

Form 3160-5
(June 2019)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No. NMNM61349

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator NOVO OIL AND GAS NORTHERN DELAWARE LLC

3a. Address 1001 West Wilshire Boulevard Suite 206, Oklahoma City, OK 73102
3b. Phone No. (include area code) (405) 404-04144. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC 1/T23S/R28E/NMP

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

8. Well Name and No. RANA SALADA FED COM 0605/235

9. API Well No. 3001548246

10. Field and Pool or Exploratory Area
PURPLE SAGE/BONE SPRING SOUTH11. Country or Parish, State
EDDY/NM

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

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

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

Novo Oil & Gas Northern Delaware, LLC respectfully request to make the following change the approved APD:

Change SHL from 1,327 FNL & 455 FEL to 2,560 FNL & 210 FEL, Section 1, T-23-S, R-28-E.

Change BHL from 330 FNL & 10 FEL to 2,090 FNL & 10 FEL, Section 5, T-23-S, R-29-E.

No new surface disturbance proposed.

Casing/Cement/Mud Program changes attached.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)
JUSTIN CARTER / Ph: (405) 286-3375

Title Landman

Signature

Date

02/10/2023

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved

Title Petroleum Engineer

Date 05/11/2023

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office CARLSBAD

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: SENE / 1327 FNL / 455 FEL / TWSP: 23S / RANGE: 28E / SECTION: 1 / LAT: 32.3384022 / LONG: -104.0334401 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 1 / 330 FNL / 10 FEL / TWSP: 23S / RANGE: 29E / SECTION: 5 / LAT: 32.3408179 / LONG: -103.9983194 (TVD: 8414 feet, MD: 18651 feet)

PPP: LOT 4 / 337 FNL / 175 FWL / TWSP: 23S / RANGE: 29E / SECTION: 6 / LAT: 32.3411129 / LONG: -104.0314011 (TVD: 8209 feet, MD: 8430 feet)

BHL: LOT 1 / 330 FNL / 10 FEL / TWSP: 23S / RANGE: 29E / SECTION: 5 / LAT: 32.3408179 / LONG: -103.9983194 (TVD: 8414 feet, MD: 18651 feet)

Well Name: RANA SALADA FED COM 0605	Well Location: T23S / R28E / SEC 1 / SENE /	County or Parish/State:
Well Number: 235H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM61349	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001548246	Well Status: Approved Application for Permit to Drill	Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Notice of Intent

Sundry ID: 2715240

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 02/10/2023	Time Sundry Submitted: 02:44
Date proposed operation will begin: 10/03/2023	

Procedure Description: Novo Oil & Gas Northern Delaware, LLC respectfully request to make the following change the approved APD: Change SHL from 1,327' FNL & 455' FEL to 2,560' FNL & 210' FEL, Section 1, T-23-S, R-28-E. Change BHL from 330' FNL & 10' FEL to 2,090' FNL & 10' FEL, Section 5, T-23-S, R-29-E. No new surface disturbance proposed. Casing/Cement/Mud Program changes attached.

NOI Attachments

Procedure Description

Change_of_Plans_Rana_Salada_Fed_Com_0605_235H_20230210144438.pdf

Well Name: RANA SALADA FED COM 0605	Well Location: T23S / R28E / SEC 1 / SENE /	County or Parish/State:
Well Number: 235H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM61349	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001548246	Well Status: Approved Application for Permit to Drill	Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Conditions of Approval

Additional
Sec_1_23S_28E_NMP_Sundry_2715240_Rana_Salada_Fed_Com_0605_235H_Eddy_NOVO_COAs_20230404094244.pdf

Operator

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

Operator Electronic Signature: JUSTIN CARTER
Signed on: FEB 10, 2023 02:44 PM

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 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: 05/11/2023
Signature: Chris Walls	

Rana Salada Fed Com 0605 235H

CHANGE TO PLANS

Move Surface Hole Location

From: 1,327' FNL & 455' FEL, Section 1, T-23-S, R-28-E

To: 2,560' FNL & 210' FEL, Section 1, T-23-S, R-28-E

Move Bottom Hole Location

From: 330' FNL & 10' FEL, Section 5, T-23-S, R-29-E

To: 2,090' FNL & 10' FEL, Section 5, T-23-S, R-29-E

Casing Depth Interval Change (TMD)

Surface Casing (13-3/8"): 390'

Intermediate Casing (8-5/8"): 3,230'

Production Casing (5-1/2"): 19,102'

Single State Cement Job for 13-3/8" Surface Casing String (TOC = Surface)

Tail: 334 Sacks; 541.9 cu. ft.; 100% excess. 1.62 cu.ft./sx; 13.8 ppg; Class C + Gel + Accelerator + LCM; 1,500 psi 14-hour compressive strength.

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

Lead: 187 Sacks; 669 cu. ft.; 100% excess. 3.58 cu.ft./sx; 10 ppg; Class C or H + Fluid Loss + Retarder + LCM + possibly beads; 900 psi 24-hour compressive strength.

Tail: 130 Sacks; 180.7 cu. ft.; 50% excess. 1.39 cu.ft./sx; 13.8 ppg; Class C or H + Fluid Loss + Retarder + LCM; 1,200 psi 14-hour compressive strength.

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

Lead: 126 Sacks; 543 cu. ft.; 20% excess. 4.3 cu.ft./sx; 10.5 ppg; Class H + Fluid Loss + Retarder + LCM; 1,200 psi 24-hour compressive strength.

Tail: 2,097 Sacks; 3,523 cu. ft.; 20% excess. 1.68 cu.ft./sx; 13 ppg; Class H + Fluid Loss + Retarder + LCM; 1,200 psi 14-hour compressive strength.

Drilling Fluid Program Changes

Fresh water spud mud: 0 – 390'; 8.30 ppg

Brine: 390' - 3,080'; 10.20 ppg

Oil Based mud: 3,080' – 19,102'; 11-12.5 ppg

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 30-015-48246	² Pool Code 15011	³ Pool Name Culebra Bluff, Bone Spring, South
⁴ Property Code	⁵ Property Name RANA SALADA FED COM 0605	⁶ Well Number 235H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3064.7

¹⁰ Surface Location

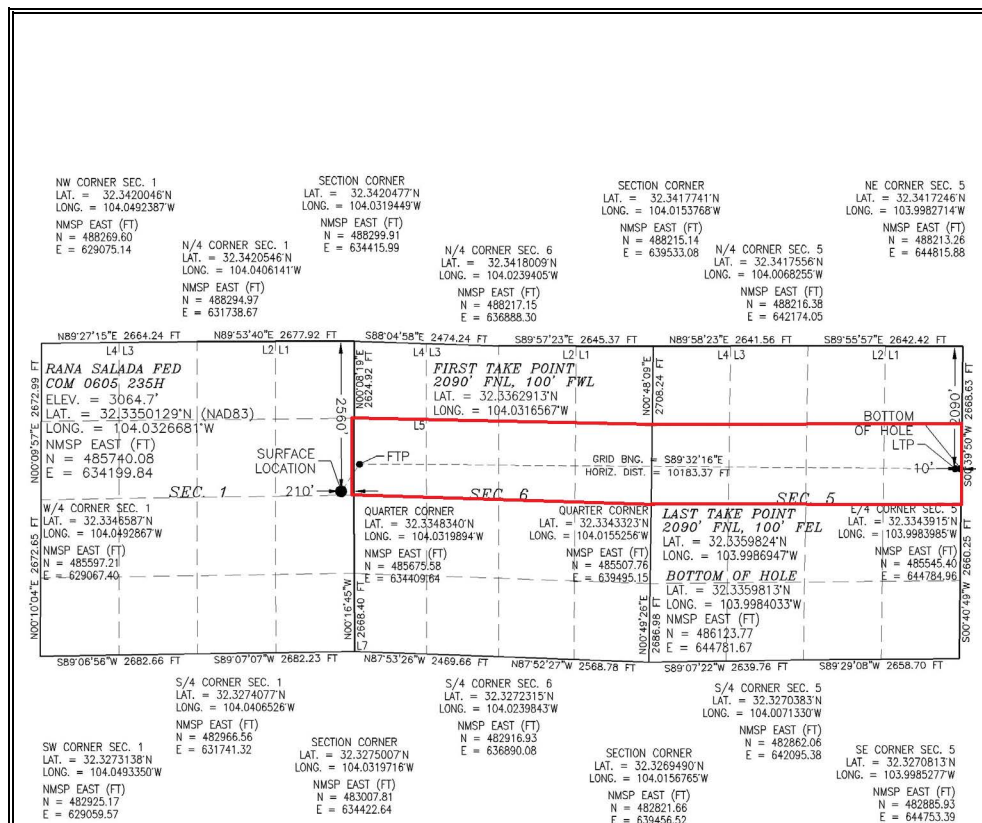
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	1	23 S	28 E		2560	NORTH	210	EAST	EDDY

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
H	5	23 S	29 E		2090	NORTH	10	EAST	EDDY

¹² Dedicated Acres 317.84	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Justin Carter 1.30.2023
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.

OCTOBER 30, 2022

Date of Survey

Imon F. Jaramillo
Signature and Seal of Professional Surveyor

Certificate Number: 12797
NOVO OIL & GAS NORTHERN DELAWARE, LLC
SURV. NO. 9570

Intent ☐ As Drilled ☐

API #		
Operator Name: NOVO OIL & GAS NORTHERN DELAWARE, LLC	Property Name: RANA SALADA FED COM 0605	Well Number 235H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	6	23S	29E	5	2090	NORTH	100	WEST	EDDY
Latitude 32.3362913					Longitude 104.0316567				NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
H	5	23S	29E		2090	NORTH	100	EAST	EDDY
Latitude 32.3359824					Longitude 103.9986947				NAD 83

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

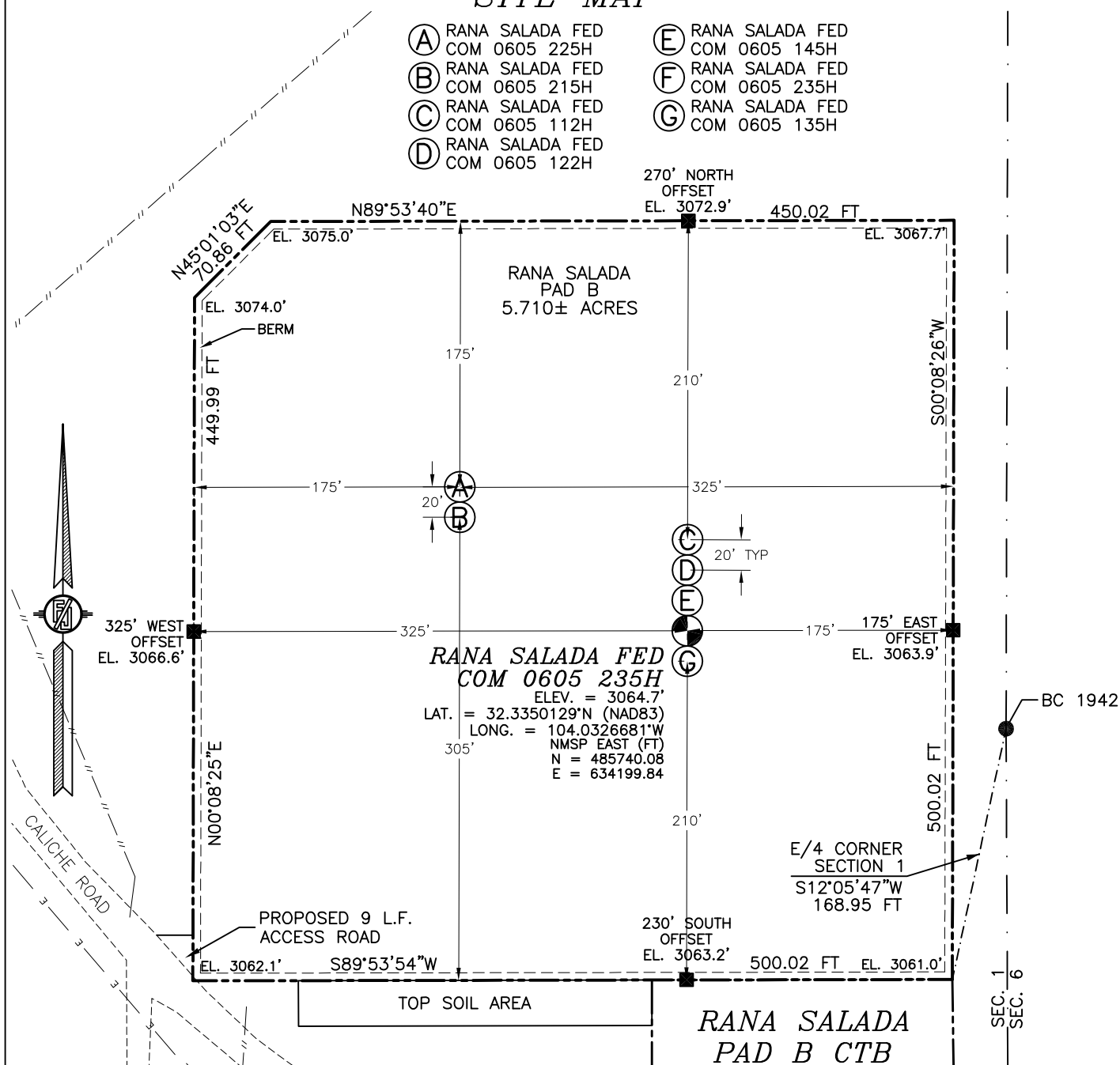
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

- | | |
|--------------------------------------|--------------------------------------|
| (A) RANA SALADA FED
COM 0605 225H | (E) RANA SALADA FED
COM 0605 145H |
| (B) RANA SALADA FED
COM 0605 215H | (F) RANA SALADA FED
COM 0605 235H |
| (C) RANA SALADA FED
COM 0605 112H | (G) RANA SALADA FED
COM 0605 135H |
| (D) RANA SALADA FED
COM 0605 122H | |



010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR 31 (POTASH MINES ROAD) AND CR 605 (REFINERY ROAD)
GO NORTH ON CR 605 APPROX. 0.4 OF A MILE, TURN RIGHT (EAST)
ON CALICHE ROAD AND GO EAST AND NORTHEAST APPROX. 0.2 OF A
MILE TO A "Y" IN ROAD, TURN LEFT (NORTH) AND GO NORTH
APPROX. 0.55 OF A MILE, THEN EAST 18° TO THE SOUTHWEST PAD
CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILA, A NEW MEXICO REGISTERED PROFESSIONAL
SURVEYOR CERTIFY THAT I DEWEED AND AM RESPONSIBLE FOR
THIS SURVEY. I HAVE BEEN LICENSED BY THE STATE OF NEW MEXICO
TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND I HAVE AND PLAT
MEET THE MINIMUM REQUIREMENTS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILA, 2023-2027

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3327

CARLSBAD, NEW MEXICO

NOVO OIL & GAS NORTHERN DELAWARE, LLC
RANA SALADA FED COM 0605 235H
LOCATED 2560 FT. FROM THE NORTH LINE
AND 210 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 30, 2022

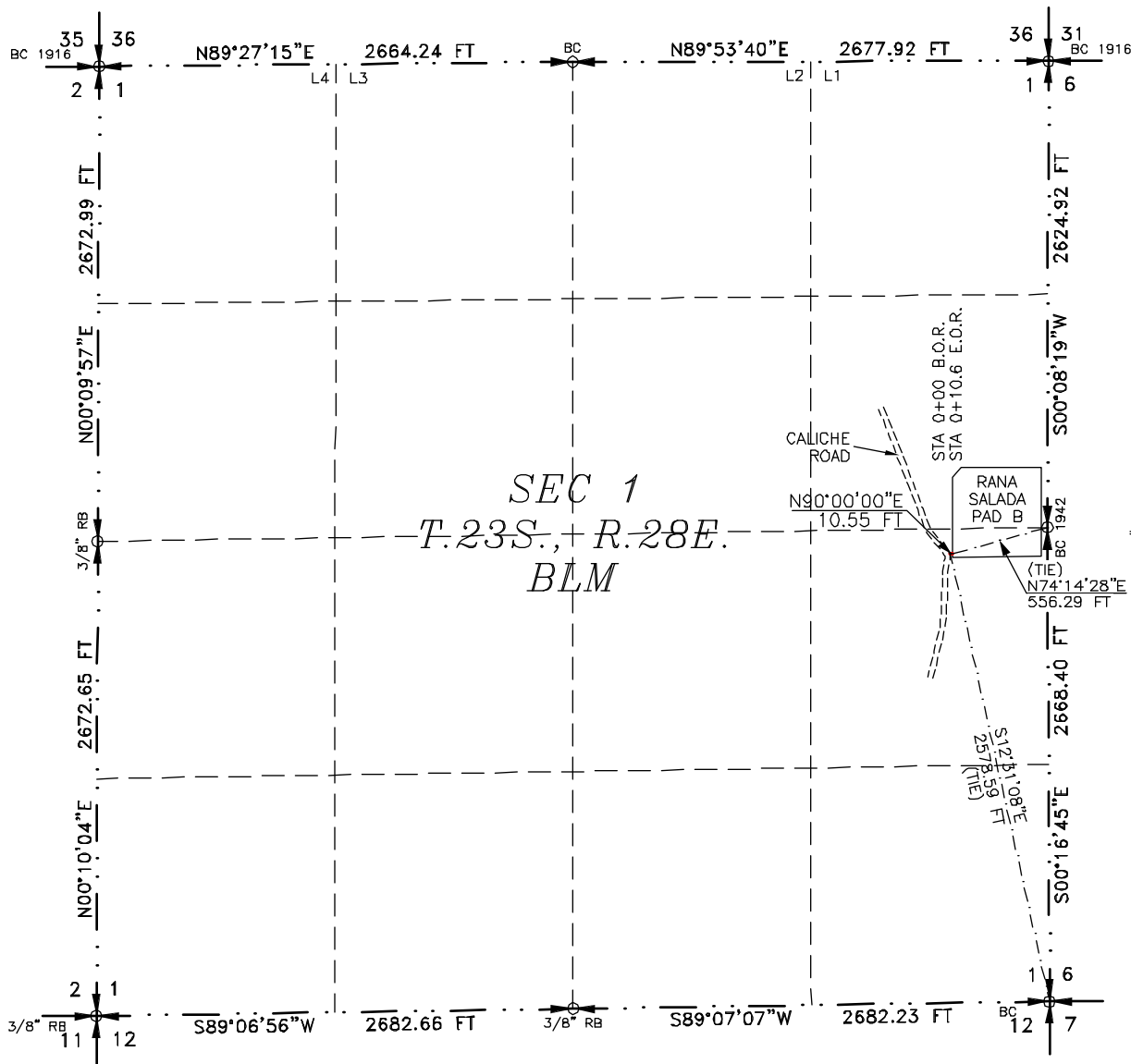
SURVEY NO. 9570

ACCESS ROAD PLAT

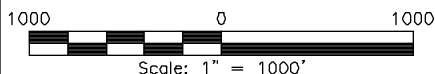
ACCESS ROAD FOR RANA SALADA PAD B

(RANA SALADA FED COM 0605 112H, 122H, 145H, 235H, 135H, 225H, & 215H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
 CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
 SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 OCTOBER 30, 2022



SEE NEXT SHEET (2-2) FOR DESCRIPTION

**GENERAL NOTES**

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

SHEET: 1-2

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

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 30TH DAY OF NOVEMBER 2022

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

SURVEY NO. 9570

ACCESS ROAD PLAT

ACCESS ROAD FOR RANA SALADA PAD B

(RANA SALADA FED COM 0605 112H, 122H, 145H, 235H, 135H, 225H, & 215H)

NOVO OIL & GAS NORTHERN DELAWARE, LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
OCTOBER 30, 2022

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 1, 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 THE NE/4 SE/4 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE SOUTHEAST CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S12°31'08"E, A DISTANCE OF 2578.59 FEET;

THENCE N90°00'00"E A DISTANCE OF 10.55 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE EAST QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS N74°14'28"E, A DISTANCE OF 556.29 FEET;

SAID STRIP OF LAND BEING 10.55 FEET OR 0.64 RODS IN LENGTH, CONTAINING 0.007 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 SE/4 10.55 L.F. 0.64 RODS 0.007 ACRES

GENERAL NOTES

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

SHEET: 2-2

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

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 22ND DAY OF NOVEMBER 2022

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

SURVEY NO. 9570

NOVO OIL & GAS NORTHERN DELAWARE, LLC
Rana Salada Fed Com 0605 235H
SHL: 2,560' FNL & 210' FEL' of Section 01-23S-28E
BHL: 2,090' FNL & 10' FEL Section 05-23S-29E
Eddy County, New Mexico



Drilling Program

1. ESTIMATED TOPS

Formation Name	TVD KB	MD'	Bearing
Quaternary	0	-	Water
Rustler anhydrite (surface csg @ 390' MD)	310	310	N/A
Salado salt	564	574	N/A
Lamar limestone	2,880	2,900	N/A
Bell Canyon sandstone	2,880	2,910	Hydrocarbons
Cherry Canyon sandstone	3,930	3,970	Hydrocarbons
Brushy Canyon sandstone	5,375	5,425	Hydrocarbons
Bone Spring limestone	6,465	6,525	Hydrocarbons
Avalon shale	6,963	7,033	Hydrocarbons
1st Bone Spring sandstone	7,400	7,480	Hydrocarbons
2nd Bone Spring carbonate	7,820	7,910	Hydrocarbons
2nd Bone Spring sandstone	8,290	8,390	Hydrocarbons
3rd Bone Spring carbonate	8,655	8,765	Hydrocarbons
Wolfcamp XY	9,790	9,910	Hydrocarbons
Wolfcamp A	9,955	10,085	Hydrocarbons
Wolfcamp B	10,205	10,345	Hydrocarbons
Wolfcamp B Flow Unit	10,520	10,670	Hydrocarbons
Wolfcamp C	10,650	10,650	Hydrocarbons
Intermediate Casing Point	3,080	3,200	
KOP	8,018	8,148	
TD	8,718	19,102	

2. NOTABLE ZONES

3. PRESSURE CONTROL

A 13.625" 5M Blowout Preventer system will be installed on a multi-bowl (speed head) wellhead with a 13.625" flanged casing spool.

Top flange of casing spool will be set in a cellar below ground level. BOP system will consist of a single pipe ram on the bottom, mud cross, double pipe ram with blind rams on bottom and pipe rams on top, and annular preventer. Blowout preventer will be installed on top of the 13.375" surface casing and will remain installed to TD of the well. Wellhead, blowout preventer, and choke manifold diagram are included.

Variance is requested to use a co-flex hose between the BOP system and choke manifold. A typical co-flex pressure test certificate is attached. An equipment specific co-flex pressure test certificate will be on site when testing the BOP.

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

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 677.6 psi OR 1,500 psi, whichever is higher) for 30 minutes

NOVO OIL & GAS NORTHERN DELAWARE, LLC
Rana Salada Fed Com 0605 235H
SHL: 2,560' FNL & 210' FEL' of Section 01-23S-28E
BHL: 2,090' FNL & 10' FEL Section 05-23S-29E
Eddy County, New Mexico



4. CASING & CEMENT

Variance is requested for an option to use a surface rig to drill the surface hole, set the surface casing, and cement the surface casing. If the schedule between rigs would preclude presetting the surface casing, then the primary rig will MIRU and drill all of the well.

All casing will be API and new. See attached casing assumption worksheet.

Casing Details

Name	Hole Size	Casing Size	Standard	Tapered	Top MD	BTM MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17 1/2	13 3/8	API	No	0	390	0	390	J-55	54.5	BTC	1.125	1.125	1.6
Intermediate	9 7/8	8 5/8	API	No	0	3,230	0	3,080	P-110 HP	32	Talon HTQ	1.125	1.125	1.6
Production	7 7/8	5 1/2	API	No	0	19,102	0	8,718	P-110 EC	20	DWC/C- IS +	1.125	1.125	1.6

Alternate grades and/or higher weights could be substituted to meet maximum stimulation pressures or due to coupling availability.

Name	Hole Size	Casing Size	Standard	Tapered	Top MD	BTM MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Intermediate	9 7/8	8 5/8	API	No	0	3,230	0	3080	P-110 HP	32	TLW	1.125	1.125	1.6
Production	7 7/8	5 1/2	API	No	0	19,102	0	8718	P-110 EC	17	DWC/C- IS +	1.125	1.125	1.6

Cement Details

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface	Tail	0	334	1.62	541.9	13.8	100%	C	Gel, Accelerator, LCM
Intermediate	Lead	0	187	3.58	669.9	10	100%	C or H	Fluid Loss, Retarder, LCM, Possibly beads
	Tail	2080	130	1.39	180.7	13.8	50%	C or H	Fluid Loss, Retarder, LCM
Production	Lead	0	126	4.3	543.1	10.5	20%	H	Fluid Loss, Retarder, LCM
	Tail	2580	2097	1.68	3523.0	13	20%	H	Fluid Loss, Retarder, LCM

5. MUD PROGRAM

An electronic PVT mud system will monitor flow rate, pump pressure, stroke rate, and volume. All necessary mud products (barite, bentonite, LCM) to control weight and fluid loss will be on site at all times. Mud program may change due to hole conditions. A closed loop system will be used.

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	390'	Water Based Spud Mud	8.30	30-60	NC
Intermediate	390	3080	Brine	10.20	35-45	NC
Production	3080	19102	Oil Based Mud	11-12.5	35-65	4-6

6. CORES, TEST, & LOGS

No core or drill stem test is planned. A 2-person mud logging program will be used from ≈3000' to TD. GR log will be acquired by MWD tools from the intermediate casing to TD.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum anticipated surface pressure is ≈3757 psi. Anticipated bottom hole pressure is ≈5679 psi. Expected bottom hole temperature is ≈215° F.

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈3 months to drill and complete the well.





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 01-23S-28E

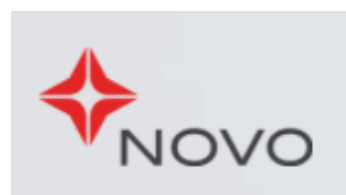
RANA-SALADA-FED-COM-0605-235H

Wellbore #1

Plan: PLAN 1

Standard Planning Report

20 December, 2022





Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site:	SEC 01-23S-28E	North Reference:	Grid
Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1		

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

Site	SEC 01-23S-28E		
Site Position:		Northing:	487,094.09 usft
From:	Map	Easting:	633,828.20 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.33873770
		Longitude:	-104.03385910

Well	RANA-SALADA-FED-COM-0605-235H		
Well Position	+N/-S	0.00 usft	Northing: 485,740.08 usft
	+E/-W	0.00 usft	Easting: 634,199.84 usft
Position Uncertainty	0.50 usft	Wellhead Elevation:	usft
Grid Convergence:	0.16 °	Ground Level:	3,064.70 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	12/13/2022	6.59	59.88	47,358.81087958

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

Plan Survey Tool Program	Date	12/20/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,101.95 PLAN 1 (Wellbore #1)	MWD+HRGM		
			OWSG MWD + HRGM		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,824.73	6.49	332.12	1,824.04	16.25	-8.60	2.00	2.00	0.00	332.12	
6,204.77	6.49	332.12	6,175.96	454.17	-240.28	0.00	0.00	0.00	0.00	
6,529.50	0.00	0.00	6,500.00	470.42	-248.88	2.00	-2.00	0.00	180.00	
7,941.69	0.00	0.00	7,912.19	470.42	-248.88	0.00	0.00	0.00	0.00	
8,828.69	88.70	90.46	8,485.00	465.94	311.07	10.00	10.00	10.20	90.46	
19,102.43	88.70	90.46	8,718.00	383.69	10,581.83	0.00	0.00	0.00	0.00	



Planning Report



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Company:	NOVO Oil & Gas	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site:	SEC 01-23S-28E	North Reference:	Grid
Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	332.12	1,599.98	1.54	-0.82	-0.82	2.00	2.00	0.00
1,700.00	4.00	332.12	1,699.84	6.17	-3.26	-3.26	2.00	2.00	0.00
1,800.00	6.00	332.12	1,799.45	13.87	-7.34	-7.34	2.00	2.00	0.00
1,824.73	6.49	332.12	1,824.04	16.25	-8.60	-8.60	2.00	2.00	0.00
1,900.00	6.49	332.12	1,898.82	23.78	-12.58	-12.58	0.00	0.00	0.00
2,000.00	6.49	332.12	1,998.18	33.77	-17.87	-17.87	0.00	0.00	0.00
2,100.00	6.49	332.12	2,097.54	43.77	-23.16	-23.16	0.00	0.00	0.00
2,200.00	6.49	332.12	2,196.90	53.77	-28.45	-28.45	0.00	0.00	0.00
2,300.00	6.49	332.12	2,296.25	63.77	-33.74	-33.74	0.00	0.00	0.00
2,400.00	6.49	332.12	2,395.61	73.77	-39.03	-39.03	0.00	0.00	0.00
2,500.00	6.49	332.12	2,494.97	83.76	-44.32	-44.32	0.00	0.00	0.00
2,600.00	6.49	332.12	2,594.33	93.76	-49.61	-49.61	0.00	0.00	0.00
2,700.00	6.49	332.12	2,693.69	103.76	-54.90	-54.90	0.00	0.00	0.00
2,800.00	6.49	332.12	2,793.05	113.76	-60.19	-60.19	0.00	0.00	0.00
2,900.00	6.49	332.12	2,892.40	123.76	-65.47	-65.47	0.00	0.00	0.00
3,000.00	6.49	332.12	2,991.76	133.75	-70.76	-70.76	0.00	0.00	0.00
3,100.00	6.49	332.12	3,091.12	143.75	-76.05	-76.05	0.00	0.00	0.00
3,200.00	6.49	332.12	3,190.48	153.75	-81.34	-81.34	0.00	0.00	0.00
3,300.00	6.49	332.12	3,289.84	163.75	-86.63	-86.63	0.00	0.00	0.00
3,400.00	6.49	332.12	3,389.20	173.75	-91.92	-91.92	0.00	0.00	0.00
3,500.00	6.49	332.12	3,488.55	183.75	-97.21	-97.21	0.00	0.00	0.00
3,600.00	6.49	332.12	3,587.91	193.74	-102.50	-102.50	0.00	0.00	0.00
3,700.00	6.49	332.12	3,687.27	203.74	-107.79	-107.79	0.00	0.00	0.00
3,800.00	6.49	332.12	3,786.63	213.74	-113.08	-113.08	0.00	0.00	0.00
3,900.00	6.49	332.12	3,885.99	223.74	-118.37	-118.37	0.00	0.00	0.00
4,000.00	6.49	332.12	3,985.35	233.74	-123.66	-123.66	0.00	0.00	0.00
4,100.00	6.49	332.12	4,084.70	243.73	-128.95	-128.95	0.00	0.00	0.00
4,200.00	6.49	332.12	4,184.06	253.73	-134.24	-134.24	0.00	0.00	0.00
4,300.00	6.49	332.12	4,283.42	263.73	-139.53	-139.53	0.00	0.00	0.00
4,400.00	6.49	332.12	4,382.78	273.73	-144.82	-144.82	0.00	0.00	0.00
4,500.00	6.49	332.12	4,482.14	283.73	-150.11	-150.11	0.00	0.00	0.00
4,600.00	6.49	332.12	4,581.49	293.72	-155.40	-155.40	0.00	0.00	0.00
4,700.00	6.49	332.12	4,680.85	303.72	-160.69	-160.69	0.00	0.00	0.00
4,800.00	6.49	332.12	4,780.21	313.72	-165.98	-165.98	0.00	0.00	0.00
4,900.00	6.49	332.12	4,879.57	323.72	-171.27	-171.27	0.00	0.00	0.00
5,000.00	6.49	332.12	4,978.93	333.72	-176.56	-176.56	0.00	0.00	0.00
5,100.00	6.49	332.12	5,078.29	343.71	-181.85	-181.85	0.00	0.00	0.00
5,200.00	6.49	332.12	5,177.64	353.71	-187.13	-187.13	0.00	0.00	0.00



Planning Report



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Site:	SEC 01-23S-28E	North Reference:	Grid
Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,300.00	6.49	332.12	5,277.00	363.71	-192.42	-192.42	0.00	0.00	0.00	
5,400.00	6.49	332.12	5,376.36	373.71	-197.71	-197.71	0.00	0.00	0.00	
5,500.00	6.49	332.12	5,475.72	383.71	-203.00	-203.00	0.00	0.00	0.00	
5,600.00	6.49	332.12	5,575.08	393.70	-208.29	-208.29	0.00	0.00	0.00	
5,700.00	6.49	332.12	5,674.44	403.70	-213.58	-213.58	0.00	0.00	0.00	
5,800.00	6.49	332.12	5,773.79	413.70	-218.87	-218.87	0.00	0.00	0.00	
5,900.00	6.49	332.12	5,873.15	423.70	-224.16	-224.16	0.00	0.00	0.00	
6,000.00	6.49	332.12	5,972.51	433.70	-229.45	-229.45	0.00	0.00	0.00	
6,100.00	6.49	332.12	6,071.87	443.69	-234.74	-234.74	0.00	0.00	0.00	
6,204.77	6.49	332.12	6,175.96	454.17	-240.28	-240.28	0.00	0.00	0.00	
6,300.00	4.59	332.12	6,270.75	462.30	-244.58	-244.58	2.00	-2.00	0.00	
6,400.00	2.59	332.12	6,370.54	467.83	-247.51	-247.51	2.00	-2.00	0.00	
6,500.00	0.59	332.12	6,470.50	470.29	-248.81	-248.81	2.00	-2.00	0.00	
6,529.50	0.00	0.00	6,500.00	470.42	-248.88	-248.88	2.00	-2.00	0.00	
6,600.00	0.00	0.00	6,570.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,670.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,770.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,870.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,970.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,070.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,170.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,270.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,370.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,470.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,570.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,670.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,770.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,870.50	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,941.69	0.00	0.00	7,912.19	470.42	-248.88	-248.88	0.00	0.00	0.00	
7,950.00	0.83	90.46	7,920.50	470.42	-248.82	-248.82	10.00	10.00	0.00	
8,000.00	5.83	90.46	7,970.40	470.40	-245.92	-245.92	10.00	10.00	0.00	
8,050.00	10.83	90.46	8,019.86	470.34	-238.67	-238.67	10.00	10.00	0.00	
8,100.00	15.83	90.46	8,068.49	470.25	-227.15	-227.15	10.00	10.00	0.00	
8,150.00	20.83	90.46	8,115.94	470.12	-211.43	-211.43	10.00	10.00	0.00	
8,200.00	25.83	90.46	8,161.84	469.96	-191.63	-191.63	10.00	10.00	0.00	
8,250.00	30.83	90.46	8,205.84	469.77	-167.91	-167.91	10.00	10.00	0.00	
8,300.00	35.83	90.46	8,247.60	469.55	-140.45	-140.45	10.00	10.00	0.00	
8,350.00	40.83	90.46	8,286.81	469.30	-109.45	-109.45	10.00	10.00	0.00	
8,400.00	45.83	90.46	8,323.17	469.03	-75.15	-75.15	10.00	10.00	0.00	
8,450.00	50.83	90.46	8,356.40	468.73	-37.81	-37.81	10.00	10.00	0.00	
8,500.00	55.83	90.46	8,386.25	468.41	2.28	2.28	10.00	10.00	0.00	
8,550.00	60.83	90.46	8,412.49	468.07	44.82	44.82	10.00	10.00	0.00	
8,600.00	65.83	90.46	8,434.92	467.71	89.48	89.48	10.00	10.00	0.00	
8,650.00	70.83	90.46	8,453.38	467.34	135.93	135.93	10.00	10.00	0.00	
8,700.00	75.83	90.46	8,467.72	466.96	183.81	183.81	10.00	10.00	0.00	
8,750.00	80.83	90.46	8,477.83	466.56	232.76	232.76	10.00	10.00	0.00	
8,800.00	85.83	90.46	8,483.63	466.17	282.41	282.41	10.00	10.00	0.00	
8,828.69	88.70	90.46	8,485.00	465.94	311.07	311.07	10.00	10.00	0.00	
8,900.00	88.70	90.46	8,486.62	465.37	382.35	382.35	0.00	0.00	0.00	
9,000.00	88.70	90.46	8,488.89	464.56	482.32	482.32	0.00	0.00	0.00	
9,100.00	88.70	90.46	8,491.15	463.76	582.29	582.29	0.00	0.00	0.00	
9,200.00	88.70	90.46	8,493.42	462.96	682.26	682.26	0.00	0.00	0.00	
9,300.00	88.70	90.46	8,495.69	462.16	782.24	782.24	0.00	0.00	0.00	
9,400.00	88.70	90.46	8,497.96	461.36	882.21	882.21	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site:	SEC 01-23S-28E	North Reference:	Grid
Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,500.00	88.70	90.46	8,500.23	460.56	982.18	982.18	0.00	0.00	0.00	
9,600.00	88.70	90.46	8,502.49	459.76	1,082.15	1,082.15	0.00	0.00	0.00	
9,700.00	88.70	90.46	8,504.76	458.96	1,182.12	1,182.12	0.00	0.00	0.00	
9,800.00	88.70	90.46	8,507.03	458.16	1,282.09	1,282.09	0.00	0.00	0.00	
9,900.00	88.70	90.46	8,509.30	457.36	1,382.06	1,382.06	0.00	0.00	0.00	
10,000.00	88.70	90.46	8,511.56	456.56	1,482.03	1,482.03	0.00	0.00	0.00	
10,100.00	88.70	90.46	8,513.83	455.76	1,582.00	1,582.00	0.00	0.00	0.00	
10,200.00	88.70	90.46	8,516.10	454.96	1,681.97	1,681.97	0.00	0.00	0.00	
10,300.00	88.70	90.46	8,518.37	454.16	1,781.95	1,781.95	0.00	0.00	0.00	
10,400.00	88.70	90.46	8,520.64	453.36	1,881.92	1,881.92	0.00	0.00	0.00	
10,500.00	88.70	90.46	8,522.90	452.56	1,981.89	1,981.89	0.00	0.00	0.00	
10,600.00	88.70	90.46	8,525.17	451.76	2,081.86	2,081.86	0.00	0.00	0.00	
10,700.00	88.70	90.46	8,527.44	450.96	2,181.83	2,181.83	0.00	0.00	0.00	
10,800.00	88.70	90.46	8,529.71	450.15	2,281.80	2,281.80	0.00	0.00	0.00	
10,900.00	88.70	90.46	8,531.98	449.35	2,381.77	2,381.77	0.00	0.00	0.00	
11,000.00	88.70	90.46	8,534.24	448.55	2,481.74	2,481.74	0.00	0.00	0.00	
11,100.00	88.70	90.46	8,536.51	447.75	2,581.71	2,581.71	0.00	0.00	0.00	
11,200.00	88.70	90.46	8,538.78	446.95	2,681.69	2,681.69	0.00	0.00	0.00	
11,300.00	88.70	90.46	8,541.05	446.15	2,781.66	2,781.66	0.00	0.00	0.00	
11,400.00	88.70	90.46	8,543.32	445.35	2,881.63	2,881.63	0.00	0.00	0.00	
11,500.00	88.70	90.46	8,545.58	444.55	2,981.60	2,981.60	0.00	0.00	0.00	
11,600.00	88.70	90.46	8,547.85	443.75	3,081.57	3,081.57	0.00	0.00	0.00	
11,700.00	88.70	90.46	8,550.12	442.95	3,181.54	3,181.54	0.00	0.00	0.00	
11,800.00	88.70	90.46	8,552.39	442.15	3,281.51	3,281.51	0.00	0.00	0.00	
11,900.00	88.70	90.46	8,554.66	441.35	3,381.48	3,381.48	0.00	0.00	0.00	
12,000.00	88.70	90.46	8,556.92	440.55	3,481.45	3,481.45	0.00	0.00	0.00	
12,100.00	88.70	90.46	8,559.19	439.75	3,581.43	3,581.43	0.00	0.00	0.00	
12,200.00	88.70	90.46	8,561.46	438.95	3,681.40	3,681.40	0.00	0.00	0.00	
12,300.00	88.70	90.46	8,563.73	438.15	3,781.37	3,781.37	0.00	0.00	0.00	
12,400.00	88.70	90.46	8,565.99	437.35	3,881.34	3,881.34	0.00	0.00	0.00	
12,500.00	88.70	90.46	8,568.26	436.55	3,981.31	3,981.31	0.00	0.00	0.00	
12,600.00	88.70	90.46	8,570.53	435.75	4,081.28	4,081.28	0.00	0.00	0.00	
12,700.00	88.70	90.46	8,572.80	434.94	4,181.25	4,181.25	0.00	0.00	0.00	
12,800.00	88.70	90.46	8,575.07	434.14	4,281.22	4,281.22	0.00	0.00	0.00	
12,900.00	88.70	90.46	8,577.33	433.34	4,381.19	4,381.19	0.00	0.00	0.00	
13,000.00	88.70	90.46	8,579.60	432.54	4,481.17	4,481.17	0.00	0.00	0.00	
13,100.00	88.70	90.46	8,581.87	431.74	4,581.14	4,581.14	0.00	0.00	0.00	
13,200.00	88.70	90.46	8,584.14	430.94	4,681.11	4,681.11	0.00	0.00	0.00	
13,300.00	88.70	90.46	8,586.41	430.14	4,781.08	4,781.08	0.00	0.00	0.00	
13,400.00	88.70	90.46	8,588.67	429.34	4,881.05	4,881.05	0.00	0.00	0.00	
13,500.00	88.70	90.46	8,590.94	428.54	4,981.02	4,981.02	0.00	0.00	0.00	
13,600.00	88.70	90.46	8,593.21	427.74	5,080.99	5,080.99	0.00	0.00	0.00	
13,700.00	88.70	90.46	8,595.48	426.94	5,180.96	5,180.96	0.00	0.00	0.00	
13,800.00	88.70	90.46	8,597.75	426.14	5,280.93	5,280.93	0.00	0.00	0.00	
13,900.00	88.70	90.46	8,600.01	425.34	5,380.90	5,380.90	0.00	0.00	0.00	
14,000.00	88.70	90.46	8,602.28	424.54	5,480.88	5,480.88	0.00	0.00	0.00	
14,100.00	88.70	90.46	8,604.55	423.74	5,580.85	5,580.85	0.00	0.00	0.00	
14,200.00	88.70	90.46	8,606.82	422.94	5,680.82	5,680.82	0.00	0.00	0.00	
14,300.00	88.70	90.46	8,609.09	422.14	5,780.79	5,780.79	0.00	0.00	0.00	
14,400.00	88.70	90.46	8,611.35	421.34	5,880.76	5,880.76	0.00	0.00	0.00	
14,500.00	88.70	90.46	8,613.62	420.53	5,980.73	5,980.73	0.00	0.00	0.00	
14,600.00	88.70	90.46	8,615.89	419.73	6,080.70	6,080.70	0.00	0.00	0.00	
14,700.00	88.70	90.46	8,618.16	418.93	6,180.67	6,180.67	0.00	0.00	0.00	
14,800.00	88.70	90.46	8,620.42	418.13	6,280.64	6,280.64	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site:	SEC 01-23S-28E	North Reference:	Grid
Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,900.00	88.70	90.46	8,622.69	417.33	6,380.62	6,380.62	0.00	0.00	0.00	
15,000.00	88.70	90.46	8,624.96	416.53	6,480.59	6,480.59	0.00	0.00	0.00	
15,100.00	88.70	90.46	8,627.23	415.73	6,580.56	6,580.56	0.00	0.00	0.00	
15,200.00	88.70	90.46	8,629.50	414.93	6,680.53	6,680.53	0.00	0.00	0.00	
15,300.00	88.70	90.46	8,631.76	414.13	6,780.50	6,780.50	0.00	0.00	0.00	
15,400.00	88.70	90.46	8,634.03	413.33	6,880.47	6,880.47	0.00	0.00	0.00	
15,500.00	88.70	90.46	8,636.30	412.53	6,980.44	6,980.44	0.00	0.00	0.00	
15,600.00	88.70	90.46	8,638.57	411.73	7,080.41	7,080.41	0.00	0.00	0.00	
15,700.00	88.70	90.46	8,640.84	410.93	7,180.38	7,180.38	0.00	0.00	0.00	
15,800.00	88.70	90.46	8,643.10	410.13	7,280.36	7,280.36	0.00	0.00	0.00	
15,900.00	88.70	90.46	8,645.37	409.33	7,380.33	7,380.33	0.00	0.00	0.00	
16,000.00	88.70	90.46	8,647.64	408.53	7,480.30	7,480.30	0.00	0.00	0.00	
16,100.00	88.70	90.46	8,649.91	407.73	7,580.27	7,580.27	0.00	0.00	0.00	
16,200.00	88.70	90.46	8,652.18	406.93	7,680.24	7,680.24	0.00	0.00	0.00	
16,300.00	88.70	90.46	8,654.44	406.12	7,780.21	7,780.21	0.00	0.00	0.00	
16,400.00	88.70	90.46	8,656.71	405.32	7,880.18	7,880.18	0.00	0.00	0.00	
16,500.00	88.70	90.46	8,658.98	404.52	7,980.15	7,980.15	0.00	0.00	0.00	
16,600.00	88.70	90.46	8,661.25	403.72	8,080.12	8,080.12	0.00	0.00	0.00	
16,700.00	88.70	90.46	8,663.52	402.92	8,180.09	8,180.09	0.00	0.00	0.00	
16,800.00	88.70	90.46	8,665.78	402.12	8,280.07	8,280.07	0.00	0.00	0.00	
16,900.00	88.70	90.46	8,668.05	401.32	8,380.04	8,380.04	0.00	0.00	0.00	
17,000.00	88.70	90.46	8,670.32	400.52	8,480.01	8,480.01	0.00	0.00	0.00	
17,100.00	88.70	90.46	8,672.59	399.72	8,579.98	8,579.98	0.00	0.00	0.00	
17,200.00	88.70	90.46	8,674.85	398.92	8,679.95	8,679.95	0.00	0.00	0.00	
17,300.00	88.70	90.46	8,677.12	398.12	8,779.92	8,779.92	0.00	0.00	0.00	
17,400.00	88.70	90.46	8,679.39	397.32	8,879.89	8,879.89	0.00	0.00	0.00	
17,500.00	88.70	90.46	8,681.66	396.52	8,979.86	8,979.86	0.00	0.00	0.00	
17,600.00	88.70	90.46	8,683.93	395.72	9,079.83	9,079.83	0.00	0.00	0.00	
17,700.00	88.70	90.46	8,686.19	394.92	9,179.81	9,179.81	0.00	0.00	0.00	
17,800.00	88.70	90.46	8,688.46	394.12	9,279.78	9,279.78	0.00	0.00	0.00	
17,900.00	88.70	90.46	8,690.73	393.32	9,379.75	9,379.75	0.00	0.00	0.00	
18,000.00	88.70	90.46	8,693.00	392.52	9,479.72	9,479.72	0.00	0.00	0.00	
18,100.00	88.70	90.46	8,695.27	391.71	9,579.69	9,579.69	0.00	0.00	0.00	
18,200.00	88.70	90.46	8,697.53	390.91	9,679.66	9,679.66	0.00	0.00	0.00	
18,300.00	88.70	90.46	8,699.80	390.11	9,779.63	9,779.63	0.00	0.00	0.00	
18,400.00	88.70	90.46	8,702.07	389.31	9,879.60	9,879.60	0.00	0.00	0.00	
18,500.00	88.70	90.46	8,704.34	388.51	9,979.57	9,979.57	0.00	0.00	0.00	
18,600.00	88.70	90.46	8,706.61	387.71	10,079.55	10,079.55	0.00	0.00	0.00	
18,700.00	88.70	90.46	8,708.87	386.91	10,179.52	10,179.52	0.00	0.00	0.00	
18,800.00	88.70	90.46	8,711.14	386.11	10,279.49	10,279.49	0.00	0.00	0.00	
18,900.00	88.70	90.46	8,713.41	385.31	10,379.46	10,379.46	0.00	0.00	0.00	
19,000.00	88.70	90.46	8,715.68	384.51	10,479.43	10,479.43	0.00	0.00	0.00	
19,102.43	88.70	90.46	8,718.00	383.69	10,581.83	10,581.83	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site:	SEC 01-23S-28E	North Reference:	Grid
Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
RANA-SALADA 235H F	0.00	0.00	8,485.00	465.94	311.07	486,206.02	634,510.91	32.33629130	-104.03165670
- plan misses target center by 0.01usft at 8828.69usft MD (8485.00 TVD, 465.94 N, 311.07 E)									
- Point									
RANA-SALADA 235H L1	0.00	0.00	8,717.00	383.81	10,491.84	486,123.89	644,691.69	32.33598240	-103.99869470
- plan misses target center by 12.50usft at 19000.00usft MD (8715.68 TVD, 384.51 N, 10479.43 E)									
- Point									
RANA-SALADA 235H PI	0.00	0.00	8,718.00	383.69	10,581.83	486,123.77	644,781.67	32.33598130	-103.99840334
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(")	(")
19,102.43	8,718.00	20" Casing		20	24



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 01-23S-28E

RANA-SALADA-FED-COM-0605-235H

Wellbore #1

PLAN 1

Anticollision Report

20 December, 2022





Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Reference	PLAN 1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum centre distance of 4,500.00usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	12/20/2022
From (usft)	To (usft)	Survey (Wellbore)
0.00	19,101.95	PLAN 1 (Wellbore #1)
		Tool Name
		MWD+HRGM
		Description
		OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC 01-23S-28E						
RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 -	1,500.00	1,484.30	972.52	963.14	103.704	CC, ES
RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 -	19,102.43	18,065.10	2,037.85	1,600.40	4.658	SF
RANA-SALADA-FED-COM-0604-116H - Wellbore #1 - PL	5,131.75	5,209.77	828.85	795.85	25.116	CC, ES
RANA-SALADA-FED-COM-0604-116H - Wellbore #1 - PL	19,102.43	18,095.34	1,349.45	1,005.42	3.922	SF
RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - P	1,778.77	1,829.13	834.00	822.30	71.277	CC
RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - P	1,800.00	1,850.31	834.07	822.23	70.437	ES
RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - P	19,102.43	19,978.54	1,490.25	1,145.83	4.327	SF
RANA-SALADA-FED-COM-0604-123HC - Wellbore #1 -	19,102.43	19,070.54	887.89	392.94	1.794	Collision Risk Procedures R
RANA-SALADA-FED-COM-0604-125HC - Wellbore #1 -	1,500.00	1,485.20	952.52	943.14	101.554	CC, ES
RANA-SALADA-FED-COM-0604-125HC - Wellbore #1 -	19,102.43	19,058.89	1,767.87	1,273.08	3.573	SF
RANA-SALADA-FED-COM-0604-223H - Wellbore #1 - P	1,500.00	1,484.70	857.21	847.83	91.402	CC, ES
RANA-SALADA-FED-COM-0604-223H - Wellbore #1 - P	19,102.43	20,326.28	2,071.01	1,713.35	5.790	SF
RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PL	916.16	917.66	59.96	52.83	8.406	CC
RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PL	1,000.00	1,001.47	59.96	52.46	7.996	ES
RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PL	19,102.43	18,180.98	1,339.87	978.06	3.703	SF
RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - P	6,587.78	6,588.32	879.95	847.72	27.301	CC
RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - P	6,983.50	6,984.26	880.25	847.47	26.857	ES
RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - P	19,102.43	18,077.56	1,357.30	1,004.20	3.844	SF
RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - P	1,416.33	1,417.33	39.98	30.87	4.389	CC
RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - P	1,800.00	1,796.87	41.64	29.48	3.425	ES
RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - P	19,102.43	19,251.01	879.86	383.49	1.773	Collision Risk Procedures R
RANA-SALADA-FED-COM-0605-122HA - Wellbore #1 - P	19,102.43	19,079.41	880.31	382.78	1.769	Collision Risk Procedures R
RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - P	1,985.12	1,848.08	1,454.35	1,441.44	112.611	CC
RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - P	2,000.00	1,858.24	1,454.38	1,441.38	111.908	ES
RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - P	19,102.43	18,171.42	2,027.76	1,580.61	4.535	SF
RANA-SALADA-FED-COM-0605-132H - Wellbore #1 - P	8,467.43	8,412.91	1,009.94	969.35	24.882	CC, ES
RANA-SALADA-FED-COM-0605-132H - Wellbore #1 - P	19,100.00	19,948.87	1,550.80	1,209.08	4.538	SF
RANA-SALADA-FED-COM-0605-135H - Wellbore #1 - P	1,500.00	1,499.40	20.02	10.62	2.129	CC, ES
RANA-SALADA-FED-COM-0605-135H - Wellbore #1 - P	5,800.00	5,827.78	44.81	19.28	1.755	Collision Risk Procedures R
RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - P	1,016.53	1,016.93	19.99	12.43	2.643	CC
RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - P	1,100.00	1,100.40	19.99	12.08	2.528	ES
RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - P	1,200.00	1,200.00	20.92	12.55	2.500	SF
RANA-SALADA-FED-COM-0605-215H - Wellbore #1 - P	3,026.97	3,021.86	67.61	49.35	3.703	CC, ES
RANA-SALADA-FED-COM-0605-215H - Wellbore #1 - P	3,100.00	3,094.43	68.10	49.45	3.652	SF
RANA-SALADA-FED-COM-0605-221H - Wellbore #1 - P	2,011.59	1,877.07	1,431.71	1,419.30	115.404	CC
RANA-SALADA-FED-COM-0605-221H - Wellbore #1 - P	19,102.43	19,116.80	1,759.41	1,262.31	3.539	ES, SF
RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - P	2,063.38	2,049.44	162.27	149.29	12.506	CC

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC 01-23S-28E						
RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - P	2,100.00	2,084.64	162.45	149.21	12.266	ES
RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - P	19,100.00	20,367.38	1,637.68	1,411.25	7.232	SF
SEC 02-T23S-R28E						
Offset-Longview Deep Federal 6-22 - Wellbore #1 - Wellb	9,605.46	8,658.73	293.24	233.77	4.931	CC, ES, SF
Offset-Longview Federal 12-4H - Wellbore #1 - Wellbore	8,504.02	12,235.08	65.78	3.74	1.060	Collision Avoidance Req., CC
SEC 08-T23S-R29E						
Road Lizard 5 Fed Com 002H - Wellbore #1 - Wellbore #	16,835.34	8,693.10	19.04	-98.59	0.162	No-Go Zone - Stop Drilling, CC

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis 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
0.00	0.00	0.00	0.00	0.50	0.50	179.67	-972.50	5.60	972.64				
100.00	100.00	84.30	84.30	0.65	0.61	179.67	-972.50	5.60	972.52	971.26	1.26	771.473	
200.00	200.00	184.30	184.30	1.34	1.22	179.67	-972.50	5.60	972.52	969.95	2.56	379.262	
300.00	300.00	284.30	284.30	1.81	1.74	179.67	-972.50	5.60	972.52	968.97	3.55	273.975	
400.00	400.00	384.30	384.30	2.19	2.13	179.67	-972.50	5.60	972.52	968.20	4.31	225.446	
500.00	500.00	484.30	484.30	2.51	2.46	179.67	-972.50	5.60	972.52	967.55	4.97	195.863	
600.00	600.00	584.30	584.30	2.80	2.75	179.67	-972.50	5.60	972.52	966.97	5.55	175.384	
700.00	700.00	684.30	684.30	3.06	3.02	179.67	-972.50	5.60	972.52	966.44	6.07	160.114	
800.00	800.00	784.30	784.30	3.30	3.26	179.67	-972.50	5.60	972.52	965.95	6.56	148.155	
900.00	900.00	884.30	884.30	3.53	3.49	179.67	-972.50	5.60	972.52	965.49	7.02	138.455	
1,000.00	1,000.00	984.30	984.30	3.75	3.71	179.67	-972.50	5.60	972.52	965.06	7.46	130.378	
1,100.00	1,100.00	1,084.30	1,084.30	3.95	3.92	179.67	-972.50	5.60	972.52	964.64	7.87	123.516	
1,200.00	1,200.00	1,184.30	1,184.30	4.15	4.12	179.67	-972.50	5.60	972.52	964.25	8.27	117.588	
1,300.00	1,300.00	1,284.30	1,284.30	4.34	4.31	179.67	-972.50	5.60	972.52	963.86	8.65	112.400	
1,400.00	1,400.00	1,384.30	1,384.30	4.52	4.50	179.67	-972.50	5.60	972.52	963.50	9.02	107.808	
1,500.00	1,500.00	1,484.30	1,484.30	4.70	4.67	179.67	-972.50	5.60	972.52	963.14	9.38	103.704	CC, ES
1,600.00	1,599.98	1,566.39	1,566.38	5.05	4.83	-152.44	-973.11	5.13	974.84	965.01	9.83	99.154	
1,700.00	1,699.84	1,644.86	1,644.80	5.69	5.18	-152.37	-975.41	3.38	982.39	971.76	10.63	92.391	
1,800.00	1,799.45	1,722.75	1,722.52	6.30	5.59	-152.26	-979.39	0.36	995.18	983.75	11.42	87.116	
1,900.00	1,898.82	1,814.38	1,813.83	6.46	5.73	-152.23	-985.61	-4.37	1,011.79	1,000.11	11.68	86.645	
2,000.00	1,998.18	1,912.96	1,912.03	6.67	5.90	-152.22	-992.39	-9.53	1,028.61	1,016.58	12.03	85.484	
2,100.00	2,097.54	2,011.53	2,010.24	6.90	6.10	-152.22	-999.17	-14.69	1,045.44	1,033.00	12.43	84.081	
2,200.00	2,196.90	2,110.11	2,108.44	7.15	6.32	-152.22	-1,005.96	-19.85	1,062.26	1,049.40	12.86	82.609	
2,300.00	2,296.25	2,208.68	2,206.65	7.42	6.55	-152.22	-1,012.74	-25.01	1,079.08	1,065.77	13.31	81.097	
2,400.00	2,395.61	2,307.26	2,304.86	7.69	6.80	-152.22	-1,019.53	-30.17	1,095.90	1,082.13	13.77	79.568	
2,500.00	2,494.97	2,405.83	2,403.06	7.98	7.05	-152.22	-1,026.31	-35.33	1,112.72	1,098.47	14.26	78.040	
2,600.00	2,594.33	2,504.41	2,501.27	8.28	7.32	-152.22	-1,033.09	-40.49	1,129.55	1,114.79	14.76	76.530	
2,700.00	2,693.69	2,602.98	2,599.47	8.59	7.60	-152.22	-1,039.88	-45.65	1,146.37	1,131.09	15.28	75.046	
2,800.00	2,793.05	2,701.56	2,697.68	8.91	7.89	-152.22	-1,046.66	-50.81	1,163.19	1,147.39	15.80	73.599	
2,900.00	2,892.40	2,800.13	2,795.88	9.24	8.18	-152.22	-1,053.45	-55.97	1,180.01	1,163.67	16.35	72.192	
3,000.00	2,991.76	2,898.71	2,894.09	9.57	8.49	-152.22	-1,060.23	-61.13	1,196.83	1,179.94	16.90	70.830	
3,100.00	3,091.12	2,997.28	2,992.30	9.91	8.80	-152.22	-1,067.01	-66.29	1,213.66	1,196.20	17.46	69.516	
3,200.00	3,190.48	3,095.86	3,090.50	10.25	9.11	-152.22	-1,073.80	-71.45	1,230.48	1,212.45	18.03	68.250	
3,300.00	3,289.84	3,194.43	3,188.71	10.60	9.43	-152.22	-1,080.58	-76.61	1,247.30	1,228.69	18.61	67.033	
3,400.00	3,389.20	3,293.01	3,286.91	10.95	9.75	-152.22	-1,087.37	-81.77	1,264.12	1,244.93	19.19	65.864	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
3,500.00	3,488.55	3,391.58	3,385.12	11.31	10.08	-152.22	-1,094.15	-86.93	1,280.94	1,261.16	19.79	64.743			
3,600.00	3,587.91	3,490.16	3,483.32	11.67	10.41	-152.22	-1,100.93	-92.09	1,297.77	1,277.38	20.38	63.668			
3,700.00	3,687.27	3,588.73	3,581.53	12.03	10.75	-152.22	-1,107.72	-97.25	1,314.59	1,293.60	20.99	62.638			
3,800.00	3,786.63	3,687.31	3,679.74	12.40	11.08	-152.22	-1,114.50	-102.41	1,331.41	1,309.81	21.60	61.651			
3,900.00	3,885.99	3,785.88	3,777.94	12.77	11.42	-152.22	-1,121.29	-107.57	1,348.23	1,326.02	22.21	60.705			
4,000.00	3,985.35	3,884.46	3,876.15	13.14	11.77	-152.22	-1,128.07	-112.73	1,365.05	1,342.23	22.83	59.798			
4,100.00	4,084.70	3,983.03	3,974.35	13.52	12.11	-152.22	-1,134.85	-117.89	1,381.88	1,358.43	23.45	58.930			
4,200.00	4,184.06	4,081.61	4,072.56	13.90	12.46	-152.22	-1,141.64	-123.05	1,398.70	1,374.62	24.07	58.098			
4,300.00	4,283.42	4,180.18	4,170.77	14.27	12.81	-152.22	-1,148.42	-128.21	1,415.52	1,390.82	24.70	57.300			
4,400.00	4,382.78	4,278.76	4,268.97	14.65	13.16	-152.22	-1,155.21	-133.37	1,432.34	1,407.01	25.34	56.534			
4,500.00	4,482.14	4,377.33	4,367.18	15.04	13.51	-152.22	-1,161.99	-138.53	1,449.16	1,423.19	25.97	55.800			
4,600.00	4,581.49	4,475.91	4,465.38	15.42	13.87	-152.22	-1,168.77	-143.69	1,465.99	1,439.38	26.61	55.095			
4,700.00	4,680.85	4,574.48	4,563.59	15.81	14.22	-152.22	-1,175.56	-148.85	1,482.81	1,455.56	27.25	54.418			
4,800.00	4,780.21	4,673.06	4,661.79	16.19	14.58	-152.22	-1,182.34	-154.01	1,499.63	1,471.74	27.89	53.767			
4,900.00	4,879.57	4,771.63	4,760.00	16.58	14.94	-152.22	-1,189.12	-159.17	1,516.45	1,487.92	28.54	53.142			
5,000.00	4,978.93	4,870.21	4,858.21	16.97	15.30	-152.22	-1,195.91	-164.33	1,533.27	1,504.09	29.18	52.541			
5,100.00	5,078.29	4,968.78	4,956.41	17.36	15.66	-152.22	-1,202.69	-169.49	1,550.10	1,520.27	29.83	51.962			
5,200.00	5,177.64	5,067.36	5,054.62	17.75	16.02	-152.22	-1,209.48	-174.65	1,566.92	1,536.44	30.48	51.405			
5,300.00	5,277.00	5,165.93	5,152.82	18.15	16.38	-152.22	-1,216.26	-179.81	1,583.74	1,552.61	31.13	50.869			
5,400.00	5,376.36	5,264.51	5,251.03	18.54	16.75	-152.22	-1,223.04	-184.97	1,600.56	1,568.78	31.79	50.352			
5,500.00	5,475.72	5,363.08	5,349.23	18.93	17.11	-152.22	-1,229.83	-190.13	1,617.38	1,584.94	32.44	49.854			
5,600.00	5,575.08	5,461.66	5,447.44	19.33	17.48	-152.22	-1,236.61	-195.29	1,634.21	1,601.11	33.10	49.373			
5,700.00	5,674.44	5,560.23	5,545.65	19.73	17.84	-152.22	-1,243.40	-200.45	1,651.03	1,617.27	33.76	48.909			
5,800.00	5,773.79	5,658.81	5,643.85	20.12	18.21	-152.22	-1,250.18	-205.61	1,667.85	1,633.43	34.42	48.461			
5,900.00	5,873.15	5,757.38	5,742.06	20.52	18.58	-152.22	-1,256.96	-210.77	1,684.67	1,649.60	35.08	48.028			
6,000.00	5,972.51	5,855.96	5,840.26	20.92	18.94	-152.22	-1,263.75	-215.93	1,701.49	1,665.76	35.74	47.610			
6,100.00	6,071.87	5,954.53	5,938.47	21.32	19.31	-152.22	-1,270.53	-221.09	1,718.32	1,681.92	36.40	47.206			
6,200.00	6,171.23	6,053.11	6,036.67	21.72	19.68	-152.22	-1,277.32	-226.25	1,735.14	1,698.07	37.07	46.812			
6,300.00	6,270.75	6,151.90	6,135.10	22.13	20.05	-152.33	-1,284.11	-231.42	1,750.58	1,712.83	37.75	46.378			
6,400.00	6,370.54	6,251.10	6,233.92	22.59	20.42	-152.37	-1,290.94	-236.61	1,762.96	1,724.51	38.45	45.852			
6,500.00	6,470.50	6,428.77	6,411.24	22.98	21.09	-152.29	-1,299.66	-243.24	1,770.49	1,731.06	39.43	44.905			
6,600.00	6,570.50	6,572.35	6,554.80	23.05	21.39	179.84	-1,300.75	-244.07	1,771.18	1,731.42	39.76	44.546			
6,700.00	6,670.50	6,672.35	6,654.80	23.10	21.41	179.84	-1,300.75	-244.07	1,771.18	1,731.34	39.84	44.458			
6,800.00	6,770.50	6,772.35	6,754.80	23.15	21.44	179.84	-1,300.75	-244.07	1,771.18	1,731.25	39.92	44.363			
6,900.00	6,870.50	6,872.35	6,854.80	23.19	21.47	179.84	-1,300.75	-244.07	1,771.18	1,731.17	40.01	44.267			
6,902.50	6,873.00	6,874.85	6,857.30	23.20	21.47	179.84	-1,300.75	-244.07	1,771.18	1,731.16	40.01	44.265			
7,000.00	6,970.50	6,969.74	6,952.01	23.24	21.44	179.71	-1,300.78	-239.80	1,771.23	1,731.16	40.07	44.207			
7,100.00	7,070.50	7,062.45	7,042.72	23.29	21.35	179.10	-1,300.93	-221.12	1,771.61	1,731.52	40.08	44.201			
7,200.00	7,170.50	7,150.00	7,124.57	23.34	21.25	178.11	-1,301.16	-190.28	1,772.81	1,732.74	40.08	44.237			
7,300.00	7,270.50	7,221.87	7,187.61	23.39	21.16	177.00	-1,301.43	-155.88	1,775.56	1,735.49	40.07	44.310			
7,400.00	7,370.50	7,286.04	7,239.88	23.44	21.10	175.80	-1,301.72	-118.71	1,780.62	1,740.55	40.07	44.433			
7,500.00	7,470.50	7,340.49	7,280.74	23.49	21.06	174.65	-1,301.99	-82.75	1,788.67	1,748.59	40.08	44.624			
7,600.00	7,570.50	7,386.50	7,312.47	23.54	21.05	173.58	-1,302.25	-49.45	1,800.24	1,760.15	40.09	44.905			
7,700.00	7,670.50	7,425.42	7,337.16	23.59	21.06	172.62	-1,302.48	-19.38	1,815.69	1,775.61	40.08	45.296			
7,800.00	7,770.50	7,450.00	7,351.68	23.65	21.07	172.00	-1,302.63	0.46	1,835.32	1,795.30	40.01	45.866			
7,900.00	7,870.50	7,486.72	7,371.75	23.70	21.12	171.02	-1,302.87	31.20	1,859.12	1,819.12	40.00	46.477			
8,000.00	7,970.40	7,500.00	7,378.51	23.66	21.13	78.52	-1,302.96	42.62	1,886.80	1,847.01	39.79	47.416			
8,100.00	8,068.49	7,550.00	7,401.57	23.58	21.24	74.43	-1,303.30	86.97	1,915.26	1,875.48	39.77	48.153			
8,200.00	8,161.84	7,570.65	7,409.95	23.48	21.30	71.25	-1,303.44	105.84	1,943.05	1,903.46	39.59	49.081			
8,300.00	8,247.60	7,600.00	7,420.68	23.40	21.40	68.20	-1,303.65	133.15	1,969.06	1,929.56	39.50	49.855			
8,400.00	8,323.17	7,650.00	7,435.69	23.38	21.62	65.33	-1,304.02	180.83	1,992.29	1,952.61	39.68	50.207			
8,500.00	8,386.25	7,670.98	7,440.74	23.47	21.73	63.34	-1,304.18	201.19	2,011.51	1,971.75	39.76	50.586			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
8,600.00	8,434.92	7,700.00	7,446.49	23.73	21.89	61.77	-1,304.40	229.63	2,026.38	1,986.28	40.10	50.529			
8,700.00	8,467.72	7,750.00	7,452.99	24.20	22.24	60.66	-1,304.78	279.19	2,036.22	1,995.31	40.91	49.774			
8,800.00	8,483.63	7,786.72	7,455.00	24.88	22.53	60.21	-1,305.06	315.85	2,040.68	1,998.86	41.82	48.795			
8,900.00	8,486.62	7,862.67	7,456.73	25.76	23.23	60.19	-1,305.65	391.78	2,040.87	1,997.54	43.33	47.104			
9,000.00	8,488.89	7,962.67	7,459.00	26.81	24.30	60.19	-1,306.41	491.75	2,040.84	1,995.49	45.35	44.999			
9,100.00	8,491.15	8,062.67	7,461.27	28.01	25.55	60.19	-1,307.18	591.72	2,040.81	1,993.17	47.65	42.834			
9,200.00	8,493.42	8,162.67	7,463.55	29.34	26.95	60.19	-1,307.95	691.69	2,040.78	1,990.62	50.16	40.682			
9,300.00	8,495.69	8,262.67	7,465.82	30.79	28.49	60.19	-1,308.72	791.67	2,040.75	1,987.87	52.88	38.593			
9,400.00	8,497.96	8,362.67	7,468.09	32.34	30.13	60.19	-1,309.49	891.64	2,040.72	1,984.96	55.76	36.598			
9,500.00	8,500.23	8,462.67	7,470.37	33.98	31.87	60.19	-1,310.26	991.61	2,040.69	1,981.91	58.79	34.714			
9,600.00	8,502.49	8,562.67	7,472.64	35.70	33.69	60.19	-1,311.03	1,091.58	2,040.66	1,978.73	61.93	32.950			
9,700.00	8,504.76	8,662.67	7,474.91	37.49	35.57	60.19	-1,311.80	1,191.55	2,040.63	1,975.45	65.18	31.306			
9,800.00	8,507.03	8,762.67	7,477.19	39.33	37.51	60.19	-1,312.57	1,291.52	2,040.60	1,972.08	68.52	29.779			
9,900.00	8,509.30	8,862.67	7,479.46	41.23	39.48	60.19	-1,313.34	1,391.49	2,040.57	1,968.63	71.94	28.364			
10,000.00	8,511.56	8,962.67	7,481.73	43.16	41.50	60.19	-1,314.11	1,491.46	2,040.54	1,965.12	75.43	27.054			
10,100.00	8,513.83	9,062.67	7,484.01	45.13	43.55	60.19	-1,314.88	1,591.43	2,040.52	1,961.55	78.97	25.840			
10,200.00	8,516.10	9,162.67	7,486.28	47.14	45.62	60.19	-1,315.65	1,691.41	2,040.49	1,957.93	82.56	24.716			
10,300.00	8,518.37	9,262.67	7,488.55	49.17	47.72	60.19	-1,316.42	1,791.38	2,040.46	1,954.26	86.19	23.673			
10,400.00	8,520.64	9,362.67	7,490.83	51.23	49.84	60.19	-1,317.19	1,891.35	2,040.43	1,950.56	89.87	22.705			
10,500.00	8,522.90	9,462.67	7,493.10	53.31	51.98	60.19	-1,317.96	1,991.32	2,040.40	1,946.82	93.58	21.805			
10,600.00	8,525.17	9,562.67	7,495.37	55.40	54.13	60.19	-1,318.73	2,091.29	2,040.37	1,943.05	97.31	20.967			
10,700.00	8,527.44	9,662.67	7,497.65	57.52	56.29	60.19	-1,319.50	2,191.26	2,040.34	1,939.26	101.08	20.185			
10,800.00	8,529.71	9,762.67	7,499.92	59.65	58.47	60.19	-1,320.27	2,291.23	2,040.31	1,935.44	104.87	19.456			
10,900.00	8,531.98	9,862.67	7,502.19	61.79	60.66	60.19	-1,321.04	2,391.20	2,040.28	1,931.60	108.68	18.773			
11,000.00	8,534.24	9,962.67	7,504.47	63.94	62.85	60.19	-1,321.81	2,491.18	2,040.25	1,927.74	112.51	18.134			
11,100.00	8,536.51	10,062.67	7,506.74	66.11	65.06	60.19	-1,322.58	2,591.15	2,040.22	1,923.87	116.35	17.535			
11,200.00	8,538.78	10,162.67	7,509.01	68.29	67.27	60.19	-1,323.35	2,691.12	2,040.19	1,919.97	120.22	16.971			
11,300.00	8,541.05	10,262.67	7,511.29	70.47	69.49	60.19	-1,324.12	2,791.09	2,040.16	1,916.07	124.09	16.441			
11,400.00	8,543.32	10,362.67	7,513.56	72.66	71.71	60.19	-1,324.89	2,891.06	2,040.13	1,912.15	127.98	15.941			
11,500.00	8,545.58	10,462.67	7,515.83	74.86	73.94	60.19	-1,325.65	2,991.03	2,040.10	1,908.22	131.88	15.469			
11,600.00	8,547.85	10,562.67	7,518.11	77.07	76.18	60.19	-1,326.42	3,091.00	2,040.07	1,904.28	135.79	15.023			
11,700.00	8,550.12	10,662.67	7,520.38	79.28	78.42	60.18	-1,327.19	3,190.97	2,040.04	1,900.33	139.71	14.602			
11,800.00	8,552.39	10,762.67	7,522.66	81.50	80.66	60.18	-1,327.96	3,290.94	2,040.01	1,896.37	143.64	14.202			
11,900.00	8,554.66	10,862.67	7,524.93	83.72	82.91	60.18	-1,328.73	3,390.92	2,039.98	1,892.40	147.58	13.823			
12,000.00	8,556.92	10,962.67	7,527.20	85.95	85.16	60.18	-1,329.50	3,490.89	2,039.95	1,888.43	151.53	13.463			
12,100.00	8,559.19	11,062.67	7,529.48	88.18	87.41	60.18	-1,330.27	3,590.86	2,039.92	1,884.44	155.48	13.120			
12,200.00	8,561.46	11,162.67	7,531.75	90.42	89.67	60.18	-1,331.04	3,690.83	2,039.89	1,880.46	159.44	12.794			
12,300.00	8,563.73	11,262.67	7,534.02	92.66	91.93	60.18	-1,331.81	3,790.80	2,039.86	1,876.46	163.40	12.484			
12,400.00	8,565.99	11,362.67	7,536.30	94.90	94.19	60.18	-1,332.58	3,890.77	2,039.84	1,872.46	167.37	12.187			
12,500.00	8,568.26	11,462.67	7,538.57	97.15	96.46	60.18	-1,333.35	3,990.74	2,039.81	1,868.46	171.35	11.904			
12,600.00	8,570.53	11,562.67	7,540.84	99.40	98.73	60.18	-1,334.12	4,090.71	2,039.78	1,864.45	175.33	11.634			
12,700.00	8,572.80	11,662.67	7,543.12	101.65	101.00	60.18	-1,334.89	4,190.69	2,039.75	1,860.43	179.31	11.375			
12,800.00	8,575.07	11,762.67	7,545.39	103.91	103.27	60.18	-1,335.66	4,290.66	2,039.72	1,856.41	183.30	11.127			
12,900.00	8,577.33	11,862.67	7,547.66	106.17	105.54	60.18	-1,336.43	4,390.63	2,039.69	1,852.39	187.30	10.890			
13,000.00	8,579.60	11,962.67	7,549.94	108.43	107.82	60.18	-1,337.20	4,490.60	2,039.66	1,848.36	191.29	10.662			
13,100.00	8,581.87	12,062.67	7,552.21	110.69	110.09	60.18	-1,337.97	4,590.57	2,039.63	1,844.33	195.29	10.444			
13,200.00	8,584.14	12,162.67	7,554.48	112.95	112.37	60.18	-1,338.74	4,690.54	2,039.60	1,840.30	199.30	10.234			
13,300.00	8,586.41	12,262.67	7,556.76	115.22	114.65	60.18	-1,339.51	4,790.51	2,039.57	1,836.26	203.30	10.032			
13,400.00	8,588.67	12,362.67	7,559.03	117.49	116.93	60.18	-1,340.28	4,890.48	2,039.54	1,832.23	207.31	9.838			
13,500.00	8,590.94	12,462.67	7,561.30	119.76	119.21	60.18	-1,341.05	4,990.46	2,039.51	1,828.18	211.33	9.651			
13,600.00	8,593.21	12,562.67	7,563.58	122.03	121.49	60.18	-1,341.82	5,090.43	2,039.48	1,824.14	215.34	9.471			
13,700.00	8,595.48	12,662.67	7,565.85	124.30	123.78	60.18	-1,342.59	5,190.40	2,039.45	1,820.09	219.36	9.297			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
13,800.00	8,597.75	12,762.67	7,568.12	126.57	126.06	60.18	-1,343.36	5,290.37	2,039.42	1,816.04	223.38	9.130			
13,900.00	8,600.01	12,862.67	7,570.40	128.85	128.35	60.18	-1,344.13	5,390.34	2,039.39	1,811.99	227.40	8.968			
14,000.00	8,602.28	12,962.67	7,572.67	131.13	130.63	60.18	-1,344.90	5,490.31	2,039.36	1,807.94	231.42	8.812			
14,100.00	8,604.55	13,062.67	7,574.94	133.40	132.92	60.18	-1,345.66	5,590.28	2,039.33	1,803.88	235.45	8.661			
14,200.00	8,606.82	13,162.67	7,577.22	135.68	135.21	60.18	-1,346.43	5,690.25	2,039.30	1,799.83	239.48	8.516			
14,300.00	8,609.09	13,262.67	7,579.49	137.96	137.50	60.18	-1,347.20	5,790.22	2,039.27	1,795.77	243.51	8.375			
14,400.00	8,611.35	13,362.67	7,581.76	140.24	139.79	60.18	-1,347.97	5,890.20	2,039.24	1,791.71	247.54	8.238			
14,500.00	8,613.62	13,462.67	7,584.04	142.53	142.08	60.18	-1,348.74	5,990.17	2,039.21	1,787.65	251.57	8.106			
14,600.00	8,615.89	13,562.67	7,586.31	144.81	144.37	60.18	-1,349.51	6,090.14	2,039.18	1,783.58	255.60	7.978			
14,700.00	8,618.16	13,662.67	7,588.58	147.09	146.66	60.18	-1,350.28	6,190.11	2,039.16	1,779.52	259.64	7.854			
14,800.00	8,620.42	13,762.67	7,590.86	149.38	148.96	60.18	-1,351.05	6,290.08	2,039.13	1,775.45	263.67	7.733			
14,900.00	8,622.69	13,862.67	7,593.13	151.66	151.25	60.18	-1,351.82	6,390.05	2,039.10	1,771.38	267.71	7.617			
15,000.00	8,624.96	13,962.67	7,595.40	153.95	153.54	60.18	-1,352.59	6,490.02	2,039.07	1,767.31	271.75	7.503			
15,100.00	8,627.23	14,062.67	7,597.68	156.24	155.84	60.17	-1,353.36	6,589.99	2,039.04	1,763.24	275.79	7.393			
15,200.00	8,629.50	14,162.67	7,599.95	158.53	158.13	60.17	-1,354.13	6,689.97	2,039.01	1,759.17	279.83	7.286			
15,300.00	8,631.76	14,262.67	7,602.22	160.81	160.43	60.17	-1,354.90	6,789.94	2,038.98	1,755.10	283.88	7.183			
15,400.00	8,634.03	14,362.67	7,604.50	163.10	162.72	60.17	-1,355.67	6,889.91	2,038.95	1,751.03	287.92	7.082			
15,500.00	8,636.30	14,462.67	7,606.77	165.39	165.02	60.17	-1,356.44	6,989.88	2,038.92	1,746.95	291.97	6.983			
15,600.00	8,638.57	14,562.67	7,609.04	167.68	167.31	60.17	-1,357.21	7,089.85	2,038.89	1,742.88	296.01	6.888			
15,700.00	8,640.84	14,662.67	7,611.32	169.97	169.61	60.17	-1,357.98	7,189.82	2,038.86	1,738.80	300.06	6.795			
15,800.00	8,643.10	14,762.67	7,613.59	172.27	171.91	60.17	-1,358.75	7,289.79	2,038.83	1,734.73	304.10	6.704			
15,900.00	8,645.37	14,862.67	7,615.86	174.56	174.21	60.17	-1,359.52	7,389.76	2,038.80	1,730.65	308.15	6.616			
16,000.00	8,647.64	14,962.67	7,618.14	176.85	176.50	60.17	-1,360.29	7,489.73	2,038.77	1,726.57	312.20	6.530			
16,100.00	8,649.91	15,062.67	7,620.41	179.14	178.80	60.17	-1,361.06	7,589.71	2,038.74	1,722.49	316.25	6.447			
16,200.00	8,652.18	15,162.67	7,622.68	181.44	181.10	60.17	-1,361.83	7,689.68	2,038.71	1,718.41	320.30	6.365			
16,300.00	8,654.44	15,262.67	7,624.96	183.73	183.40	60.17	-1,362.60	7,789.65	2,038.68	1,714.33	324.35	6.285			
16,400.00	8,656.71	15,362.67	7,627.23	186.03	185.70	60.17	-1,363.37	7,889.62	2,038.65	1,710.25	328.41	6.208			
16,500.00	8,658.98	15,462.67	7,629.50	188.32	188.00	60.17	-1,364.14	7,989.59	2,038.62	1,706.16	332.46	6.132			
16,600.00	8,661.25	15,562.67	7,631.78	190.62	190.30	60.17	-1,364.91	8,089.56	2,038.59	1,702.08	336.51	6.058			
16,700.00	8,663.52	15,662.67	7,634.05	192.91	192.60	60.17	-1,365.67	8,189.53	2,038.56	1,698.00	340.57	5.986			
16,800.00	8,665.78	15,762.67	7,636.32	195.21	194.90	60.17	-1,366.44	8,289.50	2,038.53	1,693.91	344.62	5.915			
16,900.00	8,668.05	15,862.67	7,638.60	197.50	197.20	60.17	-1,367.21	8,389.48	2,038.50	1,689.83	348.68	5.846			
17,000.00	8,670.32	15,962.67	7,640.87	199.80	199.50	60.17	-1,367.98	8,489.45	2,038.48	1,685.74	352.73	5.779			
17,100.00	8,672.59	16,062.67	7,643.14	202.10	201.80	60.17	-1,368.75	8,589.42	2,038.45	1,681.66	356.79	5.713			
17,200.00	8,674.85	16,162.67	7,645.42	204.40	204.10	60.17	-1,369.52	8,689.39	2,038.42	1,677.57	360.84	5.649			
17,300.00	8,677.12	16,262.67	7,647.69	206.69	206.41	60.17	-1,370.29	8,789.36	2,038.39	1,673.49	364.90	5.586			
17,400.00	8,679.39	16,362.67	7,649.97	208.99	208.71	60.17	-1,371.06	8,889.33	2,038.36	1,669.40	368.96	5.525			
17,500.00	8,681.66	16,462.67	7,652.24	211.29	211.01	60.17	-1,371.83	8,989.30	2,038.33	1,665.31	373.02	5.464			
17,600.00	8,683.93	16,562.67	7,654.51	213.59	213.31	60.17	-1,372.60	9,089.27	2,038.30	1,661.22	377.08	5.406			
17,700.00	8,686.19	16,662.67	7,656.79	215.89	215.61	60.17	-1,373.37	9,189.25	2,038.27	1,657.13	381.13	5.348			
17,800.00	8,688.46	16,762.67	7,659.06	218.19	217.92	60.17	-1,374.14	9,289.22	2,038.24	1,653.04	385.19	5.291			
17,900.00	8,690.73	16,862.67	7,661.33	220.49	220.22	60.17	-1,374.91	9,389.19	2,038.21	1,648.96	389.25	5.236			
18,000.00	8,693.00	16,962.67	7,663.61	222.79	222.52	60.17	-1,375.68	9,489.16	2,038.18	1,644.87	393.31	5.182			
18,100.00	8,695.27	17,062.67	7,665.88	225.08	224.83	60.17	-1,376.45	9,589.13	2,038.15	1,640.78	397.37	5.129			
18,200.00	8,697.53	17,162.67	7,668.15	227.39	227.13	60.17	-1,377.22	9,689.10	2,038.12	1,636.69	401.44	5.077			
18,300.00	8,699.80	17,262.67	7,670.43	229.69	229.43	60.17	-1,377.99	9,789.07	2,038.09	1,632.59	405.50	5.026			
18,400.00	8,702.07	17,362.67	7,672.70	231.99	231.74	60.16	-1,378.76	9,889.04	2,038.06	1,628.50	409.56	4.976			
18,500.00	8,704.34	17,462.67	7,674.97	234.29	234.04	60.16	-1,379.53	9,989.01	2,038.03	1,624.41	413.62	4.927			
18,600.00	8,706.61	17,562.67	7,677.25	236.59	236.34	60.16	-1,380.30	10,089.99	2,038.00	1,620.32	417.68	4.879			
18,700.00	8,708.87	17,662.67	7,679.52	238.89	238.65	60.16	-1,381.07	10,189.96	2,037.97	1,616.23	421.75	4.832			
18,800.00	8,711.14	17,762.67	7,681.79	241.19	240.95	60.16	-1,381.84	10,289.93	2,037.94	1,612.14	425.81	4.786			
18,900.00	8,713.41	17,862.67	7,684.07	243.49	243.26	60.16	-1,382.61	10,388.90	2,037.91	1,608.04	429.87	4.741			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-113HC - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		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	
19,000.00	8,715.68	17,962.67	7,686.34	245.79	245.56	60.16	-1,383.38	10,488.87	2,037.88	1,603.95	433.93	4.696	
19,100.00	8,717.95	18,062.67	7,688.61	247.40	247.87	60.16	-1,384.15	10,588.84	2,037.85	1,600.48	437.37	4.659	
19,102.43	8,718.00	18,065.10	7,688.67	247.44	247.92	60.16	-1,384.16	10,591.27	2,037.85	1,600.40	437.46	4.658 SF	



