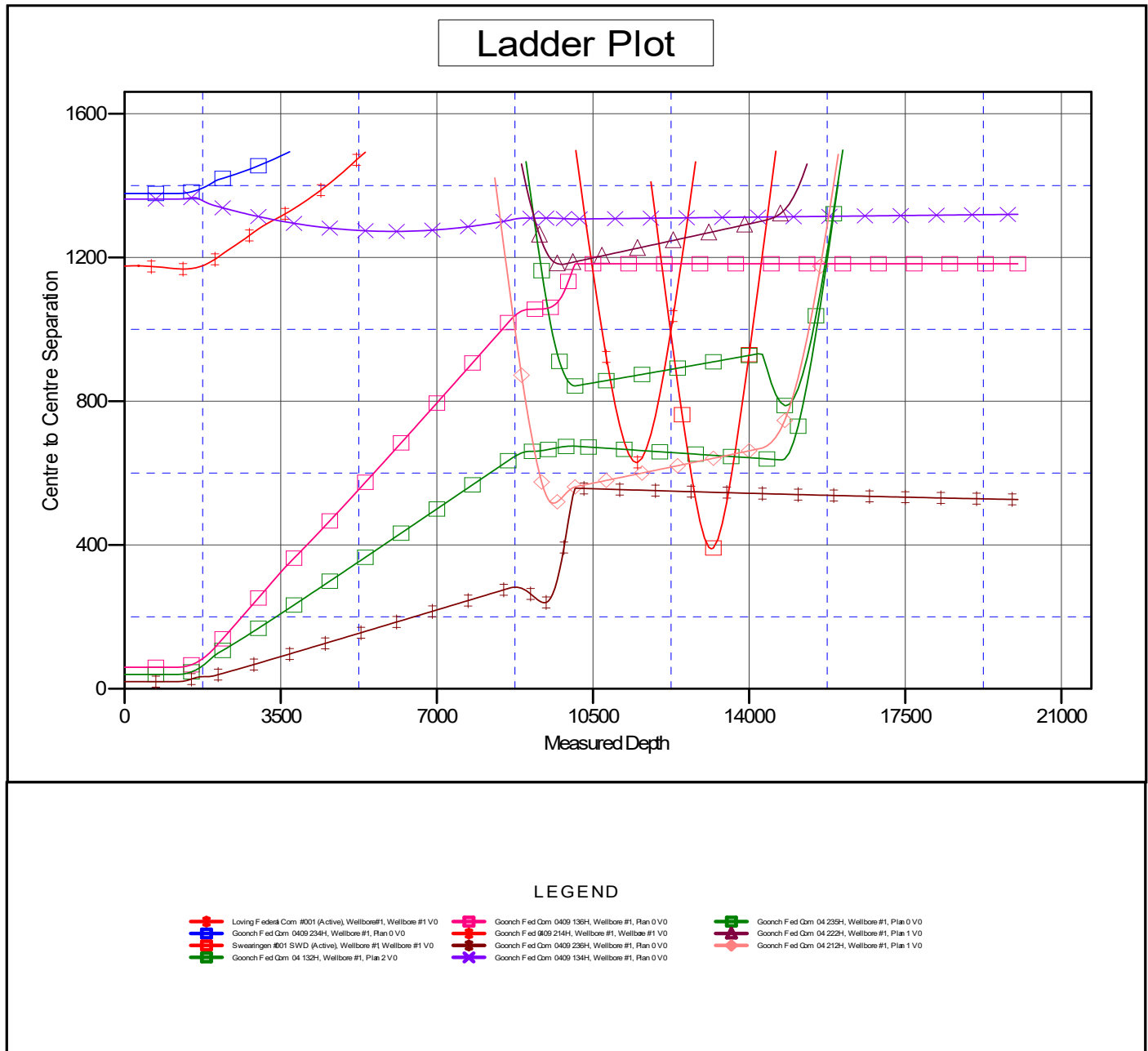
SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3060.10usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Goonch Fed Com 0409 225H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.13°



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



SB Directional Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Reference Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Goonch Fed Com 0409 225H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3060.10usft

