

Well Name: RANA SALADA FED 01	Well Location: T23S / R28E / SEC 1 / LOT 4 /	County or Parish/State:
Well Number: 131H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM91078	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001548582	Well Status: Approved Application for Permit to Drill	Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Notice of Intent

Sundry ID: 2718235

Type of Submission: Notice of Intent Type of Action: APD Change

Date Sundry Submitted: 02/28/2023 Time Sundry Submitted: 01:07

Date proposed operation will begin: 03/20/2023

Procedure Description: Novo Oil & Gas Northern Delaware, LLC respectfully request to make the following APD changes: Change SHL from 144' FNL & 393' FWL to 144' FNL & 527' FWL, Section 1, T-23-S, R-28-E. Change BHL from 726' FNL & 10' FEL, Section 1 to 2,510' FNL & 990' FWL, Section 12, T-23-S, R-28-E. Change Pool Name and Code from #15011 Culebra Bluff; Bone Spring, South to #98220 Purple Sage, Wolfcamp (Gas) Pool. Change Drilling Direction from West to East to North to South direction. Casing/Cement/Mud Program changes attached.

NOI Attachments

Procedure Description

Change_of_Plans_Rana_Salada_Fed_01_131H_20230228130717.pdf

Well Name: RANA SALADA FED 01	Well Location: T23S / R28E / SEC 1 / LOT 4 /	County or Parish/State:
Well Number: 131H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM91078	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001548582	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_2718235_Rana_Salada_Fed_01_131H_Eddy_NMNM91078_NOVO_COAs_20230428134432.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 28, 2023 01:07 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: 04/28/2023

Signature: Chris Walls

Rana Salada Fed 01 131H

CHANGE TO PLANS

Move Surface Hole Location

From: 144' FNL & 393' FWL, Section 1, T-23-S, R-28-E

To: 144' FNL & 527' FWL, Section 1, T-23-S, R-28-E

Move Bottom Hole Location

From: 726' FNL & 10' FEL, Section 1, T-23-S, R-28-E

To: 2,510' FNL & 990' FWL, Section 12, T-23-S, R-28-E

Target Formation Change

From: Third Bone Spring

To: Wolfcamp A

Pool Name and Code Change

From: Culebra Bluff; Bone Spring, South
#15011

To: Purple Sage; Wolfcamp (Gas) Pool
#98220

Drilling Direction Change

From: West to East

To: North to South

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.

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

Lead: 623 Sacks; 2,229 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: 721 Sacks; 1,528 cu. ft.; 20% excess. 2.12 cu.ft./sx; 12 ppg; Class H + Fluid Loss + Retarder + LCM; 1,200 psi 24-hour compressive strength.

Tail: 1,610 Sacks; 2,560 cu. ft.; 20% excess. 13.2 cu.ft./sx; 13.2 ppg; Class H + Fluid Loss + Retarder + LCM; 1,200 psi 14-hour compressive strength.

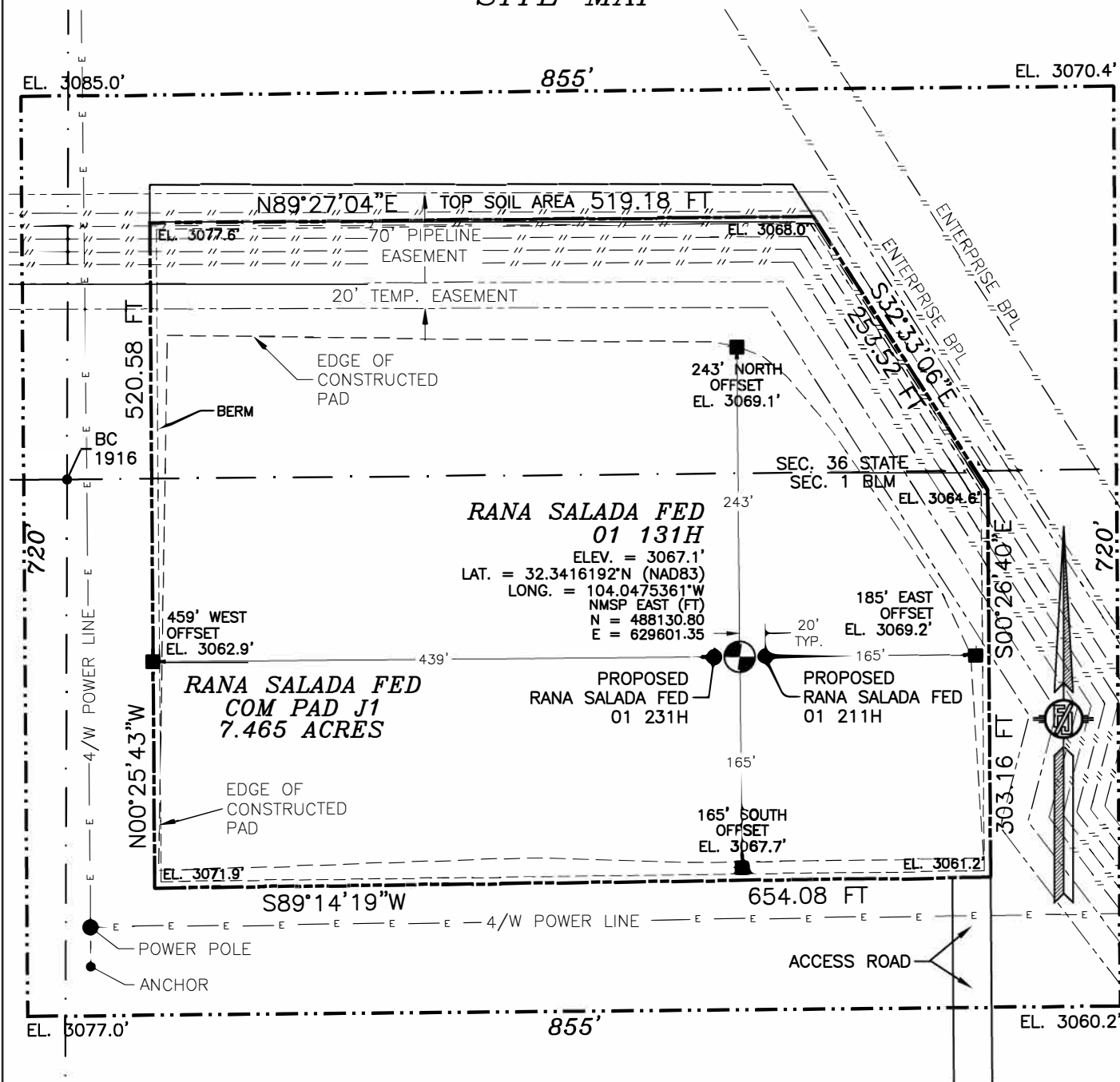
Drilling Fluid Program Changes

Water base spud mud: 0 – 390'; 8.30 ppg

Brine: 390' – 9,410'; 8.8-9.6 ppg

Oil Based mud: 9,410' – 17,887'; 11-12.5 ppg

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



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM ST. HWY. 31 AND CR. 605 (REFINERY ROAD) GO NORTHWEST ON REFINERY ROAD 1.6 MILES, TURN RIGHT ON CALICHE LEASE ROAD AND GO NORTH 815'. BEND RIGHT AND GO EAST-NORTHEAST 365' TO A ROAD SURVEY AND FOLLOW PLASS NORTH 222' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILMON F. JARAMILA, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFICATE NO. 1, DEPOSED AND RESIGNED FOR THIS SURVEY. I HAVE NOT BEEN RECALLED TO THE BEST OF MY KNOWLEDGE AND BELIEF. I HAVE OBSERVED AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILMON F. JARAMILA 0002 0797

MADRON PROFESSIONAL SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

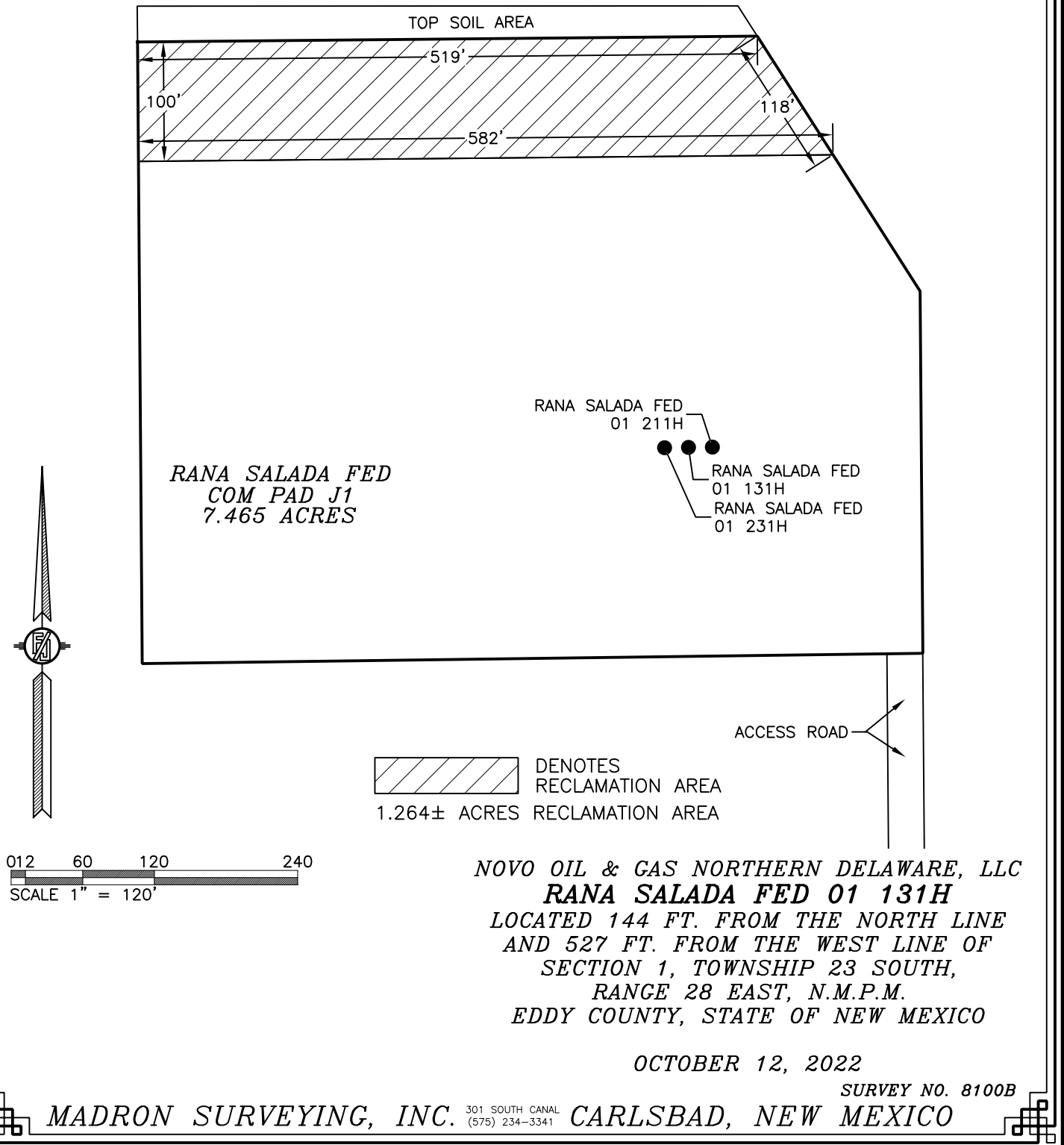
NOVO OIL & GAS NORTHERN DELAWARE, LLC
RANA SALADA FED 01 131H
LOCATED 144 FT. FROM THE NORTH LINE
AND 527 FT. FROM THE WEST LINE OF
SECTION 1, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

OCTOBER 12, 2022

SURVEY NO. 8100B

CARLSBAD, NEW MEXICO

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

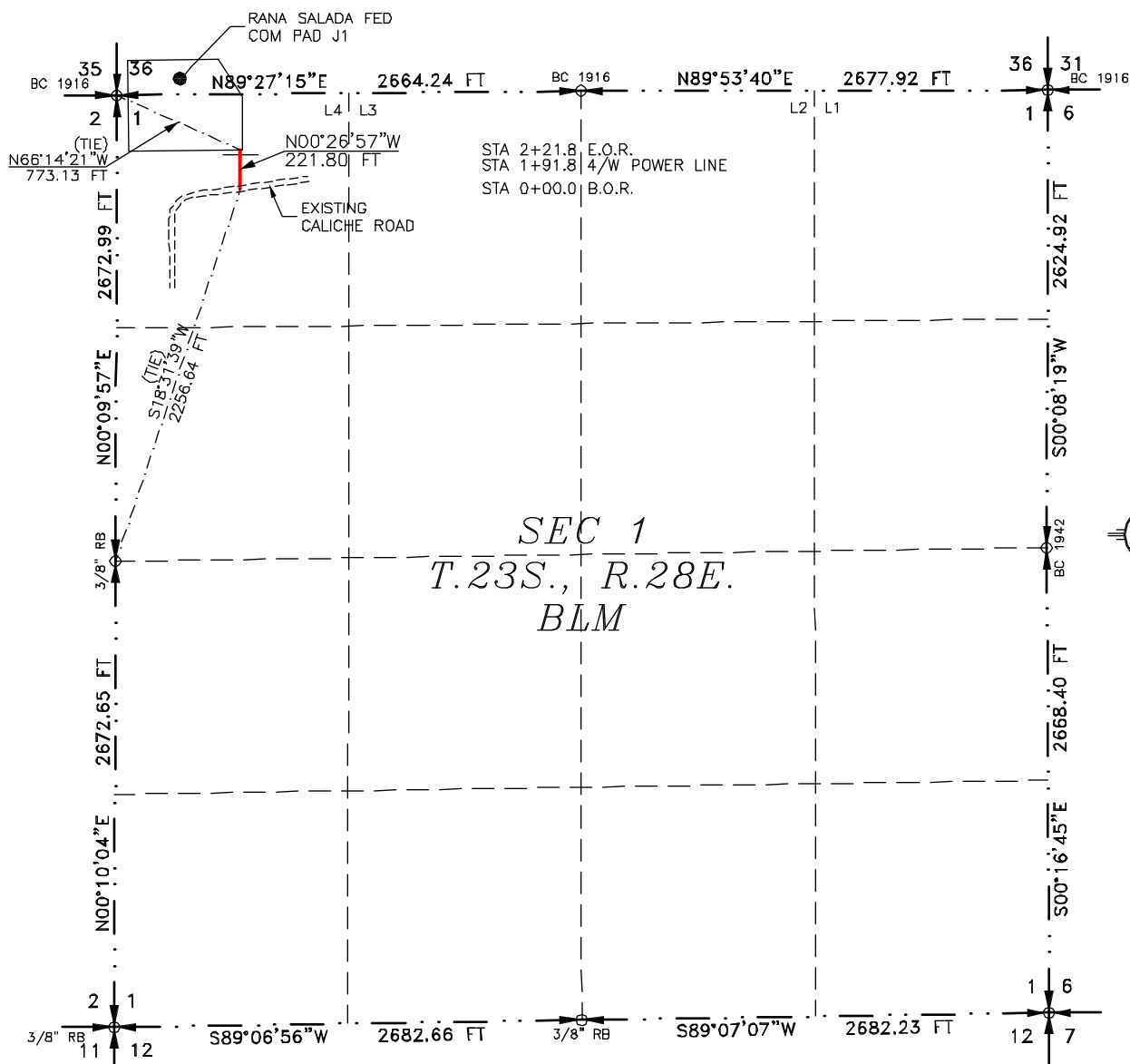




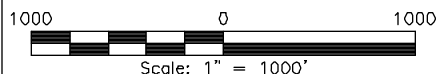
ACCESS ROAD PLAT

ACCESS ROAD FOR RANA SALADA FED COM PAD J1
(RANA SALADA FED 01 231H, 131H, & 211H)