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-116H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.50	0.50	179.67	-912.52	5.31	912.65				
100.00	100.00	85.80	85.80	0.65	0.61	179.67	-912.52	5.31	912.54	911.27	1.26	721.832	
200.00	200.00	185.80	185.80	1.34	1.23	179.67	-912.52	5.31	912.54	909.96	2.58	354.300	
300.00	300.00	285.80	285.80	1.81	1.74	179.67	-912.52	5.31	912.54	908.98	3.56	256.562	
400.00	400.00	385.80	385.80	2.19	2.13	179.67	-912.52	5.31	912.54	908.22	4.32	211.265	
500.00	500.00	485.80	485.80	2.51	2.46	179.67	-912.52	5.31	912.54	907.57	4.97	183.604	
600.00	600.00	585.80	585.80	2.80	2.75	179.67	-912.52	5.31	912.54	906.99	5.55	164.439	
700.00	700.00	685.80	685.80	3.06	3.02	179.67	-912.52	5.31	912.54	906.46	6.08	150.141	
800.00	800.00	785.80	785.80	3.30	3.27	179.67	-912.52	5.31	912.54	905.97	6.57	138.940	
900.00	900.00	885.80	885.80	3.53	3.50	179.67	-912.52	5.31	912.54	905.51	7.03	129.852	
1,000.00	1,000.00	985.80	985.80	3.75	3.72	179.67	-912.52	5.31	912.54	905.07	7.46	122.284	
1,100.00	1,100.00	1,085.80	1,085.80	3.95	3.92	179.67	-912.52	5.31	912.54	904.66	7.88	115.852	
1,200.00	1,200.00	1,185.80	1,185.80	4.15	4.12	179.67	-912.52	5.31	912.54	904.26	8.27	110.296	
1,300.00	1,300.00	1,285.80	1,285.80	4.34	4.31	179.67	-912.52	5.31	912.54	903.88	8.66	105.433	
1,400.00	1,400.00	1,385.80	1,385.80	4.52	4.50	179.67	-912.52	5.31	912.54	903.51	9.02	101.128	
1,500.00	1,500.00	1,485.80	1,485.80	4.70	4.68	179.67	-912.52	5.31	912.54	903.16	9.38	97.281	
1,600.00	1,599.98	1,618.96	1,618.93	5.05	5.13	-152.45	-910.37	4.10	912.52	902.43	10.10	90.391	
1,700.00	1,699.84	1,757.55	1,757.20	5.69	6.04	-152.39	-902.43	-0.35	911.42	900.02	11.40	79.969	
1,800.00	1,799.45	1,895.97	1,894.71	6.30	6.84	-152.28	-888.69	-8.06	909.18	896.60	12.57	72.314	
1,900.00	1,898.82	2,000.17	1,997.84	6.46	7.05	-152.17	-875.72	-15.33	906.60	893.70	12.90	70.261	
2,000.00	1,998.18	2,100.12	2,096.77	6.67	7.27	-152.06	-863.25	-22.32	904.10	890.78	13.32	67.868	
2,100.00	2,097.54	2,200.07	2,195.69	6.90	7.52	-151.95	-850.78	-29.32	901.60	887.82	13.78	65.433	
2,200.00	2,196.90	2,300.03	2,294.62	7.15	7.79	-151.84	-838.30	-36.32	899.10	884.84	14.26	63.037	
2,300.00	2,296.25	2,399.98	2,393.54	7.42	8.06	-151.73	-825.83	-43.31	896.61	881.84	14.77	60.701	
2,400.00	2,395.61	2,499.94	2,492.47	7.69	8.36	-151.62	-813.36	-50.31	894.12	878.82	15.30	58.439	
2,500.00	2,494.97	2,599.89	2,591.39	7.98	8.66	-151.51	-800.89	-57.30	891.63	875.79	15.85	56.262	
2,600.00	2,594.33	2,699.84	2,690.32	8.28	8.98	-151.40	-788.41	-64.30	889.15	872.74	16.41	54.174	
2,700.00	2,693.69	2,799.80	2,789.24	8.59	9.30	-151.28	-775.94	-71.30	886.67	869.68	16.99	52.180	
2,800.00	2,793.05	2,899.75	2,888.17	8.91	9.64	-151.17	-763.47	-78.29	884.20	866.61	17.59	50.279	
2,900.00	2,892.40	2,999.70	2,987.10	9.24	9.98	-151.06	-750.99	-85.29	881.72	863.53	18.19	48.472	
3,000.00	2,991.76	3,099.66	3,086.02	9.57	10.33	-150.94	-738.52	-92.28	879.26	860.45	18.81	46.754	
3,100.00	3,091.12	3,199.61	3,184.95	9.91	10.68	-150.83	-726.05	-99.28	876.79	857.36	19.43	45.124	
3,200.00	3,190.48	3,299.57	3,283.87	10.25	11.04	-150.71	-713.58	-106.28	874.33	854.27	20.06	43.578	
3,300.00	3,289.84	3,399.52	3,382.80	10.60	11.41	-150.59	-701.10	-113.27	871.87	851.17	20.70	42.111	
3,400.00	3,389.20	3,499.47	3,481.72	10.95	11.78	-150.47	-688.63	-120.27	869.42	848.07	21.35	40.720	
3,500.00	3,488.55	3,599.43	3,580.65	11.31	12.15	-150.36	-676.16	-127.26	866.97	844.96	22.00	39.401	
3,600.00	3,587.91	3,699.38	3,679.57	11.67	12.53	-150.24	-663.68	-134.26	864.52	841.86	22.66	38.149	
3,700.00	3,687.27	3,799.34	3,778.50	12.03	12.92	-150.12	-651.21	-141.26	862.08	838.75	23.32	36.961	
3,800.00	3,786.63	3,899.29	3,877.43	12.40	13.30	-150.00	-638.74	-148.25	859.64	835.65	23.99	35.833	
3,900.00	3,885.99	3,999.24	3,976.35	12.77	13.69	-149.87	-626.26	-155.25	857.20	832.54	24.66	34.760	
4,000.00	3,985.35	4,099.20	4,075.28	13.14	14.08	-149.75	-613.79	-162.24	854.77	829.44	25.33	33.741	
4,100.00	4,084.70	4,199.15	4,174.20	13.52	14.48	-149.63	-601.32	-169.24	852.34	826.33	26.01	32.771	
4,200.00	4,184.06	4,299.11	4,273.13	13.90	14.88	-149.51	-588.85	-176.23	849.92	823.23	26.69	31.847	
4,300.00	4,283.42	4,399.06	4,372.05	14.27	15.27	-149.38	-576.37	-183.23	847.50	820.13	27.37	30.967	
4,400.00	4,382.78	4,499.01	4,470.98	14.65	15.68	-149.26	-563.90	-190.23	845.08	817.04	28.05	30.129	
4,500.00	4,482.14	4,598.97	4,569.90	15.04	16.08	-149.13	-551.43	-197.22	842.67	813.94	28.73	29.328	
4,600.00	4,581.49	4,698.92	4,668.83	15.42	16.48	-149.01	-538.95	-204.22	840.26	810.85	29.42	28.564	
4,700.00	4,680.85	4,798.87	4,767.75	15.81	16.89	-148.88	-526.48	-211.21	837.86	807.76	30.10	27.833	
4,800.00	4,780.21	4,898.83	4,866.68	16.19	17.30	-148.75	-514.01	-218.21	835.46	804.67	30.79	27.135	
4,900.00	4,879.57	4,998.78	4,965.61	16.58	17.71	-148.62	-501.54	-225.21	833.07	801.59	31.48	26.467	
5,000.00	4,978.93	5,098.74	5,064.53	16.97	18.12	-148.50	-489.06	-232.20	830.68	798.51	32.16	25.827	
5,100.00	5,078.29	5,198.22	5,149.22	17.36	18.46	-148.41	-478.93	-237.88	828.94	796.14	32.80	25.275	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-116H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Rule Assigned:													
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
5,131.75	5,109.83	5,209.77	5,174.59	17.49	18.57	-148.40	-476.30	-239.36	828.85	795.85	33.00	25.116	CC, ES
5,200.00	5,177.64	5,264.69	5,229.21	17.75	18.83	-148.41	-471.32	-242.16	829.47	796.01	33.46	24.790	
5,300.00	5,277.00	5,345.07	5,309.33	18.15	19.22	-148.49	-465.67	-245.32	832.37	798.24	34.13	24.388	
5,400.00	5,376.36	5,425.24	5,389.39	18.54	19.58	-148.66	-461.99	-247.38	837.62	802.83	34.78	24.080	
5,500.00	5,475.72	5,505.08	5,469.20	18.93	19.90	-148.91	-460.27	-248.35	845.23	809.83	35.40	23.877	
5,600.00	5,575.08	5,596.76	5,560.88	19.33	19.97	-149.27	-460.13	-248.43	854.78	818.91	35.87	23.832	
5,700.00	5,674.44	5,696.12	5,660.24	19.73	20.02	-149.65	-460.13	-248.43	864.53	828.18	36.35	23.781	
5,800.00	5,773.79	5,795.48	5,759.59	20.12	20.07	-150.02	-460.13	-248.43	874.33	837.49	36.84	23.730	
5,900.00	5,873.15	5,894.83	5,858.95	20.52	20.12	-150.39	-460.13	-248.43	884.16	846.83	37.34	23.681	
6,000.00	5,972.51	5,994.19	5,958.31	20.92	20.17	-150.75	-460.13	-248.43	894.03	856.20	37.83	23.634	
6,100.00	6,071.87	6,093.55	6,057.67	21.32	20.23	-151.09	-460.13	-248.43	903.93	865.61	38.32	23.590	
6,200.00	6,171.23	6,192.91	6,157.03	21.72	20.28	-151.44	-460.13	-248.43	913.86	875.05	38.81	23.546	
6,300.00	6,270.75	6,292.43	6,256.55	22.13	20.34	-151.80	-460.13	-248.43	922.44	883.13	39.31	23.467	
6,400.00	6,370.54	6,392.23	6,356.34	22.59	20.39	-152.04	-460.13	-248.43	927.96	888.15	39.81	23.310	
6,500.00	6,470.50	6,492.18	6,456.30	22.98	20.45	-152.14	-460.13	-248.43	930.42	890.18	40.23	23.125	
6,600.00	6,570.50	6,592.18	6,556.30	23.05	20.50	-179.97	-460.13	-248.43	930.55	890.19	40.36	23.056	
6,700.00	6,670.50	6,692.18	6,656.30	23.10	20.56	179.97	-460.13	-248.43	930.55	890.08	40.47	22.993	
6,800.00	6,770.50	6,792.18	6,756.30	23.15	20.61	179.97	-460.13	-248.43	930.55	889.96	40.59	22.928	
6,900.00	6,870.50	6,892.18	6,856.30	23.19	20.67	179.97	-460.13	-248.43	930.55	889.85	40.70	22.864	
7,000.00	6,970.50	6,998.47	6,962.32	23.24	20.63	179.63	-459.84	-242.81	930.29	889.42	40.87	22.761	
7,100.00	7,070.50	7,101.64	7,062.64	23.29	20.56	178.18	-458.60	-219.31	929.52	888.30	41.22	22.550	
7,156.03	7,126.53	7,154.90	7,112.33	23.32	20.52	177.00	-457.60	-200.25	929.30	887.85	41.44	22.423	
7,200.00	7,170.50	7,193.90	7,147.49	23.34	20.49	175.96	-456.72	-183.40	929.49	887.88	41.61	22.336	
7,300.00	7,270.50	7,272.96	7,214.82	23.39	20.46	173.42	-454.56	-142.14	932.04	890.12	41.92	22.232	
7,400.00	7,370.50	7,339.07	7,266.32	23.44	20.46	170.88	-452.39	-100.79	938.94	896.89	42.05	22.329	
7,500.00	7,470.50	7,400.00	7,309.27	23.49	20.50	168.27	-450.13	-57.68	951.63	909.61	42.02	22.649	
7,600.00	7,570.50	7,439.11	7,334.33	23.54	20.55	166.47	-448.56	-27.70	970.94	929.35	41.59	23.346	
7,700.00	7,670.50	7,476.77	7,356.46	23.59	20.63	164.66	-446.97	2.71	997.40	956.37	41.02	24.312	
7,800.00	7,770.50	7,500.00	7,369.10	23.65	20.68	163.52	-445.95	22.17	1,031.08	990.91	40.17	25.668	
7,900.00	7,870.50	7,534.98	7,386.62	23.70	20.79	161.77	-444.36	52.40	1,071.54	1,032.09	39.45	27.160	
8,000.00	7,970.40	7,550.00	7,393.57	23.66	20.84	67.67	-443.67	65.70	1,117.66	1,079.28	38.38	29.124	
8,100.00	8,068.49	7,585.80	7,408.71	23.58	21.00	61.39	-441.97	98.09	1,163.92	1,126.40	37.52	31.023	
8,200.00	8,161.84	7,615.29	7,419.64	23.48	21.14	56.14	-440.54	125.44	1,208.11	1,171.53	36.58	33.029	
8,300.00	8,247.60	7,650.00	7,430.67	23.40	21.34	51.60	-438.81	158.30	1,248.50	1,212.72	35.78	34.898	
8,400.00	8,323.17	7,679.75	7,438.53	23.38	21.54	48.07	-437.31	186.95	1,283.67	1,248.62	35.05	36.627	
8,500.00	8,386.25	7,700.00	7,443.03	23.47	21.67	45.50	-436.28	206.67	1,312.75	1,278.39	34.36	38.208	
8,600.00	8,434.92	7,750.00	7,451.11	23.73	22.07	43.28	-433.70	255.92	1,334.31	1,300.03	34.29	38.916	
8,700.00	8,467.72	7,800.00	7,454.86	24.20	22.52	41.90	-431.09	305.70	1,348.57	1,314.11	34.46	39.136	
8,800.00	8,483.63	7,836.78	7,455.72	24.88	22.91	41.38	-429.34	342.42	1,353.94	1,319.31	34.62	39.105	
8,900.00	8,486.62	7,912.90	7,457.45	25.76	23.75	41.30	-427.21	418.49	1,352.10	1,316.82	35.27	38.331	
9,000.00	8,488.89	7,992.91	7,459.26	26.81	24.75	41.27	-427.11	498.49	1,351.46	1,315.28	36.18	37.355	
9,100.00	8,491.15	8,092.91	7,461.52	28.01	26.08	41.27	-427.87	598.46	1,351.44	1,313.87	37.57	35.972	
9,200.00	8,493.42	8,192.91	7,463.78	29.34	27.55	41.27	-428.64	698.43	1,351.42	1,312.23	39.18	34.490	
9,300.00	8,495.69	8,292.91	7,466.05	30.79	29.13	41.27	-429.40	798.40	1,351.40	1,310.40	40.99	32.966	
9,400.00	8,497.96	8,392.91	7,468.31	32.34	30.81	41.27	-430.16	898.37	1,351.38	1,308.40	42.98	31.445	
9,500.00	8,500.23	8,492.91	7,470.57	33.98	32.56	41.27	-430.93	998.34	1,351.36	1,306.25	45.11	29.960	
9,600.00	8,502.49	8,592.91	7,472.83	35.70	34.39	41.27	-431.69	1,098.31	1,351.34	1,303.97	47.36	28.531	
9,700.00	8,504.76	8,692.91	7,475.10	37.49	36.27	41.27	-432.46	1,198.29	1,351.32	1,301.58	49.73	27.171	
9,800.00	8,507.03	8,792.91	7,477.36	39.33	38.20	41.26	-433.22	1,298.26	1,351.30	1,299.10	52.20	25.888	
9,900.00	8,509.30	8,892.91	7,479.62	41.23	40.17	41.26	-433.99	1,398.23	1,351.28	1,296.53	54.75	24.682	
10,000.00	8,511.56	8,992.91	7,481.89	43.16	42.18	41.26	-434.75	1,498.20	1,351.26	1,293.89	57.37	23.555	
10,100.00	8,513.83	9,092.91	7,484.15	45.13	44.22	41.26	-435.52	1,598.17	1,351.24	1,291.19	60.05	22.502	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-116H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,200.00	8,516.10	9,192.91	7,486.41	47.14	46.28	41.26	-436.28	1,698.14	1,351.22	1,288.43	62.79	21.521			
10,300.00	8,518.37	9,292.91	7,488.67	49.17	48.37	41.26	-437.05	1,798.12	1,351.20	1,285.63	65.57	20.606			
10,400.00	8,520.64	9,392.91	7,490.94	51.23	50.48	41.26	-437.81	1,898.09	1,351.18	1,282.78	68.40	19.754			
10,500.00	8,522.90	9,492.91	7,493.20	53.31	52.60	41.26	-438.58	1,998.06	1,351.16	1,279.90	71.26	18.960			
10,600.00	8,525.17	9,592.91	7,495.46	55.40	54.75	41.25	-439.34	2,098.03	1,351.14	1,276.98	74.16	18.220			
10,700.00	8,527.44	9,692.91	7,497.73	57.52	56.90	41.25	-440.11	2,198.00	1,351.12	1,274.03	77.08	17.528			
10,800.00	8,529.71	9,792.91	7,499.99	59.65	59.07	41.25	-440.87	2,297.97	1,351.10	1,271.06	80.03	16.881			
10,900.00	8,531.98	9,892.91	7,502.25	61.79	61.24	41.25	-441.63	2,397.94	1,351.08	1,268.07	83.01	16.276			
11,000.00	8,534.24	9,992.91	7,504.51	63.94	63.43	41.25	-442.40	2,497.92	1,351.06	1,265.06	86.00	15.709			
11,100.00	8,536.51	10,092.91	7,506.78	66.11	65.63	41.25	-443.16	2,597.89	1,351.04	1,262.02	89.02	15.177			
11,200.00	8,538.78	10,192.91	7,509.04	68.29	67.83	41.25	-443.93	2,697.86	1,351.02	1,258.97	92.05	14.678			
11,300.00	8,541.05	10,292.91	7,511.30	70.47	70.04	41.25	-444.69	2,797.83	1,351.00	1,255.91	95.09	14.207			
11,400.00	8,543.32	10,392.91	7,513.57	72.66	72.26	41.24	-445.46	2,897.80	1,350.98	1,252.83	98.15	13.765			
11,500.00	8,545.58	10,492.91	7,515.83	74.86	74.48	41.24	-446.22	2,997.77	1,350.96	1,249.74	101.22	13.347			
11,600.00	8,547.85	10,592.91	7,518.09	77.07	76.71	41.24	-446.99	3,097.74	1,350.94	1,246.64	104.30	12.952			
11,700.00	8,550.12	10,692.91	7,520.35	79.28	78.94	41.24	-447.75	3,197.72	1,350.92	1,243.53	107.39	12.579			
11,800.00	8,552.39	10,792.91	7,522.62	81.50	81.18	41.24	-448.52	3,297.69	1,350.90	1,240.40	110.50	12.226			
11,900.00	8,554.66	10,892.91	7,524.88	83.72	83.42	41.24	-449.28	3,397.66	1,350.88	1,237.27	113.61	11.891			
12,000.00	8,556.92	10,992.91	7,527.14	85.95	85.67	41.24	-450.05	3,497.63	1,350.86	1,234.13	116.73	11.573			
12,100.00	8,559.19	11,092.91	7,529.41	88.18	87.92	41.23	-450.81	3,597.60	1,350.84	1,230.99	119.85	11.271			
12,200.00	8,561.46	11,192.91	7,531.67	90.42	90.17	41.23	-451.58	3,697.57	1,350.82	1,227.84	122.98	10.984			
12,300.00	8,563.73	11,292.91	7,533.93	92.66	92.42	41.23	-452.34	3,797.54	1,350.80	1,224.68	126.12	10.710			
12,400.00	8,565.99	11,392.91	7,536.19	94.90	94.68	41.23	-453.10	3,897.52	1,350.78	1,221.51	129.27	10.450			
12,500.00	8,568.26	11,492.91	7,538.46	97.15	96.94	41.23	-453.87	3,997.49	1,350.76	1,218.34	132.42	10.201			
12,600.00	8,570.53	11,592.91	7,540.72	99.40	99.20	41.23	-454.63	4,097.46	1,350.74	1,215.17	135.57	9.963			
12,700.00	8,572.80	11,692.91	7,542.98	101.65	101.47	41.23	-455.40	4,197.43	1,350.72	1,211.99	138.73	9.736			
12,800.00	8,575.07	11,792.91	7,545.25	103.91	103.74	41.23	-456.16	4,297.40	1,350.70	1,208.81	141.90	9.519			
12,900.00	8,577.33	11,892.91	7,547.51	106.17	106.01	41.22	-456.93	4,397.37	1,350.68	1,205.62	145.06	9.311			
13,000.00	8,579.60	11,992.91	7,549.77	108.43	108.28	41.22	-457.69	4,497.34	1,350.66	1,202.43	148.24	9.112			
13,100.00	8,581.87	12,092.91	7,552.03	110.69	110.55	41.22	-458.46	4,597.32	1,350.64	1,199.23	151.41	8.920			
13,200.00	8,584.14	12,192.91	7,554.30	112.95	112.82	41.22	-459.22	4,697.29	1,350.62	1,196.03	154.59	8.737			
13,300.00	8,586.41	12,292.91	7,556.56	115.22	115.10	41.22	-459.99	4,797.26	1,350.60	1,192.83	157.77	8.561			
13,400.00	8,588.67	12,392.91	7,558.82	117.49	117.38	41.22	-460.75	4,897.23	1,350.58	1,189.63	160.95	8.391			
13,500.00	8,590.94	12,492.91	7,561.09	119.76	119.65	41.22	-461.52	4,997.20	1,350.56	1,186.42	164.14	8.228			
13,600.00	8,593.21	12,592.91	7,563.35	122.03	121.93	41.22	-462.28	5,097.17	1,350.54	1,183.21	167.33	8.071			
13,700.00	8,595.48	12,692.91	7,565.61	124.30	124.21	41.21	-463.04	5,197.14	1,350.52	1,180.00	170.52	7.920			
13,800.00	8,597.75	12,792.91	7,567.87	126.57	126.50	41.21	-463.81	5,297.12	1,350.50	1,176.79	173.72	7.774			
13,900.00	8,600.01	12,892.91	7,570.14	128.85	128.78	41.21	-464.57	5,397.09	1,350.48	1,173.57	176.91	7.634			
14,000.00	8,602.28	12,992.91	7,572.40	131.13	131.06	41.21	-465.34	5,497.06	1,350.46	1,170.35	180.11	7.498			
14,100.00	8,604.55	13,092.91	7,574.66	133.40	133.35	41.21	-466.10	5,597.03	1,350.44	1,167.13	183.31	7.367			
14,200.00	8,606.82	13,192.91	7,576.93	135.68	135.63	41.21	-466.87	5,697.00	1,350.42	1,163.91	186.52	7.240			
14,300.00	8,609.09	13,292.91	7,579.19	137.96	137.92	41.21	-467.63	5,796.97	1,350.40	1,160.68	189.72	7.118			
14,400.00	8,611.35	13,392.91	7,581.45	140.24	140.21	41.21	-468.40	5,896.95	1,350.38	1,157.46	192.92	7.000			
14,500.00	8,613.62	13,492.91	7,583.71	142.53	142.50	41.20	-469.16	5,996.92	1,350.36	1,154.23	196.13	6.885			
14,600.00	8,615.89	13,592.91	7,585.98	144.81	144.79	41.20	-469.93	6,096.89	1,350.34	1,151.00	199.34	6.774			
14,700.00	8,618.16	13,692.91	7,588.24	147.09	147.07	41.20	-470.69	6,196.86	1,350.32	1,147.78	202.55	6.667			
14,800.00	8,620.42	13,792.91	7,590.50	149.38	149.37	41.20	-471.46	6,296.83	1,350.30	1,144.54	205.76	6.563			
14,900.00	8,622.69	13,892.91	7,592.77	151.66	151.66	41.20	-472.22	6,396.80	1,350.28	1,141.31	208.97	6.462			
15,000.00	8,624.96	13,992.91	7,595.03	153.95	153.95	41.20	-472.99	6,496.77	1,350.27	1,138.08	212.19	6.364			
15,100.00	8,627.23	14,092.91	7,597.29	156.24	156.24	41.20	-473.75	6,596.75	1,350.25	1,134.84	215.40	6.269			
15,200.00	8,629.50	14,192.91	7,599.55	158.53	158.53	41.19	-474.51	6,696.72	1,350.23	1,131.61	218.62	6.176			
15,300.00	8,631.76	14,292.91	7,601.82	160.81	160.83	41.19	-475.28	6,796.69	1,350.21	1,128.37	221.83	6.087			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-116H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
15,400.00	8,634.03	14,392.91	7,604.08	163.10	163.12	41.19	-476.04	6,896.66	1,350.19	1,125.14	225.05	5.999			
15,500.00	8,636.30	14,492.91	7,606.34	165.39	165.41	41.19	-476.81	6,996.63	1,350.17	1,121.90	228.27	5.915			
15,600.00	8,638.57	14,592.91	7,608.61	167.68	167.71	41.19	-477.57	7,096.60	1,350.15	1,118.66	231.49	5.832			
15,700.00	8,640.84	14,692.91	7,610.87	169.97	170.00	41.19	-478.34	7,196.57	1,350.13	1,115.42	234.71	5.752			
15,800.00	8,643.10	14,792.91	7,613.13	172.27	172.30	41.19	-479.10	7,296.55	1,350.11	1,112.18	237.93	5.674			
15,900.00	8,645.37	14,892.91	7,615.39	174.56	174.60	41.19	-479.87	7,396.52	1,350.09	1,108.94	241.15	5.599			
16,000.00	8,647.64	14,992.91	7,617.66	176.85	176.89	41.18	-480.63	7,496.49	1,350.07	1,105.69	244.37	5.525			
16,100.00	8,649.91	15,092.91	7,619.92	179.14	179.19	41.18	-481.40	7,596.46	1,350.05	1,102.45	247.60	5.453			
16,200.00	8,652.18	15,192.91	7,622.18	181.44	181.49	41.18	-482.16	7,696.43	1,350.03	1,099.21	250.82	5.382			
16,300.00	8,654.44	15,292.91	7,624.45	183.73	183.78	41.18	-482.93	7,796.40	1,350.01	1,095.96	254.04	5.314			
16,400.00	8,656.71	15,392.91	7,626.71	186.03	186.08	41.18	-483.69	7,896.37	1,349.99	1,092.72	257.27	5.247			
16,500.00	8,658.98	15,492.91	7,628.97	188.32	188.38	41.18	-484.46	7,996.35	1,349.97	1,089.47	260.50	5.182			
16,600.00	8,661.25	15,592.91	7,631.23	190.62	190.68	41.18	-485.22	8,096.32	1,349.95	1,086.23	263.72	5.119			
16,700.00	8,663.52	15,692.91	7,633.50	192.91	192.98	41.18	-485.98	8,196.29	1,349.93	1,082.98	266.95	5.057			
16,800.00	8,665.78	15,792.91	7,635.76	195.21	195.28	41.17	-486.75	8,296.26	1,349.91	1,079.73	270.18	4.996			
16,900.00	8,668.05	15,892.91	7,638.02	197.50	197.58	41.17	-487.51	8,396.23	1,349.89	1,076.49	273.40	4.937			
17,000.00	8,670.32	15,992.91	7,640.29	199.80	199.88	41.17	-488.28	8,496.20	1,349.87	1,073.24	276.63	4.880			
17,100.00	8,672.59	16,092.91	7,642.55	202.10	202.18	41.17	-489.04	8,596.17	1,349.85	1,069.99	279.86	4.823			
17,200.00	8,674.85	16,192.91	7,644.81	204.40	204.48	41.17	-489.81	8,696.15	1,349.83	1,066.74	283.09	4.768			
17,300.00	8,677.12	16,292.91	7,647.07	206.69	206.78	41.17	-490.57	8,796.12	1,349.81	1,063.49	286.32	4.714			
17,400.00	8,679.39	16,392.91	7,649.34	208.99	209.08	41.17	-491.34	8,896.09	1,349.79	1,060.24	289.55	4.662			
17,500.00	8,681.66	16,492.91	7,651.60	211.29	211.38	41.17	-492.10	8,996.06	1,349.77	1,056.99	292.78	4.610			
17,600.00	8,683.93	16,592.91	7,653.86	213.59	213.68	41.16	-492.87	9,096.03	1,349.75	1,053.74	296.01	4.560			
17,700.00	8,686.19	16,692.91	7,656.13	215.89	215.98	41.16	-493.63	9,196.00	1,349.73	1,050.49	299.24	4.511			
17,800.00	8,688.46	16,792.91	7,658.39	218.19	218.28	41.16	-494.40	9,295.97	1,349.71	1,047.24	302.47	4.462			
17,900.00	8,690.73	16,892.91	7,660.65	220.49	220.58	41.16	-495.16	9,395.95	1,349.69	1,043.99	305.70	4.415			
18,000.00	8,693.00	16,992.91	7,662.91	222.79	222.89	41.16	-495.93	9,495.92	1,349.67	1,040.74	308.93	4.369			
18,100.00	8,695.27	17,092.91	7,665.18	225.08	225.19	41.16	-496.69	9,595.89	1,349.65	1,037.49	312.16	4.324			
18,200.00	8,697.53	17,192.91	7,667.44	227.39	227.49	41.16	-497.45	9,695.86	1,349.63	1,034.24	315.39	4.279			
18,300.00	8,699.80	17,292.91	7,669.70	229.69	229.79	41.15	-498.22	9,795.83	1,349.61	1,030.98	318.63	4.236			
18,400.00	8,702.07	17,392.91	7,671.96	231.99	232.10	41.15	-498.98	9,895.80	1,349.59	1,027.73	321.86	4.193			
18,500.00	8,704.34	17,492.91	7,674.23	234.29	234.40	41.15	-499.75	9,995.78	1,349.57	1,024.48	325.09	4.151			
18,600.00	8,706.61	17,592.91	7,676.49	236.59	236.70	41.15	-500.51	10,095.75	1,349.55	1,021.23	328.33	4.110			
18,700.00	8,708.87	17,692.91	7,678.75	238.89	239.01	41.15	-501.28	10,195.72	1,349.53	1,017.97	331.56	4.070			
18,800.00	8,711.14	17,792.91	7,681.02	241.19	241.31	41.15	-502.04	10,295.69	1,349.51	1,014.72	334.79	4.031			
18,900.00	8,713.41	17,892.91	7,683.28	243.49	243.61	41.15	-502.81	10,395.66	1,349.49	1,011.47	338.03	3.992			
19,000.00	8,715.68	17,992.91	7,685.54	245.79	245.92	41.15	-503.57	10,495.63	1,349.47	1,008.21	341.26	3.954			
19,100.00	8,717.95	18,092.91	7,687.80	247.40	248.22	41.14	-504.34	10,595.60	1,349.45	1,005.49	343.97	3.923			
19,102.43	8,718.00	18,095.34	7,687.86	247.44	248.28	41.14	-504.36	10,598.03	1,349.45	1,005.42	344.03	3.922 SF			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Minimum	Separation	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	
0.00	0.00	0.00	0.00	0.50	0.50	-170.03	-824.86	-145.06	837.64				
100.00	100.00	85.50	85.50	0.65	0.61	-170.03	-824.86	-145.06	837.52	836.25	1.26	662.871	
200.00	200.00	185.50	185.50	1.34	1.23	-170.03	-824.86	-145.06	837.52	834.94	2.57	325.461	
300.00	300.00	285.50	285.50	1.81	1.74	-170.03	-824.86	-145.06	837.52	833.96	3.56	235.565	
400.00	400.00	385.50	385.50	2.19	2.13	-170.03	-824.86	-145.06	837.52	833.20	4.32	193.948	
500.00	500.00	485.50	485.50	2.51	2.46	-170.03	-824.86	-145.06	837.52	832.55	4.97	168.543	
600.00	600.00	585.50	585.50	2.80	2.75	-170.03	-824.86	-145.06	837.52	831.97	5.55	150.945	
700.00	700.00	685.50	685.50	3.06	3.02	-170.03	-824.86	-145.06	837.52	831.44	6.08	137.817	
800.00	800.00	785.50	785.50	3.30	3.27	-170.03	-824.86	-145.06	837.52	830.95	6.57	127.532	
900.00	900.00	885.50	885.50	3.53	3.50	-170.03	-824.86	-145.06	837.52	830.49	7.03	119.189	
1,000.00	1,000.00	985.50	985.50	3.75	3.72	-170.03	-824.86	-145.06	837.52	830.06	7.46	112.241	
1,100.00	1,100.00	1,085.50	1,085.50	3.95	3.92	-170.03	-824.86	-145.06	837.52	829.64	7.88	106.337	
1,200.00	1,200.00	1,185.50	1,185.50	4.15	4.12	-170.03	-824.86	-145.06	837.52	829.25	8.27	101.236	
1,300.00	1,300.00	1,285.50	1,285.50	4.34	4.31	-170.03	-824.86	-145.06	837.52	828.86	8.65	96.772	
1,400.00	1,400.00	1,385.50	1,385.50	4.52	4.50	-170.03	-824.86	-145.06	837.52	828.49	9.02	92.820	
1,500.00	1,500.00	1,485.50	1,485.50	4.70	4.68	-170.03	-824.86	-145.06	837.52	828.14	9.38	89.288	
1,600.00	1,599.98	1,620.09	1,620.06	5.05	5.13	-142.28	-822.49	-144.22	837.13	827.02	10.11	82.764	
1,700.00	1,699.84	1,750.54	1,750.23	5.69	5.77	-142.69	-814.64	-141.42	834.88	823.68	11.20	74.516	
1,778.77	1,778.33	1,829.13	1,828.58	6.17	5.90	-143.04	-808.80	-139.34	834.00	822.30	11.70	71.277 CC	
1,800.00	1,799.45	1,850.31	1,849.68	6.30	5.94	-143.15	-807.23	-138.78	834.07	822.23	11.84	70.437 ES	
1,900.00	1,898.82	1,949.96	1,949.03	6.46	6.15	-143.71	-799.82	-136.13	835.32	823.12	12.20	68.475	
2,000.00	1,998.18	2,049.61	2,048.37	6.67	6.38	-144.27	-792.41	-133.49	836.74	824.11	12.63	66.249	
2,100.00	2,097.54	2,149.27	2,147.71	6.90	6.62	-144.83	-785.00	-130.85	838.24	825.14	13.09	64.014	
2,200.00	2,196.90	2,248.92	2,247.05	7.15	6.88	-145.39	-777.59	-128.21	839.82	826.23	13.58	61.828	
2,300.00	2,296.25	2,348.57	2,346.39	7.42	7.14	-145.94	-770.18	-125.57	841.48	827.38	14.09	59.709	
2,400.00	2,395.61	2,448.22	2,445.73	7.69	7.41	-146.50	-762.77	-122.93	843.22	828.59	14.62	57.666	
2,500.00	2,494.97	2,547.87	2,545.07	7.98	7.70	-147.05	-755.36	-120.29	845.03	829.86	15.17	55.705	
2,600.00	2,594.33	2,647.52	2,644.41	8.28	7.99	-147.60	-747.95	-117.65	846.93	831.20	15.73	53.832	
2,700.00	2,693.69	2,747.17	2,743.75	8.59	8.29	-148.14	-740.55	-115.01	848.90	832.59	16.31	52.046	
2,800.00	2,793.05	2,846.83	2,843.09	8.91	8.59	-148.69	-733.14	-112.37	850.95	834.05	16.90	50.349	
2,900.00	2,892.40	2,946.48	2,942.44	9.24	8.90	-149.23	-725.73	-109.73	853.08	835.58	17.50	48.738	
3,000.00	2,991.76	3,046.13	3,041.78	9.57	9.22	-149.76	-718.32	-107.09	855.28	837.17	18.12	47.210	
3,100.00	3,091.12	3,145.78	3,141.12	9.91	9.54	-150.30	-710.91	-104.45	857.56	838.82	18.74	45.764	
3,200.00	3,190.48	3,245.43	3,240.46	10.25	9.86	-150.83	-703.50	-101.81	859.92	840.55	19.37	44.394	
3,300.00	3,289.84	3,345.08	3,339.80	10.60	10.19	-151.36	-696.09	-99.17	862.35	842.34	20.01	43.098	
3,400.00	3,389.20	3,444.73	3,439.14	10.95	10.52	-151.89	-688.68	-96.53	864.85	844.19	20.65	41.872	
3,500.00	3,488.55	3,544.39	3,538.48	11.31	10.85	-152.41	-681.28	-93.89	867.42	846.12	21.31	40.712	
3,600.00	3,587.91	3,644.04	3,637.82	11.67	11.19	-152.93	-673.87	-91.25	870.07	848.11	21.96	39.613	
3,700.00	3,687.27	3,743.69	3,737.16	12.03	11.53	-153.45	-666.46	-88.61	872.79	850.16	22.63	38.574	
3,800.00	3,786.63	3,843.34	3,836.50	12.40	11.87	-153.96	-659.05	-85.97	875.58	852.28	23.29	37.589	
3,900.00	3,885.99	3,942.99	3,935.84	12.77	12.21	-154.47	-651.64	-83.33	878.44	854.47	23.96	36.656	
4,000.00	3,985.35	4,042.64	4,035.18	13.14	12.56	-154.98	-644.23	-80.68	881.37	856.73	24.64	35.771	
4,100.00	4,084.70	4,142.29	4,134.52	13.52	12.91	-155.48	-636.82	-78.04	884.37	859.05	25.32	34.933	
4,200.00	4,184.06	4,241.95	4,233.86	13.90	13.25	-155.98	-629.41	-75.40	887.44	861.44	26.00	34.137	
4,300.00	4,283.42	4,341.60	4,333.20	14.27	13.60	-156.48	-622.00	-72.76	890.57	863.89	26.68	33.381	
4,400.00	4,382.78	4,441.25	4,432.54	14.65	13.96	-156.98	-614.60	-70.12	893.77	866.41	27.36	32.663	
4,500.00	4,482.14	4,540.90	4,531.88	15.04	14.31	-157.47	-607.19	-67.48	897.04	868.99	28.05	31.981	
4,600.00	4,581.49	4,640.55	4,631.22	15.42	14.66	-157.95	-599.78	-64.84	900.37	871.64	28.74	31.332	
4,700.00	4,680.85	4,740.20	4,730.57	15.81	15.02	-158.43	-592.37	-62.20	903.77	874.35	29.42	30.715	
4,800.00	4,780.21	4,839.85	4,829.91	16.19	15.38	-158.91	-584.96	-59.56	907.23	877.12	30.11	30.127	
4,900.00	4,879.57	4,939.51	4,929.25	16.58	15.74	-159.39	-577.55	-56.92	910.76	879.95	30.80	29.567	
5,000.00	4,978.93	5,039.16	5,028.59	16.97	16.09	-159.86	-570.14	-54.28	914.35	882.85	31.49	29.033	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,078.29	5,138.81	5,127.93	17.36	16.45	-160.33	-562.73	-51.64	918.00	885.81	32.18	28.524			
5,200.00	5,177.64	5,238.46	5,227.27	17.75	16.81	-160.79	-555.33	-49.00	921.71	888.83	32.87	28.038			
5,300.00	5,277.00	5,338.11	5,326.61	18.15	17.17	-161.25	-547.92	-46.36	925.48	891.91	33.56	27.574			
5,400.00	5,376.36	5,437.76	5,425.95	18.54	17.54	-161.71	-540.51	-43.72	929.31	895.05	34.25	27.130			
5,500.00	5,475.72	5,537.41	5,525.29	18.93	17.90	-162.16	-533.10	-41.08	933.20	898.25	34.94	26.707			
5,600.00	5,575.08	5,637.07	5,624.63	19.33	18.26	-162.61	-525.69	-38.44	937.14	901.51	35.63	26.302			
5,700.00	5,674.44	5,736.72	5,723.97	19.73	18.63	-163.06	-518.28	-35.80	941.15	904.83	36.32	25.914			
5,800.00	5,773.79	5,836.37	5,823.31	20.12	18.99	-163.50	-510.87	-33.16	945.21	908.21	37.00	25.543			
5,900.00	5,873.15	5,936.02	5,922.65	20.52	19.36	-163.94	-503.46	-30.52	949.33	911.64	37.69	25.188			
6,000.00	5,972.51	6,035.67	6,021.99	20.92	19.72	-164.37	-496.05	-27.88	953.50	915.13	38.37	24.848			
6,100.00	6,071.87	6,135.32	6,121.33	21.32	20.09	-164.80	-488.65	-25.24	957.73	918.67	39.06	24.521			
6,200.00	6,171.23	6,234.97	6,220.67	21.72	20.45	-165.23	-481.24	-22.59	962.01	922.27	39.74	24.208			
6,300.00	6,270.75	6,324.50	6,309.93	22.13	20.77	-165.60	-474.80	-20.30	965.06	924.67	40.39	23.895			
6,400.00	6,370.54	6,400.00	6,385.33	22.59	21.06	-165.81	-471.01	-18.95	966.71	925.70	41.01	23.572			
6,500.00	6,470.50	6,480.38	6,465.68	22.98	21.37	-165.91	-469.04	-18.25	967.26	925.67	41.59	23.255			
6,600.00	6,570.50	6,570.70	6,556.00	23.05	21.48	-166.20	-468.85	-18.18	967.19	925.45	41.73	23.175			
6,700.00	6,670.50	6,670.70	6,656.00	23.10	21.53	-166.20	-468.85	-18.18	967.19	925.35	41.84	23.117			
6,800.00	6,770.50	6,770.70	6,756.00	23.15	21.58	-166.20	-468.85	-18.18	967.19	925.24	41.95	23.057			
6,900.00	6,870.50	6,870.70	6,856.00	23.19	21.64	-166.20	-468.85	-18.18	967.19	925.13	42.06	22.996			
7,000.00	6,970.50	6,970.70	6,956.00	23.24	21.69	-166.20	-468.85	-18.18	967.19	925.02	42.17	22.936			
7,100.00	7,070.50	7,070.70	7,056.00	23.29	21.75	-166.20	-468.85	-18.18	967.19	924.91	42.28	22.875			
7,200.00	7,170.50	7,170.70	7,156.00	23.34	21.80	-166.20	-468.85	-18.18	967.19	924.79	42.39	22.815			
7,300.00	7,270.50	7,270.70	7,256.00	23.39	21.85	-166.20	-468.85	-18.18	967.19	924.68	42.50	22.755			
7,400.00	7,370.50	7,370.70	7,356.00	23.44	21.91	-166.20	-468.85	-18.18	967.19	924.57	42.62	22.695			
7,500.00	7,470.50	7,470.70	7,456.00	23.49	21.96	-166.20	-468.85	-18.18	967.19	924.46	42.73	22.635			
7,600.00	7,570.50	7,570.70	7,556.00	23.54	22.02	-166.20	-468.85	-18.18	967.19	924.34	42.84	22.575			
7,700.00	7,670.50	7,670.70	7,656.00	23.59	22.07	-166.20	-468.85	-18.18	967.19	924.23	42.96	22.516			
7,800.00	7,770.50	7,770.70	7,756.00	23.65	22.13	-166.20	-468.85	-18.18	967.19	924.12	43.07	22.456			
7,900.00	7,870.50	7,870.70	7,856.00	23.70	22.18	-166.20	-468.85	-18.18	967.19	924.00	43.18	22.397			
8,000.00	7,970.40	7,970.60	7,955.90	23.66	22.24	75.98	-468.85	-18.18	966.46	923.22	43.24	22.350			
8,100.00	8,068.49	8,068.70	8,053.99	23.58	22.29	77.47	-468.85	-18.18	962.07	918.76	43.31	22.215			
8,200.00	8,161.84	8,162.04	8,147.34	23.48	22.34	80.14	-468.85	-18.18	954.70	911.29	43.41	21.993			
8,300.00	8,247.60	8,247.80	8,233.10	23.40	22.39	83.60	-468.85	-18.18	946.33	902.78	43.55	21.730			
8,400.00	8,323.17	8,323.37	8,308.67	23.38	22.44	87.26	-468.85	-18.18	939.61	895.90	43.71	21.495			
8,484.19	8,377.19	8,377.39	8,362.69	23.46	22.47	90.00	-468.85	-18.18	937.39	893.52	43.87	21.367			
8,500.00	8,386.25	8,386.45	8,371.75	23.47	22.47	90.44	-468.85	-18.18	937.48	893.59	43.89	21.360			
8,600.00	8,434.92	8,435.13	8,420.42	23.73	22.50	92.50	-468.85	-18.18	942.73	898.66	44.07	21.394			
8,700.00	8,467.72	8,467.92	8,453.22	24.20	22.52	92.91	-468.85	-18.18	957.36	913.14	44.21	21.652			
8,800.00	8,483.63	8,483.83	8,469.13	24.88	22.53	91.30	-468.85	-18.18	982.14	937.84	44.30	22.169			
8,900.00	8,486.62	8,486.82	8,472.12	25.76	22.53	90.54	-468.85	-18.18	1,016.46	972.14	44.32	22.937			
9,000.00	8,488.89	8,489.09	8,474.39	26.81	22.53	90.68	-468.85	-18.18	1,059.13	1,014.84	44.29	23.911			
9,100.00	8,491.15	8,491.36	8,476.65	28.01	22.53	90.82	-468.85	-18.18	1,109.21	1,064.96	44.24	25.070			
9,200.00	8,493.42	8,493.62	8,478.92	29.34	22.53	90.96	-468.85	-18.18	1,165.72	1,121.55	44.17	26.392			
9,300.00	8,495.69	8,495.89	8,481.19	30.79	22.53	91.10	-468.85	-18.18	1,227.78	1,183.71	44.08	27.855			
9,400.00	8,497.96	8,498.16	8,483.46	32.34	22.53	91.24	-468.85	-18.18	1,294.60	1,250.63	43.97	29.440			
9,500.00	8,500.23	8,500.43	8,485.73	33.98	22.53	91.38	-468.85	-18.18	1,365.47	1,321.61	43.86	31.130			
9,600.00	8,502.49	8,502.70	8,487.99	35.70	22.54	91.51	-468.85	-18.18	1,439.81	1,396.05	43.75	32.908			
9,700.00	8,504.76	10,576.11	9,653.79	37.49	34.58	141.17	-477.43	1,148.81	1,493.90	1,431.50	62.40	23.942			
9,800.00	8,507.03	10,676.11	9,656.06	39.33	36.32	141.18	-478.17	1,248.78	1,493.86	1,429.05	64.81	23.051			
9,900.00	8,509.30	10,776.11	9,658.33	41.23	38.14	141.18	-478.90	1,348.75	1,493.82	1,426.54	67.28	22.203			
10,000.00	8,511.56	10,876.11	9,660.60	43.16	40.00	141.18	-479.64	1,448.72	1,493.78	1,423.98	69.81	21.399			
10,100.00	8,513.83	10,976.11	9,662.87	45.13	41.92	141.18	-480.37	1,548.69	1,493.74	1,421.36	72.38	20.637			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,200.00	8,516.10	11,076.11	9,665.14	47.14	43.88	141.18	-481.11	1,648.66	1,493.71	1,418.71	75.00	19.916			
10,300.00	8,518.37	11,176.11	9,667.41	49.17	45.87	141.19	-481.84	1,748.64	1,493.67	1,416.01	77.66	19.234			
10,400.00	8,520.64	11,276.11	9,669.68	51.23	47.89	141.19	-482.58	1,848.61	1,493.63	1,413.28	80.35	18.589			
10,500.00	8,522.90	11,376.11	9,671.95	53.31	49.94	141.19	-483.32	1,948.58	1,493.59	1,410.51	83.08	17.978			
10,600.00	8,525.17	11,476.11	9,674.22	55.40	52.01	141.19	-484.05	2,048.55	1,493.55	1,407.72	85.83	17.401			
10,700.00	8,527.44	11,576.11	9,676.49	57.52	54.10	141.19	-484.79	2,148.52	1,493.51	1,404.90	88.61	16.854			
10,800.00	8,529.71	11,676.11	9,678.76	59.65	56.21	141.20	-485.52	2,248.49	1,493.47	1,402.05	91.42	16.337			
10,900.00	8,531.98	11,776.11	9,681.03	61.79	58.33	141.20	-486.26	2,348.46	1,493.43	1,399.19	94.25	15.846			
11,000.00	8,534.24	11,876.11	9,683.30	63.94	60.47	141.20	-486.99	2,448.44	1,493.39	1,396.30	97.09	15.381			
11,100.00	8,536.51	11,976.11	9,685.57	66.11	62.62	141.20	-487.73	2,548.41	1,493.36	1,393.40	99.96	14.940			
11,200.00	8,538.78	12,076.11	9,687.85	68.29	64.79	141.20	-488.46	2,648.38	1,493.32	1,390.48	102.84	14.521			
11,300.00	8,541.05	12,176.11	9,690.12	70.47	66.96	141.21	-489.20	2,748.35	1,493.28	1,387.54	105.73	14.123			
11,400.00	8,543.32	12,276.11	9,692.39	72.66	69.14	141.21	-489.93	2,848.32	1,493.24	1,384.60	108.64	13.745			
11,500.00	8,545.58	12,376.11	9,694.66	74.86	71.33	141.21	-490.67	2,948.29	1,493.20	1,381.63	111.57	13.384			
11,600.00	8,547.85	12,476.11	9,696.93	77.07	73.53	141.21	-491.40	3,048.27	1,493.16	1,378.66	114.50	13.041			
11,700.00	8,550.12	12,576.11	9,699.20	79.28	75.73	141.21	-492.14	3,148.24	1,493.12	1,375.68	117.44	12.713			
11,800.00	8,552.39	12,676.11	9,701.47	81.50	77.94	141.22	-492.87	3,248.21	1,493.08	1,372.68	120.40	12.401			
11,900.00	8,554.66	12,776.11	9,703.74	83.72	80.16	141.22	-493.61	3,348.18	1,493.04	1,369.68	123.36	12.103			
12,000.00	8,556.92	12,876.11	9,706.01	85.95	82.38	141.22	-494.34	3,448.15	1,493.01	1,366.67	126.34	11.818			
12,100.00	8,559.19	12,976.11	9,708.28	88.18	84.61	141.22	-495.08	3,548.12	1,492.97	1,363.65	129.32	11.545			
12,200.00	8,561.46	13,076.11	9,710.55	90.42	86.84	141.22	-495.81	3,648.09	1,492.93	1,360.62	132.31	11.284			
12,300.00	8,563.73	13,176.11	9,712.82	92.66	89.07	141.23	-496.55	3,748.07	1,492.89	1,357.58	135.30	11.034			
12,400.00	8,565.99	13,276.11	9,715.09	94.90	91.31	141.23	-497.29	3,848.04	1,492.85	1,354.54	138.31	10.794			
12,500.00	8,568.26	13,376.11	9,717.36	97.15	93.55	141.23	-498.02	3,948.01	1,492.81	1,351.50	141.32	10.564			
12,600.00	8,570.53	13,476.11	9,719.63	99.40	95.80	141.23	-498.76	4,047.98	1,492.77	1,348.44	144.33	10.343			
12,700.00	8,572.80	13,576.11	9,721.90	101.65	98.05	141.23	-499.49	4,147.95	1,492.73	1,345.39	147.35	10.131			
12,800.00	8,575.07	13,676.11	9,724.17	103.91	100.30	141.24	-500.23	4,247.92	1,492.70	1,342.32	150.37	9.927			
12,900.00	8,577.33	13,776.11	9,726.44	106.17	102.55	141.24	-500.96	4,347.89	1,492.66	1,339.25	153.40	9.730			
13,000.00	8,579.60	13,876.11	9,728.71	108.43	104.81	141.24	-501.70	4,447.87	1,492.62	1,336.18	156.44	9.541			
13,100.00	8,581.87	13,976.11	9,730.99	110.69	107.07	141.24	-502.43	4,547.84	1,492.58	1,333.11	159.47	9.359			
13,200.00	8,584.14	14,076.11	9,733.26	112.95	109.33	141.24	-503.17	4,647.81	1,492.54	1,330.03	162.51	9.184			
13,300.00	8,586.41	14,176.11	9,735.53	115.22	111.59	141.25	-503.90	4,747.78	1,492.50	1,326.94	165.56	9.015			
13,400.00	8,588.67	14,276.11	9,737.80	117.49	113.86	141.25	-504.64	4,847.75	1,492.46	1,323.85	168.61	8.852			
13,500.00	8,590.94	14,376.11	9,740.07	119.76	116.12	141.25	-505.37	4,947.72	1,492.42	1,320.76	171.66	8.694			
13,600.00	8,593.21	14,476.11	9,742.34	122.03	118.39	141.25	-506.11	5,047.70	1,492.38	1,317.67	174.71	8.542			
13,700.00	8,595.48	14,576.11	9,744.61	124.30	120.66	141.25	-506.84	5,147.67	1,492.35	1,314.57	177.77	8.395			
13,800.00	8,597.75	14,676.11	9,746.88	126.57	122.93	141.26	-507.58	5,247.64	1,492.31	1,311.47	180.83	8.252			
13,900.00	8,600.01	14,776.11	9,749.15	128.85	125.21	141.26	-508.31	5,347.61	1,492.27	1,308.37	183.90	8.115			
14,000.00	8,602.28	14,876.11	9,751.42	131.13	127.48	141.26	-509.05	5,447.58	1,492.23	1,305.27	186.96	7.981			
14,100.00	8,604.55	14,976.11	9,753.69	133.40	129.76	141.26	-509.78	5,547.55	1,492.19	1,302.16	190.03	7.852			
14,200.00	8,606.82	15,076.11	9,755.96	135.68	132.03	141.26	-510.52	5,647.52	1,492.15	1,299.05	193.10	7.727			
14,300.00	8,609.09	15,176.11	9,758.23	137.96	134.31	141.27	-511.26	5,747.50	1,492.11	1,295.94	196.17	7.606			
14,400.00	8,611.35	15,276.11	9,760.50	140.24	136.59	141.27	-511.99	5,847.47	1,492.07	1,292.83	199.25	7.489			
14,500.00	8,613.62	15,376.11	9,762.77	142.53	138.87	141.27	-512.73	5,947.44	1,492.04	1,289.71	202.32	7.375			
14,600.00	8,615.89	15,476.11	9,765.04	144.81	141.15	141.27	-513.46	6,047.41	1,492.00	1,286.60	205.40	7.264			
14,700.00	8,618.16	15,576.11	9,767.31	147.09	143.44	141.27	-514.20	6,147.38	1,491.96	1,283.48	208.48	7.156			
14,800.00	8,620.42	15,676.11	9,769.58	149.38	145.72	141.28	-514.93	6,247.35	1,491.92	1,280.36	211.56	7.052			
14,900.00	8,622.69	15,776.11	9,771.85	151.66	148.00	141.28	-515.67	6,347.32	1,491.88	1,277.24	214.64	6.950			
15,000.00	8,624.96	15,876.11	9,774.13	153.95	150.29	141.28	-516.40	6,447.30	1,491.84	1,274.11	217.73	6.852			
15,100.00	8,627.23	15,976.11	9,776.40	156.24	152.57	141.28	-517.14	6,547.27	1,491.80	1,270.99	220.81	6.756			
15,200.00	8,629.50	16,076.11	9,778.67	158.53	154.86	141.28	-517.87	6,647.24	1,491.76	1,267.86	223.90	6.663			
15,300.00	8,631.76	16,176.11	9,780.94	160.81	157.15	141.29	-518.61	6,747.21	1,491.72	1,264.74	226.99	6.572			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM				Rule Assigned:				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)			Minimum Separation (usft)
15,400.00	8,634.03	16,276.11	9,783.21	163.10	159.44	141.29	-519.34	6,847.18	1,491.69	1,261.61	230.08	6.483	
15,500.00	8,636.30	16,376.11	9,785.48	165.39	161.72	141.29	-520.08	6,947.15	1,491.65	1,258.48	233.17	6.397	
15,600.00	8,638.57	16,476.11	9,787.75	167.68	164.01	141.29	-520.81	7,047.13	1,491.61	1,255.35	236.26	6.313	
15,700.00	8,640.84	16,576.11	9,790.02	169.97	166.30	141.29	-521.55	7,147.10	1,491.57	1,252.22	239.35	6.232	
15,800.00	8,643.10	16,676.11	9,792.29	172.27	168.59	141.30	-522.28	7,247.07	1,491.53	1,249.08	242.45	6.152	
15,900.00	8,645.37	16,776.11	9,794.56	174.56	170.88	141.30	-523.02	7,347.04	1,491.49	1,245.95	245.54	6.074	
16,000.00	8,647.64	16,876.11	9,796.83	176.85	173.18	141.30	-523.75	7,447.01	1,491.45	1,242.82	248.64	5.999	
16,100.00	8,649.91	16,976.11	9,799.10	179.14	175.47	141.30	-524.49	7,546.98	1,491.41	1,239.68	251.73	5.925	
16,200.00	8,652.18	17,076.11	9,801.37	181.44	177.76	141.30	-525.23	7,646.95	1,491.38	1,236.55	254.83	5.852	
16,300.00	8,654.44	17,176.11	9,803.64	183.73	180.05	141.31	-525.96	7,746.93	1,491.34	1,233.41	257.93	5.782	
16,400.00	8,656.71	17,276.11	9,805.91	186.03	182.35	141.31	-526.70	7,846.90	1,491.30	1,230.27	261.03	5.713	
16,500.00	8,658.98	17,376.11	9,808.18	188.32	184.64	141.31	-527.43	7,946.87	1,491.26	1,227.13	264.13	5.646	
16,600.00	8,661.25	17,476.11	9,810.45	190.62	186.94	141.31	-528.17	8,046.84	1,491.22	1,223.99	267.23	5.580	
16,700.00	8,663.52	17,576.11	9,812.72	192.91	189.23	141.31	-528.90	8,146.81	1,491.18	1,220.85	270.33	5.516	
16,800.00	8,665.78	17,676.11	9,814.99	195.21	191.52	141.32	-529.64	8,246.78	1,491.14	1,217.71	273.43	5.453	
16,900.00	8,668.05	17,776.11	9,817.27	197.50	193.82	141.32	-530.37	8,346.75	1,491.10	1,214.57	276.53	5.392	
17,000.00	8,670.32	17,876.11	9,819.54	199.80	196.12	141.32	-531.11	8,446.73	1,491.07	1,211.43	279.63	5.332	
17,100.00	8,672.59	17,976.11	9,821.81	202.10	198.41	141.32	-531.84	8,546.70	1,491.03	1,208.29	282.74	5.274	
17,200.00	8,674.85	18,076.11	9,824.08	204.40	200.71	141.32	-532.58	8,646.67	1,490.99	1,205.15	285.84	5.216	
17,300.00	8,677.12	18,176.11	9,826.35	206.69	203.01	141.33	-533.31	8,746.64	1,490.95	1,202.00	288.94	5.160	
17,400.00	8,679.39	18,276.11	9,828.62	208.99	205.30	141.33	-534.05	8,846.61	1,490.91	1,198.86	292.05	5.105	
17,500.00	8,681.66	18,376.11	9,830.89	211.29	207.60	141.33	-534.78	8,946.58	1,490.87	1,195.72	295.15	5.051	
17,600.00	8,683.93	18,476.11	9,833.16	213.59	209.90	141.33	-535.52	9,046.56	1,490.83	1,192.57	298.26	4.998	
17,700.00	8,686.19	18,576.11	9,835.43	215.89	212.20	141.33	-536.25	9,146.53	1,490.79	1,189.43	301.37	4.947	
17,800.00	8,688.46	18,676.11	9,837.70	218.19	214.49	141.34	-536.99	9,246.50	1,490.76	1,186.28	304.47	4.896	
17,900.00	8,690.73	18,776.11	9,839.97	220.49	216.79	141.34	-537.72	9,346.47	1,490.72	1,183.14	307.58	4.847	
18,000.00	8,693.00	18,876.11	9,842.24	222.79	219.09	141.34	-538.46	9,446.44	1,490.68	1,179.99	310.69	4.798	
18,100.00	8,695.27	18,976.11	9,844.51	225.08	221.39	141.34	-539.20	9,546.41	1,490.64	1,176.85	313.79	4.750	
18,200.00	8,697.53	19,076.11	9,846.78	227.39	223.69	141.34	-539.93	9,646.38	1,490.60	1,173.70	316.90	4.704	
18,300.00	8,699.80	19,176.11	9,849.05	229.69	225.99	141.35	-540.67	9,746.36	1,490.56	1,170.55	320.01	4.658	
18,400.00	8,702.07	19,276.11	9,851.32	231.99	228.29	141.35	-541.40	9,846.33	1,490.52	1,167.40	323.12	4.613	
18,500.00	8,704.34	19,376.11	9,853.59	234.29	230.59	141.35	-542.14	9,946.30	1,490.48	1,164.26	326.23	4.569	
18,600.00	8,706.61	19,476.11	9,855.86	236.59	232.89	141.35	-542.87	10,046.27	1,490.45	1,161.11	329.34	4.526	
18,700.00	8,708.87	19,576.11	9,858.13	238.89	235.19	141.35	-543.61	10,146.24	1,490.41	1,157.96	332.44	4.483	
18,800.00	8,711.14	19,676.11	9,860.41	241.19	237.49	141.36	-544.34	10,246.21	1,490.37	1,154.81	335.55	4.442	
18,900.00	8,713.41	19,776.11	9,862.68	243.49	239.79	141.36	-545.08	10,346.18	1,490.33	1,151.67	338.66	4.401	
19,000.00	8,715.68	19,876.11	9,864.95	245.79	242.09	141.36	-545.81	10,446.16	1,490.29	1,148.52	341.77	4.360	
19,100.00	8,717.95	19,976.11	9,867.22	247.40	244.40	141.36	-546.55	10,546.13	1,490.25	1,145.90	344.36	4.328	
19,102.43	8,718.00	19,978.54	9,867.27	247.44	244.45	141.36	-546.57	10,548.56	1,490.25	1,145.83	344.42	4.327 SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123HC - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.50	0.50	179.67	-932.52	5.39	932.65				
100.00	100.00	85.50	85.50	0.65	0.61	179.67	-932.52	5.39	932.54	931.27	1.26	738.075	
200.00	200.00	185.50	185.50	1.34	1.23	179.67	-932.52	5.39	932.54	929.96	2.57	362.385	
300.00	300.00	285.50	285.50	1.81	1.74	179.67	-932.52	5.39	932.54	928.98	3.56	262.291	
400.00	400.00	385.50	385.50	2.19	2.13	179.67	-932.52	5.39	932.54	928.22	4.32	215.952	
500.00	500.00	485.50	485.50	2.51	2.46	179.67	-932.52	5.39	932.54	927.57	4.97	187.665	
600.00	600.00	585.50	585.50	2.80	2.75	179.67	-932.52	5.39	932.54	926.99	5.55	168.070	
700.00	700.00	685.50	685.50	3.06	3.02	179.67	-932.52	5.39	932.54	926.46	6.08	153.452	
800.00	800.00	785.50	785.50	3.30	3.27	179.67	-932.52	5.39	932.54	925.97	6.57	142.001	
900.00	900.00	885.50	885.50	3.53	3.50	179.67	-932.52	5.39	932.54	925.51	7.03	132.711	
1,000.00	1,000.00	985.50	985.50	3.75	3.72	179.67	-932.52	5.39	932.54	925.07	7.46	124.975	
1,100.00	1,100.00	1,085.50	1,085.50	3.95	3.92	179.67	-932.52	5.39	932.54	924.66	7.88	118.401	
1,200.00	1,200.00	1,185.50	1,185.50	4.15	4.12	179.67	-932.52	5.39	932.54	924.26	8.27	112.722	
1,300.00	1,300.00	1,285.50	1,285.50	4.34	4.31	179.67	-932.52	5.39	932.54	923.88	8.65	107.751	
1,400.00	1,400.00	1,385.50	1,385.50	4.52	4.50	179.67	-932.52	5.39	932.54	923.51	9.02	103.350	
1,500.00	1,500.00	1,485.50	1,485.50	4.70	4.68	179.67	-932.52	5.39	932.54	923.16	9.38	99.418	
1,600.00	1,599.98	1,618.23	1,618.20	5.05	5.16	-152.44	-930.45	4.09	932.58	922.46	10.12	92.128	
1,700.00	1,699.84	1,756.46	1,756.12	5.69	5.98	-152.36	-922.80	-0.70	931.66	920.35	11.31	82.348	
1,777.84	1,777.41	1,843.48	1,842.71	6.16	6.24	-152.29	-915.52	-5.26	930.85	918.91	11.93	78.016	
1,800.00	1,799.45	1,865.63	1,864.75	6.30	6.28	-152.28	-913.62	-6.45	930.92	918.84	12.08	77.035	
1,900.00	1,898.82	1,965.62	1,964.23	6.46	6.48	-152.27	-905.07	-11.81	932.28	919.85	12.43	75.020	
2,000.00	1,998.18	2,065.61	2,063.71	6.67	6.71	-152.27	-896.51	-17.17	933.73	920.88	12.84	72.697	
2,100.00	2,097.54	2,165.60	2,163.19	6.90	6.95	-152.27	-887.96	-22.53	935.17	921.88	13.29	70.342	
2,200.00	2,196.90	2,265.59	2,262.67	7.15	7.21	-152.26	-879.41	-27.89	936.62	922.85	13.77	68.023	
2,300.00	2,296.25	2,365.58	2,362.15	7.42	7.48	-152.26	-870.85	-33.25	938.07	923.81	14.27	65.759	
2,400.00	2,395.61	2,465.57	2,461.62	7.69	7.76	-152.25	-862.30	-38.61	939.52	924.74	14.78	63.563	
2,500.00	2,494.97	2,565.56	2,561.10	7.98	8.05	-152.25	-853.75	-43.97	940.97	925.66	15.31	61.445	
2,600.00	2,594.33	2,665.55	2,660.58	8.28	8.35	-152.24	-845.19	-49.33	942.42	926.56	15.86	59.410	
2,700.00	2,693.69	2,765.54	2,760.06	8.59	8.66	-152.24	-836.64	-54.69	943.87	927.44	16.43	57.462	
2,800.00	2,793.05	2,865.53	2,859.54	8.91	8.98	-152.23	-828.08	-60.05	945.32	928.32	17.00	55.601	
2,900.00	2,892.40	2,965.52	2,959.02	9.24	9.30	-152.23	-819.53	-65.41	946.77	929.18	17.59	53.828	
3,000.00	2,991.76	3,065.51	3,058.50	9.57	9.63	-152.23	-810.98	-70.77	948.22	930.03	18.19	52.139	
3,100.00	3,091.12	3,165.50	3,157.97	9.91	9.97	-152.22	-802.42	-76.13	949.67	930.87	18.79	50.532	
3,200.00	3,190.48	3,265.49	3,257.45	10.25	10.30	-152.22	-793.87	-81.49	951.12	931.71	19.41	49.005	
3,300.00	3,289.84	3,365.48	3,356.93	10.60	10.65	-152.21	-785.32	-86.85	952.57	932.53	20.03	47.553	
3,400.00	3,389.20	3,465.47	3,456.41	10.95	11.00	-152.21	-776.76	-92.21	954.01	933.35	20.66	46.173	
3,500.00	3,488.55	3,565.46	3,555.89	11.31	11.35	-152.21	-768.21	-97.57	955.46	934.17	21.30	44.862	
3,600.00	3,587.91	3,665.44	3,655.37	11.67	11.70	-152.20	-759.65	-102.93	956.91	934.97	21.94	43.615	
3,700.00	3,687.27	3,765.43	3,754.85	12.03	12.06	-152.20	-751.10	-108.29	958.36	935.77	22.59	42.429	
3,800.00	3,786.63	3,865.42	3,854.33	12.40	12.42	-152.19	-742.55	-113.65	959.81	936.57	23.24	41.300	
3,900.00	3,885.99	3,965.41	3,953.80	12.77	12.78	-152.19	-733.99	-119.01	961.26	937.36	23.90	40.226	
4,000.00	3,985.35	4,065.40	4,053.28	13.14	13.15	-152.18	-725.44	-124.37	962.71	938.15	24.56	39.202	
4,100.00	4,084.70	4,165.39	4,152.76	13.52	13.51	-152.18	-716.88	-129.73	964.16	938.94	25.22	38.227	
4,200.00	4,184.06	4,265.38	4,252.24	13.90	13.88	-152.18	-708.33	-135.09	965.61	939.72	25.89	37.296	
4,300.00	4,283.42	4,365.37	4,351.72	14.27	14.25	-152.17	-699.78	-140.45	967.06	940.50	26.56	36.408	
4,400.00	4,382.78	4,465.36	4,451.20	14.65	14.63	-152.17	-691.22	-145.81	968.51	941.27	27.24	35.560	
4,500.00	4,482.14	4,565.35	4,550.68	15.04	15.00	-152.16	-682.67	-151.17	969.96	942.04	27.91	34.750	
4,600.00	4,581.49	4,665.34	4,650.15	15.42	15.38	-152.16	-674.12	-156.53	971.41	942.81	28.59	33.975	
4,700.00	4,680.85	4,765.33	4,749.63	15.81	15.75	-152.16	-665.56	-161.89	972.86	943.58	29.27	33.233	
4,800.00	4,780.21	4,865.32	4,849.11	16.19	16.13	-152.15	-657.01	-167.25	974.30	944.35	29.96	32.522	
4,900.00	4,879.57	4,965.31	4,948.59	16.58	16.51	-152.15	-648.45	-172.61	975.75	945.11	30.64	31.842	
5,000.00	4,978.93	5,065.30	5,048.07	16.97	16.89	-152.14	-639.90	-177.97	977.20	945.87	31.33	31.189	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123HC - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												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	5,078.29	5,165.29	5,147.55	17.36	17.27	-152.14	-631.35	-183.33	978.65	946.63	32.02	30.562	
5,200.00	5,177.64	5,265.28	5,247.03	17.75	17.65	-152.14	-622.79	-188.69	980.10	947.39	32.71	29.960	
5,300.00	5,277.00	5,365.27	5,346.50	18.15	18.03	-152.13	-614.24	-194.05	981.55	948.15	33.41	29.382	
5,400.00	5,376.36	5,465.26	5,445.98	18.54	18.42	-152.13	-605.69	-199.41	983.00	948.90	34.10	28.826	
5,500.00	5,475.72	5,565.24	5,545.46	18.93	18.80	-152.12	-597.13	-204.77	984.45	949.65	34.80	28.291	
5,600.00	5,575.08	5,665.23	5,644.94	19.33	19.19	-152.12	-588.58	-210.13	985.90	950.41	35.49	27.777	
5,700.00	5,674.44	5,765.22	5,744.42	19.73	19.57	-152.12	-580.02	-215.49	987.35	951.16	36.19	27.281	
5,800.00	5,773.79	5,865.21	5,843.90	20.12	19.96	-152.11	-571.47	-220.85	988.80	951.91	36.89	26.803	
5,900.00	5,873.15	5,965.20	5,943.38	20.52	20.35	-152.11	-562.92	-226.21	990.25	952.66	37.59	26.342	
6,000.00	5,972.51	6,065.19	6,042.86	20.92	20.74	-152.10	-554.36	-231.57	991.70	953.40	38.29	25.897	
6,100.00	6,071.87	6,165.18	6,142.33	21.32	21.12	-152.10	-545.81	-236.93	993.15	954.15	39.00	25.467	
6,200.00	6,171.23	6,258.08	6,234.77	21.72	21.47	-152.10	-537.95	-241.86	994.71	955.04	39.66	25.078	
6,300.00	6,270.75	6,335.31	6,311.75	22.13	21.78	-152.13	-532.77	-245.10	996.61	956.32	40.29	24.735	
6,400.00	6,370.54	6,412.52	6,388.86	22.59	22.10	-152.15	-529.35	-247.24	997.72	956.78	40.94	24.373	
6,500.00	6,470.50	6,500.00	6,476.31	22.98	22.44	-152.15	-527.60	-248.34	998.10	956.55	41.54	24.025	
6,546.06	6,516.56	6,525.76	6,502.06	23.01	22.47	-152.15	-527.52	-248.39	998.13	956.59	41.54	24.029	
6,600.00	6,570.50	6,579.69	6,556.00	23.05	22.49	179.97	-527.52	-248.39	997.94	956.34	41.60	23.991	
6,700.00	6,670.50	6,679.69	6,656.00	23.10	22.54	179.97	-527.52	-248.39	997.94	956.24	41.70	23.932	
6,800.00	6,770.50	6,779.69	6,756.00	23.15	22.59	179.97	-527.52	-248.39	997.94	956.13	41.81	23.869	
6,900.00	6,870.50	6,879.69	6,856.00	23.19	22.64	179.97	-527.52	-248.39	997.94	956.02	41.92	23.807	
7,000.00	6,970.50	6,979.69	6,956.00	23.24	22.69	179.97	-527.52	-248.39	997.94	955.91	42.03	23.744	
7,100.00	7,070.50	7,079.69	7,056.00	23.29	22.74	179.97	-527.52	-248.39	997.94	955.80	42.14	23.682	
7,200.00	7,170.50	7,179.69	7,156.00	23.34	22.79	179.97	-527.52	-248.39	997.94	955.69	42.25	23.620	
7,300.00	7,270.50	7,279.69	7,256.00	23.39	22.84	179.97	-527.52	-248.39	997.94	955.58	42.36	23.558	
7,400.00	7,370.50	7,379.69	7,356.00	23.44	22.89	179.97	-527.52	-248.39	997.94	955.47	42.47	23.496	
7,500.00	7,470.50	7,479.69	7,456.00	23.49	22.94	179.97	-527.52	-248.39	997.94	955.36	42.58	23.434	
7,600.00	7,570.50	7,579.69	7,556.00	23.54	22.99	179.97	-527.52	-248.39	997.94	955.24	42.70	23.373	
7,700.00	7,670.50	7,679.69	7,656.00	23.59	23.05	179.97	-527.52	-248.39	997.94	955.13	42.81	23.311	
7,800.00	7,770.50	7,779.69	7,756.00	23.65	23.10	179.97	-527.52	-248.39	997.94	955.02	42.92	23.250	
7,900.00	7,870.50	7,879.69	7,856.00	23.70	23.15	179.97	-527.52	-248.39	997.94	954.90	43.04	23.189	
8,000.00	7,970.40	7,999.93	7,975.88	23.66	23.11	89.41	-526.61	-241.54	997.21	954.00	43.21	23.078	
8,100.00	8,068.49	8,127.52	8,098.70	23.58	23.00	89.21	-522.17	-208.28	993.60	950.10	43.50	22.841	
8,200.00	8,161.84	8,251.51	8,208.10	23.48	22.92	89.00	-514.52	-150.95	987.19	943.34	43.85	22.514	
8,300.00	8,247.60	8,330.83	8,299.31	23.40	22.92	88.79	-504.39	-75.01	978.38	934.09	44.28	22.093	
8,400.00	8,323.17	8,484.98	8,369.93	23.38	23.07	88.61	-492.56	13.64	967.62	922.76	44.86	21.572	
8,500.00	8,386.25	8,593.94	8,419.56	23.47	23.44	88.49	-479.75	109.60	955.41	909.79	45.62	20.941	
8,600.00	8,434.92	8,698.01	8,449.07	23.73	24.02	88.43	-466.57	208.37	942.26	895.62	46.64	20.204	
8,700.00	8,467.72	8,797.70	8,460.00	24.20	24.80	88.43	-453.49	306.47	928.60	880.70	47.90	19.384	
8,800.00	8,483.63	8,871.98	8,461.68	24.88	25.53	89.05	-444.62	380.20	916.05	866.94	49.10	18.656	
8,900.00	8,486.62	8,947.46	8,463.40	25.76	26.38	89.33	-437.56	455.32	905.91	855.21	50.70	17.867	
9,000.00	8,488.89	9,023.30	8,465.12	26.81	27.32	89.33	-432.47	530.97	898.40	845.83	52.58	17.088	
9,100.00	8,491.15	9,100.00	8,466.87	28.01	28.33	89.33	-429.37	607.59	893.54	838.87	54.67	16.344	
9,200.00	8,493.42	9,175.62	8,468.59	29.34	29.41	89.32	-428.31	683.17	891.33	834.40	56.93	15.656	
9,300.00	8,495.69	9,268.11	8,470.69	30.79	30.77	89.32	-428.92	775.64	891.17	831.36	59.80	14.902	
9,303.38	8,495.77	9,271.48	8,470.76	30.84	30.82	89.32	-428.94	779.01	891.17	831.25	59.91	14.875	
9,400.00	8,497.96	9,368.11	8,472.96	32.34	32.30	89.32	-429.68	875.61	891.13	828.09	63.04	14.135	
9,500.00	8,500.23	9,468.11	8,475.23	33.98	33.91	89.32	-430.45	975.58	891.10	824.66	66.44	13.413	
9,600.00	8,502.49	9,568.11	8,477.49	35.70	35.60	89.32	-431.22	1,075.55	891.07	821.10	69.97	12.735	
9,700.00	8,504.76	9,668.11	8,479.76	37.49	37.36	89.32	-431.99	1,175.52	891.03	817.41	73.63	12.102	
9,800.00	8,507.03	9,768.11	8,482.03	39.33	39.18	89.32	-432.75	1,275.49	891.00	813.61	77.39	11.514	
9,900.00	8,509.30	9,868.11	8,484.30	41.23	41.05	89.32	-433.52	1,375.46	890.97	809.73	81.23	10.968	
10,000.00	8,511.56	9,968.11	8,486.57	43.16	42.97	89.32	-434.29	1,475.44	890.93	805.77	85.16	10.462	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM						Rule Assigned:					Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance				Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	8,513.83	10,068.11	8,488.84	45.13	44.92	89.32	-435.05	1,575.41	890.90	801.75	89.15	9.993		
10,200.00	8,516.10	10,168.11	8,491.11	47.14	46.91	89.32	-435.82	1,675.38	890.87	797.66	93.20	9.558		
10,300.00	8,518.37	10,268.11	8,493.38	49.17	48.93	89.32	-436.59	1,775.35	890.83	793.53	97.30	9.155		
10,400.00	8,520.64	10,368.11	8,495.65	51.23	50.97	89.33	-437.36	1,875.32	890.80	789.35	101.45	8.781		
10,500.00	8,522.90	10,468.11	8,497.92	53.31	53.04	89.33	-438.12	1,975.29	890.77	785.13	105.64	8.432		
10,600.00	8,525.17	10,568.11	8,500.19	55.40	55.13	89.33	-438.89	2,075.26	890.73	780.87	109.86	8.108		
10,700.00	8,527.44	10,668.11	8,502.46	57.52	57.23	89.33	-439.66	2,175.23	890.70	776.59	114.11	7.806		
10,800.00	8,529.71	10,768.11	8,504.73	59.65	59.36	89.33	-440.42	2,275.21	890.67	772.28	118.39	7.523		
10,900.00	8,531.98	10,868.11	8,507.00	61.79	61.49	89.33	-441.19	2,375.18	890.63	767.94	122.69	7.259		
11,000.00	8,534.24	10,968.11	8,509.27	63.94	63.64	89.33	-441.96	2,475.15	890.60	763.58	127.02	7.011		
11,100.00	8,536.51	11,068.11	8,511.54	66.11	65.80	89.33	-442.73	2,575.12	890.57	759.20	131.37	6.779		
11,200.00	8,538.78	11,168.11	8,513.81	68.29	67.97	89.33	-443.49	2,675.09	890.53	754.80	135.73	6.561		
11,300.00	8,541.05	11,268.11	8,516.08	70.47	70.15	89.33	-444.26	2,775.06	890.50	750.38	140.12	6.355		
11,400.00	8,543.32	11,368.11	8,518.35	72.66	72.34	89.33	-445.03	2,875.03	890.47	745.95	144.51	6.162		
11,500.00	8,545.58	11,468.11	8,520.62	74.86	74.53	89.33	-445.79	2,975.00	890.43	741.51	148.92	5.979		
11,600.00	8,547.85	11,568.11	8,522.89	77.07	76.73	89.33	-446.56	3,074.98	890.40	737.05	153.35	5.806		
11,700.00	8,550.12	11,668.11	8,525.16	79.28	78.94	89.33	-447.33	3,174.95	890.36	732.58	157.78	5.643		
11,800.00	8,552.39	11,768.11	8,527.43	81.50	81.16	89.33	-448.10	3,274.92	890.33	728.11	162.23	5.488		
11,900.00	8,554.66	11,868.11	8,529.70	83.72	83.38	89.33	-448.86	3,374.89	890.30	723.62	166.68	5.341		
12,000.00	8,556.92	11,968.11	8,531.97	85.95	85.60	89.33	-449.63	3,474.86	890.26	719.12	171.14	5.202		
12,100.00	8,559.19	12,068.11	8,534.24	88.18	87.83	89.33	-450.40	3,574.83	890.23	714.62	175.62	5.069		
12,200.00	8,561.46	12,168.11	8,536.51	90.42	90.07	89.33	-451.16	3,674.80	890.20	710.10	180.09	4.943		
12,300.00	8,563.73	12,268.11	8,538.78	92.66	92.30	89.33	-451.93	3,774.77	890.16	705.58	184.58	4.823		
12,400.00	8,565.99	12,368.11	8,541.04	94.90	94.54	89.33	-452.70	3,874.75	890.13	701.06	189.07	4.708		
12,500.00	8,568.26	12,468.11	8,543.31	97.15	96.79	89.33	-453.47	3,974.72	890.10	696.52	193.57	4.598		
12,600.00	8,570.53	12,568.11	8,545.58	99.40	99.04	89.33	-454.23	4,074.69	890.06	691.99	198.08	4.494		
12,700.00	8,572.80	12,668.11	8,547.85	101.65	101.29	89.33	-455.00	4,174.66	890.03	687.44	202.59	4.393		
12,800.00	8,575.07	12,768.11	8,550.12	103.91	103.54	89.33	-455.77	4,274.63	890.00	682.89	207.10	4.297		
12,900.00	8,577.33	12,868.11	8,552.39	106.17	105.80	89.33	-456.53	4,374.60	889.96	678.34	211.62	4.205		
13,000.00	8,579.60	12,968.11	8,554.66	108.43	108.06	89.33	-457.30	4,474.57	889.93	673.78	216.15	4.117		
13,100.00	8,581.87	13,068.11	8,556.93	110.69	110.32	89.33	-458.07	4,574.55	889.90	669.22	220.67	4.033		
13,200.00	8,584.14	13,168.11	8,559.20	112.95	112.58	89.33	-458.84	4,674.52	889.86	664.66	225.21	3.951		
13,300.00	8,586.41	13,268.11	8,561.47	115.22	114.84	89.33	-459.60	4,774.49	889.83	660.09	229.74	3.873		
13,400.00	8,588.67	13,368.11	8,563.74	117.49	117.11	89.33	-460.37	4,874.46	889.80	655.52	234.28	3.798		
13,500.00	8,590.94	13,468.11	8,566.01	119.76	119.38	89.33	-461.14	4,974.43	889.76	650.94	238.82	3.726		
13,600.00	8,593.21	13,568.11	8,568.28	122.03	121.65	89.33	-461.90	5,074.40	889.73	646.36	243.37	3.656		
13,700.00	8,595.48	13,668.11	8,570.55	124.30	123.92	89.33	-462.67	5,174.37	889.70	641.78	247.92	3.589		
13,800.00	8,597.75	13,768.11	8,572.82	126.57	126.19	89.33	-463.44	5,274.34	889.66	637.20	252.47	3.524		
13,900.00	8,600.01	13,868.11	8,575.09	128.85	128.47	89.33	-464.21	5,374.32	889.63	632.61	257.02	3.461		
14,000.00	8,602.28	13,968.11	8,577.36	131.13	130.74	89.33	-464.97	5,474.29	889.60	628.02	261.57	3.401		
14,100.00	8,604.55	14,068.11	8,579.63	133.40	133.02	89.33	-465.74	5,574.26	889.56	623.43	266.13	3.343		
14,200.00	8,606.82	14,168.11	8,581.90	135.68	135.30	89.33	-466.51	5,674.23	889.53	618.84	270.69	3.286		
14,300.00	8,609.09	14,268.11	8,584.17	137.96	137.58	89.33	-467.27	5,774.20	889.50	614.24	275.25	3.232		
14,400.00	8,611.35	14,368.11	8,586.44	140.24	139.86	89.33	-468.04	5,874.17	889.46	609.64	279.82	3.179		
14,500.00	8,613.62	14,468.11	8,588.71	142.53	142.14	89.33	-468.81	5,974.14	889.43	605.04	284.39	3.128		
14,600.00	8,615.89	14,568.11	8,590.98	144.81	144.42	89.33	-469.58	6,074.11	889.40	600.44	288.95	3.078		
14,700.00	8,618.16	14,668.11	8,593.25	147.09	146.71	89.33	-470.34	6,174.09	889.36	595.84	293.52	3.030		
14,800.00	8,620.42	14,768.11	8,595.52	149.38	148.99	89.33	-471.11	6,274.06	889.33	591.24	298.09	2.983		
14,900.00	8,622.69	14,868.11	8,597.79	151.66	151.27	89.33	-471.88	6,374.03	889.30	586.63	302.67	2.938		
15,000.00	8,624.96	14,968.11	8,600.06	153.95	153.56	89.33	-472.64	6,474.00	889.26	582.02	307.24	2.894		
15,100.00	8,627.23	15,068.11	8,602.32	156.24	155.85	89.33	-473.41	6,573.97	889.23	577.41	311.82	2.852		
15,200.00	8,629.50	15,168.11	8,604.59	158.53	158.13	89.33	-474.18	6,673.94	889.19	572.80	316.39	2.810		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-123HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
15,300.00	8,631.76	15,268.11	8,606.86	160.81	160.42	89.33	-474.95	6,773.91	889.16	568.19	320.97	2.770			
15,400.00	8,634.03	15,368.11	8,609.13	163.10	162.71	89.33	-475.71	6,873.88	889.13	563.58	325.55	2.731			
15,500.00	8,636.30	15,468.11	8,611.40	165.39	165.00	89.33	-476.48	6,973.86	889.09	558.96	330.13	2.693			
15,600.00	8,638.57	15,568.11	8,613.67	167.68	167.29	89.33	-477.25	7,073.83	889.06	554.35	334.71	2.656			
15,700.00	8,640.84	15,668.11	8,615.94	169.97	169.58	89.33	-478.01	7,173.80	889.03	549.73	339.30	2.620			
15,800.00	8,643.10	15,768.11	8,618.21	172.27	171.87	89.33	-478.78	7,273.77	888.99	545.11	343.88	2.585			
15,900.00	8,645.37	15,868.11	8,620.48	174.56	174.16	89.33	-479.55	7,373.74	888.96	540.50	348.47	2.551			
16,000.00	8,647.64	15,968.11	8,622.75	176.85	176.45	89.33	-480.32	7,473.71	888.93	535.88	353.05	2.518			
16,100.00	8,649.91	16,068.11	8,625.02	179.14	178.75	89.33	-481.08	7,573.68	888.89	531.26	357.64	2.485			
16,200.00	8,652.18	16,168.11	8,627.29	181.44	181.04	89.33	-481.85	7,673.66	888.86	526.63	362.23	2.454			
16,300.00	8,654.44	16,268.11	8,629.56	183.73	183.33	89.33	-482.62	7,773.63	888.83	522.01	366.81	2.423			
16,400.00	8,656.71	16,368.11	8,631.83	186.03	185.63	89.33	-483.38	7,873.60	888.79	517.39	371.40	2.393			
16,500.00	8,658.98	16,468.11	8,634.10	188.32	187.92	89.33	-484.15	7,973.57	888.76	512.77	375.99	2.364			
16,600.00	8,661.25	16,568.11	8,636.37	190.62	190.22	89.33	-484.92	8,073.54	888.73	508.14	380.59	2.335			
16,700.00	8,663.52	16,668.11	8,638.64	192.91	192.51	89.33	-485.69	8,173.51	888.69	503.52	385.18	2.307			
16,800.00	8,665.78	16,768.11	8,640.91	195.21	194.81	89.33	-486.45	8,273.48	888.66	498.89	389.77	2.280			
16,900.00	8,668.05	16,868.11	8,643.18	197.50	197.10	89.33	-487.22	8,373.45	888.63	494.26	394.36	2.253			
17,000.00	8,670.32	16,968.11	8,645.45	199.80	199.40	89.33	-487.99	8,473.43	888.59	489.64	398.96	2.227			
17,100.00	8,672.59	17,068.11	8,647.72	202.10	201.70	89.33	-488.75	8,573.40	888.56	485.01	403.55	2.202			
17,200.00	8,674.85	17,168.11	8,649.99	204.40	203.99	89.33	-489.52	8,673.37	888.53	480.38	408.15	2.177			
17,300.00	8,677.12	17,268.11	8,652.26	206.69	206.29	89.33	-490.29	8,773.34	888.49	475.75	412.74	2.153			
17,400.00	8,679.39	17,368.11	8,654.53	208.99	208.59	89.33	-491.06	8,873.31	888.46	471.12	417.34	2.129			
17,500.00	8,681.66	17,468.11	8,656.80	211.29	210.89	89.33	-491.82	8,973.28	888.43	466.49	421.94	2.106			
17,600.00	8,683.93	17,568.11	8,659.07	213.59	213.19	89.33	-492.59	9,073.25	888.39	461.86	426.53	2.083			
17,700.00	8,686.19	17,668.11	8,661.34	215.89	215.48	89.33	-493.36	9,173.22	888.36	457.23	431.13	2.061			
17,800.00	8,688.46	17,768.11	8,663.60	218.19	217.78	89.33	-494.12	9,273.20	888.33	452.60	435.73	2.039			
17,900.00	8,690.73	17,868.11	8,665.87	220.49	220.08	89.33	-494.89	9,373.17	888.29	447.96	440.33	2.017			
18,000.00	8,693.00	17,968.11	8,668.14	222.79	222.38	89.33	-495.66	9,473.14	888.26	443.33	444.93	1.996	Collision Risk Procedures Req.		
18,100.00	8,695.27	18,068.11	8,670.41	225.08	224.68	89.33	-496.43	9,573.11	888.23	438.70	449.53	1.976	Collision Risk Procedures Req.		
18,200.00	8,697.53	18,168.11	8,672.68	227.39	226.98	89.33	-497.19	9,673.08	888.19	434.06	454.13	1.956	Collision Risk Procedures Req.		
18,300.00	8,699.80	18,268.11	8,674.95	229.69	229.28	89.33	-497.96	9,773.05	888.16	429.43	458.73	1.936	Collision Risk Procedures Req.		
18,400.00	8,702.07	18,368.11	8,677.22	231.99	231.58	89.33	-498.73	9,873.02	888.13	424.79	463.33	1.917	Collision Risk Procedures Req.		
18,500.00	8,704.34	18,468.11	8,679.49	234.29	233.88	89.33	-499.49	9,972.99	888.09	420.16	467.93	1.898	Collision Risk Procedures Req.		
18,600.00	8,706.61	18,568.11	8,681.76	236.59	236.18	89.33	-500.26	10,072.97	888.06	415.52	472.54	1.879	Collision Risk Procedures Req.		
18,700.00	8,708.87	18,668.11	8,684.03	238.89	238.48	89.33	-501.03	10,172.94	888.02	410.89	477.14	1.861	Collision Risk Procedures Req.		
18,800.00	8,711.14	18,768.11	8,686.30	241.19	240.78	89.33	-501.80	10,272.91	887.99	406.25	481.74	1.843	Collision Risk Procedures Req.		
18,900.00	8,713.41	18,868.11	8,688.57	243.49	243.09	89.33	-502.56	10,372.88	887.96	401.61	486.34	1.826	Collision Risk Procedures Req.		
19,000.00	8,715.68	18,968.11	8,690.84	245.79	245.39	89.33	-503.33	10,472.85	887.92	396.98	490.95	1.809	Collision Risk Procedures Req.		
19,100.00	8,717.95	19,068.11	8,693.11	247.40	247.69	89.33	-504.10	10,572.82	887.89	393.04	494.85	1.794	Collision Risk Procedures Req.		
19,102.43	8,718.00	19,070.54	8,693.17	247.44	247.74	89.33	-504.12	10,575.25	887.89	392.94	494.95	1.794	Collision Risk Procedures Req., CC, E		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-125HC - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		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	
0.00	0.00	0.00	0.00	0.50	0.50	179.67	-952.50	5.50	952.63				
100.00	100.00	85.20	85.20	0.65	0.61	179.67	-952.50	5.50	952.52	951.25	1.26	754.319	
200.00	200.00	185.20	185.20	1.34	1.23	179.67	-952.50	5.50	952.52	949.94	2.57	370.477	
300.00	300.00	285.20	285.20	1.81	1.74	179.67	-952.50	5.50	952.52	948.96	3.55	268.018	
400.00	400.00	385.20	385.20	2.19	2.13	179.67	-952.50	5.50	952.52	948.20	4.32	220.637	
500.00	500.00	485.20	485.20	2.51	2.46	179.67	-952.50	5.50	952.52	947.55	4.97	191.723	
600.00	600.00	585.20	585.20	2.80	2.75	179.67	-952.50	5.50	952.52	946.97	5.55	171.697	
700.00	700.00	685.20	685.20	3.06	3.02	179.67	-952.50	5.50	952.52	946.44	6.08	156.760	
800.00	800.00	785.20	785.20	3.30	3.27	179.67	-952.50	5.50	952.52	945.95	6.57	145.059	
900.00	900.00	885.20	885.20	3.53	3.50	179.67	-952.50	5.50	952.52	945.49	7.03	135.568	
1,000.00	1,000.00	985.20	985.20	3.75	3.71	179.67	-952.50	5.50	952.52	945.05	7.46	127.664	
1,100.00	1,100.00	1,085.20	1,085.20	3.95	3.92	179.67	-952.50	5.50	952.52	944.64	7.88	120.947	
1,200.00	1,200.00	1,185.20	1,185.20	4.15	4.12	179.67	-952.50	5.50	952.52	944.24	8.27	115.145	
1,300.00	1,300.00	1,285.20	1,285.20	4.34	4.31	179.67	-952.50	5.50	952.52	943.86	8.65	110.067	
1,400.00	1,400.00	1,385.20	1,385.20	4.52	4.50	179.67	-952.50	5.50	952.52	943.49	9.02	105.571	
1,500.00	1,500.00	1,485.20	1,485.20	4.70	4.68	179.67	-952.50	5.50	952.52	943.14	9.38	101.554 CC, ES	
1,600.00	1,599.98	1,568.79	1,568.78	5.05	4.85	-152.43	-953.09	4.93	954.79	944.97	9.83	97.137	
1,700.00	1,699.84	1,649.26	1,649.19	5.69	5.21	-152.35	-955.30	2.80	962.15	951.53	10.62	90.621	
1,800.00	1,799.45	1,729.16	1,728.92	6.30	5.72	-152.21	-959.09	-0.86	974.58	963.14	11.44	85.191	
1,900.00	1,898.82	1,800.00	1,799.45	6.46	6.14	-152.12	-963.79	-5.40	991.20	979.36	11.85	83.671	
2,000.00	1,998.18	1,892.05	1,890.82	6.67	6.60	-151.96	-971.76	-13.11	1,009.80	997.45	12.35	81.750	
2,100.00	2,097.54	1,983.47	1,981.40	6.90	6.75	-151.74	-980.74	-21.77	1,029.51	1,016.81	12.70	81.065	
2,200.00	2,196.90	2,081.42	2,078.43	7.15	6.96	-151.51	-990.35	-31.06	1,049.25	1,036.14	13.11	80.019	
2,300.00	2,296.25	2,179.37	2,175.46	7.42	7.18	-151.30	-999.96	-40.34	1,069.01	1,055.46	13.55	78.875	
2,400.00	2,395.61	2,277.32	2,272.50	7.69	7.42	-151.09	-1,009.57	-49.63	1,088.79	1,074.77	14.02	77.683	
2,500.00	2,494.97	2,375.27	2,369.53	7.98	7.68	-150.89	-1,019.18	-58.91	1,108.57	1,094.08	14.50	76.463	
2,600.00	2,594.33	2,473.22	2,466.57	8.28	7.95	-150.69	-1,028.79	-68.19	1,128.37	1,113.38	15.00	75.232	
2,700.00	2,693.69	2,571.17	2,563.60	8.59	8.24	-150.51	-1,038.40	-77.48	1,148.19	1,132.67	15.52	74.003	
2,800.00	2,793.05	2,669.12	2,660.63	8.91	8.53	-150.32	-1,048.01	-86.76	1,168.01	1,151.96	16.05	72.787	
2,900.00	2,892.40	2,767.07	2,757.67	9.24	8.84	-150.15	-1,057.62	-96.04	1,187.85	1,171.25	16.59	71.591	
3,000.00	2,991.76	2,865.02	2,854.70	9.57	9.16	-149.98	-1,067.23	-105.33	1,207.69	1,190.54	17.15	70.423	
3,100.00	3,091.12	2,962.97	2,951.73	9.91	9.48	-149.82	-1,076.84	-114.61	1,227.54	1,209.83	17.72	69.285	
3,200.00	3,190.48	3,060.92	3,048.77	10.25	9.81	-149.66	-1,086.46	-123.90	1,247.41	1,229.11	18.30	68.182	
3,300.00	3,289.84	3,158.87	3,145.80	10.60	10.15	-149.50	-1,096.07	-133.18	1,267.28	1,248.40	18.88	67.114	
3,400.00	3,389.20	3,256.82	3,242.84	10.95	10.49	-149.35	-1,105.68	-142.46	1,287.16	1,267.69	19.48	66.083	
3,500.00	3,488.55	3,354.77	3,339.87	11.31	10.84	-149.21	-1,115.29	-151.75	1,307.05	1,286.97	20.08	65.089	
3,600.00	3,587.91	3,452.72	3,436.90	11.67	11.20	-149.07	-1,124.90	-161.03	1,326.95	1,306.26	20.69	64.132	
3,700.00	3,687.27	3,550.67	3,533.94	12.03	11.56	-148.93	-1,134.51	-170.32	1,346.85	1,325.55	21.31	63.212	
3,800.00	3,786.63	3,648.62	3,630.97	12.40	11.92	-148.80	-1,144.12	-179.60	1,366.77	1,344.84	21.93	62.327	
3,900.00	3,885.99	3,746.57	3,728.01	12.77	12.29	-148.67	-1,153.73	-188.88	1,386.68	1,364.13	22.56	61.476	
4,000.00	3,985.35	3,844.52	3,825.04	13.14	12.66	-148.55	-1,163.34	-198.17	1,406.61	1,383.42	23.19	60.660	
4,100.00	4,084.70	3,942.47	3,922.07	13.52	13.04	-148.43	-1,172.95	-207.45	1,426.54	1,402.72	23.83	59.875	
4,200.00	4,184.06	4,040.42	4,019.11	13.90	13.41	-148.31	-1,182.56	-216.73	1,446.48	1,422.01	24.47	59.122	
4,300.00	4,283.42	4,142.86	4,120.60	14.27	13.80	-148.19	-1,192.60	-226.43	1,466.41	1,441.30	25.11	58.388	
4,400.00	4,382.78	4,240.96	4,218.79	14.65	14.52	-148.14	-1,204.76	-236.18	1,483.94	1,457.86	26.08	56.907	
4,500.00	4,482.14	4,343.13	4,320.75	15.04	15.29	-148.32	-1,210.38	-243.60	1,497.18	1,470.17	27.02	55.417	
4,600.00	4,581.49	4,443.28	4,420.69	15.42	15.46	-148.59	-1,210.75	-243.96	1,507.08	1,479.59	27.49	54.817	
4,700.00	4,680.85	4,543.43	4,520.65	15.81	15.50	-148.81	-1,210.75	-243.96	1,516.76	1,488.88	27.88	54.406	
4,800.00	4,780.21	4,643.58	4,620.51	16.19	15.55	-149.03	-1,210.75	-243.96	1,526.46	1,498.19	28.27	53.993	
4,900.00	4,879.57	4,743.73	4,720.47	16.58	15.59	-149.24	-1,210.75	-243.96	1,536.19	1,507.52	28.67	53.587	
5,000.00	4,978.93	4,843.88	4,820.43	16.97	15.64	-149.46	-1,210.75	-243.96	1,545.94	1,516.87	29.07	53.188	
5,100.00	5,078.29	5,043.03	5,019.49	17.36	15.68	-149.67	-1,210.75	-243.96	1,555.70	1,526.24	29.47	52.797	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-125HC - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												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	
5,200.00	5,177.64	5,186.23	5,162.84	17.75	15.73	-149.88	-1,210.75	-243.96	1,565.49	1,535.62	29.87	52.412	
5,300.00	5,277.00	5,285.58	5,262.20	18.15	15.78	-150.08	-1,210.75	-243.96	1,575.30	1,545.03	30.27	52.034	
5,400.00	5,376.36	5,384.94	5,361.56	18.54	15.82	-150.29	-1,210.75	-243.96	1,585.13	1,554.45	30.68	51.664	
5,500.00	5,475.72	5,484.30	5,460.92	18.93	15.87	-150.49	-1,210.75	-243.96	1,594.98	1,563.89	31.09	51.300	
5,600.00	5,575.08	5,583.66	5,560.28	19.33	15.92	-150.69	-1,210.75	-243.96	1,604.85	1,573.35	31.50	50.943	
5,700.00	5,674.44	5,683.02	5,659.64	19.73	15.96	-150.88	-1,210.75	-243.96	1,614.74	1,582.82	31.92	50.592	
5,800.00	5,773.79	5,782.37	5,758.99	20.12	16.01	-151.08	-1,210.75	-243.96	1,624.64	1,592.31	32.33	50.248	
5,900.00	5,873.15	5,881.73	5,858.35	20.52	16.06	-151.27	-1,210.75	-243.96	1,634.57	1,601.82	32.75	49.911	
6,000.00	5,972.51	5,981.09	5,957.71	20.92	16.11	-151.46	-1,210.75	-243.96	1,644.51	1,611.34	33.17	49.580	
6,100.00	6,071.87	6,080.45	6,057.07	21.32	16.16	-151.65	-1,210.75	-243.96	1,654.47	1,620.88	33.59	49.255	
6,200.00	6,171.23	6,179.81	6,156.43	21.72	16.21	-151.83	-1,210.75	-243.96	1,664.45	1,630.43	34.01	48.933	
6,300.00	6,270.59	6,279.17	6,255.95	22.13	16.26	-152.06	-1,210.75	-243.96	1,673.05	1,638.60	34.45	48.562	
6,400.00	6,370.54	6,379.13	6,355.74	22.59	16.31	-152.22	-1,210.75	-243.96	1,678.59	1,643.67	34.92	48.073	
6,500.00	6,470.50	6,479.08	6,455.70	22.98	16.36	-152.28	-1,210.75	-243.96	1,681.04	1,645.72	35.33	47.587	
6,600.00	6,570.50	6,579.08	6,555.70	23.05	16.41	179.83	-1,210.75	-243.96	1,681.18	1,645.73	35.45	47.422	
6,700.00	6,670.50	6,679.08	6,655.70	23.10	16.46	179.83	-1,210.75	-243.96	1,681.18	1,645.62	35.56	47.274	
6,800.00	6,770.50	6,779.08	6,755.70	23.15	16.51	179.83	-1,210.75	-243.96	1,681.18	1,645.50	35.68	47.124	
6,900.00	6,870.50	6,879.08	6,855.70	23.19	16.56	179.83	-1,210.75	-243.96	1,681.18	1,645.39	35.79	46.973	
7,000.00	6,970.50	6,979.08	6,955.70	23.24	16.61	179.83	-1,210.75	-243.96	1,681.18	1,645.27	35.90	46.824	
7,100.00	7,070.50	7,079.08	7,055.70	23.29	16.66	179.83	-1,210.75	-243.96	1,681.18	1,645.16	36.02	46.674	
7,200.00	7,170.50	7,179.08	7,155.70	23.34	16.71	179.83	-1,210.75	-243.96	1,681.18	1,645.04	36.13	46.525	
7,300.00	7,270.50	7,279.08	7,255.70	23.39	16.76	179.83	-1,210.75	-243.96	1,681.18	1,644.93	36.25	46.377	
7,400.00	7,370.50	7,379.08	7,355.70	23.44	16.82	179.83	-1,210.75	-243.96	1,681.18	1,644.81	36.37	46.229	
7,500.00	7,470.50	7,479.08	7,455.70	23.49	16.87	179.83	-1,210.75	-243.96	1,681.18	1,644.69	36.48	46.082	
7,600.00	7,570.50	7,579.08	7,555.70	23.54	16.92	179.83	-1,210.75	-243.96	1,681.18	1,644.58	36.60	45.935	
7,700.00	7,670.50	7,679.08	7,655.70	23.59	16.97	179.83	-1,210.75	-243.96	1,681.18	1,644.46	36.72	45.788	
7,800.00	7,770.50	7,779.08	7,755.70	23.65	17.03	179.83	-1,210.75	-243.96	1,681.18	1,644.34	36.83	45.642	
7,900.00	7,870.50	7,879.08	7,855.70	23.70	17.08	179.83	-1,210.75	-243.96	1,681.18	1,644.23	36.95	45.497	
8,000.00	7,970.40	7,959.79	7,936.35	23.66	17.08	89.34	-1,211.03	-241.86	1,681.54	1,644.56	36.98	45.472	
8,100.00	8,068.49	8,031.72	8,007.44	23.58	17.07	89.27	-1,212.42	-231.31	1,683.30	1,646.35	36.95	45.554	
8,200.00	8,161.84	8,100.00	8,073.19	23.48	17.06	89.15	-1,214.80	-213.20	1,686.52	1,649.62	36.89	45.712	
8,300.00	8,247.60	8,176.74	8,143.89	23.40	17.04	89.05	-1,218.68	-183.76	1,691.12	1,654.26	36.86	45.881	
8,400.00	8,323.17	8,250.00	8,207.11	23.38	17.04	88.92	-1,223.49	-147.16	1,697.08	1,660.19	36.88	46.012	
8,500.00	8,386.25	8,325.23	8,266.59	23.47	17.05	88.78	-1,229.50	-101.57	1,704.31	1,667.24	37.07	45.981	
8,600.00	8,434.92	8,400.00	8,319.23	23.73	17.11	88.62	-1,236.42	-49.01	1,712.72	1,675.24	37.48	45.700	
8,700.00	8,467.72	8,480.26	8,367.54	24.20	17.24	88.51	-1,244.77	14.45	1,722.20	1,683.95	38.25	45.025	
8,800.00	8,483.63	8,561.58	8,406.89	24.88	17.47	88.39	-1,254.05	84.94	1,732.62	1,693.22	39.40	43.975	
8,900.00	8,486.62	8,647.73	8,437.16	25.76	17.90	89.01	-1,264.57	164.81	1,743.90	1,702.92	40.98	42.558	
9,000.00	8,488.89	8,741.05	8,455.94	26.81	18.61	89.56	-1,276.48	255.34	1,755.88	1,712.84	43.03	40.803	
9,100.00	8,491.15	8,904.67	8,462.43	28.01	20.48	89.66	-1,295.83	417.60	1,767.34	1,720.75	46.59	37.934	
9,200.00	8,493.42	9,140.84	8,467.80	29.34	24.20	89.66	-1,308.09	653.32	1,771.32	1,719.11	52.21	33.927	
9,300.00	8,495.69	9,256.46	8,470.43	30.79	26.17	89.66	-1,309.06	768.91	1,771.31	1,715.49	55.81	31.736	
9,400.00	8,497.96	9,356.46	8,472.70	32.34	27.97	89.66	-1,309.83	868.88	1,771.27	1,711.97	59.30	29.869	
9,500.00	8,500.23	9,456.46	8,474.98	33.98	29.84	89.66	-1,310.59	968.85	1,771.24	1,708.30	62.93	28.145	
9,600.00	8,502.49	9,556.46	8,477.25	35.70	31.78	89.66	-1,311.36	1,068.82	1,771.20	1,704.52	66.69	26.560	
9,700.00	8,504.76	9,656.46	8,479.52	37.49	33.77	89.66	-1,312.12	1,168.80	1,771.17	1,700.63	70.54	25.108	
9,800.00	8,507.03	9,756.46	8,481.79	39.33	35.80	89.66	-1,312.89	1,268.77	1,771.13	1,696.65	74.48	23.779	
9,900.00	8,509.30	9,856.46	8,484.07	41.23	37.86	89.66	-1,313.66	1,368.74	1,771.10	1,692.60	78.50	22.563	
10,000.00	8,511.56	9,956.46	8,486.34	43.16	39.95	89.66	-1,314.42	1,468.71	1,771.06	1,688.49	82.57	21.448	
10,100.00	8,513.83	10,056.46	8,488.61	45.13	42.07	89.66	-1,315.19	1,568.68	1,771.03	1,684.32	86.71	20.426	
10,200.00	8,516.10	10,156.46	8,490.88	47.14	44.20	89.66	-1,315.95	1,668.65	1,770.99	1,680.11	90.88	19.486	
10,300.00	8,518.37	10,256.46	8,493.16	49.17	46.36	89.66	-1,316.72	1,768.62	1,770.96	1,675.85	95.10	18.621	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-125HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft			
Survey Program:		0-MWD+HRGM		Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Distance	Warning	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					
10,400.00	8,520.64	10,356.46	8,495.43	51.23	48.53	89.66	-1,317.48	1,868.59	1,770.92	1,671.56	99.36	17.824					
10,500.00	8,522.90	10,456.46	8,497.70	53.31	50.71	89.66	-1,318.25	1,968.57	1,770.89	1,667.24	103.64	17.086					
10,600.00	8,525.17	10,556.46	8,499.97	55.40	52.90	89.66	-1,319.01	2,068.54	1,770.85	1,662.89	107.96	16.403					
10,700.00	8,527.44	10,656.46	8,502.24	57.52	55.10	89.66	-1,319.78	2,168.51	1,770.81	1,658.52	112.29	15.769					
10,800.00	8,529.71	10,756.46	8,504.52	59.65	57.31	89.66	-1,320.54	2,268.48	1,770.78	1,654.13	116.65	15.180					
10,900.00	8,531.98	10,856.46	8,506.79	61.79	59.53	89.66	-1,321.31	2,368.45	1,770.74	1,649.71	121.03	14.630					
11,000.00	8,534.24	10,956.46	8,509.06	63.94	61.76	89.66	-1,322.08	2,468.42	1,770.71	1,645.28	125.43	14.117					
11,100.00	8,536.51	11,056.46	8,511.33	66.11	63.99	89.66	-1,322.84	2,568.39	1,770.67	1,640.83	129.84	13.637					
11,200.00	8,538.78	11,156.46	8,513.61	68.29	66.23	89.66	-1,323.61	2,668.36	1,770.64	1,636.37	134.27	13.187					
11,300.00	8,541.05	11,256.46	8,515.88	70.47	68.47	89.66	-1,324.37	2,768.34	1,770.60	1,631.90	138.71	12.765					
11,400.00	8,543.32	11,356.46	8,518.15	72.66	70.72	89.66	-1,325.14	2,868.31	1,770.57	1,627.41	143.16	12.368					
11,500.00	8,545.58	11,456.46	8,520.42	74.86	72.97	89.66	-1,325.90	2,968.28	1,770.53	1,622.92	147.62	11.994					
11,600.00	8,547.85	11,556.46	8,522.70	77.07	75.23	89.66	-1,326.67	3,068.25	1,770.50	1,618.41	152.09	11.641					
11,700.00	8,550.12	11,656.46	8,524.97	79.28	77.49	89.66	-1,327.43	3,168.22	1,770.46	1,613.90	156.57	11.308					
11,800.00	8,552.39	11,756.46	8,527.24	81.50	79.75	89.66	-1,328.20	3,268.19	1,770.43	1,609.38	161.05	10.993					
11,900.00	8,554.66	11,856.46	8,529.51	83.72	82.01	89.66	-1,328.96	3,368.16	1,770.39	1,604.85	165.55	10.694					
12,000.00	8,556.92	11,956.46	8,531.79	85.95	84.28	89.66	-1,329.73	3,468.13	1,770.36	1,600.31	170.05	10.411					
12,100.00	8,559.19	12,056.46	8,534.06	88.18	86.55	89.67	-1,330.50	3,568.11	1,770.32	1,595.77	174.56	10.142					
12,200.00	8,561.46	12,156.46	8,536.33	90.42	88.82	89.67	-1,331.26	3,668.08	1,770.29	1,591.22	179.07	9.886					
12,300.00	8,563.73	12,256.46	8,538.60	92.66	91.10	89.67	-1,332.03	3,768.05	1,770.25	1,586.66	183.59	9.642					
12,400.00	8,565.99	12,356.46	8,540.87	94.90	93.37	89.67	-1,332.79	3,868.02	1,770.22	1,582.10	188.11	9.410					
12,500.00	8,568.26	12,456.46	8,543.15	97.15	95.65	89.67	-1,333.56	3,967.99	1,770.18	1,577.54	192.64	9.189					
12,600.00	8,570.53	12,556.46	8,545.42	99.40	97.93	89.67	-1,334.32	4,067.96	1,770.15	1,572.97	197.18	8.977					
12,700.00	8,572.80	12,656.46	8,547.69	101.65	100.21	89.67	-1,335.09	4,167.93	1,770.11	1,568.40	201.71	8.775					
12,800.00	8,575.07	12,756.46	8,549.96	103.91	102.49	89.67	-1,335.85	4,267.90	1,770.08	1,563.82	206.25	8.582					
12,900.00	8,577.33	12,856.46	8,552.24	106.17	104.77	89.67	-1,336.62	4,367.88	1,770.04	1,559.24	210.80	8.397					
13,000.00	8,579.60	12,956.46	8,554.51	108.43	107.06	89.67	-1,337.39	4,467.85	1,770.01	1,554.66	215.35	8.219					
13,100.00	8,581.87	13,056.46	8,556.78	110.69	109.34	89.67	-1,338.15	4,567.82	1,769.97	1,550.08	219.90	8.049					
13,200.00	8,584.14	13,156.46	8,559.05	112.95	111.63	89.67	-1,338.92	4,667.79	1,769.94	1,545.49	224.45	7.886					
13,300.00	8,586.41	13,256.46	8,561.33	115.22	113.92	89.67	-1,339.68	4,767.76	1,769.90	1,540.89	229.01	7.729					
13,400.00	8,588.67	13,356.46	8,563.60	117.49	116.21	89.67	-1,340.45	4,867.73	1,769.87	1,536.30	233.57	7.578					
13,500.00	8,590.94	13,456.46	8,565.87	119.76	118.50	89.67	-1,341.21	4,967.70	1,769.83	1,531.70	238.13	7.432					
13,600.00	8,593.21	13,556.46	8,568.14	122.03	120.79	89.67	-1,341.98	5,067.67	1,769.80	1,527.10	242.69	7.292					
13,700.00	8,595.48	13,656.46	8,570.42	124.30	123.08	89.67	-1,342.74	5,167.65	1,769.76	1,522.50	247.26	7.158					
13,800.00	8,597.75	13,756.46	8,572.69	126.57	125.37	89.67	-1,343.51	5,267.62	1,769.73	1,517.90	251.83	7.028					
13,900.00	8,600.01	13,856.46	8,574.96	128.85	127.66	89.67	-1,344.27	5,367.59	1,769.69	1,513.30	256.40	6.902					
14,000.00	8,602.28	13,956.46	8,577.23	131.13	129.95	89.67	-1,345.04	5,467.56	1,769.66	1,508.69	260.97	6.781					
14,100.00	8,604.55	14,056.46	8,579.51	133.40	132.25	89.67	-1,345.81	5,567.53	1,769.62	1,504.08	265.54	6.664					
14,200.00	8,606.82	14,156.46	8,581.78	135.68	134.54	89.67	-1,346.57	5,667.50	1,769.59	1,499.47	270.12	6.551					
14,300.00	8,609.09	14,256.46	8,584.05	137.96	136.84	89.67	-1,347.34	5,767.47	1,769.55	1,494.86	274.69	6.442					
14,400.00	8,611.35	14,356.46	8,586.32	140.24	139.13	89.67	-1,348.10	5,867.44	1,769.52	1,490.24	279.27	6.336					
14,500.00	8,613.62	14,456.46	8,588.59	142.53	141.43	89.67	-1,348.87	5,967.42	1,769.48	1,485.63	283.85	6.234					
14,600.00	8,615.89	14,556.46	8,590.87	144.81	143.73	89.67	-1,349.63	6,067.39	1,769.45	1,481.01	288.43	6.135					
14,700.00	8,618.16	14,656.46	8,593.14	147.09	146.02	89.67	-1,350.40	6,167.36	1,769.41	1,476.39	293.02	6.039					
14,800.00	8,620.42	14,756.46	8,595.41	149.38	148.32	89.67	-1,351.16	6,267.33	1,769.38	1,471.78	297.60	5.945					
14,900.00	8,622.69	14,856.46	8,597.68	151.66	150.62	89.67	-1,351.93	6,367.30	1,769.34	1,467.16	302.19	5.855					
15,000.00	8,624.96	14,956.46	8,599.96	153.95	152.92	89.67	-1,352.69	6,467.27	1,769.31	1,462.53	306.77	5.768					
15,100.00	8,627.23	15,056.46	8,602.23	156.24	155.22	89.67	-1,353.46	6,567.24	1,769.27	1,457.91	311.36	5.682					
15,200.00	8,629.50	15,156.46	8,604.50	158.53	157.51	89.67	-1,354.23	6,667.21	1,769.24	1,453.29	315.95	5.600					
15,300.00	8,631.76	15,256.46	8,606.77	160.81	159.81	89.67	-1,354.99	6,767.19	1,769.20	1,448.67	320.54	5.520					
15,400.00	8,634.03	15,356.46	8,609.05	163.10	162.11	89.67	-1,355.76	6,867.16	1,769.17	1,444.04	325.13	5.441					
15,500.00	8,636.30	15,456.46	8,611.32	165.39	164.41	89.67	-1,356.52	6,967.13	1,769.13	1,439.41	329.72	5.366					