Offset Depths are relative to Offset Datum

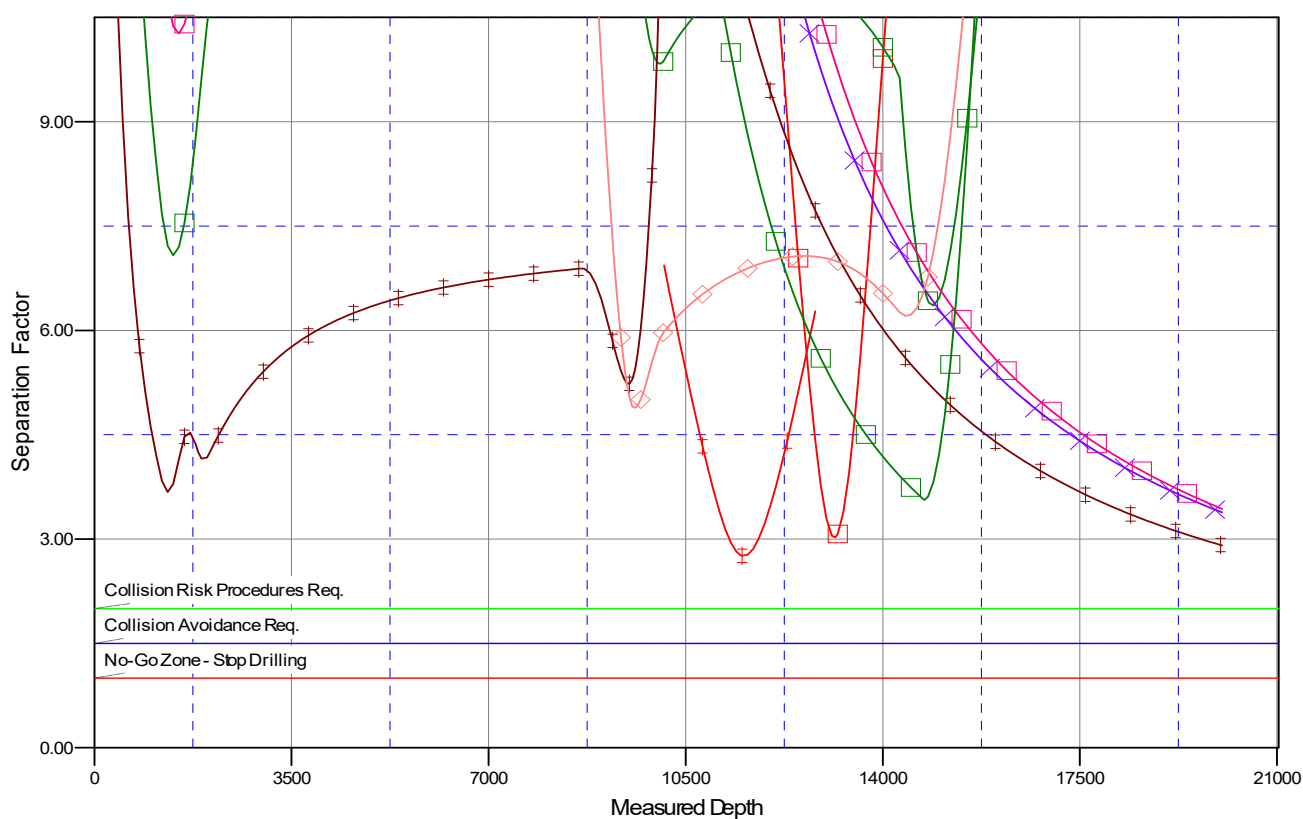
Central Meridian is -104.333334

Coordinates are relative to: Goonch Fed Com 0409 225H

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

Grid Convergence at Surface is: 0.13°

Separation Factor Plot



LEGEND

Loving Fedest Com #001 (Active), Wellbore #1, Wellbore #1 V0	Goonch Fed Com 0409 136H, Wellbore #1, Plan 0 V0	Goonch Fed Com 04 235H, Wellbore #1, Plan 0 V0
Goonch Fed Com 0409 234H, Wellbore #1, Plan 0 V0	Goonch Fed Com 0409 214H, Wellbore #1, Wellbore #1 V0	Goonch Fed Com 04 222H, Wellbore #1, Plan 1 V0
Sweetening #001 SWD (Active), Wellbore #1, Wellbore #1 V0	Goonch Fed Com 0409 236H, Wellbore #1, Plan 0 V0	Goonch Fed Com 04 212H, Wellbore #1, Plan 1 V0
Goonch Fed Com 04 132H, Wellbore #1, Plan 2 V0	Goonch Fed Com 0409 134H, Wellbore #1, Plan 0 V0	