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 12, 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) 234-1000

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 12TH DAY OF APRIL 2020

FILMON F. JARAMILLO, PLS. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-1000

SURVEY NO. 8100B

ACCESS ROAD PLAT

ACCESS ROAD FOR RANA SALADA FED COM PAD J1
(RANA SALADA FED 01 231H, 131H, & 211H)

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 12, 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 LOT 4 OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS S18°31'39"W, A DISTANCE OF 2256.64 FEET;
THENCE N00°26'57"W A DISTANCE OF 221.80 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. BEARS N66°14'21"W, A DISTANCE OF 773.13 FEET;

SAID STRIP OF LAND BEING 221.80 FEET OR 13.44 RODS IN LENGTH, CONTAINING 0.153 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

LOT 4 221.80 L.F. 13.44 RODS 0.153 ACRES

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 21ST DAY OF APRIL 2120

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

SURVEY NO. 8100B

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) 234-3341

NOVO OIL & GAS NORTHERN DELAWARE, LLC
Rana Salada Fed 01 131H
 SHL: 144' FNL & 527' FWL' of Section 01-23S-28E
 BHL: 2,510' FNL & 990' FWL Section 12-23S-28E
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	7,540	7,620	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	9,710	9,830	Hydrocarbons
Wolfcamp A	9,900	10,030	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	9,260	9,380	
KOP	9,360	9,490	
TD	9,960	17,887	

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 2037.2 psi) high for 30 minutes

NOVO OIL & GAS NORTHERN DELAWARE, LLC
Rana Salada Fed 01 131H
 SHL: 144' FNL & 527' FWL' of Section 01-23S-28E
 BHL: 2,510' FNL & 990' FWL Section 12-23S-28E
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	9,410	0	9,260	P-110 HP	32	Talon HTQ	1.125	1.125	1.6
Production	7 7/8	5 1/2	API	No	0	17,887	0	9,960	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	9,410	0	9,260	P-110 HP	32	TLW	1.125	1.125	1.6
Production	7 7/8	5 1/2	API	No	0	17,887	0	9,960	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	623	3.58	2229.0	10	100%	C or H	Fluid Loss, Retarder, LCM, Possibly beads
	Tail	8260	130	1.39	180.7	13.8	50%	C or H	Fluid Loss, Retarder, LCM
Production	Lead	0	721	2.12	1528.3	12	20%	H	Fluid Loss, Retarder, LCM
	Tail	7260	1610	1.59	2560.4	13.2	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	9260	Brine Diesel Emulsion	8.8-9.6	35-45	NC
Production	9260	17887	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

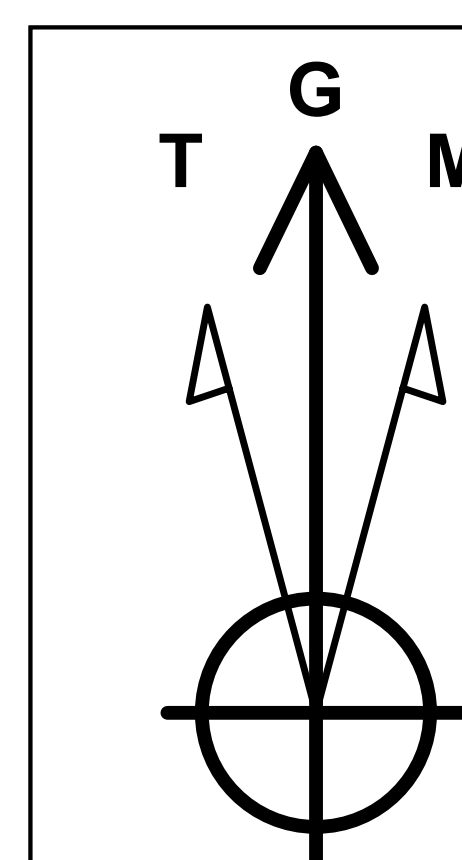
Anticipated spud date is upon approval. It is expected it will take ≈3 months to drill and complete the well.

WELL DETAILS: RANA-SALADA-FED-01-131H Plan 1

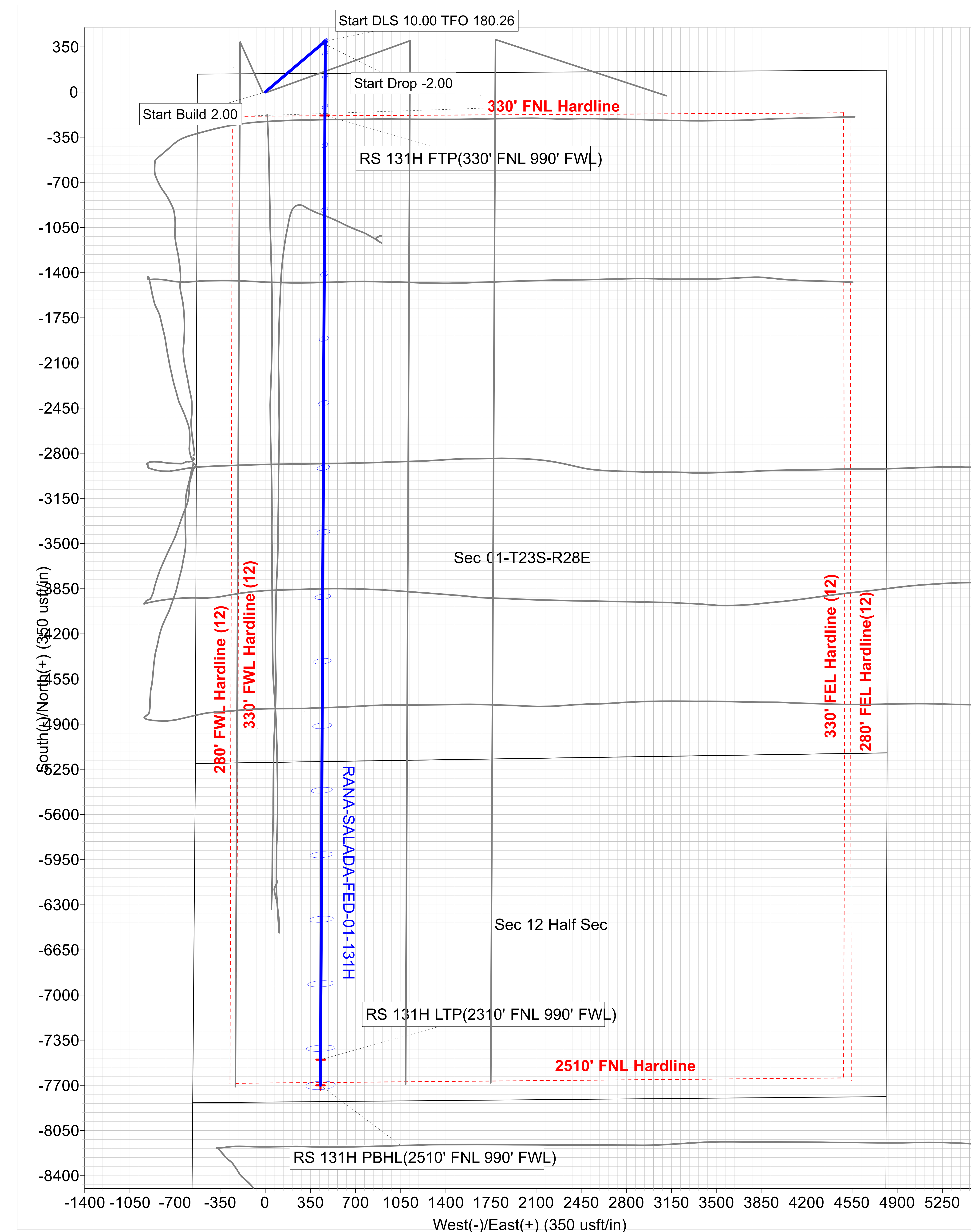
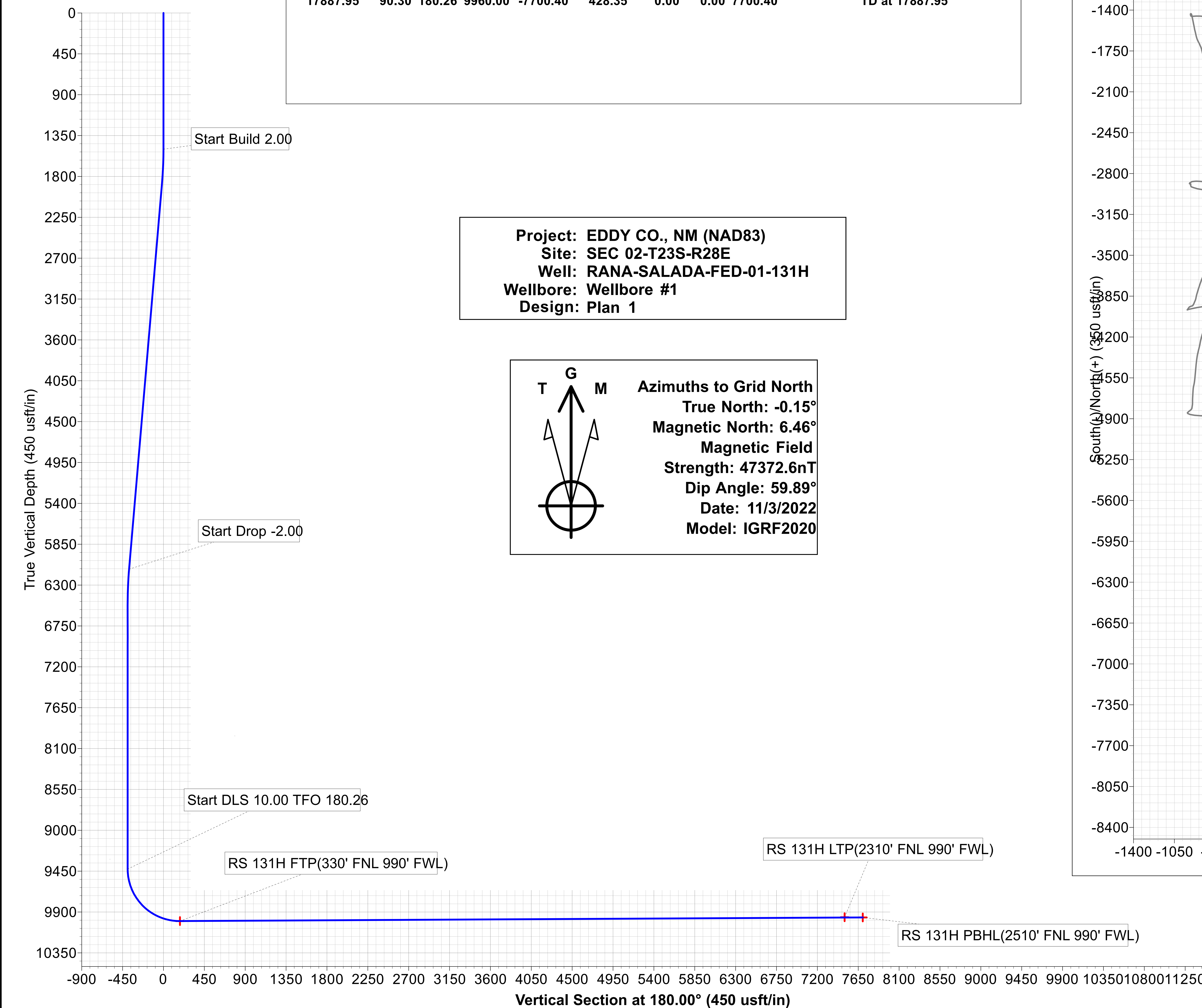
GL Elev (ft).: 3067.10
+N/-S 0.00 +E/-W 0.00 Northing 488130.80 Easting 629601.35 Latitude 32.34161917 Longitude -104.04753605

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1875.70	7.51	49.72	1874.63	15.90	18.77	2.00	49.72	-15.90	Start 4287.56 hold at 1875.70 MD
6163.27	7.51	49.72	6125.37	378.40	446.51	0.00	0.00	-378.40	Start Drop -2.00
6538.97	0.00	0.00	6500.00	394.30	465.28	2.00	180.00	-394.30	Start 2927.05 hold at 6538.97 MD
9466.02	0.00	0.00	9427.05	394.30	465.28	0.00	0.00	-394.30	Start DLS 10.00 TFO 180.26
10369.07	90.30	180.26	10000.00	-181.70	462.65	10.00	180.26	181.70	Start 7518.88 hold at 10369.07 MD
17887.95	90.30	180.26	9960.00	-7700.40	428.35	0.00	0.00	7700.40	TD at 17887.95

Project: EDDY CO., NM (NAD83)
Site: SEC 02-T23S-R28E
Well: RANA-SALADA-FED-01-131H
Wellbore: Wellbore #1
Design: Plan 1



Azimuths to Grid North
True North: -0.15°
Magnetic North: 6.46°
Magnetic Field
Strength: 47372.6nT
Dip Angle: 59.89°
Date: 11/3/2022
Model: IGRF2020