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-125HC - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					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)				
15,600.00	8,638.57	15,556.46	8,613.59	167.68	166.71	89.67	-1,357.29	7,067.10	1,769.10	1,434.79	334.31	5.292		
15,700.00	8,640.84	15,656.46	8,615.86	169.97	169.01	89.67	-1,358.05	7,167.07	1,769.06	1,430.16	338.90	5.220		
15,800.00	8,643.10	15,756.46	8,618.14	172.27	171.32	89.67	-1,358.82	7,267.04	1,769.03	1,425.53	343.49	5.150		
15,900.00	8,645.37	15,856.46	8,620.41	174.56	173.62	89.67	-1,359.58	7,367.01	1,768.99	1,420.90	348.09	5.082		
16,000.00	8,647.64	15,956.46	8,622.68	176.85	175.92	89.67	-1,360.35	7,466.98	1,768.96	1,416.27	352.68	5.016		
16,100.00	8,649.91	16,056.46	8,624.95	179.14	178.22	89.67	-1,361.11	7,566.96	1,768.92	1,411.64	357.28	4.951		
16,200.00	8,652.18	16,156.46	8,627.22	181.44	180.52	89.67	-1,361.88	7,666.93	1,768.88	1,407.01	361.88	4.888		
16,300.00	8,654.44	16,256.46	8,629.50	183.73	182.82	89.67	-1,362.65	7,766.90	1,768.85	1,402.38	366.47	4.827		
16,400.00	8,656.71	16,356.46	8,631.77	186.03	185.13	89.67	-1,363.41	7,866.87	1,768.81	1,397.74	371.07	4.767		
16,500.00	8,658.98	16,456.46	8,634.04	188.32	187.43	89.67	-1,364.18	7,966.84	1,768.78	1,393.11	375.67	4.708		
16,600.00	8,661.25	16,556.46	8,636.31	190.62	189.73	89.67	-1,364.94	8,066.81	1,768.74	1,388.48	380.27	4.651		
16,700.00	8,663.52	16,656.46	8,638.59	192.91	192.04	89.67	-1,365.71	8,166.78	1,768.71	1,383.84	384.87	4.596		
16,800.00	8,665.78	16,756.46	8,640.86	195.21	194.34	89.67	-1,366.47	8,266.75	1,768.67	1,379.21	389.47	4.541		
16,900.00	8,668.05	16,856.46	8,643.13	197.50	196.64	89.67	-1,367.24	8,366.73	1,768.64	1,374.57	394.07	4.488		
17,000.00	8,670.32	16,956.46	8,645.40	199.80	198.95	89.67	-1,368.00	8,466.70	1,768.60	1,369.93	398.67	4.436		
17,100.00	8,672.59	17,056.46	8,647.68	202.10	201.25	89.67	-1,368.77	8,566.67	1,768.57	1,365.30	403.27	4.386		
17,200.00	8,674.85	17,156.46	8,649.95	204.40	203.55	89.67	-1,369.54	8,666.64	1,768.53	1,360.66	407.87	4.336		
17,300.00	8,677.12	17,256.46	8,652.22	206.69	205.86	89.67	-1,370.30	8,766.61	1,768.50	1,356.02	412.48	4.288		
17,400.00	8,679.39	17,356.46	8,654.49	208.99	208.16	89.67	-1,371.07	8,866.58	1,768.46	1,351.39	417.08	4.240		
17,500.00	8,681.66	17,456.46	8,656.77	211.29	210.47	89.67	-1,371.83	8,966.55	1,768.43	1,346.75	421.68	4.194		
17,600.00	8,683.93	17,556.46	8,659.04	213.59	212.77	89.67	-1,372.60	9,066.52	1,768.39	1,342.11	426.29	4.148		
17,700.00	8,686.19	17,656.46	8,661.31	215.89	215.08	89.67	-1,373.36	9,166.50	1,768.36	1,337.47	430.89	4.104		
17,800.00	8,688.46	17,756.46	8,663.58	218.19	217.38	89.67	-1,374.13	9,266.47	1,768.32	1,332.83	435.49	4.060		
17,900.00	8,690.73	17,856.46	8,665.85	220.49	219.69	89.67	-1,374.89	9,366.44	1,768.29	1,328.19	440.10	4.018		
18,000.00	8,693.00	17,956.46	8,668.13	222.79	221.99	89.67	-1,375.66	9,466.41	1,768.25	1,323.55	444.70	3.976		
18,100.00	8,695.27	18,056.46	8,670.40	225.08	224.30	89.67	-1,376.42	9,566.38	1,768.22	1,318.91	449.31	3.935		
18,200.00	8,697.53	18,156.46	8,672.67	227.39	226.60	89.67	-1,377.19	9,666.35	1,768.18	1,314.27	453.92	3.895		
18,300.00	8,699.80	18,256.46	8,674.94	229.69	228.91	89.67	-1,377.96	9,766.32	1,768.15	1,309.63	458.52	3.856		
18,400.00	8,702.07	18,356.46	8,677.22	231.99	231.21	89.67	-1,378.72	9,866.29	1,768.11	1,304.98	463.13	3.818		
18,500.00	8,704.34	18,456.46	8,679.49	234.29	233.52	89.67	-1,379.49	9,966.27	1,768.08	1,300.34	467.74	3.780		
18,600.00	8,706.61	18,556.46	8,681.76	236.59	235.83	89.67	-1,380.25	10,066.24	1,768.04	1,295.70	472.34	3.743		
18,700.00	8,708.87	18,656.46	8,684.03	238.89	238.13	89.67	-1,381.02	10,166.21	1,768.01	1,291.06	476.95	3.707		
18,800.00	8,711.14	18,756.46	8,686.31	241.19	240.44	89.67	-1,381.78	10,266.18	1,767.97	1,286.41	481.56	3.671		
18,900.00	8,713.41	18,856.46	8,688.58	243.49	242.74	89.67	-1,382.55	10,366.15	1,767.94	1,281.77	486.17	3.636		
19,000.00	8,715.68	18,956.46	8,690.85	245.79	245.05	89.67	-1,383.31	10,466.12	1,767.90	1,277.13	490.78	3.602		
19,100.00	8,717.95	19,056.46	8,693.12	247.40	247.36	89.67	-1,384.08	10,566.09	1,767.87	1,273.18	494.69	3.574		
19,102.43	8,718.00	19,058.89	8,693.18	247.44	247.41	89.67	-1,384.10	10,568.52	1,767.87	1,273.08	494.78	3.573 SF		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-223H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	0.50	-170.26	-844.86	-144.98	857.35				
100.00	100.00	84.70	84.70	0.65	0.61	-170.26	-844.86	-144.98	857.21	855.95	1.26	679.488	
200.00	200.00	184.70	184.70	1.34	1.23	-170.26	-844.86	-144.98	857.21	854.64	2.57	333.900	
300.00	300.00	284.70	284.70	1.81	1.74	-170.26	-844.86	-144.98	857.21	853.66	3.55	241.362	
400.00	400.00	384.70	384.70	2.19	2.13	-170.26	-844.86	-144.98	857.21	852.89	4.32	198.647	
500.00	500.00	484.70	484.70	2.51	2.46	-170.26	-844.86	-144.98	857.21	852.24	4.97	172.596	
600.00	600.00	584.70	584.70	2.80	2.75	-170.26	-844.86	-144.98	857.21	851.66	5.55	154.558	
700.00	700.00	684.70	684.70	3.06	3.02	-170.26	-844.86	-144.98	857.21	851.13	6.07	141.106	
800.00	800.00	784.70	784.70	3.30	3.26	-170.26	-844.86	-144.98	857.21	850.64	6.57	130.569	
900.00	900.00	884.70	884.70	3.53	3.49	-170.26	-844.86	-144.98	857.21	850.18	7.02	122.023	
1,000.00	1,000.00	984.70	984.70	3.75	3.71	-170.26	-844.86	-144.98	857.21	849.75	7.46	114.907	
1,100.00	1,100.00	1,084.70	1,084.70	3.95	3.92	-170.26	-844.86	-144.98	857.21	849.33	7.87	108.860	
1,200.00	1,200.00	1,184.70	1,184.70	4.15	4.12	-170.26	-844.86	-144.98	857.21	848.94	8.27	103.636	
1,300.00	1,300.00	1,284.70	1,284.70	4.34	4.31	-170.26	-844.86	-144.98	857.21	848.56	8.65	99.064	
1,400.00	1,400.00	1,384.70	1,384.70	4.52	4.50	-170.26	-844.86	-144.98	857.21	848.19	9.02	95.018	
1,500.00	1,500.00	1,484.70	1,484.70	4.70	4.68	-170.26	-844.86	-144.98	857.21	847.83	9.38	91.402 CC, ES	
1,600.00	1,599.98	1,575.62	1,575.61	5.05	4.88	-142.48	-845.41	-144.14	859.04	849.24	9.80	87.671	
1,700.00	1,699.84	1,664.42	1,664.33	5.69	5.33	-142.83	-847.44	-141.03	864.89	854.43	10.46	82.684	
1,800.00	1,799.45	1,752.24	1,751.91	6.30	5.69	-143.39	-850.93	-135.69	874.87	863.82	11.05	79.144	
1,900.00	1,898.82	1,850.36	1,849.66	6.46	5.83	-144.29	-855.65	-128.48	887.67	876.35	11.32	78.393	
2,000.00	1,998.18	1,948.47	1,947.38	6.67	6.01	-145.20	-860.36	-121.26	900.79	889.10	11.69	77.059	
2,100.00	2,097.54	2,046.57	2,045.11	6.90	6.22	-146.09	-865.07	-114.05	914.13	902.04	12.09	75.611	
2,200.00	2,196.90	2,144.68	2,142.83	7.15	6.45	-146.95	-869.79	-106.83	927.69	915.18	12.51	74.160	
2,300.00	2,296.25	2,242.78	2,240.56	7.42	6.69	-147.79	-874.50	-99.62	941.45	928.50	12.95	72.717	
2,400.00	2,395.61	2,340.89	2,338.29	7.69	6.94	-148.60	-879.21	-92.41	955.40	942.00	13.40	71.288	
2,500.00	2,494.97	2,438.99	2,436.01	7.98	7.20	-149.39	-883.93	-85.19	969.54	955.67	13.87	69.880	
2,600.00	2,594.33	2,537.10	2,533.74	8.28	7.47	-150.16	-888.64	-77.98	983.86	969.49	14.36	68.500	
2,700.00	2,693.69	2,635.20	2,631.46	8.59	7.76	-150.90	-893.36	-70.77	998.35	983.48	14.87	67.151	
2,800.00	2,793.05	2,733.31	2,729.19	8.91	8.05	-151.63	-898.07	-63.55	1,013.00	997.61	15.39	65.837	
2,900.00	2,892.40	2,831.41	2,826.91	9.24	8.35	-152.33	-902.78	-56.34	1,027.81	1,011.89	15.92	64.562	
3,000.00	2,991.76	2,929.52	2,924.64	9.57	8.65	-153.01	-907.50	-49.13	1,042.77	1,026.30	16.47	63.327	
3,100.00	3,091.12	3,027.62	3,022.37	9.91	8.96	-153.68	-912.21	-41.91	1,057.87	1,040.84	17.03	62.134	
3,200.00	3,190.48	3,125.73	3,120.09	10.25	9.28	-154.32	-916.93	-34.70	1,073.11	1,055.51	17.60	60.982	
3,300.00	3,289.84	3,223.83	3,217.82	10.60	9.59	-154.95	-921.64	-27.48	1,088.48	1,070.31	18.17	59.909	
3,400.00	3,389.20	3,342.27	3,335.90	10.95	9.99	-155.63	-926.60	-19.90	1,103.35	1,084.55	18.80	58.690	
3,500.00	3,488.55	3,471.44	3,464.98	11.31	10.37	-156.13	-929.05	-16.14	1,115.78	1,096.34	19.44	57.403	
3,600.00	3,587.91	3,579.07	3,572.61	11.67	10.50	-156.39	-929.17	-15.96	1,126.24	1,106.26	19.99	56.349	
3,700.00	3,687.27	3,678.43	3,671.97	12.03	10.57	-156.62	-929.17	-15.96	1,136.63	1,116.17	20.46	55.566	
3,800.00	3,786.63	3,777.79	3,771.33	12.40	10.65	-156.84	-929.17	-15.96	1,147.03	1,126.12	20.91	54.864	
3,900.00	3,885.99	3,877.14	3,870.69	12.77	10.72	-157.06	-929.17	-15.96	1,157.45	1,136.09	21.36	54.185	
4,000.00	3,985.35	3,976.50	3,970.05	13.14	10.79	-157.28	-929.17	-15.96	1,167.88	1,146.06	21.82	53.529	
4,100.00	4,084.70	4,075.86	4,069.40	13.52	10.87	-157.49	-929.17	-15.96	1,178.33	1,156.06	22.28	52.895	
4,200.00	4,184.06	4,175.22	4,168.76	13.90	10.94	-157.70	-929.17	-15.96	1,188.80	1,166.06	22.74	52.282	
4,300.00	4,283.42	4,274.58	4,268.12	14.27	11.01	-157.90	-929.17	-15.96	1,199.28	1,176.08	23.20	51.690	
4,400.00	4,382.78	4,373.94	4,367.48	14.65	11.09	-158.11	-929.17	-15.96	1,209.78	1,186.11	23.67	51.118	
4,500.00	4,482.14	4,473.29	4,466.84	15.04	11.16	-158.30	-929.17	-15.96	1,220.29	1,196.16	24.13	50.565	
4,600.00	4,581.49	4,572.65	4,566.19	15.42	11.23	-158.50	-929.17	-15.96	1,230.82	1,206.22	24.60	50.031	
4,700.00	4,680.85	4,672.01	4,665.55	15.81	11.31	-158.69	-929.17	-15.96	1,241.36	1,216.29	25.07	49.514	
4,800.00	4,780.21	4,771.37	4,764.91	16.19	11.38	-158.88	-929.17	-15.96	1,251.91	1,226.37	25.54	49.014	
4,900.00	4,879.57	4,870.73	4,864.27	16.58	11.45	-159.06	-929.17	-15.96	1,262.48	1,236.46	26.01	48.530	
5,000.00	4,978.93	4,970.08	4,963.63	16.97	11.53	-159.24	-929.17	-15.96	1,273.06	1,246.57	26.49	48.062	
5,100.00	5,078.29	5,069.44	5,062.99	17.36	11.60	-159.42	-929.17	-15.96	1,283.65	1,256.69	26.96	47.608	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-223H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,177.64	5,168.80	5,162.34	17.75	11.68	-159.60	-929.17	-15.96	1,294.25	1,266.81	27.44	47.169			
5,300.00	5,277.00	5,268.16	5,261.70	18.15	11.75	-159.77	-929.17	-15.96	1,304.87	1,276.95	27.92	46.744			
5,400.00	5,376.36	5,367.52	5,361.06	18.54	11.83	-159.94	-929.17	-15.96	1,315.49	1,287.10	28.39	46.332			
5,500.00	5,475.72	5,466.88	5,460.42	18.93	11.90	-160.11	-929.17	-15.96	1,326.13	1,297.26	28.87	45.932			
5,600.00	5,575.08	5,566.23	5,559.78	19.33	11.98	-160.27	-929.17	-15.96	1,336.78	1,307.43	29.35	45.545			
5,700.00	5,674.44	5,665.59	5,659.14	19.73	12.05	-160.44	-929.17	-15.96	1,347.44	1,317.61	29.83	45.169			
5,800.00	5,773.79	5,764.95	5,758.49	20.12	12.12	-160.60	-929.17	-15.96	1,358.11	1,327.80	30.31	44.804			
5,900.00	5,873.15	5,864.31	5,857.85	20.52	12.20	-160.75	-929.17	-15.96	1,368.80	1,338.00	30.79	44.451			
6,000.00	5,972.51	5,963.67	5,957.21	20.92	12.27	-160.91	-929.17	-15.96	1,379.49	1,348.21	31.28	44.107			
6,100.00	6,071.87	6,063.03	6,056.57	21.32	12.35	-161.06	-929.17	-15.96	1,390.19	1,358.43	31.76	43.773			
6,200.00	6,171.23	6,162.38	6,155.93	21.72	12.42	-161.21	-929.17	-15.96	1,400.90	1,368.65	32.24	43.446			
6,300.00	6,270.75	6,261.90	6,255.45	22.13	12.50	-161.39	-929.17	-15.96	1,410.13	1,377.38	32.74	43.067			
6,400.00	6,370.54	6,361.70	6,355.24	22.59	12.58	-161.51	-929.17	-15.96	1,416.06	1,382.79	33.27	42.564			
6,500.00	6,470.50	6,461.66	6,455.20	22.98	12.65	-161.56	-929.17	-15.96	1,418.69	1,384.96	33.73	42.059			
6,600.00	6,570.50	6,561.66	6,555.20	23.05	12.73	170.55	-929.17	-15.96	1,418.84	1,384.96	33.88	41.876			
6,700.00	6,670.50	6,661.66	6,655.20	23.10	12.80	170.55	-929.17	-15.96	1,418.84	1,384.82	34.01	41.712			
6,800.00	6,770.50	6,761.66	6,755.20	23.15	12.88	170.55	-929.17	-15.96	1,418.84	1,384.69	34.15	41.547			
6,900.00	6,870.50	6,861.66	6,855.20	23.19	12.96	170.55	-929.17	-15.96	1,418.84	1,384.55	34.29	41.382			
7,000.00	6,970.50	6,961.66	6,955.20	23.24	13.03	170.55	-929.17	-15.96	1,418.84	1,384.42	34.42	41.219			
7,100.00	7,070.50	7,061.66	7,055.20	23.29	13.11	170.55	-929.17	-15.96	1,418.84	1,384.28	34.56	41.057			
7,200.00	7,170.50	7,161.66	7,155.20	23.34	13.18	170.55	-929.17	-15.96	1,418.84	1,384.14	34.69	40.896			
7,300.00	7,270.50	7,261.66	7,255.20	23.39	13.26	170.55	-929.17	-15.96	1,418.84	1,384.01	34.83	40.736			
7,400.00	7,370.50	7,361.66	7,355.20	23.44	13.34	170.55	-929.17	-15.96	1,418.84	1,383.87	34.97	40.577			
7,500.00	7,470.50	7,461.66	7,455.20	23.49	13.41	170.55	-929.17	-15.96	1,418.84	1,383.74	35.10	40.419			
7,600.00	7,570.50	7,561.66	7,555.20	23.54	13.49	170.55	-929.17	-15.96	1,418.84	1,383.60	35.24	40.262			
7,700.00	7,670.50	7,661.66	7,655.20	23.59	13.57	170.55	-929.17	-15.96	1,418.84	1,383.46	35.38	40.106			
7,800.00	7,770.50	7,761.66	7,755.20	23.65	13.64	170.55	-929.17	-15.96	1,418.84	1,383.33	35.51	39.952			
7,900.00	7,870.50	7,861.66	7,855.20	23.70	13.72	170.55	-929.17	-15.96	1,418.84	1,383.19	35.65	39.798			
8,000.00	7,970.40	7,961.56	7,955.10	23.66	13.80	80.26	-929.17	-15.96	1,418.33	1,382.62	35.72	39.712			
8,100.00	8,068.49	8,059.65	8,053.19	23.58	13.87	81.30	-929.17	-15.96	1,415.26	1,379.60	35.66	39.688			
8,200.00	8,161.84	8,153.00	8,146.54	23.48	13.94	83.14	-929.17	-15.96	1,410.12	1,374.60	35.52	39.700			
8,300.00	8,247.60	8,238.76	8,232.30	23.40	14.01	85.50	-929.17	-15.96	1,404.25	1,368.93	35.32	39.754			
8,400.00	8,323.17	8,314.32	8,307.87	23.38	14.07	87.99	-929.17	-15.96	1,399.45	1,364.34	35.11	39.855			
8,491.44	8,381.39	8,372.55	8,366.09	23.47	14.11	90.00	-929.17	-15.96	1,397.68	1,362.72	34.96	39.980			
8,500.00	8,386.25	8,377.40	8,370.95	23.47	14.12	90.16	-929.17	-15.96	1,397.70	1,362.76	34.94	40.000			
8,600.00	8,434.92	8,426.08	8,419.62	23.73	14.15	91.58	-929.17	-15.96	1,400.85	1,365.99	34.86	40.180			
8,700.00	8,467.72	8,458.87	8,452.42	24.20	14.18	91.89	-929.17	-15.96	1,410.35	1,375.43	34.92	40.392			
8,800.00	8,483.63	8,474.79	8,468.33	24.88	14.19	90.86	-929.17	-15.96	1,426.88	1,391.78	35.10	40.653			
8,900.00	8,486.62	8,477.77	8,471.32	25.76	14.19	90.36	-929.17	-15.96	1,450.30	1,414.91	35.39	40.981			
9,000.00	8,488.89	8,480.04	8,473.59	26.81	14.20	90.45	-929.17	-15.96	1,480.13	1,444.33	35.80	41.346			
9,100.00	8,491.15	8,482.31	8,475.85	28.01	14.20	90.55	-929.17	-15.96	1,515.97	1,479.68	36.29	41.769			
9,200.00	8,493.42	8,484.58	8,478.12	29.34	14.20	90.64	-929.17	-15.96	1,557.42	1,520.57	36.85	42.269			
9,300.00	8,495.69	8,486.85	8,480.39	30.79	14.20	90.73	-929.17	-15.96	1,604.03	1,566.61	37.43	42.856			
9,400.00	8,497.96	8,489.11	8,482.66	32.34	14.20	90.82	-929.17	-15.96	1,655.38	1,617.36	38.02	43.537			
9,500.00	8,500.23	8,491.38	8,484.93	33.98	14.20	90.92	-929.17	-15.96	1,711.03	1,672.42	38.61	44.313			
9,600.00	8,502.49	8,493.65	8,487.19	35.70	14.21	91.01	-929.17	-15.96	1,770.59	1,731.40	39.19	45.182			
9,700.00	8,504.76	8,495.92	8,489.46	37.49	14.21	91.10	-929.17	-15.96	1,833.66	1,793.92	39.74	46.142			
9,800.00	8,507.03	8,498.19	8,491.73	39.33	14.21	91.20	-929.17	-15.96	1,899.90	1,859.64	40.26	47.187			
9,900.00	8,509.30	8,500.45	8,494.00	41.23	14.21	91.29	-929.17	-15.96	1,968.99	1,928.23	40.76	48.310			
10,000.00	8,511.56	8,502.72	8,496.26	43.16	14.21	91.38	-929.17	-15.96	2,040.64	1,999.42	41.22	49.506			
10,100.00	8,513.83	11,323.85	10,032.57	45.13	37.92	137.69	-940.55	1,536.91	2,074.84	2,005.94	68.90	30.113			
10,200.00	8,516.10	11,423.85	10,034.84	47.14	40.07	137.69	-941.29	1,636.88	2,074.80	2,003.12	71.68	28.944			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-223H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:	0.50 usft		
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,300.00	8,518.37	11,523.85	10,037.11	49.17	42.24	137.69	-942.02	1,736.85	2,074.76	2,000.25	74.51	27.845		
10,400.00	8,520.64	11,623.85	10,039.38	51.23	44.42	137.70	-942.75	1,836.82	2,074.72	1,997.34	77.38	26.813		
10,500.00	8,522.90	11,723.85	10,041.65	53.31	46.61	137.70	-943.48	1,936.79	2,074.67	1,994.39	80.28	25.843		
10,600.00	8,525.17	11,823.85	10,043.92	55.40	48.82	137.70	-944.22	2,036.76	2,074.63	1,991.41	83.22	24.931		
10,700.00	8,527.44	11,923.85	10,046.20	57.52	51.03	137.70	-944.95	2,136.74	2,074.59	1,988.41	86.18	24.073		
10,800.00	8,529.71	12,023.85	10,048.47	59.65	53.25	137.70	-945.68	2,236.71	2,074.54	1,985.37	89.17	23.265		
10,900.00	8,531.98	12,123.85	10,050.74	61.79	55.49	137.70	-946.42	2,336.68	2,074.50	1,982.32	92.18	22.504		
11,000.00	8,534.24	12,223.85	10,053.01	63.94	57.72	137.70	-947.15	2,436.65	2,074.46	1,979.24	95.22	21.786		
11,100.00	8,536.51	12,323.85	10,055.28	66.11	59.96	137.71	-947.88	2,536.62	2,074.42	1,976.15	98.27	21.109		
11,200.00	8,538.78	12,423.85	10,057.56	68.29	62.21	137.71	-948.61	2,636.59	2,074.37	1,973.03	101.34	20.469		
11,300.00	8,541.05	12,523.85	10,059.83	70.47	64.46	137.71	-949.35	2,736.56	2,074.33	1,969.90	104.43	19.864		
11,400.00	8,543.32	12,623.85	10,062.10	72.66	66.72	137.71	-950.08	2,836.54	2,074.29	1,966.76	107.53	19.291		
11,500.00	8,545.58	12,723.85	10,064.37	74.86	68.98	137.71	-950.81	2,936.51	2,074.25	1,963.61	110.64	18.748		
11,600.00	8,547.85	12,823.85	10,066.64	77.07	71.24	137.71	-951.54	3,036.48	2,074.20	1,960.44	113.77	18.232		
11,700.00	8,550.12	12,923.85	10,068.92	79.28	73.51	137.71	-952.28	3,136.45	2,074.16	1,957.26	116.90	17.743		
11,800.00	8,552.39	13,023.85	10,071.19	81.50	75.78	137.72	-953.01	3,236.42	2,074.12	1,954.07	120.05	17.277		
11,900.00	8,554.66	13,123.85	10,073.46	83.72	78.05	137.72	-953.74	3,336.39	2,074.08	1,950.87	123.20	16.834		
12,000.00	8,556.92	13,223.85	10,075.73	85.95	80.32	137.72	-954.48	3,436.37	2,074.03	1,947.67	126.37	16.413		
12,100.00	8,559.19	13,323.85	10,078.00	88.18	82.60	137.72	-955.21	3,536.34	2,073.99	1,944.45	129.54	16.010		
12,200.00	8,561.46	13,423.85	10,080.28	90.42	84.87	137.72	-955.94	3,636.31	2,073.95	1,941.23	132.72	15.627		
12,300.00	8,563.73	13,523.85	10,082.55	92.66	87.15	137.72	-956.67	3,736.28	2,073.91	1,938.00	135.91	15.260		
12,400.00	8,565.99	13,623.85	10,084.82	94.90	89.43	137.72	-957.41	3,836.25	2,073.86	1,934.77	139.10	14.909		
12,500.00	8,568.26	13,723.85	10,087.09	97.15	91.72	137.73	-958.14	3,936.22	2,073.82	1,931.52	142.30	14.574		
12,600.00	8,570.53	13,823.85	10,089.36	99.40	94.00	137.73	-958.87	4,036.19	2,073.78	1,928.28	145.50	14.253		
12,700.00	8,572.80	13,923.85	10,091.64	101.65	96.29	137.73	-959.61	4,136.17	2,073.74	1,925.03	148.71	13.945		
12,800.00	8,575.07	14,023.85	10,093.91	103.91	98.57	137.73	-960.34	4,236.14	2,073.69	1,921.77	151.92	13.650		
12,900.00	8,577.33	14,123.85	10,096.18	106.17	100.86	137.73	-961.07	4,336.11	2,073.65	1,918.51	155.14	13.366		
13,000.00	8,579.60	14,223.85	10,098.45	108.43	103.15	137.73	-961.80	4,436.08	2,073.61	1,915.24	158.36	13.094		
13,100.00	8,581.87	14,323.85	10,100.72	110.69	105.44	137.74	-962.54	4,536.05	2,073.56	1,911.97	161.59	12.832		
13,200.00	8,584.14	14,423.85	10,102.99	112.95	107.73	137.74	-963.27	4,636.02	2,073.52	1,908.70	164.82	12.581		
13,300.00	8,586.41	14,523.85	10,105.27	115.22	110.02	137.74	-964.00	4,735.99	2,073.48	1,905.43	168.05	12.338		
13,400.00	8,588.67	14,623.85	10,107.54	117.49	112.31	137.74	-964.73	4,835.97	2,073.44	1,902.15	171.29	12.105		
13,500.00	8,590.94	14,723.85	10,109.81	119.76	114.60	137.74	-965.47	4,935.94	2,073.39	1,898.86	174.53	11.880		
13,600.00	8,593.21	14,823.85	10,112.08	122.03	116.90	137.74	-966.20	5,035.91	2,073.35	1,895.58	177.77	11.663		
13,700.00	8,595.48	14,923.85	10,114.35	124.30	119.19	137.74	-966.93	5,135.88	2,073.31	1,892.29	181.02	11.454		
13,800.00	8,597.75	15,023.85	10,116.63	126.57	121.49	137.75	-967.67	5,235.85	2,073.27	1,889.00	184.27	11.251		
13,900.00	8,600.01	15,123.85	10,118.90	128.85	123.78	137.75	-968.40	5,335.82	2,073.22	1,885.71	187.52	11.056		
14,000.00	8,602.28	15,223.85	10,121.17	131.13	126.08	137.75	-969.13	5,435.79	2,073.18	1,882.41	190.77	10.867		
14,100.00	8,604.55	15,323.85	10,123.44	133.40	128.38	137.75	-969.86	5,535.77	2,073.14	1,879.11	194.02	10.685		
14,200.00	8,606.82	15,423.85	10,125.71	135.68	130.67	137.75	-970.60	5,635.74	2,073.10	1,875.81	197.28	10.508		
14,300.00	8,609.09	15,523.85	10,127.99	137.96	132.97	137.75	-971.33	5,735.71	2,073.05	1,872.51	200.54	10.337		
14,400.00	8,611.35	15,623.85	10,130.26	140.24	135.27	137.75	-972.06	5,835.68	2,073.01	1,869.21	203.80	10.172		
14,500.00	8,613.62	15,723.85	10,132.53	142.53	137.57	137.76	-972.80	5,935.65	2,072.97	1,865.90	207.06	10.011		
14,600.00	8,615.89	15,823.85	10,134.80	144.81	139.87	137.76	-973.53	6,035.62	2,072.93	1,862.60	210.33	9.856		
14,700.00	8,618.16	15,923.85	10,137.07	147.09	142.17	137.76	-974.26	6,135.60	2,072.88	1,859.29	213.59	9.705		
14,800.00	8,620.42	16,023.85	10,139.35	149.38	144.47	137.76	-974.99	6,235.57	2,072.84	1,855.98	216.86	9.558		
14,900.00	8,622.69	16,123.85	10,141.62	151.66	146.77	137.76	-975.73	6,335.54	2,072.80	1,852.67	220.13	9.416		
15,000.00	8,624.96	16,223.85	10,143.89	153.95	149.07	137.76	-976.46	6,435.51	2,072.76	1,849.36	223.40	9.278		
15,100.00	8,627.23	16,323.85	10,146.16	156.24	151.37	137.76	-977.19	6,535.48	2,072.71	1,846.04	226.67	9.144		
15,200.00	8,629.50	16,423.85	10,148.43	158.53	153.67	137.77	-977.93	6,635.45	2,072.67	1,842.73	229.94	9.014		
15,300.00	8,631.76	16,523.85	10,150.70	160.81	155.97	137.77	-978.66	6,735.42	2,072.63	1,839.41	233.22	8.887		
15,400.00	8,634.03	16,623.85	10,152.98	163.10	158.27	137.77	-979.39	6,835.40	2,072.59	1,836.09	236.49	8.764		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0604-223H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				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)			Minimum Separation (usft)	
15,500.00	8,636.30	16,723.85	10,155.25	165.39	160.57	137.77	-980.12	6,935.37	2,072.54	1,832.77	239.77	8.644		
15,600.00	8,638.57	16,823.85	10,157.52	167.68	162.88	137.77	-980.86	7,035.34	2,072.50	1,829.45	243.05	8.527		
15,700.00	8,640.84	16,923.85	10,159.79	169.97	165.18	137.77	-981.59	7,135.31	2,072.46	1,826.13	246.32	8.414		
15,800.00	8,643.10	17,023.85	10,162.06	172.27	167.48	137.77	-982.32	7,235.28	2,072.41	1,822.81	249.60	8.303		
15,900.00	8,645.37	17,123.85	10,164.34	174.56	169.78	137.78	-983.05	7,335.25	2,072.37	1,819.49	252.88	8.195		
16,000.00	8,647.64	17,223.85	10,166.61	176.85	172.09	137.78	-983.79	7,435.22	2,072.33	1,816.17	256.16	8.090		
16,100.00	8,649.91	17,323.85	10,168.88	179.14	174.39	137.78	-984.52	7,535.20	2,072.29	1,812.84	259.45	7.987		
16,200.00	8,652.18	17,423.85	10,171.15	181.44	176.69	137.78	-985.25	7,635.17	2,072.24	1,809.52	262.73	7.887		
16,300.00	8,654.44	17,523.85	10,173.42	183.73	179.00	137.78	-985.99	7,735.14	2,072.20	1,806.19	266.01	7.790		
16,400.00	8,656.71	17,623.85	10,175.70	186.03	181.30	137.78	-986.72	7,835.11	2,072.16	1,802.86	269.29	7.695		
16,500.00	8,658.98	17,723.85	10,177.97	188.32	183.61	137.78	-987.45	7,935.08	2,072.12	1,799.54	272.58	7.602		
16,600.00	8,661.25	17,823.85	10,180.24	190.62	185.91	137.79	-988.18	8,035.05	2,072.07	1,796.21	275.86	7.511		
16,700.00	8,663.52	17,923.85	10,182.51	192.91	188.21	137.79	-988.92	8,135.02	2,072.03	1,792.88	279.15	7.423		
16,800.00	8,665.78	18,023.85	10,184.78	195.21	190.52	137.79	-989.65	8,235.00	2,071.99	1,789.55	282.44	7.336		
16,900.00	8,668.05	18,123.85	10,187.06	197.50	192.82	137.79	-990.38	8,334.97	2,071.95	1,786.22	285.72	7.252		
17,000.00	8,670.32	18,223.85	10,189.33	199.80	195.13	137.79	-991.12	8,434.94	2,071.90	1,782.89	289.01	7.169		
17,100.00	8,672.59	18,323.85	10,191.60	202.10	197.43	137.79	-991.85	8,534.91	2,071.86	1,779.56	292.30	7.088		
17,200.00	8,674.85	18,423.85	10,193.87	204.40	199.74	137.79	-992.58	8,634.88	2,071.82	1,776.23	295.59	7.009		
17,300.00	8,677.12	18,523.85	10,196.14	206.69	202.04	137.80	-993.31	8,734.85	2,071.78	1,772.90	298.88	6.932		
17,400.00	8,679.39	18,623.85	10,198.42	208.99	204.35	137.80	-994.05	8,834.83	2,071.73	1,769.57	302.17	6.856		
17,500.00	8,681.66	18,723.85	10,200.69	211.29	206.66	137.80	-994.78	8,934.80	2,071.69	1,766.24	305.46	6.782		
17,600.00	8,683.93	18,823.85	10,202.96	213.59	208.96	137.80	-995.51	9,034.77	2,071.65	1,762.90	308.75	6.710		
17,700.00	8,686.19	18,923.85	10,205.23	215.89	211.27	137.80	-996.25	9,134.74	2,071.61	1,759.57	312.04	6.639		
17,800.00	8,688.46	19,023.85	10,207.50	218.19	213.57	137.80	-996.98	9,234.71	2,071.56	1,756.24	315.33	6.570		
17,900.00	8,690.73	19,123.85	10,209.77	220.49	215.88	137.81	-997.71	9,334.68	2,071.52	1,752.90	318.62	6.502		
18,000.00	8,693.00	19,223.85	10,212.05	222.79	218.19	137.81	-998.44	9,434.65	2,071.48	1,749.57	321.91	6.435		
18,100.00	8,695.27	19,323.85	10,214.32	225.08	220.49	137.81	-999.18	9,534.63	2,071.44	1,746.23	325.20	6.370		
18,200.00	8,697.53	19,423.85	10,216.59	227.39	222.80	137.81	-999.91	9,634.60	2,071.39	1,742.90	328.50	6.306		
18,300.00	8,699.80	19,523.85	10,218.86	229.69	225.11	137.81	-1,000.64	9,734.57	2,071.35	1,739.56	331.79	6.243		
18,400.00	8,702.07	19,623.85	10,221.13	231.99	227.41	137.81	-1,001.37	9,834.54	2,071.31	1,736.23	335.08	6.182		
18,500.00	8,704.34	19,723.85	10,223.41	234.29	229.72	137.81	-1,002.11	9,934.51	2,071.27	1,732.89	338.37	6.121		
18,600.00	8,706.61	19,823.85	10,225.68	236.59	232.03	137.82	-1,002.84	10,034.48	2,071.22	1,729.56	341.67	6.062		
18,700.00	8,708.87	19,923.85	10,227.95	238.89	234.33	137.82	-1,003.57	10,134.45	2,071.18	1,726.22	344.96	6.004		
18,800.00	8,711.14	20,023.85	10,230.22	241.19	236.64	137.82	-1,004.31	10,234.43	2,071.14	1,722.88	348.26	5.947		
18,900.00	8,713.41	20,123.85	10,232.49	243.49	238.95	137.82	-1,005.04	10,334.40	2,071.10	1,719.55	351.55	5.891		
19,000.00	8,715.68	20,223.85	10,234.77	245.79	241.25	137.82	-1,005.77	10,434.37	2,071.05	1,716.21	354.85	5.837		
19,100.00	8,717.95	20,323.85	10,237.04	247.40	243.56	137.82	-1,006.50	10,534.34	2,071.01	1,713.42	357.59	5.792		
19,102.43	8,718.00	20,326.28	10,237.09	247.44	243.62	137.82	-1,006.52	10,536.77	2,071.01	1,713.35	357.66	5.790 SF		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		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	1.50	1.50	0.50	0.50	0.13	59.96	0.14	59.96				
100.00	100.00	101.50	101.50	0.65	0.66	0.13	59.96	0.14	59.96	58.65	1.31	45.832	
200.00	200.00	201.50	201.50	1.34	1.35	0.13	59.96	0.14	59.96	57.27	2.69	22.281	
300.00	300.00	301.50	301.50	1.81	1.82	0.13	59.96	0.14	59.96	56.33	3.63	16.518	
400.00	400.00	401.50	401.50	2.19	2.19	0.13	59.96	0.14	59.96	55.58	4.38	13.697	
500.00	500.00	501.50	501.50	2.51	2.51	0.13	59.96	0.14	59.96	54.94	5.02	11.944	
600.00	600.00	601.50	601.50	2.80	2.80	0.13	59.96	0.14	59.96	54.37	5.59	10.718	
700.00	700.00	701.50	701.50	3.06	3.06	0.13	59.96	0.14	59.96	53.84	6.12	9.799	
800.00	800.00	801.50	801.50	3.30	3.30	0.13	59.96	0.14	59.96	53.35	6.61	9.077	
900.00	900.00	901.50	901.50	3.53	3.53	0.13	59.96	0.14	59.96	52.90	7.06	8.489	
916.16	916.16	917.66	917.66	3.56	3.57	0.13	59.96	0.14	59.96	52.83	7.13	8.406 CC	
1,000.00	1,000.00	1,001.47	1,001.47	3.75	3.75	0.13	59.96	0.14	59.96	52.46	7.50	7.996 ES	
1,100.00	1,100.00	1,100.00	1,099.98	3.95	4.17	0.82	61.54	0.88	61.57	53.47	8.09	7.607	
1,200.00	1,200.00	1,197.40	1,197.24	4.15	4.39	2.38	66.15	2.75	66.34	57.85	8.49	7.813	
1,300.00	1,300.00	1,294.79	1,294.31	4.34	4.81	3.17	73.92	4.10	74.39	65.29	9.10	8.179	
1,400.00	1,400.00	1,391.57	1,390.48	4.52	5.42	3.12	84.82	4.62	85.66	75.77	9.89	8.662	
1,500.00	1,500.00	1,487.55	1,485.43	4.70	6.03	2.52	98.72	4.34	100.12	89.45	10.66	9.388	
1,600.00	1,599.98	1,582.79	1,579.16	5.05	6.62	29.76	115.56	3.28	116.25	104.71	11.54	10.071	
1,700.00	1,699.84	1,677.50	1,671.78	5.69	7.19	29.58	135.29	1.44	132.54	119.93	12.61	10.510	
1,800.00	1,799.45	1,771.71	1,763.20	6.30	7.74	29.70	157.84	-1.15	148.96	135.33	13.63	10.932	
1,900.00	1,898.82	1,866.73	1,854.66	6.46	8.09	30.01	183.39	-4.50	166.21	152.13	14.09	11.801	
2,000.00	1,998.18	1,965.10	1,949.12	6.67	8.39	30.25	210.60	-8.17	184.17	169.58	14.59	12.624	
2,100.00	2,097.54	2,063.47	2,043.59	6.90	8.70	30.44	237.81	-11.84	202.12	186.98	15.14	13.348	
2,200.00	2,196.90	2,161.85	2,138.05	7.15	9.04	30.60	265.02	-15.51	220.08	204.35	15.73	13.993	
2,300.00	2,296.25	2,260.22	2,232.51	7.42	9.39	30.74	292.23	-19.18	238.04	221.70	16.34	14.569	
2,400.00	2,395.61	2,358.59	2,326.98	7.69	9.75	30.86	319.44	-22.85	256.00	239.03	16.97	15.082	
2,500.00	2,494.97	2,456.96	2,421.44	7.98	10.13	30.97	346.65	-26.52	273.96	256.33	17.63	15.541	
2,600.00	2,594.33	2,555.34	2,515.90	8.28	10.51	31.06	373.86	-30.19	291.92	273.62	18.30	15.952	
2,700.00	2,693.69	2,653.71	2,610.37	8.59	10.90	31.14	401.07	-33.86	309.89	290.90	18.99	16.319	
2,800.00	2,793.05	2,752.08	2,704.83	8.91	11.31	31.21	428.28	-37.53	327.85	308.16	19.69	16.649	
2,900.00	2,892.40	2,850.45	2,799.29	9.24	11.72	31.27	455.49	-41.20	345.81	325.41	20.41	16.945	
3,000.00	2,991.76	2,948.83	2,893.75	9.57	12.13	31.33	482.70	-44.87	363.78	342.64	21.14	17.211	
3,100.00	3,091.12	3,047.20	2,988.22	9.91	12.55	31.38	509.91	-48.54	381.74	359.87	21.87	17.452	
3,200.00	3,190.48	3,145.57	3,082.68	10.25	12.98	31.43	537.12	-52.21	399.71	377.09	22.62	17.669	
3,300.00	3,289.84	3,243.95	3,177.14	10.60	13.41	31.47	564.33	-55.88	417.67	394.30	23.38	17.866	
3,400.00	3,389.20	3,342.32	3,271.61	10.95	13.85	31.51	591.54	-59.55	435.64	411.50	24.14	18.045	
3,500.00	3,488.55	3,440.69	3,366.07	11.31	14.29	31.55	618.75	-63.22	453.60	428.69	24.91	18.208	
3,600.00	3,587.91	3,539.06	3,460.53	11.67	14.73	31.58	645.96	-66.89	471.57	445.88	25.69	18.357	
3,700.00	3,687.27	3,637.44	3,555.00	12.03	15.18	31.61	673.17	-70.56	489.54	463.06	26.47	18.493	
3,800.00	3,786.63	3,735.81	3,649.46	12.40	15.63	31.64	700.38	-74.23	507.50	480.24	27.26	18.617	
3,900.00	3,885.99	3,834.18	3,743.92	12.77	16.08	31.67	727.59	-77.90	525.47	497.42	28.05	18.732	
4,000.00	3,985.35	3,932.55	3,838.39	13.14	16.53	31.70	754.80	-81.57	543.43	514.58	28.85	18.837	
4,100.00	4,084.70	4,030.93	3,932.85	13.52	16.99	31.72	782.01	-85.24	561.40	531.75	29.65	18.933	
4,200.00	4,184.06	4,129.30	4,027.31	13.90	17.45	31.74	809.22	-88.91	579.37	548.91	30.46	19.023	
4,300.00	4,283.42	4,227.67	4,121.78	14.27	17.91	31.76	836.43	-92.58	597.33	566.07	31.27	19.105	
4,400.00	4,382.78	4,326.04	4,216.24	14.65	18.38	31.78	863.64	-96.25	615.30	583.22	32.08	19.182	
4,500.00	4,482.14	4,424.42	4,310.70	15.04	18.84	31.80	890.85	-99.92	633.27	600.37	32.89	19.253	
4,600.00	4,581.49	4,522.79	4,405.17	15.42	19.31	31.82	918.06	-103.59	651.23	617.52	33.71	19.319	
4,700.00	4,680.85	4,621.16	4,499.63	15.81	19.78	31.83	945.27	-107.26	669.20	634.67	34.53	19.380	
4,800.00	4,780.21	4,719.53	4,594.09	16.19	20.25	31.85	972.48	-110.93	687.17	651.81	35.35	19.437	
4,900.00	4,879.57	4,817.91	4,688.56	16.58	20.72	31.87	999.69	-114.61	705.13	668.96	36.18	19.491	
5,000.00	4,978.93	4,916.28	4,783.02	16.97	21.19	31.88	1,026.90	-118.28	723.10	686.10	37.00	19.541	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.00	5,078.29	5,014.65	4,877.48	17.36	21.67	31.89	1,054.11	-121.95	741.07	703.23	37.83	19.588			
5,200.00	5,177.64	5,113.02	4,971.95	17.75	22.14	31.91	1,081.32	-125.62	759.04	720.37	38.66	19.631			
5,300.00	5,277.00	5,211.40	5,066.41	18.15	22.62	31.92	1,108.53	-129.29	777.00	737.51	39.50	19.673			
5,400.00	5,376.36	5,309.77	5,160.87	18.54	23.09	31.93	1,135.74	-132.96	794.97	754.64	40.33	19.712			
5,500.00	5,475.72	5,430.09	5,276.70	18.93	23.67	31.96	1,167.98	-137.30	812.16	770.82	41.34	19.646			
5,600.00	5,575.08	5,567.69	5,410.63	19.33	24.42	32.08	1,199.23	-141.52	825.15	782.65	42.49	19.419			
5,700.00	5,674.44	5,706.64	5,547.25	19.73	25.18	32.29	1,224.28	-144.90	833.44	789.89	43.55	19.136			
5,800.00	5,773.79	5,846.30	5,685.63	20.12	25.89	32.60	1,242.81	-147.40	837.01	792.55	44.46	18.827			
5,900.00	5,873.15	5,986.00	5,824.82	20.52	26.54	33.01	1,254.65	-148.99	835.83	790.63	45.20	18.491			
6,000.00	5,972.51	6,125.10	5,963.80	20.92	27.05	33.52	1,259.73	-149.68	829.94	784.24	45.70	18.162			
6,100.00	6,071.87	6,234.66	6,073.37	21.32	27.14	34.00	1,259.96	-149.71	820.68	774.71	45.97	17.853			
6,200.00	6,171.23	6,334.02	6,172.73	21.72	27.18	34.45	1,259.96	-149.71	811.31	765.03	46.28	17.531			
6,300.00	6,270.75	6,433.54	6,272.25	22.13	27.22	34.75	1,259.96	-149.71	803.28	756.68	46.60	17.236			
6,400.00	6,370.54	6,533.34	6,372.04	22.59	27.26	34.95	1,259.96	-149.71	798.14	751.17	46.97	16.991			
6,500.00	6,470.50	6,633.30	6,472.00	22.98	27.30	35.04	1,259.96	-149.71	795.87	748.55	47.32	16.820			
6,587.78	6,558.28	6,721.08	6,559.78	23.04	27.34	35.06	1,259.96	-149.71	795.45	748.05	47.41	16.779			
6,600.00	6,570.50	6,733.30	6,572.00	23.05	27.35	7.16	1,259.96	-149.71	795.74	748.32	47.42	16.780			
6,700.00	6,670.50	6,833.30	6,672.00	23.10	27.39	7.16	1,259.96	-149.71	795.74	748.22	47.52	16.746			
6,800.00	6,770.50	6,933.30	6,772.00	23.15	27.43	7.16	1,259.96	-149.71	795.74	748.12	47.62	16.711			
6,900.00	6,870.50	7,033.30	6,872.00	23.19	27.47	7.16	1,259.96	-149.71	795.74	748.03	47.72	16.676			
7,000.00	6,970.50	7,133.30	6,972.00	23.24	27.51	7.16	1,259.96	-149.71	795.74	747.93	47.81	16.643			
7,100.00	7,070.50	7,211.24	7,049.84	23.29	27.53	7.36	1,260.32	-146.87	796.77	748.71	48.07	16.577			
7,200.00	7,170.50	7,279.44	7,116.87	23.34	27.55	8.21	1,261.88	-134.71	801.55	753.30	48.25	16.612			
7,300.00	7,270.50	7,342.99	7,177.17	23.39	27.58	9.57	1,264.41	-114.96	810.77	762.47	48.30	16.785			
7,400.00	7,370.50	7,400.00	7,228.59	23.44	27.61	11.23	1,267.53	-90.63	825.22	776.99	48.23	17.110			
7,500.00	7,470.50	7,450.00	7,271.01	23.49	27.64	12.98	1,270.89	-64.42	845.68	797.65	48.03	17.609			
7,600.00	7,570.50	7,500.00	7,310.43	23.54	27.69	14.96	1,274.79	-33.95	872.71	825.06	47.65	18.314			
7,700.00	7,670.50	7,533.32	7,334.83	23.59	27.73	16.39	1,277.67	-11.45	906.49	859.29	47.19	19.207			
7,800.00	7,770.50	7,566.23	7,357.31	23.65	27.78	17.87	1,280.72	12.38	947.01	900.40	46.61	20.318			
7,900.00	7,870.50	7,600.00	7,378.60	23.70	27.85	19.45	1,284.05	38.37	993.96	948.01	45.95	21.631			
8,000.00	7,970.40	7,625.00	7,393.15	23.66	27.90	-66.55	1,286.64	58.54	1,045.90	1,000.60	45.30	23.089			
8,100.00	8,068.49	7,650.00	7,406.61	23.58	27.96	-60.25	1,289.31	79.44	1,097.70	1,052.79	44.92	24.438			
8,200.00	8,161.84	7,675.00	7,418.94	23.48	28.04	-54.79	1,292.08	101.00	1,147.01	1,102.23	44.78	25.614			
8,300.00	8,247.60	7,700.00	7,430.13	23.40	28.12	-50.27	1,294.92	123.17	1,192.24	1,147.35	44.89	26.558			
8,400.00	8,323.17	7,735.65	7,444.01	23.38	28.26	-46.55	1,299.09	155.73	1,232.01	1,186.70	45.31	27.192			
8,500.00	8,386.25	7,766.57	7,454.05	23.47	28.40	-43.81	1,302.80	184.74	1,265.42	1,219.46	45.96	27.531			
8,600.00	8,434.92	7,800.00	7,462.75	23.73	28.56	-41.86	1,306.90	216.75	1,291.70	1,244.81	46.89	27.548			
8,700.00	8,467.72	7,825.00	7,467.76	24.20	28.70	-40.62	1,310.02	241.04	1,310.32	1,262.31	48.01	27.292			
8,800.00	8,483.63	7,861.06	7,472.72	24.88	28.93	-40.06	1,314.55	276.46	1,320.90	1,271.47	49.42	26.725			
8,900.00	8,486.62	7,898.12	7,475.00	25.76	29.18	-40.16	1,319.25	313.14	1,326.77	1,275.93	50.84	26.099			
9,000.00	8,488.89	8,016.23	7,477.69	26.81	30.20	-40.61	1,331.84	430.54	1,334.32	1,281.46	52.85	25.245			
9,100.00	8,491.15	8,159.74	7,480.95	28.01	31.79	-40.93	1,340.60	573.72	1,338.82	1,283.67	55.16	24.273			
9,200.00	8,493.42	8,298.36	7,484.11	29.34	33.51	-41.02	1,342.27	712.29	1,340.08	1,282.64	57.44	23.330			
9,300.00	8,495.69	8,398.36	7,486.39	30.79	34.83	-41.02	1,341.47	812.26	1,340.08	1,280.49	59.59	22.488			
9,400.00	8,497.96	8,498.36	7,488.66	32.34	36.24	-41.02	1,340.68	912.23	1,340.08	1,278.24	61.84	21.670			
9,500.00	8,500.23	8,598.36	7,490.94	33.98	37.74	-41.02	1,339.88	1,012.20	1,340.07	1,275.89	64.18	20.881			
9,600.00	8,502.49	8,698.36	7,493.21	35.70	39.31	-41.02	1,339.08	1,112.17	1,340.07	1,273.47	66.59	20.123			
9,700.00	8,504.76	8,798.36	7,495.49	37.49	40.95	-41.02	1,338.28	1,212.14	1,340.06	1,270.99	69.08	19.399			
9,800.00	8,507.03	8,898.36	7,497.76	39.33	42.64	-41.02	1,337.49	1,312.11	1,340.06	1,268.43	71.63	18.709			
9,900.00	8,509.30	8,998.36	7,500.04	41.23	44.39	-41.02	1,336.69	1,412.08	1,340.06	1,265.83	74.23	18.052			
10,000.00	8,511.56	9,098.36	7,502.31	43.16	46.18	-41.02	1,335.89	1,512.05	1,340.05	1,263.17	76.89	17.429			
10,100.00	8,513.83	9,198.36	7,504.59	45.13	48.02	-41.02	1,335.10	1,612.02	1,340.05	1,260.46	79.59	16.838			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		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	
10,200.00	8,516.10	9,298.36	7,506.87	47.14	49.89	-41.02	1,334.30	1,711.99	1,340.05	1,257.72	82.33	16.277	
10,300.00	8,518.37	9,398.36	7,509.14	49.17	51.80	-41.02	1,333.50	1,811.97	1,340.04	1,254.94	85.10	15.746	
10,400.00	8,520.64	9,498.36	7,511.42	51.23	53.74	-41.02	1,332.70	1,911.94	1,340.04	1,252.12	87.91	15.242	
10,500.00	8,522.90	9,598.36	7,513.69	53.31	55.70	-41.02	1,331.91	2,011.91	1,340.04	1,249.28	90.76	14.765	
10,600.00	8,525.17	9,698.36	7,515.97	55.40	57.69	-41.02	1,331.11	2,111.88	1,340.03	1,246.41	93.62	14.313	
10,700.00	8,527.44	9,798.36	7,518.24	57.52	59.70	-41.02	1,330.31	2,211.85	1,340.03	1,243.51	96.52	13.884	
10,800.00	8,529.71	9,898.36	7,520.52	59.65	61.74	-41.02	1,329.51	2,311.82	1,340.02	1,240.59	99.44	13.476	
10,900.00	8,531.98	9,998.36	7,522.80	61.79	63.79	-41.03	1,328.72	2,411.79	1,340.02	1,237.65	102.37	13.090	
11,000.00	8,534.24	10,098.36	7,525.07	63.94	65.85	-41.03	1,327.92	2,511.76	1,340.02	1,234.69	105.33	12.722	
11,100.00	8,536.51	10,198.36	7,527.35	66.11	67.94	-41.03	1,327.12	2,611.73	1,340.01	1,231.71	108.30	12.373	
11,200.00	8,538.78	10,298.36	7,529.62	68.29	70.03	-41.03	1,326.33	2,711.70	1,340.01	1,228.71	111.30	12.040	
11,300.00	8,541.05	10,398.36	7,531.90	70.47	72.14	-41.03	1,325.53	2,811.67	1,340.01	1,225.71	114.30	11.723	
11,400.00	8,543.32	10,498.36	7,534.17	72.66	74.27	-41.03	1,324.73	2,911.65	1,340.00	1,222.68	117.32	11.422	
11,500.00	8,545.58	10,598.36	7,536.45	74.86	76.40	-41.03	1,323.93	3,011.62	1,340.00	1,219.65	120.35	11.134	
11,600.00	8,547.85	10,698.36	7,538.72	77.07	78.54	-41.03	1,323.14	3,111.59	1,340.00	1,216.60	123.40	10.859	
11,700.00	8,550.12	10,798.36	7,541.00	79.28	80.69	-41.03	1,322.34	3,211.56	1,339.99	1,213.54	126.45	10.597	
11,800.00	8,552.39	10,898.36	7,543.28	81.50	82.85	-41.03	1,321.54	3,311.53	1,339.99	1,210.47	129.52	10.346	
11,900.00	8,554.66	10,998.36	7,545.55	83.72	85.02	-41.03	1,320.74	3,411.50	1,339.98	1,207.39	132.59	10.106	
12,000.00	8,556.92	11,098.36	7,547.83	85.95	87.19	-41.03	1,319.95	3,511.47	1,339.98	1,204.30	135.68	9.876	
12,100.00	8,559.19	11,198.36	7,550.10	88.18	89.38	-41.03	1,319.15	3,611.44	1,339.98	1,201.21	138.77	9.656	
12,200.00	8,561.46	11,298.36	7,552.38	90.42	91.56	-41.03	1,318.35	3,711.41	1,339.97	1,198.10	141.87	9.445	
12,300.00	8,563.73	11,398.36	7,554.65	92.66	93.76	-41.03	1,317.56	3,811.38	1,339.97	1,194.99	144.98	9.243	
12,400.00	8,565.99	11,498.36	7,556.93	94.90	95.96	-41.03	1,316.76	3,911.36	1,339.97	1,191.88	148.09	9.048	
12,500.00	8,568.26	11,598.36	7,559.21	97.15	98.16	-41.03	1,315.96	4,011.33	1,339.96	1,188.75	151.21	8.862	
12,600.00	8,570.53	11,698.36	7,561.48	99.40	100.37	-41.03	1,315.16	4,111.30	1,339.96	1,185.62	154.34	8.682	
12,700.00	8,572.80	11,798.36	7,563.76	101.65	102.58	-41.03	1,314.37	4,211.27	1,339.95	1,182.49	157.47	8.509	
12,800.00	8,575.07	11,898.36	7,566.03	103.91	104.80	-41.03	1,313.57	4,311.24	1,339.95	1,179.35	160.61	8.343	
12,900.00	8,577.33	11,998.36	7,568.31	106.17	107.02	-41.03	1,312.77	4,411.21	1,339.95	1,176.20	163.75	8.183	
13,000.00	8,579.60	12,098.36	7,570.58	108.43	109.25	-41.03	1,311.97	4,511.18	1,339.94	1,173.05	166.89	8.029	
13,100.00	8,581.87	12,198.36	7,572.86	110.69	111.48	-41.03	1,311.18	4,611.15	1,339.94	1,169.89	170.05	7.880	
13,200.00	8,584.14	12,298.36	7,575.13	112.95	113.71	-41.03	1,310.38	4,711.12	1,339.94	1,166.74	173.20	7.736	
13,300.00	8,586.41	12,398.36	7,577.41	115.22	115.94	-41.03	1,309.58	4,811.09	1,339.93	1,163.57	176.36	7.598	
13,400.00	8,588.67	12,498.36	7,579.69	117.49	118.18	-41.03	1,308.79	4,911.06	1,339.93	1,160.40	179.52	7.464	
13,500.00	8,590.94	12,598.36	7,581.96	119.76	120.42	-41.03	1,307.99	5,011.04	1,339.93	1,157.23	182.69	7.334	
13,600.00	8,593.21	12,698.36	7,584.24	122.03	122.67	-41.03	1,307.19	5,111.01	1,339.92	1,154.06	185.86	7.209	
13,700.00	8,595.48	12,798.36	7,586.51	124.30	124.91	-41.03	1,306.39	5,210.98	1,339.92	1,150.88	189.04	7.088	
13,800.00	8,597.75	12,898.36	7,588.79	126.57	127.16	-41.03	1,305.60	5,310.95	1,339.91	1,147.70	192.21	6.971	
13,900.00	8,600.01	12,998.36	7,591.06	128.85	129.41	-41.03	1,304.80	5,410.92	1,339.91	1,144.52	195.39	6.858	
14,000.00	8,602.28	13,098.36	7,593.34	131.13	131.66	-41.04	1,304.00	5,510.89	1,339.91	1,141.33	198.58	6.748	
14,100.00	8,604.55	13,198.36	7,595.62	133.40	133.92	-41.04	1,303.20	5,610.86	1,339.90	1,138.14	201.76	6.641	
14,200.00	8,606.82	13,298.36	7,597.89	135.68	136.17	-41.04	1,302.41	5,710.83	1,339.90	1,134.95	204.95	6.538	
14,300.00	8,609.09	13,398.36	7,600.17	137.96	138.43	-41.04	1,301.61	5,810.80	1,339.90	1,131.76	208.14	6.438	
14,400.00	8,611.35	13,498.36	7,602.44	140.24	140.69	-41.04	1,300.81	5,910.77	1,339.89	1,128.56	211.33	6.340	
14,500.00	8,613.62	13,598.36	7,604.72	142.53	142.95	-41.04	1,300.02	6,010.74	1,339.89	1,125.36	214.53	6.246	
14,600.00	8,615.89	13,698.36	7,606.99	144.81	145.22	-41.04	1,299.22	6,110.72	1,339.89	1,122.16	217.72	6.154	
14,700.00	8,618.16	13,798.36	7,609.27	147.09	147.48	-41.04	1,298.42	6,210.69	1,339.88	1,118.96	220.92	6.065	
14,800.00	8,620.42	13,898.36	7,611.54	149.38	149.75	-41.04	1,297.62	6,310.66	1,339.88	1,115.75	224.12	5.978	
14,900.00	8,622.69	13,998.36	7,613.82	151.66	152.02	-41.04	1,296.83	6,410.63	1,339.87	1,112.55	227.33	5.894	
15,000.00	8,624.96	14,098.36	7,616.10	153.95	154.28	-41.04	1,296.03	6,510.60	1,339.87	1,109.34	230.53	5.812	
15,100.00	8,627.23	14,198.36	7,618.37	156.24	156.55	-41.04	1,295.23	6,610.57	1,339.87	1,106.13	233.74	5.732	
15,200.00	8,629.50	14,298.36	7,620.65	158.53	158.83	-41.04	1,294.43	6,710.54	1,339.86	1,102.92	236.95	5.655	
15,300.00	8,631.76	14,398.36	7,622.92	160.81	161.10	-41.04	1,293.64	6,810.51	1,339.86	1,099.71	240.15	5.579	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		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)			
15,400.00	8,634.03	14,498.36	7,625.20	163.10	163.37	-41.04	1,292.84	6,910.48	1,339.86	1,096.49	243.37	5.506	
15,500.00	8,636.30	14,598.36	7,627.47	165.39	165.64	-41.04	1,292.04	7,010.45	1,339.85	1,093.27	246.58	5.434	
15,600.00	8,638.57	14,698.36	7,629.75	167.68	167.92	-41.04	1,291.25	7,110.42	1,339.85	1,090.06	249.79	5.364	
15,700.00	8,640.84	14,798.36	7,632.02	169.97	170.20	-41.04	1,290.45	7,210.40	1,339.85	1,086.84	253.01	5.296	
15,800.00	8,643.10	14,898.36	7,634.30	172.27	172.47	-41.04	1,289.65	7,310.37	1,339.84	1,083.62	256.22	5.229	
15,900.00	8,645.37	14,998.36	7,636.58	174.56	174.75	-41.04	1,288.85	7,410.34	1,339.84	1,080.40	259.44	5.164	
16,000.00	8,647.64	15,098.36	7,638.85	176.85	177.03	-41.04	1,288.06	7,510.31	1,339.83	1,077.17	262.66	5.101	
16,100.00	8,649.91	15,198.36	7,641.13	179.14	179.31	-41.04	1,287.26	7,610.28	1,339.83	1,073.95	265.88	5.039	
16,200.00	8,652.18	15,298.36	7,643.40	181.44	181.59	-41.04	1,286.46	7,710.25	1,339.83	1,070.72	269.10	4.979	
16,300.00	8,654.44	15,398.36	7,645.68	183.73	183.87	-41.04	1,285.66	7,810.22	1,339.82	1,067.50	272.33	4.920	
16,400.00	8,656.71	15,498.36	7,647.95	186.03	186.16	-41.04	1,284.87	7,910.19	1,339.82	1,064.27	275.55	4.862	
16,500.00	8,658.98	15,598.36	7,650.23	188.32	188.44	-41.04	1,284.07	8,010.16	1,339.82	1,061.04	278.77	4.806	
16,600.00	8,661.25	15,698.36	7,652.51	190.62	190.72	-41.04	1,283.27	8,110.13	1,339.81	1,057.81	282.00	4.751	
16,700.00	8,663.52	15,798.36	7,654.78	192.91	193.01	-41.04	1,282.48	8,210.11	1,339.81	1,054.58	285.23	4.697	
16,800.00	8,665.78	15,898.36	7,657.06	195.21	195.29	-41.04	1,281.68	8,310.08	1,339.81	1,051.35	288.45	4.645	
16,900.00	8,668.05	15,998.36	7,659.33	197.50	197.58	-41.04	1,280.88	8,410.05	1,339.80	1,048.12	291.68	4.593	
17,000.00	8,670.32	16,098.36	7,661.61	199.80	199.86	-41.04	1,280.08	8,510.02	1,339.80	1,044.89	294.91	4.543	
17,100.00	8,672.59	16,198.36	7,663.88	202.10	202.15	-41.05	1,279.29	8,609.99	1,339.79	1,041.65	298.14	4.494	
17,200.00	8,674.85	16,298.36	7,666.16	204.40	204.44	-41.05	1,278.49	8,709.96	1,339.79	1,038.42	301.37	4.446	
17,300.00	8,677.12	16,398.36	7,668.43	206.69	206.72	-41.05	1,277.69	8,809.93	1,339.79	1,035.18	304.60	4.398	
17,400.00	8,679.39	16,498.36	7,670.71	208.99	209.01	-41.05	1,276.89	8,909.90	1,339.78	1,031.95	307.84	4.352	
17,500.00	8,681.66	16,598.36	7,672.99	211.29	211.30	-41.05	1,276.10	9,009.87	1,339.78	1,028.71	311.07	4.307	
17,600.00	8,683.93	16,698.36	7,675.26	213.59	213.59	-41.05	1,275.30	9,109.84	1,339.78	1,025.47	314.30	4.263	
17,700.00	8,686.19	16,798.36	7,677.54	215.89	215.88	-41.05	1,274.50	9,209.81	1,339.77	1,022.23	317.54	4.219	
17,800.00	8,688.46	16,898.36	7,679.81	218.19	218.17	-41.05	1,273.71	9,309.79	1,339.77	1,019.00	320.77	4.177	
17,900.00	8,690.73	16,998.36	7,682.09	220.49	220.46	-41.05	1,272.91	9,409.76	1,339.76	1,015.76	324.01	4.135	
18,000.00	8,693.00	17,098.36	7,684.36	222.79	222.75	-41.05	1,272.11	9,509.73	1,339.76	1,012.52	327.25	4.094	
18,100.00	8,695.27	17,198.36	7,686.64	225.08	225.04	-41.05	1,271.31	9,609.70	1,339.76	1,009.27	330.48	4.054	
18,200.00	8,697.53	17,298.36	7,688.92	227.39	227.33	-41.05	1,270.52	9,709.67	1,339.75	1,006.03	333.72	4.015	
18,300.00	8,699.80	17,398.36	7,691.19	229.69	229.63	-41.05	1,269.72	9,809.64	1,339.75	1,002.79	336.96	3.976	
18,400.00	8,702.07	17,498.36	7,693.47	231.99	231.92	-41.05	1,268.92	9,909.61	1,339.75	999.55	340.20	3.938	
18,500.00	8,704.34	17,598.36	7,695.74	234.29	234.21	-41.05	1,268.13	10,009.58	1,339.74	996.31	343.44	3.901	
18,600.00	8,706.61	17,698.36	7,698.02	236.59	236.51	-41.05	1,267.33	10,109.55	1,339.74	993.06	346.68	3.865	
18,700.00	8,708.87	17,798.36	7,700.29	238.89	238.80	-41.05	1,266.53	10,209.52	1,339.74	989.82	349.92	3.829	
18,800.00	8,711.14	17,898.36	7,702.57	241.19	241.09	-41.05	1,265.73	10,309.49	1,339.73	986.57	353.16	3.794	
18,900.00	8,713.41	17,998.36	7,704.84	243.49	243.39	-41.05	1,264.94	10,409.47	1,339.73	983.33	356.40	3.759	
19,000.00	8,715.68	18,098.36	7,707.12	245.79	245.68	-41.05	1,264.14	10,509.44	1,339.72	980.08	359.64	3.725	
19,082.66	8,717.55	18,180.98	7,709.00	247.12	247.02	-41.05	1,263.48	10,592.03	1,339.72	978.29	361.43	3.707	
19,100.00	8,717.95	18,180.98	7,709.00	247.40	247.02	-41.05	1,263.48	10,592.03	1,339.83	978.07	361.76	3.704	
19,102.43	8,718.00	18,180.98	7,709.00	247.44	247.02	-41.05	1,263.48	10,592.03	1,339.87	978.06	361.80	3.703 SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	23.50	23.50	0.50	0.51	-15.35	1,354.01	-371.64	1,404.09				
100.00	100.00	123.50	123.50	0.65	0.79	-15.35	1,354.01	-371.64	1,404.09	1,402.65	1.44	975.554	
200.00	200.00	223.50	223.50	1.34	1.45	-15.35	1,354.01	-371.64	1,404.09	1,401.29	2.79	502.699	
300.00	300.00	323.50	323.50	1.81	1.90	-15.35	1,354.01	-371.64	1,404.09	1,400.37	3.71	378.265	
400.00	400.00	423.50	423.50	2.19	2.26	-15.35	1,354.01	-371.64	1,404.09	1,399.64	4.45	315.656	
500.00	500.00	523.50	523.50	2.51	2.58	-15.35	1,354.01	-371.64	1,404.09	1,399.00	5.08	276.217	
600.00	600.00	623.50	623.50	2.80	2.86	-15.35	1,354.01	-371.64	1,404.09	1,398.43	5.65	248.430	
700.00	700.00	723.50	723.50	3.06	3.11	-15.35	1,354.01	-371.64	1,404.09	1,397.91	6.17	227.479	
800.00	800.00	823.50	823.50	3.30	3.35	-15.35	1,354.01	-371.64	1,404.09	1,397.43	6.66	210.944	
900.00	900.00	923.50	923.50	3.53	3.58	-15.35	1,354.01	-371.64	1,404.09	1,396.98	7.11	197.456	
1,000.00	1,000.00	1,023.50	1,023.50	3.75	3.80	-15.35	1,354.01	-371.64	1,404.09	1,396.55	7.54	186.177	
1,100.00	1,100.00	1,123.50	1,123.50	3.95	4.00	-15.35	1,354.01	-371.64	1,404.09	1,396.13	7.95	176.559	
1,200.00	1,200.00	1,223.50	1,223.50	4.15	4.20	-15.35	1,354.01	-371.64	1,404.09	1,395.74	8.35	168.229	
1,300.00	1,300.00	1,323.50	1,323.50	4.34	4.42	-15.34	1,354.01	-371.51	1,404.05	1,395.33	8.73	160.910	
1,400.00	1,400.00	1,443.87	1,443.80	4.52	4.93	-15.21	1,353.91	-368.03	1,403.19	1,394.08	9.11	154.078	
1,500.00	1,500.00	1,559.86	1,559.50	4.70	5.69	-14.89	1,353.70	-359.87	1,401.18	1,391.65	9.52	147.141	
1,600.00	1,599.98	1,669.41	1,668.41	5.05	6.05	13.50	1,353.38	-348.08	1,396.45	1,386.45	10.00	139.628	
1,700.00	1,699.84	1,768.29	1,766.62	5.69	6.24	14.05	1,353.07	-336.56	1,388.21	1,377.45	10.75	129.085	
1,800.00	1,799.45	1,866.73	1,864.39	6.30	6.46	14.65	1,352.77	-325.10	1,376.71	1,365.22	11.49	119.829	
1,900.00	1,898.82	1,964.78	1,961.77	6.46	6.70	15.26	1,352.46	-313.69	1,362.95	1,351.14	11.81	115.429	
2,000.00	1,998.18	2,062.82	2,059.14	6.67	6.96	15.85	1,352.16	-302.27	1,349.23	1,337.06	12.18	110.812	
2,100.00	2,097.54	2,160.85	2,156.51	6.90	7.23	16.46	1,351.86	-290.86	1,335.67	1,323.10	12.57	106.282	
2,200.00	2,196.90	2,258.89	2,253.88	7.15	7.51	17.09	1,351.55	-279.44	1,322.25	1,309.28	12.97	101.924	
2,300.00	2,296.25	2,356.92	2,351.25	7.42	7.79	17.72	1,351.25	-268.03	1,309.00	1,295.63	13.37	97.912	
2,400.00	2,395.61	2,448.21	2,442.02	7.69	8.10	18.28	1,350.99	-258.41	1,296.13	1,282.38	13.75	94.274	
2,500.00	2,494.97	2,539.03	2,532.58	7.98	8.53	18.72	1,350.81	-251.66	1,283.98	1,269.81	14.17	90.637	
2,600.00	2,594.33	2,630.51	2,623.98	8.28	8.95	19.05	1,350.71	-247.78	1,272.49	1,257.88	14.61	87.097	
2,700.00	2,693.69	2,723.73	2,717.19	8.59	9.15	19.25	1,350.68	-246.77	1,261.60	1,246.49	15.10	83.522	
2,800.00	2,793.05	2,823.08	2,816.55	8.91	9.24	19.42	1,350.68	-246.77	1,250.92	1,235.29	15.62	80.076	
2,900.00	2,892.40	2,922.44	2,915.90	9.24	9.33	19.59	1,350.68	-246.77	1,240.25	1,224.20	16.05	77.292	
3,000.00	2,991.76	3,021.80	3,015.26	9.57	9.41	19.77	1,350.68	-246.77	1,229.59	1,213.11	16.48	74.625	
3,100.00	3,091.12	3,121.16	3,114.62	9.91	9.50	19.95	1,350.68	-246.77	1,218.94	1,202.03	16.91	72.077	
3,200.00	3,190.48	3,220.52	3,213.98	10.25	9.59	20.13	1,350.68	-246.77	1,208.31	1,190.96	17.35	69.644	
3,300.00	3,289.84	3,319.88	3,313.34	10.60	9.68	20.32	1,350.68	-246.77	1,197.69	1,179.89	17.79	67.320	
3,400.00	3,389.20	3,419.23	3,412.70	10.95	9.77	20.51	1,350.68	-246.77	1,187.08	1,168.84	18.23	65.101	
3,500.00	3,488.55	3,518.59	3,512.05	11.31	9.85	20.70	1,350.68	-246.77	1,176.48	1,157.80	18.68	62.980	
3,600.00	3,587.91	3,617.95	3,611.41	11.67	9.94	20.90	1,350.68	-246.77	1,165.90	1,146.77	19.13	60.953	
3,700.00	3,687.27	3,717.31	3,710.77	12.03	10.03	21.10	1,350.68	-246.77	1,155.33	1,135.75	19.58	59.015	
3,800.00	3,786.63	3,816.67	3,810.13	12.40	10.12	21.30	1,350.68	-246.77	1,144.77	1,124.75	20.03	57.161	
3,900.00	3,885.99	3,916.03	3,909.49	12.77	10.20	21.51	1,350.68	-246.77	1,134.23	1,113.76	20.48	55.386	
4,000.00	3,985.35	4,015.38	4,008.85	13.14	10.29	21.72	1,350.68	-246.77	1,123.71	1,102.78	20.93	53.687	
4,100.00	4,084.70	4,114.74	4,108.20	13.52	10.38	21.93	1,350.68	-246.77	1,113.20	1,091.82	21.38	52.060	
4,200.00	4,184.06	4,214.10	4,207.56	13.90	10.47	22.15	1,350.68	-246.77	1,102.71	1,080.87	21.84	50.500	
4,300.00	4,283.42	4,313.46	4,306.92	14.27	10.55	22.38	1,350.68	-246.77	1,092.23	1,069.94	22.29	49.003	
4,400.00	4,382.78	4,412.82	4,406.28	14.65	10.64	22.60	1,350.68	-246.77	1,081.77	1,059.03	22.74	47.568	
4,500.00	4,482.14	4,512.18	4,505.64	15.04	10.73	22.84	1,350.68	-246.77	1,071.32	1,048.13	23.19	46.189	
4,600.00	4,581.49	4,611.53	4,604.99	15.42	10.81	23.07	1,350.68	-246.77	1,060.90	1,037.25	23.65	44.865	
4,700.00	4,680.85	4,710.89	4,704.35	15.81	10.90	23.31	1,350.68	-246.77	1,050.49	1,026.39	24.10	43.592	
4,800.00	4,780.21	4,810.25	4,803.71	16.19	10.99	23.56	1,350.68	-246.77	1,040.10	1,015.55	24.55	42.368	
4,900.00	4,879.57	4,909.61	4,903.07	16.58	11.07	23.81	1,350.68	-246.77	1,029.73	1,004.73	25.00	41.190	
5,000.00	4,978.93	5,008.97	5,002.43	16.97	11.16	24.07	1,350.68	-246.77	1,019.39	993.94	25.45	40.056	
5,100.00	5,078.29	5,108.32	5,101.79	17.36	11.24	24.33	1,350.68	-246.77	1,009.06	983.16	25.90	38.964	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,177.64	5,207.68	5,201.14	17.75	11.33	24.60	1,350.68	-246.77	998.75	972.41	26.34	37.911			
5,300.00	5,277.00	5,307.04	5,300.50	18.15	11.42	24.87	1,350.68	-246.77	988.47	961.67	26.79	36.897			
5,400.00	5,376.36	5,406.40	5,399.86	18.54	11.50	25.15	1,350.68	-246.77	978.20	950.97	27.23	35.918			
5,500.00	5,475.72	5,505.76	5,499.22	18.93	11.59	25.43	1,350.68	-246.77	967.96	940.29	27.68	34.973			
5,600.00	5,575.08	5,605.12	5,598.58	19.33	11.67	25.72	1,350.68	-246.77	957.75	929.63	28.12	34.061			
5,700.00	5,674.44	5,704.47	5,697.94	19.73	11.76	26.02	1,350.68	-246.77	947.56	919.00	28.56	33.181			
5,800.00	5,773.79	5,803.83	5,797.29	20.12	11.85	26.32	1,350.68	-246.77	937.39	908.40	28.99	32.330			
5,900.00	5,873.15	5,903.19	5,896.65	20.52	11.93	26.63	1,350.68	-246.77	927.26	897.83	29.43	31.507			
6,000.00	5,972.51	6,002.55	5,996.01	20.92	12.02	26.95	1,350.68	-246.77	917.15	887.28	29.86	30.712			
6,100.00	6,071.87	6,101.91	6,095.37	21.32	12.10	27.27	1,350.68	-246.77	907.07	876.77	30.29	29.942			
6,200.00	6,171.23	6,201.27	6,194.73	21.72	12.19	27.60	1,350.68	-246.77	897.01	866.29	30.72	29.196			
6,300.00	6,270.75	6,300.78	6,294.25	22.13	12.27	27.82	1,350.68	-246.77	888.38	857.22	31.17	28.502			
6,400.00	6,370.54	6,400.58	6,394.04	22.59	12.36	27.95	1,350.68	-246.77	882.85	851.20	31.65	27.893			
6,500.00	6,470.50	6,500.54	6,494.00	22.98	12.45	28.02	1,350.68	-246.77	880.40	848.31	32.09	27.437			
6,587.78	6,558.28	6,588.32	6,581.78	23.04	12.52	28.03	1,350.68	-246.77	879.95	847.72	32.23	27.301	CC		
6,600.00	6,570.50	6,600.54	6,594.00	23.05	12.53	0.14	1,350.68	-246.77	880.26	848.01	32.25	27.293			
6,700.00	6,670.50	6,700.54	6,694.00	23.10	12.62	0.14	1,350.68	-246.77	880.26	847.86	32.40	27.166			
6,800.00	6,770.50	6,800.54	6,794.00	23.15	12.70	0.14	1,350.68	-246.77	880.26	847.71	32.56	27.038			
6,900.00	6,870.50	6,900.54	6,894.00	23.19	12.80	0.14	1,350.68	-246.77	880.26	847.55	32.72	26.906			
6,983.50	6,954.00	6,984.26	6,977.50	23.24	13.13	0.46	1,350.64	-241.80	880.25	847.47	32.78	26.857	ES		
7,000.00	6,970.50	7,000.55	6,993.62	23.24	13.25	0.62	1,350.62	-239.43	880.25	847.47	32.78	26.855			
7,100.00	7,070.50	7,095.33	7,085.51	23.29	14.03	2.10	1,350.44	-216.65	880.65	847.87	32.77	26.870			
7,200.00	7,170.50	7,180.65	7,164.02	23.34	14.67	4.25	1,350.17	-183.45	882.69	849.93	32.76	26.944			
7,300.00	7,270.50	7,254.72	7,227.53	23.39	15.18	6.71	1,349.86	-145.44	888.00	855.23	32.76	27.102			
7,400.00	7,370.50	7,317.62	7,277.24	23.44	15.56	9.17	1,349.56	-106.96	898.14	865.33	32.81	27.376			
7,500.00	7,470.50	7,370.50	7,315.57	23.49	15.85	11.47	1,349.26	-70.55	914.33	881.46	32.87	27.818			
7,600.00	7,570.50	7,414.86	7,345.02	23.54	16.06	13.53	1,349.00	-37.39	937.34	904.42	32.92	28.470			
7,700.00	7,670.50	7,450.00	7,366.47	23.59	16.22	15.24	1,348.77	-9.57	967.50	934.55	32.95	29.367			
7,800.00	7,770.50	7,483.80	7,385.46	23.65	16.35	16.93	1,348.55	18.39	1,004.71	971.75	32.97	30.478			
7,900.00	7,870.50	7,500.00	7,393.96	23.70	16.41	17.75	1,348.44	32.17	1,048.78	1,015.91	32.87	31.903			
8,000.00	7,970.40	7,535.09	7,411.04	23.66	16.52	-67.79	1,348.19	62.82	1,097.98	1,065.05	32.93	33.343			
8,100.00	8,068.49	7,550.00	7,417.72	23.58	16.56	-61.95	1,348.08	76.15	1,147.71	1,114.70	33.01	34.770			
8,200.00	8,161.84	7,600.00	7,437.55	23.48	16.69	-55.64	1,347.71	122.03	1,195.00	1,161.48	33.52	35.650			
8,300.00	8,247.60	7,623.16	7,445.36	23.40	16.73	-51.18	1,347.54	143.83	1,238.35	1,204.40	33.95	36.473			
8,400.00	8,323.17	7,650.00	7,453.30	23.38	16.79	-47.51	1,347.33	169.47	1,276.46	1,241.91	34.55	36.941			
8,500.00	8,386.25	7,700.00	7,464.86	23.47	16.85	-44.39	1,346.94	218.10	1,308.13	1,272.57	35.56	36.789			
8,600.00	8,434.92	7,724.80	7,469.01	23.73	16.88	-42.44	1,346.74	242.54	1,332.31	1,295.85	36.46	36.540			
8,700.00	8,467.72	7,750.00	7,472.14	24.20	16.90	-41.16	1,346.54	267.55	1,348.78	1,311.26	37.52	35.952			
8,800.00	8,483.63	7,795.74	7,475.00	24.88	17.10	-40.49	1,346.18	313.19	1,356.71	1,317.78	38.93	34.851			
8,900.00	8,486.62	7,895.43	7,477.26	25.76	18.79	-40.43	1,345.37	412.84	1,357.25	1,316.56	40.70	33.351			
9,000.00	8,488.89	7,995.43	7,479.53	26.81	20.63	-40.43	1,344.57	512.81	1,357.25	1,314.64	42.61	31.851			
9,100.00	8,491.15	8,095.43	7,481.79	28.01	22.56	-40.43	1,343.76	612.79	1,357.25	1,312.57	44.69	30.374			
9,200.00	8,493.42	8,195.43	7,484.06	29.34	24.55	-40.43	1,342.96	712.76	1,357.25	1,310.36	46.89	28.946			
9,300.00	8,495.69	8,295.43	7,486.32	30.79	26.59	-40.43	1,342.16	812.73	1,357.25	1,308.04	49.21	27.582			
9,400.00	8,497.96	8,395.43	7,488.59	32.34	28.68	-40.43	1,341.35	912.70	1,357.25	1,305.63	51.62	26.291			
9,500.00	8,500.23	8,495.43	7,490.86	33.98	30.79	-40.43	1,340.55	1,012.67	1,357.25	1,303.12	54.12	25.076			
9,600.00	8,502.49	8,595.43	7,493.12	35.70	32.94	-40.43	1,339.74	1,112.64	1,357.25	1,300.55	56.70	23.938			
9,700.00	8,504.76	8,695.43	7,495.39	37.49	35.10	-40.43	1,338.94	1,212.61	1,357.25	1,297.91	59.34	22.874			
9,800.00	8,507.03	8,795.43	7,497.66	39.33	37.28	-40.43	1,338.13	1,312.58	1,357.24	1,295.21	62.03	21.880			
9,900.00	8,509.30	8,895.43	7,499.92	41.23	39.48	-40.43	1,337.33	1,412.55	1,357.24	1,292.47	64.77	20.954			
10,000.00	8,511.56	8,995.43	7,502.19	43.16	41.69	-40.43	1,336.53	1,512.53	1,357.24	1,289.68	67.56	20.090			
10,100.00	8,513.83	9,095.43	7,504.45	45.13	43.91	-40.43	1,335.72	1,612.50	1,357.24	1,286.86	70.38	19.284			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												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	
10,200.00	8,516.10	9,195.43	7,506.72	47.14	46.14	-40.43	1,334.92	1,712.47	1,357.24	1,284.00	73.24	18.532	
10,300.00	8,518.37	9,295.43	7,508.99	49.17	48.38	-40.43	1,334.11	1,812.44	1,357.24	1,281.11	76.12	17.829	
10,400.00	8,520.64	9,395.43	7,511.25	51.23	50.62	-40.43	1,333.31	1,912.41	1,357.24	1,278.20	79.04	17.172	
10,500.00	8,522.90	9,495.43	7,513.52	53.31	52.87	-40.43	1,332.50	2,012.38	1,357.24	1,275.26	81.97	16.557	
10,600.00	8,525.17	9,595.43	7,515.78	55.40	55.12	-40.43	1,331.70	2,112.35	1,357.24	1,272.30	84.93	15.980	
10,700.00	8,527.44	9,695.43	7,518.05	57.52	57.38	-40.43	1,330.90	2,212.32	1,357.24	1,269.33	87.91	15.439	
10,800.00	8,529.71	9,795.43	7,520.32	59.65	59.64	-40.43	1,330.09	2,312.29	1,357.23	1,266.33	90.90	14.931	
10,900.00	8,531.98	9,895.43	7,522.58	61.79	61.91	-40.43	1,329.29	2,412.27	1,357.23	1,263.32	93.91	14.452	
11,000.00	8,534.24	9,995.43	7,524.85	63.94	64.18	-40.43	1,328.48	2,512.24	1,357.23	1,260.29	96.94	14.001	
11,100.00	8,536.51	10,095.43	7,527.11	66.11	66.45	-40.43	1,327.68	2,612.21	1,357.23	1,257.26	99.97	13.576	
11,200.00	8,538.78	10,195.43	7,529.38	68.29	68.73	-40.43	1,326.87	2,712.18	1,357.23	1,254.21	103.02	13.174	
11,300.00	8,541.05	10,295.43	7,531.65	70.47	71.01	-40.43	1,326.07	2,812.15	1,357.23	1,251.15	106.08	12.794	
11,400.00	8,543.32	10,395.43	7,533.91	72.66	73.29	-40.43	1,325.27	2,912.12	1,357.23	1,248.07	109.15	12.434	
11,500.00	8,545.58	10,495.43	7,536.18	74.86	75.57	-40.43	1,324.46	3,012.09	1,357.23	1,244.99	112.23	12.093	
11,600.00	8,547.85	10,595.43	7,538.45	77.07	77.85	-40.43	1,323.66	3,112.06	1,357.23	1,241.91	115.32	11.769	
11,700.00	8,550.12	10,695.43	7,540.71	79.28	80.14	-40.43	1,322.85	3,212.03	1,357.22	1,238.81	118.41	11.462	
11,800.00	8,552.39	10,795.43	7,542.98	81.50	82.42	-40.43	1,322.05	3,312.00	1,357.22	1,235.71	121.52	11.169	
11,900.00	8,554.66	10,895.43	7,545.24	83.72	84.71	-40.43	1,321.24	3,411.98	1,357.22	1,232.60	124.62	10.890	
12,000.00	8,556.92	10,995.43	7,547.51	85.95	87.00	-40.43	1,320.44	3,511.95	1,357.22	1,229.48	127.74	10.625	
12,100.00	8,559.19	11,095.43	7,549.78	88.18	89.29	-40.43	1,319.64	3,611.92	1,357.22	1,226.36	130.86	10.372	
12,200.00	8,561.46	11,195.43	7,552.04	90.42	91.58	-40.43	1,318.83	3,711.89	1,357.22	1,223.23	133.99	10.130	
12,300.00	8,563.73	11,295.43	7,554.31	92.66	93.87	-40.43	1,318.03	3,811.86	1,357.22	1,220.10	137.12	9.898	
12,400.00	8,565.99	11,395.43	7,556.57	94.90	96.17	-40.43	1,317.22	3,911.83	1,357.22	1,216.97	140.25	9.677	
12,500.00	8,568.26	11,495.43	7,558.84	97.15	98.46	-40.42	1,316.42	4,011.80	1,357.22	1,213.82	143.39	9.465	
12,600.00	8,570.53	11,595.43	7,561.11	99.40	100.76	-40.42	1,315.61	4,111.77	1,357.22	1,210.68	146.53	9.262	
12,700.00	8,572.80	11,695.43	7,563.37	101.65	103.05	-40.42	1,314.81	4,211.74	1,357.21	1,207.53	149.68	9.067	
12,800.00	8,575.07	11,795.43	7,565.64	103.91	105.35	-40.42	1,314.01	4,311.72	1,357.21	1,204.38	152.83	8.880	
12,900.00	8,577.33	11,895.43	7,567.91	106.17	107.64	-40.42	1,313.20	4,411.69	1,357.21	1,201.22	155.99	8.701	
13,000.00	8,579.60	11,995.43	7,570.17	108.43	109.94	-40.42	1,312.40	4,511.66	1,357.21	1,198.07	159.15	8.528	
13,100.00	8,581.87	12,095.43	7,572.44	110.69	112.24	-40.42	1,311.59	4,611.63	1,357.21	1,194.90	162.31	8.362	
13,200.00	8,584.14	12,195.43	7,574.70	112.95	114.54	-40.42	1,310.79	4,711.60	1,357.21	1,191.74	165.47	8.202	
13,300.00	8,586.41	12,295.43	7,576.97	115.22	116.84	-40.42	1,309.98	4,811.57	1,357.21	1,188.57	168.63	8.048	
13,400.00	8,588.67	12,395.43	7,579.24	117.49	119.14	-40.42	1,309.18	4,911.54	1,357.21	1,185.40	171.80	7.900	
13,500.00	8,590.94	12,495.43	7,581.50	119.76	121.44	-40.42	1,308.38	5,011.51	1,357.21	1,182.23	174.97	7.757	
13,600.00	8,593.21	12,595.43	7,583.77	122.03	123.74	-40.42	1,307.57	5,111.48	1,357.20	1,179.06	178.15	7.618	
13,700.00	8,595.48	12,695.43	7,586.03	124.30	126.04	-40.42	1,306.77	5,211.46	1,357.20	1,175.88	181.32	7.485	
13,800.00	8,597.75	12,795.43	7,588.30	126.57	128.34	-40.42	1,305.96	5,311.43	1,357.20	1,172.70	184.50	7.356	
13,900.00	8,600.01	12,895.43	7,590.57	128.85	130.64	-40.42	1,305.16	5,411.40	1,357.20	1,169.52	187.68	7.232	
14,000.00	8,602.28	12,995.43	7,592.83	131.13	132.94	-40.42	1,304.35	5,511.37	1,357.20	1,166.34	190.86	7.111	
14,100.00	8,604.55	13,095.43	7,595.10	133.40	135.25	-40.42	1,303.55	5,611.34	1,357.20	1,163.16	194.04	6.994	
14,200.00	8,606.82	13,195.43	7,597.36	135.68	137.55	-40.42	1,302.75	5,711.31	1,357.20	1,159.97	197.23	6.881	
14,300.00	8,609.09	13,295.43	7,599.63	137.96	139.85	-40.42	1,301.94	5,811.28	1,357.20	1,156.79	200.41	6.772	
14,400.00	8,611.35	13,395.43	7,601.90	140.24	142.16	-40.42	1,301.14	5,911.25	1,357.20	1,153.60	203.60	6.666	
14,500.00	8,613.62	13,495.43	7,604.16	142.53	144.46	-40.42	1,300.33	6,011.22	1,357.19	1,150.41	206.79	6.563	
14,600.00	8,615.89	13,595.43	7,606.43	144.81	146.76	-40.42	1,299.53	6,111.20	1,357.19	1,147.22	209.98	6.464	
14,700.00	8,618.16	13,695.43	7,608.70	147.09	149.07	-40.42	1,298.72	6,211.17	1,357.19	1,144.02	213.17	6.367	
14,800.00	8,620.42	13,795.43	7,610.96	149.38	151.37	-40.42	1,297.92	6,311.14	1,357.19	1,140.83	216.36	6.273	
14,900.00	8,622.69	13,895.43	7,613.23	151.66	153.68	-40.42	1,297.12	6,411.11	1,357.19	1,137.64	219.55	6.182	
15,000.00	8,624.96	13,995.43	7,615.49	153.95	155.98	-40.42	1,296.31	6,511.08	1,357.19	1,134.44	222.75	6.093	
15,100.00	8,627.23	14,095.43	7,617.76	156.24	158.28	-40.42	1,295.51	6,611.05	1,357.19	1,131.24	225.94	6.007	
15,200.00	8,629.50	14,195.43	7,620.03	158.53	160.59	-40.42	1,294.70	6,711.02	1,357.19	1,128.05	229.14	5.923	
15,300.00	8,631.76	14,295.43	7,622.29	160.81	162.90	-40.42	1,293.90	6,810.99	1,357.19	1,124.85	232.34	5.841	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-112HA - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,400.00	8,634.03	14,395.43	7,624.56	163.10	165.20	-40.42	1,293.09	6,910.96	1,357.19	1,121.65	235.54	5.762	
15,500.00	8,636.30	14,495.43	7,626.82	165.39	167.51	-40.42	1,292.29	7,010.94	1,357.18	1,118.45	238.74	5.685	
15,600.00	8,638.57	14,595.43	7,629.09	167.68	169.81	-40.42	1,291.49	7,110.91	1,357.18	1,115.25	241.94	5.610	
15,700.00	8,640.84	14,695.43	7,631.36	169.97	172.12	-40.42	1,290.68	7,210.88	1,357.18	1,112.04	245.14	5.536	
15,800.00	8,643.10	14,795.43	7,633.62	172.27	174.42	-40.42	1,289.88	7,310.85	1,357.18	1,108.84	248.34	5.465	
15,900.00	8,645.37	14,895.43	7,635.89	174.56	176.73	-40.42	1,289.07	7,410.82	1,357.18	1,105.64	251.54	5.395	
16,000.00	8,647.64	14,995.43	7,638.16	176.85	179.04	-40.42	1,288.27	7,510.79	1,357.18	1,102.43	254.75	5.328	
16,100.00	8,649.91	15,095.43	7,640.42	179.14	181.34	-40.42	1,287.46	7,610.76	1,357.18	1,099.23	257.95	5.261	
16,200.00	8,652.18	15,195.43	7,642.69	181.44	183.65	-40.42	1,286.66	7,710.73	1,357.18	1,096.02	261.16	5.197	
16,300.00	8,654.44	15,295.43	7,644.95	183.73	185.96	-40.42	1,285.86	7,810.70	1,357.18	1,092.81	264.36	5.134	
16,400.00	8,656.71	15,395.43	7,647.22	186.03	188.26	-40.42	1,285.05	7,910.67	1,357.17	1,089.61	267.57	5.072	
16,500.00	8,658.98	15,495.43	7,649.49	188.32	190.57	-40.42	1,284.25	8,010.65	1,357.17	1,086.40	270.78	5.012	
16,600.00	8,661.25	15,595.43	7,651.75	190.62	192.88	-40.42	1,283.44	8,110.62	1,357.17	1,083.19	273.98	4.953	
16,700.00	8,663.52	15,695.43	7,654.02	192.91	195.18	-40.42	1,282.64	8,210.59	1,357.17	1,079.98	277.19	4.896	
16,800.00	8,665.78	15,795.43	7,656.28	195.21	197.49	-40.42	1,281.83	8,310.56	1,357.17	1,076.77	280.40	4.840	
16,900.00	8,668.05	15,895.43	7,658.55	197.50	199.80	-40.42	1,281.03	8,410.53	1,357.17	1,073.56	283.61	4.785	
17,000.00	8,670.32	15,995.43	7,660.82	199.80	202.11	-40.42	1,280.23	8,510.50	1,357.17	1,070.35	286.82	4.732	
17,100.00	8,672.59	16,095.43	7,663.08	202.10	204.41	-40.42	1,279.42	8,610.47	1,357.17	1,067.14	290.03	4.679	
17,200.00	8,674.85	16,195.43	7,665.35	204.40	206.72	-40.42	1,278.62	8,710.44	1,357.17	1,063.93	293.24	4.628	
17,300.00	8,677.12	16,295.43	7,667.61	206.69	209.03	-40.42	1,277.81	8,810.41	1,357.16	1,060.71	296.45	4.578	
17,400.00	8,679.39	16,395.43	7,669.88	208.99	211.34	-40.42	1,277.01	8,910.39	1,357.16	1,057.50	299.66	4.529	
17,500.00	8,681.66	16,495.43	7,672.15	211.29	213.64	-40.42	1,276.20	9,010.36	1,357.16	1,054.29	302.88	4.481	
17,600.00	8,683.93	16,595.43	7,674.41	213.59	215.95	-40.42	1,275.40	9,110.33	1,357.16	1,051.07	306.09	4.434	
17,700.00	8,686.19	16,695.43	7,676.68	215.89	218.26	-40.42	1,274.60	9,210.30	1,357.16	1,047.86	309.30	4.388	
17,800.00	8,688.46	16,795.43	7,678.95	218.19	220.57	-40.42	1,273.79	9,310.27	1,357.16	1,044.65	312.51	4.343	
17,900.00	8,690.73	16,895.43	7,681.21	220.49	222.88	-40.42	1,272.99	9,410.24	1,357.16	1,041.43	315.73	4.299	
18,000.00	8,693.00	16,995.43	7,683.48	222.79	225.18	-40.42	1,272.18	9,510.21	1,357.16	1,038.22	318.94	4.255	
18,100.00	8,695.27	17,095.43	7,685.74	225.08	227.49	-40.42	1,271.38	9,610.18	1,357.16	1,035.00	322.16	4.213	
18,200.00	8,697.53	17,195.43	7,688.01	227.39	229.80	-40.42	1,270.57	9,710.15	1,357.16	1,031.78	325.37	4.171	
18,300.00	8,699.80	17,295.43	7,690.28	229.69	232.11	-40.42	1,269.77	9,810.13	1,357.15	1,028.57	328.59	4.130	
18,400.00	8,702.07	17,395.43	7,692.54	231.99	234.42	-40.42	1,268.97	9,910.10	1,357.15	1,025.35	331.80	4.090	
18,500.00	8,704.34	17,495.43	7,694.81	234.29	236.73	-40.41	1,268.16	10,010.07	1,357.15	1,022.13	335.02	4.051	
18,600.00	8,706.61	17,595.43	7,697.07	236.59	239.04	-40.41	1,267.36	10,110.04	1,357.15	1,018.92	338.23	4.012	
18,700.00	8,708.87	17,695.43	7,699.34	238.89	241.34	-40.41	1,266.55	10,210.01	1,357.15	1,015.70	341.45	3.975	
18,800.00	8,711.14	17,795.43	7,701.61	241.19	243.65	-40.41	1,265.75	10,309.98	1,357.15	1,012.48	344.67	3.938	
18,900.00	8,713.41	17,895.43	7,703.87	243.49	245.96	-40.41	1,264.94	10,409.95	1,357.15	1,009.26	347.88	3.901	
19,000.00	8,715.68	17,995.43	7,706.14	245.79	248.27	-40.41	1,264.14	10,509.92	1,357.15	1,006.05	351.10	3.865	
19,081.97	8,717.54	18,077.40	7,708.00	247.11	249.63	-40.41	1,263.48	10,591.87	1,357.15	1,004.26	352.89	3.846	
19,100.00	8,717.95	18,077.56	7,708.00	247.40	249.63	-40.41	1,263.48	10,592.03	1,357.26	1,004.18	353.08	3.844	
19,102.43	8,718.00	18,077.56	7,708.00	247.44	249.63	-40.41	1,263.48	10,592.03	1,357.30	1,004.20	353.10	3.844 SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		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	1.00	1.00	0.50	0.50	0.10	39.98	0.07	39.98				
100.00	100.00	101.00	101.00	0.65	0.66	0.10	39.98	0.07	39.98	38.67	1.31	30.623	
200.00	200.00	201.00	201.00	1.34	1.35	0.10	39.98	0.07	39.98	37.29	2.69	14.869	
300.00	300.00	301.00	301.00	1.81	1.82	0.10	39.98	0.07	39.98	36.35	3.63	11.019	
400.00	400.00	401.00	401.00	2.19	2.19	0.10	39.98	0.07	39.98	35.60	4.38	9.136	
500.00	500.00	501.00	501.00	2.51	2.51	0.10	39.98	0.07	39.98	34.96	5.02	7.966	
600.00	600.00	601.00	601.00	2.80	2.80	0.10	39.98	0.07	39.98	34.39	5.59	7.148	
700.00	700.00	701.00	701.00	3.06	3.06	0.10	39.98	0.07	39.98	33.86	6.12	6.535	
800.00	800.00	801.00	801.00	3.30	3.30	0.10	39.98	0.07	39.98	33.38	6.60	6.053	
900.00	900.00	901.00	901.00	3.53	3.53	0.10	39.98	0.07	39.98	32.92	7.06	5.661	
1,000.00	1,000.00	1,001.00	1,001.00	3.75	3.75	0.10	39.98	0.07	39.98	32.48	7.50	5.334	
1,100.00	1,100.00	1,101.00	1,101.00	3.95	3.95	0.10	39.98	0.07	39.98	32.07	7.91	5.056	
1,200.00	1,200.00	1,201.00	1,201.00	4.15	4.15	0.10	39.98	0.07	39.98	31.68	8.30	4.815	
1,300.00	1,300.00	1,301.00	1,301.00	4.34	4.34	0.10	39.98	0.07	39.98	31.30	8.68	4.604	
1,400.00	1,400.00	1,401.00	1,401.00	4.52	4.53	0.10	39.98	0.07	39.98	30.93	9.05	4.417	
1,416.33	1,416.33	1,417.33	1,417.33	4.55	4.56	0.10	39.98	0.07	39.98	30.87	9.11	4.389 CC	
1,500.00	1,500.00	1,500.99	1,500.99	4.70	4.71	0.10	39.98	0.07	39.98	30.57	9.41	4.249	
1,600.00	1,599.98	1,600.00	1,599.98	5.05	5.06	28.66	41.69	-0.26	40.17	30.10	10.07	3.989	
1,600.66	1,600.63	1,600.00	1,599.98	5.05	5.06	28.66	41.69	-0.26	40.17	30.10	10.07	3.990	
1,700.00	1,699.84	1,698.26	1,698.11	5.69	5.69	30.66	46.71	-1.24	40.68	29.50	11.18	3.638	
1,800.00	1,799.45	1,796.87	1,796.34	6.30	6.29	33.88	55.06	-2.87	41.64	29.48	12.16	3.425 ES	
1,900.00	1,898.82	1,895.42	1,894.16	6.46	6.85	37.36	66.72	-5.15	43.95	31.25	12.70	3.461	
2,000.00	1,998.18	1,993.77	1,991.33	6.67	7.40	38.98	81.64	-8.06	49.49	36.18	13.31	3.718	
2,100.00	2,097.54	2,091.69	2,087.49	6.90	7.93	38.95	99.74	-11.59	58.21	44.23	13.98	4.164	
2,200.00	2,196.90	2,188.96	2,182.34	7.15	8.45	37.89	120.90	-15.72	70.07	55.38	14.70	4.768	
2,300.00	2,296.25	2,285.36	2,275.56	7.42	8.96	36.35	144.98	-20.42	85.10	69.67	15.44	5.513	
2,400.00	2,395.61	2,381.55	2,367.74	7.69	9.28	34.71	171.94	-25.69	103.20	87.18	16.03	6.440	
2,500.00	2,494.97	2,479.70	2,461.54	7.98	9.54	33.42	200.28	-31.22	122.20	105.58	16.63	7.350	
2,600.00	2,594.33	2,577.84	2,555.34	8.28	9.84	32.47	228.62	-36.75	141.25	124.00	17.25	8.188	
2,700.00	2,693.69	2,675.99	2,649.15	8.59	10.15	31.74	256.96	-42.28	160.33	142.43	17.89	8.960	
2,800.00	2,793.05	2,774.13	2,742.95	8.91	10.48	31.17	285.30	-47.81	179.42	160.87	18.55	9.671	
2,900.00	2,892.40	2,872.28	2,836.75	9.24	10.82	30.71	313.64	-53.34	198.53	179.30	19.23	10.325	
3,000.00	2,991.76	2,970.43	2,930.55	9.57	11.17	30.33	341.98	-58.87	217.65	197.73	19.92	10.927	
3,100.00	3,091.12	3,068.57	3,024.36	9.91	11.53	30.01	370.32	-64.40	236.77	216.15	20.62	11.481	
3,200.00	3,190.48	3,166.72	3,118.16	10.25	11.90	29.74	398.66	-69.93	255.90	234.56	21.34	11.991	
3,300.00	3,289.84	3,264.87	3,211.96	10.60	12.29	29.51	427.00	-75.46	275.04	252.97	22.07	12.462	
3,400.00	3,389.20	3,363.01	3,305.77	10.95	12.68	29.31	455.34	-81.00	294.18	271.37	22.81	12.896	
3,500.00	3,488.55	3,461.16	3,399.57	11.31	13.08	29.13	483.68	-86.53	313.32	289.76	23.56	13.297	
3,600.00	3,587.91	3,559.30	3,493.37	11.67	13.48	28.97	512.02	-92.06	332.47	308.15	24.32	13.669	
3,700.00	3,687.27	3,657.45	3,587.17	12.03	13.89	28.83	540.36	-97.59	351.62	326.53	25.09	14.013	
3,800.00	3,786.63	3,755.60	3,680.98	12.40	14.31	28.71	568.70	-103.12	370.77	344.90	25.87	14.332	
3,900.00	3,885.99	3,853.74	3,774.78	12.77	14.73	28.59	597.04	-108.65	389.92	363.27	26.65	14.629	
4,000.00	3,985.35	3,951.89	3,868.58	13.14	15.16	28.49	625.38	-114.18	409.07	381.63	27.45	14.905	
4,100.00	4,084.70	4,050.03	3,962.38	13.52	15.59	28.40	653.72	-119.71	428.23	399.98	28.24	15.163	
4,200.00	4,184.06	4,148.18	4,056.19	13.90	16.03	28.31	682.06	-125.24	447.38	418.34	29.04	15.403	
4,300.00	4,283.42	4,246.33	4,149.99	14.27	16.46	28.23	710.39	-130.77	466.54	436.69	29.85	15.628	
4,400.00	4,382.78	4,344.47	4,243.79	14.65	16.91	28.16	738.73	-136.31	485.69	455.03	30.67	15.839	
4,500.00	4,482.14	4,442.62	4,337.60	15.04	17.35	28.09	767.07	-141.84	504.85	473.37	31.48	16.036	
4,600.00	4,581.49	4,540.77	4,431.40	15.42	17.80	28.03	795.41	-147.37	524.01	491.71	32.30	16.222	
4,700.00	4,680.85	4,638.91	4,525.20	15.81	18.25	27.98	823.75	-152.90	543.17	510.04	33.13	16.396	
4,800.00	4,780.21	4,737.06	4,619.00	16.19	18.71	27.92	852.09	-158.43	562.33	528.37	33.96	16.560	
4,900.00	4,879.57	4,835.20	4,712.81	16.58	19.17	27.87	880.43	-163.96	581.49	546.70	34.79	16.715	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		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)			
5,000.00	4,978.93	4,933.35	4,806.61	16.97	19.62	27.82	908.77	-169.49	600.65	565.02	35.62	16.861	
5,100.00	5,078.29	5,031.50	4,900.41	17.36	20.09	27.78	937.11	-175.02	619.81	583.35	36.46	17.000	
5,200.00	5,177.64	5,129.64	4,994.22	17.75	20.55	27.74	965.45	-180.55	638.97	601.67	37.30	17.130	
5,300.00	5,277.00	5,227.79	5,088.02	18.15	21.01	27.70	993.79	-186.08	658.13	619.99	38.14	17.254	
5,400.00	5,376.36	5,325.94	5,181.82	18.54	21.48	27.66	1,022.13	-191.61	677.29	638.30	38.99	17.372	
5,500.00	5,475.72	5,424.08	5,275.62	18.93	21.95	27.63	1,050.47	-197.15	696.45	656.62	39.84	17.483	
5,600.00	5,575.08	5,522.23	5,369.43	19.33	22.42	27.60	1,078.81	-202.68	715.61	674.93	40.68	17.589	
5,700.00	5,674.44	5,620.37	5,463.23	19.73	22.89	27.56	1,107.15	-208.21	734.78	693.24	41.54	17.690	
5,800.00	5,773.79	5,718.52	5,557.03	20.12	23.36	27.53	1,135.49	-213.74	753.94	711.55	42.39	17.786	
5,900.00	5,873.15	5,816.67	5,650.83	20.52	23.83	27.51	1,163.83	-219.27	773.10	729.86	43.24	17.879	
6,000.00	5,972.51	5,948.84	5,777.93	20.92	24.50	27.51	1,199.40	-226.21	790.29	745.88	44.42	17.793	
6,100.00	6,071.87	6,085.30	5,910.75	21.32	25.25	27.60	1,230.06	-232.20	802.91	757.31	45.59	17.610	
6,200.00	6,171.23	6,223.06	6,046.19	21.72	25.98	27.77	1,254.68	-237.00	810.85	764.19	46.65	17.381	
6,300.00	6,270.75	6,361.48	6,183.34	22.13	26.68	28.01	1,272.95	-240.57	815.47	767.89	47.58	17.139	
6,400.00	6,370.54	6,500.23	6,321.57	22.59	27.32	28.16	1,284.72	-242.86	818.43	770.03	48.39	16.912	
6,500.00	6,470.50	6,639.17	6,460.39	22.98	27.81	28.22	1,289.91	-243.88	819.72	770.81	48.91	16.760	
6,600.00	6,570.50	6,750.28	6,571.50	23.05	27.92	0.35	1,290.18	-243.93	819.77	770.80	48.98	16.738	
6,700.00	6,670.50	6,850.28	6,671.50	23.10	27.96	0.35	1,290.18	-243.93	819.77	770.71	49.07	16.707	
6,800.00	6,770.50	6,950.28	6,771.50	23.15	28.00	0.35	1,290.18	-243.93	819.77	770.61	49.16	16.674	
6,900.00	6,870.50	7,050.28	6,871.50	23.19	28.04	0.35	1,290.18	-243.93	819.77	770.51	49.26	16.642	
7,000.00	6,970.50	7,150.28	6,971.50	23.24	28.08	0.35	1,290.18	-243.93	819.77	770.42	49.36	16.609	
7,100.00	7,070.50	7,250.28	7,071.50	23.29	28.13	0.35	1,290.18	-243.93	819.77	770.32	49.45	16.577	
7,200.00	7,170.50	7,350.28	7,171.50	23.34	28.17	0.35	1,290.18	-243.93	819.77	770.22	49.55	16.544	
7,300.00	7,270.50	7,450.28	7,271.50	23.39	28.21	0.35	1,290.18	-243.93	819.77	770.13	49.65	16.512	
7,400.00	7,370.50	7,550.28	7,371.50	23.44	28.25	0.35	1,290.18	-243.93	819.77	770.03	49.75	16.479	
7,500.00	7,470.50	7,650.28	7,471.50	23.49	28.29	0.35	1,290.18	-243.93	819.77	769.93	49.84	16.447	
7,600.00	7,570.50	7,750.28	7,571.50	23.54	28.34	0.35	1,290.18	-243.93	819.77	769.83	49.94	16.414	
7,700.00	7,670.50	7,850.28	7,671.50	23.59	28.38	0.35	1,290.18	-243.93	819.77	769.73	50.04	16.382	
7,800.00	7,770.50	7,950.28	7,771.50	23.65	28.42	0.35	1,290.18	-243.93	819.77	769.63	50.14	16.350	
7,900.00	7,870.50	8,050.28	7,871.50	23.70	28.46	0.35	1,290.18	-243.93	819.77	769.54	50.24	16.318	
7,901.20	7,871.70	8,051.49	7,872.70	23.70	28.46	-90.11	1,290.18	-243.93	819.77	769.54	50.24	16.318	
8,000.00	7,970.40	8,143.20	7,964.33	23.66	28.47	-90.07	1,290.41	-241.08	820.06	769.71	50.35	16.288	
8,100.00	8,068.49	8,232.22	8,051.86	23.58	28.46	-89.99	1,291.67	-225.43	821.61	771.13	50.48	16.275	
8,200.00	8,161.84	8,321.45	8,136.10	23.48	28.45	-89.90	1,294.01	-196.37	824.49	773.86	50.63	16.285	
8,300.00	8,247.60	8,411.11	8,215.15	23.40	28.46	-89.80	1,297.38	-154.42	828.62	777.82	50.81	16.310	
8,400.00	8,323.17	8,500.00	8,286.11	23.38	28.51	-89.69	1,301.66	-101.20	833.91	782.84	51.07	16.328	
8,500.00	8,386.25	8,592.60	8,350.33	23.47	28.63	-89.59	1,307.00	-34.84	840.23	788.77	51.45	16.329	
8,600.00	8,434.92	8,684.90	8,402.85	23.73	28.85	-89.50	1,313.08	40.70	847.42	795.35	52.07	16.275	
8,700.00	8,467.72	8,778.59	8,443.02	24.20	29.21	-89.41	1,319.86	124.95	855.32	802.36	52.96	16.149	
8,800.00	8,483.63	8,873.91	8,469.22	24.88	29.74	-89.33	1,327.20	216.19	863.71	809.55	54.16	15.947	
8,900.00	8,486.62	8,971.32	8,479.96	25.76	30.45	-89.61	1,334.96	312.58	872.42	816.71	55.71	15.661	
9,000.00	8,488.89	9,114.31	8,483.21	26.81	31.80	-89.61	1,342.94	455.29	878.82	821.04	57.77	15.211	
9,100.00	8,491.15	9,248.58	8,486.25	28.01	33.36	-89.62	1,344.04	589.52	880.32	820.10	60.22	14.618	
9,200.00	8,493.42	9,348.58	8,488.52	29.34	34.59	-89.62	1,343.23	689.49	880.32	817.49	62.83	14.012	
9,300.00	8,495.69	9,448.58	8,490.79	30.79	35.92	-89.62	1,342.43	789.46	880.31	814.66	65.65	13.409	
9,400.00	8,497.96	9,548.58	8,493.05	32.34	37.33	-89.62	1,341.62	889.43	880.31	811.64	68.67	12.820	
9,500.00	8,500.23	9,648.58	8,495.32	33.98	38.83	-89.62	1,340.82	989.40	880.30	808.45	71.85	12.251	
9,600.00	8,502.49	9,748.58	8,497.58	35.70	40.39	-89.62	1,340.01	1,089.37	880.30	805.11	75.19	11.708	
9,700.00	8,504.76	9,848.58	8,499.85	37.49	42.03	-89.62	1,339.21	1,189.34	880.29	801.64	78.65	11.192	
9,800.00	8,507.03	9,948.58	8,502.12	39.33	43.72	-89.62	1,338.40	1,289.31	880.29	798.06	82.23	10.705	
9,900.00	8,509.30	10,048.58	8,504.38	41.23	45.46	-89.61	1,337.60	1,389.28	880.29	794.38	85.91	10.247	
10,000.00	8,511.56	10,148.58	8,506.65	43.16	47.25	-89.61	1,336.79	1,489.26	880.28	790.61	89.67	9.817	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,100.00	8,513.83	10,248.58	8,508.92	45.13	49.08	-89.61	1,335.99	1,589.23	880.28	786.77	93.51	9.414			
10,200.00	8,516.10	10,348.58	8,511.18	47.14	50.95	-89.61	1,335.18	1,689.20	880.27	782.85	97.42	9.036			
10,300.00	8,518.37	10,448.58	8,513.45	49.17	52.86	-89.61	1,334.37	1,789.17	880.27	778.88	101.39	8.682			
10,400.00	8,520.64	10,548.58	8,515.71	51.23	54.79	-89.61	1,333.57	1,889.14	880.26	774.86	105.41	8.351			
10,500.00	8,522.90	10,648.58	8,517.98	53.31	56.75	-89.61	1,332.76	1,989.11	880.26	770.79	109.47	8.041			
10,600.00	8,525.17	10,748.58	8,520.25	55.40	58.74	-89.61	1,331.96	2,089.08	880.25	766.67	113.58	7.750			
10,700.00	8,527.44	10,848.58	8,522.51	57.52	60.75	-89.61	1,331.15	2,189.05	880.25	762.52	117.73	7.477			
10,800.00	8,529.71	10,948.58	8,524.78	59.65	62.78	-89.61	1,330.35	2,289.02	880.24	758.33	121.91	7.220			
10,900.00	8,531.98	11,048.58	8,527.05	61.79	64.82	-89.61	1,329.54	2,389.00	880.24	754.12	126.12	6.979			
11,000.00	8,534.24	11,148.58	8,529.31	63.94	66.89	-89.61	1,328.74	2,488.97	880.23	749.87	130.36	6.752			
11,100.00	8,536.51	11,248.58	8,531.58	66.11	68.97	-89.61	1,327.93	2,588.94	880.23	745.60	134.63	6.538			
11,200.00	8,538.78	11,348.58	8,533.84	68.29	71.06	-89.61	1,327.13	2,688.91	880.23	741.31	138.91	6.336			
11,300.00	8,541.05	11,448.58	8,536.11	70.47	73.17	-89.61	1,326.32	2,788.88	880.22	737.00	143.22	6.146			
11,400.00	8,543.32	11,548.58	8,538.38	72.66	75.29	-89.61	1,325.52	2,888.85	880.22	732.67	147.55	5.966			
11,500.00	8,545.58	11,648.58	8,540.64	74.86	77.42	-89.61	1,324.71	2,988.82	880.21	728.32	151.89	5.795			
11,600.00	8,547.85	11,748.58	8,542.91	77.07	79.56	-89.61	1,323.91	3,088.79	880.21	723.95	156.25	5.633			
11,700.00	8,550.12	11,848.58	8,545.18	79.28	81.71	-89.61	1,323.10	3,188.76	880.20	719.57	160.63	5.480			
11,800.00	8,552.39	11,948.58	8,547.44	81.50	83.87	-89.61	1,322.30	3,288.74	880.20	715.18	165.02	5.334			
11,900.00	8,554.66	12,048.58	8,549.71	83.72	86.03	-89.61	1,321.49	3,388.71	880.19	710.77	169.42	5.195			
12,000.00	8,556.92	12,148.58	8,551.97	85.95	88.20	-89.61	1,320.69	3,488.68	880.19	706.36	173.83	5.063			
12,100.00	8,559.19	12,248.58	8,554.24	88.18	90.38	-89.61	1,319.88	3,588.65	880.18	701.93	178.25	4.938			
12,200.00	8,561.46	12,348.58	8,556.51	90.42	92.57	-89.61	1,319.08	3,688.62	880.18	697.49	182.69	4.818			
12,300.00	8,563.73	12,448.58	8,558.77	92.66	94.76	-89.61	1,318.27	3,788.59	880.18	693.05	187.13	4.704			
12,400.00	8,565.99	12,548.58	8,561.04	94.90	96.96	-89.61	1,317.47	3,888.56	880.17	688.59	191.58	4.594			
12,500.00	8,568.26	12,648.58	8,563.31	97.15	99.16	-89.61	1,316.66	3,988.53	880.17	684.13	196.04	4.490			
12,600.00	8,570.53	12,748.58	8,565.57	99.40	101.37	-89.61	1,315.86	4,088.50	880.16	679.66	200.50	4.390			
12,700.00	8,572.80	12,848.58	8,567.84	101.65	103.58	-89.61	1,315.05	4,188.48	880.16	675.18	204.98	4.294			
12,800.00	8,575.07	12,948.58	8,570.10	103.91	105.80	-89.61	1,314.25	4,288.45	880.15	670.70	209.46	4.202			
12,900.00	8,577.33	13,048.58	8,572.37	106.17	108.02	-89.61	1,313.44	4,388.42	880.15	666.21	213.94	4.114			
13,000.00	8,579.60	13,148.58	8,574.64	108.43	110.24	-89.61	1,312.64	4,488.39	880.14	661.71	218.43	4.029			
13,100.00	8,581.87	13,248.58	8,576.90	110.69	112.47	-89.61	1,311.83	4,588.36	880.14	657.21	222.93	3.948			
13,200.00	8,584.14	13,348.58	8,579.17	112.95	114.70	-89.61	1,311.03	4,688.33	880.13	652.70	227.43	3.870			
13,300.00	8,586.41	13,448.58	8,581.44	115.22	116.94	-89.61	1,310.22	4,788.30	880.13	648.19	231.94	3.795			
13,400.00	8,588.67	13,548.58	8,583.70	117.49	119.17	-89.61	1,309.42	4,888.27	880.13	643.68	236.45	3.722			
13,500.00	8,590.94	13,648.58	8,585.97	119.76	121.41	-89.61	1,308.61	4,988.24	880.12	639.16	240.96	3.653			
13,600.00	8,593.21	13,748.58	8,588.23	122.03	123.65	-89.61	1,307.81	5,088.21	880.12	634.63	245.48	3.585			
13,700.00	8,595.48	13,848.58	8,590.50	124.30	125.90	-89.61	1,307.00	5,188.19	880.11	630.11	250.01	3.520			
13,800.00	8,597.75	13,948.58	8,592.77	126.57	128.15	-89.61	1,306.20	5,288.16	880.11	625.57	254.53	3.458			
13,900.00	8,600.01	14,048.58	8,595.03	128.85	130.40	-89.61	1,305.39	5,388.13	880.10	621.04	259.06	3.397			
14,000.00	8,602.28	14,148.58	8,597.30	131.13	132.65	-89.61	1,304.59	5,488.10	880.10	616.50	263.59	3.339			
14,100.00	8,604.55	14,248.58	8,599.57	133.40	134.90	-89.61	1,303.78	5,588.07	880.09	611.96	268.13	3.282			
14,200.00	8,606.82	14,348.58	8,601.83	135.68	137.16	-89.61	1,302.97	5,688.04	880.09	607.42	272.67	3.228			
14,300.00	8,609.09	14,448.58	8,604.10	137.96	139.41	-89.61	1,302.17	5,788.01	880.08	602.87	277.21	3.175			
14,400.00	8,611.35	14,548.58	8,606.36	140.24	141.67	-89.61	1,301.36	5,887.98	880.08	598.32	281.76	3.124			
14,500.00	8,613.62	14,648.58	8,608.63	142.53	143.93	-89.61	1,300.56	5,987.95	880.07	593.77	286.30	3.074			
14,600.00	8,615.89	14,748.58	8,610.90	144.81	146.19	-89.61	1,299.75	6,087.93	880.07	589.22	290.85	3.026			
14,700.00	8,618.16	14,848.58	8,613.16	147.09	148.46	-89.61	1,298.95	6,187.90	880.07	584.66	295.40	2.979			
14,800.00	8,620.42	14,948.58	8,615.43	149.38	150.72	-89.61	1,298.14	6,287.87	880.06	580.10	299.96	2.934			
14,900.00	8,622.69	15,048.58	8,617.70	151.66	152.99	-89.61	1,297.34	6,387.84	880.06	575.54	304.51	2.890			
15,000.00	8,624.96	15,148.58	8,619.96	153.95	155.26	-89.61	1,296.53	6,487.81	880.05	570.98	309.07	2.847			
15,100.00	8,627.23	15,248.58	8,622.23	156.24	157.53	-89.61	1,295.73	6,587.78	880.05	566.42	313.63	2.806			
15,200.00	8,629.50	15,348.58	8,624.49	158.53	159.80	-89.61	1,294.92	6,687.75	880.04	561.85	318.19	2.766			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:	0.50 usft		
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
15,300.00	8,631.76	15,448.58	8,626.76	160.81	162.07	-89.61	1,294.12	6,787.72	880.04	557.28	322.76	2.727		
15,400.00	8,634.03	15,548.58	8,629.03	163.10	164.34	-89.61	1,293.31	6,887.69	880.03	552.71	327.32	2.689		
15,500.00	8,636.30	15,648.58	8,631.29	165.39	166.62	-89.61	1,292.51	6,987.67	880.03	548.14	331.89	2.652		
15,600.00	8,638.57	15,748.58	8,633.56	167.68	168.89	-89.61	1,291.70	7,087.64	880.02	543.57	336.46	2.616		
15,700.00	8,640.84	15,848.58	8,635.83	169.97	171.17	-89.61	1,290.90	7,187.61	880.02	538.99	341.03	2.581		
15,800.00	8,643.10	15,948.58	8,638.09	172.27	173.44	-89.61	1,290.09	7,287.58	880.02	534.42	345.60	2.546		
15,900.00	8,645.37	16,048.58	8,640.36	174.56	175.72	-89.61	1,289.29	7,387.55	880.01	529.84	350.17	2.513		
16,000.00	8,647.64	16,148.58	8,642.62	176.85	178.00	-89.61	1,288.48	7,487.52	880.01	525.26	354.74	2.481		
16,100.00	8,649.91	16,248.58	8,644.89	179.14	180.28	-89.61	1,287.68	7,587.49	880.00	520.68	359.32	2.449		
16,200.00	8,652.18	16,348.58	8,647.16	181.44	182.56	-89.61	1,286.87	7,687.46	880.00	516.10	363.89	2.418		
16,300.00	8,654.44	16,448.58	8,649.42	183.73	184.84	-89.61	1,286.07	7,787.43	879.99	511.52	368.47	2.388		
16,400.00	8,656.71	16,548.58	8,651.69	186.03	187.12	-89.61	1,285.26	7,887.40	879.99	506.94	373.05	2.359		
16,500.00	8,658.98	16,648.58	8,653.96	188.32	189.40	-89.61	1,284.46	7,987.38	879.98	502.35	377.63	2.330		
16,600.00	8,661.25	16,748.58	8,656.22	190.62	191.69	-89.61	1,283.65	8,087.35	879.98	497.77	382.21	2.302		
16,700.00	8,663.52	16,848.58	8,658.49	192.91	193.97	-89.61	1,282.85	8,187.32	879.97	493.18	386.79	2.275		
16,800.00	8,665.78	16,948.58	8,660.75	195.21	196.25	-89.61	1,282.04	8,287.29	879.97	488.60	391.37	2.248		
16,900.00	8,668.05	17,048.58	8,663.02	197.50	198.54	-89.61	1,281.24	8,387.26	879.97	484.01	395.96	2.222		
17,000.00	8,670.32	17,148.58	8,665.29	199.80	200.82	-89.61	1,280.43	8,487.23	879.96	479.42	400.54	2.197		
17,100.00	8,672.59	17,248.58	8,667.55	202.10	203.11	-89.61	1,279.63	8,587.20	879.96	474.83	405.13	2.172		
17,200.00	8,674.85	17,348.58	8,669.82	204.40	205.40	-89.61	1,278.82	8,687.17	879.95	470.24	409.71	2.148		
17,300.00	8,677.12	17,448.58	8,672.09	206.69	207.68	-89.61	1,278.02	8,787.14	879.95	465.65	414.30	2.124		
17,400.00	8,679.39	17,548.58	8,674.35	208.99	209.97	-89.61	1,277.21	8,887.12	879.94	461.06	418.89	2.101		
17,500.00	8,681.66	17,648.58	8,676.62	211.29	212.26	-89.61	1,276.41	8,987.09	879.94	456.46	423.48	2.078		
17,600.00	8,683.93	17,748.58	8,678.88	213.59	214.55	-89.61	1,275.60	9,087.06	879.93	451.87	428.06	2.056		
17,700.00	8,686.19	17,848.58	8,681.15	215.89	216.84	-89.61	1,274.80	9,187.03	879.93	447.27	432.65	2.034		
17,800.00	8,688.46	17,948.58	8,683.42	218.19	219.13	-89.61	1,273.99	9,287.00	879.92	442.68	437.25	2.012		
17,900.00	8,690.73	18,048.58	8,685.68	220.49	221.42	-89.61	1,273.19	9,386.97	879.92	438.08	441.84	1.992 Collision Risk Procedures Req.		
18,000.00	8,693.00	18,148.58	8,687.95	222.79	223.71	-89.61	1,272.38	9,486.94	879.91	433.49	446.43	1.971 Collision Risk Procedures Req.		
18,100.00	8,695.27	18,248.58	8,690.22	225.08	226.00	-89.61	1,271.57	9,586.91	879.91	428.89	451.02	1.951 Collision Risk Procedures Req.		
18,200.00	8,697.53	18,348.58	8,692.48	227.39	228.29	-89.61	1,270.77	9,686.88	879.91	424.29	455.61	1.931 Collision Risk Procedures Req.		
18,300.00	8,699.80	18,448.58	8,694.75	229.69	230.58	-89.61	1,269.96	9,786.86	879.90	419.69	460.21	1.912 Collision Risk Procedures Req.		
18,400.00	8,702.07	18,548.58	8,697.01	231.99	232.88	-89.61	1,269.16	9,886.83	879.90	415.09	464.80	1.893 Collision Risk Procedures Req.		
18,500.00	8,704.34	18,648.58	8,699.28	234.29	235.17	-89.61	1,268.35	9,986.80	879.89	410.50	469.40	1.875 Collision Risk Procedures Req.		
18,600.00	8,706.61	18,748.58	8,701.55	236.59	237.46	-89.61	1,267.55	10,086.77	879.89	405.90	473.99	1.856 Collision Risk Procedures Req.		
18,700.00	8,708.87	18,848.58	8,703.81	238.89	239.75	-89.61	1,266.74	10,186.74	879.88	401.29	478.59	1.838 Collision Risk Procedures Req.		
18,800.00	8,711.14	18,948.58	8,706.08	241.19	242.05	-89.61	1,265.94	10,286.71	879.88	396.69	483.18	1.821 Collision Risk Procedures Req.		
18,900.00	8,713.41	19,048.58	8,708.35	243.49	244.34	-89.60	1,265.13	10,386.68	879.87	392.09	487.78	1.804 Collision Risk Procedures Req.		
19,000.00	8,715.68	19,148.58	8,710.61	245.79	246.64	-89.60	1,264.33	10,486.65	879.87	387.49	492.38	1.787 Collision Risk Procedures Req.		
19,100.00	8,717.95	19,248.58	8,712.88	247.40	248.93	-89.60	1,263.52	10,586.62	879.86	383.59	496.28	1.773 Collision Risk Procedures Req.		
19,102.43	8,718.00	19,251.01	8,712.93	247.44	248.99	-89.60	1,263.50	10,589.05	879.86	383.49	496.37	1.773 Collision Risk Procedures Req., SF		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122HA - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		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	
0.00	0.00	23.60	23.60	0.50	0.51	-15.13	1,374.02	-371.58	1,423.38				
100.00	100.00	123.60	123.60	0.65	0.79	-15.13	1,374.02	-371.58	1,423.38	1,421.94	1.44	988.516	
200.00	200.00	223.60	223.60	1.34	1.45	-15.13	1,374.02	-371.58	1,423.38	1,420.58	2.79	509.520	
300.00	300.00	323.60	323.60	1.81	1.90	-15.13	1,374.02	-371.58	1,423.38	1,419.66	3.71	383.424	
400.00	400.00	423.60	423.60	2.19	2.26	-15.13	1,374.02	-371.58	1,423.38	1,418.93	4.45	319.970	
500.00	500.00	523.60	523.60	2.51	2.58	-15.13	1,374.02	-371.58	1,423.38	1,418.29	5.08	279.996	
600.00	600.00	623.60	623.60	2.80	2.86	-15.13	1,374.02	-371.58	1,423.38	1,417.73	5.65	251.832	
700.00	700.00	723.60	723.60	3.06	3.12	-15.13	1,374.02	-371.58	1,423.38	1,417.20	6.17	230.596	
800.00	800.00	823.60	823.60	3.30	3.36	-15.13	1,374.02	-371.58	1,423.38	1,416.72	6.66	213.835	
900.00	900.00	923.60	923.60	3.53	3.58	-15.13	1,374.02	-371.58	1,423.38	1,416.27	7.11	200.163	
1,000.00	1,000.00	1,023.60	1,023.60	3.75	3.80	-15.13	1,374.02	-371.58	1,423.38	1,415.84	7.54	188.729	
1,100.00	1,100.00	1,123.60	1,123.60	3.95	4.00	-15.13	1,374.02	-371.58	1,423.38	1,415.42	7.95	178.980	
1,200.00	1,200.00	1,223.60	1,223.60	4.15	4.20	-15.13	1,374.02	-371.58	1,423.38	1,415.03	8.35	170.536	
1,300.00	1,300.00	1,323.60	1,323.60	4.34	4.38	-15.13	1,374.02	-371.58	1,423.38	1,414.65	8.73	163.128	
1,400.00	1,400.00	1,423.60	1,423.60	4.52	4.57	-15.13	1,374.02	-371.58	1,423.38	1,414.29	9.09	156.558	
1,500.00	1,500.00	1,523.94	1,523.93	4.70	4.77	-15.13	1,374.04	-371.48	1,423.37	1,413.93	9.45	150.674	
1,600.00	1,599.98	1,625.24	1,625.20	5.05	5.07	12.88	1,374.66	-368.92	1,421.60	1,411.68	9.92	143.305	
1,700.00	1,699.84	1,725.28	1,725.10	5.69	5.24	13.17	1,375.90	-363.77	1,416.38	1,405.75	10.63	133.251	
1,800.00	1,799.45	1,824.63	1,824.30	6.30	5.42	13.51	1,377.17	-358.48	1,407.79	1,396.44	11.35	124.026	
1,900.00	1,898.82	1,923.70	1,923.22	6.46	5.62	13.85	1,378.43	-353.21	1,396.83	1,385.17	11.66	119.810	
2,000.00	1,998.18	2,022.76	2,022.13	6.67	5.84	14.19	1,379.70	-347.95	1,385.81	1,373.80	12.01	115.348	
2,100.00	2,097.54	2,121.81	2,121.04	6.90	6.06	14.53	1,380.97	-342.68	1,374.84	1,362.45	12.39	110.955	
2,200.00	2,196.90	2,220.87	2,219.95	7.15	6.30	14.88	1,382.23	-337.41	1,363.92	1,351.14	12.78	106.716	
2,300.00	2,296.25	2,319.92	2,318.85	7.42	6.55	15.23	1,383.50	-332.14	1,353.05	1,339.86	13.18	102.640	
2,400.00	2,395.61	2,418.98	2,417.76	7.69	6.81	15.59	1,384.77	-326.87	1,342.23	1,328.63	13.59	98.735	
2,500.00	2,494.97	2,518.04	2,516.67	7.98	7.07	15.96	1,386.03	-321.60	1,331.46	1,317.45	14.02	95.002	
2,600.00	2,594.33	2,617.09	2,615.58	8.28	7.34	16.33	1,387.30	-316.34	1,320.75	1,306.31	14.44	91.440	
2,700.00	2,693.69	2,716.15	2,714.48	8.59	7.62	16.70	1,388.57	-311.07	1,310.10	1,295.22	14.88	88.047	
2,800.00	2,793.05	2,815.20	2,813.39	8.91	7.90	17.09	1,389.83	-305.80	1,299.50	1,284.18	15.32	84.817	
2,900.00	2,892.40	2,914.26	2,912.30	9.24	8.18	17.47	1,391.10	-300.53	1,288.96	1,273.19	15.77	81.744	
3,000.00	2,991.76	3,013.32	3,011.21	9.57	8.48	17.87	1,392.36	-295.26	1,278.48	1,262.26	16.22	78.823	
3,100.00	3,091.12	3,112.37	3,110.11	9.91	8.77	18.27	1,393.63	-289.99	1,268.06	1,251.39	16.68	76.045	
3,200.00	3,190.48	3,211.43	3,209.02	10.25	9.07	18.68	1,394.90	-284.73	1,257.71	1,240.58	17.13	73.404	
3,300.00	3,289.84	3,310.48	3,307.93	10.60	9.37	19.09	1,396.16	-279.46	1,247.42	1,229.82	17.60	70.893	
3,400.00	3,389.20	3,409.54	3,406.84	10.95	9.67	19.52	1,397.43	-274.19	1,237.20	1,219.14	18.06	68.504	
3,500.00	3,488.55	3,508.60	3,505.74	11.31	9.98	19.94	1,398.70	-268.92	1,227.04	1,208.51	18.53	66.230	
3,600.00	3,587.91	3,607.65	3,604.65	11.67	10.29	20.38	1,399.96	-263.65	1,216.96	1,197.96	19.00	64.066	
3,700.00	3,687.27	3,706.71	3,703.56	12.03	10.60	20.82	1,401.23	-258.38	1,206.94	1,187.48	19.47	62.004	
3,800.00	3,786.63	3,805.76	3,802.47	12.40	10.91	21.27	1,402.49	-253.12	1,197.00	1,177.07	19.93	60.047	
3,900.00	3,885.99	3,904.83	3,901.41	12.77	11.19	21.71	1,403.75	-247.85	1,187.06	1,166.69	20.36	58.290	
4,000.00	3,985.35	4,013.88	4,009.95	13.14	11.41	22.00	1,404.02	-242.58	1,176.74	1,155.82	20.92	56.252	
4,100.00	4,084.70	4,111.74	4,108.30	13.52	11.48	22.21	1,404.02	-246.77	1,166.25	1,144.79	21.46	54.336	
4,200.00	4,184.06	4,211.10	4,207.66	13.90	11.56	22.42	1,404.02	-246.77	1,155.78	1,133.86	21.92	52.736	
4,300.00	4,283.42	4,310.45	4,307.02	14.27	11.64	22.64	1,404.02	-246.77	1,145.32	1,122.95	22.37	51.200	
4,400.00	4,382.78	4,409.81	4,406.38	14.65	11.71	22.86	1,404.02	-246.77	1,134.88	1,112.06	22.82	49.725	
4,500.00	4,482.14	4,509.17	4,505.74	15.04	11.79	23.08	1,404.02	-246.77	1,124.46	1,101.18	23.28	48.308	
4,600.00	4,581.49	4,608.53	4,605.09	15.42	11.86	23.31	1,404.02	-246.77	1,114.05	1,090.32	23.73	46.947	
4,700.00	4,680.85	4,707.89	4,704.45	15.81	11.94	23.54	1,404.02	-246.77	1,103.66	1,079.48	24.18	45.638	
4,800.00	4,780.21	4,807.25	4,803.81	16.19	12.02	23.78	1,404.02	-246.77	1,093.29	1,068.65	24.64	44.379	
4,900.00	4,879.57	4,906.60	4,903.17	16.58	12.09	24.02	1,404.02	-246.77	1,082.94	1,057.85	25.09	43.167	
5,000.00	4,978.93	5,005.96	5,002.53	16.97	12.17	24.27	1,404.02	-246.77	1,072.60	1,047.07	25.54	41.999	
5,100.00	5,078.29	5,105.32	5,101.89	17.36	12.25	24.52	1,404.02	-246.77	1,062.29	1,036.30	25.99	40.875	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122HA - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,177.64	5,204.68	5,201.24	17.75	12.32	24.77	1,404.02	-246.77	1,052.00	1,025.56	26.44	39.791			
5,300.00	5,277.00	5,304.04	5,300.60	18.15	12.40	25.03	1,404.02	-246.77	1,041.73	1,014.84	26.89	38.746			
5,400.00	5,376.36	5,403.40	5,399.96	18.54	12.48	25.30	1,404.02	-246.77	1,031.48	1,004.15	27.33	37.737			
5,500.00	5,475.72	5,502.75	5,499.32	18.93	12.55	25.57	1,404.02	-246.77	1,021.25	993.47	27.78	36.763			
5,600.00	5,575.08	5,602.11	5,598.68	19.33	12.63	25.84	1,404.02	-246.77	1,011.05	982.82	28.22	35.823			
5,700.00	5,674.44	5,701.47	5,698.04	19.73	12.71	26.13	1,404.02	-246.77	1,000.87	972.20	28.67	34.915			
5,800.00	5,773.79	5,800.83	5,797.39	20.12	12.78	26.41	1,404.02	-246.77	990.71	961.61	29.11	34.037			
5,900.00	5,873.15	5,900.19	5,896.75	20.52	12.86	26.71	1,404.02	-246.77	980.58	951.04	29.55	33.188			
6,000.00	5,972.51	5,999.55	5,996.11	20.92	12.94	27.01	1,404.02	-246.77	970.48	940.49	29.98	32.367			
6,100.00	6,071.87	6,098.90	6,095.47	21.32	13.01	27.31	1,404.02	-246.77	960.40	929.98	30.42	31.572			
6,200.00	6,171.23	6,198.26	6,194.83	21.72	13.09	27.63	1,404.02	-246.77	950.35	919.50	30.85	30.801			
6,300.00	6,270.75	6,297.78	6,294.35	22.13	13.17	27.82	1,404.02	-246.77	941.72	910.42	31.30	30.084			
6,400.00	6,370.54	6,397.58	6,394.14	22.59	13.24	27.95	1,404.02	-246.77	936.19	904.40	31.79	29.453			
6,500.00	6,470.50	6,497.54	6,494.10	22.98	13.32	28.01	1,404.02	-246.77	933.74	901.51	32.22	28.978			
6,587.78	6,558.28	6,585.32	6,581.88	23.04	13.39	28.02	1,404.02	-246.77	933.29	900.93	32.36	28.839			
6,600.00	6,570.50	6,597.54	6,594.10	23.05	13.40	0.13	1,404.02	-246.77	933.60	901.22	32.38	28.831			
6,700.00	6,670.50	6,697.54	6,694.10	23.10	13.48	0.13	1,404.02	-246.77	933.60	901.07	32.53	28.701			
6,800.00	6,770.50	6,797.54	6,794.10	23.15	13.56	0.13	1,404.02	-246.77	933.60	900.93	32.68	28.571			
6,900.00	6,870.50	6,897.54	6,894.10	23.19	13.63	0.13	1,404.02	-246.77	933.60	900.78	32.83	28.441			
7,000.00	6,970.50	6,997.54	6,994.10	23.24	13.71	0.13	1,404.02	-246.77	933.60	900.63	32.97	28.313			
7,100.00	7,070.50	7,097.54	7,094.10	23.29	13.79	0.13	1,404.02	-246.77	933.60	900.48	33.12	28.186			
7,200.00	7,170.50	7,197.54	7,194.10	23.34	13.87	0.13	1,404.02	-246.77	933.60	900.33	33.27	28.060			
7,300.00	7,270.50	7,297.54	7,294.10	23.39	13.95	0.13	1,404.02	-246.77	933.60	900.18	33.42	27.936			
7,400.00	7,370.50	7,397.54	7,394.10	23.44	14.02	0.13	1,404.02	-246.77	933.60	900.03	33.57	27.812			
7,500.00	7,470.50	7,497.54	7,494.10	23.49	14.10	0.13	1,404.02	-246.77	933.60	899.89	33.72	27.690			
7,600.00	7,570.50	7,597.54	7,594.10	23.54	14.18	0.13	1,404.02	-246.77	933.60	899.74	33.87	27.568			
7,700.00	7,670.50	7,697.54	7,694.10	23.59	14.26	0.13	1,404.02	-246.77	933.60	899.59	34.01	27.448			
7,800.00	7,770.50	7,797.54	7,794.10	23.65	14.34	0.13	1,404.02	-246.77	933.60	899.44	34.16	27.329			
7,900.00	7,870.50	7,897.54	7,894.10	23.70	14.41	0.13	1,404.02	-246.77	933.60	899.29	34.31	27.210			
8,000.00	7,970.40	8,010.94	8,007.00	23.66	14.90	-90.06	1,403.26	-238.04	932.98	898.65	34.33	27.177			
8,100.00	8,068.49	8,124.54	8,116.17	23.58	15.78	-89.68	1,400.58	-207.45	930.85	896.50	34.35	27.097			
8,200.00	8,161.84	8,235.71	8,215.11	23.48	16.59	-89.30	1,396.20	-157.34	927.34	892.88	34.46	26.911			
8,300.00	8,247.60	8,344.13	8,300.50	23.40	17.27	-88.95	1,390.40	-91.05	922.63	887.89	34.75	26.553			
8,400.00	8,323.17	8,449.66	8,370.16	23.38	17.80	-88.63	1,383.50	-12.26	916.93	881.60	35.34	25.948			
8,500.00	8,386.25	8,552.33	8,422.91	23.47	18.20	-88.35	1,375.84	75.32	910.46	874.11	36.35	25.048			
8,600.00	8,434.92	8,652.27	8,458.40	23.73	18.47	-88.13	1,367.71	168.26	903.44	865.60	37.84	23.877			
8,700.00	8,467.72	8,750.00	8,476.94	24.20	18.70	-87.96	1,359.36	263.73	896.09	856.29	39.80	22.517			
8,800.00	8,483.63	8,835.45	8,480.86	24.88	19.10	-88.02	1,352.17	348.75	888.88	846.82	42.05	21.137			
8,900.00	8,486.62	8,900.00	8,482.32	25.76	19.81	-88.16	1,348.12	413.15	883.73	839.45	44.29	19.955			
9,000.00	8,488.89	8,988.15	8,484.32	26.81	21.29	-88.15	1,344.94	501.22	881.03	833.87	47.16	18.682			
9,100.00	8,491.15	9,076.98	8,486.34	28.01	22.88	-88.15	1,343.99	590.02	880.72	830.57	50.15	17.561			
9,114.60	8,491.48	9,091.58	8,486.67	28.20	23.14	-88.15	1,343.87	604.61	880.72	830.09	50.63	17.394			
9,200.00	8,493.42	9,176.98	8,488.60	29.34	24.76	-88.15	1,343.19	689.99	880.72	827.22	53.49	16.464			
9,300.00	8,495.69	9,276.98	8,490.87	30.79	26.72	-88.15	1,342.38	789.96	880.71	823.71	57.00	15.450			
9,400.00	8,497.96	9,376.98	8,493.13	32.34	28.74	-88.15	1,341.58	889.94	880.71	820.05	60.66	14.519			
9,500.00	8,500.23	9,476.98	8,495.40	33.98	30.80	-88.15	1,340.77	989.91	880.70	816.27	64.44	13.668			
9,600.00	8,502.49	9,576.98	8,497.66	35.70	32.90	-88.15	1,339.97	1,089.88	880.70	812.39	68.31	12.892			
9,700.00	8,504.76	9,676.98	8,499.93	37.49	35.02	-88.15	1,339.16	1,189.85	880.69	808.42	72.27	12.186			
9,800.00	8,507.03	9,776.98	8,502.19	39.33	37.17	-88.15	1,338.36	1,289.82	880.69	804.38	76.31	11.542			
9,900.00	8,509.30	9,876.98	8,504.46	41.23	39.34	-88.15	1,337.55	1,389.79	880.69	800.29	80.40	10.954			
10,000.00	8,511.56	9,976.98	8,506.73	43.16	41.52	-88.15	1,336.75	1,489.76	880.68	796.13	84.55	10.416			
10,100.00	8,513.83	10,076.98	8,508.99	45.13	43.72	-88.15	1,335.94	1,589.73	880.68	791.93	88.74	9.924			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122HA - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM						Rule Assigned:						Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum		Separation	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Separation (usft)	Factor			
10,200.00	8,516.10	10,176.98	8,511.26	47.14	45.93	-88.15	1,335.14	1,689.70	880.67	787.70	92.98	9.472			
10,300.00	8,518.37	10,276.98	8,513.52	49.17	48.14	-88.15	1,334.33	1,789.68	880.67	783.42	97.25	9.056			
10,400.00	8,520.64	10,376.98	8,515.79	51.23	50.37	-88.15	1,333.53	1,889.65	880.67	779.12	101.55	8.672			
10,500.00	8,522.90	10,476.98	8,518.05	53.31	52.60	-88.15	1,332.73	1,989.62	880.66	774.79	105.87	8.318			
10,600.00	8,525.17	10,576.98	8,520.32	55.40	54.84	-88.15	1,331.92	2,089.59	880.66	770.43	110.22	7.990			
10,700.00	8,527.44	10,676.98	8,522.58	57.52	57.09	-88.15	1,331.12	2,189.56	880.65	766.06	114.59	7.685			
10,800.00	8,529.71	10,776.98	8,524.85	59.65	59.34	-88.15	1,330.31	2,289.53	880.65	761.67	118.98	7.401			
10,900.00	8,531.98	10,876.98	8,527.12	61.79	61.59	-88.15	1,329.51	2,389.50	880.65	757.26	123.39	7.137			
11,000.00	8,534.24	10,976.98	8,529.38	63.94	63.85	-88.15	1,328.70	2,489.47	880.64	752.83	127.81	6.890			
11,100.00	8,536.51	11,076.98	8,531.65	66.11	66.12	-88.15	1,327.90	2,589.44	880.64	748.39	132.25	6.659			
11,200.00	8,538.78	11,176.98	8,533.91	68.29	68.38	-88.15	1,327.09	2,689.42	880.63	743.94	136.70	6.442			
11,300.00	8,541.05	11,276.98	8,536.18	70.47	70.65	-88.15	1,326.29	2,789.39	880.63	739.48	141.15	6.239			
11,400.00	8,543.32	11,376.98	8,538.44	72.66	72.92	-88.15	1,325.48	2,889.36	880.63	735.00	145.62	6.047			
11,500.00	8,545.58	11,476.98	8,540.71	74.86	75.20	-88.15	1,324.68	2,989.33	880.62	730.52	150.10	5.867			
11,600.00	8,547.85	11,576.98	8,542.97	77.07	77.48	-88.15	1,323.87	3,089.30	880.62	726.03	154.59	5.697			
11,700.00	8,550.12	11,676.98	8,545.24	79.28	79.75	-88.15	1,323.07	3,189.27	880.61	721.53	159.08	5.536			
11,800.00	8,552.39	11,776.98	8,547.51	81.50	82.03	-88.15	1,322.26	3,289.24	880.61	717.03	163.58	5.383			
11,900.00	8,554.66	11,876.98	8,549.77	83.72	84.32	-88.15	1,321.46	3,389.21	880.60	712.52	168.09	5.239			
12,000.00	8,556.92	11,976.98	8,552.04	85.95	86.60	-88.15	1,320.65	3,489.18	880.60	708.00	172.60	5.102			
12,100.00	8,559.19	12,076.98	8,554.30	88.18	88.88	-88.15	1,319.85	3,589.16	880.60	703.47	177.12	4.972			
12,200.00	8,561.46	12,176.98	8,556.57	90.42	91.17	-88.15	1,319.04	3,689.13	880.59	698.95	181.65	4.848			
12,300.00	8,563.73	12,276.98	8,558.83	92.66	93.46	-88.15	1,318.24	3,789.10	880.59	694.41	186.18	4.730			
12,400.00	8,565.99	12,376.98	8,561.10	94.90	95.75	-88.15	1,317.44	3,889.07	880.58	689.88	190.71	4.617			
12,500.00	8,568.26	12,476.98	8,563.36	97.15	98.04	-88.14	1,316.63	3,989.04	880.58	685.33	195.25	4.510			
12,600.00	8,570.53	12,576.98	8,565.63	99.40	100.33	-88.14	1,315.83	4,089.01	880.58	680.79	199.79	4.408			
12,700.00	8,572.80	12,676.98	8,567.89	101.65	102.62	-88.14	1,315.02	4,188.98	880.57	676.24	204.33	4.310			
12,800.00	8,575.07	12,776.98	8,570.16	103.91	104.91	-88.14	1,314.22	4,288.95	880.57	671.69	208.88	4.216			
12,900.00	8,577.33	12,876.98	8,572.43	106.17	107.21	-88.14	1,313.41	4,388.92	880.56	667.13	213.43	4.126			
13,000.00	8,579.60	12,976.98	8,574.69	108.43	109.50	-88.14	1,312.61	4,488.90	880.56	662.57	217.99	4.040			
13,100.00	8,581.87	13,076.98	8,576.96	110.69	111.80	-88.14	1,311.80	4,588.87	880.56	658.01	222.54	3.957			
13,200.00	8,584.14	13,176.98	8,579.22	112.95	114.09	-88.14	1,311.00	4,688.84	880.55	653.45	227.10	3.877			
13,300.00	8,586.41	13,276.98	8,581.49	115.22	116.39	-88.14	1,310.19	4,788.81	880.55	648.88	231.67	3.801			
13,400.00	8,588.67	13,376.98	8,583.75	117.49	118.68	-88.14	1,309.39	4,888.78	880.54	644.31	236.23	3.727			
13,500.00	8,590.94	13,476.98	8,586.02	119.76	120.98	-88.14	1,308.58	4,988.75	880.54	639.74	240.80	3.657			
13,600.00	8,593.21	13,576.98	8,588.28	122.03	123.28	-88.14	1,307.78	5,088.72	880.54	635.17	245.36	3.589			
13,700.00	8,595.48	13,676.98	8,590.55	124.30	125.58	-88.14	1,306.97	5,188.69	880.53	630.60	249.94	3.523			
13,800.00	8,597.75	13,776.98	8,592.82	126.57	127.88	-88.14	1,306.17	5,288.66	880.53	626.02	254.51	3.460			
13,900.00	8,600.01	13,876.98	8,595.08	128.85	130.18	-88.14	1,305.36	5,388.64	880.52	621.44	259.08	3.399			
14,000.00	8,602.28	13,976.98	8,597.35	131.13	132.48	-88.14	1,304.56	5,488.61	880.52	616.86	263.66	3.340			
14,100.00	8,604.55	14,076.98	8,599.61	133.40	134.78	-88.14	1,303.76	5,588.58	880.51	612.28	268.23	3.283			
14,200.00	8,606.82	14,176.98	8,601.88	135.68	137.08	-88.14	1,302.95	5,688.55	880.51	607.70	272.81	3.228			
14,300.00	8,609.09	14,276.98	8,604.14	137.96	139.38	-88.14	1,302.15	5,788.52	880.51	603.11	277.39	3.174			
14,400.00	8,611.35	14,376.98	8,606.41	140.24	141.68	-88.14	1,301.34	5,888.49	880.50	598.53	281.98	3.123			
14,500.00	8,613.62	14,476.98	8,608.67	142.53	143.98	-88.14	1,300.54	5,988.46	880.50	593.94	286.56	3.073			
14,600.00	8,615.89	14,576.98	8,610.94	144.81	146.28	-88.14	1,299.73	6,088.43	880.49	589.35	291.14	3.024			
14,700.00	8,618.16	14,676.98	8,613.21	147.09	148.59	-88.14	1,298.93	6,188.40	880.49	584.76	295.73	2.977			
14,800.00	8,620.42	14,776.98	8,615.47	149.38	150.89	-88.14	1,298.12	6,288.38	880.49	580.17	300.31	2.932			
14,900.00	8,622.69	14,876.98	8,617.74	151.66	153.19	-88.14	1,297.32	6,388.35	880.48	575.58	304.90	2.888			
15,000.00	8,624.96	14,976.98	8,620.00	153.95	155.49	-88.14	1,296.51	6,488.32	880.48	570.99	309.49	2.845			
15,100.00	8,627.23	15,076.98	8,622.27	156.24	157.80	-88.14	1,295.71	6,588.29	880.47	566.40	314.08	2.803			
15,200.00	8,629.50	15,176.98	8,624.53	158.53	160.10	-88.14	1,294.90	6,688.26	880.47	561.80	318.67	2.763			
15,300.00	8,631.76	15,276.98	8,626.80	160.81	162.40	-88.14	1,294.10	6,788.23	880.47	557.21	323.26	2.724			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-122HA - Wellbore #1 - PLAN 1											Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM											Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
15,400.00	8,634.03	15,376.98	8,629.06	163.10	164.71	-88.14	1,293.29	6,888.20	880.46	552.61	2.686
15,500.00	8,636.30	15,476.98	8,631.33	165.39	167.01	-88.14	1,292.49	6,988.17	880.46	548.01	2.648
15,600.00	8,638.57	15,576.98	8,633.60	167.68	169.32	-88.14	1,291.68	7,088.14	880.45	543.42	2.612
15,700.00	8,640.84	15,676.98	8,635.86	169.97	171.62	-88.14	1,290.88	7,188.11	880.45	538.82	2.577
15,800.00	8,643.10	15,776.98	8,638.13	172.27	173.93	-88.14	1,290.08	7,288.09	880.45	534.22	2.543
15,900.00	8,645.37	15,876.98	8,640.39	174.56	176.23	-88.14	1,289.27	7,388.06	880.44	529.62	2.510
16,000.00	8,647.64	15,976.98	8,642.66	176.85	178.54	-88.14	1,288.47	7,488.03	880.44	525.02	2.477
16,100.00	8,649.91	16,076.98	8,644.92	179.14	180.84	-88.14	1,287.66	7,588.00	880.43	520.42	2.446
16,200.00	8,652.18	16,176.98	8,647.19	181.44	183.15	-88.14	1,286.86	7,687.97	880.43	515.82	2.415
16,300.00	8,654.44	16,276.98	8,649.45	183.73	185.45	-88.14	1,286.05	7,787.94	880.43	511.21	2.385
16,400.00	8,656.71	16,376.98	8,651.72	186.03	187.76	-88.14	1,285.25	7,887.91	880.42	506.61	2.355
16,500.00	8,658.98	16,476.98	8,653.99	188.32	190.06	-88.14	1,284.44	7,987.88	880.42	502.01	2.327
16,600.00	8,661.25	16,576.98	8,656.25	190.62	192.37	-88.14	1,283.64	8,087.85	880.41	497.40	2.299
16,700.00	8,663.52	16,676.98	8,658.52	192.91	194.68	-88.14	1,282.83	8,187.83	880.41	492.80	2.271
16,800.00	8,665.78	16,776.98	8,660.78	195.21	196.98	-88.14	1,282.03	8,287.80	880.40	488.19	2.245
16,900.00	8,668.05	16,876.98	8,663.05	197.50	199.29	-88.14	1,281.22	8,387.77	880.40	483.59	2.219
17,000.00	8,670.32	16,976.98	8,665.31	199.80	201.60	-88.14	1,280.42	8,487.74	880.40	478.98	2.193
17,100.00	8,672.59	17,076.98	8,667.58	202.10	203.90	-88.14	1,279.61	8,587.71	880.39	474.38	2.168
17,200.00	8,674.85	17,176.98	8,669.84	204.40	206.21	-88.14	1,278.81	8,687.68	880.39	469.77	2.144
17,300.00	8,677.12	17,276.98	8,672.11	206.69	208.52	-88.14	1,278.00	8,787.65	880.38	465.16	2.120
17,400.00	8,679.39	17,376.98	8,674.38	208.99	210.82	-88.14	1,277.20	8,887.62	880.38	460.56	2.097
17,500.00	8,681.66	17,476.98	8,676.64	211.29	213.13	-88.14	1,276.39	8,987.59	880.38	455.95	2.074
17,600.00	8,683.93	17,576.98	8,678.91	213.59	215.44	-88.14	1,275.59	9,087.57	880.37	451.34	2.052
17,700.00	8,686.19	17,676.98	8,681.17	215.89	217.74	-88.14	1,274.79	9,187.54	880.37	446.73	2.030
17,800.00	8,688.46	17,776.98	8,683.44	218.19	220.05	-88.14	1,273.98	9,287.51	880.36	442.12	2.009
17,900.00	8,690.73	17,876.98	8,685.70	220.49	222.36	-88.14	1,273.18	9,387.48	880.36	437.51	1.988 Collision Risk Procedures Req.
18,000.00	8,693.00	17,976.98	8,687.97	222.79	224.67	-88.14	1,272.37	9,487.45	880.36	432.90	1.967 Collision Risk Procedures Req.
18,100.00	8,695.27	18,076.98	8,690.23	225.08	226.97	-88.14	1,271.57	9,587.42	880.35	428.29	1.947 Collision Risk Procedures Req.
18,200.00	8,697.53	18,176.98	8,692.50	227.39	229.28	-88.14	1,270.76	9,687.39	880.35	423.68	1.928 Collision Risk Procedures Req.
18,300.00	8,699.80	18,276.98	8,694.76	229.69	231.59	-88.14	1,269.96	9,787.36	880.34	419.07	1.909 Collision Risk Procedures Req.
18,400.00	8,702.07	18,376.98	8,697.03	231.99	233.90	-88.14	1,269.15	9,887.33	880.34	414.46	1.890 Collision Risk Procedures Req.
18,500.00	8,704.34	18,476.98	8,699.30	234.29	236.20	-88.14	1,268.35	9,987.31	880.34	409.85	1.871 Collision Risk Procedures Req.
18,600.00	8,706.61	18,576.98	8,701.56	236.59	238.51	-88.13	1,267.54	10,087.28	880.33	405.24	1.853 Collision Risk Procedures Req.
18,700.00	8,708.87	18,676.98	8,703.83	238.89	240.82	-88.13	1,266.74	10,187.25	880.33	400.63	1.835 Collision Risk Procedures Req.
18,800.00	8,711.14	18,776.98	8,706.09	241.19	243.13	-88.13	1,265.93	10,287.22	880.32	396.02	1.818 Collision Risk Procedures Req.
18,900.00	8,713.41	18,876.98	8,708.36	243.49	245.44	-88.13	1,265.13	10,387.19	880.32	391.40	1.801 Collision Risk Procedures Req.
19,000.00	8,715.68	18,976.98	8,710.62	245.79	247.75	-88.13	1,264.32	10,487.16	880.31	386.79	1.784 Collision Risk Procedures Req.
19,100.00	8,717.95	19,076.98	8,712.89	247.40	250.05	-88.13	1,263.52	10,587.13	880.31	382.88	1.770 Collision Risk Procedures Req.
19,102.43	8,718.00	19,079.41	8,712.94	247.44	250.11	-88.13	1,263.50	10,589.56	880.31	382.78	1.769 Collision Risk Procedures Req., CC, E