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



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC. 04-T23S-R28E

Goonch Fed Com 0409 225H

Wellbore #1

Plan: Plan 0

Standard Survey Report

10 March, 2021





SB Directional Survey Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

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. 04-T23S-R28E		
Site Position:		Northing:	487,875.76 usft
From:	Map	Easting:	615,421.32 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.341014
		Longitude:	-104.093453

Well	Goonch Fed Com 0409 225H		
Well Position	+N/-S	0.00 usft	Northing: 487,837.16 usft
	+E/-W	0.00 usft	Easting: 617,068.11 usft
Position Uncertainty	0.50 usft	Wellhead Elevation:	usft
Grid Convergence:	0.13 °	Ground Level:	3,035.10 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2021/03/09	6.82	59.94	47,540.06030074

Design	Plan 0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.00	

Survey Tool Program	Date	2021/03/10			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,026.64	Plan 0 (Wellbore #1)	MWD	MWD - Standard	

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	


SB Directional
 Survey Report


Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

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)
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
Start Nudge									
1,300.00	1.00	287.86	1,299.99	0.27	-0.83	-0.27	1.00	1.00	0.00
1,400.00	2.00	287.86	1,399.96	1.07	-3.32	-1.07	1.00	1.00	0.00
1,500.00	3.00	287.86	1,499.86	2.41	-7.47	-2.41	1.00	1.00	0.00
1,600.00	4.00	287.86	1,599.68	4.28	-13.28	-4.28	1.00	1.00	0.00
1,700.00	5.00	287.86	1,699.37	6.69	-20.75	-6.69	1.00	1.00	0.00
1,800.00	6.00	287.86	1,798.90	9.63	-29.87	-9.63	1.00	1.00	0.00
1,900.00	7.00	287.86	1,898.26	13.10	-40.65	-13.10	1.00	1.00	0.00
2,000.00	8.00	287.86	1,997.40	17.10	-53.07	-17.10	1.00	1.00	0.00
2,027.76	8.28	287.86	2,024.88	18.31	-56.81	-18.31	1.00	1.00	0.00
EOB									
2,100.00	8.28	287.86	2,096.37	21.50	-66.71	-21.50	0.00	0.00	0.00
2,200.00	8.28	287.86	2,195.33	25.91	-80.41	-25.91	0.00	0.00	0.00
2,300.00	8.28	287.86	2,294.29	30.33	-94.12	-30.33	0.00	0.00	0.00
2,400.00	8.28	287.86	2,393.25	34.75	-107.82	-34.75	0.00	0.00	0.00
2,500.00	8.28	287.86	2,492.20	39.16	-121.52	-39.16	0.00	0.00	0.00
2,600.00	8.28	287.86	2,591.16	43.58	-135.23	-43.58	0.00	0.00	0.00
2,700.00	8.28	287.86	2,690.12	47.99	-148.93	-47.99	0.00	0.00	0.00
2,800.00	8.28	287.86	2,789.08	52.41	-162.63	-52.41	0.00	0.00	0.00
2,900.00	8.28	287.86	2,888.04	56.83	-176.34	-56.83	0.00	0.00	0.00
3,000.00	8.28	287.86	2,986.99	61.24	-190.04	-61.24	0.00	0.00	0.00
3,100.00	8.28	287.86	3,085.95	65.66	-203.74	-65.66	0.00	0.00	0.00
3,200.00	8.28	287.86	3,184.91	70.07	-217.44	-70.07	0.00	0.00	0.00
3,300.00	8.28	287.86	3,283.87	74.49	-231.15	-74.49	0.00	0.00	0.00
3,400.00	8.28	287.86	3,382.83	78.90	-244.85	-78.90	0.00	0.00	0.00
3,500.00	8.28	287.86	3,481.79	83.32	-258.55	-83.32	0.00	0.00	0.00
3,600.00	8.28	287.86	3,580.74	87.74	-272.26	-87.74	0.00	0.00	0.00
3,700.00	8.28	287.86	3,679.70	92.15	-285.96	-92.15	0.00	0.00	0.00
3,800.00	8.28	287.86	3,778.66	96.57	-299.66	-96.57	0.00	0.00	0.00
3,900.00	8.28	287.86	3,877.62	100.98	-313.37	-100.98	0.00	0.00	0.00
4,000.00	8.28	287.86	3,976.58	105.40	-327.07	-105.40	0.00	0.00	0.00
4,100.00	8.28	287.86	4,075.54	109.82	-340.77	-109.82	0.00	0.00	0.00
4,200.00	8.28	287.86	4,174.49	114.23	-354.47	-114.23	0.00	0.00	0.00
4,300.00	8.28	287.86	4,273.45	118.65	-368.18	-118.65	0.00	0.00	0.00
4,400.00	8.28	287.86	4,372.41	123.06	-381.88	-123.06	0.00	0.00	0.00
4,500.00	8.28	287.86	4,471.37	127.48	-395.58	-127.48	0.00	0.00	0.00
4,600.00	8.28	287.86	4,570.33	131.89	-409.29	-131.89	0.00	0.00	0.00
4,700.00	8.28	287.86	4,669.28	136.31	-422.99	-136.31	0.00	0.00	0.00
4,800.00	8.28	287.86	4,768.24	140.73	-436.69	-140.73	0.00	0.00	0.00
4,900.00	8.28	287.86	4,867.20	145.14	-450.40	-145.14	0.00	0.00	0.00