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 02-T23S-R28E

RANA-SALADA-FED-01-131H

Wellbore #1

Plan: Plan 1

Standard Planning Report

04 November, 2022





Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	RANA-SALADA-FED-01-131H	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 02-T23S-R28E			
Site Position:		Northing:	485,314.80 usft	Latitude:	32.33388258
From:	Map	Easting:	629,041.60 usft	Longitude:	-104.04937266
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	RANA-SALADA-FED-01-131H					
Well Position	+N/-S	0.00 usft	Northing:	488,130.80 usft	Latitude:	32.34161917
	+E/-W	0.00 usft	Easting:	629,601.35 usft	Longitude:	-104.04753605
Position Uncertainty		0.50 usft	Wellhead Elevation:	usft	Ground Level:	3,067.10 usft
Grid Convergence:		0.15 °				

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	11/3/2022	6.61	59.89	47,372.55770326

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	180.00	

Plan Survey Tool Program	Date	11/4/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,887.63 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	
1,875.70	7.51	49.72	1,874.63	15.90	18.77	2.00	2.00	0.00	49.72	
6,163.27	7.51	49.72	6,125.37	378.40	446.51	0.00	0.00	0.00	0.00	
6,538.97	0.00	0.00	6,500.00	394.30	465.28	2.00	-2.00	0.00	180.00	
9,466.02	0.00	0.00	9,427.05	394.30	465.28	0.00	0.00	0.00	0.00	
10,369.07	90.30	180.26	10,000.00	-181.70	462.65	10.00	10.00	-19.90	180.26	
17,887.95	90.30	180.26	9,960.00	-7,700.40	428.35	0.00	0.00	0.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	RANA-SALADA-FED-01-131H	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	49.72	1,599.98	1.13	1.33	-1.13	2.00	2.00	0.00
1,700.00	4.00	49.72	1,699.84	4.51	5.32	-4.51	2.00	2.00	0.00
1,800.00	6.00	49.72	1,799.45	10.15	11.97	-10.15	2.00	2.00	0.00
1,875.70	7.51	49.72	1,874.63	15.90	18.77	-15.90	2.00	2.00	0.00
1,900.00	7.51	49.72	1,898.72	17.96	21.19	-17.96	0.00	0.00	0.00
2,000.00	7.51	49.72	1,997.86	26.41	31.17	-26.41	0.00	0.00	0.00
2,100.00	7.51	49.72	2,097.00	34.87	41.14	-34.87	0.00	0.00	0.00
2,200.00	7.51	49.72	2,196.14	43.32	51.12	-43.32	0.00	0.00	0.00
2,300.00	7.51	49.72	2,295.28	51.78	61.10	-51.78	0.00	0.00	0.00
2,400.00	7.51	49.72	2,394.42	60.23	71.07	-60.23	0.00	0.00	0.00
2,500.00	7.51	49.72	2,493.56	68.69	81.05	-68.69	0.00	0.00	0.00
2,600.00	7.51	49.72	2,592.70	77.14	91.03	-77.14	0.00	0.00	0.00
2,700.00	7.51	49.72	2,691.85	85.59	101.00	-85.59	0.00	0.00	0.00
2,800.00	7.51	49.72	2,790.99	94.05	110.98	-94.05	0.00	0.00	0.00
2,900.00	7.51	49.72	2,890.13	102.50	120.96	-102.50	0.00	0.00	0.00
3,000.00	7.51	49.72	2,989.27	110.96	130.93	-110.96	0.00	0.00	0.00
3,100.00	7.51	49.72	3,088.41	119.41	140.91	-119.41	0.00	0.00	0.00
3,200.00	7.51	49.72	3,187.55	127.87	150.88	-127.87	0.00	0.00	0.00
3,300.00	7.51	49.72	3,286.69	136.32	160.86	-136.32	0.00	0.00	0.00
3,400.00	7.51	49.72	3,385.83	144.78	170.84	-144.78	0.00	0.00	0.00
3,500.00	7.51	49.72	3,484.98	153.23	180.81	-153.23	0.00	0.00	0.00
3,600.00	7.51	49.72	3,584.12	161.68	190.79	-161.68	0.00	0.00	0.00
3,700.00	7.51	49.72	3,683.26	170.14	200.77	-170.14	0.00	0.00	0.00
3,800.00	7.51	49.72	3,782.40	178.59	210.74	-178.59	0.00	0.00	0.00
3,900.00	7.51	49.72	3,881.54	187.05	220.72	-187.05	0.00	0.00	0.00
4,000.00	7.51	49.72	3,980.68	195.50	230.70	-195.50	0.00	0.00	0.00
4,100.00	7.51	49.72	4,079.82	203.96	240.67	-203.96	0.00	0.00	0.00
4,200.00	7.51	49.72	4,178.96	212.41	250.65	-212.41	0.00	0.00	0.00
4,300.00	7.51	49.72	4,278.11	220.87	260.63	-220.87	0.00	0.00	0.00
4,400.00	7.51	49.72	4,377.25	229.32	270.60	-229.32	0.00	0.00	0.00
4,500.00	7.51	49.72	4,476.39	237.77	280.58	-237.77	0.00	0.00	0.00
4,600.00	7.51	49.72	4,575.53	246.23	290.55	-246.23	0.00	0.00	0.00
4,700.00	7.51	49.72	4,674.67	254.68	300.53	-254.68	0.00	0.00	0.00
4,800.00	7.51	49.72	4,773.81	263.14	310.51	-263.14	0.00	0.00	0.00
4,900.00	7.51	49.72	4,872.95	271.59	320.48	-271.59	0.00	0.00	0.00
5,000.00	7.51	49.72	4,972.10	280.05	330.46	-280.05	0.00	0.00	0.00
5,100.00	7.51	49.72	5,071.24	288.50	340.44	-288.50	0.00	0.00	0.00
5,200.00	7.51	49.72	5,170.38	296.96	350.41	-296.96	0.00	0.00	0.00



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	RANA-SALADA-FED-01-131H	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	7.51	49.72	5,269.52	305.41	360.39	-305.41	0.00	0.00	0.00	
5,400.00	7.51	49.72	5,368.66	313.87	370.37	-313.87	0.00	0.00	0.00	
5,500.00	7.51	49.72	5,467.80	322.32	380.34	-322.32	0.00	0.00	0.00	
5,600.00	7.51	49.72	5,566.94	330.77	390.32	-330.77	0.00	0.00	0.00	
5,700.00	7.51	49.72	5,666.08	339.23	400.29	-339.23	0.00	0.00	0.00	
5,800.00	7.51	49.72	5,765.23	347.68	410.27	-347.68	0.00	0.00	0.00	
5,900.00	7.51	49.72	5,864.37	356.14	420.25	-356.14	0.00	0.00	0.00	
6,000.00	7.51	49.72	5,963.51	364.59	430.22	-364.59	0.00	0.00	0.00	
6,100.00	7.51	49.72	6,062.65	373.05	440.20	-373.05	0.00	0.00	0.00	
6,163.27	7.51	49.72	6,125.37	378.40	446.51	-378.40	0.00	0.00	0.00	
6,200.00	6.78	49.72	6,161.82	381.35	450.00	-381.35	2.00	-2.00	0.00	
6,300.00	4.78	49.72	6,261.31	387.86	457.68	-387.86	2.00	-2.00	0.00	
6,400.00	2.78	49.72	6,361.08	392.12	462.71	-392.12	2.00	-2.00	0.00	
6,500.00	0.78	49.72	6,461.03	394.13	465.08	-394.13	2.00	-2.00	0.00	
6,538.97	0.00	0.00	6,500.00	394.30	465.28	-394.30	2.00	-2.00	0.00	
6,600.00	0.00	0.00	6,561.03	394.30	465.28	-394.30	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,661.03	394.30	465.28	-394.30	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,761.03	394.30	465.28	-394.30	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,861.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,961.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,061.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,161.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,261.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,361.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,461.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,561.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,661.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,761.03	394.30	465.28	-394.30	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,861.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,961.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,061.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,161.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,261.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,361.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,461.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,561.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,661.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,761.03	394.30	465.28	-394.30	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,861.03	394.30	465.28	-394.30	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,961.03	394.30	465.28	-394.30	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,061.03	394.30	465.28	-394.30	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,161.03	394.30	465.28	-394.30	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,261.03	394.30	465.28	-394.30	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,361.03	394.30	465.28	-394.30	0.00	0.00	0.00	
9,466.02	0.00	0.00	9,427.05	394.30	465.28	-394.30	0.00	0.00	0.00	
9,500.00	3.40	180.26	9,461.01	393.29	465.28	-393.29	10.00	10.00	0.00	
9,550.00	8.40	180.26	9,510.73	388.16	465.25	-388.16	10.00	10.00	0.00	
9,600.00	13.40	180.26	9,559.81	378.71	465.21	-378.71	10.00	10.00	0.00	
9,650.00	18.40	180.26	9,607.88	365.01	465.15	-365.01	10.00	10.00	0.00	
9,700.00	23.40	180.26	9,654.58	347.19	465.07	-347.19	10.00	10.00	0.00	
9,750.00	28.40	180.26	9,699.54	325.35	464.97	-325.35	10.00	10.00	0.00	
9,800.00	33.40	180.26	9,742.44	299.69	464.85	-299.69	10.00	10.00	0.00	
9,850.00	38.40	180.26	9,782.93	270.38	464.71	-270.38	10.00	10.00	0.00	
9,900.00	43.40	180.26	9,820.71	237.65	464.57	-237.65	10.00	10.00	0.00	



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	RANA-SALADA-FED-01-131H	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)
9,950.00	48.40	180.26	9,855.49	201.76	464.40	-201.76	10.00	10.00	0.00
10,000.00	53.40	180.26	9,887.02	162.97	464.22	-162.97	10.00	10.00	0.00
10,050.00	58.40	180.26	9,915.04	121.58	464.04	-121.58	10.00	10.00	0.00
10,100.00	63.40	180.26	9,939.35	77.91	463.84	-77.91	10.00	10.00	0.00
10,150.00	68.40	180.26	9,959.77	32.28	463.63	-32.28	10.00	10.00	0.00
10,200.00	73.40	180.26	9,976.12	-14.95	463.41	14.95	10.00	10.00	0.00
10,250.00	78.40	180.26	9,988.30	-63.42	463.19	63.42	10.00	10.00	0.00
10,300.00	83.40	180.26	9,996.21	-112.78	462.97	112.78	10.00	10.00	0.00
10,350.00	88.40	180.26	9,999.78	-162.63	462.74	162.63	10.00	10.00	0.00
10,369.07	90.30	180.26	10,000.00	-181.70	462.65	181.70	10.00	10.00	0.00
10,400.00	90.30	180.26	9,999.84	-212.63	462.51	212.63	0.00	0.00	0.00
10,500.00	90.30	180.26	9,999.30	-312.63	462.05	312.63	0.00	0.00	0.00
10,600.00	90.30	180.26	9,998.77	-412.63	461.60	412.63	0.00	0.00	0.00
10,700.00	90.30	180.26	9,998.24	-512.62	461.14	512.62	0.00	0.00	0.00
10,800.00	90.30	180.26	9,997.71	-612.62	460.69	612.62	0.00	0.00	0.00
10,900.00	90.30	180.26	9,997.18	-712.62	460.23	712.62	0.00	0.00	0.00
11,000.00	90.30	180.26	9,996.64	-812.62	459.77	812.62	0.00	0.00	0.00
11,100.00	90.30	180.26	9,996.11	-912.61	459.32	912.61	0.00	0.00	0.00
11,200.00	90.30	180.26	9,995.58	-1,012.61	458.86	1,012.61	0.00	0.00	0.00
11,300.00	90.30	180.26	9,995.05	-1,112.61	458.40	1,112.61	0.00	0.00	0.00
11,400.00	90.30	180.26	9,994.52	-1,212.61	457.95	1,212.61	0.00	0.00	0.00
11,500.00	90.30	180.26	9,993.98	-1,312.60	457.49	1,312.60	0.00	0.00	0.00
11,600.00	90.30	180.26	9,993.45	-1,412.60	457.04	1,412.60	0.00	0.00	0.00
11,700.00	90.30	180.26	9,992.92	-1,512.60	456.58	1,512.60	0.00	0.00	0.00
11,800.00	90.30	180.26	9,992.39	-1,612.60	456.12	1,612.60	0.00	0.00	0.00
11,900.00	90.30	180.26	9,991.86	-1,712.59	455.67	1,712.59	0.00	0.00	0.00
12,000.00	90.30	180.26	9,991.32	-1,812.59	455.21	1,812.59	0.00	0.00	0.00
12,100.00	90.30	180.26	9,990.79	-1,912.59	454.75	1,912.59	0.00	0.00	0.00
12,200.00	90.30	180.26	9,990.26	-2,012.59	454.30	2,012.59	0.00	0.00	0.00
12,300.00	90.30	180.26	9,989.73	-2,112.58	453.84	2,112.58	0.00	0.00	0.00
12,400.00	90.30	180.26	9,989.20	-2,212.58	453.39	2,212.58	0.00	0.00	0.00
12,500.00	90.30	180.26	9,988.66	-2,312.58	452.93	2,312.58	0.00	0.00	0.00
12,600.00	90.30	180.26	9,988.13	-2,412.58	452.47	2,412.58	0.00	0.00	0.00
12,700.00	90.30	180.26	9,987.60	-2,512.57	452.02	2,512.57	0.00	0.00	0.00
12,800.00	90.30	180.26	9,987.07	-2,612.57	451.56	2,612.57	0.00	0.00	0.00
12,900.00	90.30	180.26	9,986.54	-2,712.57	451.10	2,712.57	0.00	0.00	0.00
13,000.00	90.30	180.26	9,986.00	-2,812.57	450.65	2,812.57	0.00	0.00	0.00
13,100.00	90.30	180.26	9,985.47	-2,912.56	450.19	2,912.56	0.00	0.00	0.00
13,200.00	90.30	180.26	9,984.94	-3,012.56	449.74	3,012.56	0.00	0.00	0.00
13,300.00	90.30	180.26	9,984.41	-3,112.56	449.28	3,112.56	0.00	0.00	0.00
13,400.00	90.30	180.26	9,983.88	-3,212.56	448.82	3,212.56	0.00	0.00	0.00
13,500.00	90.30	180.26	9,983.34	-3,312.55	448.37	3,312.55	0.00	0.00	0.00
13,600.00	90.30	180.26	9,982.81	-3,412.55	447.91	3,412.55	0.00	0.00	0.00
13,700.00	90.30	180.26	9,982.28	-3,512.55	447.45	3,512.55	0.00	0.00	0.00
13,800.00	90.30	180.26	9,981.75	-3,612.55	447.00	3,612.55	0.00	0.00	0.00
13,900.00	90.30	180.26	9,981.22	-3,712.54	446.54	3,712.54	0.00	0.00	0.00
14,000.00	90.30	180.26	9,980.68	-3,812.54	446.09	3,812.54	0.00	0.00	0.00
14,100.00	90.30	180.26	9,980.15	-3,912.54	445.63	3,912.54	0.00	0.00	0.00
14,200.00	90.30	180.26	9,979.62	-4,012.54	445.17	4,012.54	0.00	0.00	0.00
14,300.00	90.30	180.26	9,979.09	-4,112.54	444.72	4,112.54	0.00	0.00	0.00
14,400.00	90.30	180.26	9,978.56	-4,212.53	444.26	4,212.53	0.00	0.00	0.00
14,500.00	90.30	180.26	9,978.02	-4,312.53	443.80	4,312.53	0.00	0.00	0.00
14,600.00	90.30	180.26	9,977.49	-4,412.53	443.35	4,412.53	0.00	0.00	0.00
14,700.00	90.30	180.26	9,976.96	-4,512.53	442.89	4,512.53	0.00	0.00	0.00