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		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	
0.00	0.00	23.60	23.60	0.50	0.51	-14.72	1,414.02	-371.49	1,462.00				
100.00	100.00	123.60	123.60	0.65	0.79	-14.72	1,414.02	-371.49	1,462.00	1,460.56	1.44	1,015.342	
200.00	200.00	223.60	223.60	1.34	1.45	-14.72	1,414.02	-371.49	1,462.00	1,459.21	2.79	523.348	
300.00	300.00	323.60	323.60	1.81	1.90	-14.72	1,414.02	-371.49	1,462.00	1,458.29	3.71	393.829	
400.00	400.00	423.60	423.60	2.19	2.26	-14.72	1,414.02	-371.49	1,462.00	1,457.56	4.45	328.653	
500.00	500.00	523.60	523.60	2.51	2.58	-14.72	1,414.02	-371.49	1,462.00	1,456.92	5.08	287.594	
600.00	600.00	623.60	623.60	2.80	2.86	-14.72	1,414.02	-371.49	1,462.00	1,456.35	5.65	258.666	
700.00	700.00	723.60	723.60	3.06	3.12	-14.72	1,414.02	-371.49	1,462.00	1,455.83	6.17	236.854	
800.00	800.00	823.60	823.60	3.30	3.36	-14.72	1,414.02	-371.49	1,462.00	1,455.35	6.66	219.638	
900.00	900.00	923.60	923.60	3.53	3.58	-14.72	1,414.02	-371.49	1,462.00	1,454.89	7.11	205.595	
1,000.00	1,000.00	1,023.60	1,023.60	3.75	3.80	-14.72	1,414.02	-371.49	1,462.00	1,454.46	7.54	193.851	
1,100.00	1,100.00	1,123.60	1,123.60	3.95	4.00	-14.72	1,414.02	-371.49	1,462.00	1,454.05	7.95	183.838	
1,200.00	1,200.00	1,223.60	1,223.60	4.15	4.20	-14.72	1,414.02	-371.49	1,462.00	1,453.66	8.35	175.164	
1,300.00	1,300.00	1,323.60	1,323.60	4.34	4.38	-14.72	1,414.02	-371.49	1,462.00	1,453.28	8.73	167.555	
1,400.00	1,400.00	1,423.60	1,423.60	4.52	4.57	-14.72	1,414.02	-371.49	1,462.00	1,452.91	9.09	160.806	
1,406.37	1,406.37	1,429.97	1,429.97	4.54	4.58	-14.72	1,414.02	-371.49	1,462.00	1,452.89	9.11	160.406	
1,500.00	1,500.00	1,516.17	1,516.17	4.70	4.76	-14.72	1,414.06	-371.48	1,462.06	1,452.60	9.46	154.554	
1,600.00	1,599.98	1,600.00	1,599.98	5.05	5.06	13.21	1,415.73	-371.15	1,462.07	1,452.00	10.07	145.176	
1,700.00	1,699.84	1,653.17	1,653.09	5.69	5.40	13.28	1,418.04	-370.70	1,460.59	1,449.61	10.99	132.950	
1,800.00	1,799.45	1,721.58	1,721.36	6.30	5.83	13.42	1,422.42	-369.84	1,458.00	1,446.06	11.94	122.144	
1,900.00	1,898.82	1,800.00	1,799.45	6.46	6.30	13.63	1,429.42	-368.46	1,455.20	1,442.69	12.50	116.369	
1,985.12	1,983.40	1,848.08	1,847.23	6.63	6.58	13.77	1,434.74	-367.41	1,454.35	1,441.44	12.91	112.611 CC	
2,000.00	1,998.18	1,858.24	1,857.30	6.67	6.64	13.80	1,435.97	-367.17	1,454.38	1,441.38	13.00	111.908 ES	
2,100.00	2,097.54	1,926.42	1,924.85	6.90	7.03	14.03	1,445.10	-365.38	1,455.81	1,442.24	13.56	107.339	
2,200.00	2,196.90	2,000.00	1,997.47	7.15	7.43	14.31	1,456.72	-363.09	1,459.46	1,445.28	14.17	102.989	
2,300.00	2,296.25	2,062.13	2,058.53	7.42	7.77	14.56	1,467.96	-360.88	1,465.29	1,450.57	14.72	99.552	
2,400.00	2,395.61	2,129.50	2,124.45	7.69	8.05	14.86	1,481.61	-358.20	1,473.36	1,458.13	15.22	96.781	
2,500.00	2,494.97	2,224.13	2,216.74	7.98	8.26	15.30	1,502.12	-354.16	1,482.85	1,467.13	15.72	94.321	
2,600.00	2,594.33	2,322.97	2,313.14	8.28	8.52	15.75	1,523.55	-349.95	1,492.45	1,476.17	16.28	91.675	
2,700.00	2,693.69	2,421.82	2,409.54	8.59	8.80	16.19	1,544.99	-345.73	1,502.14	1,485.27	16.87	89.043	
2,800.00	2,793.05	2,520.66	2,505.94	8.91	9.09	16.63	1,566.42	-341.52	1,511.93	1,494.44	17.48	86.481	
2,900.00	2,892.40	2,619.51	2,602.34	9.24	9.40	17.07	1,587.86	-337.30	1,521.80	1,503.68	18.12	84.002	
3,000.00	2,991.76	2,718.35	2,698.74	9.57	9.73	17.49	1,609.29	-333.09	1,531.76	1,512.99	18.77	81.615	
3,100.00	3,091.12	2,817.19	2,795.14	9.91	10.06	17.92	1,630.73	-328.87	1,541.80	1,522.36	19.44	79.326	
3,200.00	3,190.48	2,916.04	2,891.54	10.25	10.41	18.33	1,652.16	-324.65	1,551.93	1,531.81	20.12	77.136	
3,300.00	3,289.84	3,014.88	2,987.94	10.60	10.77	18.75	1,673.60	-320.44	1,562.13	1,541.32	20.82	75.047	
3,400.00	3,389.20	3,113.72	3,084.34	10.95	11.13	19.15	1,695.03	-316.22	1,572.42	1,550.90	21.52	73.056	
3,500.00	3,488.55	3,212.57	3,180.73	11.31	11.51	19.56	1,716.47	-312.01	1,582.79	1,560.55	22.24	71.162	
3,600.00	3,587.91	3,311.41	3,277.13	11.67	11.89	19.95	1,737.90	-307.79	1,593.23	1,570.26	22.97	69.362	
3,700.00	3,687.27	3,410.26	3,373.53	12.03	12.28	20.34	1,759.34	-303.58	1,603.75	1,580.04	23.71	67.651	
3,800.00	3,786.63	3,509.10	3,469.93	12.40	12.67	20.73	1,780.77	-299.36	1,614.34	1,589.89	24.45	66.026	
3,900.00	3,885.99	3,607.94	3,566.33	12.77	13.07	21.11	1,802.21	-295.14	1,625.01	1,599.81	25.20	64.483	
4,000.00	3,985.35	3,706.79	3,662.73	13.14	13.47	21.49	1,823.64	-290.93	1,635.74	1,609.79	25.96	63.017	
4,100.00	4,084.70	3,805.63	3,759.13	13.52	13.88	21.86	1,845.08	-286.71	1,646.55	1,619.83	26.72	61.624	
4,200.00	4,184.06	3,904.47	3,855.53	13.90	14.30	22.22	1,866.51	-282.50	1,657.42	1,629.94	27.49	60.300	
4,300.00	4,283.42	4,003.32	3,951.93	14.27	14.71	22.59	1,887.95	-278.28	1,668.36	1,640.11	28.26	59.042	
4,400.00	4,382.78	4,102.16	4,048.33	14.65	15.13	22.94	1,909.39	-274.07	1,679.37	1,650.34	29.03	57.845	
4,500.00	4,482.14	4,201.01	4,144.73	15.04	15.56	23.30	1,930.82	-269.85	1,690.44	1,660.63	29.81	56.706	
4,600.00	4,581.49	4,299.85	4,241.13	15.42	15.98	23.64	1,952.26	-265.63	1,701.57	1,670.98	30.59	55.621	
4,700.00	4,680.85	4,398.69	4,337.53	15.81	16.41	23.99	1,973.69	-261.42	1,712.77	1,681.39	31.38	54.588	
4,800.00	4,780.21	4,497.54	4,433.93	16.19	16.85	24.33	1,995.13	-257.20	1,724.02	1,691.86	32.16	53.603	
4,900.00	4,879.57	4,596.38	4,530.33	16.58	17.28	24.66	2,016.56	-252.99	1,735.34	1,702.39	32.95	52.664	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:		0.50 usft	
Reference	Offset	Semi Major Axis		Distance		Offset Wellbore Centre		Distance		Minimum Separation		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		
5,000.00	4,978.93	4,695.23	4,626.73	16.97	17.72	24.99	2,038.00	-248.77	1,746.71	1,712.97	33.74	51.767		
5,100.00	5,078.29	4,794.07	4,723.13	17.36	18.15	25.32	2,059.43	-244.56	1,758.15	1,723.61	34.53	50.911		
5,200.00	5,177.64	4,892.91	4,819.53	17.75	18.59	25.64	2,080.87	-240.34	1,769.63	1,734.31	35.33	50.093		
5,300.00	5,277.00	5,069.58	4,992.42	18.15	19.41	26.19	2,116.43	-233.35	1,780.08	1,743.53	36.54	48.710		
5,400.00	5,376.36	5,278.88	5,199.61	18.54	20.51	26.73	2,145.12	-227.70	1,782.96	1,745.00	37.95	46.979		
5,500.00	5,475.72	5,578.12	5,498.27	18.93	21.71	27.33	2,160.90	-224.60	1,777.32	1,738.20	39.13	45.423		
5,600.00	5,575.08	5,678.54	5,598.68	19.33	21.75	27.50	2,160.90	-224.60	1,767.27	1,727.75	39.52	44.717		
5,700.00	5,674.44	5,777.89	5,698.04	19.73	21.80	27.67	2,160.90	-224.60	1,757.23	1,717.31	39.92	44.017		
5,800.00	5,773.79	5,877.25	5,797.39	20.12	21.85	27.85	2,160.90	-224.60	1,747.21	1,706.89	40.32	43.331		
5,900.00	5,873.15	5,976.61	5,896.75	20.52	21.90	28.02	2,160.90	-224.60	1,737.20	1,696.48	40.72	42.659		
6,000.00	5,972.51	6,075.97	5,996.11	20.92	21.95	28.20	2,160.90	-224.60	1,727.21	1,686.09	41.12	42.002		
6,100.00	6,071.87	6,175.33	6,095.47	21.32	22.00	28.37	2,160.90	-224.60	1,717.24	1,675.71	41.52	41.357		
6,200.00	6,171.23	6,274.68	6,194.83	21.72	22.05	28.55	2,160.90	-224.60	1,707.28	1,665.35	41.92	40.724		
6,300.00	6,270.75	6,374.20	6,294.35	22.13	22.10	28.63	2,160.90	-224.60	1,698.72	1,656.38	42.34	40.125		
6,400.00	6,370.54	6,474.00	6,394.14	22.59	22.15	28.68	2,160.90	-224.60	1,693.22	1,650.44	42.78	39.579		
6,500.00	6,470.50	6,573.96	6,494.10	22.98	22.20	28.70	2,160.90	-224.60	1,690.79	1,647.61	43.17	39.162		
6,587.78	6,558.28	6,661.74	6,581.88	23.04	22.25	28.71	2,160.90	-224.60	1,690.34	1,647.07	43.28	39.059		
6,600.00	6,570.50	6,673.96	6,594.10	23.05	22.26	0.82	2,160.90	-224.60	1,690.65	1,647.36	43.29	39.053		
6,700.00	6,670.50	6,773.96	6,694.10	23.10	22.31	0.82	2,160.90	-224.60	1,690.65	1,647.26	43.40	38.960		
6,800.00	6,770.50	6,873.96	6,794.10	23.15	22.36	0.82	2,160.90	-224.60	1,690.65	1,647.15	43.50	38.864		
6,900.00	6,870.50	6,973.96	6,894.10	23.19	22.41	0.82	2,160.90	-224.60	1,690.65	1,647.05	43.61	38.769		
6,905.34	6,875.84	6,979.30	6,899.44	23.20	22.42	0.82	2,160.90	-224.60	1,690.65	1,647.04	43.61	38.764		
7,000.00	6,970.50	7,061.98	6,982.09	23.24	22.46	0.86	2,161.01	-223.40	1,690.83	1,647.10	43.73	38.665		
7,100.00	7,070.50	7,163.01	7,055.41	23.29	22.57	1.19	2,161.92	-213.65	1,692.31	1,648.42	43.88	38.563		
7,200.00	7,170.50	7,200.00	7,117.27	23.34	22.69	1.74	2,163.42	-197.45	1,695.52	1,651.47	44.05	38.489		
7,300.00	7,270.50	7,271.00	7,183.19	23.39	22.84	2.62	2,165.84	-171.31	1,700.82	1,656.61	44.21	38.474		
7,400.00	7,370.50	7,329.30	7,234.46	23.44	22.98	3.54	2,168.40	-143.73	1,708.71	1,664.33	44.37	38.506		
7,500.00	7,470.50	7,381.00	7,277.27	23.49	23.12	4.50	2,171.08	-114.90	1,719.65	1,675.11	44.54	38.610		
7,600.00	7,570.50	7,426.39	7,312.49	23.54	23.24	5.45	2,173.72	-86.41	1,734.05	1,689.36	44.69	38.803		
7,700.00	7,670.50	7,466.07	7,341.28	23.59	23.36	6.34	2,176.24	-59.24	1,752.22	1,707.41	44.81	39.101		
7,800.00	7,770.50	7,500.00	7,364.29	23.65	23.47	7.16	2,178.54	-34.42	1,774.38	1,729.48	44.90	39.520		
7,900.00	7,870.50	7,530.98	7,383.94	23.70	23.58	7.93	2,180.75	-10.57	1,800.64	1,755.68	44.96	40.054		
8,000.00	7,970.40	7,550.00	7,395.33	23.66	23.65	-80.19	2,182.16	4.59	1,830.66	1,785.73	44.92	40.753		
8,100.00	8,068.49	7,600.00	7,422.71	23.58	23.85	-75.87	2,186.02	46.23	1,861.91	1,816.81	45.10	41.284		
8,200.00	8,161.84	7,619.05	7,432.14	23.48	23.94	-72.42	2,187.55	62.71	1,892.69	1,847.47	45.22	41.858		
8,300.00	8,247.60	7,650.00	7,446.22	23.40	24.08	-69.07	2,190.10	90.15	1,921.99	1,876.49	45.50	42.239		
8,400.00	8,323.17	7,700.00	7,465.67	23.38	24.35	-65.98	2,194.35	136.00	1,948.76	1,902.67	46.09	42.284		
8,500.00	8,386.25	7,719.17	7,472.01	23.47	24.47	-63.73	2,196.02	154.01	1,971.60	1,924.98	46.63	42.286		
8,600.00	8,434.92	7,750.00	7,480.88	23.73	24.66	-61.90	2,198.75	183.41	1,990.25	1,942.80	47.45	41.940		
8,700.00	8,467.72	7,800.00	7,491.75	24.20	25.03	-60.63	2,203.26	231.98	2,004.04	1,955.34	48.70	41.149		
8,800.00	8,483.63	7,823.73	7,495.37	24.88	25.22	-59.95	2,205.42	255.34	2,012.37	1,962.47	49.90	40.328		
8,900.00	8,486.62	7,850.00	7,498.19	25.76	25.44	-59.91	2,207.83	281.34	2,017.57	1,966.37	51.20	39.403		
9,000.00	8,488.89	7,956.63	7,501.65	26.81	26.53	-60.07	2,216.76	387.52	2,025.08	1,971.55	53.54	37.826		
9,100.00	8,491.15	8,215.28	7,507.53	28.01	30.14	-60.18	2,222.45	645.95	2,027.68	1,969.73	57.96	34.985		
9,200.00	8,493.42	8,340.56	7,510.38	29.34	32.11	-60.14	2,218.04	771.12	2,025.22	1,964.27	60.95	33.227		
9,300.00	8,495.69	8,440.52	7,512.65	30.79	33.77	-60.10	2,214.28	870.98	2,022.65	1,958.86	63.79	31.706		
9,400.00	8,497.96	8,540.48	7,514.92	32.34	35.50	-60.05	2,210.53	970.84	2,020.09	1,953.32	66.77	30.256		
9,500.00	8,500.23	8,640.43	7,517.20	33.98	37.29	-60.01	2,206.78	1,070.70	2,017.53	1,947.68	69.85	28.883		
9,600.00	8,502.49	8,740.39	7,519.47	35.70	39.14	-59.97	2,203.03	1,170.56	2,014.96	1,941.93	73.03	27.591		
9,700.00	8,504.76	8,840.35	7,521.74	37.49	41.03	-59.93	2,199.27	1,270.42	2,012.40	1,936.11	76.29	26.377		
9,800.00	8,507.03	8,940.30	7,524.01	39.33	42.96	-59.89	2,195.52	1,370.28	2,009.84	1,930.22	79.63	25.240		
9,900.00	8,509.30	9,040.26	7,526.28	41.23	44.93	-59.84	2,191.77	1,470.14	2,007.29	1,924.26	83.03	24.176		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,000.00	8,511.56	9,140.22	7,528.55	43.16	46.93	-59.80	2,188.01	1,570.00	2,004.73	1,918.25	86.48	23.181			
10,100.00	8,513.83	9,240.17	7,530.82	45.13	48.96	-59.76	2,184.26	1,669.86	2,002.17	1,912.19	89.98	22.250			
10,200.00	8,516.10	9,340.13	7,533.10	47.14	51.00	-59.72	2,180.51	1,769.72	1,999.62	1,906.09	93.53	21.379			
10,300.00	8,518.37	9,440.08	7,535.37	49.17	53.07	-59.67	2,176.75	1,869.58	1,997.06	1,899.95	97.11	20.564			
10,400.00	8,520.64	9,540.04	7,537.64	51.23	55.16	-59.63	2,173.00	1,969.44	1,994.51	1,893.78	100.73	19.801			
10,500.00	8,522.90	9,640.00	7,539.91	53.31	57.27	-59.59	2,169.25	2,069.30	1,991.96	1,887.58	104.38	19.085			
10,600.00	8,525.17	9,739.95	7,542.18	55.40	59.39	-59.55	2,165.49	2,169.17	1,989.41	1,881.36	108.05	18.412			
10,700.00	8,527.44	9,839.91	7,544.45	57.52	61.52	-59.50	2,161.74	2,269.03	1,986.86	1,875.12	111.74	17.781			
10,800.00	8,529.71	9,939.87	7,546.73	59.65	63.67	-59.46	2,157.99	2,368.89	1,984.31	1,868.85	115.46	17.187			
10,900.00	8,531.98	10,039.82	7,549.00	61.79	65.82	-59.42	2,154.23	2,468.75	1,981.76	1,862.57	119.19	16.627			
11,000.00	8,534.24	10,139.78	7,551.27	63.94	67.99	-59.37	2,150.48	2,568.61	1,979.22	1,856.28	122.94	16.099			
11,100.00	8,536.51	10,227.61	7,553.26	66.11	69.90	-59.34	2,147.26	2,656.36	1,976.77	1,850.23	126.54	15.622			
11,200.00	8,538.78	10,300.00	7,554.91	68.29	71.49	-59.33	2,145.97	2,728.71	1,975.82	1,845.88	129.94	15.206			
11,210.03	8,539.01	10,300.00	7,554.91	68.50	71.49	-59.33	2,145.97	2,728.71	1,975.79	1,845.62	130.17	15.179			
11,300.00	8,541.05	10,376.53	7,556.65	70.47	73.17	-59.33	2,145.91	2,805.23	1,976.30	1,842.90	133.40	14.814			
11,400.00	8,543.32	10,476.53	7,558.92	72.66	75.36	-59.35	2,145.87	2,905.20	1,976.96	1,839.71	137.25	14.404			
11,500.00	8,545.58	10,576.53	7,561.20	74.86	77.56	-59.36	2,145.83	3,005.17	1,977.61	1,836.50	141.11	14.015			
11,600.00	8,547.85	10,676.52	7,563.47	77.07	79.77	-59.37	2,145.79	3,105.14	1,978.26	1,833.28	144.98	13.645			
11,700.00	8,550.12	10,776.52	7,565.74	79.28	81.99	-59.38	2,145.75	3,205.11	1,978.92	1,830.05	148.86	13.293			
11,800.00	8,552.39	10,876.52	7,568.02	81.50	84.21	-59.39	2,145.72	3,305.08	1,979.57	1,826.81	152.76	12.959			
11,900.00	8,554.66	10,976.52	7,570.29	83.72	86.43	-59.40	2,145.68	3,405.05	1,980.22	1,823.56	156.66	12.640			
12,000.00	8,556.92	11,076.51	7,572.57	85.95	88.66	-59.41	2,145.64	3,505.02	1,980.88	1,820.30	160.57	12.336			
12,100.00	8,559.19	11,176.51	7,574.84	88.18	90.89	-59.42	2,145.60	3,605.00	1,981.53	1,817.03	164.50	12.046			
12,200.00	8,561.46	11,276.51	7,577.11	90.42	93.13	-59.44	2,145.57	3,704.97	1,982.18	1,813.76	168.43	11.769			
12,300.00	8,563.73	11,376.50	7,579.39	92.66	95.37	-59.45	2,145.53	3,804.94	1,982.84	1,810.47	172.36	11.504			
12,400.00	8,565.99	11,476.50	7,581.66	94.90	97.61	-59.46	2,145.49	3,904.91	1,983.49	1,807.18	176.31	11.250			
12,500.00	8,568.26	11,576.50	7,583.93	97.15	99.86	-59.47	2,145.45	4,004.88	1,984.15	1,803.89	180.26	11.007			
12,600.00	8,570.53	11,676.50	7,586.21	99.40	102.11	-59.48	2,145.41	4,104.85	1,984.80	1,800.58	184.22	10.774			
12,700.00	8,572.80	11,776.49	7,588.48	101.65	104.36	-59.49	2,145.38	4,204.82	1,985.45	1,797.27	188.18	10.551			
12,800.00	8,575.07	11,876.49	7,590.75	103.91	106.61	-59.50	2,145.34	4,304.79	1,986.11	1,793.96	192.15	10.336			
12,900.00	8,577.33	11,976.49	7,593.03	106.17	108.87	-59.52	2,145.30	4,404.77	1,986.76	1,790.64	196.12	10.130			
13,000.00	8,579.60	12,076.48	7,595.30	108.43	111.13	-59.53	2,145.26	4,504.74	1,987.42	1,787.31	200.10	9.932			
13,100.00	8,581.87	12,176.48	7,597.58	110.69	113.39	-59.54	2,145.22	4,604.71	1,988.07	1,783.98	204.09	9.741			
13,200.00	8,584.14	12,276.48	7,599.85	112.95	115.65	-59.55	2,145.19	4,704.68	1,988.73	1,780.65	208.08	9.558			
13,300.00	8,586.41	12,376.47	7,602.12	115.22	117.91	-59.56	2,145.15	4,804.65	1,989.38	1,777.31	212.07	9.381			
13,400.00	8,588.67	12,476.47	7,604.40	117.49	120.18	-59.57	2,145.11	4,904.62	1,990.04	1,773.97	216.07	9.210			
13,500.00	8,590.94	12,576.47	7,606.67	119.76	122.45	-59.58	2,145.07	5,004.59	1,990.69	1,770.62	220.07	9.046			
13,600.00	8,593.21	12,676.47	7,608.94	122.03	124.72	-59.59	2,145.04	5,104.56	1,991.34	1,767.27	224.07	8.887			
13,700.00	8,595.48	12,776.46	7,611.22	124.30	126.99	-59.61	2,145.00	5,204.54	1,992.00	1,763.92	228.08	8.734			
13,800.00	8,597.75	12,876.46	7,613.49	126.57	129.26	-59.62	2,144.96	5,304.51	1,992.65	1,760.56	232.10	8.585			
13,900.00	8,600.01	12,976.46	7,615.77	128.85	131.53	-59.63	2,144.92	5,404.48	1,993.31	1,757.20	236.11	8.442			
14,000.00	8,602.28	13,076.45	7,618.04	131.13	133.81	-59.64	2,144.88	5,504.45	1,993.96	1,753.83	240.13	8.304			
14,100.00	8,604.55	13,176.45	7,620.31	133.40	136.08	-59.65	2,144.85	5,604.42	1,994.62	1,750.47	244.15	8.170			
14,200.00	8,606.82	13,276.45	7,622.59	135.68	138.36	-59.66	2,144.81	5,704.39	1,995.28	1,747.10	248.18	8.040			
14,300.00	8,609.09	13,376.45	7,624.86	137.96	140.64	-59.67	2,144.77	5,804.36	1,995.93	1,743.72	252.21	7.914			
14,400.00	8,611.35	13,476.44	7,627.13	140.24	142.92	-59.68	2,144.73	5,904.33	1,996.59	1,740.35	256.24	7.792			
14,500.00	8,613.62	13,576.44	7,629.41	142.53	145.20	-59.70	2,144.69	6,004.31	1,997.24	1,736.97	260.27	7.674			
14,600.00	8,615.89	13,676.44	7,631.68	144.81	147.48	-59.71	2,144.66	6,104.28	1,997.90	1,733.59	264.31	7.559			
14,700.00	8,618.16	13,776.43	7,633.95	147.09	149.76	-59.72	2,144.62	6,204.25	1,998.55	1,730.21	268.35	7.448			
14,800.00	8,620.42	13,876.43	7,636.23	149.38	152.04	-59.73	2,144.58	6,304.22	1,999.21	1,726.82	272.39	7.340			
14,900.00	8,622.69	13,976.43	7,638.50	151.66	154.33	-59.74	2,144.54	6,404.19	1,999.86	1,723.43	276.43	7.235			
15,000.00	8,624.96	14,076.43	7,640.78	153.95	156.61	-59.75	2,144.51	6,504.16	2,000.52	1,720.04	280.48	7.133			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-131H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:		0.50 usft	
Reference	Offset	Semi Major Axis			Distance								Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,100.00	8,627.23	14,176.42	7,643.05	156.24	158.90	-59.76	2,144.47	6,604.13	2,001.18	1,716.65	284.53	7.033		
15,200.00	8,629.50	14,276.42	7,645.32	158.53	161.18	-59.77	2,144.43	6,704.10	2,001.83	1,713.26	288.58	6.937		
15,300.00	8,631.76	14,376.42	7,647.60	160.81	163.47	-59.78	2,144.39	6,804.07	2,002.49	1,709.86	292.63	6.843		
15,400.00	8,634.03	14,476.41	7,649.87	163.10	165.76	-59.80	2,144.35	6,904.05	2,003.14	1,706.46	296.68	6.752		
15,500.00	8,636.30	14,576.41	7,652.14	165.39	168.04	-59.81	2,144.32	7,004.02	2,003.80	1,703.06	300.74	6.663		
15,600.00	8,638.57	14,676.41	7,654.42	167.68	170.33	-59.82	2,144.28	7,103.99	2,004.46	1,699.66	304.80	6.576		
15,700.00	8,640.84	14,776.41	7,656.69	169.97	172.62	-59.83	2,144.24	7,203.96	2,005.11	1,696.25	308.86	6.492		
15,800.00	8,643.10	14,876.40	7,658.96	172.27	174.91	-59.84	2,144.20	7,303.93	2,005.77	1,692.85	312.92	6.410		
15,900.00	8,645.37	14,976.40	7,661.24	174.56	177.20	-59.85	2,144.16	7,403.90	2,006.43	1,689.44	316.99	6.330		
16,000.00	8,647.64	15,076.40	7,663.51	176.85	179.49	-59.86	2,144.13	7,503.87	2,007.08	1,686.03	321.05	6.252		
16,100.00	8,649.91	15,176.39	7,665.79	179.14	181.78	-59.87	2,144.09	7,603.84	2,007.74	1,682.62	325.12	6.175		
16,200.00	8,652.18	15,276.39	7,668.06	181.44	184.07	-59.88	2,144.05	7,703.82	2,008.40	1,679.21	329.19	6.101		
16,300.00	8,654.44	15,376.39	7,670.33	183.73	186.36	-59.90	2,144.01	7,803.79	2,009.05	1,675.79	333.26	6.028		
16,400.00	8,656.71	15,476.38	7,672.61	186.03	188.66	-59.91	2,143.98	7,903.76	2,009.71	1,672.38	337.33	5.958		
16,500.00	8,658.98	15,576.38	7,674.88	188.32	190.95	-59.92	2,143.94	8,003.73	2,010.37	1,668.96	341.41	5.888		
16,600.00	8,661.25	15,676.38	7,677.15	190.62	193.24	-59.93	2,143.90	8,103.70	2,011.02	1,665.54	345.48	5.821		
16,700.00	8,663.52	15,776.38	7,679.43	192.91	195.54	-59.94	2,143.86	8,203.67	2,011.68	1,662.12	349.56	5.755		
16,800.00	8,665.78	15,876.37	7,681.70	195.21	197.83	-59.95	2,143.82	8,303.64	2,012.34	1,658.70	353.64	5.690		
16,900.00	8,668.05	15,976.37	7,683.97	197.50	200.13	-59.96	2,143.79	8,403.61	2,013.00	1,655.27	357.72	5.627		
17,000.00	8,670.32	16,076.37	7,686.25	199.80	202.42	-59.97	2,143.75	8,503.59	2,013.65	1,651.85	361.80	5.566		
17,100.00	8,672.59	16,176.36	7,688.52	202.10	204.72	-59.98	2,143.71	8,603.56	2,014.31	1,648.42	365.89	5.505		
17,200.00	8,674.85	16,276.36	7,690.80	204.40	207.01	-59.99	2,143.67	8,703.53	2,014.97	1,645.00	369.97	5.446		
17,300.00	8,677.12	16,376.36	7,693.07	206.69	209.31	-60.01	2,143.63	8,803.50	2,015.62	1,641.57	374.06	5.389		
17,400.00	8,679.39	16,476.36	7,695.34	208.99	211.60	-60.02	2,143.60	8,903.47	2,016.28	1,638.14	378.14	5.332		
17,500.00	8,681.66	16,576.35	7,697.62	211.29	213.90	-60.03	2,143.56	9,003.44	2,016.94	1,634.71	382.23	5.277		
17,600.00	8,683.93	16,676.35	7,699.89	213.59	216.20	-60.04	2,143.52	9,103.41	2,017.60	1,631.28	386.32	5.223		
17,700.00	8,686.19	16,776.35	7,702.16	215.89	218.49	-60.05	2,143.48	9,203.38	2,018.26	1,627.84	390.41	5.170		
17,800.00	8,688.46	16,876.34	7,704.44	218.19	220.79	-60.06	2,143.45	9,303.36	2,018.91	1,624.41	394.51	5.118		
17,900.00	8,690.73	16,976.34	7,706.71	220.49	223.09	-60.07	2,143.41	9,403.33	2,019.57	1,620.97	398.60	5.067		
18,000.00	8,693.00	17,076.34	7,708.98	222.79	225.39	-60.08	2,143.37	9,503.30	2,020.23	1,617.53	402.70	5.017		
18,100.00	8,695.27	17,176.34	7,711.26	225.08	227.68	-60.09	2,143.33	9,603.27	2,020.89	1,614.10	406.79	4.968		
18,200.00	8,697.53	17,276.33	7,713.53	227.39	229.98	-60.10	2,143.29	9,703.24	2,021.55	1,610.66	410.89	4.920		
18,300.00	8,699.80	17,376.33	7,715.81	229.69	232.28	-60.12	2,143.26	9,803.21	2,022.20	1,607.22	414.99	4.873		
18,400.00	8,702.07	17,476.33	7,718.08	231.99	234.58	-60.13	2,143.22	9,903.18	2,022.86	1,603.77	419.09	4.827		
18,500.00	8,704.34	17,576.32	7,720.35	234.29	236.88	-60.14	2,143.18	10,003.15	2,023.52	1,600.33	423.19	4.782		
18,600.00	8,706.61	17,676.32	7,722.63	236.59	239.18	-60.15	2,143.14	10,103.13	2,024.18	1,596.89	427.29	4.737		
18,700.00	8,708.87	17,776.32	7,724.90	238.89	241.48	-60.16	2,143.10	10,203.10	2,024.84	1,593.44	431.40	4.694		
18,800.00	8,711.14	17,876.32	7,727.17	241.19	243.78	-60.17	2,143.07	10,303.07	2,025.50	1,590.00	435.50	4.651		
18,900.00	8,713.41	17,976.31	7,729.45	243.49	246.08	-60.18	2,143.03	10,403.04	2,026.16	1,586.55	439.61	4.609		
19,000.00	8,715.68	18,076.31	7,731.72	245.79	248.38	-60.19	2,142.99	10,503.01	2,026.82	1,583.10	443.71	4.568		
19,100.00	8,717.95	18,168.99	7,733.85	247.40	250.51	-60.21	2,143.25	10,595.67	2,027.74	1,580.67	447.07	4.536		
19,102.43	8,718.00	18,171.42	7,733.91	247.44	250.56	-60.21	2,143.26	10,598.10	2,027.76	1,580.61	447.15	4.535 SF		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-132H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		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	23.60	23.60	0.50	0.51	-17.44	1,184.08	-372.05	1,241.16				
100.00	100.00	123.60	123.60	0.65	0.79	-17.44	1,184.08	-372.05	1,241.16	1,239.72	1.44	861.965	
200.00	200.00	223.60	223.60	1.34	1.45	-17.44	1,184.08	-372.05	1,241.16	1,238.36	2.79	444.291	
300.00	300.00	323.60	323.60	1.81	1.90	-17.44	1,184.08	-372.05	1,241.16	1,237.44	3.71	334.338	
400.00	400.00	423.60	423.60	2.19	2.26	-17.44	1,184.08	-372.05	1,241.16	1,236.71	4.45	279.007	
500.00	500.00	523.60	523.60	2.51	2.58	-17.44	1,184.08	-372.05	1,241.16	1,236.07	5.08	244.151	
600.00	600.00	623.60	623.60	2.80	2.86	-17.44	1,184.08	-372.05	1,241.16	1,235.50	5.65	219.592	
700.00	700.00	723.60	723.60	3.06	3.12	-17.44	1,184.08	-372.05	1,241.16	1,234.98	6.17	201.075	
800.00	800.00	823.60	823.60	3.30	3.36	-17.44	1,184.08	-372.05	1,241.16	1,234.50	6.66	186.459	
900.00	900.00	923.60	923.60	3.53	3.58	-17.44	1,184.08	-372.05	1,241.16	1,234.04	7.11	174.538	
1,000.00	1,000.00	1,023.60	1,023.60	3.75	3.80	-17.44	1,184.08	-372.05	1,241.16	1,233.61	7.54	164.568	
1,100.00	1,100.00	1,123.60	1,123.60	3.95	4.00	-17.44	1,184.08	-372.05	1,241.16	1,233.20	7.95	156.067	
1,200.00	1,200.00	1,223.60	1,223.60	4.15	4.20	-17.44	1,184.08	-372.05	1,241.16	1,232.81	8.35	148.704	
1,300.00	1,300.00	1,323.60	1,323.60	4.34	4.38	-17.44	1,184.08	-372.05	1,241.16	1,232.43	8.73	142.244	
1,400.00	1,400.00	1,423.60	1,423.60	4.52	4.57	-17.44	1,184.08	-372.05	1,241.16	1,232.06	9.09	136.515	
1,406.37	1,406.37	1,429.97	1,429.97	4.54	4.58	-17.44	1,184.08	-372.05	1,241.16	1,232.04	9.11	136.175	
1,500.00	1,500.00	1,520.29	1,520.29	4.70	4.76	-17.44	1,184.13	-371.99	1,241.19	1,231.73	9.45	131.285	
1,600.00	1,599.98	1,600.00	1,599.98	5.05	5.03	10.53	1,185.19	-370.71	1,240.32	1,230.37	9.95	124.655	
1,700.00	1,699.84	1,691.86	1,691.71	5.69	5.62	10.78	1,188.17	-367.10	1,237.14	1,226.34	10.80	114.551	
1,800.00	1,799.45	1,779.50	1,779.05	6.30	6.01	11.18	1,192.76	-361.55	1,231.74	1,220.19	11.55	106.674	
1,900.00	1,898.82	1,875.80	1,874.90	6.46	6.17	11.69	1,198.74	-354.32	1,224.58	1,212.75	11.83	103.501	
2,000.00	1,998.18	1,974.91	1,973.54	6.67	6.37	12.21	1,204.89	-346.88	1,217.42	1,205.21	12.21	99.707	
2,100.00	2,097.54	2,074.02	2,072.18	6.90	6.60	12.74	1,211.05	-339.44	1,210.36	1,197.74	12.62	95.901	
2,200.00	2,196.90	2,173.13	2,170.82	7.15	6.84	13.28	1,217.20	-332.01	1,203.41	1,190.35	13.05	92.207	
2,300.00	2,296.25	2,272.24	2,269.46	7.42	7.10	13.82	1,223.35	-324.57	1,196.56	1,183.06	13.50	88.643	
2,400.00	2,395.61	2,371.35	2,368.09	7.69	7.37	14.37	1,229.51	-317.13	1,189.83	1,175.86	13.96	85.217	
2,500.00	2,494.97	2,470.46	2,466.73	7.98	7.65	14.93	1,235.66	-309.69	1,183.20	1,168.76	14.44	81.935	
2,600.00	2,594.33	2,569.57	2,565.37	8.28	7.94	15.49	1,241.81	-302.25	1,176.69	1,161.76	14.93	78.801	
2,700.00	2,693.69	2,668.68	2,664.01	8.59	8.23	16.06	1,247.97	-294.81	1,170.30	1,154.86	15.44	75.813	
2,800.00	2,793.05	2,767.79	2,762.65	8.91	8.54	16.63	1,254.12	-287.37	1,164.02	1,148.07	15.95	72.969	
2,900.00	2,892.40	2,866.90	2,861.28	9.24	8.85	17.21	1,260.27	-279.93	1,157.86	1,141.39	16.48	70.265	
3,000.00	2,991.76	2,966.01	2,959.92	9.57	9.17	17.79	1,266.42	-272.49	1,151.83	1,134.81	17.01	67.697	
3,100.00	3,091.12	3,065.12	3,058.56	9.91	9.50	18.39	1,272.58	-265.05	1,145.91	1,128.35	17.56	65.259	
3,200.00	3,190.48	3,164.23	3,157.20	10.25	9.83	18.98	1,278.73	-257.61	1,140.12	1,122.01	18.11	62.945	
3,300.00	3,289.84	3,263.34	3,255.84	10.60	10.16	19.59	1,284.88	-250.17	1,134.46	1,115.79	18.67	60.749	
3,400.00	3,389.20	3,362.45	3,354.47	10.95	10.50	20.20	1,291.04	-242.74	1,128.93	1,109.69	19.24	58.666	
3,500.00	3,488.55	3,461.56	3,453.11	11.31	10.84	20.81	1,297.19	-235.30	1,123.53	1,103.71	19.82	56.689	
3,600.00	3,587.91	3,560.66	3,551.75	11.67	11.19	21.43	1,303.34	-227.86	1,118.25	1,097.85	20.40	54.813	
3,700.00	3,687.27	3,659.77	3,650.39	12.03	11.54	22.06	1,309.49	-220.42	1,113.12	1,092.13	20.99	53.032	
3,800.00	3,786.63	3,758.88	3,749.03	12.40	11.89	22.69	1,315.65	-212.98	1,108.12	1,086.53	21.58	51.341	
3,900.00	3,885.99	3,857.99	3,847.67	12.77	12.25	23.33	1,321.80	-205.54	1,103.26	1,081.07	22.18	49.734	
4,000.00	3,985.35	3,957.10	3,946.30	13.14	12.60	23.98	1,327.95	-198.10	1,098.53	1,075.75	22.79	48.208	
4,100.00	4,084.70	4,056.21	4,044.94	13.52	12.96	24.62	1,334.11	-190.66	1,093.95	1,070.56	23.40	46.757	
4,200.00	4,184.06	4,155.32	4,143.58	13.90	13.32	25.28	1,340.26	-183.22	1,089.52	1,065.51	24.01	45.378	
4,300.00	4,283.42	4,254.43	4,242.22	14.27	13.69	25.94	1,346.41	-175.78	1,085.23	1,060.60	24.63	44.066	
4,400.00	4,382.78	4,353.54	4,340.86	14.65	14.05	26.60	1,352.56	-168.34	1,081.08	1,055.83	25.25	42.818	
4,500.00	4,482.14	4,452.65	4,439.49	15.04	14.42	27.27	1,358.72	-160.90	1,077.09	1,051.21	25.87	41.630	
4,600.00	4,581.49	4,551.76	4,538.13	15.42	14.79	27.95	1,364.87	-153.46	1,073.24	1,046.74	26.50	40.498	
4,700.00	4,680.85	4,650.87	4,636.77	15.81	15.16	28.63	1,371.02	-146.03	1,069.55	1,042.41	27.13	39.421	
4,800.00	4,780.21	4,749.98	4,735.41	16.19	15.53	29.31	1,377.18	-138.59	1,066.01	1,038.24	27.76	38.395	
4,900.00	4,879.57	4,849.09	4,834.05	16.58	15.90	30.00	1,383.33	-131.15	1,062.62	1,034.22	28.40	37.416	
5,000.00	4,978.93	4,948.20	4,932.68	16.97	16.27	30.69	1,389.48	-123.71	1,059.39	1,030.36	29.04	36.484	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-132H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												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	5,078.29	5,047.31	5,031.32	17.36	16.65	31.39	1,395.63	-116.27	1,056.32	1,026.65	29.68	35.595	
5,200.00	5,177.64	5,146.42	5,129.96	17.75	17.02	32.09	1,401.79	-108.83	1,053.41	1,023.09	30.32	34.746	
5,300.00	5,277.00	5,245.52	5,228.60	18.15	17.40	32.79	1,407.94	-101.39	1,050.66	1,019.70	30.96	33.937	
5,400.00	5,376.36	5,344.63	5,327.24	18.54	17.77	33.50	1,414.09	-93.95	1,048.07	1,016.47	31.60	33.166	
5,500.00	5,475.72	5,443.74	5,425.87	18.93	18.15	34.21	1,420.25	-86.51	1,045.65	1,013.40	32.24	32.429	
5,600.00	5,575.08	5,542.85	5,524.51	19.33	18.53	34.92	1,426.40	-79.07	1,043.39	1,010.50	32.89	31.726	
5,700.00	5,674.44	5,641.96	5,623.15	19.73	18.91	35.64	1,432.55	-71.63	1,041.29	1,007.76	33.53	31.055	
5,800.00	5,773.79	5,741.07	5,721.79	20.12	19.29	36.36	1,438.71	-64.19	1,039.36	1,005.19	34.17	30.414	
5,900.00	5,873.15	5,840.18	5,820.43	20.52	19.67	37.08	1,444.86	-56.75	1,037.60	1,002.79	34.82	29.802	
6,000.00	5,972.51	5,939.29	5,919.07	20.92	20.05	37.80	1,451.01	-49.32	1,036.01	1,000.55	35.46	29.217	
6,100.00	6,071.87	6,038.40	6,017.70	21.32	20.43	38.53	1,457.16	-41.88	1,034.58	998.49	36.10	28.660	
6,200.00	6,171.23	6,137.51	6,116.34	21.72	20.81	39.26	1,463.32	-34.44	1,033.33	996.59	36.74	28.125	
6,242.89	6,213.87	6,180.04	6,158.67	21.90	20.98	39.56	1,465.96	-31.24	1,033.08	996.06	37.02	27.907	
6,300.00	6,270.75	6,236.75	6,215.11	22.13	21.19	39.94	1,469.48	-26.99	1,033.46	996.08	37.38	27.648	
6,400.00	6,370.54	6,373.76	6,351.71	22.59	21.72	40.61	1,476.08	-19.01	1,034.68	996.58	38.10	27.158	
6,500.00	6,470.50	6,513.84	6,491.73	22.98	22.24	40.88	1,478.52	-16.06	1,034.75	996.05	38.70	26.735	
6,595.46	6,565.96	6,611.67	6,589.56	23.05	22.28	40.90	1,478.52	-16.05	1,034.37	995.56	38.81	26.655	
6,600.00	6,570.50	6,616.21	6,594.10	23.05	22.28	13.00	1,478.52	-16.05	1,034.64	995.83	38.81	26.658	
6,700.00	6,670.50	6,716.21	6,694.10	23.10	22.33	13.00	1,478.52	-16.05	1,034.64	995.72	38.92	26.583	
6,800.00	6,770.50	6,816.21	6,794.10	23.15	22.38	13.00	1,478.52	-16.05	1,034.64	995.61	39.04	26.505	
6,900.00	6,870.50	6,916.21	6,894.10	23.19	22.42	13.00	1,478.52	-16.05	1,034.64	995.49	39.15	26.428	
7,000.00	6,970.50	7,016.21	6,994.10	23.24	22.47	13.00	1,478.52	-16.05	1,034.64	995.38	39.26	26.350	
7,100.00	7,070.50	7,116.21	7,094.10	23.29	22.52	13.00	1,478.52	-16.05	1,034.64	995.26	39.38	26.273	
7,200.00	7,170.50	7,216.21	7,194.10	23.34	22.57	13.00	1,478.52	-16.05	1,034.64	995.15	39.50	26.196	
7,300.00	7,270.50	7,316.21	7,294.10	23.39	22.61	13.00	1,478.52	-16.05	1,034.64	995.03	39.61	26.120	
7,400.00	7,370.50	7,416.21	7,394.10	23.44	22.66	13.00	1,478.52	-16.05	1,034.64	994.91	39.73	26.043	
7,500.00	7,470.50	7,516.21	7,494.10	23.49	22.71	13.00	1,478.52	-16.05	1,034.64	994.80	39.84	25.967	
7,600.00	7,570.50	7,616.21	7,594.10	23.54	22.76	13.00	1,478.52	-16.05	1,034.64	994.68	39.96	25.891	
7,700.00	7,670.50	7,716.21	7,694.10	23.59	22.81	13.00	1,478.52	-16.05	1,034.64	994.56	40.08	25.815	
7,800.00	7,770.50	7,816.21	7,794.10	23.65	22.86	13.00	1,478.52	-16.05	1,034.64	994.45	40.20	25.740	
7,900.00	7,870.50	7,916.21	7,894.10	23.70	22.91	13.00	1,478.52	-16.05	1,034.64	994.33	40.31	25.665	
8,000.00	7,970.40	8,016.11	7,994.00	23.66	22.96	-77.68	1,478.52	-16.05	1,034.00	993.58	40.42	25.582	
8,100.00	8,068.49	8,114.20	8,092.09	23.58	23.01	-79.05	1,478.52	-16.05	1,030.14	989.60	40.54	25.410	
8,200.00	8,161.84	8,207.55	8,185.44	23.48	23.05	-81.51	1,478.52	-16.05	1,023.73	983.11	40.62	25.202	
8,300.00	8,247.60	8,293.31	8,271.20	23.40	23.09	-84.67	1,478.52	-16.05	1,016.61	975.97	40.64	25.014	
8,400.00	8,323.17	8,368.88	8,346.77	23.38	23.13	-87.98	1,478.52	-16.05	1,011.22	970.62	40.61	24.901	
8,467.43	8,367.20	8,412.91	8,390.80	23.44	23.15	-90.00	1,478.52	-16.05	1,009.94	969.35	40.59	24.882 CC, ES	
8,500.00	8,386.25	8,431.96	8,409.85	23.47	23.16	-90.84	1,478.52	-16.05	1,010.28	969.72	40.56	24.910	
8,600.00	8,434.92	8,480.63	8,458.52	23.73	23.19	-92.64	1,478.52	-16.05	1,016.31	975.77	40.54	25.071	
8,700.00	8,467.72	8,513.43	8,491.32	24.20	23.21	-92.89	1,478.52	-16.05	1,031.13	990.53	40.60	25.399	
8,800.00	8,483.63	8,529.34	8,507.23	24.88	23.21	-91.26	1,478.52	-16.05	1,055.44	1,014.67	40.77	25.891	
8,900.00	8,486.62	8,532.33	8,510.22	25.76	23.22	-90.52	1,478.52	-16.05	1,088.68	1,047.63	41.04	26.525	
9,000.00	8,488.89	8,534.60	8,512.49	26.81	23.22	-90.65	1,478.52	-16.05	1,129.82	1,088.40	41.42	27.278	
9,100.00	8,491.15	8,536.86	8,514.75	28.01	23.22	-90.78	1,478.52	-16.05	1,178.03	1,136.17	41.86	28.141	
9,200.00	8,493.42	8,539.13	8,517.02	29.34	23.22	-90.91	1,478.52	-16.05	1,232.48	1,190.13	42.35	29.104	
9,300.00	8,495.69	8,541.40	8,519.29	30.79	23.22	-91.04	1,478.52	-16.05	1,292.38	1,249.53	42.86	30.156	
9,400.00	8,497.96	8,543.67	8,521.56	32.34	23.22	-91.17	1,478.52	-16.05	1,357.01	1,313.64	43.37	31.289	
9,500.00	8,500.23	8,545.94	8,523.83	33.98	23.22	-91.29	1,478.52	-16.05	1,425.73	1,381.86	43.87	32.495	
9,600.00	8,502.49	8,548.20	8,526.09	35.70	23.22	-91.42	1,478.52	-16.05	1,497.97	1,453.61	44.36	33.769	
9,700.00	8,504.76	10,635.51	9,694.03	37.49	34.84	-139.07	1,470.10	1,162.93	1,543.23	1,492.07	51.16	30.167	
9,800.00	8,507.03	10,735.51	9,696.29	39.33	36.63	-139.07	1,469.39	1,262.90	1,543.28	1,489.82	53.46	28.867	
9,900.00	8,509.30	10,835.51	9,698.56	41.23	38.51	-139.07	1,468.67	1,362.87	1,543.34	1,487.48	55.86	27.629	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-132H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,000.00	8,511.56	10,935.51	9,700.82	43.16	40.45	-139.07	1,467.96	1,462.85	1,543.39	1,485.05	58.34	26.455			
10,100.00	8,513.83	11,035.51	9,703.09	45.13	42.44	-139.06	1,467.25	1,562.82	1,543.45	1,482.55	60.89	25.347			
10,200.00	8,516.10	11,135.51	9,705.35	47.14	44.46	-139.06	1,466.53	1,662.79	1,543.50	1,479.99	63.51	24.303			
10,300.00	8,518.37	11,235.51	9,707.62	49.17	46.53	-139.06	1,465.82	1,762.76	1,543.56	1,477.37	66.18	23.322			
10,400.00	8,520.64	11,335.51	9,709.88	51.23	48.61	-139.06	1,465.10	1,862.73	1,543.61	1,474.70	68.91	22.402			
10,500.00	8,522.90	11,435.51	9,712.15	53.31	50.73	-139.05	1,464.39	1,962.70	1,543.67	1,471.99	71.67	21.538			
10,600.00	8,525.17	11,535.51	9,714.41	55.40	52.86	-139.05	1,463.68	2,062.68	1,543.72	1,469.24	74.48	20.727			
10,700.00	8,527.44	11,635.51	9,716.68	57.52	55.00	-139.05	1,462.96	2,162.65	1,543.77	1,466.46	77.32	19.966			
10,800.00	8,529.71	11,735.51	9,718.95	59.65	57.16	-139.05	1,462.25	2,262.62	1,543.83	1,463.64	80.19	19.252			
10,900.00	8,531.98	11,835.51	9,721.21	61.79	59.34	-139.04	1,461.53	2,362.59	1,543.88	1,460.79	83.09	18.581			
11,000.00	8,534.24	11,935.51	9,723.48	63.94	61.52	-139.04	1,460.82	2,462.56	1,543.94	1,457.92	86.02	17.949			
11,100.00	8,536.51	12,035.51	9,725.74	66.11	63.72	-139.04	1,460.10	2,562.53	1,543.99	1,455.03	88.96	17.355			
11,200.00	8,538.78	12,135.51	9,728.01	68.29	65.92	-139.04	1,459.39	2,662.51	1,544.05	1,452.11	91.93	16.795			
11,300.00	8,541.05	12,235.51	9,730.27	70.47	68.13	-139.03	1,458.68	2,762.48	1,544.10	1,449.18	94.92	16.267			
11,400.00	8,543.32	12,335.51	9,732.54	72.66	70.34	-139.03	1,457.96	2,862.45	1,544.16	1,446.23	97.93	15.769			
11,500.00	8,545.58	12,435.51	9,734.80	74.86	72.57	-139.03	1,457.25	2,962.42	1,544.21	1,443.27	100.95	15.298			
11,600.00	8,547.85	12,535.51	9,737.07	77.07	74.80	-139.03	1,456.53	3,062.39	1,544.27	1,440.29	103.98	14.852			
11,700.00	8,550.12	12,635.51	9,739.33	79.28	77.03	-139.02	1,455.82	3,162.36	1,544.32	1,437.29	107.03	14.429			
11,800.00	8,552.39	12,735.51	9,741.60	81.50	79.27	-139.02	1,455.11	3,262.34	1,544.38	1,434.29	110.09	14.029			
11,900.00	8,554.66	12,835.51	9,743.86	83.72	81.51	-139.02	1,454.39	3,362.31	1,544.43	1,431.27	113.16	13.649			
12,000.00	8,556.92	12,935.51	9,746.13	85.95	83.76	-139.02	1,453.68	3,462.28	1,544.48	1,428.25	116.24	13.288			
12,100.00	8,559.19	13,035.51	9,748.39	88.18	86.01	-139.01	1,452.96	3,562.25	1,544.54	1,425.21	119.32	12.944			
12,200.00	8,561.46	13,135.51	9,750.66	90.42	88.26	-139.01	1,452.25	3,662.22	1,544.59	1,422.17	122.42	12.617			
12,300.00	8,563.73	13,235.51	9,752.92	92.66	90.52	-139.01	1,451.53	3,762.20	1,544.65	1,419.12	125.53	12.305			
12,400.00	8,565.99	13,335.51	9,755.19	94.90	92.78	-139.01	1,450.82	3,862.17	1,544.70	1,416.06	128.64	12.008			
12,500.00	8,568.26	13,435.51	9,757.45	97.15	95.04	-139.00	1,450.11	3,962.14	1,544.76	1,412.99	131.76	11.724			
12,600.00	8,570.53	13,535.51	9,759.72	99.40	97.30	-139.00	1,449.39	4,062.11	1,544.81	1,409.92	134.89	11.452			
12,700.00	8,572.80	13,635.51	9,761.99	101.65	99.57	-139.00	1,448.68	4,162.08	1,544.87	1,406.84	138.02	11.193			
12,800.00	8,575.07	13,735.51	9,764.25	103.91	101.84	-139.00	1,447.96	4,262.05	1,544.92	1,403.76	141.16	10.944			
12,900.00	8,577.33	13,835.51	9,766.52	106.17	104.11	-138.99	1,447.25	4,362.03	1,544.98	1,400.67	144.31	10.706			
13,000.00	8,579.60	13,935.51	9,768.78	108.43	106.38	-138.99	1,446.54	4,462.00	1,545.03	1,397.57	147.46	10.478			
13,100.00	8,581.87	14,035.51	9,771.05	110.69	108.65	-138.99	1,445.82	4,561.97	1,545.09	1,394.47	150.61	10.259			
13,200.00	8,584.14	14,135.51	9,773.31	112.95	110.93	-138.99	1,445.11	4,661.94	1,545.14	1,391.37	153.77	10.048			
13,300.00	8,586.41	14,235.51	9,775.58	115.22	113.20	-138.98	1,444.39	4,761.91	1,545.20	1,388.26	156.93	9.846			
13,400.00	8,588.67	14,335.51	9,777.84	117.49	115.48	-138.98	1,443.68	4,861.88	1,545.25	1,385.15	160.10	9.652			
13,500.00	8,590.94	14,435.51	9,780.11	119.76	117.76	-138.98	1,442.96	4,961.86	1,545.31	1,382.03	163.27	9.465			
13,600.00	8,593.21	14,535.51	9,782.37	122.03	120.04	-138.98	1,442.25	5,061.83	1,545.36	1,378.91	166.45	9.284			
13,700.00	8,595.48	14,635.51	9,784.64	124.30	122.32	-138.97	1,441.54	5,161.80	1,545.41	1,375.79	169.62	9.111			
13,800.00	8,597.75	14,735.51	9,786.90	126.57	124.61	-138.97	1,440.82	5,261.77	1,545.47	1,372.67	172.80	8.943			
13,900.00	8,600.01	14,835.51	9,789.17	128.85	126.89	-138.97	1,440.11	5,361.74	1,545.52	1,369.54	175.99	8.782			
14,000.00	8,602.28	14,935.51	9,791.43	131.13	129.17	-138.97	1,439.39	5,461.72	1,545.58	1,366.40	179.17	8.626			
14,100.00	8,604.55	15,035.51	9,793.70	133.40	131.46	-138.96	1,438.68	5,561.69	1,545.63	1,363.27	182.36	8.476			
14,200.00	8,606.82	15,135.51	9,795.96	135.68	133.75	-138.96	1,437.97	5,661.66	1,545.69	1,360.13	185.56	8.330			
14,300.00	8,609.09	15,235.51	9,798.23	137.96	136.03	-138.96	1,437.25	5,761.63	1,545.74	1,356.99	188.75	8.189			
14,400.00	8,611.35	15,335.51	9,800.50	140.24	138.32	-138.96	1,436.54	5,861.60	1,545.80	1,353.85	191.95	8.053			
14,500.00	8,613.62	15,435.51	9,802.76	142.53	140.61	-138.95	1,435.82	5,961.57	1,545.85	1,350.71	195.15	7.922			
14,600.00	8,615.89	15,535.51	9,805.03	144.81	142.90	-138.95	1,435.11	6,061.55	1,545.91	1,347.56	198.35	7.794			
14,700.00	8,618.16	15,635.51	9,807.29	147.09	145.19	-138.95	1,434.39	6,161.52	1,545.96	1,344.41	201.55	7.670			
14,800.00	8,620.42	15,735.51	9,809.56	149.38	147.48	-138.95	1,433.68	6,261.49	1,546.02	1,341.26	204.76	7.551			
14,900.00	8,622.69	15,835.51	9,811.82	151.66	149.77	-138.94	1,432.97	6,361.46	1,546.07	1,338.11	207.96	7.434			
15,000.00	8,624.96	15,935.51	9,814.09	153.95	152.07	-138.94	1,432.25	6,461.43	1,546.13	1,334.95	211.17	7.322			
15,100.00	8,627.23	16,035.51	9,816.35	156.24	154.36	-138.94	1,431.54	6,561.40	1,546.18	1,331.80	214.38	7.212			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-132H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM				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	
15,200.00	8,629.50	16,135.51	9,818.62	158.53	156.65	-138.94	1,430.82	6,661.38	1,546.24	1,328.64	217.60	7.106		
15,300.00	8,631.76	16,235.51	9,820.88	160.81	158.95	-138.93	1,430.11	6,761.35	1,546.29	1,325.48	220.81	7.003		
15,400.00	8,634.03	16,335.51	9,823.15	163.10	161.24	-138.93	1,429.40	6,861.32	1,546.34	1,322.32	224.03	6.902		
15,500.00	8,636.30	16,435.51	9,825.41	165.39	163.54	-138.93	1,428.68	6,961.29	1,546.40	1,319.16	227.24	6.805		
15,600.00	8,638.57	16,535.51	9,827.68	167.68	165.83	-138.93	1,427.97	7,061.26	1,546.45	1,315.99	230.46	6.710		
15,700.00	8,640.84	16,635.51	9,829.94	169.97	168.13	-138.92	1,427.25	7,161.24	1,546.51	1,312.83	233.68	6.618		
15,800.00	8,643.10	16,735.51	9,832.21	172.27	170.42	-138.92	1,426.54	7,261.21	1,546.56	1,309.66	236.91	6.528		
15,900.00	8,645.37	16,835.51	9,834.47	174.56	172.72	-138.92	1,425.82	7,361.18	1,546.62	1,306.49	240.13	6.441		
16,000.00	8,647.64	16,935.51	9,836.74	176.85	175.02	-138.92	1,425.11	7,461.15	1,546.67	1,303.32	243.35	6.356		
16,100.00	8,649.91	17,035.51	9,839.00	179.14	177.31	-138.91	1,424.40	7,561.12	1,546.73	1,300.15	246.58	6.273		
16,200.00	8,652.18	17,135.51	9,841.27	181.44	179.61	-138.91	1,423.68	7,661.09	1,546.78	1,296.98	249.81	6.192		
16,300.00	8,654.44	17,235.51	9,843.54	183.73	181.91	-138.91	1,422.97	7,761.07	1,546.84	1,293.80	253.03	6.113		
16,400.00	8,656.71	17,335.51	9,845.80	186.03	184.21	-138.91	1,422.25	7,861.04	1,546.89	1,290.63	256.26	6.036		
16,500.00	8,658.98	17,435.51	9,848.07	188.32	186.51	-138.90	1,421.54	7,961.01	1,546.95	1,287.45	259.49	5.961		
16,600.00	8,661.25	17,535.51	9,850.33	190.62	188.81	-138.90	1,420.83	8,060.98	1,547.00	1,284.28	262.72	5.888		
16,700.00	8,663.52	17,635.51	9,852.60	192.91	191.11	-138.90	1,420.11	8,160.95	1,547.06	1,281.10	265.96	5.817		
16,800.00	8,665.78	17,735.51	9,854.86	195.21	193.41	-138.90	1,419.40	8,260.92	1,547.11	1,277.92	269.19	5.747		
16,900.00	8,668.05	17,835.51	9,857.13	197.50	195.71	-138.89	1,418.68	8,360.90	1,547.17	1,274.74	272.42	5.679		
17,000.00	8,670.32	17,935.51	9,859.39	199.80	198.01	-138.89	1,417.97	8,460.87	1,547.22	1,271.56	275.66	5.613		
17,100.00	8,672.59	18,035.51	9,861.66	202.10	200.31	-138.89	1,417.25	8,560.84	1,547.28	1,268.38	278.90	5.548		
17,200.00	8,674.85	18,135.51	9,863.92	204.40	202.61	-138.89	1,416.54	8,660.81	1,547.33	1,265.20	282.13	5.484		
17,300.00	8,677.12	18,235.51	9,866.19	206.69	204.91	-138.88	1,415.83	8,760.78	1,547.39	1,262.01	285.37	5.422		
17,400.00	8,679.39	18,335.51	9,868.45	208.99	207.21	-138.88	1,415.11	8,860.75	1,547.44	1,258.83	288.61	5.362		
17,500.00	8,681.66	18,435.51	9,870.72	211.29	209.51	-138.88	1,414.40	8,960.73	1,547.50	1,255.65	291.85	5.302		
17,600.00	8,683.93	18,535.51	9,872.98	213.59	211.81	-138.88	1,413.68	9,060.70	1,547.55	1,252.46	295.09	5.244		
17,700.00	8,686.19	18,635.51	9,875.25	215.89	214.11	-138.87	1,412.97	9,160.67	1,547.61	1,249.27	298.33	5.188		
17,800.00	8,688.46	18,735.51	9,877.51	218.19	216.42	-138.87	1,412.26	9,260.64	1,547.66	1,246.09	301.57	5.132		
17,900.00	8,690.73	18,835.51	9,879.78	220.49	218.72	-138.87	1,411.54	9,360.61	1,547.71	1,242.90	304.82	5.078		
18,000.00	8,693.00	18,935.51	9,882.04	222.79	221.02	-138.87	1,410.83	9,460.59	1,547.77	1,239.71	308.06	5.024		
18,100.00	8,695.27	19,035.51	9,884.31	225.08	223.32	-138.87	1,410.11	9,560.56	1,547.82	1,236.52	311.31	4.972		
18,200.00	8,697.53	19,135.51	9,886.58	227.39	225.63	-138.86	1,409.40	9,660.53	1,547.88	1,233.33	314.55	4.921		
18,300.00	8,699.80	19,235.51	9,888.84	229.69	227.93	-138.86	1,408.68	9,760.50	1,547.93	1,230.14	317.80	4.871		
18,400.00	8,702.07	19,335.51	9,891.11	231.99	230.23	-138.86	1,407.97	9,860.47	1,547.99	1,226.95	321.04	4.822		
18,500.00	8,704.34	19,435.51	9,893.37	234.29	232.53	-138.86	1,407.26	9,960.44	1,548.04	1,223.75	324.29	4.774		
18,600.00	8,706.61	19,535.51	9,895.64	236.59	234.84	-138.85	1,406.54	10,060.42	1,548.10	1,220.56	327.54	4.726		
18,700.00	8,708.87	19,635.51	9,897.90	238.89	237.14	-138.85	1,405.83	10,160.39	1,548.15	1,217.37	330.79	4.680		
18,800.00	8,711.14	19,735.51	9,900.17	241.19	239.45	-138.85	1,405.11	10,260.36	1,548.21	1,214.17	334.04	4.635		
18,900.00	8,713.41	19,835.51	9,902.43	243.49	241.75	-138.85	1,404.40	10,360.33	1,548.26	1,210.98	337.29	4.590		
19,000.00	8,715.68	19,935.51	9,904.70	245.79	244.05	-138.84	1,403.69	10,460.30	1,548.32	1,207.78	340.54	4.547		
19,100.00	8,717.95	19,948.87	9,905.00	247.40	244.36	-138.84	1,403.59	10,473.66	1,550.80	1,209.08	341.72	4.538 SF		
19,102.43	8,718.00	19,948.87	9,905.00	247.44	244.36	-138.84	1,403.59	10,473.66	1,550.93	1,209.20	341.73	4.538		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-135H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	-179.86	-20.02	-0.05	20.03				
100.00	100.00	99.40	99.40	0.65	0.65	-179.86	-20.02	-0.05	20.02	18.72	1.30	15.416	
200.00	200.00	199.40	199.40	1.34	1.34	-179.86	-20.02	-0.05	20.02	17.34	2.68	7.471	
300.00	300.00	299.40	299.40	1.81	1.81	-179.86	-20.02	-0.05	20.02	16.40	3.62	5.528	
400.00	400.00	399.40	399.40	2.19	2.18	-179.86	-20.02	-0.05	20.02	15.65	4.37	4.581	
500.00	500.00	499.40	499.40	2.51	2.51	-179.86	-20.02	-0.05	20.02	15.01	5.01	3.993	
600.00	600.00	599.40	599.40	2.80	2.79	-179.86	-20.02	-0.05	20.02	14.43	5.59	3.582	
700.00	700.00	699.40	699.40	3.06	3.06	-179.86	-20.02	-0.05	20.02	13.91	6.11	3.275	
800.00	800.00	799.40	799.40	3.30	3.30	-179.86	-20.02	-0.05	20.02	13.42	6.60	3.033	
900.00	900.00	899.40	899.40	3.53	3.53	-179.86	-20.02	-0.05	20.02	12.96	7.06	2.836	
1,000.00	1,000.00	999.40	999.40	3.75	3.75	-179.86	-20.02	-0.05	20.02	12.53	7.49	2.672	
1,100.00	1,100.00	1,099.40	1,099.40	3.95	3.95	-179.86	-20.02	-0.05	20.02	12.12	7.90	2.533	
1,200.00	1,200.00	1,199.40	1,199.40	4.15	4.15	-179.86	-20.02	-0.05	20.02	11.72	8.30	2.412	
1,300.00	1,300.00	1,299.40	1,299.40	4.34	4.34	-179.86	-20.02	-0.05	20.02	11.34	8.68	2.306	
1,400.00	1,400.00	1,399.40	1,399.40	4.52	4.52	-179.86	-20.02	-0.05	20.02	10.97	9.05	2.213	
1,500.00	1,500.00	1,499.40	1,499.40	4.70	4.70	-179.86	-20.02	-0.05	20.02	10.62	9.40	2.129 CC, ES	
1,600.00	1,599.98	1,599.74	1,599.72	5.05	5.02	-150.08	-19.15	-1.55	20.71	10.78	9.93	2.086	
1,700.00	1,699.84	1,700.21	1,700.05	5.69	5.21	-145.44	-16.34	-5.91	22.68	12.18	10.50	2.159	
1,800.00	1,799.45	1,800.87	1,800.36	6.30	5.60	-141.56	-10.49	-11.91	24.83	13.70	11.13	2.231	
1,900.00	1,898.82	1,901.57	1,900.36	6.46	6.19	-137.24	-1.42	-19.36	26.18	14.71	11.47	2.283	
2,000.00	1,998.18	2,002.14	1,999.79	6.67	6.77	-128.10	10.83	-28.22	25.26	13.62	11.64	2.171	
2,100.00	2,097.54	2,102.34	2,098.27	6.90	7.34	-111.28	26.21	-38.46	23.33	11.82	11.51	2.026	
2,151.85	2,149.06	2,154.08	2,148.85	7.03	7.62	-98.62	35.38	-44.29	22.86	11.35	11.51	1.986 Collision Risk Procedures Req.	
2,200.00	2,196.90	2,201.94	2,195.46	7.15	7.89	-84.95	44.60	-50.01	23.44	11.63	11.82	1.984 Collision Risk Procedures Req.	
2,300.00	2,296.25	2,300.71	2,291.05	7.42	8.41	-57.25	65.89	-62.81	29.51	15.96	13.56	2.177	
2,400.00	2,395.61	2,399.48	2,386.24	7.69	8.67	-39.69	88.57	-76.23	40.99	25.91	15.09	2.717	
2,500.00	2,494.97	2,498.25	2,481.42	7.98	8.97	-30.24	111.26	-89.65	54.58	38.45	16.13	3.384	
2,600.00	2,594.33	2,597.02	2,576.61	8.28	9.28	-24.64	133.95	-103.08	69.05	52.07	16.97	4.068	
2,700.00	2,693.69	2,695.79	2,671.80	8.59	9.60	-20.99	156.64	-116.50	83.93	66.19	17.74	4.731	
2,800.00	2,793.05	2,794.56	2,766.98	8.91	9.94	-18.45	179.33	-129.92	99.05	80.56	18.49	5.358	
2,900.00	2,892.40	2,893.33	2,862.17	9.24	10.30	-16.58	202.02	-143.34	114.31	95.08	19.23	5.945	
3,000.00	2,991.76	2,992.09	2,957.36	9.57	10.66	-15.15	224.71	-156.76	129.66	109.68	19.97	6.492	
3,100.00	3,091.12	3,090.86	3,052.54	9.91	11.04	-14.03	247.39	-170.19	145.07	124.34	20.72	7.000	
3,200.00	3,190.48	3,189.63	3,147.73	10.25	11.42	-13.12	270.08	-183.61	160.52	139.04	21.49	7.471	
3,300.00	3,289.84	3,288.91	3,243.41	10.60	11.80	-12.37	292.88	-197.09	176.00	153.75	22.25	7.910	
3,400.00	3,389.20	3,394.65	3,345.88	10.95	12.27	-11.80	315.29	-210.35	189.43	166.25	23.18	8.172	
3,500.00	3,488.55	3,501.32	3,450.16	11.31	12.88	-11.49	334.58	-221.76	199.23	175.01	24.22	8.225	
3,600.00	3,587.91	3,608.62	3,555.84	11.67	13.49	-11.37	350.60	-231.24	205.35	180.14	25.22	8.144	
3,700.00	3,687.27	3,716.27	3,662.47	12.03	14.07	-11.42	363.25	-238.72	207.77	181.62	26.15	7.945	
3,800.00	3,786.63	3,823.96	3,769.63	12.40	14.62	-11.64	372.43	-244.16	206.48	179.47	27.02	7.643	
3,900.00	3,885.99	3,931.38	3,876.84	12.77	15.13	-12.05	378.14	-247.53	201.48	173.69	27.80	7.249	
4,000.00	3,985.35	4,038.25	3,983.66	13.14	15.49	-12.68	380.38	-248.86	192.82	164.43	28.39	6.791	
4,100.00	4,084.70	4,138.69	4,084.10	13.52	15.56	-13.47	380.42	-248.88	181.84	153.07	28.77	6.321	
4,200.00	4,184.06	4,238.05	4,183.46	13.90	15.62	-14.35	380.42	-248.88	170.86	141.71	29.14	5.862	
4,300.00	4,283.42	4,337.40	4,282.82	14.27	15.68	-15.35	380.42	-248.88	159.92	130.41	29.51	5.419	
4,400.00	4,382.78	4,436.76	4,382.18	14.65	15.74	-16.50	380.42	-248.88	149.04	119.17	29.87	4.990	
4,500.00	4,482.14	4,536.12	4,481.54	15.04	15.80	-17.83	380.42	-248.88	138.22	108.03	30.20	4.577	
4,600.00	4,581.49	4,635.48	4,580.89	15.42	15.87	-19.39	380.42	-248.88	127.50	97.00	30.50	4.181	
4,700.00	4,680.85	4,734.84	4,680.25	15.81	15.93	-21.23	380.42	-248.88	116.88	86.13	30.75	3.801	
4,800.00	4,780.21	4,834.20	4,779.61	16.19	15.99	-23.43	380.42	-248.88	106.40	75.46	30.95	3.438	
4,900.00	4,879.57	4,933.55	4,878.97	16.58	16.06	-26.11	380.42	-248.88	96.12	65.07	31.05	3.095	
5,000.00	4,978.93	5,032.91	4,978.33	16.97	16.12	-29.42	380.42	-248.88	86.09	55.07	31.03	2.775	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-135H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												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	5,078.29	5,132.27	5,077.69	17.36	16.18	-33.58	380.42	-248.88	76.43	45.62	30.81	2.481	
5,200.00	5,177.64	5,231.63	5,177.04	17.75	16.24	-38.91	380.42	-248.88	67.27	36.99	30.29	2.221	
5,300.00	5,277.00	5,330.99	5,276.40	18.15	16.31	-45.82	380.42	-248.88	58.88	29.54	29.34	2.007	
5,400.00	5,376.36	5,430.34	5,375.76	18.54	16.37	-54.82	380.42	-248.88	51.60	23.78	27.82	1.855	Collision Risk Procedures Req.
5,500.00	5,475.72	5,529.70	5,475.12	18.93	16.44	-66.35	380.42	-248.88	45.99	20.20	25.79	1.783	Collision Risk Procedures Req.
5,600.00	5,575.08	5,629.06	5,574.48	19.33	16.50	-80.30	380.42	-248.88	42.71	18.75	23.95	1.783	Collision Risk Procedures Req.
5,663.99	5,638.66	5,692.64	5,638.06	19.58	16.54	-90.00	380.42	-248.88	42.09	18.55	23.54	1.788	Collision Risk Procedures Req.
5,700.00	5,674.44	5,728.42	5,673.84	19.73	16.56	-95.49	380.42	-248.88	42.28	18.57	23.71	1.783	Collision Risk Procedures Req.
5,800.00	5,773.79	5,827.78	5,773.19	20.12	16.63	-109.96	380.42	-248.88	44.81	19.28	25.53	1.755	Collision Risk Procedures Req., SF
5,900.00	5,873.15	5,927.14	5,872.55	20.52	16.69	-122.22	380.42	-248.88	49.84	21.60	28.24	1.765	Collision Risk Procedures Req.
6,000.00	5,972.51	6,026.49	5,971.91	20.92	16.76	-131.90	380.42	-248.88	56.71	25.92	30.79	1.842	Collision Risk Procedures Req.
6,100.00	6,071.87	6,125.85	6,071.27	21.32	16.82	-139.34	380.42	-248.88	64.84	31.97	32.86	1.973	Collision Risk Procedures Req.
6,200.00	6,171.23	6,225.21	6,170.63	21.72	16.89	-145.06	380.42	-248.88	73.81	39.31	34.50	2.139	
6,300.00	6,270.75	6,324.73	6,270.15	22.13	16.95	-149.03	380.42	-248.88	81.99	46.28	35.71	2.296	
6,400.00	6,370.54	6,424.53	6,369.94	22.59	17.02	-151.20	380.42	-248.88	87.42	50.84	36.59	2.390	
6,500.00	6,470.50	6,524.49	6,469.90	22.98	17.08	-152.07	380.42	-248.88	89.87	52.70	37.16	2.418	
6,600.00	6,570.50	6,624.49	6,569.90	23.05	17.15	180.00	380.42	-248.88	90.00	52.69	37.31	2.412	
6,700.00	6,670.50	6,724.49	6,669.90	23.10	17.22	180.00	380.42	-248.88	90.00	52.57	37.43	2.404	
6,800.00	6,770.50	6,824.49	6,769.90	23.15	17.28	180.00	380.42	-248.88	90.00	52.44	37.56	2.396	
6,900.00	6,870.50	6,924.49	6,869.90	23.19	17.34	180.00	380.42	-248.88	90.00	52.32	37.68	2.389	
7,000.00	6,970.50	7,025.40	6,970.65	23.24	17.35	177.39	380.89	-244.80	89.62	51.36	38.26	2.342	
7,040.63	7,011.13	7,065.77	7,010.53	23.26	17.35	173.41	381.61	-238.61	89.40	50.52	38.89	2.299	
7,100.00	7,070.50	7,122.76	7,065.87	23.29	17.34	164.79	383.16	-225.16	90.51	50.77	39.74	2.278	
7,200.00	7,170.50	7,211.24	7,148.37	23.34	17.34	146.56	386.81	-193.66	102.48	63.29	39.20	2.615	
7,300.00	7,270.50	7,288.45	7,215.65	23.39	17.35	130.53	391.15	-156.15	133.51	97.50	36.02	3.707	
7,400.00	7,370.50	7,350.00	7,265.27	23.44	17.38	120.23	395.33	-120.02	182.19	149.54	32.65	5.580	
7,500.00	7,470.50	7,409.36	7,309.16	23.49	17.45	112.70	399.92	-80.36	243.33	212.51	30.82	7.895	
7,600.00	7,570.50	7,450.00	7,336.72	23.54	17.52	108.70	403.35	-50.70	313.29	283.81	29.48	10.629	
7,700.00	7,670.50	7,500.00	7,367.61	23.59	17.63	104.77	407.87	-11.67	389.31	360.15	29.16	13.352	
7,800.00	7,770.50	7,527.19	7,382.94	23.65	17.72	103.01	410.45	10.64	469.77	441.05	28.73	16.354	
7,900.00	7,870.50	7,550.00	7,394.96	23.70	17.79	101.70	412.68	29.89	553.73	525.17	28.55	19.393	
8,000.00	7,970.40	7,580.13	7,409.65	23.66	17.92	8.31	415.70	56.02	638.69	610.03	28.66	22.286	
8,100.00	8,068.49	7,600.00	7,418.57	23.58	18.00	6.12	417.74	73.66	717.54	688.78	28.77	24.943	
8,200.00	8,161.84	7,650.00	7,438.24	23.48	18.27	4.27	423.02	119.31	788.43	759.07	29.36	26.858	
8,300.00	8,247.60	7,669.85	7,444.93	23.40	18.41	3.47	425.17	137.87	850.15	820.50	29.65	28.670	
8,400.00	8,323.17	7,700.00	7,453.83	23.38	18.61	2.79	428.48	166.48	902.62	872.43	30.19	29.898	
8,500.00	8,386.25	7,750.00	7,465.23	23.47	19.02	2.12	434.07	214.83	945.27	914.21	31.05	30.440	
8,600.00	8,434.92	7,772.57	7,468.97	23.73	19.23	1.82	436.63	236.93	977.04	945.33	31.71	30.812	
8,700.00	8,467.72	7,800.00	7,472.34	24.20	19.50	1.55	439.76	263.97	998.38	965.87	32.51	30.710	
8,800.00	8,483.63	7,844.31	7,475.01	24.88	19.97	1.20	444.84	307.90	1,008.57	975.06	33.50	30.104	
8,900.00	8,486.62	7,943.14	7,477.26	25.76	21.20	0.61	454.48	406.23	1,009.10	974.76	34.34	29.385	
9,000.00	8,488.89	8,042.59	7,479.52	26.81	22.65	0.21	460.76	505.44	1,009.04	973.98	35.06	28.779	
9,100.00	8,491.15	8,142.41	7,481.78	28.01	24.25	0.00	463.59	605.19	1,009.03	973.22	35.81	28.174	
9,127.28	8,491.77	8,169.67	7,482.40	28.37	24.70	-0.02	463.75	632.46	1,009.03	973.01	36.03	28.009	
9,200.00	8,493.42	8,242.38	7,484.05	29.34	25.91	-0.03	463.30	705.14	1,009.03	972.45	36.58	27.582	
9,300.00	8,495.69	8,342.38	7,486.32	30.79	27.62	-0.03	462.49	805.11	1,009.03	971.64	37.40	26.982	
9,400.00	8,497.96	8,442.38	7,488.58	32.34	29.42	-0.03	461.68	905.08	1,009.03	970.77	38.26	26.373	
9,500.00	8,500.23	8,542.38	7,490.85	33.98	31.28	-0.03	460.88	1,005.05	1,009.03	969.87	39.17	25.762	
9,600.00	8,502.49	8,642.38	7,493.12	35.70	33.21	-0.03	460.07	1,105.02	1,009.04	968.92	40.12	25.153	
9,700.00	8,504.76	8,742.38	7,495.38	37.49	35.18	-0.03	459.27	1,205.00	1,009.04	967.94	41.10	24.550	
9,800.00	8,507.03	8,842.38	7,497.65	39.33	37.19	-0.03	458.46	1,304.97	1,009.04	966.92	42.12	23.955	
9,900.00	8,509.30	8,942.38	7,499.92	41.23	39.24	-0.03	457.66	1,404.94	1,009.04	965.86	43.18	23.370	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-135H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,000.00	8,511.56	9,042.38	7,502.18	43.16	41.32	-0.03	456.85	1,504.91	1,009.04	964.78	44.26	22.797			
10,100.00	8,513.83	9,142.38	7,504.45	45.13	43.42	-0.03	456.04	1,604.88	1,009.04	963.67	45.37	22.238			
10,200.00	8,516.10	9,242.38	7,506.72	47.14	45.54	-0.03	455.24	1,704.85	1,009.04	962.53	46.51	21.694			
10,300.00	8,518.37	9,342.38	7,508.98	49.17	47.68	-0.03	454.43	1,804.82	1,009.04	961.37	47.68	21.164			
10,400.00	8,520.64	9,442.38	7,511.25	51.23	49.83	-0.03	453.63	1,904.79	1,009.04	960.18	48.86	20.650			
10,500.00	8,522.90	9,542.38	7,513.52	53.31	52.00	-0.03	452.82	2,004.76	1,009.05	958.98	50.07	20.153			
10,600.00	8,525.17	9,642.38	7,515.78	55.40	54.18	-0.03	452.01	2,104.74	1,009.05	957.75	51.30	19.671			
10,700.00	8,527.44	9,742.38	7,518.05	57.52	56.37	-0.02	451.21	2,204.71	1,009.05	956.51	52.54	19.205			
10,800.00	8,529.71	9,842.38	7,520.32	59.65	58.57	-0.02	450.40	2,304.68	1,009.05	955.24	53.80	18.754			
10,900.00	8,531.98	9,942.38	7,522.59	61.79	60.78	-0.02	449.60	2,404.65	1,009.05	953.97	55.08	18.319			
11,000.00	8,534.24	10,042.38	7,524.85	63.94	62.99	-0.02	448.79	2,504.62	1,009.05	952.68	56.37	17.899			
11,100.00	8,536.51	10,142.38	7,527.12	66.11	65.22	-0.02	447.99	2,604.59	1,009.05	951.37	57.68	17.494			
11,200.00	8,538.78	10,242.38	7,529.39	68.29	67.45	-0.02	447.18	2,704.56	1,009.05	950.05	59.00	17.103			
11,300.00	8,541.05	10,342.38	7,531.65	70.47	69.68	-0.02	446.37	2,804.53	1,009.05	948.72	60.33	16.726			
11,400.00	8,543.32	10,442.38	7,533.92	72.66	71.92	-0.02	445.57	2,904.50	1,009.06	947.38	61.67	16.362			
11,500.00	8,545.58	10,542.38	7,536.19	74.86	74.16	-0.02	444.76	3,004.47	1,009.06	946.03	63.02	16.011			
11,600.00	8,547.85	10,642.38	7,538.45	77.07	76.41	-0.02	443.96	3,104.45	1,009.06	944.67	64.39	15.672			
11,700.00	8,550.12	10,742.38	7,540.72	79.28	78.66	-0.02	443.15	3,204.42	1,009.06	943.30	65.76	15.345			
11,800.00	8,552.39	10,842.38	7,542.99	81.50	80.92	-0.02	442.35	3,304.39	1,009.06	941.92	67.14	15.030			
11,900.00	8,554.66	10,942.38	7,545.25	83.72	83.18	-0.02	441.54	3,404.36	1,009.06	940.53	68.53	14.725			
12,000.00	8,556.92	11,042.38	7,547.52	85.95	85.44	-0.02	440.73	3,504.33	1,009.06	939.14	69.92	14.431			
12,100.00	8,559.19	11,142.38	7,549.79	88.18	87.70	-0.02	439.93	3,604.30	1,009.06	937.74	71.33	14.147			
12,200.00	8,561.46	11,242.38	7,552.05	90.42	89.97	-0.02	439.12	3,704.27	1,009.06	936.33	72.74	13.873			
12,300.00	8,563.73	11,342.38	7,554.32	92.66	92.24	-0.02	438.32	3,804.24	1,009.07	934.91	74.15	13.608			
12,400.00	8,565.99	11,442.38	7,556.59	94.90	94.51	-0.02	437.51	3,904.21	1,009.07	933.49	75.57	13.352			
12,500.00	8,568.26	11,542.38	7,558.85	97.15	96.78	-0.02	436.71	4,004.19	1,009.07	932.06	77.00	13.104			
12,600.00	8,570.53	11,642.38	7,561.12	99.40	99.05	-0.02	435.90	4,104.16	1,009.07	930.63	78.44	12.865			
12,700.00	8,572.80	11,742.38	7,563.39	101.65	101.33	-0.02	435.09	4,204.13	1,009.07	929.20	79.87	12.633			
12,800.00	8,575.07	11,842.38	7,565.65	103.91	103.61	-0.02	434.29	4,304.10	1,009.07	927.75	81.32	12.409			
12,900.00	8,577.33	11,942.38	7,567.92	106.17	105.89	-0.02	433.48	4,404.07	1,009.07	926.31	82.77	12.192			
13,000.00	8,579.60	12,042.38	7,570.19	108.43	108.17	-0.02	432.68	4,504.04	1,009.07	924.85	84.22	11.982			
13,100.00	8,581.87	12,142.38	7,572.46	110.69	110.45	-0.02	431.87	4,604.01	1,009.07	923.40	85.67	11.778			
13,200.00	8,584.14	12,242.38	7,574.72	112.95	112.73	-0.02	431.07	4,703.98	1,009.08	921.94	87.14	11.581			
13,300.00	8,586.41	12,342.38	7,576.99	115.22	115.02	-0.02	430.26	4,803.95	1,009.08	920.48	88.60	11.389			
13,400.00	8,588.67	12,442.38	7,579.26	117.49	117.30	-0.02	429.45	4,903.92	1,009.08	919.01	90.07	11.204			
13,500.00	8,590.94	12,542.38	7,581.52	119.76	119.59	-0.02	428.65	5,003.90	1,009.08	917.54	91.54	11.024			
13,600.00	8,593.21	12,642.38	7,583.79	122.03	121.87	-0.02	427.84	5,103.87	1,009.08	916.07	93.01	10.849			
13,700.00	8,595.48	12,742.38	7,586.06	124.30	124.16	-0.02	427.04	5,203.84	1,009.08	914.59	94.49	10.679			
13,800.00	8,597.75	12,842.38	7,588.32	126.57	126.45	-0.02	426.23	5,303.81	1,009.08	913.11	95.97	10.515			
13,900.00	8,600.01	12,942.38	7,590.59	128.85	128.74	-0.02	425.42	5,403.78	1,009.08	911.63	97.45	10.355			
14,000.00	8,602.28	13,042.38	7,592.86	131.13	131.03	-0.02	424.62	5,503.75	1,009.08	910.15	98.94	10.199			
14,100.00	8,604.55	13,142.38	7,595.12	133.40	133.32	-0.01	423.81	5,603.72	1,009.09	908.66	100.43	10.048			
14,200.00	8,606.82	13,242.38	7,597.39	135.68	135.61	-0.01	423.01	5,703.69	1,009.09	907.17	101.92	9.901			
14,300.00	8,609.09	13,342.38	7,599.66	137.96	137.91	-0.01	422.20	5,803.66	1,009.09	905.68	103.41	9.758			
14,400.00	8,611.35	13,442.38	7,601.92	140.24	140.20	-0.01	421.40	5,903.64	1,009.09	904.18	104.91	9.619			
14,500.00	8,613.62	13,542.38	7,604.19	142.53	142.49	-0.01	420.59	6,003.61	1,009.09	902.69	106.40	9.484			
14,600.00	8,615.89	13,642.38	7,606.46	144.81	144.79	-0.01	419.78	6,103.58	1,009.09	901.19	107.90	9.352			
14,700.00	8,618.16	13,742.38	7,608.72	147.09	147.08	-0.01	418.98	6,203.55	1,009.09	899.69	109.40	9.224			
14,800.00	8,620.42	13,842.38	7,610.99	149.38	149.38	-0.01	418.17	6,303.52	1,009.09	898.19	110.91	9.099			
14,900.00	8,622.69	13,942.38	7,613.26	151.66	151.67	-0.01	417.37	6,403.49	1,009.09	896.68	112.41	8.977			
15,000.00	8,624.96	14,042.38	7,615.52	153.95	153.97	-0.01	416.56	6,503.46	1,009.10	895.18	113.92	8.858			
15,100.00	8,627.23	14,142.38	7,617.79	156.24	156.27	-0.01	415.76	6,603.43	1,009.10	893.67	115.43	8.742			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-135H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		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)			
15,200.00	8,629.50	14,242.38	7,620.06	158.53	158.56	-0.01	414.95	6,703.40	1,009.10	892.16	116.94	8.629	
15,300.00	8,631.76	14,342.38	7,622.33	160.81	160.86	-0.01	414.14	6,803.38	1,009.10	890.65	118.45	8.519	
15,400.00	8,634.03	14,442.38	7,624.59	163.10	163.16	-0.01	413.34	6,903.35	1,009.10	889.14	119.96	8.412	
15,500.00	8,636.30	14,542.38	7,626.86	165.39	165.46	-0.01	412.53	7,003.32	1,009.10	887.63	121.48	8.307	
15,600.00	8,638.57	14,642.38	7,629.13	167.68	167.76	-0.01	411.73	7,103.29	1,009.10	886.11	122.99	8.205	
15,700.00	8,640.84	14,742.38	7,631.39	169.97	170.06	-0.01	410.92	7,203.26	1,009.10	884.59	124.51	8.105	
15,800.00	8,643.10	14,842.38	7,633.66	172.27	172.36	-0.01	410.12	7,303.23	1,009.10	883.08	126.03	8.007	
15,900.00	8,645.37	14,942.38	7,635.93	174.56	174.65	-0.01	409.31	7,403.20	1,009.11	881.56	127.55	7.912	
16,000.00	8,647.64	15,042.38	7,638.19	176.85	176.96	-0.01	408.50	7,503.17	1,009.11	880.04	129.07	7.818	
16,100.00	8,649.91	15,142.38	7,640.46	179.14	179.26	-0.01	407.70	7,603.14	1,009.11	878.52	130.59	7.727	
16,200.00	8,652.18	15,242.38	7,642.73	181.44	181.56	-0.01	406.89	7,703.11	1,009.11	877.00	132.11	7.638	
16,300.00	8,654.44	15,342.38	7,644.99	183.73	183.86	-0.01	406.09	7,803.09	1,009.11	875.47	133.64	7.551	
16,400.00	8,656.71	15,442.38	7,647.26	186.03	186.16	-0.01	405.28	7,903.06	1,009.11	873.95	135.16	7.466	
16,500.00	8,658.98	15,542.38	7,649.53	188.32	188.46	-0.01	404.47	8,003.03	1,009.11	872.42	136.69	7.383	
16,600.00	8,661.25	15,642.38	7,651.79	190.62	190.76	-0.01	403.67	8,103.00	1,009.11	870.90	138.21	7.301	
16,700.00	8,663.52	15,742.38	7,654.06	192.91	193.06	-0.01	402.86	8,202.97	1,009.11	869.37	139.74	7.221	
16,800.00	8,665.78	15,842.38	7,656.33	195.21	195.37	-0.01	402.06	8,302.94	1,009.12	867.84	141.27	7.143	
16,900.00	8,668.05	15,942.38	7,658.59	197.50	197.67	-0.01	401.25	8,402.91	1,009.12	866.31	142.80	7.067	
17,000.00	8,670.32	16,042.38	7,660.86	199.80	199.97	-0.01	400.45	8,502.88	1,009.12	864.78	144.33	6.992	
17,100.00	8,672.59	16,142.38	7,663.13	202.10	202.27	-0.01	399.64	8,602.85	1,009.12	863.25	145.86	6.918	
17,200.00	8,674.85	16,242.38	7,665.39	204.40	204.58	-0.01	398.83	8,702.83	1,009.12	861.72	147.40	6.846	
17,300.00	8,677.12	16,342.38	7,667.66	206.69	206.88	-0.01	398.03	8,802.80	1,009.12	860.19	148.93	6.776	
17,400.00	8,679.39	16,442.38	7,669.93	208.99	209.18	0.00	397.22	8,902.77	1,009.12	858.66	150.46	6.707	
17,500.00	8,681.66	16,542.38	7,672.19	211.29	211.49	0.00	396.42	9,002.74	1,009.12	857.13	152.00	6.639	
17,600.00	8,683.93	16,642.38	7,674.46	213.59	213.79	0.00	395.61	9,102.71	1,009.12	855.59	153.53	6.573	
17,700.00	8,686.19	16,742.38	7,676.73	215.89	216.09	0.00	394.81	9,202.68	1,009.13	854.06	155.07	6.508	
17,800.00	8,688.46	16,842.38	7,679.00	218.19	218.40	0.00	394.00	9,302.65	1,009.13	852.52	156.61	6.444	
17,900.00	8,690.73	16,942.38	7,681.26	220.49	220.70	0.00	393.19	9,402.62	1,009.13	850.98	158.14	6.381	
18,000.00	8,693.00	17,042.38	7,683.53	222.79	223.01	0.00	392.39	9,502.59	1,009.13	849.45	159.68	6.320	
18,100.00	8,695.27	17,142.38	7,685.80	225.08	225.31	0.00	391.58	9,602.56	1,009.13	847.91	161.22	6.259	
18,200.00	8,697.53	17,242.38	7,688.06	227.39	227.61	0.00	390.78	9,702.54	1,009.13	846.37	162.76	6.200	
18,300.00	8,699.80	17,342.38	7,690.33	229.69	229.92	0.00	389.97	9,802.51	1,009.13	844.83	164.30	6.142	
18,400.00	8,702.07	17,442.38	7,692.60	231.99	232.22	0.00	389.17	9,902.48	1,009.13	843.29	165.84	6.085	
18,500.00	8,704.34	17,542.38	7,694.86	234.29	234.53	0.00	388.36	10,002.45	1,009.13	841.76	167.38	6.029	
18,600.00	8,706.61	17,642.38	7,697.13	236.59	236.83	0.00	387.55	10,102.42	1,009.14	840.21	168.92	5.974	
18,700.00	8,708.87	17,742.38	7,699.40	238.89	239.14	0.00	386.75	10,202.39	1,009.14	838.67	170.46	5.920	
18,800.00	8,711.14	17,842.38	7,701.66	241.19	241.44	0.00	385.94	10,302.36	1,009.14	837.13	172.00	5.867	
18,900.00	8,713.41	17,942.38	7,703.93	243.49	243.75	0.00	385.14	10,402.33	1,009.14	835.59	173.55	5.815	
19,000.00	8,715.68	18,042.38	7,706.20	245.79	246.06	0.00	384.33	10,502.30	1,009.14	834.05	175.09	5.764	
19,002.51	8,715.73	18,044.89	7,706.25	245.83	246.11	0.00	384.31	10,504.81	1,009.14	834.02	175.12	5.763	
19,100.00	8,717.95	18,121.93	7,708.00	247.40	247.74	0.00	383.69	10,581.83	1,009.35	833.21	176.14	5.730	
19,102.43	8,718.00	18,121.93	7,708.00	247.44	247.74	0.00	383.69	10,581.83	1,009.40	833.24	176.16	5.730	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - PLAN 1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM											Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Rule Assigned:	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	0.40	0.40	0.50	0.50	0.14	19.99	0.05	19.99			
100.00	100.00	100.40	100.40	0.65	0.65	0.14	19.99	0.05	19.99	18.69	1.30	15.349
200.00	200.00	200.40	200.40	1.34	1.34	0.14	19.99	0.05	19.99	17.30	2.69	7.442
300.00	300.00	300.40	300.40	1.81	1.81	0.14	19.99	0.05	19.99	16.36	3.63	5.513
400.00	400.00	400.40	400.40	2.19	2.19	0.14	19.99	0.05	19.99	15.62	4.37	4.570
500.00	500.00	500.40	500.40	2.51	2.51	0.14	19.99	0.05	19.99	14.97	5.02	3.984
600.00	600.00	600.40	600.40	2.80	2.80	0.14	19.99	0.05	19.99	14.40	5.59	3.575
700.00	700.00	700.40	700.40	3.06	3.06	0.14	19.99	0.05	19.99	13.87	6.12	3.268
800.00	800.00	800.40	800.40	3.30	3.30	0.14	19.99	0.05	19.99	13.39	6.60	3.027
900.00	900.00	900.40	900.40	3.53	3.53	0.14	19.99	0.05	19.99	12.93	7.06	2.831
1,000.00	1,000.00	1,000.40	1,000.40	3.75	3.75	0.14	19.99	0.05	19.99	12.50	7.49	2.667
1,016.53	1,016.53	1,016.93	1,016.93	3.78	3.78	0.14	19.99	0.05	19.99	12.43	7.56	2.643 CC
1,100.00	1,100.00	1,100.40	1,100.40	3.95	3.95	0.14	19.99	0.05	19.99	12.08	7.91	2.528 ES
1,200.00	1,200.00	1,200.00	1,199.98	4.15	4.32	-4.01	20.86	-1.46	20.92	12.55	8.37	2.500 SF
1,300.00	1,300.00	1,299.26	1,299.11	4.34	4.53	-13.36	23.66	-5.62	24.36	15.62	8.73	2.789
1,400.00	1,400.00	1,398.02	1,397.57	4.52	4.89	-19.35	29.63	-10.40	31.53	22.23	9.30	3.391
1,500.00	1,500.00	1,496.23	1,495.20	4.70	5.44	-21.66	38.92	-15.46	42.19	32.15	10.05	4.200
1,600.00	1,599.98	1,593.90	1,591.92	5.05	6.03	6.06	51.45	-20.77	54.41	43.44	10.97	4.959
1,700.00	1,699.84	1,691.20	1,687.76	5.69	6.60	7.09	67.20	-26.34	66.44	54.27	12.17	5.460
1,800.00	1,799.45	1,788.10	1,782.62	6.30	7.17	8.76	86.11	-32.16	78.30	65.01	13.29	5.892
1,900.00	1,898.82	1,884.47	1,876.25	6.46	7.67	10.72	108.07	-38.22	91.05	77.16	13.89	6.556
2,000.00	1,998.18	1,983.18	1,971.72	6.67	7.96	12.44	132.36	-44.56	105.61	91.25	14.36	7.353
2,100.00	2,097.54	2,082.07	2,067.35	6.90	8.26	13.75	156.70	-50.92	120.24	105.35	14.89	8.075
2,200.00	2,196.90	2,180.96	2,162.99	7.15	8.58	14.77	181.04	-57.28	134.93	119.47	15.46	8.729
2,300.00	2,296.25	2,279.85	2,258.63	7.42	8.92	15.60	205.38	-63.63	149.64	133.59	16.06	9.320
2,400.00	2,395.61	2,378.74	2,354.27	7.69	9.27	16.27	229.72	-69.99	164.38	147.70	16.68	9.855
2,500.00	2,494.97	2,477.63	2,449.90	7.98	9.63	16.84	254.06	-76.35	179.14	161.81	17.33	10.337
2,600.00	2,594.33	2,576.52	2,545.54	8.28	10.01	17.32	278.39	-82.71	193.92	175.92	18.00	10.773
2,700.00	2,693.69	2,675.41	2,641.18	8.59	10.39	17.73	302.73	-89.06	208.70	190.01	18.69	11.167
2,800.00	2,793.05	2,774.31	2,736.82	8.91	10.78	18.08	327.07	-95.42	223.50	204.10	19.40	11.523
2,900.00	2,892.40	2,873.20	2,832.45	9.24	11.18	18.40	351.41	-101.78	238.30	218.18	20.12	11.846
3,000.00	2,991.76	2,972.09	2,928.09	9.57	11.59	18.67	375.75	-108.14	253.11	232.26	20.85	12.138
3,100.00	3,091.12	3,070.98	3,023.73	9.91	12.00	18.92	400.09	-114.49	267.92	246.32	21.60	12.405
3,200.00	3,190.48	3,169.87	3,119.37	10.25	12.42	19.14	424.43	-120.85	282.74	260.38	22.35	12.648
3,300.00	3,289.84	3,268.76	3,215.01	10.60	12.84	19.33	448.77	-127.21	297.56	274.44	23.12	12.870
3,400.00	3,389.20	3,367.65	3,310.64	10.95	13.27	19.51	473.11	-133.57	312.38	288.49	23.90	13.072
3,500.00	3,488.55	3,466.54	3,406.28	11.31	13.70	19.67	497.45	-139.92	327.21	302.53	24.68	13.259
3,600.00	3,587.91	3,565.43	3,501.92	11.67	14.14	19.82	521.78	-146.28	342.04	316.57	25.47	13.430
3,700.00	3,687.27	3,664.32	3,597.56	12.03	14.57	19.96	546.12	-152.64	356.87	330.61	26.26	13.587
3,800.00	3,786.63	3,763.21	3,693.19	12.40	15.02	20.08	570.46	-159.00	371.70	344.64	27.07	13.733
3,900.00	3,885.99	3,862.10	3,788.83	12.77	15.46	20.20	594.80	-165.35	386.54	358.67	27.87	13.867
4,000.00	3,985.35	3,960.99	3,884.47	13.14	15.91	20.31	619.14	-171.71	401.38	372.69	28.69	13.992
4,100.00	4,084.70	4,059.88	3,980.11	13.52	16.36	20.41	643.48	-178.07	416.21	386.71	29.50	14.108
4,200.00	4,184.06	4,158.77	4,075.74	13.90	16.81	20.50	667.82	-184.43	431.05	400.73	30.32	14.215
4,300.00	4,283.42	4,257.66	4,171.38	14.27	17.27	20.59	692.16	-190.78	445.89	414.74	31.15	14.316
4,400.00	4,382.78	4,356.56	4,267.02	14.65	17.73	20.67	716.50	-197.14	460.73	428.76	31.97	14.409
4,500.00	4,482.14	4,455.45	4,362.66	15.04	18.19	20.74	740.83	-203.50	475.57	442.77	32.81	14.497
4,600.00	4,581.49	4,554.34	4,458.29	15.42	18.65	20.81	765.17	-209.86	490.42	456.78	33.64	14.579
4,700.00	4,680.85	4,653.23	4,553.93	15.81	19.11	20.88	789.51	-216.21	505.26	470.78	34.48	14.655
4,800.00	4,780.21	4,752.12	4,649.57	16.19	19.57	20.94	813.85	-222.57	520.10	484.79	35.31	14.730
4,900.00	4,879.57	4,868.32	4,762.33	16.58	20.12	21.04	841.01	-229.67	533.71	497.40	36.31	14.698
5,000.00	4,978.93	4,990.63	4,882.11	16.97	20.79	21.20	864.88	-235.90	543.24	505.85	37.39	14.529