SB Directional Survey Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

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)
5,000.00	8.28	287.86	4,966.16	149.56	-464.10	-149.56	0.00	0.00	0.00
5,100.00	8.28	287.86	5,065.12	153.97	-477.80	-153.97	0.00	0.00	0.00
5,200.00	8.28	287.86	5,164.08	158.39	-491.50	-158.39	0.00	0.00	0.00
5,300.00	8.28	287.86	5,263.03	162.81	-505.21	-162.81	0.00	0.00	0.00
5,400.00	8.28	287.86	5,361.99	167.22	-518.91	-167.22	0.00	0.00	0.00
5,500.00	8.28	287.86	5,460.95	171.64	-532.61	-171.64	0.00	0.00	0.00
5,600.00	8.28	287.86	5,559.91	176.05	-546.32	-176.05	0.00	0.00	0.00
5,700.00	8.28	287.86	5,658.87	180.47	-560.02	-180.47	0.00	0.00	0.00
5,800.00	8.28	287.86	5,757.82	184.89	-573.72	-184.89	0.00	0.00	0.00
5,900.00	8.28	287.86	5,856.78	189.30	-587.43	-189.30	0.00	0.00	0.00
6,000.00	8.28	287.86	5,955.74	193.72	-601.13	-193.72	0.00	0.00	0.00
6,100.00	8.28	287.86	6,054.70	198.13	-614.83	-198.13	0.00	0.00	0.00
6,200.00	8.28	287.86	6,153.66	202.55	-628.53	-202.55	0.00	0.00	0.00
6,300.00	8.28	287.86	6,252.62	206.96	-642.24	-206.96	0.00	0.00	0.00
6,400.00	8.28	287.86	6,351.57	211.38	-655.94	-211.38	0.00	0.00	0.00
6,500.00	8.28	287.86	6,450.53	215.80	-669.64	-215.80	0.00	0.00	0.00
6,600.00	8.28	287.86	6,549.49	220.21	-683.35	-220.21	0.00	0.00	0.00
6,700.00	8.28	287.86	6,648.45	224.63	-697.05	-224.63	0.00	0.00	0.00
6,800.00	8.28	287.86	6,747.41	229.04	-710.75	-229.04	0.00	0.00	0.00
6,900.00	8.28	287.86	6,846.37	233.46	-724.46	-233.46	0.00	0.00	0.00
7,000.00	8.28	287.86	6,945.32	237.88	-738.16	-237.88	0.00	0.00	0.00
7,100.00	8.28	287.86	7,044.28	242.29	-751.86	-242.29	0.00	0.00	0.00
7,200.00	8.28	287.86	7,143.24	246.71	-765.56	-246.71	0.00	0.00	0.00
7,300.00	8.28	287.86	7,242.20	251.12	-779.27	-251.12	0.00	0.00	0.00
7,400.00	8.28	287.86	7,341.16	255.54	-792.97	-255.54	0.00	0.00	0.00
7,500.00	8.28	287.86	7,440.11	259.96	-806.67	-259.96	0.00	0.00	0.00
7,600.00	8.28	287.86	7,539.07	264.37	-820.38	-264.37	0.00	0.00	0.00
7,700.00	8.28	287.86	7,638.03	268.79	-834.08	-268.79	0.00	0.00	0.00
7,800.00	8.28	287.86	7,736.99	273.20	-847.78	-273.20	0.00	0.00	0.00
7,900.00	8.28	287.86	7,835.95	277.62	-861.49	-277.62	0.00	0.00	0.00
8,000.00	8.28	287.86	7,934.91	282.03	-875.19	-282.03	0.00	0.00	0.00
8,100.00	8.28	287.86	8,033.86	286.45	-888.89	-286.45	0.00	0.00	0.00
8,200.00	8.28	287.86	8,132.82	290.87	-902.59	-290.87	0.00	0.00	0.00
8,300.00	8.28	287.86	8,231.78	295.28	-916.30	-295.28	0.00	0.00	0.00
8,400.00	8.28	287.86	8,330.74	299.70	-930.00	-299.70	0.00	0.00	0.00
8,500.00	8.28	287.86	8,429.70	304.11	-943.70	-304.11	0.00	0.00	0.00
8,600.00	8.28	287.86	8,528.65	308.53	-957.41	-308.53	0.00	0.00	0.00
8,652.45	8.28	287.86	8,580.56	310.85	-964.59	-310.85	0.00	0.00	0.00
EOH									
8,700.00	7.33	287.86	8,627.67	312.83	-970.74	-312.83	2.00	-2.00	0.00
8,800.00	5.33	287.86	8,727.05	316.21	-981.23	-316.21	2.00	-2.00	0.00
8,900.00	3.33	287.86	8,826.76	318.52	-988.41	-318.52	2.00	-2.00	0.00
9,000.00	1.33	287.86	8,926.68	319.76	-992.27	-319.76	2.00	-2.00	0.00
9,066.33	0.00	0.00	8,993.00	320.00	-993.00	-320.00	2.00	-2.00	0.00