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	RANA-SALADA-FED-01-131H	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)	
14,800.00	90.30	180.26	9,976.43	-4,612.52	442.44	4,612.52	0.00	0.00	0.00	
14,900.00	90.30	180.26	9,975.90	-4,712.52	441.98	4,712.52	0.00	0.00	0.00	
15,000.00	90.30	180.26	9,975.36	-4,812.52	441.52	4,812.52	0.00	0.00	0.00	
15,100.00	90.30	180.26	9,974.83	-4,912.52	441.07	4,912.52	0.00	0.00	0.00	
15,200.00	90.30	180.26	9,974.30	-5,012.51	440.61	5,012.51	0.00	0.00	0.00	
15,300.00	90.30	180.26	9,973.77	-5,112.51	440.15	5,112.51	0.00	0.00	0.00	
15,400.00	90.30	180.26	9,973.24	-5,212.51	439.70	5,212.51	0.00	0.00	0.00	
15,500.00	90.30	180.26	9,972.70	-5,312.51	439.24	5,312.51	0.00	0.00	0.00	
15,600.00	90.30	180.26	9,972.17	-5,412.50	438.79	5,412.50	0.00	0.00	0.00	
15,700.00	90.30	180.26	9,971.64	-5,512.50	438.33	5,512.50	0.00	0.00	0.00	
15,800.00	90.30	180.26	9,971.11	-5,612.50	437.87	5,612.50	0.00	0.00	0.00	
15,900.00	90.30	180.26	9,970.58	-5,712.50	437.42	5,712.50	0.00	0.00	0.00	
16,000.00	90.30	180.26	9,970.04	-5,812.49	436.96	5,812.49	0.00	0.00	0.00	
16,100.00	90.30	180.26	9,969.51	-5,912.49	436.50	5,912.49	0.00	0.00	0.00	
16,200.00	90.30	180.26	9,968.98	-6,012.49	436.05	6,012.49	0.00	0.00	0.00	
16,300.00	90.30	180.26	9,968.45	-6,112.49	435.59	6,112.49	0.00	0.00	0.00	
16,400.00	90.30	180.26	9,967.92	-6,212.48	435.14	6,212.48	0.00	0.00	0.00	
16,500.00	90.30	180.26	9,967.38	-6,312.48	434.68	6,312.48	0.00	0.00	0.00	
16,600.00	90.30	180.26	9,966.85	-6,412.48	434.22	6,412.48	0.00	0.00	0.00	
16,700.00	90.30	180.26	9,966.32	-6,512.48	433.77	6,512.48	0.00	0.00	0.00	
16,800.00	90.30	180.26	9,965.79	-6,612.47	433.31	6,612.47	0.00	0.00	0.00	
16,900.00	90.30	180.26	9,965.26	-6,712.47	432.85	6,712.47	0.00	0.00	0.00	
17,000.00	90.30	180.26	9,964.72	-6,812.47	432.40	6,812.47	0.00	0.00	0.00	
17,100.00	90.30	180.26	9,964.19	-6,912.47	431.94	6,912.47	0.00	0.00	0.00	
17,200.00	90.30	180.26	9,963.66	-7,012.46	431.49	7,012.46	0.00	0.00	0.00	
17,300.00	90.30	180.26	9,963.13	-7,112.46	431.03	7,112.46	0.00	0.00	0.00	
17,400.00	90.30	180.26	9,962.60	-7,212.46	430.57	7,212.46	0.00	0.00	0.00	
17,500.00	90.30	180.26	9,962.06	-7,312.46	430.12	7,312.46	0.00	0.00	0.00	
17,600.00	90.30	180.26	9,961.53	-7,412.45	429.66	7,412.45	0.00	0.00	0.00	
17,700.00	90.30	180.26	9,961.00	-7,512.45	429.20	7,512.45	0.00	0.00	0.00	
17,800.00	90.30	180.26	9,960.47	-7,612.45	428.75	7,612.45	0.00	0.00	0.00	
17,887.95	90.30	180.26	9,960.00	-7,700.40	428.35	7,700.40	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RS 131H LTP(2310' FNL - hit/miss target - Shape	0.00	0.00	9,958.00	-7,500.41	429.91	480,630.39	630,031.27	32.32099870	-104.04620910
- plan misses target center by 3.13usft at 17687.97usft MD (9961.06 TVD, -7500.42 N, 429.26 E)									
- Point									
RS 131H PBHL(2510' FI - plan hits target center - Point	0.00	0.01	9,960.00	-7,700.40	428.35	480,430.40	630,029.70	32.32044896	-104.04621590
RS 131H FTP(330' FNL - plan misses target center by 0.01usft at 10369.07usft MD (10000.00 TVD, -181.70 N, 462.65 E)	0.00	0.00	10,000.00	-181.70	462.65	487,949.10	630,064.00	32.34111630	-104.04603960
- Point									



Planning Report



Database:	1 - EDM Production	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	RANA-SALADA-FED-01-131H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
17,887.95	9,960.00	20" Casing	20	24	



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 02-T23S-R28E

RANA-SALADA-FED-01-131H

Wellbore #1

Plan 1

Anticollision Report

04 November, 2022





Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 2,199.98usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	11/4/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,887.63	Plan 1 (Wellbore #1)	MWD+HRGM	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 02-T23S-R28E						
Offset-Longview Fed 1-21H - Wellbore #1 - Wellbore #1	7,869.56	7,866.69	1,284.92	1,244.19	31.544	CC, ES
Offset-Longview Fed 1-21H - Wellbore #1 - Wellbore #1	16,800.00	13,690.00	1,654.54	1,545.47	15.169	SF
Offset-Longview Federal 12-13H - Wellbore #1 - Wellbore	7,476.25	13,517.00	725.66	634.52	7.962	CC, ES, SF
Rana Salada Fed Com 0106 133H - Wellbore #1 - FINAL	14,957.03	11,912.63	604.78	536.70	8.883	CC, ES
Rana Salada Fed Com 0106 133H - Wellbore #1 - FINAL	15,000.00	11,910.72	606.30	537.93	8.868	SF
Rana Salada Fed Com 0106 213H - Wellbore #1 - FINAL	12,900.00	11,644.71	606.79	550.90	10.856	SF
Rana Salada Fed Com 0106 213H - Wellbore #1 - FINAL	13,065.74	11,641.10	583.73	530.58	10.984	CC, ES
Rana Salada Fed Com 0106 223H - Wellbore #1 - FINAL	14,000.00	11,733.49	605.26	544.34	9.936	SF
Rana Salada Fed Com 0106 223H - Wellbore #1 - FINAL	14,036.12	11,732.34	604.18	543.38	9.938	CC, ES
Rana Salada Fed Com 0106 233H - Wellbore #1 - FINAL	11,400.00	11,917.59	696.40	643.91	13.269	SF
Rana Salada Fed Com 0106 233H - Wellbore #1 - FINAL	11,659.17	11,910.56	646.41	600.17	13.980	CC, ES
Rana Salada Fed Com 0106 236H - Wellbore #1 - FINAL	10,300.00	12,070.76	619.92	573.79	13.437	SF
Rana Salada Fed Com 0106 236H - Wellbore #1 - FINAL	10,398.73	12,069.33	606.19	562.75	13.953	CC, ES
RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1	1,500.00	1,500.00	20.00	10.12	2.024	CC
RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1	1,600.00	1,599.34	20.30	9.84	1.940	Collision Risk Procedures R
RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1	1,700.00	1,698.66	21.28	10.09	1.902	Collision Risk Procedures R
RANA-SALADA-FED-01-231H - Wellbore #1 - Plan 1	1,500.00	1,500.00	20.00	10.59	2.126	CC, ES, SF
RANA-SALADA-FED-COM-0112-222H - Wellbore #1 - PI	10,351.12	10,559.84	1,319.68	1,267.61	25.343	CC
RANA-SALADA-FED-COM-0112-222H - Wellbore #1 - PI	17,887.95	18,071.00	1,320.06	1,089.47	5.725	ES, SF
Sec 14-T23S-28E						
CB Boba Fett 14 11 Fed 09 403H Package 9 - Wellbore #	9,987.81	23,214.85	1,307.65	1,077.35	5.678	SF
CB Boba Fett 14 11 Fed 09 403H Package 9 - Wellbore #	17,887.95	15,415.94	1,286.15	1,076.49	6.135	CC, ES
Valkyrie Pad (Grid)						
Valkyrie 12 WXY Federal Com 11H - Wellbore #1 - Final S	17,887.95	10,226.00	1,823.65	1,760.79	29.012	CC, ES, SF
Valkyrie 12 WXY Federal Com 7H - Wellbore #1 - Final S	17,887.95	10,269.67	514.06	453.27	8.457	CC, ES, SF

Offset Design:	SEC 02-T23S-R28E - Offset-Longview Fed 1-21H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program:	2-MWD												Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Offset Wellbore Centre				Rule Assigned:					
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	
0.00	0.00	0.00	0.00	0.50	0.00	141.21	-1,117.01	897.85	1,433.55					
100.00	100.00	70.68	70.68	0.66	0.16	141.21	-1,116.85	897.81	1,432.99	1,432.17	0.82	1,757.328		