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference		Offset		Semi Major Axis		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	5,078.29	5,113.69	5,003.58	17.36	21.46	21.44	883.88	-240.86	548.55	510.16	38.39	14.288	
5,200.00	5,177.64	5,237.04	5,126.08	17.75	22.09	21.76	897.85	-244.51	549.62	510.33	39.28	13.991	
5,300.00	5,277.00	5,360.25	5,248.93	18.15	22.66	22.16	906.69	-246.82	546.44	506.40	40.05	13.646	
5,400.00	5,376.36	5,482.84	5,371.46	18.54	23.14	22.66	910.41	-247.79	539.06	498.43	40.64	13.266	
5,500.00	5,475.72	5,587.50	5,476.12	18.93	23.24	23.15	910.55	-247.83	528.75	487.75	40.99	12.898	
5,600.00	5,575.08	5,686.86	5,575.48	19.33	23.29	23.64	910.55	-247.83	518.36	477.01	41.35	12.537	
5,700.00	5,674.44	5,786.22	5,674.84	19.73	23.33	24.15	910.55	-247.83	508.00	466.31	41.70	12.183	
5,800.00	5,773.79	5,888.32	5,776.87	20.12	23.32	24.95	910.53	-245.67	497.56	455.63	41.94	11.865	
5,900.00	5,873.15	5,988.80	5,875.70	20.52	23.26	27.56	910.39	-228.25	486.72	444.81	41.90	11.615	
6,000.00	5,972.51	6,079.02	5,960.64	20.92	23.20	31.72	910.15	-198.12	477.64	435.92	41.72	11.449	
6,100.00	6,071.87	6,156.77	6,029.28	21.32	23.16	36.61	909.86	-161.72	473.80	432.42	41.38	11.450	
6,100.09	6,071.95	6,156.83	6,029.33	21.32	23.16	36.61	909.86	-161.69	473.80	432.42	41.38	11.450	
6,200.00	6,171.23	6,222.20	6,082.79	21.72	23.16	41.52	909.56	-124.13	478.68	437.87	40.81	11.730	
6,300.00	6,270.75	6,277.14	6,124.17	22.13	23.18	46.25	909.27	-88.02	495.88	455.92	39.96	12.410	
6,400.00	6,370.54	6,323.80	6,156.46	22.59	23.23	50.66	909.00	-54.36	527.20	488.30	38.90	13.553	
6,500.00	6,470.50	6,363.70	6,181.83	22.98	23.29	54.79	908.75	-23.57	571.44	533.71	37.73	15.146	
6,600.00	6,570.50	6,400.00	6,202.99	23.05	23.37	30.18	908.51	5.91	626.26	589.76	36.50	17.160	
6,700.00	6,670.50	6,427.04	6,217.52	23.10	23.45	32.37	908.33	28.71	688.75	653.35	35.40	19.458	
6,800.00	6,770.50	6,450.00	6,229.00	23.15	23.52	34.20	908.17	48.59	757.48	723.03	34.44	21.991	
6,900.00	6,870.50	6,473.48	6,239.91	23.19	23.61	36.03	908.00	69.38	831.22	797.55	33.66	24.692	
7,000.00	6,970.50	6,500.00	6,251.19	23.24	23.72	38.04	907.81	93.38	909.08	876.02	33.07	27.493	
7,100.00	7,070.50	6,500.00	6,251.19	23.29	23.72	38.04	907.81	93.38	990.14	957.67	32.47	30.494	
7,200.00	7,170.50	6,522.96	6,260.06	23.34	23.83	39.73	907.64	114.56	1,073.73	1,041.59	32.13	33.417	
7,300.00	7,270.50	6,550.00	6,269.40	23.39	23.97	41.66	907.44	139.93	1,159.81	1,127.88	31.94	36.315	
7,400.00	7,370.50	6,550.00	6,269.40	23.44	23.97	41.66	907.44	139.93	1,247.19	1,215.54	31.64	39.417	
7,500.00	7,470.50	6,550.00	6,269.40	23.49	23.97	41.66	907.44	139.93	1,336.33	1,304.92	31.41	42.544	
7,600.00	7,570.50	6,550.00	6,269.40	23.54	23.97	41.66	907.44	139.93	1,426.91	1,395.67	31.24	45.679	
7,700.00	7,670.50	6,575.00	6,276.96	23.59	24.13	43.37	907.25	163.76	1,517.95	1,486.62	31.33	48.451	
7,800.00	7,770.50	6,600.00	6,283.47	23.65	24.28	45.01	907.05	187.89	1,610.55	1,579.07	31.47	51.175	
7,900.00	7,870.50	6,600.00	6,283.47	23.70	24.28	45.01	907.05	187.89	1,703.33	1,671.89	31.44	54.177	
8,000.00	7,970.40	6,600.00	6,283.47	23.66	24.28	-36.28	907.05	187.89	1,796.09	1,764.63	31.46	57.100	
8,100.00	8,068.49	6,600.00	6,283.47	23.58	24.28	-26.49	907.05	187.89	1,884.35	1,852.75	31.61	59.620	
8,200.00	8,161.84	6,619.55	6,287.83	23.48	24.42	-20.58	906.90	206.95	1,965.50	1,933.45	32.05	61.328	
8,300.00	8,247.60	6,650.00	6,293.32	23.40	24.65	-16.91	906.66	236.89	2,038.19	2,005.48	32.71	62.306	
8,400.00	8,323.17	6,650.00	6,293.32	23.38	24.65	-14.75	906.66	236.89	2,100.19	2,066.99	33.20	63.253	
8,500.00	8,386.25	6,670.11	6,296.06	23.47	24.82	-13.24	906.50	256.81	2,151.11	2,117.11	33.99	63.285	
8,600.00	8,434.92	6,700.00	6,298.85	23.73	25.06	-12.24	906.26	286.57	2,189.91	2,154.93	34.97	62.620	
8,700.00	8,467.72	6,700.00	6,298.85	24.20	25.06	-11.69	906.26	286.57	2,215.69	2,179.94	35.75	61.978	
8,800.00	8,483.63	6,748.96	6,300.53	24.88	25.53	-11.41	905.87	335.49	2,227.97	2,191.08	36.89	60.394	
8,900.00	8,486.62	6,848.95	6,302.80	25.76	26.59	-11.39	905.07	435.45	2,228.67	2,190.68	37.99	58.660	
9,000.00	8,488.89	6,948.95	6,305.07	26.81	27.78	-11.39	904.26	535.42	2,228.67	2,189.62	39.04	57.081	
9,100.00	8,491.15	7,048.95	6,307.34	28.01	29.10	-11.39	903.46	635.39	2,228.67	2,188.52	40.15	55.508	
9,200.00	8,493.42	7,148.95	6,309.61	29.34	30.54	-11.39	902.66	735.36	2,228.66	2,187.36	41.30	53.957	
9,300.00	8,495.69	7,248.95	6,311.88	30.79	32.07	-11.39	901.86	835.34	2,228.66	2,186.16	42.50	52.436	
9,400.00	8,497.96	7,348.95	6,314.14	32.34	33.70	-11.39	901.05	935.31	2,228.66	2,184.92	43.74	50.952	
9,500.00	8,500.23	7,448.95	6,316.41	33.98	35.39	-11.39	900.25	1,035.28	2,228.66	2,183.64	45.02	49.507	
9,600.00	8,502.49	7,548.95	6,318.68	35.70	37.15	-11.39	899.45	1,135.25	2,228.66	2,182.33	46.33	48.108	
9,700.00	8,504.76	7,648.95	6,320.95	37.49	38.97	-11.39	898.65	1,235.22	2,228.66	2,180.99	47.67	46.755	
9,800.00	8,507.03	7,748.95	6,323.22	39.33	40.84	-11.39	897.84	1,335.19	2,228.66	2,179.62	49.04	45.449	
9,900.00	8,509.30	7,848.95	6,325.49	41.23	42.75	-11.39	897.04	1,435.16	2,228.66	2,178.22	50.43	44.191	
10,000.00	8,511.56	7,948.95	6,327.76	43.16	44.70	-11.39	896.24	1,535.13	2,228.65	2,176.80	51.85	42.981	
10,100.00	8,513.83	8,048.95	6,330.03	45.13	46.68	-11.39	895.44	1,635.10	2,228.65	2,175.36	53.30	41.817	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - PLAN 1														Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,200.00	8,516.10	8,148.95	6,332.30	47.14	48.69	-11.39	894.63	1,735.08	2,228.65	2,173.89	54.76	40.699			
10,300.00	8,518.37	8,248.95	6,334.56	49.17	50.73	-11.39	893.83	1,835.05	2,228.65	2,172.41	56.24	39.627			
10,400.00	8,520.64	8,348.95	6,336.83	51.23	52.79	-11.39	893.03	1,935.02	2,228.65	2,170.91	57.74	38.597			
10,500.00	8,522.90	8,448.95	6,339.10	53.31	54.87	-11.39	892.23	2,034.99	2,228.65	2,169.39	59.26	37.609			
10,600.00	8,525.17	8,548.95	6,341.37	55.40	56.96	-11.39	891.42	2,134.96	2,228.65	2,167.86	60.79	36.662			
10,700.00	8,527.44	8,648.95	6,343.64	57.52	59.08	-11.39	890.62	2,234.93	2,228.65	2,166.31	62.33	35.753			
10,800.00	8,529.71	8,748.95	6,345.91	59.65	61.20	-11.39	889.82	2,334.90	2,228.64	2,164.75	63.89	34.881			
10,900.00	8,531.98	8,848.95	6,348.18	61.79	63.34	-11.39	889.02	2,434.87	2,228.64	2,163.18	65.46	34.044			
11,000.00	8,534.24	8,948.95	6,350.45	63.94	65.50	-11.39	888.21	2,534.84	2,228.64	2,161.60	67.05	33.241			
11,100.00	8,536.51	9,048.95	6,352.71	66.11	67.66	-11.39	887.41	2,634.81	2,228.64	2,160.00	68.64	32.470			
11,200.00	8,538.78	9,148.95	6,354.98	68.29	69.83	-11.39	886.61	2,734.79	2,228.64	2,158.40	70.24	31.729			
11,300.00	8,541.05	9,248.95	6,357.25	70.47	72.01	-11.39	885.81	2,834.76	2,228.64	2,156.79	71.85	31.018			
11,400.00	8,543.32	9,348.95	6,359.52	72.66	74.20	-11.39	885.00	2,934.73	2,228.64	2,155.17	73.47	30.334			
11,500.00	8,545.58	9,448.95	6,361.79	74.86	76.40	-11.39	884.20	3,034.70	2,228.63	2,153.54	75.10	29.677			
11,600.00	8,547.85	9,548.95	6,364.06	77.07	78.60	-11.39	883.40	3,134.67	2,228.63	2,151.90	76.73	29.044			
11,700.00	8,550.12	9,648.95	6,366.33	79.28	80.81	-11.39	882.60	3,234.64	2,228.63	2,150.26	78.37	28.436			
11,800.00	8,552.39	9,748.95	6,368.60	81.50	83.02	-11.39	881.79	3,334.61	2,228.63	2,148.61	80.02	27.850			
11,900.00	8,554.66	9,848.95	6,370.87	83.72	85.24	-11.39	880.99	3,434.58	2,228.63	2,146.95	81.68	27.286			
12,000.00	8,556.92	9,948.95	6,373.13	85.95	87.47	-11.39	880.19	3,534.55	2,228.63	2,145.29	83.34	26.743			
12,100.00	8,559.19	10,048.95	6,375.40	88.18	89.70	-11.39	879.39	3,634.53	2,228.63	2,143.62	85.00	26.219			
12,200.00	8,561.46	10,148.95	6,377.67	90.42	91.93	-11.39	878.58	3,734.50	2,228.63	2,141.95	86.67	25.713			
12,300.00	8,563.73	10,248.95	6,379.94	92.66	94.17	-11.39	877.78	3,834.47	2,228.62	2,140.28	88.35	25.225			
12,400.00	8,565.99	10,348.95	6,382.21	94.90	96.41	-11.39	876.98	3,934.44	2,228.62	2,138.59	90.03	24.755			
12,500.00	8,568.26	10,448.95	6,384.48	97.15	98.65	-11.39	876.18	4,034.41	2,228.62	2,136.91	91.71	24.300			
12,600.00	8,570.53	10,548.95	6,386.75	99.40	100.90	-11.39	875.37	4,134.38	2,228.62	2,135.22	93.40	23.861			
12,700.00	8,572.80	10,648.95	6,389.02	101.65	103.15	-11.39	874.57	4,234.35	2,228.62	2,133.52	95.09	23.436			
12,800.00	8,575.07	10,748.95	6,391.29	103.91	105.40	-11.39	873.77	4,334.32	2,228.62	2,131.83	96.79	23.025			
12,900.00	8,577.33	10,848.95	6,393.55	106.17	107.65	-11.39	872.97	4,434.29	2,228.62	2,130.13	98.49	22.628			
13,000.00	8,579.60	10,948.95	6,395.82	108.43	109.91	-11.39	872.16	4,534.26	2,228.61	2,128.42	100.19	22.243			
13,100.00	8,581.87	11,048.95	6,398.09	110.69	112.17	-11.39	871.36	4,634.24	2,228.61	2,126.72	101.90	21.871			
13,200.00	8,584.14	11,148.95	6,400.36	112.95	114.43	-11.39	870.56	4,734.21	2,228.61	2,125.01	103.61	21.510			
13,300.00	8,586.41	11,248.95	6,402.63	115.22	116.69	-11.39	869.76	4,834.18	2,228.61	2,123.29	105.32	21.161			
13,400.00	8,588.67	11,348.95	6,404.90	117.49	118.96	-11.39	868.95	4,934.15	2,228.61	2,121.58	107.03	20.822			
13,500.00	8,590.94	11,448.95	6,407.17	119.76	121.23	-11.39	868.15	5,034.12	2,228.61	2,119.86	108.75	20.493			
13,600.00	8,593.21	11,548.95	6,409.44	122.03	123.49	-11.39	867.35	5,134.09	2,228.61	2,118.14	110.47	20.174			
13,700.00	8,595.48	11,648.95	6,411.71	124.30	125.76	-11.39	866.55	5,234.06	2,228.61	2,116.41	112.19	19.864			
13,800.00	8,597.75	11,748.95	6,413.97	126.57	128.04	-11.39	865.74	5,334.03	2,228.60	2,114.69	113.92	19.564			
13,900.00	8,600.01	11,848.95	6,416.24	128.85	130.31	-11.39	864.94	5,434.00	2,228.60	2,112.96	115.64	19.272			
14,000.00	8,602.28	11,948.95	6,418.51	131.13	132.58	-11.39	864.14	5,533.97	2,228.60	2,111.23	117.37	18.988			
14,100.00	8,604.55	12,048.95	6,420.78	133.40	134.86	-11.39	863.34	5,633.95	2,228.60	2,109.50	119.10	18.712			
14,200.00	8,606.82	12,148.95	6,423.05	135.68	137.14	-11.39	862.53	5,733.92	2,228.60	2,107.77	120.83	18.444			
14,300.00	8,609.09	12,248.95	6,425.32	137.96	139.41	-11.39	861.73	5,833.89	2,228.60	2,106.03	122.57	18.183			
14,400.00	8,611.35	12,348.95	6,427.59	140.24	141.69	-11.39	860.93	5,933.86	2,228.60	2,104.30	124.30	17.929			
14,500.00	8,613.62	12,448.95	6,429.86	142.53	143.97	-11.39	860.13	6,033.83	2,228.60	2,102.56	126.04	17.682			
14,600.00	8,615.89	12,548.95	6,432.13	144.81	146.25	-11.39	859.33	6,133.80	2,228.59	2,100.82	127.78	17.441			
14,700.00	8,618.16	12,648.95	6,434.39	147.09	148.54	-11.39	858.52	6,233.77	2,228.59	2,099.08	129.52	17.207			
14,800.00	8,620.42	12,748.95	6,436.66	149.38	150.82	-11.39	857.72	6,333.74	2,228.59	2,097.33	131.26	16.979			
14,900.00	8,622.69	12,848.95	6,438.93	151.66	153.10	-11.39	856.92	6,433.71	2,228.59	2,095.59	133.00	16.756			
15,000.00	8,624.96	12,948.95	6,441.20	153.95	155.39	-11.39	856.12	6,533.69	2,228.59	2,093.84	134.75	16.539			
15,100.00	8,627.23	13,048.95	6,443.47	156.24	157.67	-11.39	855.31	6,633.66	2,228.59	2,092.10	136.49	16.328			
15,200.00	8,629.50	13,148.95	6,445.74	158.53	159.96	-11.39	854.51	6,733.63	2,228.59	2,090.35	138.24	16.121			
15,300.00	8,631.76	13,248.95	6,448.01	160.81	162.25	-11.39	853.71	6,833.60	2,228.58	2,088.60	139.99	15.920			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-145H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		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)			
15,400.00	8,634.03	13,348.95	6,450.28	163.10	164.53	-11.39	852.91	6,933.57	2,228.58	2,086.85	141.74	15.724	
15,500.00	8,636.30	13,448.95	6,452.55	165.39	166.82	-11.39	852.10	7,033.54	2,228.58	2,085.10	143.49	15.532	
15,600.00	8,638.57	13,548.95	6,454.81	167.68	169.11	-11.39	851.30	7,133.51	2,228.58	2,083.34	145.24	15.344	
15,700.00	8,640.84	13,648.95	6,457.08	169.97	171.40	-11.39	850.50	7,233.48	2,228.58	2,081.59	146.99	15.162	
15,800.00	8,643.10	13,748.95	6,459.35	172.27	173.69	-11.39	849.70	7,333.45	2,228.58	2,079.84	148.74	14.983	
15,900.00	8,645.37	13,848.95	6,461.62	174.56	175.98	-11.39	848.89	7,433.42	2,228.58	2,078.08	150.50	14.808	
16,000.00	8,647.64	13,948.95	6,463.89	176.85	178.27	-11.39	848.09	7,533.40	2,228.58	2,076.32	152.25	14.637	
16,100.00	8,649.91	14,048.95	6,466.16	179.14	180.56	-11.39	847.29	7,633.37	2,228.57	2,074.57	154.01	14.470	
16,200.00	8,652.18	14,148.95	6,468.43	181.44	182.86	-11.39	846.49	7,733.34	2,228.57	2,072.81	155.77	14.307	
16,300.00	8,654.44	14,248.95	6,470.70	183.73	185.15	-11.39	845.68	7,833.31	2,228.57	2,071.05	157.52	14.148	
16,400.00	8,656.71	14,348.95	6,472.96	186.03	187.44	-11.39	844.88	7,933.28	2,228.57	2,069.29	159.28	13.991	
16,500.00	8,658.98	14,448.95	6,475.23	188.32	189.73	-11.39	844.08	8,033.25	2,228.57	2,067.53	161.04	13.839	
16,600.00	8,661.25	14,548.95	6,477.50	190.62	192.03	-11.39	843.28	8,133.22	2,228.57	2,065.77	162.80	13.689	
16,700.00	8,663.52	14,648.95	6,479.77	192.91	194.32	-11.39	842.47	8,233.19	2,228.57	2,064.00	164.56	13.542	
16,800.00	8,665.78	14,748.95	6,482.04	195.21	196.62	-11.39	841.67	8,333.16	2,228.56	2,062.24	166.32	13.399	
16,900.00	8,668.05	14,848.95	6,484.31	197.50	198.91	-11.39	840.87	8,433.13	2,228.56	2,060.48	168.09	13.259	
17,000.00	8,670.32	14,948.95	6,486.58	199.80	201.21	-11.39	840.07	8,533.11	2,228.56	2,058.71	169.85	13.121	
17,100.00	8,672.59	15,048.95	6,488.85	202.10	203.50	-11.39	839.26	8,633.08	2,228.56	2,056.95	171.61	12.986	
17,200.00	8,674.85	15,148.95	6,491.12	204.40	205.80	-11.39	838.46	8,733.05	2,228.56	2,055.18	173.38	12.854	
17,300.00	8,677.12	15,248.95	6,493.38	206.69	208.10	-11.39	837.66	8,833.02	2,228.56	2,053.42	175.14	12.724	
17,400.00	8,679.39	15,348.95	6,495.65	208.99	210.39	-11.39	836.86	8,932.99	2,228.56	2,051.65	176.91	12.597	
17,500.00	8,681.66	15,448.95	6,497.92	211.29	212.69	-11.39	836.05	9,032.96	2,228.56	2,049.88	178.67	12.473	
17,600.00	8,683.93	15,548.95	6,500.19	213.59	214.99	-11.39	835.25	9,132.93	2,228.55	2,048.12	180.44	12.351	
17,700.00	8,686.19	15,648.95	6,502.46	215.89	217.29	-11.39	834.45	9,232.90	2,228.55	2,046.35	182.20	12.231	
17,800.00	8,688.46	15,748.95	6,504.73	218.19	219.58	-11.39	833.65	9,332.87	2,228.55	2,044.58	183.97	12.114	
17,900.00	8,690.73	15,848.95	6,507.00	220.49	221.88	-11.39	832.84	9,432.85	2,228.55	2,042.81	185.74	11.998	
18,000.00	8,693.00	15,948.95	6,509.27	222.79	224.18	-11.39	832.04	9,532.82	2,228.55	2,041.04	187.51	11.885	
18,100.00	8,695.27	16,048.95	6,511.54	225.08	226.48	-11.39	831.24	9,632.79	2,228.55	2,039.27	189.28	11.774	
18,200.00	8,697.53	16,148.95	6,513.80	227.39	228.78	-11.39	830.44	9,732.76	2,228.55	2,037.50	191.05	11.665	
18,300.00	8,699.80	16,248.95	6,516.07	229.69	231.08	-11.39	829.63	9,832.73	2,228.55	2,035.73	192.82	11.558	
18,400.00	8,702.07	16,348.95	6,518.34	231.99	233.38	-11.39	828.83	9,932.70	2,228.54	2,033.96	194.59	11.453	
18,500.00	8,704.34	16,448.95	6,520.61	234.29	235.68	-11.39	828.03	10,032.67	2,228.54	2,032.19	196.36	11.349	
18,600.00	8,706.61	16,548.95	6,522.88	236.59	237.98	-11.39	827.23	10,132.64	2,228.54	2,030.41	198.13	11.248	
18,700.00	8,708.87	16,648.95	6,525.15	238.89	240.28	-11.39	826.42	10,232.61	2,228.54	2,028.64	199.90	11.148	
18,800.00	8,711.14	16,748.95	6,527.42	241.19	242.58	-11.39	825.62	10,332.58	2,228.54	2,026.87	201.67	11.050	
18,900.00	8,713.41	16,848.95	6,529.69	243.49	244.88	-11.39	824.82	10,432.56	2,228.54	2,025.09	203.44	10.954	
19,000.00	8,715.68	16,948.95	6,531.96	245.79	247.18	-11.39	824.02	10,532.53	2,228.54	2,023.32	205.22	10.859	
19,052.85	8,716.88	17,001.80	6,533.15	246.64	248.40	-11.39	823.59	10,585.36	2,228.54	2,022.59	205.94	10.821	
19,100.00	8,717.95	17,003.37	6,533.19	247.40	248.43	-11.39	823.58	10,586.93	2,229.00	2,022.62	206.38	10.800	
19,102.43	8,718.00	17,003.37	6,533.19	247.44	248.43	-11.39	823.58	10,586.93	2,229.05	2,022.65	206.40	10.799	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-215H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program: 0-MWD+HRGM				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Reference 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 Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	1.70	1.70	0.50	0.50	-63.50	74.68	-149.80	167.38						
100.00	100.00	101.70	101.70	0.65	0.66	-63.50	74.68	-149.80	167.38	166.07	1.31	127.839			
200.00	200.00	201.70	201.70	1.34	1.35	-63.50	74.68	-149.80	167.38	164.69	2.69	62.177			
300.00	300.00	301.70	301.70	1.81	1.82	-63.50	74.68	-149.80	167.38	163.75	3.63	46.102			
400.00	400.00	401.70	401.70	2.19	2.19	-63.50	74.68	-149.80	167.38	163.00	4.38	38.231			
500.00	500.00	501.70	501.70	2.51	2.51	-63.50	74.68	-149.80	167.38	162.36	5.02	33.338			
600.00	600.00	601.70	601.70	2.80	2.80	-63.50	74.68	-149.80	167.38	161.79	5.59	29.918			
700.00	700.00	701.70	701.70	3.06	3.06	-63.50	74.68	-149.80	167.38	161.26	6.12	27.353			
800.00	800.00	801.70	801.70	3.30	3.31	-63.50	74.68	-149.80	167.38	160.78	6.61	25.337			
900.00	900.00	901.70	901.70	3.53	3.53	-63.50	74.68	-149.80	167.38	160.32	7.06	23.696			
1,000.00	1,000.00	1,001.70	1,001.70	3.75	3.75	-63.50	74.68	-149.80	167.38	159.89	7.50	22.328			
1,100.00	1,100.00	1,101.70	1,101.70	3.95	3.96	-63.50	74.68	-149.80	167.38	159.47	7.91	21.163			
1,200.00	1,200.00	1,201.70	1,201.70	4.15	4.15	-63.50	74.68	-149.80	167.38	159.08	8.30	20.155			
1,300.00	1,300.00	1,301.70	1,301.70	4.34	4.34	-63.50	74.68	-149.80	167.38	158.70	8.69	19.272			
1,400.00	1,400.00	1,401.70	1,401.70	4.52	4.53	-63.50	74.68	-149.80	167.38	158.33	9.05	18.490			
1,500.00	1,500.00	1,501.71	1,501.71	4.70	4.71	-63.50	74.68	-149.80	167.38	157.97	9.41	17.789			
1,600.00	1,599.98	1,602.25	1,602.22	5.05	5.06	-35.36	76.23	-148.83	165.79	155.94	9.85	16.825			
1,700.00	1,699.84	1,702.59	1,702.43	5.69	5.71	-34.61	80.75	-146.00	161.05	150.53	10.52	15.305			
1,800.00	1,799.45	1,802.57	1,802.01	6.30	6.30	-33.26	88.21	-141.33	153.23	142.05	11.18	13.707			
1,900.00	1,898.82	1,902.00	1,900.82	6.46	6.46	-31.30	97.58	-135.46	143.34	131.89	11.46	12.511			
2,000.00	1,998.18	2,001.37	1,999.57	6.67	6.66	-29.02	106.99	-129.57	133.56	121.71	11.85	11.268			
2,100.00	2,097.54	2,100.74	2,098.31	6.90	6.90	-26.39	116.41	-123.67	124.02	111.73	12.29	10.091			
2,200.00	2,196.90	2,200.11	2,197.06	7.15	7.14	-23.33	125.82	-117.78	114.78	102.02	12.76	8.994			
2,300.00	2,296.25	2,299.48	2,295.81	7.42	7.41	-19.75	135.23	-111.89	105.92	92.65	13.27	7.981			
2,400.00	2,395.61	2,398.85	2,394.55	7.69	7.68	-15.54	144.65	-105.99	97.55	83.72	13.83	7.054			
2,500.00	2,494.97	2,498.21	2,493.30	7.98	7.97	-10.57	154.06	-100.10	89.80	75.36	14.44	6.217			
2,600.00	2,594.33	2,597.58	2,592.05	8.28	8.27	-4.73	163.47	-94.20	82.85	67.73	15.12	5.479			
2,700.00	2,693.69	2,696.95	2,690.79	8.59	8.57	2.08	172.89	-88.31	76.91	61.06	15.86	4.850			
2,800.00	2,793.05	2,796.32	2,789.54	8.91	8.89	9.89	182.30	-82.41	72.24	55.61	16.63	4.343			
2,900.00	2,892.40	2,895.69	2,888.29	9.24	9.21	18.59	191.71	-76.52	69.09	51.69	17.40	3.971			
3,000.00	2,991.76	2,995.06	2,987.03	9.57	9.54	27.86	201.13	-70.63	67.68	49.59	18.09	3.741			
3,026.97	3,018.56	3,021.86	3,013.67	9.66	9.63	30.41	203.66	-69.04	67.61	49.35	18.26	3.703 CC, ES			
3,100.00	3,091.12	3,094.43	3,085.78	9.91	9.87	37.27	210.54	-64.73	68.10	49.45	18.65	3.652 SF			
3,200.00	3,190.48	3,193.80	3,184.53	10.25	10.21	46.33	219.95	-58.84	70.34	51.28	19.06	3.691			
3,300.00	3,289.84	3,293.17	3,283.27	10.60	10.56	54.64	229.37	-52.94	74.22	54.88	19.34	3.838			
3,400.00	3,389.20	3,392.54	3,382.02	10.95	10.91	61.99	238.78	-47.05	79.51	59.96	19.55	4.067			
3,500.00	3,488.55	3,491.91	3,480.76	11.31	11.26	68.35	248.19	-41.16	85.94	66.20	19.74	4.354			
3,600.00	3,587.91	3,591.27	3,579.51	11.67	11.62	73.77	257.61	-35.26	93.28	73.35	19.93	4.680			
3,700.00	3,687.27	3,690.64	3,678.26	12.03	11.97	78.38	267.02	-29.37	101.34	81.18	20.15	5.028			
3,800.00	3,786.63	3,793.56	3,780.70	12.40	12.38	82.78	275.26	-24.21	108.35	87.92	20.43	5.303			
3,900.00	3,885.99	3,896.67	3,883.63	12.77	12.90	87.48	280.38	-21.00	112.71	91.94	20.77	5.427			
4,000.00	3,985.35	3,999.66	3,986.59	13.14	13.36	92.76	282.35	-19.77	114.71	93.72	20.99	5.466			
4,100.00	4,084.70	4,099.47	4,086.40	13.52	13.42	98.34	282.38	-19.75	115.84	94.92	20.92	5.538			
4,200.00	4,184.06	4,198.83	4,185.76	13.90	13.49	103.75	282.38	-19.75	118.02	97.07	20.95	5.633			
4,300.00	4,283.42	4,298.19	4,285.12	14.27	13.56	108.92	282.38	-19.75	121.22	100.13	21.09	5.747			
4,400.00	4,382.78	4,397.54	4,384.48	14.65	13.64	113.79	282.38	-19.75	125.37	104.03	21.33	5.877			
4,500.00	4,482.14	4,496.90	4,483.84	15.04	13.71	118.32	282.38	-19.75	130.36	108.70	21.66	6.018			
4,600.00	4,581.49	4,596.26	4,583.19	15.42	13.78	122.49	282.38	-19.75	136.12	114.05	22.07	6.168			
4,700.00	4,680.85	4,695.62	4,682.55	15.81	13.85	126.32	282.38	-19.75	142.54	120.01	22.54	6.325			
4,800.00	4,780.21	4,794.98	4,781.91	16.19	13.93	129.80	282.38	-19.75	149.55	126.49	23.05	6.487			
4,900.00	4,879.57	4,894.34	4,881.27	16.58	14.00	132.96	282.38	-19.75	157.05	133.45	23.60	6.654			
5,000.00	4,978.93	4,993.69	4,980.63	16.97	14.07	135.82	282.38	-19.75	164.99	140.81	24.18	6.823			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-215H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.00	5,078.29	5,093.05	5,079.99	17.36	14.15	138.42	282.38	-19.75	173.31	148.54	24.78	6.995		
5,200.00	5,177.64	5,192.41	5,179.34	17.75	14.22	140.78	282.38	-19.75	181.95	156.57	25.38	7.169		
5,300.00	5,277.00	5,291.77	5,278.70	18.15	14.29	142.92	282.38	-19.75	190.87	164.88	25.99	7.343		
5,400.00	5,376.36	5,391.13	5,378.06	18.54	14.36	144.87	282.38	-19.75	200.03	173.42	26.61	7.518		
5,500.00	5,475.72	5,490.48	5,477.42	18.93	14.44	146.65	282.38	-19.75	209.40	182.18	27.22	7.693		
5,600.00	5,575.08	5,589.84	5,576.78	19.33	14.51	148.28	282.38	-19.75	218.96	191.12	27.83	7.867		
5,700.00	5,674.44	5,689.20	5,676.14	19.73	14.58	149.76	282.38	-19.75	228.67	200.23	28.44	8.040		
5,800.00	5,773.79	5,788.56	5,775.49	20.12	14.66	151.13	282.38	-19.75	238.53	209.48	29.05	8.212		
5,900.00	5,873.15	5,887.92	5,874.85	20.52	14.73	152.39	282.38	-19.75	248.51	218.86	29.65	8.383		
6,000.00	5,972.51	5,987.28	5,974.21	20.92	14.80	153.55	282.38	-19.75	258.59	228.35	30.24	8.551		
6,100.00	6,071.87	6,086.63	6,073.57	21.32	14.88	154.62	282.38	-19.75	268.78	237.95	30.83	8.718		
6,200.00	6,171.23	6,185.99	6,172.93	21.72	14.95	155.62	282.38	-19.75	279.05	247.64	31.42	8.882		
6,300.00	6,270.75	6,285.51	6,272.45	22.13	15.03	156.48	282.38	-19.75	287.96	255.96	32.00	8.999		
6,400.00	6,370.54	6,385.31	6,372.24	22.59	15.10	157.01	282.38	-19.75	293.71	261.14	32.58	9.016		
6,500.00	6,470.50	6,485.27	6,472.20	22.98	15.17	157.24	282.38	-19.75	296.27	263.21	33.06	8.960		
6,600.00	6,570.50	6,585.27	6,572.20	23.05	15.25	129.37	282.38	-19.75	296.41	263.18	33.23	8.921		
6,700.00	6,670.50	6,685.27	6,672.20	23.10	15.32	129.37	282.38	-19.75	296.41	263.04	33.37	8.882		
6,800.00	6,770.50	6,785.27	6,772.20	23.15	15.40	129.37	282.38	-19.75	296.41	262.89	33.52	8.842		
6,900.00	6,870.50	6,885.27	6,872.20	23.19	15.47	129.37	282.38	-19.75	296.41	262.74	33.67	8.803		
7,000.00	6,970.50	6,985.27	6,972.20	23.24	15.55	129.37	282.38	-19.75	296.41	262.59	33.82	8.764		
7,100.00	7,070.50	7,085.27	7,072.20	23.29	15.62	129.37	282.38	-19.75	296.41	262.44	33.97	8.726		
7,200.00	7,170.50	7,185.27	7,172.20	23.34	15.70	129.37	282.38	-19.75	296.41	262.29	34.12	8.688		
7,300.00	7,270.50	7,285.27	7,272.20	23.39	15.77	129.37	282.38	-19.75	296.41	262.15	34.27	8.650		
7,400.00	7,370.50	7,385.27	7,372.20	23.44	15.85	129.37	282.38	-19.75	296.41	262.00	34.41	8.613		
7,500.00	7,470.50	7,485.27	7,472.20	23.49	15.92	129.37	282.38	-19.75	296.41	261.85	34.56	8.576		
7,600.00	7,570.50	7,585.27	7,572.20	23.54	16.00	129.37	282.38	-19.75	296.41	261.70	34.71	8.539		
7,700.00	7,670.50	7,685.27	7,672.20	23.59	16.07	129.37	282.38	-19.75	296.41	261.55	34.86	8.503		
7,800.00	7,770.50	7,785.27	7,772.20	23.65	16.15	129.37	282.38	-19.75	296.41	261.40	35.01	8.467		
7,900.00	7,870.50	7,885.27	7,872.20	23.70	16.22	129.37	282.38	-19.75	296.41	261.25	35.16	8.431		
8,000.00	7,970.40	7,985.17	7,972.10	23.66	16.30	39.42	282.38	-19.75	294.11	258.86	35.25	8.344		
8,100.00	8,068.49	8,083.26	8,070.19	23.58	16.37	42.81	282.38	-19.75	279.84	244.24	35.59	7.863		
8,200.00	8,161.84	8,176.60	8,163.54	23.48	16.44	50.03	282.38	-19.75	254.42	218.25	36.17	7.033		
8,300.00	8,247.60	8,262.36	8,249.30	23.40	16.51	61.98	282.38	-19.75	222.71	185.67	37.04	6.012		
8,400.00	8,323.17	8,337.93	8,324.87	23.38	16.57	77.98	282.38	-19.75	194.70	156.76	37.94	5.132		
8,474.80	8,371.64	8,386.40	8,373.34	23.45	16.60	90.00	282.38	-19.75	186.20	148.28	37.92	4.911		
8,500.00	8,386.25	8,401.01	8,387.95	23.47	16.61	93.54	282.38	-19.75	187.33	149.71	37.62	4.980		
8,600.00	8,434.92	8,449.69	8,436.62	23.73	16.65	103.33	282.38	-19.75	215.13	179.66	35.46	6.066		
8,700.00	8,467.72	8,482.48	8,469.42	24.20	16.68	104.88	282.38	-19.75	274.78	241.35	33.43	8.219		
8,800.00	8,483.63	8,498.40	8,485.33	24.88	16.69	96.70	282.38	-19.75	353.66	321.33	32.33	10.939		
8,900.00	8,486.62	8,501.38	8,488.32	25.76	16.69	92.79	282.38	-19.75	441.78	409.98	31.80	13.892		
9,000.00	8,488.89	8,503.65	8,490.59	26.81	16.69	93.49	282.38	-19.75	534.10	502.55	31.56	16.924		
9,100.00	8,491.15	8,505.92	8,492.85	28.01	16.69	94.18	282.38	-19.75	628.77	597.33	31.45	19.994		
9,200.00	8,493.42	8,508.19	8,495.12	29.34	16.69	94.88	282.38	-19.75	724.87	693.47	31.40	23.085		
9,300.00	8,495.69	8,510.46	8,497.39	30.79	16.70	95.57	282.38	-19.75	821.89	790.51	31.38	26.188		
9,400.00	8,497.96	8,512.72	8,499.66	32.34	16.70	96.26	282.38	-19.75	919.54	888.16	31.39	29.298		
9,500.00	8,500.23	8,514.99	8,501.93	33.98	16.70	96.95	282.38	-19.75	1,017.65	986.25	31.40	32.411		
9,600.00	8,502.49	8,517.26	8,504.19	35.70	16.70	97.63	282.38	-19.75	1,116.08	1,084.67	31.42	35.524		
9,700.00	8,504.76	8,519.53	8,506.46	37.49	16.70	98.32	282.38	-19.75	1,214.77	1,183.33	31.44	38.636		
9,800.00	8,507.03	8,521.80	8,508.73	39.33	16.71	99.00	282.38	-19.75	1,313.65	1,282.19	31.47	41.745		
9,900.00	8,509.30	10,957.86	9,838.38	41.23	35.24	172.05	272.11	1,350.57	1,340.62	1,292.45	48.17	27.829		
10,000.00	8,511.56	11,057.86	9,840.65	43.16	37.28	172.05	271.36	1,450.54	1,340.61	1,291.36	49.25	27.220		
10,100.00	8,513.83	11,157.86	9,842.92	45.13	39.35	172.05	270.62	1,550.51	1,340.60	1,290.24	50.36	26.619		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-215H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset		Semi Maior 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		
10,200.00	8,516.10	11,257.86	9,845.18	47.14	41.44	172.05	269.87	1,650.48	1,340.60	1,289.09	51.50	26.029			
10,300.00	8,518.37	11,357.86	9,847.45	49.17	43.56	172.06	269.12	1,750.45	1,340.59	1,287.92	52.67	25.451			
10,400.00	8,520.64	11,457.86	9,849.72	51.23	45.70	172.06	268.37	1,850.42	1,340.58	1,286.71	53.87	24.885			
10,500.00	8,522.90	11,557.86	9,851.99	53.31	47.85	172.06	267.62	1,950.39	1,340.57	1,285.48	55.09	24.333			
10,600.00	8,525.17	11,657.86	9,854.25	55.40	50.02	172.06	266.87	2,050.37	1,340.57	1,284.23	56.34	23.795			
10,700.00	8,527.44	11,757.86	9,856.52	57.52	52.20	172.06	266.12	2,150.34	1,340.56	1,282.95	57.61	23.271			
10,800.00	8,529.71	11,857.86	9,858.79	59.65	54.39	172.07	265.37	2,250.31	1,340.55	1,281.66	58.89	22.762			
10,900.00	8,531.98	11,957.86	9,861.06	61.79	56.59	172.07	264.62	2,350.28	1,340.54	1,280.34	60.20	22.267			
11,000.00	8,534.24	12,057.86	9,863.33	63.94	58.80	172.07	263.88	2,450.25	1,340.54	1,279.01	61.53	21.788			
11,100.00	8,536.51	12,157.86	9,865.59	66.11	61.02	172.07	263.13	2,550.22	1,340.53	1,277.66	62.87	21.322			
11,200.00	8,538.78	12,257.86	9,867.86	68.29	63.24	172.08	262.38	2,650.19	1,340.52	1,276.29	64.23	20.871			
11,300.00	8,541.05	12,357.86	9,870.13	70.47	65.47	172.08	261.63	2,750.17	1,340.51	1,274.91	65.60	20.434			
11,400.00	8,543.32	12,457.86	9,872.40	72.66	67.71	172.08	260.88	2,850.14	1,340.51	1,273.52	66.99	20.011			
11,500.00	8,545.58	12,557.86	9,874.66	74.86	69.95	172.08	260.13	2,950.11	1,340.50	1,272.11	68.39	19.601			
11,600.00	8,547.85	12,657.86	9,876.93	77.07	72.19	172.08	259.38	3,050.08	1,340.49	1,270.69	69.80	19.204			
11,700.00	8,550.12	12,757.86	9,879.20	79.28	74.44	172.09	258.63	3,150.05	1,340.48	1,269.26	71.23	18.820			
11,800.00	8,552.39	12,857.86	9,881.47	81.50	76.70	172.09	257.88	3,250.02	1,340.48	1,267.82	72.66	18.448			
11,900.00	8,554.66	12,957.86	9,883.73	83.72	78.95	172.09	257.13	3,350.00	1,340.47	1,266.36	74.11	18.088			
12,000.00	8,556.92	13,057.86	9,886.00	85.95	81.21	172.09	256.39	3,449.97	1,340.46	1,264.90	75.56	17.740			
12,100.00	8,559.19	13,157.86	9,888.27	88.18	83.47	172.09	255.64	3,549.94	1,340.46	1,263.43	77.03	17.403			
12,200.00	8,561.46	13,257.86	9,890.54	90.42	85.74	172.10	254.89	3,649.91	1,340.45	1,261.95	78.50	17.076			
12,300.00	8,563.73	13,357.86	9,892.80	92.66	88.00	172.10	254.14	3,749.88	1,340.44	1,260.46	79.98	16.760			
12,400.00	8,565.99	13,457.86	9,895.07	94.90	90.27	172.10	253.39	3,849.85	1,340.43	1,258.97	81.47	16.454			
12,500.00	8,568.26	13,557.86	9,897.34	97.15	92.54	172.10	252.64	3,949.82	1,340.43	1,257.46	82.96	16.157			
12,600.00	8,570.53	13,657.86	9,899.61	99.40	94.82	172.11	251.89	4,049.80	1,340.42	1,255.95	84.47	15.869			
12,700.00	8,572.80	13,757.86	9,901.87	101.65	97.09	172.11	251.14	4,149.77	1,340.41	1,254.44	85.98	15.591			
12,800.00	8,575.07	13,857.86	9,904.14	103.91	99.37	172.11	250.39	4,249.74	1,340.40	1,252.91	87.49	15.321			
12,900.00	8,577.33	13,957.86	9,906.41	106.17	101.65	172.11	249.65	4,349.71	1,340.40	1,251.38	89.01	15.059			
13,000.00	8,579.60	14,057.86	9,908.68	108.43	103.93	172.11	248.90	4,449.68	1,340.39	1,249.85	90.54	14.805			
13,100.00	8,581.87	14,157.86	9,910.94	110.69	106.21	172.12	248.15	4,549.65	1,340.38	1,248.31	92.07	14.558			
13,200.00	8,584.14	14,257.86	9,913.21	112.95	108.49	172.12	247.40	4,649.62	1,340.37	1,246.77	93.61	14.319			
13,300.00	8,586.41	14,357.86	9,915.48	115.22	110.78	172.12	246.65	4,749.60	1,340.37	1,245.22	95.15	14.087			
13,400.00	8,588.67	14,457.86	9,917.75	117.49	113.06	172.12	245.90	4,849.57	1,340.36	1,243.67	96.69	13.862			
13,500.00	8,590.94	14,557.86	9,920.02	119.76	115.35	172.13	245.15	4,949.54	1,340.35	1,242.11	98.24	13.643			
13,600.00	8,593.21	14,657.86	9,922.28	122.03	117.63	172.13	244.40	5,049.51	1,340.34	1,240.55	99.80	13.431			
13,700.00	8,595.48	14,757.86	9,924.55	124.30	119.92	172.13	243.65	5,149.48	1,340.34	1,238.98	101.36	13.224			
13,800.00	8,597.75	14,857.86	9,926.82	126.57	122.21	172.13	242.90	5,249.45	1,340.33	1,237.41	102.92	13.023			
13,900.00	8,600.01	14,957.86	9,929.09	128.85	124.50	172.13	242.16	5,349.42	1,340.32	1,235.84	104.48	12.828			
14,000.00	8,602.28	15,057.86	9,931.35	131.13	126.79	172.14	241.41	5,449.40	1,340.31	1,234.26	106.05	12.638			
14,100.00	8,604.55	15,157.86	9,933.62	133.40	129.08	172.14	240.66	5,549.37	1,340.31	1,232.68	107.62	12.454			
14,200.00	8,606.82	15,257.86	9,935.89	135.68	131.37	172.14	239.91	5,649.34	1,340.30	1,231.10	109.20	12.274			
14,300.00	8,609.09	15,357.86	9,938.16	137.96	133.66	172.14	239.16	5,749.31	1,340.29	1,229.52	110.78	12.099			
14,400.00	8,611.35	15,457.86	9,940.42	140.24	135.96	172.15	238.41	5,849.28	1,340.29	1,227.93	112.36	11.929			
14,500.00	8,613.62	15,557.86	9,942.69	142.53	138.25	172.15	237.66	5,949.25	1,340.28	1,226.34	113.94	11.763			
14,600.00	8,615.89	15,657.86	9,944.96	144.81	140.54	172.15	236.91	6,049.22	1,340.27	1,224.74	115.53	11.601			
14,700.00	8,618.16	15,757.86	9,947.23	147.09	142.84	172.15	236.16	6,149.20	1,340.26	1,223.15	117.12	11.444			
14,800.00	8,620.42	15,857.86	9,949.49	149.38	145.13	172.15	235.41	6,249.17	1,340.26	1,221.55	118.71	11.290			
14,900.00	8,622.69	15,957.86	9,951.76	151.66	147.43	172.16	234.67	6,349.14	1,340.25	1,219.95	120.30	11.141			
15,000.00	8,624.96	16,057.86	9,954.03	153.95	149.73	172.16	233.92	6,449.11	1,340.24	1,218.35	121.89	10.995			
15,100.00	8,627.23	16,157.86	9,956.30	156.24	152.02	172.16	233.17	6,549.08	1,340.23	1,216.74	123.49	10.853			
15,200.00	8,629.50	16,257.86	9,958.56	158.53	154.32	172.16	232.42	6,649.05	1,340.23	1,215.13	125.09	10.714			
15,300.00	8,631.76	16,357.86	9,960.83	160.81	156.62	172.16	231.67	6,749.03	1,340.22	1,213.53	126.69	10.578			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-215H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		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)			
15,400.00	8,634.03	16,457.86	9,963.10	163.10	158.92	172.17	230.92	6,849.00	1,340.21	1,211.92	128.30	10.446	
15,500.00	8,636.30	16,557.86	9,965.37	165.39	161.21	172.17	230.17	6,948.97	1,340.20	1,210.30	129.90	10.317	
15,600.00	8,638.57	16,657.86	9,967.63	167.68	163.51	172.17	229.42	7,048.94	1,340.20	1,208.69	131.51	10.191	
15,700.00	8,640.84	16,757.86	9,969.90	169.97	165.81	172.17	228.67	7,148.91	1,340.19	1,207.07	133.11	10.068	
15,800.00	8,643.10	16,857.86	9,972.17	172.27	168.11	172.18	227.93	7,248.88	1,340.18	1,205.46	134.72	9.948	
15,900.00	8,645.37	16,957.86	9,974.44	174.56	170.41	172.18	227.18	7,348.85	1,340.17	1,203.84	136.34	9.830	
16,000.00	8,647.64	17,057.86	9,976.70	176.85	172.71	172.18	226.43	7,448.83	1,340.17	1,202.22	137.95	9.715	
16,100.00	8,649.91	17,157.86	9,978.97	179.14	175.01	172.18	225.68	7,548.80	1,340.16	1,200.60	139.56	9.603	
16,200.00	8,652.18	17,257.86	9,981.24	181.44	177.31	172.18	224.93	7,648.77	1,340.15	1,198.98	141.18	9.493	
16,300.00	8,654.44	17,357.86	9,983.51	183.73	179.61	172.19	224.18	7,748.74	1,340.15	1,197.35	142.79	9.385	
16,400.00	8,656.71	17,457.86	9,985.78	186.03	181.91	172.19	223.43	7,848.71	1,340.14	1,195.73	144.41	9.280	
16,500.00	8,658.98	17,557.86	9,988.04	188.32	184.22	172.19	222.68	7,948.68	1,340.13	1,194.10	146.03	9.177	
16,600.00	8,661.25	17,657.86	9,990.31	190.62	186.52	172.19	221.93	8,048.65	1,340.12	1,192.47	147.65	9.076	
16,700.00	8,663.52	17,757.86	9,992.58	192.91	188.82	172.20	221.18	8,148.63	1,340.12	1,190.84	149.27	8.978	
16,800.00	8,665.78	17,857.86	9,994.85	195.21	191.12	172.20	220.44	8,248.60	1,340.11	1,189.21	150.89	8.881	
16,900.00	8,668.05	17,957.86	9,997.11	197.50	193.42	172.20	219.69	8,348.57	1,340.10	1,187.58	152.52	8.787	
17,000.00	8,670.32	18,057.86	9,999.38	199.80	195.73	172.20	218.94	8,448.54	1,340.09	1,185.95	154.14	8.694	
17,100.00	8,672.59	18,157.86	10,001.65	202.10	198.03	172.20	218.19	8,548.51	1,340.09	1,184.32	155.77	8.603	
17,200.00	8,674.85	18,257.86	10,003.92	204.40	200.33	172.21	217.44	8,648.48	1,340.08	1,182.69	157.39	8.514	
17,300.00	8,677.12	18,357.86	10,006.18	206.69	202.64	172.21	216.69	8,748.45	1,340.07	1,181.05	159.02	8.427	
17,400.00	8,679.39	18,457.86	10,008.45	208.99	204.94	172.21	215.94	8,848.43	1,340.06	1,179.42	160.65	8.342	
17,500.00	8,681.66	18,557.86	10,010.72	211.29	207.24	172.21	215.19	8,948.40	1,340.06	1,177.78	162.28	8.258	
17,600.00	8,683.93	18,657.86	10,012.99	213.59	209.55	172.21	214.44	9,048.37	1,340.05	1,176.14	163.91	8.176	
17,700.00	8,686.19	18,757.86	10,015.25	215.89	211.85	172.22	213.69	9,148.34	1,340.04	1,174.50	165.54	8.095	
17,800.00	8,688.46	18,857.86	10,017.52	218.19	214.15	172.22	212.95	9,248.31	1,340.04	1,172.87	167.17	8.016	
17,900.00	8,690.73	18,957.86	10,019.79	220.49	216.46	172.22	212.20	9,348.28	1,340.03	1,171.23	168.80	7.938	
18,000.00	8,693.00	19,057.86	10,022.06	222.79	218.76	172.22	211.45	9,448.25	1,340.02	1,169.59	170.43	7.862	
18,100.00	8,695.27	19,157.86	10,024.32	225.08	221.07	172.23	210.70	9,548.23	1,340.01	1,167.95	172.07	7.788	
18,200.00	8,697.53	19,257.86	10,026.59	227.39	223.37	172.23	209.95	9,648.20	1,340.01	1,166.31	173.70	7.714	
18,300.00	8,699.80	19,357.86	10,028.86	229.69	225.68	172.23	209.20	9,748.17	1,340.00	1,164.66	175.34	7.642	
18,400.00	8,702.07	19,457.86	10,031.13	231.99	227.98	172.23	208.45	9,848.14	1,339.99	1,163.02	176.97	7.572	
18,500.00	8,704.34	19,557.86	10,033.39	234.29	230.29	172.23	207.70	9,948.11	1,339.98	1,161.38	178.61	7.502	
18,600.00	8,706.61	19,657.86	10,035.66	236.59	232.59	172.24	206.95	10,048.08	1,339.98	1,159.73	180.24	7.434	
18,700.00	8,708.87	19,757.86	10,037.93	238.89	234.90	172.24	206.21	10,148.06	1,339.97	1,158.09	181.88	7.367	
18,800.00	8,711.14	19,857.86	10,040.20	241.19	237.20	172.24	205.46	10,248.03	1,339.96	1,156.45	183.52	7.302	
18,900.00	8,713.41	19,957.86	10,042.46	243.49	239.51	172.24	204.71	10,348.00	1,339.96	1,154.80	185.16	7.237	
19,000.00	8,715.68	20,057.86	10,044.73	245.79	241.81	172.25	203.96	10,447.97	1,339.95	1,153.15	186.79	7.173	
19,011.90	8,715.95	20,069.66	10,045.00	245.98	242.08	172.25	203.87	10,459.77	1,339.95	1,153.01	186.94	7.168	
19,100.00	8,717.95	20,069.66	10,045.00	247.40	242.08	172.25	203.87	10,459.77	1,342.84	1,156.10	186.74	7.191	
19,102.43	8,718.00	20,069.66	10,045.00	247.44	242.08	172.25	203.87	10,459.77	1,343.00	1,156.28	186.73	7.192	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-221H - Wellbore #1 - PLAN 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	23.60	23.60	0.50	0.51	-14.92	1,394.01	-371.55	1,442.68				
100.00	100.00	123.60	123.60	0.65	0.79	-14.92	1,394.01	-371.55	1,442.68	1,441.24	1.44	1,001.919	
200.00	200.00	223.60	223.60	1.34	1.45	-14.92	1,394.01	-371.55	1,442.68	1,439.88	2.79	516.429	
300.00	300.00	323.60	323.60	1.81	1.90	-14.92	1,394.01	-371.55	1,442.68	1,438.96	3.71	388.622	
400.00	400.00	423.60	423.60	2.19	2.26	-14.92	1,394.01	-371.55	1,442.68	1,438.23	4.45	324.308	
500.00	500.00	523.60	523.60	2.51	2.58	-14.92	1,394.01	-371.55	1,442.68	1,437.59	5.08	283.792	
600.00	600.00	623.60	623.60	2.80	2.86	-14.92	1,394.01	-371.55	1,442.68	1,437.02	5.65	255.246	
700.00	700.00	723.60	723.60	3.06	3.12	-14.92	1,394.01	-371.55	1,442.68	1,436.50	6.17	233.722	
800.00	800.00	823.60	823.60	3.30	3.36	-14.92	1,394.01	-371.55	1,442.68	1,436.02	6.66	216.734	
900.00	900.00	923.60	923.60	3.53	3.58	-14.92	1,394.01	-371.55	1,442.68	1,435.56	7.11	202.876	
1,000.00	1,000.00	1,023.60	1,023.60	3.75	3.80	-14.92	1,394.01	-371.55	1,442.68	1,435.13	7.54	191.288	
1,100.00	1,100.00	1,123.60	1,123.60	3.95	4.00	-14.92	1,394.01	-371.55	1,442.68	1,434.72	7.95	181.407	
1,200.00	1,200.00	1,223.60	1,223.60	4.15	4.20	-14.92	1,394.01	-371.55	1,442.68	1,434.33	8.35	172.848	
1,300.00	1,300.00	1,323.60	1,323.60	4.34	4.38	-14.92	1,394.01	-371.55	1,442.68	1,433.95	8.73	165.340	
1,400.00	1,400.00	1,423.60	1,423.60	4.52	4.57	-14.92	1,394.01	-371.55	1,442.68	1,433.58	9.09	158.680	
1,406.37	1,406.37	1,429.97	1,429.97	4.54	4.58	-14.92	1,394.01	-371.55	1,442.68	1,433.56	9.11	158.285	
1,500.00	1,500.00	1,517.82	1,517.82	4.70	4.76	-14.92	1,394.06	-371.52	1,442.72	1,433.27	9.46	152.562	
1,600.00	1,599.98	1,600.00	1,599.98	5.05	5.05	13.03	1,395.44	-370.55	1,442.29	1,432.29	10.00	144.189	
1,700.00	1,699.84	1,666.76	1,666.67	5.69	5.19	13.16	1,397.99	-368.79	1,440.14	1,429.43	10.71	134.406	
1,800.00	1,799.45	1,734.29	1,734.04	6.30	5.38	13.35	1,402.08	-366.69	1,436.72	1,425.28	11.44	125.556	
1,900.00	1,898.82	1,800.00	1,799.48	6.46	5.64	13.56	1,407.57	-364.54	1,433.13	1,421.33	11.80	121.439	
2,000.00	1,998.18	1,869.25	1,868.29	6.67	6.05	13.80	1,414.98	-362.18	1,431.72	1,419.38	12.34	116.005	
2,011.59	2,009.69	1,877.07	1,876.05	6.69	6.10	13.83	1,415.92	-361.91	1,431.71	1,419.30	12.41	115.404 CC	
2,100.00	2,097.54	1,936.65	1,935.07	6.90	6.36	14.05	1,423.78	-359.78	1,432.60	1,419.78	12.82	111.713	
2,200.00	2,196.90	2,022.39	2,019.77	7.15	6.57	14.39	1,436.68	-356.62	1,435.42	1,422.16	13.26	108.270	
2,300.00	2,296.25	2,121.84	2,118.00	7.42	6.81	14.79	1,451.81	-352.94	1,438.51	1,424.75	13.75	104.593	
2,400.00	2,395.61	2,221.30	2,216.23	7.69	7.08	15.18	1,466.94	-349.27	1,441.66	1,427.37	14.29	100.879	
2,500.00	2,494.97	2,320.76	2,314.47	7.98	7.37	15.57	1,482.07	-345.59	1,444.88	1,430.03	14.85	97.267	
2,600.00	2,594.33	2,420.22	2,412.70	8.28	7.67	15.96	1,497.20	-341.91	1,448.17	1,432.73	15.44	93.781	
2,700.00	2,693.69	2,519.68	2,510.93	8.59	7.98	16.35	1,512.33	-338.24	1,451.53	1,435.48	16.05	90.437	
2,800.00	2,793.05	2,619.14	2,609.16	8.91	8.31	16.73	1,527.46	-334.56	1,454.95	1,438.28	16.68	87.243	
2,900.00	2,892.40	2,718.60	2,707.40	9.24	8.65	17.11	1,542.59	-330.88	1,458.44	1,441.12	17.32	84.204	
3,000.00	2,991.76	2,818.05	2,805.63	9.57	8.99	17.50	1,557.72	-327.21	1,462.00	1,444.02	17.98	81.319	
3,100.00	3,091.12	2,917.51	2,903.86	9.91	9.35	17.88	1,572.86	-323.53	1,465.62	1,446.97	18.65	78.586	
3,200.00	3,190.48	3,016.97	3,002.09	10.25	9.71	18.25	1,587.99	-319.85	1,469.30	1,449.97	19.33	76.001	
3,300.00	3,289.84	3,116.43	3,100.32	10.60	10.08	18.63	1,603.12	-316.18	1,473.05	1,453.03	20.03	73.556	
3,400.00	3,389.20	3,215.89	3,198.56	10.95	10.45	19.00	1,618.25	-312.50	1,476.87	1,456.14	20.73	71.246	
3,500.00	3,488.55	3,315.35	3,296.79	11.31	10.83	19.38	1,633.38	-308.83	1,480.74	1,459.30	21.44	69.063	
3,600.00	3,587.91	3,414.81	3,395.02	11.67	11.21	19.75	1,648.51	-305.15	1,484.68	1,462.52	22.16	67.001	
3,700.00	3,687.27	3,514.26	3,493.25	12.03	11.60	20.11	1,663.64	-301.47	1,488.68	1,465.80	22.88	65.052	
3,800.00	3,786.63	3,613.72	3,591.48	12.40	11.99	20.48	1,678.77	-297.80	1,492.74	1,469.13	23.62	63.210	
3,900.00	3,885.99	3,713.18	3,689.72	12.77	12.39	20.84	1,693.90	-294.12	1,496.87	1,472.51	24.35	61.467	
4,000.00	3,985.35	3,812.64	3,787.95	13.14	12.79	21.21	1,709.03	-290.44	1,501.05	1,475.96	25.09	59.817	
4,100.00	4,084.70	3,912.10	3,886.18	13.52	13.19	21.57	1,724.16	-286.77	1,505.29	1,479.46	25.84	58.255	
4,200.00	4,184.06	4,011.56	3,984.41	13.90	13.59	21.92	1,739.29	-283.09	1,509.60	1,483.01	26.59	56.775	
4,300.00	4,283.42	4,111.02	4,082.65	14.27	14.00	22.28	1,754.42	-279.41	1,513.96	1,486.62	27.34	55.372	
4,400.00	4,382.78	4,210.47	4,180.88	14.65	14.41	22.64	1,769.55	-275.74	1,518.38	1,490.28	28.10	54.040	
4,500.00	4,482.14	4,309.93	4,279.11	15.04	14.82	22.99	1,784.68	-272.06	1,522.86	1,494.01	28.86	52.775	
4,600.00	4,581.49	4,409.39	4,377.34	15.42	15.23	23.34	1,799.81	-268.39	1,527.40	1,497.78	29.62	51.573	
4,700.00	4,680.85	4,508.85	4,475.57	15.81	15.65	23.69	1,814.94	-264.71	1,531.99	1,501.61	30.38	50.429	
4,800.00	4,780.21	4,608.31	4,573.81	16.19	16.06	24.03	1,830.08	-261.03	1,536.64	1,505.50	31.14	49.341	
4,900.00	4,879.57	4,707.77	4,672.04	16.58	16.48	24.38	1,845.21	-257.36	1,541.35	1,509.44	31.91	48.304	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-221H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												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	
5,000.00	4,978.93	4,807.23	4,770.27	16.97	16.90	24.72	1,860.34	-253.68	1,546.11	1,513.44	32.68	47.316	
5,100.00	5,078.29	4,906.68	4,868.50	17.36	17.32	25.06	1,875.47	-250.00	1,550.93	1,517.48	33.44	46.373	
5,200.00	5,177.64	5,006.14	4,966.73	17.75	17.74	25.39	1,890.60	-246.33	1,555.80	1,521.59	34.21	45.473	
5,300.00	5,277.00	5,105.60	5,064.97	18.15	18.16	25.73	1,905.73	-242.65	1,560.73	1,525.74	34.98	44.613	
5,400.00	5,376.36	5,205.06	5,163.20	18.54	18.58	26.06	1,920.86	-238.98	1,565.71	1,529.95	35.75	43.792	
5,500.00	5,475.72	5,304.52	5,261.43	18.93	19.01	26.39	1,935.99	-235.30	1,570.74	1,534.21	36.52	43.005	
5,600.00	5,575.08	5,403.98	5,359.66	19.33	19.43	26.72	1,951.12	-231.62	1,575.82	1,538.53	37.29	42.253	
5,700.00	5,674.44	5,503.43	5,457.89	19.73	19.86	27.05	1,966.25	-227.95	1,580.96	1,542.89	38.07	41.532	
5,800.00	5,773.79	5,602.89	5,556.13	20.12	20.28	27.38	1,981.38	-224.27	1,586.15	1,547.31	38.84	40.842	
5,900.00	5,873.15	5,702.35	5,654.36	20.52	20.71	27.70	1,996.51	-220.59	1,591.39	1,551.78	39.61	40.179	
6,000.00	5,972.51	5,801.81	5,752.59	20.92	21.14	28.02	2,011.64	-216.92	1,596.68	1,556.30	40.38	39.544	
6,100.00	6,071.87	5,901.27	5,850.82	21.32	21.57	28.34	2,026.77	-213.24	1,602.01	1,560.87	41.15	38.933	
6,200.00	6,171.23	6,000.73	5,949.06	21.72	22.00	28.65	2,041.90	-209.56	1,607.40	1,565.48	41.92	38.345	
6,300.00	6,270.75	6,100.16	6,047.26	22.13	22.43	29.00	2,057.03	-205.89	1,614.22	1,571.52	42.70	37.800	
6,400.00	6,370.54	6,317.45	6,262.91	22.59	23.47	29.50	2,082.46	-199.71	1,620.66	1,576.59	44.07	36.774	
6,500.00	6,470.50	6,541.57	6,486.76	22.98	24.33	29.70	2,091.98	-197.40	1,622.53	1,577.52	45.01	36.049	
6,596.88	6,567.38	6,645.78	6,590.98	23.05	24.39	29.71	2,092.01	-197.39	1,622.09	1,576.98	45.11	35.960	
6,600.00	6,570.50	6,648.90	6,594.10	23.05	24.39	1.82	2,092.01	-197.39	1,622.41	1,577.29	45.11	35.964	
6,700.00	6,670.50	6,748.90	6,694.10	23.10	24.44	1.82	2,092.01	-197.39	1,622.41	1,577.20	45.21	35.886	
6,800.00	6,770.50	6,848.90	6,794.10	23.15	24.49	1.82	2,092.01	-197.39	1,622.41	1,577.09	45.31	35.805	
6,900.00	6,870.50	6,948.90	6,894.10	23.19	24.53	1.82	2,092.01	-197.39	1,622.41	1,576.99	45.42	35.724	
7,000.00	6,970.50	7,048.90	6,994.10	23.24	24.58	1.82	2,092.01	-197.39	1,622.41	1,576.89	45.52	35.643	
7,100.00	7,070.50	7,148.90	7,094.10	23.29	24.63	1.82	2,092.01	-197.39	1,622.41	1,576.78	45.62	35.562	
7,200.00	7,170.50	7,248.90	7,194.10	23.34	24.68	1.82	2,092.01	-197.39	1,622.41	1,576.68	45.73	35.481	
7,300.00	7,270.50	7,348.90	7,294.10	23.39	24.72	1.82	2,092.01	-197.39	1,622.41	1,576.58	45.83	35.400	
7,400.00	7,370.50	7,448.90	7,394.10	23.44	24.77	1.82	2,092.01	-197.39	1,622.41	1,576.47	45.93	35.320	
7,500.00	7,470.50	7,548.90	7,494.10	23.49	24.82	1.82	2,092.01	-197.39	1,622.41	1,576.37	46.04	35.239	
7,600.00	7,570.50	7,648.90	7,594.10	23.54	24.87	1.82	2,092.01	-197.39	1,622.41	1,576.26	46.15	35.159	
7,700.00	7,670.50	7,748.90	7,694.10	23.59	24.92	1.82	2,092.01	-197.39	1,622.41	1,576.16	46.25	35.079	
7,800.00	7,770.50	7,848.90	7,794.10	23.65	24.97	1.82	2,092.01	-197.39	1,622.41	1,576.05	46.36	34.998	
7,900.00	7,870.50	7,948.90	7,894.10	23.70	25.02	1.82	2,092.01	-197.39	1,622.41	1,575.94	46.46	34.918	
7,993.49	7,963.85	8,039.00	7,984.19	23.66	25.06	-88.79	2,092.01	-197.36	1,622.32	1,575.78	46.54	34.861	
8,000.00	7,970.40	8,043.11	7,988.31	23.66	25.06	-88.73	2,092.02	-197.30	1,622.37	1,575.82	46.54	34.858	
8,100.00	8,068.49	8,100.00	8,045.02	23.58	25.15	-88.84	2,092.69	-193.28	1,623.48	1,576.77	46.71	34.754	
8,200.00	8,161.84	8,169.40	8,113.12	23.48	25.33	-88.94	2,094.83	-180.33	1,626.52	1,579.64	46.88	34.695	
8,300.00	8,247.60	8,233.47	8,173.98	23.40	25.51	-88.95	2,098.09	-160.69	1,631.56	1,584.49	47.07	34.662	
8,400.00	8,323.17	8,300.00	8,234.16	23.38	25.72	-88.90	2,102.70	-132.82	1,638.56	1,591.25	47.31	34.634	
8,500.00	8,386.25	8,364.78	8,288.93	23.47	25.93	-88.74	2,108.34	-98.76	1,647.48	1,599.82	47.66	34.568	
8,600.00	8,434.92	8,432.76	8,341.44	23.73	26.16	-88.55	2,115.38	-56.23	1,658.24	1,610.07	48.17	34.425	
8,700.00	8,467.72	8,500.00	8,387.55	24.20	26.40	-88.26	2,123.36	-8.01	1,670.70	1,621.82	48.88	34.180	
8,800.00	8,483.63	8,576.29	8,431.91	24.88	26.69	-88.02	2,133.48	53.14	1,684.69	1,634.84	49.86	33.790	
8,900.00	8,486.62	8,655.32	8,468.03	25.76	27.03	-88.77	2,144.95	122.41	1,700.11	1,649.01	51.09	33.275	
9,000.00	8,488.89	8,744.45	8,495.77	26.81	27.47	-89.66	2,158.77	205.87	1,716.69	1,663.95	52.74	32.551	
9,100.00	8,491.15	8,840.37	8,509.41	28.01	28.07	-90.05	2,174.25	299.41	1,733.73	1,678.91	54.82	31.624	
9,200.00	8,493.42	9,067.98	8,514.82	29.34	30.26	-90.06	2,203.67	524.98	1,747.80	1,688.75	59.05	29.597	
9,300.00	8,495.69	9,279.02	8,519.62	30.79	33.19	-90.06	2,214.62	735.63	1,753.08	1,689.56	63.52	27.600	
9,400.00	8,497.96	9,491.14	8,524.43	32.34	36.57	-90.06	2,211.13	947.62	1,750.99	1,682.85	68.14	25.698	
9,500.00	8,500.23	9,591.10	8,526.69	33.98	38.25	-90.06	2,207.39	1,047.48	1,748.05	1,676.56	71.49	24.450	
9,600.00	8,502.49	9,691.05	8,528.95	35.70	39.99	-90.06	2,203.66	1,147.34	1,745.12	1,670.13	74.99	23.272	
9,700.00	8,504.76	9,791.01	8,531.21	37.49	41.79	-90.06	2,199.92	1,247.20	1,742.18	1,663.58	78.60	22.166	
9,800.00	8,507.03	9,890.97	8,533.47	39.33	43.64	-90.06	2,196.18	1,347.07	1,739.24	1,656.93	82.31	21.131	
9,900.00	8,509.30	9,990.92	8,535.73	41.23	45.53	-90.06	2,192.45	1,446.93	1,736.30	1,650.19	86.11	20.165	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-221H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,000.00	8,511.56	10,090.88	8,537.99	43.16	47.45	-90.06	2,188.71	1,546.79	1,733.36	1,643.38	89.98	19.263			
10,100.00	8,513.83	10,190.84	8,540.25	45.13	49.41	-90.06	2,184.97	1,646.65	1,730.42	1,636.50	93.93	18.423			
10,200.00	8,516.10	10,290.80	8,542.51	47.14	51.40	-90.05	2,181.23	1,746.51	1,727.48	1,629.55	97.93	17.640			
10,300.00	8,518.37	10,390.75	8,544.77	49.17	53.41	-90.05	2,177.50	1,846.37	1,724.55	1,622.56	101.99	16.910			
10,400.00	8,520.64	10,490.71	8,547.03	51.23	55.44	-90.05	2,173.76	1,946.23	1,721.61	1,615.52	106.09	16.228			
10,500.00	8,522.90	10,590.67	8,549.29	53.31	57.50	-90.05	2,170.02	2,046.10	1,718.67	1,608.44	110.23	15.591			
10,600.00	8,525.17	10,690.62	8,551.55	55.40	59.57	-90.05	2,166.29	2,145.96	1,715.73	1,601.32	114.41	14.996			
10,700.00	8,527.44	10,790.58	8,553.81	57.52	61.66	-90.05	2,162.55	2,245.82	1,712.79	1,594.17	118.63	14.439			
10,800.00	8,529.71	10,890.54	8,556.07	59.65	63.77	-90.05	2,158.81	2,345.68	1,709.85	1,586.98	122.87	13.916			
10,900.00	8,531.98	10,990.49	8,558.33	61.79	65.89	-90.05	2,155.08	2,445.54	1,706.91	1,579.78	127.14	13.426			
11,000.00	8,534.24	11,090.45	8,560.59	63.94	68.02	-90.05	2,151.34	2,545.40	1,703.98	1,572.54	131.43	12.965			
11,100.00	8,536.51	11,186.93	8,562.77	66.11	70.08	-90.05	2,147.74	2,641.79	1,701.05	1,565.35	135.69	12.536			
11,200.00	8,538.78	11,249.68	8,564.19	68.29	71.44	-90.05	2,146.21	2,704.51	1,699.41	1,559.96	139.45	12.187			
11,225.29	8,539.35	11,265.56	8,564.55	68.84	71.78	-90.05	2,146.04	2,720.38	1,699.34	1,558.95	140.39	12.105			
11,300.00	8,541.05	11,327.48	8,565.95	70.47	73.12	-90.05	2,145.93	2,782.28	1,699.78	1,556.36	143.42	11.852			
11,400.00	8,543.32	11,427.48	8,568.22	72.66	75.28	-90.05	2,145.89	2,882.25	1,700.54	1,552.76	147.78	11.507			
11,500.00	8,545.58	11,527.47	8,570.48	74.86	77.46	-90.05	2,145.85	2,982.23	1,701.30	1,549.15	152.16	11.181			
11,600.00	8,547.85	11,627.47	8,572.74	77.07	79.64	-90.05	2,145.82	3,082.20	1,702.07	1,545.51	156.55	10.872			
11,700.00	8,550.12	11,727.47	8,575.01	79.28	81.83	-90.05	2,145.78	3,182.17	1,702.83	1,541.87	160.96	10.579			
11,800.00	8,552.39	11,827.46	8,577.27	81.50	84.03	-90.05	2,145.74	3,282.14	1,703.59	1,538.21	165.38	10.301			
11,900.00	8,554.66	11,927.46	8,579.53	83.72	86.23	-90.05	2,145.70	3,382.11	1,704.35	1,534.55	169.80	10.037			
12,000.00	8,556.92	12,027.46	8,581.80	85.95	88.44	-90.05	2,145.66	3,482.08	1,705.11	1,530.87	174.24	9.786			
12,100.00	8,559.19	12,127.46	8,584.06	88.18	90.65	-90.05	2,145.62	3,582.05	1,705.88	1,527.19	178.69	9.547			
12,200.00	8,561.46	12,227.45	8,586.32	90.42	92.87	-90.05	2,145.59	3,682.03	1,706.64	1,523.49	183.15	9.318			
12,300.00	8,563.73	12,327.45	8,588.59	92.66	95.09	-90.05	2,145.55	3,782.00	1,707.40	1,519.79	187.61	9.101			
12,400.00	8,565.99	12,427.45	8,590.85	94.90	97.31	-90.05	2,145.51	3,881.97	1,708.16	1,516.08	192.08	8.893			
12,500.00	8,568.26	12,527.44	8,593.11	97.15	99.54	-90.05	2,145.47	3,981.94	1,708.92	1,512.36	196.56	8.694			
12,600.00	8,570.53	12,627.44	8,595.38	99.40	101.78	-90.05	2,145.43	4,081.91	1,709.69	1,508.64	201.05	8.504			
12,700.00	8,572.80	12,727.44	8,597.64	101.65	104.01	-90.05	2,145.39	4,181.88	1,710.45	1,504.91	205.54	8.322			
12,800.00	8,575.07	12,827.44	8,599.90	103.91	106.25	-90.05	2,145.35	4,281.85	1,711.21	1,501.18	210.03	8.147			
12,900.00	8,577.33	12,927.43	8,602.17	106.17	108.49	-90.05	2,145.32	4,381.83	1,711.97	1,497.44	214.54	7.980			
13,000.00	8,579.60	13,027.43	8,604.43	108.43	110.74	-90.05	2,145.28	4,481.80	1,712.73	1,493.69	219.04	7.819			
13,100.00	8,581.87	13,127.43	8,606.69	110.69	112.99	-90.05	2,145.24	4,581.77	1,713.50	1,489.94	223.56	7.665			
13,200.00	8,584.14	13,227.42	8,608.96	112.95	115.24	-90.05	2,145.20	4,681.74	1,714.26	1,486.19	228.07	7.516			
13,300.00	8,586.41	13,327.42	8,611.22	115.22	117.49	-90.05	2,145.16	4,781.71	1,715.02	1,482.43	232.59	7.374			
13,400.00	8,588.67	13,427.42	8,613.48	117.49	119.74	-90.05	2,145.12	4,881.68	1,715.78	1,478.67	237.12	7.236			
13,500.00	8,590.94	13,527.41	8,615.75	119.76	122.00	-90.05	2,145.08	4,981.65	1,716.54	1,474.90	241.64	7.104			
13,600.00	8,593.21	13,627.41	8,618.01	122.03	124.26	-90.05	2,145.05	5,081.63	1,717.31	1,471.13	246.18	6.976			
13,700.00	8,595.48	13,727.41	8,620.27	124.30	126.52	-90.05	2,145.01	5,181.60	1,718.07	1,467.36	250.71	6.853			
13,800.00	8,597.75	13,827.41	8,622.53	126.57	128.78	-90.05	2,144.97	5,281.57	1,718.83	1,463.58	255.25	6.734			
13,900.00	8,600.01	13,927.40	8,624.80	128.85	131.04	-90.05	2,144.93	5,381.54	1,719.59	1,459.81	259.79	6.619			
14,000.00	8,602.28	14,027.40	8,627.06	131.13	133.31	-90.05	2,144.89	5,481.51	1,720.35	1,456.02	264.33	6.508			
14,100.00	8,604.55	14,127.40	8,629.32	133.40	135.58	-90.05	2,144.85	5,581.48	1,721.12	1,452.24	268.88	6.401			
14,200.00	8,606.82	14,227.39	8,631.59	135.68	137.84	-90.05	2,144.81	5,681.46	1,721.88	1,448.45	273.43	6.297			
14,300.00	8,609.09	14,327.39	8,633.85	137.96	140.11	-90.05	2,144.78	5,781.43	1,722.64	1,444.66	277.98	6.197			
14,400.00	8,611.35	14,427.39	8,636.11	140.24	142.39	-90.05	2,144.74	5,881.40	1,723.40	1,440.87	282.53	6.100			
14,500.00	8,613.62	14,527.39	8,638.38	142.53	144.66	-90.05	2,144.70	5,981.37	1,724.16	1,437.08	287.09	6.006			
14,600.00	8,615.89	14,627.38	8,640.64	144.81	146.93	-90.05	2,144.66	6,081.34	1,724.93	1,433.28	291.64	5.915			
14,700.00	8,618.16	14,727.38	8,642.90	147.09	149.21	-90.05	2,144.62	6,181.31	1,725.69	1,429.49	296.20	5.826			
14,800.00	8,620.42	14,827.38	8,645.17	149.38	151.48	-90.05	2,144.58	6,281.28	1,726.45	1,425.69	300.77	5.740			
14,900.00	8,622.69	14,927.37	8,647.43	151.66	153.76	-90.05	2,144.54	6,381.26	1,727.21	1,421.88	305.33	5.657			
15,000.00	8,624.96	15,027.37	8,649.69	153.95	156.04	-90.05	2,144.51	6,481.23	1,727.97	1,418.08	309.89	5.576			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-221H - Wellbore #1 - PLAN 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM												Offset Well Error:	0.50 usft
Reference		Offset		Semi Major Axis		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)			
15,100.00	8,627.23	15,127.37	8,651.96	156.24	158.31	-90.05	2,144.47	6,581.20	1,728.74	1,414.28	314.46	5.497	
15,200.00	8,629.50	15,227.37	8,654.22	158.53	160.59	-90.05	2,144.43	6,681.17	1,729.50	1,410.47	319.03	5.421	
15,300.00	8,631.76	15,327.36	8,656.48	160.81	162.87	-90.05	2,144.39	6,781.14	1,730.26	1,406.66	323.60	5.347	
15,400.00	8,634.03	15,427.36	8,658.75	163.10	165.15	-90.05	2,144.35	6,881.11	1,731.02	1,402.85	328.17	5.275	
15,500.00	8,636.30	15,527.36	8,661.01	165.39	167.44	-90.05	2,144.31	6,981.08	1,731.79	1,399.04	332.74	5.205	
15,600.00	8,638.57	15,627.35	8,663.27	167.68	169.72	-90.05	2,144.28	7,081.06	1,732.55	1,395.23	337.32	5.136	
15,700.00	8,640.84	15,727.35	8,665.54	169.97	172.00	-90.05	2,144.24	7,181.03	1,733.31	1,391.42	341.89	5.070	
15,800.00	8,643.10	15,827.35	8,667.80	172.27	174.29	-90.05	2,144.20	7,281.00	1,734.07	1,387.60	346.47	5.005	
15,900.00	8,645.37	15,927.35	8,670.06	174.56	176.57	-90.05	2,144.16	7,380.97	1,734.83	1,383.79	351.05	4.942	
16,000.00	8,647.64	16,027.34	8,672.33	176.85	178.86	-90.05	2,144.12	7,480.94	1,735.60	1,379.97	355.63	4.880	
16,100.00	8,649.91	16,127.34	8,674.59	179.14	181.14	-90.05	2,144.08	7,580.91	1,736.36	1,376.15	360.21	4.820	
16,200.00	8,652.18	16,227.34	8,676.85	181.44	183.43	-90.05	2,144.04	7,680.88	1,737.12	1,372.33	364.79	4.762	
16,300.00	8,654.44	16,327.33	8,679.12	183.73	185.72	-90.05	2,144.01	7,780.86	1,737.88	1,368.51	369.37	4.705	
16,400.00	8,656.71	16,427.33	8,681.38	186.03	188.00	-90.05	2,143.97	7,880.83	1,738.64	1,364.69	373.95	4.649	
16,500.00	8,658.98	16,527.33	8,683.64	188.32	190.29	-90.04	2,143.93	7,980.80	1,739.41	1,360.87	378.54	4.595	
16,600.00	8,661.25	16,627.33	8,685.91	190.62	192.58	-90.04	2,143.89	8,080.77	1,740.17	1,357.05	383.12	4.542	
16,700.00	8,663.52	16,727.32	8,688.17	192.91	194.87	-90.04	2,143.85	8,180.74	1,740.93	1,353.22	387.71	4.490	
16,800.00	8,665.78	16,827.32	8,690.43	195.21	197.16	-90.04	2,143.81	8,280.71	1,741.69	1,349.40	392.29	4.440	
16,900.00	8,668.05	16,927.32	8,692.70	197.50	199.45	-90.04	2,143.77	8,380.68	1,742.45	1,345.57	396.88	4.390	
17,000.00	8,670.32	17,027.31	8,694.96	199.80	201.74	-90.04	2,143.74	8,480.66	1,743.22	1,341.75	401.47	4.342	
17,100.00	8,672.59	17,127.31	8,697.22	202.10	204.03	-90.04	2,143.70	8,580.63	1,743.98	1,337.92	406.06	4.295	
17,200.00	8,674.85	17,227.31	8,699.49	204.40	206.32	-90.04	2,143.66	8,680.60	1,744.74	1,334.09	410.65	4.249	
17,300.00	8,677.12	17,327.30	8,701.75	206.69	208.62	-90.04	2,143.62	8,780.57	1,745.50	1,330.26	415.24	4.204	
17,400.00	8,679.39	17,427.30	8,704.01	208.99	210.91	-90.04	2,143.58	8,880.54	1,746.26	1,326.43	419.83	4.159	
17,500.00	8,681.66	17,527.30	8,706.28	211.29	213.20	-90.04	2,143.54	8,980.51	1,747.03	1,322.61	424.42	4.116	
17,600.00	8,683.93	17,627.30	8,708.54	213.59	215.49	-90.04	2,143.50	9,080.49	1,747.79	1,318.77	429.01	4.074	
17,700.00	8,686.19	17,727.29	8,710.80	215.89	217.79	-90.04	2,143.47	9,180.46	1,748.55	1,314.94	433.61	4.033	
17,800.00	8,688.46	17,827.29	8,713.07	218.19	220.08	-90.04	2,143.43	9,280.43	1,749.31	1,311.11	438.20	3.992	
17,900.00	8,690.73	17,927.29	8,715.33	220.49	222.38	-90.04	2,143.39	9,380.40	1,750.07	1,307.28	442.79	3.952	
18,000.00	8,693.00	18,027.28	8,717.59	222.79	224.67	-90.04	2,143.35	9,480.37	1,750.84	1,303.45	447.39	3.913	
18,100.00	8,695.27	18,127.28	8,719.86	225.08	226.97	-90.04	2,143.31	9,580.34	1,751.60	1,299.61	451.98	3.875	
18,200.00	8,697.53	18,227.28	8,722.12	227.39	229.26	-90.04	2,143.27	9,680.31	1,752.36	1,295.78	456.58	3.838	
18,300.00	8,699.80	18,327.28	8,724.38	229.69	231.56	-90.04	2,143.23	9,780.29	1,753.12	1,291.95	461.18	3.801	
18,400.00	8,702.07	18,427.27	8,726.65	231.99	233.85	-90.04	2,143.20	9,880.26	1,753.88	1,288.11	465.77	3.766	
18,500.00	8,704.34	18,527.27	8,728.91	234.29	236.15	-90.04	2,143.16	9,980.23	1,754.65	1,284.28	470.37	3.730	
18,600.00	8,706.61	18,627.27	8,731.17	236.59	238.44	-90.04	2,143.12	10,080.20	1,755.41	1,280.44	474.97	3.696	
18,700.00	8,708.87	18,727.26	8,733.44	238.89	240.74	-90.04	2,143.08	10,180.17	1,756.17	1,276.60	479.57	3.662	
18,800.00	8,711.14	18,827.26	8,735.70	241.19	243.04	-90.04	2,143.04	10,280.14	1,756.93	1,272.77	484.16	3.629	
18,900.00	8,713.41	18,927.26	8,737.96	243.49	245.33	-90.04	2,143.00	10,380.11	1,757.69	1,268.93	488.76	3.596	
19,000.00	8,715.68	19,027.26	8,740.23	245.79	247.63	-90.04	2,142.97	10,480.09	1,758.46	1,265.09	493.36	3.564	
19,100.00	8,717.95	19,114.37	8,742.20	247.40	249.63	-90.04	2,143.04	10,567.18	1,759.37	1,262.37	497.00	3.540	
19,102.43	8,718.00	19,116.80	8,742.26	247.44	249.69	-90.04	2,143.05	10,569.60	1,759.41	1,262.31	497.10	3.539 ES, SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - PLAN 1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM											Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	2.10	2.10	0.50	0.50	-57.69	94.70	-149.76	177.19			
100.00	100.00	102.10	102.10	0.65	0.66	-57.69	94.70	-149.76	177.19	175.88	1.31	135.105
200.00	200.00	202.10	202.10	1.34	1.35	-57.69	94.70	-149.76	177.19	174.50	2.69	65.775
300.00	300.00	302.10	302.10	1.81	1.82	-57.69	94.70	-149.76	177.19	173.56	3.63	48.783
400.00	400.00	402.10	402.10	2.19	2.19	-57.69	94.70	-149.76	177.19	172.81	4.38	40.459
500.00	500.00	502.10	502.10	2.51	2.51	-57.69	94.70	-149.76	177.19	172.17	5.02	35.283
600.00	600.00	602.10	602.10	2.80	2.80	-57.69	94.70	-149.76	177.19	171.59	5.60	31.665
700.00	700.00	702.10	702.10	3.06	3.06	-57.69	94.70	-149.76	177.19	171.07	6.12	28.951
800.00	800.00	802.10	802.10	3.30	3.31	-57.69	94.70	-149.76	177.19	170.58	6.61	26.817
900.00	900.00	902.10	902.10	3.53	3.53	-57.69	94.70	-149.76	177.19	170.13	7.06	25.081
1,000.00	1,000.00	1,002.10	1,002.10	3.75	3.75	-57.69	94.70	-149.76	177.19	169.69	7.50	23.633
1,100.00	1,100.00	1,102.10	1,102.10	3.95	3.96	-57.69	94.70	-149.76	177.19	169.28	7.91	22.400
1,200.00	1,200.00	1,202.10	1,202.10	4.15	4.15	-57.69	94.70	-149.76	177.19	168.88	8.31	21.334
1,300.00	1,300.00	1,302.10	1,302.10	4.34	4.34	-57.69	94.70	-149.76	177.19	168.50	8.69	20.399
1,400.00	1,400.00	1,402.10	1,402.10	4.52	4.53	-57.69	94.70	-149.76	177.19	168.14	9.05	19.571
1,500.00	1,500.00	1,502.05	1,502.05	4.70	4.71	-57.69	94.70	-149.76	177.19	167.78	9.41	18.829
1,516.35	1,516.35	1,518.00	1,518.00	4.76	4.77	-29.80	94.76	-149.75	177.17	167.69	9.49	18.679
1,600.00	1,599.98	1,600.00	1,599.98	5.05	5.06	-29.58	96.43	-149.51	176.40	166.50	9.90	17.810
1,700.00	1,699.84	1,697.01	1,696.86	5.69	5.68	-28.92	101.40	-148.81	174.01	163.31	10.70	16.266
1,800.00	1,799.45	1,794.33	1,793.81	6.30	6.27	-27.80	109.66	-147.63	170.05	158.56	11.49	14.803
1,900.00	1,898.82	1,891.47	1,890.25	6.46	6.83	-25.96	121.14	-145.99	165.51	153.56	11.95	13.850
2,000.00	1,998.18	1,988.31	1,985.95	6.67	7.37	-23.04	135.80	-143.91	162.79	150.25	12.54	12.984
2,063.38	2,061.15	2,049.44	2,046.08	6.81	7.71	-20.65	146.70	-142.35	162.27	149.29	12.97	12.506 CC
2,100.00	2,097.54	2,084.64	2,080.59	6.90	7.90	-19.10	153.56	-141.38	162.45	149.21	13.24	12.266 ES
2,200.00	2,196.90	2,183.16	2,176.96	7.15	8.28	-14.49	173.85	-138.49	164.36	150.36	13.99	11.746
2,300.00	2,296.25	2,282.25	2,273.86	7.42	8.54	-9.98	194.30	-135.58	167.36	152.64	14.72	11.370
2,400.00	2,395.61	2,381.33	2,370.77	7.69	8.81	-5.64	214.75	-132.66	171.38	155.93	15.45	11.092
2,500.00	2,494.97	2,480.41	2,467.67	7.98	9.10	-1.53	235.21	-129.75	176.35	160.16	16.19	10.893
2,600.00	2,594.33	2,579.49	2,564.58	8.28	9.39	2.35	255.66	-126.84	182.18	165.26	16.93	10.762
2,700.00	2,693.69	2,678.58	2,661.48	8.59	9.71	5.97	276.12	-123.92	188.81	171.15	17.66	10.689
2,800.00	2,793.05	2,777.66	2,758.39	8.91	10.03	9.34	296.57	-121.01	196.14	177.75	18.39	10.664
2,900.00	2,892.40	2,876.74	2,855.29	9.24	10.37	12.45	317.03	-118.10	204.11	185.00	19.11	10.678
3,000.00	2,991.76	2,975.82	2,952.19	9.57	10.71	15.33	337.48	-115.18	212.64	192.81	19.83	10.724
3,100.00	3,091.12	3,074.91	3,049.10	9.91	11.07	17.99	357.94	-112.27	221.66	201.13	20.53	10.795
3,200.00	3,190.48	3,173.99	3,146.00	10.25	11.43	20.43	378.39	-109.36	231.12	209.89	21.23	10.886
3,300.00	3,289.84	3,273.07	3,242.91	10.60	11.80	22.68	398.85	-106.44	240.97	219.05	21.92	10.991
3,400.00	3,389.20	3,372.15	3,339.81	10.95	12.18	24.75	419.30	-103.53	251.16	228.55	22.61	11.108
3,500.00	3,488.55	3,471.24	3,436.72	11.31	12.57	26.65	439.76	-100.62	261.65	238.36	23.29	11.234
3,600.00	3,587.91	3,570.32	3,533.62	11.67	12.96	28.41	460.21	-97.71	272.41	248.44	23.97	11.365
3,700.00	3,687.27	3,669.40	3,630.53	12.03	13.35	30.04	480.67	-94.79	283.41	258.76	24.64	11.500
3,800.00	3,786.63	3,768.49	3,727.43	12.40	13.75	31.54	501.12	-91.88	294.61	269.30	25.31	11.638
3,900.00	3,885.99	3,867.57	3,824.33	12.77	14.16	32.94	521.58	-88.97	306.00	280.02	25.98	11.777
4,000.00	3,985.35	3,966.65	3,921.24	13.14	14.57	34.23	542.03	-86.05	317.56	290.91	26.65	11.916
4,100.00	4,084.70	4,065.73	4,018.14	13.52	14.98	35.43	562.48	-83.14	329.26	301.95	27.32	12.054
4,200.00	4,184.06	4,164.82	4,115.05	13.90	15.39	36.55	582.94	-80.23	341.10	313.12	27.98	12.190
4,300.00	4,283.42	4,263.90	4,211.95	14.27	15.81	37.59	603.39	-77.31	353.07	324.42	28.65	12.325
4,400.00	4,382.78	4,362.98	4,308.86	14.65	16.23	38.57	623.85	-74.40	365.13	335.83	29.31	12.458
4,500.00	4,482.14	4,462.06	4,405.76	15.04	16.66	39.48	644.30	-71.49	377.30	347.33	29.97	12.589
4,600.00	4,581.49	4,561.15	4,502.67	15.42	17.09	40.34	664.76	-68.57	389.56	358.92	30.63	12.717
4,700.00	4,680.85	4,660.23	4,599.57	15.81	17.51	41.14	685.21	-65.66	401.89	370.60	31.30	12.842
4,800.00	4,780.21	4,759.31	4,696.47	16.19	17.95	41.90	705.67	-62.75	414.30	382.34	31.96	12.964
4,900.00	4,879.57	4,858.39	4,793.38	16.58	18.38	42.61	726.12	-59.83	426.78	394.16	32.62	13.083