SB Directional Survey Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

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)
Drop to Vertical									
9,100.00	0.00	0.00	9,026.67	320.00	-993.00	-320.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,126.67	320.00	-993.00	-320.00	0.00	0.00	0.00
9,216.37	0.00	0.00	9,143.04	320.00	-993.00	-320.00	0.00	0.00	0.00
KOP @ 9143' TVD									
9,300.00	8.36	179.99	9,226.37	313.91	-993.00	-313.91	10.00	10.00	0.00
9,400.00	18.36	179.99	9,323.54	290.82	-993.00	-290.82	10.00	10.00	0.00
9,500.00	28.36	179.99	9,415.23	251.22	-992.99	-251.22	10.00	10.00	0.00
9,600.00	38.36	179.99	9,498.64	196.30	-992.98	-196.30	10.00	10.00	0.00
9,700.00	48.36	179.99	9,571.25	127.72	-992.97	-127.72	10.00	10.00	0.00
9,800.00	58.36	179.99	9,630.85	47.58	-992.95	-47.58	10.00	10.00	0.00
9,900.00	68.36	179.99	9,675.63	-41.69	-992.94	41.69	10.00	10.00	0.00
10,000.00	78.36	179.99	9,704.22	-137.39	-992.92	137.39	10.00	10.00	0.00
10,100.00	88.36	179.99	9,715.76	-236.59	-992.91	236.59	10.00	10.00	0.00
10,116.37	90.00	179.99	9,716.00	-252.96	-992.90	252.96	10.00	10.00	0.00
LP @ 9716' TVD									
10,200.00	90.00	179.99	9,716.00	-336.59	-992.89	336.59	0.00	0.00	0.00
10,300.00	90.00	179.99	9,716.00	-436.59	-992.87	436.59	0.00	0.00	0.00
10,400.00	90.00	179.99	9,716.00	-536.59	-992.85	536.59	0.00	0.00	0.00
10,500.00	90.00	179.99	9,716.00	-636.59	-992.84	636.59	0.00	0.00	0.00
10,600.00	90.00	179.99	9,716.00	-736.59	-992.82	736.59	0.00	0.00	0.00
10,700.00	90.00	179.99	9,716.00	-836.59	-992.80	836.59	0.00	0.00	0.00
10,800.00	90.00	179.99	9,716.00	-936.59	-992.79	936.59	0.00	0.00	0.00
10,900.00	90.00	179.99	9,716.00	-1,036.59	-992.77	1,036.59	0.00	0.00	0.00
11,000.00	90.00	179.99	9,716.00	-1,136.59	-992.75	1,136.59	0.00	0.00	0.00
11,100.00	90.00	179.99	9,716.00	-1,236.59	-992.74	1,236.59	0.00	0.00	0.00
11,200.00	90.00	179.99	9,716.00	-1,336.59	-992.72	1,336.59	0.00	0.00	0.00
11,300.00	90.00	179.99	9,716.00	-1,436.59	-992.70	1,436.59	0.00	0.00	0.00
11,400.00	90.00	179.99	9,716.00	-1,536.59	-992.68	1,536.59	0.00	0.00	0.00
11,500.00	90.00	179.99	9,716.00	-1,636.59	-992.67	1,636.59	0.00	0.00	0.00
11,600.00	90.00	179.99	9,716.00	-1,736.59	-992.65	1,736.59	0.00	0.00	0.00
11,700.00	90.00	179.99	9,716.00	-1,836.59	-992.63	1,836.59	0.00	0.00	0.00
11,800.00	90.00	179.99	9,716.00	-1,936.59	-992.62	1,936.59	0.00	0.00	0.00
11,900.00	90.00	179.99	9,716.00	-2,036.59	-992.60	2,036.59	0.00	0.00	0.00
12,000.00	90.00	179.99	9,716.00	-2,136.59	-992.58	2,136.59	0.00	0.00	0.00
12,100.00	90.00	179.99	9,716.00	-2,236.59	-992.57	2,236.59	0.00	0.00	0.00
12,200.00	90.00	179.99	9,716.00	-2,336.59	-992.55	2,336.59	0.00	0.00	0.00
12,300.00	90.00	179.99	9,716.00	-2,436.59	-992.53	2,436.59	0.00	0.00	0.00
12,400.00	90.00	179.99	9,716.00	-2,536.59	-992.51	2,536.59	0.00	0.00	0.00
12,500.00	90.00	179.99	9,716.00	-2,636.59	-992.50	2,636.59	0.00	0.00	0.00
12,600.00	90.00	179.99	9,716.00	-2,736.59	-992.48	2,736.59	0.00	0.00	0.00
12,700.00	90.00	179.99	9,716.00	-2,836.59	-992.46	2,836.59	0.00	0.00	0.00
12,800.00	90.00	179.99	9,716.00	-2,936.59	-992.45	2,936.59	0.00	0.00	0.00
12,900.00	90.00	179.99	9,716.00	-3,036.59	-992.43	3,036.59	0.00	0.00	0.00