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 Fed 1-21H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 2-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
200.00	200.00	181.27	181.26	1.35	0.41	141.19	-1,115.96	897.59	1,432.23	1,430.48	1.75	816.418	
300.00	300.00	279.28	279.27	1.82	0.61	141.17	-1,114.77	897.26	1,431.08	1,428.66	2.42	590.585	
400.00	400.00	383.66	383.65	2.19	0.82	141.15	-1,113.57	896.93	1,429.99	1,426.98	3.01	475.217	
500.00	500.00	482.51	482.48	2.51	1.03	141.13	-1,112.28	896.46	1,428.68	1,425.14	3.54	404.045	
600.00	600.00	573.53	573.49	2.80	1.21	141.13	-1,111.59	895.93	1,427.72	1,423.72	4.01	356.334	
700.00	700.00	670.25	670.22	3.06	1.41	141.15	-1,111.52	895.39	1,427.31	1,422.84	4.47	319.481	
800.00	800.00	770.46	770.42	3.30	1.62	141.19	-1,111.89	894.33	1,426.94	1,422.01	4.92	289.807	
900.00	900.00	868.29	868.23	3.53	1.83	141.26	-1,112.70	892.80	1,426.60	1,421.24	5.36	265.989	
1,000.00	1,000.00	970.10	970.01	3.75	2.05	141.35	-1,114.02	890.75	1,426.36	1,420.56	5.80	245.833	
1,100.00	1,100.00	1,073.20	1,073.05	3.96	2.28	141.50	-1,115.81	887.72	1,425.88	1,419.65	6.24	228.602	
1,200.00	1,200.00	1,175.44	1,175.20	4.15	2.51	141.67	-1,117.97	883.93	1,425.23	1,418.57	6.67	213.798	
1,300.00	1,300.00	1,275.03	1,274.68	4.34	2.73	141.85	-1,120.24	879.88	1,424.51	1,417.44	7.07	201.417	
1,400.00	1,400.00	1,374.08	1,373.62	4.53	2.94	142.04	-1,122.56	875.87	1,423.86	1,416.39	7.47	190.643	
1,500.00	1,500.00	1,474.30	1,473.72	4.70	3.17	142.23	-1,125.05	871.69	1,423.26	1,415.38	7.87	180.766	
1,600.00	1,599.98	1,572.00	1,571.31	5.03	3.39	92.78	-1,127.48	867.64	1,422.77	1,414.52	8.25	172.384	
1,674.82	1,674.71	1,645.00	1,644.24	5.50	3.54	93.05	-1,129.26	864.86	1,422.67	1,414.13	8.54	166.556	
1,700.00	1,699.84	1,669.70	1,668.92	5.68	3.59	93.16	-1,129.82	863.99	1,422.69	1,414.07	8.62	165.048	
1,800.00	1,799.45	1,766.87	1,766.01	6.27	3.79	93.64	-1,131.90	860.87	1,422.99	1,414.01	8.98	158.408	
1,900.00	1,898.72	1,856.59	1,855.68	6.60	3.97	94.19	-1,133.83	858.45	1,423.97	1,414.69	9.28	153.459	
2,000.00	1,997.86	1,939.33	1,938.39	6.80	4.14	94.70	-1,135.69	857.37	1,426.07	1,416.47	9.60	148.563	
2,100.00	2,097.00	2,021.27	2,020.30	7.03	4.31	95.16	-1,137.75	857.85	1,429.60	1,419.67	9.94	143.854	
2,200.00	2,196.14	2,112.44	2,111.43	7.28	4.50	95.63	-1,140.09	859.62	1,434.08	1,423.78	10.30	139.269	
2,300.00	2,295.28	2,207.71	2,206.63	7.54	4.69	96.11	-1,142.63	861.91	1,439.02	1,428.35	10.67	134.864	
2,400.00	2,394.42	2,292.45	2,291.29	7.82	4.87	96.52	-1,145.23	864.45	1,444.72	1,433.69	11.02	131.074	
2,500.00	2,493.56	2,385.32	2,384.04	8.11	5.07	96.95	-1,148.42	867.96	1,451.25	1,439.85	11.39	127.379	
2,600.00	2,592.70	2,480.13	2,478.71	8.42	5.26	97.37	-1,151.77	872.00	1,458.21	1,446.44	11.77	123.882	
2,700.00	2,691.85	2,585.14	2,583.55	8.73	5.48	97.84	-1,155.46	876.54	1,465.27	1,453.10	12.17	120.369	
2,800.00	2,790.99	2,701.79	2,700.06	9.05	5.72	98.34	-1,158.65	881.19	1,471.60	1,459.00	12.60	116.794	
2,900.00	2,890.13	2,811.22	2,809.41	9.39	5.94	98.81	-1,160.76	884.96	1,477.03	1,464.01	13.01	113.493	
3,000.00	2,989.27	2,918.38	2,916.52	9.73	6.16	99.28	-1,162.51	887.86	1,481.92	1,468.49	13.43	110.356	
3,100.00	3,088.41	3,024.11	3,022.21	10.07	6.38	99.76	-1,163.97	890.33	1,486.49	1,472.65	13.84	107.381	
3,200.00	3,187.55	3,132.74	3,130.81	10.42	6.61	100.24	-1,164.79	892.49	1,490.44	1,476.17	14.27	104.460	
3,300.00	3,286.69	3,233.49	3,231.54	10.78	6.82	100.70	-1,165.61	894.07	1,494.33	1,479.65	14.68	101.795	
3,400.00	3,385.83	3,336.03	3,334.08	11.14	7.03	101.17	-1,166.13	895.46	1,497.94	1,482.84	15.10	99.212	
3,500.00	3,484.98	3,433.87	3,431.90	11.51	7.24	101.62	-1,166.83	896.78	1,501.83	1,486.32	15.51	96.835	
3,600.00	3,584.12	3,539.25	3,537.28	11.88	7.46	102.11	-1,167.37	897.79	1,505.45	1,489.51	15.94	94.441	
3,700.00	3,683.26	3,637.82	3,635.84	12.25	7.66	102.56	-1,167.72	898.80	1,509.06	1,492.70	16.36	92.252	
3,800.00	3,782.40	3,736.05	3,734.07	12.63	7.87	103.01	-1,168.12	899.86	1,512.84	1,496.06	16.78	90.167	
3,900.00	3,881.54	3,837.78	3,835.79	13.01	8.08	103.48	-1,168.69	900.63	1,516.71	1,499.50	17.21	88.121	
4,000.00	3,980.68	3,943.13	3,941.14	13.40	8.30	103.98	-1,169.00	901.10	1,520.31	1,502.65	17.66	86.102	
4,100.00	4,079.82	4,047.39	4,045.40	13.78	8.52	104.48	-1,169.25	900.90	1,523.68	1,505.57	18.11	84.151	
4,200.00	4,178.96	4,158.52	4,156.53	14.17	8.76	105.04	-1,169.31	900.05	1,526.78	1,508.20	18.58	82.187	
4,300.00	4,278.11	4,302.91	4,300.84	14.56	9.06	105.83	-1,167.54	896.07	1,528.01	1,508.88	19.13	79.886	
4,400.00	4,377.25	4,514.13	4,511.27	14.96	9.50	107.18	-1,157.87	881.35	1,525.09	1,505.29	19.80	77.027	
4,500.00	4,476.39	4,695.81	4,690.16	15.35	9.89	108.69	-1,140.43	855.23	1,513.81	1,493.39	20.41	74.155	
4,600.00	4,575.53	4,804.32	4,796.16	15.75	10.15	109.76	-1,129.21	834.97	1,501.21	1,480.26	20.95	71.650	
4,700.00	4,674.67	4,907.24	4,896.56	16.15	10.40	110.80	-1,118.04	815.24	1,488.40	1,466.90	21.50	69.227	
4,800.00	4,773.81	5,002.39	4,989.35	16.54	10.64	111.77	-1,107.49	797.00	1,475.84	1,453.80	22.05	66.944	
4,900.00	4,872.95	5,077.00	5,062.17	16.95	10.84	112.54	-1,099.25	783.03	1,464.06	1,441.50	22.57	64.880	
5,000.00	4,972.10	5,137.25	5,121.19	17.35	10.99	113.16	-1,093.65	772.26	1,454.70	1,431.64	23.06	63.077	
5,100.00	5,071.24	5,209.38	5,192.15	17.75	11.18	113.90	-1,089.16	760.13	1,448.60	1,425.01	23.59	61.413	
5,200.00	5,170.38	5,328.21	5,308.90	18.16	11.52	115.15	-1,081.32	739.47	1,442.62	1,418.36	24.26	59.466	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 Fed 1-21H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft	
Survey Program:		2-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	
5,300.00	5,269.52	5,428.41	5,407.06	18.56	11.81	116.26	-1,073.86	720.82	1,436.00	1,411.10	24.91	57.657		
5,400.00	5,368.66	5,525.93	5,502.65	18.97	12.10	117.33	-1,066.58	702.90	1,429.96	1,404.40	25.56	55.947		
5,500.00	5,467.80	5,626.45	5,601.12	19.37	12.41	118.45	-1,058.83	684.31	1,424.20	1,397.95	26.25	54.261		
5,600.00	5,566.94	5,728.27	5,700.81	19.78	12.73	119.60	-1,050.67	665.21	1,418.62	1,391.66	26.96	52.610		
5,700.00	5,666.08	5,823.03	5,793.58	20.19	13.03	120.67	-1,042.84	647.59	1,413.40	1,385.74	27.67	51.086		
5,800.00	5,765.23	5,918.86	5,887.49	20.60	13.34	121.74	-1,034.92	630.20	1,408.80	1,380.41	28.39	49.631		
5,900.00	5,864.37	6,040.10	6,005.99	21.01	13.75	123.15	-1,023.95	607.06	1,403.84	1,374.60	29.23	48.020		
6,000.00	5,963.51	6,138.21	6,101.67	21.42	14.09	124.31	-1,014.13	587.66	1,398.46	1,368.44	30.02	46.580		
6,100.00	6,062.65	6,225.78	6,187.06	21.84	14.40	125.37	-1,005.67	570.22	1,393.99	1,363.21	30.78	45.285		
6,200.00	6,161.82	6,306.00	6,265.36	22.23	14.67	126.31	-998.19	554.45	1,390.42	1,358.92	31.49	44.150		
6,300.00	6,261.31	6,400.00	6,357.35	22.67	14.98	127.26	-990.32	536.83	1,386.67	1,354.40	32.26	42.982		
6,400.00	6,361.08	6,482.14	6,438.05	23.13	15.25	127.93	-984.24	522.72	1,382.22	1,349.27	32.95	41.948		
6,500.00	6,461.03	6,574.28	6,528.73	23.53	15.55	128.54	-977.70	507.80	1,376.34	1,342.72	33.62	40.941		
6,600.00	6,561.03	6,683.00	6,635.58	23.61	15.92	128.99	-969.95	489.29	1,368.86	1,334.67	34.19	40.041		
6,700.00	6,661.03	6,773.20	6,724.21	23.65	16.22	129.64	-963.36	473.85	1,361.24	1,326.58	34.66	39.278		
6,800.00	6,761.03	6,865.80	6,815.19	23.69	16.54	-179.69	-957.07	457.86	1,354.33	1,319.19	35.14	38.536		
6,900.00	6,861.03	6,969.74	6,917.02	23.74	16.91	-178.85	-950.03	438.22	1,347.68	1,311.96	35.73	37.721		
7,000.00	6,961.03	7,062.00	7,007.38	23.78	17.24	-178.09	-943.94	420.63	1,341.46	1,305.21	36.25	37.008		
7,100.00	7,061.03	7,168.72	7,112.07	23.83	17.62	-177.24	-936.83	401.18	1,335.46	1,298.63	36.83	36.259		
7,200.00	7,161.03	7,284.03	7,224.98	23.87	18.04	-176.30	-927.39	379.81	1,328.15	1,290.67	37.47	35.441		
7,300.00	7,261.03	7,378.64	7,317.67	23.92	18.38	-175.53	-919.57	362.50	1,321.08	1,283.07	38.01	34.760		
7,400.00	7,361.03	7,484.15	7,421.18	23.96	18.76	-174.69	-910.59	344.09	1,313.97	1,275.38	38.58	34.056		
7,500.00	7,461.03	7,585.56	7,520.66	24.01	19.12	-173.89	-901.53	326.63	1,306.66	1,267.52	39.14	33.386		
7,600.00	7,561.03	7,701.14	7,634.18	24.05	19.54	-173.01	-890.73	307.81	1,299.16	1,259.41	39.75	32.683		
7,700.00	7,661.03	7,787.00	7,718.50	24.10	19.84	-172.36	-882.03	294.16	1,291.07	1,250.85	40.22	32.104		
7,800.00	7,761.03	7,835.58	7,765.81	24.15	20.04	-171.89	-878.34	283.88	1,286.12	1,245.60	40.52	31.737		
7,869.56	7,830.59	7,866.69	7,795.50	24.18	20.18	-171.47	-876.42	274.76	1,284.92	1,244.19	40.73	31.544	CC, ES	
7,900.00	7,861.03	7,882.00	7,809.93	24.19	20.26	-171.25	-875.82	269.70	1,285.19	1,244.35	40.84	31.469		
8,000.00	7,961.03	7,913.00	7,838.98	24.24	20.42	-170.77	-876.04	258.91	1,289.93	1,248.96	40.97	31.488		
8,100.00	8,061.03	7,913.00	7,838.98	24.29	20.42	-170.77	-876.04	258.91	1,300.50	1,259.86	40.64	32.000		
8,200.00	8,161.03	7,945.00	7,868.84	24.34	20.58	-170.30	-878.65	247.72	1,316.75	1,276.16	40.59	32.440		
8,300.00	8,261.03	7,976.00	7,897.68	24.38	20.71	-169.88	-883.23	237.33	1,338.58	1,298.12	40.46	33.086		
8,400.00	8,361.03	8,008.00	7,927.42	24.43	20.84	-169.51	-889.67	227.44	1,365.26	1,324.99	40.27	33.899		
8,500.00	8,461.03	8,039.00	7,956.17	24.48	20.95	-169.20	-897.54	218.96	1,396.49	1,356.47	40.02	34.891		
8,600.00	8,561.03	8,071.00	7,985.74	24.53	21.04	-168.98	-907.39	211.74	1,431.95	1,392.21	39.74	36.032		
8,700.00	8,661.03	8,112.14	8,023.39	24.57	21.13	-168.79	-922.19	204.29	1,471.16	1,431.63	39.53	37.215		
8,800.00	8,761.03	8,148.81	8,056.50	24.62	21.19	-168.67	-936.90	198.66	1,513.70	1,474.44	39.26	38.557		
8,900.00	8,861.03	8,180.12	8,084.28	24.67	21.25	-168.61	-950.66	194.31	1,559.61	1,520.68	38.93	40.060		
9,000.00	8,961.03	8,197.00	8,099.04	24.72	21.27	-168.58	-958.54	192.05	1,608.91	1,570.44	38.47	41.827		
9,100.00	9,061.03	8,228.00	8,125.54	24.77	21.32	-168.55	-974.13	188.14	1,661.36	1,623.19	38.17	43.525		
9,200.00	9,161.03	8,245.56	8,140.10	24.82	21.35	-168.55	-983.72	186.07	1,717.20	1,679.43	37.76	45.476		
9,300.00	9,261.03	8,260.00	8,151.80	24.87	21.37	-168.55	-992.03	184.44	1,776.11	1,738.75	37.36	47.544		
9,400.00	9,361.03	8,291.00	8,175.98	24.92	21.41	-168.56	-1,011.09	180.89	1,838.03	1,800.88	37.15	49.477		
9,500.00	9,461.01	8,291.00	8,175.98	24.92	21.41	10.66	-1,011.09	180.89	1,901.44	1,864.79	36.65	51.885		
9,600.00	9,559.81	8,323.00	8,199.67	24.81	21.45	9.52	-1,032.21	176.83	1,956.93	1,920.47	36.47	53.664		
9,700.00	9,654.58	8,323.00	8,199.67	24.67	21.45	8.75	-1,032.21	176.83	2,000.42	1,964.41	36.01	55.546		
9,800.00	9,742.44	8,354.00	8,221.43	24.53	21.50	8.35	-1,053.85	172.49	2,031.12	1,995.28	35.84	56.678		
9,900.00	9,820.71	8,386.00	8,242.82	24.39	21.56	8.21	-1,077.18	167.81	2,048.67	2,012.99	35.68	57.416		
10,000.00	9,887.02	8,417.00	8,262.52	24.30	21.62	8.28	-1,100.66	163.16	2,052.71	2,017.16	35.54	57.753		
10,100.00	9,939.35	8,431.10	8,271.10	24.27	21.65	8.48	-1,111.66	161.07	2,043.02	2,007.72	35.30	57.875		
10,200.00	9,976.12	8,449.00	8,281.64	24.32	21.69	8.93	-1,125.90	158.53	2,020.08	1,984.92	35.15	57.469		
10,300.00	9,996.21	8,480.00	8,298.93	24.46	21.75	9.73	-1,151.31	154.51	1,984.07	1,948.94	35.13	56.482		