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft
Survey Program:		0-MWD+HRGM					Rule Assigned:				Offset Well Error:	0.50 usft		
Reference		Offset		Semi Maior 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)	Ellipses (usft)				
5,000.00	4,978.93	4,957.48	4,890.28	16.97	18.81	43.28	746.58	-56.92	439.32	406.04	33.28	13.199		
5,100.00	5,078.29	5,056.56	4,987.19	17.36	19.25	43.92	767.03	-54.01	451.91	417.97	33.95	13.313		
5,200.00	5,177.64	5,155.64	5,084.09	17.75	19.69	44.52	787.49	-51.10	464.56	429.95	34.61	13.423		
5,300.00	5,277.00	5,254.72	5,181.00	18.15	20.13	45.09	807.94	-48.18	477.25	441.98	35.27	13.531		
5,400.00	5,376.36	5,353.81	5,277.90	18.54	20.57	45.63	828.40	-45.27	489.99	454.06	35.93	13.636		
5,500.00	5,475.72	5,452.89	5,374.81	18.93	21.01	46.14	848.85	-42.36	502.77	466.17	36.60	13.737		
5,600.00	5,575.08	5,551.97	5,471.71	19.33	21.46	46.62	869.31	-39.44	515.59	478.32	37.26	13.837		
5,700.00	5,674.44	5,651.05	5,568.61	19.73	21.90	47.09	889.76	-36.53	528.44	490.51	37.93	13.933		
5,800.00	5,773.79	5,750.14	5,665.52	20.12	22.35	47.53	910.22	-33.62	541.32	502.73	38.59	14.027		
5,900.00	5,873.15	5,849.22	5,762.42	20.52	22.80	47.95	930.67	-30.70	554.23	514.98	39.26	14.119		
6,000.00	5,972.51	5,948.30	5,859.33	20.92	23.24	48.35	951.12	-27.79	567.18	527.26	39.92	14.208		
6,100.00	6,071.87	6,060.83	5,969.54	21.32	23.76	48.80	973.57	-24.59	579.51	538.83	40.68	14.246		
6,200.00	6,171.23	6,184.94	6,091.97	21.72	24.39	49.39	993.70	-21.73	588.11	546.61	41.50	14.170		
6,300.00	6,270.75	6,309.65	6,215.75	22.13	25.02	50.01	1,008.61	-19.60	593.58	551.32	42.26	14.046		
6,400.00	6,370.54	6,434.73	6,340.45	22.59	25.59	50.42	1,018.21	-18.24	597.09	554.17	42.92	13.910		
6,500.00	6,470.50	6,560.02	6,465.66	22.98	26.02	50.60	1,022.41	-17.64	598.60	555.23	43.37	13.801		
6,600.00	6,570.50	6,666.96	6,572.60	23.05	26.14	22.73	1,022.61	-17.61	598.66	555.18	43.48	13.768		
6,700.00	6,670.50	6,766.96	6,672.60	23.10	26.18	22.73	1,022.61	-17.61	598.66	555.08	43.59	13.735		
6,800.00	6,770.50	6,866.96	6,772.60	23.15	26.23	22.73	1,022.61	-17.61	598.66	554.97	43.69	13.701		
6,900.00	6,870.50	6,966.96	6,872.60	23.19	26.27	22.73	1,022.61	-17.61	598.66	554.86	43.80	13.667		
7,000.00	6,970.50	7,066.96	6,972.60	23.24	26.31	22.73	1,022.61	-17.61	598.66	554.75	43.91	13.633		
7,100.00	7,070.50	7,166.96	7,072.60	23.29	26.36	22.73	1,022.61	-17.61	598.66	554.64	44.02	13.599		
7,200.00	7,170.50	7,266.96	7,172.60	23.34	26.40	22.73	1,022.61	-17.61	598.66	554.53	44.13	13.566		
7,300.00	7,270.50	7,366.96	7,272.60	23.39	26.45	22.73	1,022.61	-17.61	598.66	554.42	44.24	13.532		
7,400.00	7,370.50	7,466.96	7,372.60	23.44	26.50	22.73	1,022.61	-17.61	598.66	554.31	44.35	13.498		
7,500.00	7,470.50	7,566.96	7,472.60	23.49	26.54	22.73	1,022.61	-17.61	598.66	554.20	44.46	13.464		
7,600.00	7,570.50	7,666.96	7,572.60	23.54	26.59	22.73	1,022.61	-17.61	598.66	554.09	44.57	13.431		
7,700.00	7,670.50	7,766.96	7,672.60	23.59	26.63	22.73	1,022.61	-17.61	598.66	553.98	44.68	13.397		
7,800.00	7,770.50	7,866.96	7,772.60	23.65	26.68	22.73	1,022.61	-17.61	598.66	553.87	44.80	13.364		
7,900.00	7,870.50	7,966.96	7,872.60	23.70	26.72	22.73	1,022.61	-17.61	598.66	553.76	44.91	13.331		
8,000.00	7,970.40	8,066.86	7,972.50	23.66	26.77	-68.10	1,022.61	-17.61	597.55	552.46	45.09	13.254		
8,100.00	8,068.49	8,164.96	8,070.59	23.58	26.82	-70.40	1,022.61	-17.61	590.77	545.13	45.64	12.944		
8,200.00	8,161.84	8,258.30	8,163.94	23.48	26.86	-74.60	1,022.61	-17.61	579.40	532.96	46.44	12.475		
8,300.00	8,247.60	8,344.06	8,249.70	23.40	26.90	-80.17	1,022.61	-17.61	566.54	519.13	47.40	11.951		
8,400.00	8,323.17	8,419.63	8,325.27	23.38	26.94	-86.18	1,022.61	-17.61	556.56	508.19	48.37	11.506		
8,470.05	8,368.79	8,465.25	8,370.89	23.45	26.96	-90.00	1,022.61	-17.61	554.02	505.05	48.97	11.313		
8,500.00	8,386.25	8,482.71	8,388.35	23.47	26.97	-91.41	1,022.61	-17.61	554.56	505.40	49.16	11.281		
8,600.00	8,434.92	8,531.39	8,437.02	23.73	26.99	-94.71	1,022.61	-17.61	565.14	515.58	49.56	11.403		
8,700.00	8,467.72	8,564.18	8,469.82	24.20	27.00	-95.20	1,022.61	-17.61	591.04	541.55	49.48	11.944		
8,800.00	8,483.63	8,580.09	8,485.73	24.88	27.01	-92.29	1,022.61	-17.61	632.17	583.17	49.00	12.901		
8,900.00	8,486.62	8,583.08	8,488.72	25.76	27.01	-90.95	1,022.61	-17.61	685.92	637.62	48.31	14.199		
9,000.00	8,488.89	8,585.35	8,490.99	26.81	27.01	-91.18	1,022.61	-17.61	749.23	701.68	47.55	15.757		
9,100.00	8,491.15	8,587.62	8,493.25	28.01	27.02	-91.42	1,022.61	-17.61	819.87	773.05	46.82	17.511		
9,200.00	8,493.42	8,589.88	8,495.52	29.34	27.02	-91.65	1,022.61	-17.61	896.12	849.96	46.16	19.412		
9,300.00	8,495.69	8,592.15	8,497.79	30.79	27.02	-91.89	1,022.61	-17.61	976.65	931.06	45.59	21.422		
9,400.00	8,497.96	8,594.42	8,500.06	32.34	27.02	-92.12	1,022.61	-17.61	1,060.50	1,015.40	45.11	23.512		
9,500.00	8,500.23	8,596.69	8,502.33	33.98	27.02	-92.35	1,022.61	-17.61	1,146.94	1,102.25	44.70	25.661		
9,600.00	8,502.49	8,598.96	8,504.59	35.70	27.02	-92.59	1,022.61	-17.61	1,235.42	1,191.07	44.35	27.856		
9,700.00	8,504.76	8,601.22	8,506.86	37.49	27.02	-92.82	1,022.61	-17.61	1,325.54	1,281.48	44.06	30.084		
9,800.00	8,507.03	8,603.49	8,509.13	39.33	27.02	-93.06	1,022.61	-17.61	1,416.98	1,373.16	43.82	32.338		
9,900.00	8,509.30	8,605.76	8,511.40	41.23	27.02	-93.29	1,022.61	-17.61	1,509.50	1,465.89	43.61	34.612		
10,000.00	8,511.56	8,608.03	8,513.66	43.16	27.03	-93.52	1,022.61	-17.61	1,602.92	1,559.48	43.44	36.900		