SB Directional Survey Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

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)
13,000.00	90.00	179.99	9,716.00	-3,136.59	-992.41	3,136.59	0.00	0.00	0.00
13,100.00	90.00	179.99	9,716.00	-3,236.59	-992.40	3,236.59	0.00	0.00	0.00
13,200.00	90.00	179.99	9,716.00	-3,336.59	-992.38	3,336.59	0.00	0.00	0.00
13,300.00	90.00	179.99	9,716.00	-3,436.59	-992.36	3,436.59	0.00	0.00	0.00
13,400.00	90.00	179.99	9,716.00	-3,536.59	-992.35	3,536.59	0.00	0.00	0.00
13,500.00	90.00	179.99	9,716.00	-3,636.59	-992.33	3,636.59	0.00	0.00	0.00
13,600.00	90.00	179.99	9,716.00	-3,736.59	-992.31	3,736.59	0.00	0.00	0.00
13,700.00	90.00	179.99	9,716.00	-3,836.59	-992.29	3,836.59	0.00	0.00	0.00
13,800.00	90.00	179.99	9,716.00	-3,936.59	-992.28	3,936.59	0.00	0.00	0.00
13,900.00	90.00	179.99	9,716.00	-4,036.59	-992.26	4,036.59	0.00	0.00	0.00
14,000.00	90.00	179.99	9,716.00	-4,136.59	-992.24	4,136.59	0.00	0.00	0.00
14,100.00	90.00	179.99	9,716.00	-4,236.59	-992.23	4,236.59	0.00	0.00	0.00
14,200.00	90.00	179.99	9,716.00	-4,336.59	-992.21	4,336.59	0.00	0.00	0.00
14,300.00	90.00	179.99	9,716.00	-4,436.59	-992.19	4,436.59	0.00	0.00	0.00
14,400.00	90.00	179.99	9,716.00	-4,536.59	-992.18	4,536.59	0.00	0.00	0.00
14,500.00	90.00	179.99	9,716.00	-4,636.59	-992.16	4,636.59	0.00	0.00	0.00
14,600.00	90.00	179.99	9,716.00	-4,736.59	-992.14	4,736.59	0.00	0.00	0.00
14,700.00	90.00	179.99	9,716.00	-4,836.59	-992.12	4,836.59	0.00	0.00	0.00
14,800.00	90.00	179.99	9,716.00	-4,936.59	-992.11	4,936.59	0.00	0.00	0.00
14,900.00	90.00	179.99	9,716.00	-5,036.59	-992.09	5,036.59	0.00	0.00	0.00
15,000.00	90.00	179.99	9,716.00	-5,136.59	-992.07	5,136.59	0.00	0.00	0.00