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 Fed 1-21H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 2-MWD													Offset Well Error: 0.00 usft
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.00	9,999.84	8,512.00	8,315.58	24.71	21.83	10.60	-1,178.34	150.52	1,936.40	1,901.39	35.01	55.312	
10,500.00	9,999.30	8,524.49	8,321.76	25.02	21.86	10.69	-1,189.08	148.92	1,887.82	1,853.19	34.63	54.518	
10,600.00	9,998.77	8,543.00	8,330.51	25.39	21.91	10.83	-1,205.20	146.51	1,842.46	1,808.12	34.34	53.652	
10,700.00	9,998.24	8,575.00	8,344.61	25.81	22.01	11.05	-1,233.64	142.44	1,800.29	1,766.10	34.20	52.646	
10,800.00	9,997.71	8,606.00	8,357.27	26.28	22.11	11.26	-1,261.69	138.74	1,761.26	1,727.15	34.11	51.632	
10,900.00	9,997.18	8,638.00	8,369.36	26.81	22.22	11.46	-1,291.12	135.34	1,725.39	1,691.28	34.11	50.585	
11,000.00	9,996.64	8,670.00	8,380.25	27.39	22.34	11.64	-1,321.06	132.33	1,692.99	1,658.80	34.19	49.514	
11,100.00	9,996.11	8,701.00	8,389.60	28.04	22.47	11.80	-1,350.48	129.55	1,664.27	1,629.91	34.37	48.426	
11,200.00	9,995.58	8,733.00	8,398.02	28.73	22.61	11.96	-1,381.22	126.75	1,639.35	1,604.70	34.65	47.311	
11,300.00	9,995.05	8,764.00	8,404.96	29.48	22.77	12.09	-1,411.33	124.25	1,618.29	1,583.25	35.04	46.184	
11,400.00	9,994.52	8,796.00	8,410.82	30.28	22.93	12.20	-1,442.72	122.28	1,601.18	1,565.63	35.54	45.047	
11,500.00	9,993.98	8,838.61	8,416.83	31.13	23.17	12.31	-1,484.86	120.30	1,587.86	1,551.68	36.18	43.890	
11,600.00	9,993.45	8,891.00	8,421.82	32.03	23.50	12.43	-1,536.96	118.08	1,578.38	1,541.47	36.91	42.767	
11,700.00	9,992.92	8,923.00	8,423.47	32.97	23.71	12.48	-1,568.88	116.66	1,572.56	1,534.85	37.72	41.695	
11,783.45	9,992.48	8,943.70	8,423.88	33.78	23.86	12.52	-1,589.55	115.66	1,570.87	1,532.41	38.46	40.841	
11,800.00	9,992.39	8,954.00	8,423.87	33.95	23.94	12.54	-1,599.84	115.17	1,570.91	1,532.30	38.62	40.681	
11,900.00	9,991.86	9,011.51	8,422.77	34.96	24.38	12.61	-1,657.28	112.62	1,572.85	1,533.26	39.58	39.734	
12,000.00	9,991.32	9,102.88	8,419.80	36.01	25.16	12.71	-1,748.52	108.95	1,576.26	1,535.67	40.59	38.834	
12,100.00	9,990.79	9,309.21	8,419.04	37.08	27.00	12.84	-1,954.73	104.25	1,576.68	1,535.09	41.59	37.913	
12,200.00	9,990.26	9,390.66	8,421.19	38.18	27.85	12.90	-2,036.14	102.77	1,573.91	1,531.23	42.68	36.877	
12,300.00	9,989.73	9,508.43	8,424.63	39.31	29.13	12.91	-2,153.86	103.15	1,570.22	1,526.42	43.80	35.852	
12,400.00	9,989.20	9,636.20	8,429.41	40.46	30.56	12.85	-2,281.52	105.34	1,565.43	1,520.50	44.93	34.842	
12,500.00	9,988.66	9,711.00	8,432.06	41.63	31.47	12.80	-2,356.24	107.24	1,560.89	1,514.76	46.13	33.839	
12,600.00	9,988.13	9,774.00	8,433.13	42.82	32.24	12.78	-2,419.23	107.73	1,558.53	1,511.16	47.36	32.906	
12,624.60	9,988.00	9,782.39	8,433.08	43.12	32.35	12.78	-2,427.62	107.75	1,558.43	1,510.75	47.68	32.686	
12,700.00	9,987.60	9,848.08	8,432.38	44.03	33.19	12.76	-2,493.31	107.77	1,558.73	1,510.11	48.62	32.059	
12,800.00	9,987.07	9,976.85	8,431.98	45.25	34.86	12.71	-2,622.06	108.81	1,558.19	1,508.33	49.86	31.254	
12,868.29	9,986.70	10,026.00	8,432.11	46.09	35.53	12.72	-2,671.21	108.20	1,557.77	1,507.02	50.75	30.695	
12,900.00	9,986.54	10,048.94	8,431.96	46.48	35.86	12.73	-2,694.14	107.95	1,557.86	1,506.69	51.17	30.445	
13,000.00	9,986.00	10,145.91	8,430.90	47.73	37.18	12.76	-2,791.10	106.39	1,558.65	1,506.16	52.48	29.698	
13,100.00	9,985.47	10,266.57	8,431.76	48.99	38.84	12.86	-2,911.72	103.50	1,557.68	1,503.88	53.81	28.950	
13,133.01	9,985.30	10,290.77	8,431.76	49.41	39.20	12.87	-2,935.91	103.13	1,557.59	1,503.33	54.26	28.706	
13,200.00	9,984.94	10,341.00	8,431.25	50.26	39.96	12.87	-2,986.13	102.78	1,557.94	1,502.76	55.18	28.233	
13,300.00	9,984.41	10,432.44	8,428.98	51.54	41.33	12.84	-3,077.55	102.97	1,559.66	1,503.12	56.54	27.583	
13,400.00	9,983.88	10,523.46	8,426.44	52.83	42.67	12.83	-3,168.52	102.30	1,561.90	1,503.97	57.93	26.964	
13,500.00	9,983.34	10,627.07	8,424.86	54.13	44.18	12.85	-3,272.11	100.87	1,563.04	1,503.73	59.31	26.352	
13,600.00	9,982.81	10,685.00	8,422.74	55.44	45.04	12.87	-3,329.99	99.82	1,566.38	1,505.64	60.74	25.788	
13,700.00	9,982.28	10,827.74	8,419.24	56.75	47.16	12.88	-3,472.67	98.14	1,567.86	1,505.74	62.13	25.236	
13,800.00	9,981.75	10,911.43	8,416.30	58.07	48.43	12.87	-3,556.31	97.54	1,570.74	1,507.18	63.56	24.713	
13,900.00	9,981.22	11,029.92	8,413.77	59.39	50.21	12.98	-3,674.69	93.57	1,572.93	1,507.92	65.01	24.195	
14,000.00	9,980.68	11,112.69	8,412.40	60.73	51.48	13.09	-3,757.36	89.74	1,575.02	1,508.51	66.51	23.682	
14,100.00	9,980.15	11,212.38	8,409.23	62.06	53.04	13.21	-3,856.91	85.45	1,578.47	1,510.47	68.00	23.212	
14,200.00	9,979.62	11,373.00	8,407.93	63.40	55.49	13.29	-4,017.47	82.25	1,578.88	1,509.46	69.42	22.744	
14,260.13	9,979.30	11,418.37	8,408.00	64.21	56.20	13.31	-4,062.83	81.62	1,578.60	1,508.26	70.34	22.443	
14,300.00	9,979.09	11,443.00	8,407.86	64.75	56.59	13.31	-4,087.47	81.30	1,578.73	1,507.78	70.95	22.252	
14,400.00	9,978.56	11,517.53	8,406.39	66.10	57.82	13.32	-4,161.98	80.50	1,580.33	1,507.87	72.47	21.808	
14,500.00	9,978.02	11,649.83	8,403.39	67.45	59.93	13.34	-4,294.22	78.93	1,582.29	1,508.36	73.93	21.403	
14,600.00	9,977.49	11,746.91	8,402.26	68.81	61.47	13.30	-4,391.30	79.27	1,582.72	1,507.31	75.41	20.988	
14,700.00	9,976.96	11,822.00	8,400.16	70.17	62.70	13.21	-4,466.33	81.14	1,584.25	1,507.35	76.90	20.601	
14,800.00	9,976.43	11,917.00	8,396.67	71.54	64.25	13.12	-4,561.25	82.71	1,586.82	1,508.45	78.37	20.248	
14,900.00	9,975.90	12,012.00	8,393.94	72.91	65.74	13.12	-4,656.20	81.55	1,589.29	1,509.41	79.88	19.896	
15,000.00	9,975.36	12,079.88	8,391.43	74.28	66.85	13.15	-4,724.02	79.90	1,592.96	1,511.53	81.42	19.564	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 Fed 1-21H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 2-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,100.00	9,974.83	12,182.44	8,385.77	75.65	68.53	13.20	-4,826.37	76.81	1,598.40	1,515.43	82.97	19.265	
15,200.00	9,974.30	12,322.07	8,381.99	77.03	70.75	13.37	-4,965.79	70.53	1,601.26	1,516.70	84.57	18.935	
15,300.00	9,973.77	12,404.18	8,379.59	78.41	72.09	13.46	-5,047.80	67.10	1,604.39	1,518.23	86.16	18.620	
15,400.00	9,973.24	12,527.13	8,377.01	79.79	74.10	13.52	-5,170.68	64.42	1,606.14	1,518.42	87.72	18.310	
15,500.00	9,972.70	12,643.12	8,373.70	81.17	76.01	13.51	-5,286.62	63.45	1,608.63	1,519.39	89.24	18.026	
15,600.00	9,972.17	12,734.27	8,372.70	82.56	77.51	13.52	-5,377.76	62.69	1,609.32	1,518.52	90.80	17.723	
15,700.00	9,971.64	12,843.99	8,370.18	83.94	79.31	13.52	-5,487.45	61.92	1,611.15	1,518.81	92.34	17.448	
15,800.00	9,971.11	12,923.08	8,368.75	85.33	80.61	13.51	-5,566.53	61.56	1,612.45	1,518.54	93.91	17.170	
15,900.00	9,970.58	13,021.72	8,365.47	86.72	82.26	13.49	-5,665.11	61.01	1,615.19	1,519.73	95.46	16.920	
16,000.00	9,970.04	13,117.92	8,363.40	88.11	83.87	13.56	-5,761.24	58.08	1,617.38	1,520.30	97.08	16.661	
16,100.00	9,969.51	13,261.09	8,361.26	89.51	86.25	13.62	-5,904.36	55.36	1,618.68	1,520.06	98.62	16.413	
16,108.04	9,969.47	13,267.15	8,361.24	89.62	86.35	13.62	-5,910.42	55.29	1,618.68	1,519.92	98.75	16.391	
16,200.00	9,968.98	13,337.00	8,360.44	90.90	87.51	13.63	-5,980.26	54.67	1,619.32	1,519.08	100.24	16.155	
16,300.00	9,968.45	13,407.26	8,358.44	92.30	88.72	13.62	-6,050.49	54.18	1,621.62	1,519.78	101.83	15.924	
16,400.00	9,967.92	13,516.87	8,354.42	93.70	90.56	13.63	-6,160.00	52.73	1,624.90	1,521.50	103.41	15.714	
16,500.00	9,967.38	13,587.69	8,351.99	95.10	91.74	13.66	-6,230.76	50.86	1,628.29	1,523.28	105.02	15.505	
16,600.00	9,966.85	13,660.52	8,348.00	96.50	92.98	13.70	-6,303.45	48.61	1,633.67	1,527.06	106.61	15.324	
16,700.00	9,966.32	13,690.00	8,346.20	97.90	93.48	13.71	-6,332.86	47.69	1,641.23	1,533.20	108.03	15.193	
16,800.00	9,965.79	13,690.00	8,346.20	99.31	93.48	13.71	-6,332.86	47.69	1,654.54	1,545.47	109.08	15.169 SF	
16,900.00	9,965.26	13,690.00	8,346.20	100.71	93.48	13.71	-6,332.86	47.69	1,673.74	1,563.95	109.79	15.245	
17,000.00	9,964.72	13,690.00	8,346.20	102.12	93.48	13.71	-6,332.86	47.69	1,698.61	1,588.43	110.18	15.417	
17,100.00	9,964.19	13,690.00	8,346.20	103.52	93.48	13.71	-6,332.86	47.69	1,728.92	1,618.65	110.27	15.679	
17,200.00	9,963.66	13,690.00	8,346.20	104.93	93.48	13.71	-6,332.86	47.69	1,764.38	1,654.29	110.09	16.027	
17,300.00	9,963.13	13,690.00	8,346.20	106.34	93.48	13.71	-6,332.86	47.69	1,804.70	1,695.02	109.68	16.455	
17,400.00	9,962.60	13,690.00	8,346.20	107.75	93.48	13.71	-6,332.86	47.69	1,849.54	1,740.48	109.06	16.959	
17,500.00	9,962.06	13,690.00	8,346.20	109.16	93.48	13.71	-6,332.86	47.69	1,898.60	1,790.32	108.29	17.533	
17,600.00	9,961.53	13,690.00	8,346.20	110.57	93.48	13.71	-6,332.86	47.69	1,951.56	1,844.18	107.38	18.175	
17,700.00	9,961.00	13,690.00	8,346.20	111.98	93.48	13.71	-6,332.86	47.69	2,008.10	1,901.73	106.37	18.879	
17,800.00	9,960.47	13,690.00	8,346.20	113.39	93.48	13.71	-6,332.86	47.69	2,067.93	1,962.65	105.28	19.642	
17,887.95	9,960.00	13,690.00	8,346.20	114.65	93.48	13.71	-6,332.86	47.69	2,123.06	2,019.23	103.83	20.448	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 12-13H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 377-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,400.00	5,368.66	13,517.00	7,381.18	18.97	105.01	170.42	-175.33	15.72	2,155.06	2,097.16	57.90	37.221	
5,500.00	5,467.80	13,517.00	7,381.18	19.37	105.01	170.42	-175.33	15.72	2,063.85	2,005.26	58.59	35.226	
5,600.00	5,566.94	13,517.00	7,381.18	19.78	105.01	170.42	-175.33	15.72	1,973.48	1,914.13	59.35	33.249	
5,700.00	5,666.08	13,517.00	7,381.18	20.19	105.01	170.42	-175.33	15.72	1,884.10	1,823.89	60.21	31.292	
5,800.00	5,765.23	13,517.00	7,381.18	20.60	105.01	170.42	-175.33	15.72	1,795.83	1,734.66	61.17	29.359	
5,900.00	5,864.37	13,517.00	7,381.18	21.01	105.01	170.42	-175.33	15.72	1,708.85	1,646.60	62.25	27.453	
6,000.00	5,963.51	13,517.00	7,381.18	21.42	105.01	170.42	-175.33	15.72	1,623.37	1,559.91	63.46	25.580	
6,100.00	6,062.65	13,517.00	7,381.18	21.84	105.01	170.42	-175.33	15.72	1,539.65	1,474.81	64.84	23.745	