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - PLAN 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+HRGM		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,100.00	8,513.83	11,447.85	10,052.87	45.13	44.99	-160.16	1,010.80	1,551.34	1,634.38	1,585.97	48.41	33.763			
10,200.00	8,516.10	11,547.85	10,055.14	47.14	46.85	-160.16	1,010.05	1,651.31	1,634.39	1,584.59	49.80	32.818			
10,300.00	8,518.37	11,647.85	10,057.40	49.17	48.74	-160.15	1,009.30	1,751.29	1,634.41	1,583.16	51.25	31.893			
10,400.00	8,520.64	11,747.85	10,059.67	51.23	50.66	-160.15	1,008.54	1,851.26	1,634.42	1,581.68	52.74	30.990			
10,500.00	8,522.90	11,847.85	10,061.94	53.31	52.62	-160.15	1,007.79	1,951.23	1,634.44	1,580.16	54.28	30.113			
10,600.00	8,525.17	11,947.85	10,064.20	55.40	54.61	-160.15	1,007.04	2,051.20	1,634.45	1,578.60	55.85	29.263			
10,700.00	8,527.44	12,047.85	10,066.47	57.52	56.61	-160.15	1,006.29	2,151.17	1,634.47	1,577.00	57.47	28.441			
10,800.00	8,529.71	12,147.85	10,068.74	59.65	58.64	-160.15	1,005.53	2,251.14	1,634.48	1,575.37	59.12	27.649			
10,900.00	8,531.98	12,247.85	10,071.00	61.79	60.69	-160.14	1,004.78	2,351.11	1,634.50	1,573.70	60.80	26.885			
11,000.00	8,534.24	12,347.85	10,073.27	63.94	62.76	-160.14	1,004.03	2,451.09	1,634.51	1,572.01	62.50	26.151			
11,100.00	8,536.51	12,447.85	10,075.53	66.11	64.85	-160.14	1,003.28	2,551.06	1,634.53	1,570.29	64.24	25.445			
11,200.00	8,538.78	12,547.85	10,077.80	68.29	66.94	-160.14	1,002.53	2,651.03	1,634.54	1,568.54	66.00	24.767			
11,300.00	8,541.05	12,647.85	10,080.07	70.47	69.06	-160.14	1,001.77	2,751.00	1,634.56	1,566.78	67.78	24.116			
11,400.00	8,543.32	12,747.85	10,082.33	72.66	71.18	-160.14	1,001.02	2,850.97	1,634.57	1,564.99	69.58	23.492			
11,500.00	8,545.58	12,847.85	10,084.60	74.86	73.31	-160.13	1,000.27	2,950.94	1,634.58	1,563.18	71.40	22.893			
11,600.00	8,547.85	12,947.85	10,086.86	77.07	75.46	-160.13	999.52	3,050.91	1,634.60	1,561.36	73.24	22.318			
11,700.00	8,550.12	13,047.85	10,089.13	79.28	77.61	-160.13	998.76	3,150.89	1,634.61	1,559.52	75.10	21.767			
11,800.00	8,552.39	13,147.85	10,091.40	81.50	79.78	-160.13	998.01	3,250.86	1,634.63	1,557.66	76.97	21.237			
11,900.00	8,554.66	13,247.85	10,093.66	83.72	81.95	-160.13	997.26	3,350.83	1,634.64	1,555.79	78.85	20.730			
12,000.00	8,556.92	13,347.85	10,095.93	85.95	84.13	-160.13	996.51	3,450.80	1,634.66	1,553.90	80.75	20.242			
12,100.00	8,559.19	13,447.85	10,098.19	88.18	86.31	-160.12	995.75	3,550.77	1,634.67	1,552.01	82.67	19.774			
12,200.00	8,561.46	13,547.85	10,100.46	90.42	88.50	-160.12	995.00	3,650.74	1,634.69	1,550.10	84.59	19.325			
12,300.00	8,563.73	13,647.85	10,102.73	92.66	90.70	-160.12	994.25	3,750.71	1,634.70	1,548.18	86.52	18.893			
12,400.00	8,565.99	13,747.85	10,104.99	94.90	92.90	-160.12	993.50	3,850.69	1,634.72	1,546.25	88.47	18.478			
12,500.00	8,568.26	13,847.85	10,107.26	97.15	95.11	-160.12	992.74	3,950.66	1,634.73	1,544.31	90.42	18.079			
12,600.00	8,570.53	13,947.85	10,109.53	99.40	97.33	-160.12	991.99	4,050.63	1,634.75	1,542.36	92.38	17.695			
12,700.00	8,572.80	14,047.85	10,111.79	101.65	99.54	-160.12	991.24	4,150.60	1,634.76	1,540.41	94.36	17.326			
12,800.00	8,575.07	14,147.85	10,114.06	103.91	101.76	-160.11	990.49	4,250.57	1,634.78	1,538.44	96.33	16.970			
12,900.00	8,577.33	14,247.85	10,116.32	106.17	103.99	-160.11	989.73	4,350.54	1,634.79	1,536.47	98.32	16.627			
13,000.00	8,579.60	14,347.85	10,118.59	108.43	106.22	-160.11	988.98	4,450.52	1,634.81	1,534.49	100.31	16.297			
13,100.00	8,581.87	14,447.85	10,120.86	110.69	108.45	-160.11	988.23	4,550.49	1,634.82	1,532.51	102.31	15.978			
13,200.00	8,584.14	14,547.85	10,123.12	112.95	110.69	-160.11	987.48	4,650.46	1,634.83	1,530.51	104.32	15.671			
13,300.00	8,586.41	14,647.85	10,125.39	115.22	112.92	-160.11	986.72	4,750.43	1,634.85	1,528.52	106.33	15.375			
13,400.00	8,588.67	14,747.85	10,127.65	117.49	115.16	-160.10	985.97	4,850.40	1,634.86	1,526.51	108.35	15.089			
13,500.00	8,590.94	14,847.85	10,129.92	119.76	117.41	-160.10	985.22	4,950.37	1,634.88	1,524.50	110.37	14.812			
13,600.00	8,593.21	14,947.85	10,132.19	122.03	119.65	-160.10	984.47	5,050.34	1,634.89	1,522.49	112.40	14.545			
13,700.00	8,595.48	15,047.85	10,134.45	124.30	121.90	-160.10	983.71	5,150.32	1,634.91	1,520.47	114.43	14.287			
13,800.00	8,597.75	15,147.85	10,136.72	126.57	124.15	-160.10	982.96	5,250.29	1,634.92	1,518.45	116.47	14.037			
13,900.00	8,600.01	15,247.85	10,138.99	128.85	126.41	-160.10	982.21	5,350.26	1,634.94	1,516.42	118.51	13.795			
14,000.00	8,602.28	15,347.85	10,141.25	131.13	128.66	-160.09	981.46	5,450.23	1,634.95	1,514.39	120.56	13.561			
14,100.00	8,604.55	15,447.85	10,143.52	133.40	130.92	-160.09	980.71	5,550.20	1,634.97	1,512.36	122.61	13.335			
14,200.00	8,606.82	15,547.85	10,145.78	135.68	133.18	-160.09	979.95	5,650.17	1,634.98	1,510.32	124.66	13.115			
14,300.00	8,609.09	15,647.85	10,148.05	137.96	135.44	-160.09	979.20	5,750.14	1,635.00	1,508.28	126.72	12.903			
14,400.00	8,611.35	15,747.85	10,150.32	140.24	137.70	-160.09	978.45	5,850.12	1,635.01	1,506.23	128.78	12.696			
14,500.00	8,613.62	15,847.85	10,152.58	142.53	139.97	-160.09	977.70	5,950.09	1,635.03	1,504.18	130.84	12.496			
14,600.00	8,615.89	15,947.85	10,154.85	144.81	142.23	-160.08	976.94	6,050.06	1,635.04	1,502.13	132.91	12.302			
14,700.00	8,618.16	16,047.85	10,157.11	147.09	144.50	-160.08	976.19	6,150.03	1,635.06	1,500.08	134.98	12.114			
14,800.00	8,620.42	16,147.85	10,159.38	149.38	146.77	-160.08	975.44	6,250.00	1,635.07	1,498.02	137.05	11.930			
14,900.00	8,622.69	16,247.85	10,161.65	151.66	149.04	-160.08	974.69	6,349.97	1,635.08	1,495.96	139.12	11.753			
15,000.00	8,624.96	16,347.85	10,163.91	153.95	151.31	-160.08	973.93	6,449.94	1,635.10	1,493.90	141.20	11.580			
15,100.00	8,627.23	16,447.85	10,166.18	156.24	153.58	-160.08	973.18	6,549.92	1,635.11	1,491.83	143.28	11.412			
15,200.00	8,629.50	16,547.85	10,168.44	158.53	155.85	-160.08	972.43	6,649.89	1,635.13	1,489.76	145.36	11.249			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 01-23S-28E - RANA-SALADA-FED-COM-0605-225H - Wellbore #1 - PLAN 1											Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HRGM											Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	
15,300.00	8,631.76	16,647.85	10,170.71	160.81	158.13	-160.07	971.68	6,749.86	1,635.14	1,487.70	147.45	11.090
15,400.00	8,634.03	16,747.85	10,172.98	163.10	160.40	-160.07	970.92	6,849.83	1,635.16	1,485.62	149.54	10.935
15,500.00	8,636.30	16,847.85	10,175.24	165.39	162.68	-160.07	970.17	6,949.80	1,635.17	1,483.55	151.62	10.784
15,600.00	8,638.57	16,947.85	10,177.51	167.68	164.96	-160.07	969.42	7,049.77	1,635.19	1,481.47	153.71	10.638
15,700.00	8,640.84	17,047.85	10,179.78	169.97	167.23	-160.07	968.67	7,149.75	1,635.20	1,479.39	155.81	10.495
15,800.00	8,643.10	17,147.85	10,182.04	172.27	169.51	-160.07	967.91	7,249.72	1,635.22	1,477.31	157.90	10.356
15,900.00	8,645.37	17,247.85	10,184.31	174.56	171.79	-160.06	967.16	7,349.69	1,635.23	1,475.23	160.00	10.220
16,000.00	8,647.64	17,347.85	10,186.57	176.85	174.07	-160.06	966.41	7,449.66	1,635.25	1,473.15	162.10	10.088
16,100.00	8,649.91	17,447.85	10,188.84	179.14	176.36	-160.06	965.66	7,549.63	1,635.26	1,471.06	164.20	9.959
16,200.00	8,652.18	17,547.85	10,191.11	181.44	178.64	-160.06	964.90	7,649.60	1,635.28	1,468.98	166.30	9.833
16,300.00	8,654.44	17,647.85	10,193.37	183.73	180.92	-160.06	964.15	7,749.57	1,635.29	1,466.89	168.40	9.711
16,400.00	8,656.71	17,747.85	10,195.64	186.03	183.20	-160.06	963.40	7,849.55	1,635.31	1,464.80	170.51	9.591
16,500.00	8,658.98	17,847.85	10,197.90	188.32	185.49	-160.05	962.65	7,949.52	1,635.32	1,462.71	172.61	9.474
16,600.00	8,661.25	17,947.85	10,200.17	190.62	187.77	-160.05	961.89	8,049.49	1,635.33	1,460.61	174.72	9.360
16,700.00	8,663.52	18,047.85	10,202.44	192.91	190.06	-160.05	961.14	8,149.46	1,635.35	1,458.52	176.83	9.248
16,800.00	8,665.78	18,147.85	10,204.70	195.21	192.35	-160.05	960.39	8,249.43	1,635.36	1,456.42	178.94	9.139
16,900.00	8,668.05	18,247.85	10,206.97	197.50	194.63	-160.05	959.64	8,349.40	1,635.38	1,454.33	181.05	9.033
17,000.00	8,670.32	18,347.85	10,209.24	199.80	196.92	-160.05	958.89	8,449.37	1,635.39	1,452.23	183.16	8.929
17,100.00	8,672.59	18,447.85	10,211.50	202.10	199.21	-160.04	958.13	8,549.35	1,635.41	1,450.13	185.28	8.827
17,200.00	8,674.85	18,547.85	10,213.77	204.40	201.50	-160.04	957.38	8,649.32	1,635.42	1,448.03	187.39	8.727
17,300.00	8,677.12	18,647.85	10,216.03	206.69	203.79	-160.04	956.63	8,749.29	1,635.44	1,445.93	189.51	8.630
17,400.00	8,679.39	18,747.85	10,218.30	208.99	206.08	-160.04	955.88	8,849.26	1,635.45	1,443.83	191.63	8.535
17,500.00	8,681.66	18,847.85	10,220.57	211.29	208.37	-160.04	955.12	8,949.23	1,635.47	1,441.72	193.75	8.441
17,600.00	8,683.93	18,947.85	10,222.83	213.59	210.66	-160.04	954.37	9,049.20	1,635.48	1,439.62	195.87	8.350
17,700.00	8,686.19	19,047.85	10,225.10	215.89	212.95	-160.03	953.62	9,149.17	1,635.50	1,437.51	197.99	8.261
17,800.00	8,688.46	19,147.85	10,227.36	218.19	215.24	-160.03	952.87	9,249.15	1,635.51	1,435.40	200.11	8.173
17,900.00	8,690.73	19,247.85	10,229.63	220.49	217.53	-160.03	952.11	9,349.12	1,635.53	1,433.30	202.23	8.087
18,000.00	8,693.00	19,347.85	10,231.90	222.79	219.82	-160.03	951.36	9,449.09	1,635.54	1,431.19	204.35	8.003
18,100.00	8,695.27	19,447.85	10,234.16	225.08	222.11	-160.03	950.61	9,549.06	1,635.56	1,429.08	206.48	7.921
18,200.00	8,697.53	19,547.85	10,236.43	227.39	224.41	-160.03	949.86	9,649.03	1,635.57	1,426.97	208.60	7.841
18,300.00	8,699.80	19,647.85	10,238.69	229.69	226.70	-160.03	949.10	9,749.00	1,635.59	1,424.85	210.73	7.761
18,400.00	8,702.07	19,747.85	10,240.96	231.99	228.99	-160.02	948.35	9,848.98	1,635.60	1,422.74	212.86	7.684
18,500.00	8,704.34	19,847.85	10,243.23	234.29	231.29	-160.02	947.60	9,948.95	1,635.62	1,420.63	214.99	7.608
18,600.00	8,706.61	19,947.85	10,245.49	236.59	233.58	-160.02	946.85	10,048.92	1,635.63	1,418.51	217.12	7.533
18,700.00	8,708.87	20,047.85	10,247.76	238.89	235.88	-160.02	946.09	10,148.89	1,635.64	1,416.40	219.24	7.460
18,800.00	8,711.14	20,147.85	10,250.03	241.19	238.17	-160.02	945.34	10,248.86	1,635.66	1,414.28	221.38	7.389
18,900.00	8,713.41	20,247.85	10,252.29	243.49	240.47	-160.02	944.59	10,348.83	1,635.67	1,412.17	223.51	7.318
19,000.00	8,715.68	20,347.85	10,254.56	245.79	242.76	-160.01	943.84	10,448.80	1,635.69	1,410.05	225.64	7.249
19,100.00	8,717.95	20,367.38	10,255.00	247.40	243.21	-160.01	943.69	10,468.33	1,637.68	1,411.25	226.44	7.232 SF
19,102.43	8,718.00	20,367.38	10,255.00	247.44	243.21	-160.01	943.69	10,468.33	1,637.80	1,411.36	226.44	7.233