15,100.00	90.00	179.99	9,716.00	-5,236.59	-992.06	5,236.59	0.00	0.00	0.00
15,200.00	90.00	179.99	9,716.00	-5,336.59	-992.04	5,336.59	0.00	0.00	0.00
15,300.00	90.00	179.99	9,716.00	-5,436.59	-992.02	5,436.59	0.00	0.00	0.00
15,400.00	90.00	179.99	9,716.00	-5,536.59	-992.01	5,536.59	0.00	0.00	0.00
15,500.00	90.00	179.99	9,716.00	-5,636.59	-991.99	5,636.59	0.00	0.00	0.00
15,600.00	90.00	179.99	9,716.00	-5,736.59	-991.97	5,736.59	0.00	0.00	0.00
15,700.00	90.00	179.99	9,716.00	-5,836.59	-991.95	5,836.59	0.00	0.00	0.00
15,800.00	90.00	179.99	9,716.00	-5,936.59	-991.94	5,936.59	0.00	0.00	0.00
15,900.00	90.00	179.99	9,716.00	-6,036.59	-991.92	6,036.59	0.00	0.00	0.00
16,000.00	90.00	179.99	9,716.00	-6,136.59	-991.90	6,136.59	0.00	0.00	0.00
16,100.00	90.00	179.99	9,716.00	-6,236.59	-991.89	6,236.59	0.00	0.00	0.00
16,200.00	90.00	179.99	9,716.00	-6,336.59	-991.87	6,336.59	0.00	0.00	0.00
16,300.00	90.00	179.99	9,716.00	-6,436.59	-991.85	6,436.59	0.00	0.00	0.00
16,400.00	90.00	179.99	9,716.00	-6,536.59	-991.84	6,536.59	0.00	0.00	0.00
16,500.00	90.00	179.99	9,716.00	-6,636.59	-991.82	6,636.59	0.00	0.00	0.00
16,600.00	90.00	179.99	9,716.00	-6,736.59	-991.80	6,736.59	0.00	0.00	0.00
16,700.00	90.00	179.99	9,716.00	-6,836.59	-991.78	6,836.59	0.00	0.00	0.00
16,800.00	90.00	179.99	9,716.00	-6,936.59	-991.77	6,936.59	0.00	0.00	0.00
16,900.00	90.00	179.99	9,716.00	-7,036.59	-991.75	7,036.59	0.00	0.00	0.00
17,000.00	90.00	179.99	9,716.00	-7,136.59	-991.73	7,136.59	0.00	0.00	0.00
17,100.00	90.00	179.99	9,716.00	-7,236.59	-991.72	7,236.59	0.00	0.00	0.00
17,200.00	90.00	179.99	9,716.00	-7,336.59	-991.70	7,336.59	0.00	0.00	0.00