6,200.00	6,161.82	13,517.00	7,381.18	22.23	105.01	170.24	-175.33	15.72	1,457.84	1,391.45	66.39	21.960	
6,300.00	6,261.31	13,517.00	7,381.18	22.67	105.01	169.76	-175.33	15.72	1,376.75	1,308.66	68.08	20.222	
6,400.00	6,361.08	13,517.00	7,381.18	23.13	105.01	169.27	-175.33	15.72	1,296.15	1,226.24	69.91	18.541	
6,500.00	6,461.03	13,517.00	7,381.18	23.53	105.01	168.76	-175.33	15.72	1,216.25	1,144.44	71.82	16.936	
6,600.00	6,561.03	13,517.00	7,381.18	23.61	105.01	-141.72	-175.33	15.72	1,137.72	1,064.03	73.69	15.440	
6,700.00	6,661.03	13,517.00	7,381.18	23.65	105.01	-141.72	-175.33	15.72	1,062.62	986.87	75.74	14.029	
6,800.00	6,761.03	13,517.00	7,381.18	23.69	105.01	-141.72	-175.33	15.72	991.92	913.90	78.02	12.714	
6,900.00	6,861.03	13,517.00	7,381.18	23.74	105.01	-141.72	-175.33	15.72	926.63	846.15	80.48	11.513	
7,000.00	6,961.03	13,517.00	7,381.18	23.78	105.01	-141.72	-175.33	15.72	867.99	784.92	83.07	10.449	
7,100.00	7,061.03	13,517.00	7,381.18	23.83	105.01	-141.72	-175.33	15.72	817.41	731.77	85.64	9.545	
7,200.00	7,161.03	13,517.00	7,381.18	23.87	105.01	-141.72	-175.33	15.72	776.47	688.49	87.98	8.825	
7,300.00	7,261.03	13,517.00	7,381.18	23.92	105.01	-141.72	-175.33	15.72	746.76	656.92	89.84	8.312	
7,400.00	7,361.03	13,517.00	7,381.18	23.96	105.01	-141.72	-175.33	15.72	729.66	638.72	90.93	8.024	
7,476.25	7,437.28	13,517.00	7,381.18	24.00	105.01	-141.72	-175.33	15.72	725.66	634.52	91.14	7.962 CC, ES, SF	
7,500.00	7,461.03	13,517.00	7,381.18	24.01	105.01	-141.72	-175.33	15.72	726.05	634.97	91.08	7.971	
7,600.00	7,561.03	13,517.00	7,381.18	24.05	105.01	-141.72	-175.33	15.72	736.14	645.88	90.26	8.156	
7,700.00	7,661.03	13,517.00	7,381.18	24.10	105.01	-141.72	-175.33	15.72	759.37	670.77	88.60	8.571	
7,800.00	7,761.03	13,517.00	7,381.18	24.15	105.01	-141.72	-175.33	15.72	794.60	708.22	86.38	9.199	
7,900.00	7,861.03	13,517.00	7,381.18	24.19	105.01	-141.72	-175.33	15.72	840.32	756.43	83.90	10.016	
8,000.00	7,961.03	13,517.00	7,381.18	24.24	105.01	-141.72	-175.33	15.72	894.93	813.54	81.39	10.996	
8,100.00	8,061.03	13,517.00	7,381.18	24.29	105.01	-141.72	-175.33	15.72	956.89	877.87	79.02	12.109	
8,200.00	8,161.03	13,517.00	7,381.18	24.34	105.01	-141.72	-175.33	15.72	1,024.89	947.99	76.89	13.328	
8,300.00	8,261.03	13,517.00	7,381.18	24.38	105.01	-141.72	-175.33	15.72	1,097.79	1,022.75	75.04	14.630	
8,400.00	8,361.03	13,517.00	7,381.18	24.43	105.01	-141.72	-175.33	15.72	1,174.69	1,101.23	73.46	15.991	
8,500.00	8,461.03	13,517.00	7,381.18	24.48	105.01	-141.72	-175.33	15.72	1,254.85	1,182.71	72.13	17.396	
8,600.00	8,561.03	13,517.00	7,381.18	24.53	105.01	-141.72	-175.33	15.72	1,337.68	1,266.64	71.04	18.831	
8,700.00	8,661.03	13,517.00	7,381.18	24.57	105.01	-141.72	-175.33	15.72	1,422.72	1,352.58	70.14	20.283	
8,800.00	8,761.03	13,517.00	7,381.18	24.62	105.01	-141.72	-175.33	15.72	1,509.60	1,440.18	69.42	21.746	
8,900.00	8,861.03	13,517.00	7,381.18	24.67	105.01	-141.72	-175.33	15.72	1,598.01	1,529.17	68.84	23.213	
9,000.00	8,961.03	13,517.00	7,381.18	24.72	105.01	-141.72	-175.33	15.72	1,687.72	1,619.33	68.39	24.679	
9,100.00	9,061.03	13,517.00	7,381.18	24.77	105.01	-141.72	-175.33	15.72	1,778.52	1,710.48	68.04	26.140	
9,200.00	9,161.03	13,517.00	7,381.18	24.82	105.01	-141.72	-175.33	15.72	1,870.26	1,802.49	67.78	27.594	
9,300.00	9,261.03	13,517.00	7,381.18	24.87	105.01	-141.72	-175.33	15.72	1,962.81	1,895.22	67.59	29.038	
9,400.00	9,361.03	13,517.00	7,381.18	24.92	105.01	-141.72	-175.33	15.72	2,056.06	1,988.59	67.47	30.472	
9,500.00	9,461.01	13,517.00	7,381.18	24.92	105.01	32.95	-175.33	15.72	2,149.63	2,082.23	67.40	31.893	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - Rana Salada Fed Com 0106 133H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 179-MWD, 498-MWD												Offset Well Error:	0.50 usft
Reference	Offset	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,900.00	9,986.54	11,985.00	10,577.86	46.48	46.53	-173.41	-4,770.40	511.64	2,142.74	2,078.44	64.30	33.324	
13,000.00	9,986.00	11,985.00	10,577.86	47.73	46.53	-173.41	-4,770.40	511.64	2,047.06	1,982.54	64.52	31.727	
13,100.00	9,985.47	11,985.00	10,577.86	48.99	46.53	-173.41	-4,770.40	511.64	1,951.82	1,887.06	64.76	30.141	
13,200.00	9,984.94	11,970.41	10,577.80	50.26	46.28	-174.77	-4,770.79	497.06	1,857.00	1,792.07	64.93	28.601	
13,300.00	9,984.41	11,967.93	10,577.79	51.54	46.24	-175.01	-4,770.86	494.57	1,762.80	1,697.60	65.20	27.038	
13,400.00	9,983.88	11,965.37	10,577.78	52.83	46.20	-175.25	-4,770.94	492.01	1,669.27	1,603.78	65.49	25.489	
13,500.00	9,983.34	11,962.73	10,577.77	54.13	46.15	-175.50	-4,771.02	489.37	1,576.54	1,510.73	65.81	23.957	
13,600.00	9,982.81	11,960.01	10,577.76	55.44	46.11	-175.75	-4,771.10	486.66	1,484.74	1,418.59	66.15	22.445	
13,700.00	9,982.28	11,957.20	10,577.75	56.75	46.06	-176.02	-4,771.18	483.85	1,394.06	1,327.55	66.52	20.958	
13,800.00	9,981.75	11,954.31	10,577.73	58.07	46.01	-176.29	-4,771.28	480.96	1,304.74	1,237.84	66.91	19.501	
13,900.00	9,981.22	11,951.32	10,577.72	59.39	45.96	-176.57	-4,771.37	477.97	1,217.07	1,149.76	67.31	18.080	
14,000.00	9,980.68	11,948.24	10,577.71	60.73	45.91	-176.86	-4,771.47	474.89	1,131.44	1,063.71	67.73	16.705	
14,100.00	9,980.15	11,945.05	10,577.70	62.06	45.86	-177.16	-4,771.57	471.70	1,048.35	980.21	68.14	15.385	
14,200.00	9,979.62	11,941.75	10,577.68	63.40	45.80	-177.47	-4,771.69	468.41	968.44	899.93	68.51	14.135	
14,300.00	9,979.09	11,938.34	10,577.67	64.75	45.74	-177.79	-4,771.80	465.00	892.58	823.77	68.81	12.972	
14,400.00	9,978.56	11,934.81	10,577.65	66.10	45.69	-178.13	-4,771.93	461.47	821.89	752.92	68.97	11.917	
14,500.00	9,978.02	11,931.16	10,577.64	67.45	45.63	-178.47	-4,772.06	457.82	757.80	688.88	68.92	10.995	
14,600.00	9,977.49	11,927.37	10,577.62	68.81	45.56	-178.83	-4,772.19	454.03	702.14	633.50	68.63	10.230	
14,700.00	9,976.96	11,923.44	10,577.61	70.17	45.50	-179.20	-4,772.34	450.11	657.04	588.88	68.16	9.640	
14,800.00	9,976.43	11,919.36	10,577.59	71.54	45.43	-179.59	-4,772.49	446.03	624.80	557.05	67.75	9.222	
14,900.00	9,975.90	11,915.12	10,577.57	72.91	45.36	-179.99	-4,772.66	441.80	607.46	539.66	67.80	8.959	
14,957.03	9,975.59	11,912.63	10,577.56	73.69	45.32	179.77	-4,772.76	439.31	604.78	536.70	68.08	8.883 CC, ES	
15,000.00	9,975.36	11,910.72	10,577.55	74.28	45.29	179.59	-4,772.83	437.40	606.30	537.93	68.37	8.868 SF	
15,100.00	9,974.83	11,906.14	10,577.53	75.65	45.22	179.16	-4,773.02	432.83	621.42	552.40	69.02	9.003	
15,200.00	9,974.30	11,901.38	10,577.51	77.03	45.14	178.71	-4,773.21	428.07	651.67	582.39	69.28	9.406	
15,300.00	9,973.77	11,896.41	10,577.49	78.41	45.07	178.24	-4,773.42	423.11	695.08	626.09	68.99	10.075	
15,400.00	9,973.24	11,891.24	10,577.47	79.79	44.98	177.75	-4,773.65	417.94	749.38	681.12	68.26	10.978	
15,500.00	9,972.70	11,886.20	10,577.45	81.17	44.91	177.27	-4,773.87	412.90	812.36	745.09	67.27	12.076	
15,600.00	9,972.17	11,881.22	10,577.42	82.56	44.83	176.80	-4,774.08	407.93	882.19	816.00	66.19	13.329	
15,700.00	9,971.64	11,876.29	10,577.40	83.94	44.75	176.34	-4,774.30	403.00	957.36	892.24	65.12	14.701	
15,800.00	9,971.11	11,871.41	10,577.37	85.33	44.68	175.88	-4,774.51	398.12	1,036.71	972.58	64.13	16.165	
15,900.00	9,970.58	11,866.57	10,577.34	86.72	44.61	175.42	-4,774.71	393.29	1,119.35	1,056.10	63.25	17.697	
16,000.00	9,970.04	11,861.78	10,577.30	88.11	44.53	174.97	-4,774.92	388.50	1,204.61	1,142.12	62.49	19.278	
16,100.00	9,969.51	11,857.03	10,577.27	89.51	44.46	174.53	-4,775.12	383.76	1,291.97	1,230.13	61.83	20.894	
16,200.00	9,968.98	11,852.33	10,577.23	90.90	44.39	174.08	-4,775.31	379.07	1,381.02	1,319.74	61.28	22.535	
16,300.00	9,968.45	11,847.68	10,577.19	92.30	44.32	173.65	-4,775.51	374.42	1,471.47	1,410.65	60.82	24.192	
16,400.00	9,967.92	11,843.07	10,577.15	93.70	44.26	173.22	-4,775.70	369.81	1,563.07	1,502.63	60.44	25.861	
16,500.00	9,967.38	11,838.50	10,577.11	95.10	44.19	172.79	-4,775.89	365.24	1,655.63	1,595.50	60.13	27.535	
16,600.00	9,966.85	11,833.97	10,577.06	96.50	44.12	172.37	-4,776.08	360.72	1,749.00	1,689.13	59.87	29.212	
16,700.00	9,966.32	11,829.49	10,577.01	97.90	44.06	171.95	-4,776.26	356.24	1,843.05	1,783.39	59.66	30.891	
16,800.00	9,965.79	11,825.05	10,576.97	99.31	43.99	171.54	-4,776.44	351.80	1,937.69	1,878.19	59.50	32.568	
16,900.00	9,965.26	11,820.64	10,576.92	100.71	43.93	171.13	-4,776.62	347.41	2,032.83	1,973.46	59.36	34.244	
17,000.00	9,964.72	11,816.28	10,576.86	102.12	43.87	170.73	-4,776.80	343.05	2,128.40	2,069.14	59.26	35.916	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - Rana Salada Fed Com 0106 213H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 179-MWD, 509-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
11,000.00	9,996.64	11,694.79	10,568.89	27.39	39.32	-176.59	-2,880.37	485.21	2,146.11	2,086.21	59.90	35.830	
11,100.00	9,996.11	11,691.67	10,568.80	28.04	39.24	-176.89	-2,880.43	482.10	2,050.09	1,990.11	59.98	34.179	
11,200.00	9,995.58	11,688.62	10,568.71	28.73	39.17	-177.19	-2,880.49	479.05	1,954.47	1,894.39	60.08	32.532	
11,300.00	9,995.05	11,685.63	10,568.63	29.48	39.11	-177.48	-2,880.55	476.06	1,859.30	1,799.11	60.19	30.892	
11,400.00	9,994.52	11,682.69	10,568.54	30.28	39.04	-177.77	-2,880.61	473.12	1,764.66	1,704.35	60.31	29.259	
11,500.00	9,993.98	11,679.82	10,568.46	31.13	38.97	-178.05	-2,880.66	470.25	1,670.65	1,610.20	60.45	27.638	
11,600.00	9,993.45	11,676.99	10,568.38	32.03	38.91	-178.33	-2,880.71	467.43	1,577.36	1,516.77	60.60	26.030	
11,700.00	9,992.92	11,674.23	10,568.30	32.97	38.84	-178.60	-2,880.77	464.66	1,484.95	1,424.19	60.76	24.440	
11,800.00	9,992.39	11,671.51	10,568.21	33.95	38.78	-178.86	-2,880.82	461.95	1,393.58	1,332.65	60.93	22.872	
11,900.00	9,991.86	11,668.85	10,568.14	34.96	38.72	-179.12	-2,880.86	459.28	1,303.47	1,242.37	61.10	21.333	
12,000.00	9,991.32	11,666.23	10,568.06	36.01	38.66	-179.38	-2,880.91	456.67	1,214.91	1,153.64	61.27	19.829	
12,100.00	9,990.79	11,663.66	10,567.98	37.08	38.60	-179.63	-2,880.96	454.11	1,128.26	1,066.84	61.42	18.370	