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Offset-Longview Deep Federal 6-22 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 200-MWD												Offset Well Error:	0.00 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
0.00	0.00	13.85	13.85	0.50	0.01	15.81	631.20	178.72	656.01				
100.00	100.00	117.98	117.98	0.65	0.12	15.84	630.71	178.93	655.62	654.84	0.77	848.904	
200.00	200.00	225.06	225.05	1.34	0.27	15.92	629.34	179.47	654.54	652.93	1.61	407.595	
300.00	300.00	330.19	330.12	1.81	0.50	16.06	626.18	180.26	651.83	649.52	2.31	282.597	
400.00	400.00	427.67	427.55	2.19	0.70	16.29	623.27	182.18	649.51	646.63	2.88	225.559	
500.00	500.00	518.47	518.26	2.51	0.90	16.61	621.19	185.29	648.26	644.86	3.40	190.781	
566.55	566.55	580.14	579.85	2.70	1.04	16.90	620.01	188.32	647.97	644.24	3.73	173.654	
600.00	600.00	610.72	610.36	2.80	1.12	17.07	619.49	190.22	648.04	644.14	3.90	166.188	
700.00	700.00	708.64	707.98	3.06	1.36	17.74	617.65	197.61	648.51	644.11	4.40	147.251	
800.00	800.00	789.37	788.19	3.30	1.58	18.53	616.55	206.65	650.75	645.88	4.86	133.770	
900.00	900.00	868.00	865.77	3.53	1.82	19.58	616.87	219.41	656.45	651.12	5.33	123.167	
1,000.00	1,000.00	937.25	933.19	3.75	2.08	20.83	618.05	235.11	666.10	660.31	5.79	115.091	
1,100.00	1,100.00	1,014.41	1,006.85	3.95	2.45	22.57	620.41	257.89	680.25	673.93	6.32	107.664	
1,200.00	1,200.00	1,092.26	1,080.53	4.15	2.86	24.39	623.70	282.83	697.59	690.73	6.86	101.709	
1,300.00	1,300.00	1,175.90	1,159.23	4.34	3.35	26.30	628.63	310.71	717.95	710.52	7.43	96.622	
1,400.00	1,400.00	1,262.25	1,240.34	4.52	3.87	28.16	634.56	339.74	740.27	732.27	8.01	92.437	
1,500.00	1,500.00	1,364.33	1,336.61	4.70	4.46	30.07	643.38	372.50	764.14	755.53	8.61	88.734	
1,600.00	1,599.98	1,462.10	1,429.84	5.05	4.97	59.16	652.10	400.62	786.14	776.96	9.19	85.566	
1,700.00	1,699.84	1,547.00	1,510.73	5.69	5.46	60.25	660.42	425.01	807.73	797.97	9.75	82.804	
1,800.00	1,799.45	1,637.77	1,596.89	6.30	6.00	61.60	669.55	452.09	829.21	818.88	10.33	80.300	
1,900.00	1,898.82	1,745.39	1,698.84	6.46	6.64	63.73	679.21	485.15	850.18	839.39	10.79	78.766	
2,000.00	1,998.18	1,851.62	1,799.90	6.67	7.25	65.88	686.18	517.14	869.84	858.55	11.29	77.020	
2,100.00	2,097.54	1,954.06	1,897.41	6.90	7.85	67.92	691.69	548.04	889.73	877.95	11.79	75.491	
2,200.00	2,196.90	2,040.63	1,979.69	7.15	8.37	69.62	695.55	574.67	910.36	898.17	12.19	74.657	
2,300.00	2,296.25	2,135.78	2,069.81	7.42	8.97	71.48	699.50	604.96	932.50	919.86	12.65	73.743	
2,400.00	2,395.61	2,233.03	2,162.14	7.69	9.55	73.27	703.37	635.25	954.96	941.88	13.08	72.993	
2,500.00	2,494.97	2,323.84	2,248.36	7.98	10.09	74.88	706.99	663.51	978.25	964.78	13.48	72.576	
2,600.00	2,594.33	2,409.93	2,330.17	8.28	10.61	76.26	711.67	689.91	1,002.84	989.00	13.84	72.457	
2,700.00	2,693.69	2,505.70	2,421.06	8.59	11.20	77.75	716.89	719.62	1,028.38	1,014.12	14.25	72.154	
2,800.00	2,793.05	2,600.35	2,510.97	8.91	11.76	79.15	721.89	748.77	1,054.26	1,039.62	14.65	71.985	
2,900.00	2,892.40	2,690.81	2,596.98	9.24	12.30	80.39	727.17	776.31	1,080.76	1,065.74	15.01	71.992	
3,000.00	2,991.76	2,782.70	2,684.44	9.57	12.84	81.55	733.44	803.76	1,107.80	1,092.42	15.38	72.031	
3,100.00	3,091.12	2,873.62	2,770.84	9.91	13.39	82.63	740.00	831.33	1,135.84	1,120.09	15.75	72.135	
3,200.00	3,190.48	2,960.24	2,862.03	10.25	14.06	83.98	747.25	865.74	1,163.07	1,146.85	16.22	71.698	
3,300.00	3,289.84	3,071.00	2,959.08	10.60	14.52	84.89	751.78	889.49	1,190.37	1,173.83	16.54	71.978	
3,400.00	3,389.20	3,149.57	3,033.69	10.95	15.01	85.76	756.35	913.69	1,219.30	1,202.44	16.86	72.327	
3,500.00	3,488.55	3,233.41	3,113.01	11.31	15.54	86.66	761.43	940.35	1,249.58	1,232.37	17.21	72.620	
3,600.00	3,587.91	3,433.81	3,304.83	11.67	16.65	88.58	772.44	997.09	1,277.43	1,259.41	18.03	70.857	
3,700.00	3,687.27	3,638.97	3,505.96	12.03	17.45	90.24	778.14	1,036.79	1,295.33	1,276.64	18.68	69.329	
3,800.00	3,786.63	3,786.97	3,652.59	12.40	17.88	91.24	781.63	1,056.50	1,308.49	1,289.39	19.10	68.498	
3,900.00	3,885.99	3,886.23	3,751.16	12.77	18.15	91.87	783.50	1,067.95	1,320.09	1,300.66	19.43	67.952	
4,000.00	3,985.35	4,006.91	3,871.00	13.14	18.47	92.65	785.32	1,082.02	1,331.99	1,312.20	19.79	67.305	
4,100.00	4,084.70	4,186.76	4,050.45	13.52	18.80	93.66	787.08	1,093.44	1,338.55	1,318.38	20.17	66.363	
4,200.00	4,184.06	4,292.49	4,156.13	13.90	18.95	94.19	788.03	1,096.53	1,342.38	1,321.90	20.47	65.568	
4,300.00	4,283.42	4,392.42	4,256.01	14.27	19.09	94.69	788.77	1,099.65	1,346.43	1,325.65	20.78	64.799	
4,400.00	4,382.78	4,492.18	4,355.72	14.65	19.23	95.20	789.26	1,102.63	1,350.38	1,329.29	21.09	64.030	
4,500.00	4,482.14	4,596.81	4,460.30	15.04	19.37	95.74	789.60	1,105.73	1,354.35	1,332.95	21.41	63.262	
4,600.00	4,581.49	4,689.96	4,553.41	15.42	19.50	96.21	789.81	1,108.39	1,358.30	1,336.57	21.73	62.515	
4,700.00	4,680.85	4,787.05	4,650.44	15.81	19.65	96.72	789.93	1,111.64	1,362.76	1,340.70	22.06	61.784	
4,800.00	4,780.21	4,891.70	4,755.04	16.19	19.80	97.27	789.70	1,115.04	1,367.12	1,344.73	22.40	61.044	
4,900.00	4,879.57	4,992.68	4,855.97	16.58	19.95	97.80	789.41	1,118.17	1,371.45	1,348.71	22.74	60.321	
5,000.00	4,978.93	5,102.66	4,965.92	16.97	20.10	98.36	789.24	1,120.96	1,375.41	1,352.32	23.08	59.582	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Offset-Longview Deep Federal 6-22 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 usft	
Survey Program:		200-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.00 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		
5,100.00	5,078.29	5,207.80	5,071.04	17.36	20.24	98.90	788.63	1,122.92	1,378.69	1,355.26	23.43	58.834			
5,200.00	5,177.64	5,309.93	5,173.15	17.75	20.37	99.41	788.21	1,124.63	1,381.96	1,358.18	23.79	58.099			
5,300.00	5,277.00	5,410.16	5,273.37	18.15	20.50	99.92	787.59	1,126.08	1,385.07	1,360.93	24.14	57.368			
5,400.00	5,376.36	5,512.35	5,375.54	18.54	20.63	100.43	786.96	1,127.54	1,388.27	1,363.76	24.51	56.646			
5,500.00	5,475.72	5,611.14	5,474.32	18.93	20.76	100.93	786.17	1,128.81	1,391.37	1,366.49	24.88	55.932			
5,600.00	5,575.08	5,721.64	5,584.81	19.33	20.90	101.48	785.41	1,129.90	1,394.34	1,369.09	25.25	55.211			
5,700.00	5,674.44	5,815.50	5,678.67	19.73	21.01	101.94	784.68	1,130.51	1,397.07	1,371.44	25.63	54.510			
5,800.00	5,773.79	5,918.24	5,781.41	20.12	21.14	102.43	784.16	1,131.25	1,400.03	1,374.02	26.01	53.817			
5,900.00	5,873.15	6,015.84	5,879.00	20.52	21.27	102.90	783.59	1,131.89	1,403.01	1,376.61	26.40	53.139			
6,000.00	5,972.51	6,129.53	5,992.68	20.92	21.40	103.46	782.44	1,132.12	1,405.54	1,378.73	26.81	52.434			
6,100.00	6,071.87	6,230.22	6,093.37	21.32	21.52	103.96	781.22	1,131.86	1,407.69	1,380.48	27.21	51.741			
6,200.00	6,171.23	6,328.90	6,192.03	21.72	21.64	104.46	779.64	1,131.65	1,409.89	1,382.27	27.62	51.052			
6,300.00	6,270.75	6,429.72	6,292.84	22.13	21.75	104.95	777.73	1,131.61	1,411.91	1,383.89	28.02	50.394			
6,400.00	6,370.54	6,534.91	6,398.01	22.59	21.88	105.31	775.45	1,131.13	1,412.62	1,384.22	28.40	49.743			
6,500.00	6,470.50	6,638.32	6,501.38	22.98	22.00	105.51	773.02	1,130.58	1,412.32	1,383.58	28.74	49.142			
6,600.00	6,570.50	6,748.19	6,611.22	23.05	22.12	77.71	770.72	1,129.30	1,410.78	1,381.79	28.99	48.663			
6,700.00	6,670.50	6,872.10	6,735.07	23.10	22.24	77.78	768.25	1,126.41	1,408.11	1,378.85	29.26	48.121			
6,800.00	6,770.50	6,978.45	6,841.32	23.15	22.33	77.84	765.86	1,122.54	1,404.06	1,374.54	29.52	47.557			
6,900.00	6,870.50	7,061.00	6,923.82	23.19	22.41	77.88	764.37	1,120.14	1,400.79	1,371.02	29.78	47.043			
7,000.00	6,970.50	7,152.84	7,015.62	23.24	22.50	77.95	762.35	1,118.39	1,398.45	1,368.41	30.04	46.555			
7,100.00	7,070.50	7,257.26	7,119.97	23.29	22.62	78.07	759.01	1,116.51	1,396.03	1,365.71	30.32	46.050			
7,200.00	7,170.50	7,363.44	7,226.09	23.34	22.73	78.14	756.66	1,114.01	1,393.27	1,362.68	30.59	45.552			
7,300.00	7,270.50	7,466.00	7,328.59	23.39	22.83	78.15	755.71	1,110.59	1,389.80	1,358.96	30.85	45.056			
7,400.00	7,370.50	7,541.13	7,403.70	23.44	22.91	78.13	755.70	1,108.85	1,387.52	1,356.43	31.09	44.629			
7,500.00	7,470.50	7,653.89	7,516.44	23.49	23.05	78.10	755.97	1,106.61	1,385.62	1,354.27	31.36	44.187			
7,600.00	7,570.50	7,757.69	7,620.20	23.54	23.16	78.08	755.93	1,103.77	1,382.93	1,351.31	31.62	43.735			
7,700.00	7,670.50	7,847.34	7,709.83	23.59	23.27	78.06	756.03	1,101.72	1,380.71	1,348.84	31.87	43.317			
7,800.00	7,770.50	7,939.84	7,802.30	23.65	23.38	78.03	756.39	1,100.09	1,379.07	1,346.94	32.13	42.922			
7,900.00	7,870.50	8,031.76	7,894.22	23.70	23.50	78.02	756.51	1,099.16	1,378.11	1,345.72	32.39	42.549			
8,000.00	7,970.40	8,135.86	7,998.32	23.66	23.64	-12.54	756.21	1,098.23	1,374.27	1,341.64	32.64	42.106			
8,100.00	8,068.49	8,238.33	8,100.77	23.58	23.78	-13.13	755.13	1,097.25	1,354.83	1,321.64	33.18	40.827			
8,200.00	8,161.84	8,340.78	8,203.21	23.48	23.91	-14.44	754.31	1,095.56	1,318.52	1,284.88	33.64	39.195			
8,300.00	8,247.60	8,426.24	8,288.64	23.40	24.02	-16.70	754.43	1,093.52	1,266.73	1,232.73	33.99	37.263			
8,400.00	8,323.17	8,494.27	8,356.66	23.38	24.10	-20.29	754.51	1,092.15	1,201.88	1,167.62	34.26	35.079			
8,500.00	8,386.25	8,555.21	8,417.59	23.47	24.19	-26.33	754.26	1,091.19	1,125.95	1,091.50	34.45	32.687			
8,600.00	8,434.92	8,602.55	8,464.92	23.73	24.25	-36.76	753.76	1,090.54	1,041.26	1,006.70	34.56	30.128			
8,700.00	8,467.72	8,634.50	8,496.87	24.20	24.29	-54.96	753.31	1,090.14	950.61	915.98	34.64	27.445			
8,800.00	8,483.63	8,649.38	8,511.75	24.88	24.31	-81.52	753.07	1,089.95	857.12	822.39	34.73	24.680			
8,900.00	8,486.62	8,651.17	8,513.54	25.76	24.31	-89.54	753.04	1,089.93	763.94	729.01	34.94	21.867			
9,000.00	8,488.89	8,652.23	8,514.60	26.81	24.32	-89.74	753.02	1,089.91	672.70	637.28	35.42	18.990			
9,100.00	8,491.15	8,653.30	8,515.67	28.01	24.32	-89.95	753.00	1,089.90	584.34	547.92	36.42	16.044			
9,200.00	8,493.42	8,654.37	8,516.74	29.34	24.32	-90.16	752.98	1,089.89	500.37	462.08	38.29	13.067			
9,300.00	8,495.69	8,655.44	8,517.81	30.79	24.32	-90.37	752.96	1,089.88	423.42	381.86	41.56	10.188			
9,400.00	8,497.96	8,656.52	8,518.88	32.34	24.32	-90.58	752.94	1,089.86	358.05	311.33	46.72	7.664			
9,500.00	8,500.23	8,657.59	8,519.96	33.98	24.32	-90.79	752.93	1,089.85	311.63	258.22	53.41	5.835			
9,600.00	8,502.49	8,658.68	8,521.04	35.70	24.32	-91.00	752.91	1,089.84	293.29	234.05	59.25	4.950			
9,605.46	8,502.62	8,658.73	8,521.10	35.80	24.32	-91.01	752.91	1,089.84	293.24	233.77	59.47	4.931	CC, ES, SF		
9,700.00	8,504.76	8,659.76	8,522.12	37.49	24.33	-91.21	752.89	1,089.82	308.10	246.84	61.26	5.030			
9,800.00	8,507.03	8,660.85	8,523.21	39.33	24.33	-91.43	752.87	1,089.81	351.90	292.23	59.67	5.897			
9,900.00	8,509.30	8,661.94	8,524.30	41.23	24.33	-91.64	752.85	1,089.80	415.62	358.86	56.75	7.323			
10,000.00	8,511.56	8,663.03	8,525.39	43.16	24.33	-91.85	752.83	1,089.78	491.57	437.65	53.92	9.117			
10,100.00	8,513.83	8,664.13	8,526.49	45.13	24.33	-92.07	752.81	1,089.77	574.92	523.35	51.57	11.147			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Offset-Longview Deep Federal 6-22 - Wellbore #1 - Wellbore #1											Offset Site Error: 0.00 usft
Survey Program: 200-MWD											Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
10,200.00	8,516.10	8,665.23	8,527.59	47.14	24.33	-92.28	752.79	1,089.76	662.90	613.17	13.332
10,300.00	8,518.37	8,666.33	8,528.69	49.17	24.34	-92.50	752.77	1,089.74	753.87	705.60	15.618
10,400.00	8,520.64	8,667.43	8,529.80	51.23	24.34	-92.71	752.75	1,089.73	846.89	799.76	17.972
10,500.00	8,522.90	8,668.54	8,530.91	53.31	24.34	-92.93	752.73	1,089.72	941.33	895.13	20.373
10,600.00	8,525.17	8,669.66	8,532.02	55.40	24.34	-93.15	752.71	1,089.70	1,036.82	991.36	22.806
10,700.00	8,527.44	8,670.77	8,533.13	57.52	24.34	-93.36	752.69	1,089.69	1,133.08	1,088.23	25.262
10,800.00	8,529.71	8,671.89	8,534.25	59.65	24.34	-93.58	752.67	1,089.67	1,229.94	1,185.59	27.732
10,900.00	8,531.98	8,673.01	8,535.37	61.79	24.34	-93.80	752.65	1,089.66	1,327.27	1,283.34	30.214
11,000.00	8,534.24	8,674.14	8,536.50	63.94	24.35	-94.02	752.63	1,089.65	1,424.96	1,381.39	32.701
11,100.00	8,536.51	8,675.26	8,537.62	66.11	24.35	-94.24	752.60	1,089.63	1,522.95	1,479.68	35.192
11,200.00	8,538.78	8,676.39	8,538.76	68.29	24.35	-94.46	752.58	1,089.62	1,621.19	1,578.17	37.685
11,300.00	8,541.05	8,677.53	8,539.89	70.47	24.35	-94.68	752.56	1,089.61	1,719.63	1,676.83	40.178
11,400.00	8,543.32	8,678.67	8,541.03	72.66	24.35	-94.90	752.54	1,089.59	1,818.24	1,775.63	42.669
11,500.00	8,545.58	8,679.81	8,542.17	74.86	24.35	-95.12	752.52	1,089.58	1,916.99	1,874.54	45.157
11,600.00	8,547.85	8,680.95	8,543.31	77.07	24.36	-95.35	752.49	1,089.57	2,015.87	1,973.55	47.641
11,700.00	8,550.12	8,679.00	8,541.36	79.28	24.35	-94.97	752.53	1,089.59	2,114.85	2,072.65	50.110
11,800.00	8,552.39	8,679.00	8,541.36	81.50	24.35	-94.97	752.53	1,089.59	2,213.92	2,171.82	52.581
11,900.00	8,554.66	8,679.00	8,541.36	83.72	24.35	-94.97	752.53	1,089.59	2,313.08	2,271.05	55.045
12,000.00	8,556.92	8,684.53	8,546.89	85.95	24.36	-96.04	752.42	1,089.52	2,412.29	2,370.36	57.523
12,100.00	8,559.19	8,685.47	8,547.83	88.18	24.36	-96.22	752.41	1,089.51	2,511.57	2,469.70	60.007
12,200.00	8,561.46	8,686.39	8,548.75	90.42	24.36	-96.40	752.39	1,089.50	2,610.91	2,569.09	62.424
12,300.00	8,563.73	8,687.31	8,549.67	92.66	24.36	-96.58	752.37	1,089.49	2,710.30	2,668.51	64.863
12,400.00	8,565.99	8,688.21	8,550.57	94.90	24.36	-96.75	752.35	1,089.48	2,809.72	2,767.97	67.294
12,500.00	8,568.26	8,689.11	8,551.47	97.15	24.37	-96.93	752.33	1,089.47	2,909.19	2,867.46	69.717
12,600.00	8,570.53	8,689.99	8,552.35	99.40	24.37	-97.10	752.32	1,089.45	3,008.69	2,966.98	72.131
12,700.00	8,572.80	8,690.87	8,553.23	101.65	24.37	-97.27	752.30	1,089.44	3,108.23	3,066.53	74.536
12,800.00	8,575.07	8,691.74	8,554.10	103.91	24.37	-97.44	752.28	1,089.43	3,207.79	3,166.09	76.931
12,900.00	8,577.33	8,692.60	8,554.95	106.17	24.37	-97.60	752.26	1,089.42	3,307.38	3,265.68	79.317
13,000.00	8,579.60	8,693.45	8,555.80	108.43	24.37	-97.76	752.24	1,089.41	3,406.99	3,365.29	81.693
13,100.00	8,581.87	8,694.29	8,556.64	110.69	24.37	-97.93	752.23	1,089.40	3,506.63	3,464.91	84.059
13,200.00	8,584.14	8,695.12	8,557.48	112.95	24.37	-98.09	752.21	1,089.39	3,606.28	3,564.55	86.415
13,300.00	8,586.41	8,695.95	8,558.30	115.22	24.38	-98.25	752.19	1,089.38	3,705.95	3,664.20	88.760
13,400.00	8,588.67	8,696.76	8,559.12	117.49	24.38	-98.40	752.18	1,089.37	3,805.64	3,763.87	91.095
13,500.00	8,590.94	8,697.57	8,559.92	119.76	24.38	-98.56	752.16	1,089.36	3,905.35	3,863.54	93.418
13,600.00	8,593.21	8,698.37	8,560.72	122.03	24.38	-98.71	752.14	1,089.35	4,005.07	3,963.23	95.731
13,700.00	8,595.48	8,699.16	8,561.51	124.30	24.38	-98.86	752.13	1,089.34	4,104.80	4,062.93	98.033
13,800.00	8,597.75	8,699.94	8,562.30	126.57	24.38	-99.01	752.11	1,089.32	4,204.55	4,162.64	100.324
13,900.00	8,600.01	8,700.72	8,563.07	128.85	24.38	-99.16	752.09	1,089.31	4,304.30	4,262.35	102.603
14,000.00	8,602.28	8,701.49	8,563.84	131.13	24.38	-99.31	752.08	1,089.30	4,404.07	4,362.08	104.871

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Offset-Longview Federal 12-4H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 122-MWD													Offset Well Error: 0.00 usft
Reference	Offset	Rule Assigned:											Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	Distance	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	0.00	179.33	-3,346.16	39.07	3,346.72				
100.00	100.00	51.77	51.77	0.65	0.05	179.33	-3,346.17	39.06	3,346.40	3,345.70	0.70	4,779.222	
200.00	200.00	146.75	146.75	1.34	0.17	179.33	-3,346.27	38.97	3,346.50	3,344.99	1.51	2,212.552	
300.00	300.00	242.49	242.49	1.81	0.37	179.33	-3,346.55	39.06	3,346.80	3,344.62	2.18	1,533.578	
400.00	400.00	355.34	355.34	2.19	0.60	179.33	-3,346.76	39.23	3,346.99	3,344.20	2.79	1,200.007	
482.70	482.70	436.00	436.00	2.45	0.77	179.33	-3,346.72	39.36	3,346.95	3,343.73	3.22	1,038.226	
500.00	500.00	451.06	451.06	2.51	0.80	179.33	-3,346.73	39.39	3,346.96	3,343.65	3.31	1,010.691	
600.00	600.00	536.98	536.98	2.80	0.99	179.33	-3,346.99	39.34	3,347.26	3,343.48	3.78	885.260	
700.00	700.00	638.30	638.30	3.06	1.20	179.33	-3,347.47	39.14	3,347.74	3,343.48	4.25	786.925	
800.00	800.00	743.95	743.95	3.30	1.42	179.33	-3,347.86	39.11	3,348.10	3,343.39	4.72	709.921	
900.00	900.00	845.66	845.65	3.53	1.63	179.34	-3,348.09	38.53	3,348.32	3,343.16	5.16	649.178	
1,000.00	1,000.00	939.29	939.28	3.75	1.83	179.36	-3,348.38	37.63	3,348.62	3,343.05	5.57	600.799	
1,100.00	1,100.00	1,036.04	1,036.02	3.95	2.03	179.37	-3,348.89	36.59	3,349.13	3,343.15	5.99	559.509	
1,200.00	1,200.00	1,144.67	1,144.65	4.15	2.26	179.39	-3,349.36	35.44	3,349.56	3,343.15	6.41	522.591	
1,300.00	1,300.00	1,248.88	1,248.85	4.34	2.47	179.41	-3,349.54	34.60	3,349.72	3,342.91	6.81	491.572	
1,400.00	1,400.00	1,347.94	1,347.91	4.52	2.68	179.42	-3,349.69	33.99	3,349.87	3,342.66	7.20	464.997	
1,500.00	1,500.00	1,464.53	1,464.50	4.70	2.92	179.43	-3,349.55	33.48	3,349.74	3,342.11	7.63	439.225	
1,510.61	1,510.61	1,474.96	1,474.93	4.74	2.95	-152.69	-3,349.52	33.44	3,349.72	3,342.04	7.68	436.045	
1,600.00	1,599.98	1,563.79	1,563.76	5.05	3.13	-152.69	-3,349.24	33.05	3,350.97	3,342.82	8.15	410.969	
1,700.00	1,699.84	1,661.12	1,661.08	5.69	3.34	-152.68	-3,348.94	32.51	3,355.31	3,346.40	8.91	376.672	
1,800.00	1,799.45	1,755.32	1,755.28	6.30	3.53	-152.67	-3,348.84	32.16	3,362.95	3,353.32	9.63	349.371	
1,900.00	1,898.82	1,856.15	1,856.11	6.46	3.74	-152.73	-3,348.73	31.99	3,372.81	3,362.82	9.99	337.688	
2,000.00	1,998.18	1,946.74	1,946.70	6.67	3.93	-152.81	-3,348.68	31.93	3,382.83	3,372.45	10.38	325.886	
2,100.00	2,097.54	2,032.44	2,032.40	6.90	4.12	-152.89	-3,349.00	32.28	3,393.28	3,382.49	10.78	314.644	
2,200.00	2,196.90	2,128.17	2,128.13	7.15	4.32	-152.98	-3,349.60	32.84	3,404.00	3,392.77	11.22	303.273	
2,300.00	2,296.25	2,226.80	2,226.76	7.42	4.53	-153.08	-3,350.19	33.81	3,414.70	3,403.02	11.68	292.294	
2,400.00	2,395.61	2,317.24	2,317.18	7.69	4.72	-153.18	-3,350.88	34.86	3,425.59	3,413.46	12.13	282.298	
2,500.00	2,494.97	2,404.54	2,404.47	7.98	4.90	-153.27	-3,351.80	36.13	3,436.78	3,424.19	12.59	272.966	
2,600.00	2,594.33	2,494.28	2,494.20	8.28	5.09	-153.37	-3,353.11	37.19	3,448.38	3,435.32	13.06	264.070	
2,700.00	2,693.69	2,609.69	2,609.59	8.59	5.33	-153.49	-3,354.56	38.38	3,459.78	3,446.20	13.59	254.632	
2,800.00	2,793.05	2,716.53	2,716.42	8.91	5.55	-153.59	-3,355.56	39.22	3,470.87	3,456.77	14.10	246.094	
2,900.00	2,892.40	2,825.24	2,825.12	9.24	5.78	-153.69	-3,356.36	39.69	3,481.77	3,467.14	14.63	237.941	
3,000.00	2,991.76	2,915.91	2,915.80	9.57	5.97	-153.77	-3,356.92	40.10	3,492.56	3,477.43	15.13	230.843	
3,100.00	3,091.12	3,013.24	3,013.12	9.91	6.17	-153.85	-3,357.83	40.40	3,503.66	3,488.01	15.65	223.917	
3,200.00	3,190.48	3,125.02	3,124.90	10.25	6.40	-153.95	-3,358.64	40.87	3,514.57	3,498.36	16.20	216.923	
3,300.00	3,289.84	3,209.24	3,209.11	10.60	6.58	-154.03	-3,359.20	41.43	3,525.44	3,508.75	16.70	211.110	
3,400.00	3,389.20	3,305.42	3,305.29	10.95	6.78	-154.11	-3,360.23	41.85	3,536.70	3,519.47	17.23	205.278	
3,500.00	3,488.55	3,403.50	3,403.36	11.31	6.99	-154.20	-3,361.25	42.19	3,547.94	3,530.17	17.77	199.704	
3,600.00	3,587.91	3,521.94	3,521.79	11.67	7.24	-154.30	-3,362.24	42.93	3,559.01	3,540.66	18.35	193.904	
3,700.00	3,687.27	3,619.30	3,619.14	12.03	7.44	-154.39	-3,362.77	43.59	3,569.79	3,550.89	18.90	188.907	
3,800.00	3,786.63	3,707.00	3,706.84	12.40	7.63	-154.47	-3,363.43	44.10	3,580.77	3,561.35	19.42	184.384	
3,900.00	3,885.99	3,801.00	3,800.84	12.77	7.82	-154.55	-3,364.07	44.59	3,591.71	3,571.75	19.96	179.941	
4,000.00	3,985.35	3,896.00	3,895.83	13.14	8.02	-154.62	-3,365.10	44.81	3,603.03	3,582.53	20.51	175.710	
4,100.00	4,084.70	3,978.00	3,977.82	13.52	8.19	-154.68	-3,366.45	44.65	3,614.86	3,593.84	21.02	171.965	
4,200.00	4,184.06	4,064.38	4,064.18	13.90	8.38	-154.74	-3,367.96	44.28	3,626.83	3,605.28	21.55	168.310	
4,300.00	4,283.42	4,141.00	4,140.78	14.27	8.54	-154.79	-3,369.84	43.75	3,639.45	3,617.40	22.05	165.026	
4,400.00	4,382.78	4,192.17	4,191.92	14.65	8.65	-154.82	-3,371.59	43.30	3,653.02	3,630.52	22.49	162.396	
4,500.00	4,482.14	4,234.00	4,233.71	15.04	8.74	-154.85	-3,373.46	42.86	3,667.83	3,644.92	22.91	160.113	
4,600.00	4,581.49	4,287.63	4,287.24	15.42	8.85	-154.87	-3,376.61	42.22	3,683.98	3,660.63	23.35	157.774	
4,700.00	4,680.85	4,329.00	4,328.49	15.81	8.94	-154.89	-3,379.72	41.63	3,701.64	3,677.88	23.75	155.832	
4,800.00	4,780.21	4,397.10	4,396.20	16.19	9.03	-154.90	-3,383.63	40.98	3,720.18	3,695.97	24.15	153.984	
4,900.00	4,879.57	4,465.22	4,464.00	16.58	9.11	-154.91	-3,388.03	40.33	3,739.29	3,713.96	24.55	152.232	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Offset-Longview Federal 12-4H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 usft	
Survey Program:		122-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.00 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		
5,000.00	4,978.93	12,187.32	8,397.70	16.97	67.83	156.06	421.83	-31.21	3,469.64	3,431.57	38.07	91.127			
5,100.00	5,078.29	12,204.69	8,397.23	17.36	68.13	154.13	439.19	-31.10	3,370.37	3,331.99	38.39	87.804			
5,200.00	5,177.64	12,220.78	8,396.75	17.75	68.41	152.26	455.28	-31.02	3,271.11	3,232.42	38.69	84.542			
5,300.00	5,277.00	12,196.90	8,397.36	18.15	68.00	155.01	431.41	-31.19	3,171.88	3,133.12	38.75	81.846			
5,400.00	5,376.36	12,204.69	8,397.19	18.54	68.13	154.13	439.19	-31.12	3,072.74	3,033.72	39.02	78.745			
5,500.00	5,475.72	12,211.00	8,397.05	18.93	68.24	153.41	445.50	-31.06	2,973.65	2,934.36	39.29	75.692			
5,600.00	5,575.08	12,211.00	8,397.05	19.33	68.24	153.41	445.50	-31.06	2,874.61	2,835.09	39.52	72.738			
5,700.00	5,674.44	12,211.00	8,397.05	19.73	68.24	153.41	445.50	-31.06	2,775.64	2,735.87	39.76	69.805			
5,800.00	5,773.79	12,211.00	8,397.05	20.12	68.24	153.41	445.50	-31.06	2,676.74	2,636.73	40.02	66.893			
5,900.00	5,873.15	12,211.00	8,397.05	20.52	68.24	153.41	445.50	-31.06	2,577.93	2,537.65	40.28	64.002			
6,000.00	5,972.51	12,239.38	8,396.39	20.92	68.71	149.99	473.87	-30.92	2,478.87	2,438.15	40.72	60.879			
6,100.00	6,071.87	12,243.36	8,396.33	21.32	68.78	149.49	477.86	-30.90	2,380.15	2,339.12	41.03	58.013			
6,200.00	6,171.23	12,247.53	8,396.27	21.72	68.85	148.96	482.03	-30.89	2,281.53	2,240.17	41.35	55.170			
6,300.00	6,270.75	12,251.19	8,396.23	22.13	68.91	141.68	485.69	-30.87	2,182.79	2,141.11	41.69	52.362			
6,400.00	6,370.54	12,253.45	8,396.20	22.59	68.94	131.40	487.95	-30.86	2,083.75	2,041.74	42.01	49.601			
6,500.00	6,470.50	12,254.21	8,396.19	22.98	68.96	117.76	488.70	-30.86	1,984.48	1,942.17	42.32	46.896			
6,600.00	6,570.50	12,253.75	8,396.20	23.05	68.95	85.33	488.24	-30.86	1,885.13	1,842.52	42.61	44.240			
6,700.00	6,670.50	12,253.19	8,396.21	23.10	68.94	85.47	487.69	-30.86	1,785.85	1,742.93	42.92	41.607			
6,800.00	6,770.50	12,252.61	8,396.21	23.15	68.93	85.62	487.10	-30.86	1,686.64	1,643.39	43.25	38.996			
6,900.00	6,870.50	12,252.00	8,396.22	23.19	68.92	85.78	486.49	-30.87	1,587.54	1,543.93	43.61	36.405			
7,000.00	6,970.50	12,251.35	8,396.22	23.24	68.91	85.95	485.84	-30.87	1,488.56	1,444.56	43.99	33.835			
7,100.00	7,070.50	12,250.66	8,396.23	23.29	68.90	86.13	485.16	-30.87	1,389.72	1,345.30	44.42	31.286			
7,200.00	7,170.50	12,249.94	8,396.24	23.34	68.89	86.32	484.43	-30.87	1,291.06	1,246.16	44.89	28.758			
7,300.00	7,270.50	12,249.17	8,396.25	23.39	68.87	86.52	483.66	-30.88	1,192.62	1,147.19	45.43	26.251			
7,400.00	7,370.50	12,248.36	8,396.26	23.44	68.86	86.74	482.85	-30.88	1,094.46	1,048.41	46.05	23.764			
7,500.00	7,470.50	12,247.49	8,396.27	23.49	68.85	86.96	481.98	-30.89	996.67	949.88	46.79	21.300			
7,600.00	7,570.50	12,246.56	8,396.28	23.54	68.83	87.21	481.06	-30.89	899.37	851.68	47.69	18.859			
7,700.00	7,670.50	12,245.58	8,396.30	23.59	68.81	87.47	480.07	-30.89	802.72	753.91	48.81	16.445			
7,800.00	7,770.50	12,244.52	8,396.31	23.65	68.80	87.74	479.01	-30.90	707.01	656.73	50.28	14.063			
7,900.00	7,870.50	12,243.39	8,396.33	23.70	68.78	88.04	477.88	-30.90	612.66	560.41	52.25	11.726			
8,000.00	7,970.40	12,242.16	8,396.35	23.66	68.76	-2.75	476.65	-30.91	519.29	464.48	54.81	9.474			
8,100.00	8,068.49	12,240.82	8,396.37	23.58	68.73	-4.38	475.31	-30.92	422.89	365.69	57.20	7.393			
8,200.00	8,161.84	12,239.39	8,396.39	23.48	68.71	-13.27	473.88	-30.92	323.95	265.11	58.84	5.506			
8,300.00	8,247.60	12,237.92	8,396.42	23.40	68.69	-171.71	472.42	-30.93	224.12	165.44	58.68	3.819			
8,400.00	8,323.17	12,236.48	8,396.44	23.38	68.66	-177.62	470.97	-30.94	127.88	74.86	53.01	2.412			
8,500.00	8,386.25	12,235.13	8,396.47	23.47	68.64	-179.17	469.63	-30.94	65.92	6.29	59.62	1.106	Collision Avoidance Req.		
8,504.02	8,388.49	12,235.08	8,396.47	23.48	68.64	-179.22	469.57	-30.94	65.78	3.74	62.04	1.060	Collision Avoidance Req., CC, ES, SF		
8,600.00	8,434.92	12,233.95	8,396.49	23.73	68.62	179.77	468.45	-30.95	120.72	34.78	85.94	1.405	Collision Avoidance Req.		
8,700.00	8,467.72	12,233.02	8,396.51	24.20	68.61	177.69	467.51	-30.95	216.16	130.46	85.70	2.522			
8,800.00	8,483.63	12,232.39	8,396.52	24.88	68.59	5.84	466.88	-30.96	315.96	230.35	85.61	3.691			
8,900.00	8,486.62	12,232.01	8,396.53	25.76	68.59	3.66	466.50	-30.96	415.58	329.79	85.79	4.844			
9,000.00	8,488.89	12,231.64	8,396.53	26.81	68.58	4.27	466.14	-30.96	515.31	429.41	85.90	5.999			
9,100.00	8,491.15	12,231.28	8,396.54	28.01	68.58	4.88	465.77	-30.96	615.13	529.16	85.97	7.155			
9,200.00	8,493.42	12,230.91	8,396.55	29.34	68.57	5.49	465.41	-30.96	714.99	628.98	86.01	8.312			
9,300.00	8,495.69	12,230.55	8,396.56	30.79	68.56	6.10	465.04	-30.97	814.89	728.84	86.05	9.470			
9,400.00	8,497.96	12,230.19	8,396.56	32.34	68.56	6.71	464.68	-30.97	914.82	828.73	86.09	10.627			
9,500.00	8,500.23	12,229.82	8,396.57	33.98	68.55	7.31	464.32	-30.97	1,014.75	928.64	86.12	11.783			
9,600.00	8,502.49	12,229.46	8,396.58	35.70	68.55	7.91	463.96	-30.97	1,114.70	1,028.56	86.14	12.940			
9,700.00	8,504.76	12,229.10	8,396.59	37.49	68.54	8.51	463.60	-30.97	1,214.66	1,128.49	86.17	14.096			
9,800.00	8,507.03	12,228.74	8,396.59	39.33	68.53	9.11	463.24	-30.97	1,314.62	1,228.42	86.20	15.251			
9,900.00	8,509.30	12,228.38	8,396.60	41.23	68.53	9.70	462.88	-30.98	1,414.59	1,328.36	86.23	16.405			
10,000.00	8,511.56	12,228.02	8,396.61	43.16	68.52	10.29	462.52	-30.98	1,514.56	1,428.30	86.26	17.559			

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Offset-Longview Federal 12-4H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 122-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,100.00	8,513.83	12,227.66	8,396.62	45.13	68.52	10.88	462.16	-30.98	1,614.54	1,528.25	86.29	18.711	
10,200.00	8,516.10	12,227.30	8,396.63	47.14	68.51	11.46	461.80	-30.98	1,714.52	1,628.20	86.32	19.863	
10,300.00	8,518.37	12,226.95	8,396.63	49.17	68.50	12.04	461.44	-30.98	1,814.50	1,728.15	86.35	21.014	
10,400.00	8,520.64	12,226.59	8,396.64	51.23	68.50	12.62	461.08	-30.99	1,914.48	1,828.10	86.38	22.163	
10,500.00	8,522.90	12,226.23	8,396.65	53.31	68.49	13.20	460.73	-30.99	2,014.46	1,928.05	86.42	23.311	
10,600.00	8,525.17	12,225.88	8,396.66	55.40	68.49	13.77	460.37	-30.99	2,114.45	2,028.00	86.45	24.458	
10,700.00	8,527.44	12,225.52	8,396.67	57.52	68.48	14.34	460.02	-30.99	2,214.44	2,127.95	86.49	25.604	
10,800.00	8,529.71	12,225.17	8,396.67	59.65	68.47	14.91	459.66	-30.99	2,314.42	2,227.90	86.53	26.748	
10,900.00	8,531.98	12,224.81	8,396.68	61.79	68.47	15.47	459.31	-30.99	2,414.41	2,327.85	86.57	27.891	
11,000.00	8,534.24	12,224.46	8,396.69	63.94	68.46	16.03	458.95	-31.00	2,514.40	2,427.80	86.61	29.032	
11,100.00	8,536.51	12,224.10	8,396.70	66.11	68.46	16.58	458.60	-31.00	2,614.39	2,527.74	86.65	30.172	
11,200.00	8,538.78	12,223.75	8,396.71	68.29	68.45	17.13	458.25	-31.00	2,714.38	2,627.69	86.69	31.310	
11,300.00	8,541.05	12,223.40	8,396.72	70.47	68.45	17.68	457.90	-31.00	2,814.38	2,727.64	86.74	32.447	
11,400.00	8,543.32	12,223.05	8,396.72	72.66	68.44	18.22	457.55	-31.00	2,914.37	2,827.58	86.79	33.581	
11,500.00	8,545.58	12,222.70	8,396.73	74.86	68.43	18.76	457.19	-31.00	3,014.36	2,927.53	86.83	34.714	
11,600.00	8,547.85	12,222.35	8,396.74	77.07	68.43	19.29	456.84	-31.01	3,114.35	3,027.47	86.88	35.845	
11,700.00	8,550.12	12,222.00	8,396.75	79.28	68.42	19.83	456.49	-31.01	3,214.35	3,127.41	86.93	36.974	
11,800.00	8,552.39	12,221.65	8,396.76	81.50	68.42	20.35	456.15	-31.01	3,314.34	3,227.35	86.99	38.101	
11,900.00	8,554.66	12,221.30	8,396.77	83.72	68.41	20.88	455.80	-31.01	3,414.34	3,327.29	87.04	39.227	
12,000.00	8,556.92	12,220.95	8,396.78	85.95	68.41	21.39	455.45	-31.01	3,514.33	3,427.23	87.10	40.350	
12,100.00	8,559.19	12,220.60	8,396.78	88.18	68.40	21.91	455.10	-31.02	3,614.33	3,527.17	87.15	41.471	
12,200.00	8,561.46	12,220.26	8,396.79	90.42	68.39	22.42	454.75	-31.02	3,714.32	3,627.11	87.21	42.589	
12,300.00	8,563.73	12,219.91	8,396.80	92.66	68.39	22.93	454.41	-31.02	3,814.32	3,727.04	87.27	43.706	
12,400.00	8,565.99	12,219.56	8,396.81	94.90	68.38	23.43	454.06	-31.02	3,914.31	3,826.98	87.33	44.820	
12,500.00	8,568.26	12,219.22	8,396.82	97.15	68.38	23.93	453.72	-31.02	4,014.31	3,926.91	87.40	45.933	
12,600.00	8,570.53	12,218.87	8,396.83	99.40	68.37	24.42	453.37	-31.02	4,114.30	4,026.84	87.46	47.042	
12,700.00	8,572.80	12,218.53	8,396.84	101.65	68.36	24.91	453.03	-31.03	4,214.30	4,126.77	87.52	48.150	
12,800.00	8,575.07	12,218.19	8,396.85	103.91	68.36	25.39	452.68	-31.03	4,314.30	4,226.70	87.59	49.255	
12,900.00	8,577.33	12,217.84	8,396.86	106.17	68.35	25.87	452.34	-31.03	4,414.29	4,326.63	87.66	50.357	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 08-T23S-R29E - Road Lizard 5 Fed Com 002H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-GYRO-NS, 2922-MWD												Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,400.00	8,565.99	8,408.50	8,392.53	94.90	20.29	-43.76	600.20	8,306.18	4,429.12	4,390.87	38.24	115.809	
12,500.00	8,568.26	8,410.52	8,394.22	97.15	20.29	-43.84	599.11	8,306.26	4,329.33	4,291.02	38.31	113.002	
12,600.00	8,570.53	8,412.61	8,395.97	99.40	20.29	-43.91	597.96	8,306.35	4,229.55	4,191.17	38.38	110.195	
12,700.00	8,572.80	8,425.00	8,406.21	101.65	20.30	-44.36	591.02	8,306.91	4,129.82	4,091.34	38.48	107.323	
12,800.00	8,575.07	8,425.00	8,406.21	103.91	20.30	-44.36	591.02	8,306.91	4,030.04	3,991.49	38.55	104.536	
12,900.00	8,577.33	8,425.00	8,406.21	106.17	20.30	-44.36	591.02	8,306.91	3,930.27	3,891.64	38.63	101.748	
13,000.00	8,579.60	8,425.00	8,406.21	108.43	20.30	-44.36	591.02	8,306.91	3,830.51	3,791.80	38.71	98.958	
13,100.00	8,581.87	8,425.00	8,406.21	110.69	20.30	-44.36	591.02	8,306.91	3,730.77	3,691.97	38.80	96.166	
13,200.00	8,584.14	8,558.61	8,506.69	112.95	20.50	-47.51	503.45	8,311.39	3,631.03	3,591.71	39.32	92.352	
13,300.00	8,586.41	8,562.29	8,509.18	115.22	20.51	-47.50	500.73	8,311.45	3,531.10	3,491.69	39.40	89.615	
13,400.00	8,588.67	8,565.98	8,511.64	117.49	20.52	-47.48	497.98	8,311.52	3,431.17	3,391.68	39.49	86.886	
13,500.00	8,590.94	8,569.68	8,514.09	119.76	20.53	-47.45	495.21	8,311.58	3,331.24	3,291.66	39.58	84.166	
13,600.00	8,593.21	8,573.38	8,516.52	122.03	20.54	-47.41	492.42	8,311.64	3,231.31	3,191.64	39.67	81.455	
13,700.00	8,595.48	8,577.09	8,518.93	124.30	20.55	-47.35	489.61	8,311.71	3,131.39	3,091.62	39.76	78.754	
13,800.00	8,597.75	8,580.79	8,521.33	126.57	20.56	-47.27	486.78	8,311.77	3,031.46	2,991.60	39.85	76.062	
13,900.00	8,600.01	8,582.00	8,522.10	128.85	20.57	-47.24	485.85	8,311.79	2,931.53	2,891.60	39.94	73.406	
14,000.00	8,602.28	8,582.00	8,522.10	131.13	20.57	-47.24	485.85	8,311.79	2,831.61	2,791.60	40.01	70.768	
14,100.00	8,604.55	8,582.00	8,522.10	133.40	20.57	-47.24	485.85	8,311.79	2,731.70	2,691.60	40.09	68.135	
14,200.00	8,606.82	8,590.04	8,527.19	135.68	20.59	-46.98	479.64	8,311.94	2,631.77	2,591.55	40.21	65.443	
14,300.00	8,609.09	8,592.39	8,528.66	137.96	20.60	-46.88	477.80	8,311.99	2,531.85	2,491.54	40.31	62.812	
14,400.00	8,611.35	8,594.82	8,530.17	140.24	20.61	-46.77	475.90	8,312.04	2,431.94	2,391.53	40.40	60.189	
14,500.00	8,613.62	8,597.33	8,531.72	142.53	20.61	-46.64	473.93	8,312.09	2,332.02	2,291.52	40.50	57.577	
14,600.00	8,615.89	8,599.92	8,533.32	144.81	20.62	-46.49	471.88	8,312.15	2,232.12	2,191.51	40.60	54.975	
14,700.00	8,618.16	8,602.60	8,534.95	147.09	20.63	-46.32	469.76	8,312.21	2,132.21	2,091.51	40.70	52.382	
14,800.00	8,620.42	8,605.37	8,536.63	149.38	20.64	-46.12	467.55	8,312.28	2,032.31	1,991.50	40.81	49.801	
14,900.00	8,622.69	8,613.00	8,541.18	151.66	20.66	-45.47	461.44	8,312.48	1,932.42	1,891.49	40.93	47.215	
15,000.00	8,624.96	8,613.00	8,541.18	153.95	20.66	-45.47	461.44	8,312.48	1,832.52	1,791.49	41.03	44.667	
15,100.00	8,627.23	8,613.00	8,541.18	156.24	20.66	-45.47	461.44	8,312.48	1,732.63	1,691.50	41.13	42.125	
15,200.00	8,629.50	8,613.00	8,541.18	158.53	20.66	-45.47	461.44	8,312.48	1,632.75	1,591.51	41.25	39.585	
15,300.00	8,631.76	8,620.26	8,545.42	160.81	20.69	-44.64	455.55	8,312.68	1,532.87	1,491.51	41.36	37.062	
15,400.00	8,634.03	8,623.49	8,547.29	163.10	20.70	-44.19	452.91	8,312.78	1,432.99	1,391.52	41.48	34.550	
15,500.00	8,636.30	8,626.87	8,549.22	165.39	20.71	-43.66	450.13	8,312.88	1,333.13	1,291.54	41.59	32.052	
15,600.00	8,638.57	8,630.42	8,551.22	167.68	20.72	-43.03	447.21	8,313.00	1,233.27	1,191.56	41.71	29.567	
15,700.00	8,640.84	8,634.13	8,553.29	169.97	20.74	-42.26	444.14	8,313.12	1,133.42	1,091.59	41.83	27.096	
15,800.00	8,643.10	8,638.02	8,555.44	172.27	20.75	-41.34	440.89	8,313.26	1,033.58	991.63	41.95	24.641	
15,900.00	8,645.37	8,644.00	8,558.69	174.56	20.77	-39.60	435.88	8,313.48	933.75	891.72	42.03	22.214	
16,000.00	8,647.64	8,644.00	8,558.69	176.85	20.77	-39.60	435.88	8,313.48	833.93	791.72	42.22	19.754	
16,100.00	8,649.91	8,651.03	8,562.43	179.14	20.80	-36.90	429.94	8,313.76	734.12	691.86	42.26	17.371	
16,200.00	8,652.18	8,655.84	8,564.94	181.44	20.82	-34.50	425.83	8,313.96	634.34	592.00	42.34	14.982	
16,300.00	8,654.44	8,660.90	8,567.52	183.73	20.84	-31.29	421.50	8,314.18	534.57	492.19	42.38	12.612	
16,400.00	8,656.71	8,666.21	8,570.19	186.03	20.86	-26.91	416.90	8,314.42	434.84	392.46	42.38	10.261	
16,500.00	8,658.98	8,671.81	8,572.94	188.32	20.88	-20.72	412.03	8,314.68	335.17	292.87	42.30	7.924	
16,600.00	8,661.25	8,677.88	8,575.85	190.62	20.91	-11.46	406.71	8,314.97	235.61	193.49	42.12	5.593	
16,700.00	8,663.52	8,684.42	8,578.92	192.91	20.94	2.44	400.95	8,315.29	136.39	93.85	42.54	3.206	
16,800.00	8,665.78	8,690.85	8,581.88	195.21	20.97	20.11	395.24	8,315.60	40.08	-24.38	64.46	0.622 No-Go Zone - Stop Drilling	
16,835.34	8,666.58	8,693.10	8,582.89	196.02	20.98	26.82	393.24	8,315.71	19.04	-98.59	117.63	0.162 No-Go Zone - Stop Drilling, CC, ES, SF	
16,900.00	8,668.05	8,697.18	8,584.72	197.50	20.99	38.87	389.61	8,315.91	67.28	2.52	64.76	1.039 Collision Avoidance Req.	
17,000.00	8,670.32	8,703.39	8,587.46	199.80	21.02	55.05	384.03	8,316.20	165.42	113.62	51.80	3.194	
17,100.00	8,672.59	8,709.34	8,590.03	202.10	21.05	66.88	378.68	8,316.48	264.81	215.78	49.03	5.401	
17,200.00	8,674.85	8,714.74	8,592.32	204.40	21.08	74.83	373.79	8,316.73	364.43	316.55	47.89	7.610	
17,300.00	8,677.12	8,719.79	8,594.42	206.69	21.10	80.43	369.21	8,316.95	464.15	416.84	47.32	9.810	
17,400.00	8,679.39	8,724.52	8,596.36	208.99	21.12	84.48	364.90	8,317.15	563.92	516.92	47.00	11.999	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 08-T23S-R29E - Road Lizard 5 Fed Com 002H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 100-GYRO-NS, 2922-MWD							Rule Assigned:						Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Minimum	Separation	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)	Separation (usft)	Factor	
17,500.00	8,681.66	8,728.96	8,598.16	211.29	21.15	87.52	360.84	8,317.32	663.71	616.90	46.81	14.177	
17,600.00	8,683.93	8,733.14	8,599.82	213.59	21.17	89.85	357.01	8,317.48	763.53	716.82	46.71	16.345	
17,700.00	8,686.19	8,739.00	8,602.12	215.89	21.19	92.48	351.62	8,317.70	863.37	816.56	46.81	18.443	
17,800.00	8,688.46	8,741.22	8,602.98	218.19	21.21	93.32	349.57	8,317.77	963.22	916.53	46.68	20.633	
17,900.00	8,690.73	8,745.72	8,604.69	220.49	21.23	94.80	345.42	8,317.93	1,063.07	1,016.32	46.75	22.737	
18,000.00	8,693.00	8,750.13	8,606.35	222.79	21.25	96.03	341.34	8,318.09	1,162.93	1,116.09	46.84	24.827	
18,100.00	8,695.27	8,754.45	8,607.95	225.08	21.28	97.06	337.32	8,318.23	1,262.80	1,215.86	46.94	26.902	
18,200.00	8,697.53	8,758.70	8,609.50	227.39	21.30	97.93	333.37	8,318.38	1,362.67	1,315.62	47.05	28.964	
18,300.00	8,699.80	8,762.86	8,610.99	229.69	21.32	98.66	329.49	8,318.52	1,462.54	1,415.38	47.16	31.011	
18,400.00	8,702.07	8,766.94	8,612.44	231.99	21.35	99.29	325.67	8,318.65	1,562.42	1,515.13	47.28	33.045	
18,500.00	8,704.34	8,770.00	8,613.50	234.29	21.36	99.71	322.81	8,318.75	1,662.30	1,614.93	47.37	35.094	
18,600.00	8,706.61	8,774.54	8,615.07	236.59	21.39	100.27	318.55	8,318.90	1,762.18	1,714.66	47.52	37.081	
18,700.00	8,708.87	8,778.11	8,616.27	238.89	21.41	100.65	315.19	8,319.01	1,862.06	1,814.42	47.64	39.082	
18,800.00	8,711.14	8,781.59	8,617.43	241.19	21.43	100.98	311.92	8,319.12	1,961.95	1,914.18	47.77	41.071	
18,900.00	8,713.41	8,784.98	8,618.55	243.49	21.45	101.27	308.72	8,319.23	2,061.85	2,013.95	47.90	43.047	
19,000.00	8,715.68	8,788.29	8,619.62	245.79	21.47	101.53	305.59	8,319.33	2,161.74	2,113.72	48.03	45.011	
19,100.00	8,717.95	8,791.52	8,620.66	247.40	21.49	101.76	302.53	8,319.42	2,261.64	2,206.98	54.66	41.376	
19,102.43	8,718.00	8,791.60	8,620.68	247.44	21.49	101.76	302.45	8,319.43	2,264.07	2,209.24	54.82	41.297	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB 27' + GL 3064.7' @ 3091.70usft

Offset Depths are relative to Offset Datum

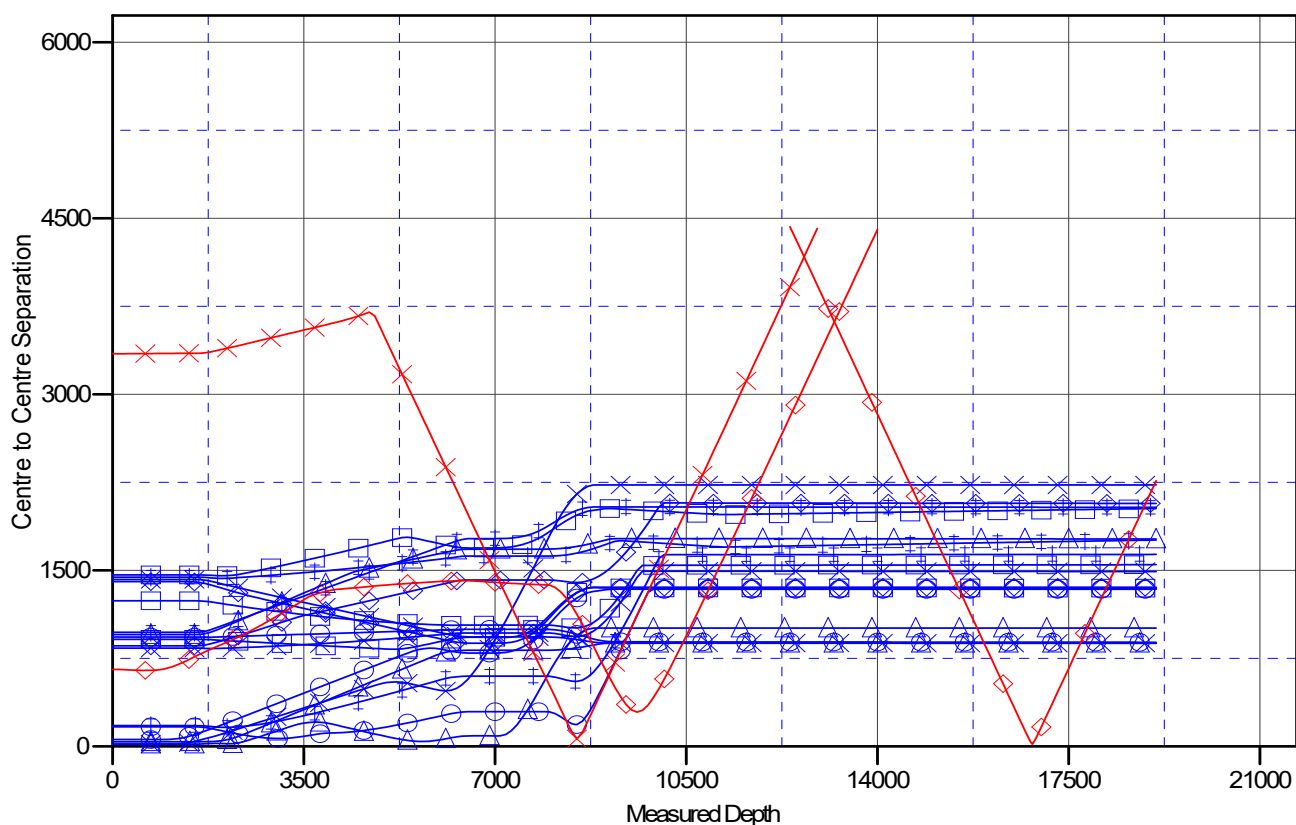
Central Meridian is -104.33333334

Coordinates are relative to: RANA-SALADA-FED-COM-0605-235H

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

Grid Convergence at Surface is: 0.16°

Ladder Plot



LEGEND

RANA-SALADA-FED-COM-0604-123H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-225H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-112H, Wellbore #1, PLAN 1 V0
RANA-SALADA-FED-COM-0605-122H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-131H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-145H, Wellbore #1, PLAN 1 V0
RANA-SALADA-FED-COM-0605-221H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0604-113HC, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-112HA, Wellbore #1, PLAN 1 V0
RANA-SALADA-FED-COM-0605-122HA, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-215H, Wellbore #1, PLAN 1 V0	Road Lizard 5 Fed Com 002H, Wellbore #1, Wellbore #1 V0
RANA-SALADA-FED-COM-0604-116H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0604-223H, Wellbore #1, PLAN 1 V0	Offset-Longview Deep Federal 6-22, Wellbore #1, Wellbore #1 V0
RANA-SALADA-FED-COM-0604-123HC, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-135H, Wellbore #1, PLAN 1 V0	Offset-Longview Federal 12-4H, Wellbore #1, Wellbore #1 V0
RANA-SALADA-FED-COM-0604-125HC, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-132H, Wellbore #1, PLAN 1 V0	

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



Anticollision Report

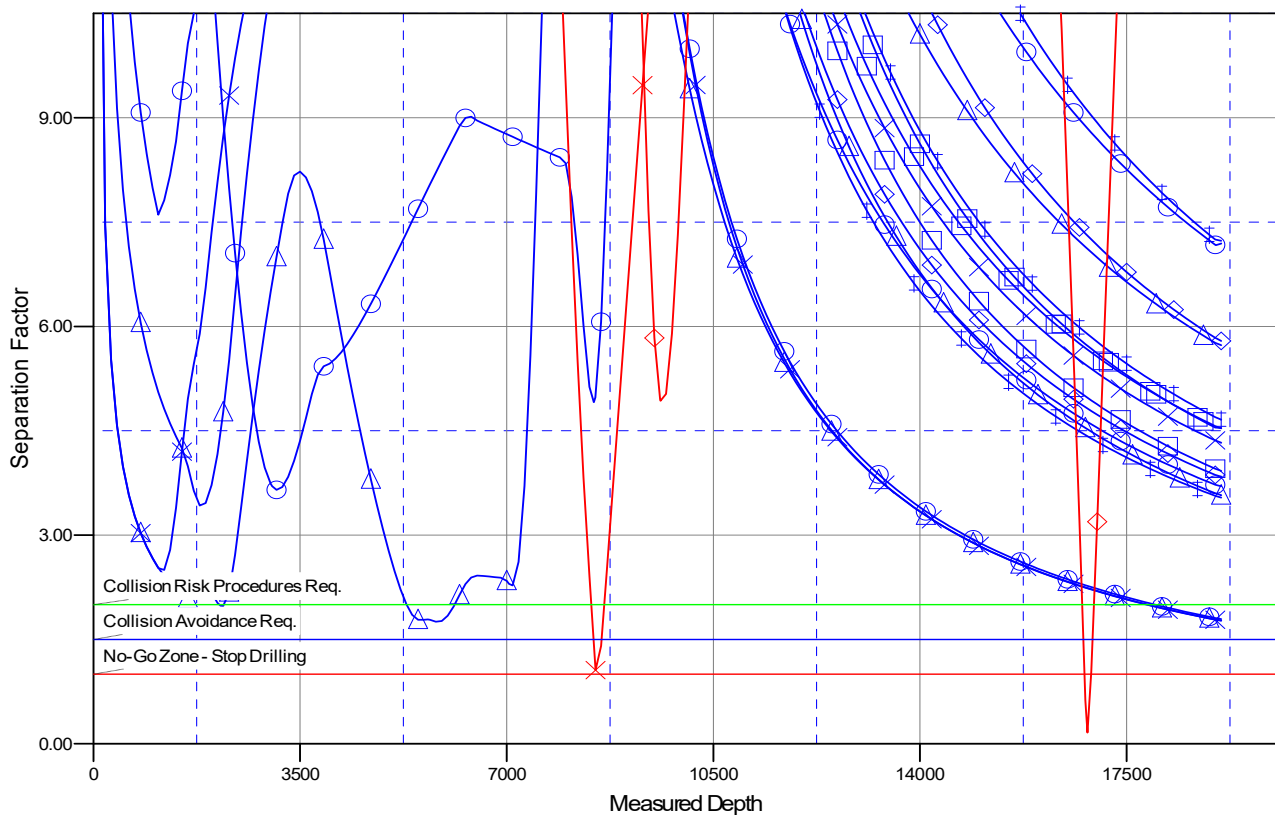


Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-COM-0605-235H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Reference Site:	SEC 01-23S-28E	MD Reference:	RKB 27' + GL 3064.7' @ 3091.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-COM-0605-235H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	1 - EDM Production
Reference Design:	PLAN 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB 27' + GL 3064.7' @ 3091.70usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.33333334

Coordinates are relative to: RANA-SALADA-FED-COM-0605-235H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.16°

Separation Factor Plot



LEGEND

RANA-SALADA-FED-COM-0604-123H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-225H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-112H, Wellbore #1, PLAN 1 V0
RANA-SALADA-FED-COM-0605-122H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-131H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-149H, Wellbore #1, PLAN 1 V0
RANA-SALADA-FED-COM-0605-221H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0604-113HC, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-112HA, Wellbore #1, PLAN 1 V0
RANA-SALADA-FED-COM-0605-122HA, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-219H, Wellbore #1, PLAN 1 V0	Road Lizard 5 F ed Com 002H, Wellbore #1, Wellbore #1 V0
RANA-SALADA-FED-COM-0604-116H, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0604-223H, Wellbore #1, PLAN 1 V0	Offset Longview Deep Federal 622, Wellbore #1, Wellbore #1 V0
RANA-SALADA-FED-COM-0604-123HC, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-139H, Wellbore #1, PLAN 1 V0	Offset Longview Federal 12-4H, Wellbore #1, Wellbore #1 V0
RANA-SALADA-FED-COM-0604-125HC, Wellbore #1, PLAN 1 V0	RANA-SALADA-FED-COM-0605-132H, Wellbore #1, PLAN 1 V0	

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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	NOVO Oil and Gas Northern Delaware LLC
WELL NAME & NO.:	Rana Salada Fed Com 0605 235H
LOCATION:	Sec 1-23S-28E-NMP
COUNTY:	Eddy County, New Mexico

*Changes approved through engineering via **Sundry 2715240** on 04/03/2023. Any previous COAs not addressed within the updated COAs still apply.*

COA

H2S	☐ Yes	☒ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Wellhead Variance	☐ Diverter		
Other	☐ 4 String	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☐ Contingency Cement Squeeze	☐ EchoMeter	☐ Primary Cement Squeeze
Special Requirements	☐ Water Disposal	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 291 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. **Set depth adjusted per BLM geologist.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall

be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.

- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 2.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any

test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

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

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

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 30-015-48246	² Pool Code 15011	³ Pool Name Culebra Bluff; Bone Spring, South
⁴ Property Code	⁵ Property Name RANA SALADA FED COM 0605	⁶ Well Number 235H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3064.7

¹⁰ Surface Location

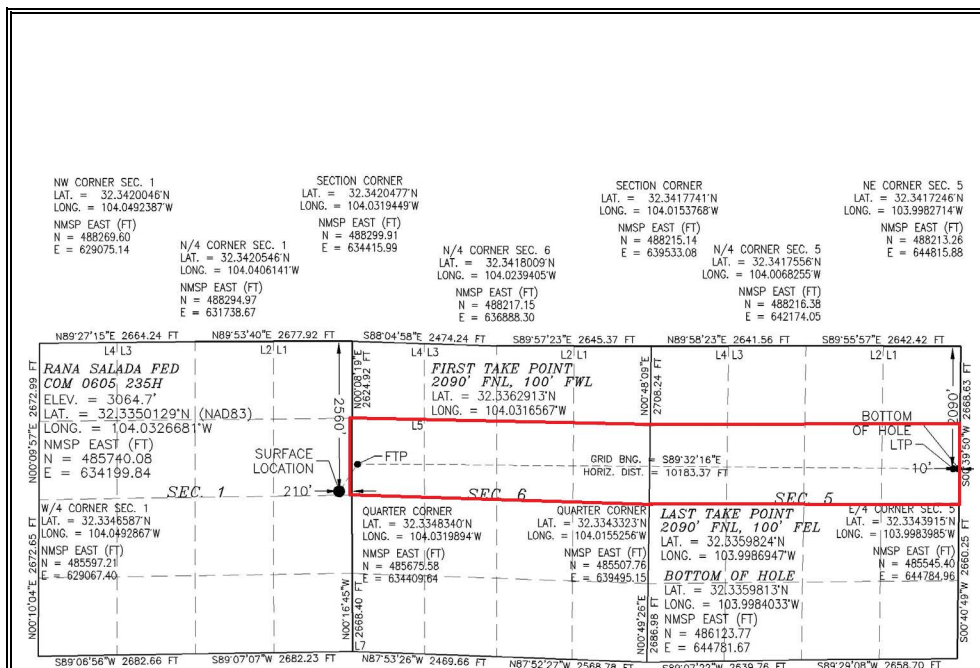
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	1	23 S	28 E		2560	NORTH	210	EAST	EDDY

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
H	5	23 S	29 E		2090	NORTH	10	EAST	EDDY

¹² Dedicated Acres 316.52	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Justin Carter 1.30.2023
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.

OCTOBER 30, 2022

Date of Survey

Imon F. Jaramillo
Signature and Seal of Professional Surveyor
Certificate Number: 12797
NO. 9570

Intent ☐ As Drilled ☒

API # 30-015-48246		
Operator Name: NOVO OIL & GAS NORTHERN DELAWARE, LLC	Property Name: RANA SALADA FED COM 0605	Well Number 235H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	6	23S	29E	5	2090	NORTH	100	WEST	EDDY
Latitude 32.3362913					Longitude 104.0316567				NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
H	5	23S	29E		2090	NORTH	100	EAST	EDDY
Latitude 32.3359824					Longitude 103.9986947				NAD 83

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

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

API # 30-015-46085		
Operator Name: Novo Oil & Gas Northern Delaware, LLC	Property Name: Rana Salada Fed Com 0605	Well Number 231H

KZ 06/29/2018

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

CONDITIONS

Action 237914

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 237914
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Original COA's still apply.	10/25/2023