SB Directional Survey Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

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)
17,300.00	90.00	179.99	9,716.00	-7,436.59	-991.68	7,436.59	0.00	0.00	0.00
17,400.00	90.00	179.99	9,716.00	-7,536.59	-991.67	7,536.59	0.00	0.00	0.00
17,500.00	90.00	179.99	9,716.00	-7,636.59	-991.65	7,636.59	0.00	0.00	0.00
17,600.00	90.00	179.99	9,716.00	-7,736.59	-991.63	7,736.59	0.00	0.00	0.00
17,700.00	90.00	179.99	9,716.00	-7,836.59	-991.62	7,836.59	0.00	0.00	0.00
17,800.00	90.00	179.99	9,716.00	-7,936.59	-991.60	7,936.59	0.00	0.00	0.00
17,900.00	90.00	179.99	9,716.00	-8,036.59	-991.58	8,036.59	0.00	0.00	0.00
18,000.00	90.00	179.99	9,716.00	-8,136.59	-991.56	8,136.59	0.00	0.00	0.00
18,100.00	90.00	179.99	9,716.00	-8,236.59	-991.55	8,236.59	0.00	0.00	0.00
18,200.00	90.00	179.99	9,716.00	-8,336.59	-991.53	8,336.59	0.00	0.00	0.00
18,300.00	90.00	179.99	9,716.00	-8,436.59	-991.51	8,436.59	0.00	0.00	0.00
18,400.00	90.00	179.99	9,716.00	-8,536.59	-991.50	8,536.59	0.00	0.00	0.00
18,500.00	90.00	179.99	9,716.00	-8,636.59	-991.48	8,636.59	0.00	0.00	0.00
18,600.00	90.00	179.99	9,716.00	-8,736.59	-991.46	8,736.59	0.00	0.00	0.00
18,700.00	90.00	179.99	9,716.00	-8,836.59	-991.45	8,836.59	0.00	0.00	0.00
18,800.00	90.00	179.99	9,716.00	-8,936.59	-991.43	8,936.59	0.00	0.00	0.00
18,900.00	90.00	179.99	9,716.00	-9,036.59	-991.41	9,036.59	0.00	0.00	0.00
19,000.00	90.00	179.99	9,716.00	-9,136.59	-991.39	9,136.59	0.00	0.00	0.00
19,100.00	90.00	179.99	9,716.00	-9,236.59	-991.38	9,236.59	0.00	0.00	0.00
19,200.00	90.00	179.99	9,716.00	-9,336.59	-991.36	9,336.59	0.00	0.00	0.00
19,300.00	90.00	179.99	9,716.00	-9,436.59	-991.34	9,436.59	0.00	0.00	0.00
19,400.00	90.00	179.99	9,716.00	-9,536.59	-991.33	9,536.59	0.00	0.00	0.00
19,500.00	90.00	179.99	9,716.00	-9,636.59	-991.31	9,636.59	0.00	0.00	0.00
19,600.00	90.00	179.99	9,716.00	-9,736.59	-991.29	9,736.59	0.00	0.00	0.00
19,700.00	90.00	179.99	9,716.00	-9,836.59	-991.28	9,836.59	0.00	0.00	0.00
19,800.00	90.00	179.99	9,716.00	-9,936.59	-991.26	9,936.59	0.00	0.00	0.00
19,900.00	90.00	179.99	9,716.00	-10,036.59	-991.24	10,036.59	0.00	0.00	0.00
20,000.00	90.00	179.99	9,716.00	-10,136.59	-991.22	10,136.59	0.00	0.00	0.00
20,026.64	90.00	179.99	9,716.00	-10,163.23	-991.22	10,163.23	0.00	0.00	0.00
PBHL; 130' FSL, 2310' FEL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL - Goonch Fed Cor	0.00	0.00	0.00	-10,163.23	-991.22	477,673.93	616,076.89	32.312967	-104.091404
- plan misses target center by 9716.00usft at 20026.64usft MD (9716.00 TVD, -10163.23 N, -991.22 E)									
- Point									



SB Directional

Survey Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Goonch Fed Com 0409 225H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB @ 3060.10usft
Site:	SEC. 04-T23S-R28E	MD Reference:	RKB @ 3060.10usft
Well:	Goonch Fed Com 0409 225H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 0	Database:	EDM 5000.16 Single User Db

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
20,026.64	9,716.00	20" Casing	20	24

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1200	1200	0	0	Start Nudge
2028	2025	18	-57	EOB
8652	8581	311	-965	EOH
9066	8993	320	-993	Drop to Vertical
9216	9143	320	-993	KOP @ 9143' TVD
10,116	9716	-253	-993	LP @ 9716' TVD
20,027	9716	-10,163	-991	PBHL; 130' FSL, 2310' FEL

Checked By: _____ Approved By: _____ Date: _____

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

COMMENTS

Action 27703

COMMENTS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 27703
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 5/13/2021	5/13/2021

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CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD conditions of approval	5/13/2021