12,200.00	9,990.26	11,661.14	10,567.90	38.18	38.55	-179.88	-2,881.00	451.59	1,043.98	982.46	61.53	16.968	
12,300.00	9,989.73	11,658.67	10,567.83	39.31	38.49	-179.88	-2,881.04	449.11	962.72	901.17	61.55	15.640	
12,400.00	9,989.20	11,656.24	10,567.75	40.46	38.43	-179.64	-2,881.08	446.68	885.30	823.85	61.45	14.406	
12,500.00	9,988.66	11,653.85	10,567.68	41.63	38.38	-179.41	-2,881.12	444.30	812.81	751.67	61.14	13.295	
12,600.00	9,988.13	11,651.50	10,567.60	42.82	38.32	-179.18	-2,881.16	441.95	746.70	686.19	60.50	12.341	
12,700.00	9,987.60	11,649.20	10,567.53	44.03	38.27	-178.95	-2,881.20	439.65	688.80	629.37	59.44	11.589	
12,800.00	9,987.07	11,646.93	10,567.46	45.25	38.22	-178.73	-2,881.24	437.39	641.35	583.49	57.86	11.084	
12,900.00	9,986.54	11,644.71	10,567.39	46.48	38.17	-178.51	-2,881.27	435.16	606.79	550.90	55.90	10.856 SF	
13,000.00	9,986.00	11,642.52	10,567.32	47.73	38.12	-178.30	-2,881.31	432.97	587.42	533.41	54.01	10.876	
13,065.74	9,985.65	11,641.10	10,567.27	48.56	38.09	-178.16	-2,881.33	431.56	583.73	530.58	53.14	10.984 CC, ES	
13,100.00	9,985.47	11,640.37	10,567.25	48.99	38.07	-178.08	-2,881.34	430.82	584.73	531.87	52.86	11.061	
13,200.00	9,984.94	11,638.25	10,567.18	50.26	38.02	-177.88	-2,881.38	428.71	598.96	546.28	52.68	11.370	
13,300.00	9,984.41	11,636.17	10,567.11	51.54	37.97	-177.67	-2,881.41	426.63	628.96	575.93	53.02	11.862	
13,400.00	9,983.88	11,634.12	10,567.04	52.83	37.93	-177.47	-2,881.44	424.58	672.62	619.19	53.43	12.589	
13,500.00	9,983.34	11,632.11	10,566.98	54.13	37.88	-177.27	-2,881.47	422.57	727.48	673.79	53.69	13.549	
13,600.00	9,982.81	11,630.13	10,566.91	55.44	37.84	-177.08	-2,881.50	420.59	791.23	737.42	53.81	14.704	
13,700.00	9,982.28	11,628.18	10,566.85	56.75	37.79	-176.89	-2,881.53	418.65	861.89	808.05	53.83	16.011	
13,800.00	9,981.75	11,628.00	10,566.84	58.07	37.79	-176.87	-2,881.53	418.47	937.89	884.06	53.84	17.422	
13,900.00	9,981.22	11,628.00	10,566.84	59.39	37.79	-176.87	-2,881.53	418.47	1,018.06	964.21	53.84	18.908	
14,000.00	9,980.68	11,628.00	10,566.84	60.73	37.79	-176.87	-2,881.53	418.47	1,101.47	1,047.60	53.87	20.446	
14,100.00	9,980.15	11,628.00	10,566.84	62.06	37.79	-176.87	-2,881.53	418.47	1,187.45	1,133.53	53.92	22.021	
14,200.00	9,979.62	11,628.00	10,566.84	63.40	37.79	-176.87	-2,881.53	418.47	1,275.48	1,221.48	54.00	23.620	
14,300.00	9,979.09	11,628.00	10,566.84	64.75	37.79	-176.87	-2,881.53	418.47	1,365.15	1,311.05	54.10	25.234	
14,400.00	9,978.56	11,628.00	10,566.84	66.10	37.79	-176.87	-2,881.53	418.47	1,456.17	1,401.96	54.21	26.859	
14,500.00	9,978.02	11,628.00	10,566.84	67.45	37.79	-176.87	-2,881.53	418.47	1,548.30	1,493.96	54.34	28.491	
14,600.00	9,977.49	11,628.00	10,566.84	68.81	37.79	-176.87	-2,881.53	418.47	1,641.35	1,586.87	54.48	30.125	
14,700.00	9,976.96	11,628.00	10,566.84	70.17	37.79	-176.87	-2,881.53	418.47	1,735.17	1,680.54	54.63	31.761	
14,800.00	9,976.43	11,628.00	10,566.84	71.54	37.79	-176.87	-2,881.53	418.47	1,829.65	1,774.87	54.79	33.397	
14,900.00	9,975.90	11,628.00	10,566.84	72.91	37.79	-176.87	-2,881.53	418.47	1,924.69	1,869.75	54.94	35.031	
15,000.00	9,975.36	11,628.00	10,566.84	74.28	37.79	-176.87	-2,881.53	418.47	2,020.20	1,965.10	55.10	36.664	
15,100.00	9,974.83	11,628.00	10,566.84	75.65	37.79	-176.87	-2,881.53	418.47	2,116.13	2,060.87	55.26	38.293	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - Rana Salada Fed Com 0106 223H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 129-MWD, 416-MWD												Offset Well Error:	0.50 usft
Reference												Rule Assigned:	
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		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,000.00	9,991.32	11,788.00	10,584.38	36.01	40.38	-177.46	-3,850.21	472.76	2,122.89	2,061.39	61.50	34.517	
12,100.00	9,990.79	11,788.00	10,584.38	37.08	40.38	-177.46	-3,850.21	472.76	2,027.26	1,965.56	61.71	32.853	
12,200.00	9,990.26	11,788.00	10,584.38	38.18	40.38	-177.46	-3,850.21	472.76	1,932.08	1,870.16	61.92	31.201	
12,300.00	9,989.73	11,788.00	10,584.38	39.31	40.38	-177.46	-3,850.21	472.76	1,837.41	1,775.25	62.15	29.562	
12,400.00	9,989.20	11,783.23	10,584.15	40.46	40.27	-177.91	-3,850.34	468.00	1,743.32	1,680.97	62.36	27.958	
12,500.00	9,988.66	11,780.20	10,584.00	41.63	40.20	-178.20	-3,850.42	464.97	1,649.93	1,587.34	62.59	26.359	
12,600.00	9,988.13	11,777.15	10,583.85	42.82	40.14	-178.48	-3,850.51	461.93	1,557.35	1,494.50	62.85	24.778	
12,700.00	9,987.60	11,774.10	10,583.70	44.03	40.07	-178.77	-3,850.59	458.88	1,465.75	1,402.61	63.13	23.217	
12,800.00	9,987.07	11,771.04	10,583.55	45.25	40.00	-179.06	-3,850.67	455.82	1,375.30	1,311.87	63.43	21.682	
12,900.00	9,986.54	11,767.96	10,583.40	46.48	39.94	-179.35	-3,850.75	452.75	1,286.26	1,222.51	63.74	20.178	
13,000.00	9,986.00	11,764.88	10,583.25	47.73	39.87	-179.64	-3,850.84	449.67	1,198.94	1,134.88	64.07	18.714	
13,100.00	9,985.47	11,761.78	10,583.10	48.99	39.80	-179.94	-3,850.92	446.59	1,113.75	1,049.37	64.38	17.299	
13,200.00	9,984.94	11,758.68	10,582.95	50.26	39.73	-179.77	-3,851.01	443.49	1,031.21	966.54	64.67	15.946	
13,300.00	9,984.41	11,755.57	10,582.80	51.54	39.67	-179.48	-3,851.09	440.38	952.02	887.12	64.89	14.670	
13,400.00	9,983.88	11,752.44	10,582.64	52.83	39.60	-179.18	-3,851.18	437.26	877.07	812.07	65.00	13.493	
13,500.00	9,983.34	11,749.31	10,582.49	54.13	39.53	-178.88	-3,851.26	434.13	807.56	742.64	64.92	12.439	
13,600.00	9,982.81	11,746.17	10,582.34	55.44	39.46	-178.59	-3,851.35	430.99	745.00	680.44	64.56	11.540	
13,700.00	9,982.28	11,743.01	10,582.19	56.75	39.39	-178.29	-3,851.44	427.84	691.29	627.45	63.85	10.827	
13,800.00	9,981.75	11,739.85	10,582.04	58.07	39.32	-177.99	-3,851.52	424.68	648.63	585.83	62.81	10.328	
13,900.00	9,981.22	11,736.67	10,581.89	59.39	39.25	-177.69	-3,851.61	421.51	619.31	557.63	61.68	10.041	
14,000.00	9,980.68	11,733.49	10,581.73	60.73	39.18	-177.38	-3,851.70	418.33	605.26	544.34	60.92	9.936 SF	
14,036.12	9,980.49	11,732.34	10,581.68	61.21	39.16	-177.28	-3,851.73	417.18	604.18	543.38	60.79	9.938 CC, ES	
14,100.00	9,980.15	11,730.29	10,581.58	62.06	39.11	-177.08	-3,851.79	415.14	607.54	546.78	60.77	9.998	
14,200.00	9,979.62	11,727.09	10,581.43	63.40	39.04	-176.78	-3,851.88	411.94	625.99	565.01	60.98	10.266	
14,300.00	9,979.09	11,723.87	10,581.28	64.75	38.97	-176.47	-3,851.97	408.73	659.24	598.13	61.11	10.787	
14,400.00	9,978.56	11,720.65	10,581.12	66.10	38.90	-176.17	-3,852.06	405.51	705.20	644.23	60.97	11.567	
14,500.00	9,978.02	11,717.41	10,580.97	67.45	38.83	-175.86	-3,852.15	402.28	761.58	701.02	60.56	12.576	
14,600.00	9,977.49	11,714.16	10,580.82	68.81	38.76	-175.55	-3,852.24	399.04	826.24	766.25	59.99	13.773	
14,700.00	9,976.96	11,710.90	10,580.66	70.17	38.69	-175.24	-3,852.33	395.78	897.39	838.03	59.36	15.117	
14,800.00	9,976.43	11,707.63	10,580.51	71.54	38.62	-174.94	-3,852.42	392.52	973.62	914.87	58.75	16.571	
14,900.00	9,975.90	11,709.49	10,580.51	72.91	38.65	-175.11	-3,852.36	394.37	1,053.80	995.53	58.26	18.086	
15,000.00	9,975.36	11,704.40	10,580.32	74.28	38.54	-174.63	-3,852.51	389.29	1,137.15	1,079.38	57.76	19.686	
15,100.00	9,974.83	11,699.46	10,580.12	75.65	38.44	-174.16	-3,852.65	384.35	1,222.98	1,165.65	57.34	21.330	
15,200.00	9,974.30	11,694.64	10,579.90	77.03	38.34	-173.71	-3,852.79	379.55	1,310.81	1,253.83	56.98	23.005	
15,300.00	9,973.77	11,689.96	10,579.68	78.41	38.24	-173.27	-3,852.92	374.87	1,400.27	1,343.58	56.69	24.701	
15,400.00	9,973.24	11,685.40	10,579.45	79.79	38.14	-172.84	-3,853.05	370.32	1,491.05	1,434.59	56.46	26.411	
15,500.00	9,972.70	11,680.96	10,579.21	81.17	38.05	-172.42	-3,853.17	365.89	1,582.93	1,526.66	56.27	28.131	
15,600.00	9,972.17	11,676.64	10,578.97	82.56	37.96	-172.01	-3,853.29	361.57	1,675.74	1,619.61	56.13	29.855	
15,700.00	9,971.64	11,672.43	10,578.72	83.94	37.87	-171.61	-3,853.40	357.37	1,769.32	1,713.30	56.02	31.582	
15,800.00	9,971.11	11,668.32	10,578.46	85.33	37.78	-171.23	-3,853.51	353.27	1,863.57	1,807.62	55.95	33.310	
15,900.00	9,970.58	11,664.31	10,578.20	86.72	37.69	-170.85	-3,853.61	349.28	1,958.37	1,902.48	55.89	35.037	
16,000.00	9,970.04	11,660.41	10,577.93	88.11	37.61	-170.49	-3,853.71	345.38	2,053.67	1,997.81	55.86	36.762	
16,100.00	9,969.51	11,656.59	10,577.67	89.51	37.53	-170.13	-3,853.80	341.58	2,149.39	2,093.54	55.85	38.485	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - Rana Salada Fed Com 0106 233H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 137-MWD												Offset Well Error:	0.50 usft
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,600.00	9,559.81	11,987.35	10,636.38	24.81	43.76	-3.28	-1,473.51	545.81	2,144.53	2,084.73	59.80	35.859	
9,700.00	9,654.58	11,982.02	10,636.51	24.67	43.65	-3.74	-1,473.67	540.49	2,070.73	2,010.51	60.22	34.385	
9,800.00	9,742.44	11,976.32	10,636.65	24.53	43.53	-4.52	-1,473.82	534.79	1,988.01	1,927.51	60.50	32.859	
9,900.00	9,820.71	11,970.49	10,636.78	24.39	43.40	-6.05	-1,473.98	528.96	1,897.88	1,837.21	60.67	31.284	
10,000.00	9,887.02	11,964.77	10,636.92	24.30	43.28	-10.11	-1,474.13	523.25	1,802.19	1,741.45	60.74	29.670	
10,100.00	9,939.35	11,959.35	10,637.05	24.27	43.17	-41.13	-1,474.26	517.83	1,703.16	1,642.41	60.75	28.034	
10,200.00	9,976.12	11,954.39	10,637.16	24.32	43.06	-165.55	-1,474.38	512.87	1,603.46	1,542.73	60.73	26.404	
10,300.00	9,996.21	11,950.02	10,637.26	24.46	42.97	-173.87	-1,474.48	508.50	1,506.30	1,445.60	60.69	24.819	
10,400.00	9,999.84	11,946.28	10,637.35	24.71	42.89	-175.75	-1,474.56	504.77	1,415.04	1,354.42	60.62	23.342	
10,500.00	9,999.30	11,942.84	10,637.43	25.02	42.82	-176.05	-1,474.64	501.33	1,326.90	1,266.40	60.50	21.931	
10,600.00	9,998.77	11,939.56	10,637.50	25.39	42.75	-176.34	-1,474.71	498.04	1,240.56	1,180.21	60.34	20.558	
10,700.00	9,998.24	11,936.42	10,637.57	25.81	42.68	-176.62	-1,474.77	494.91	1,156.41	1,096.29	60.12	19.235	
10,800.00	9,997.71	11,933.41	10,637.64	26.28	42.62	-176.88	-1,474.83	491.91	1,074.97	1,015.17	59.80	17.975	
10,900.00	9,997.18	11,930.54	10,637.70	26.81	42.56	-177.14	-1,474.89	489.03	996.91	937.56	59.35	16.798	
11,000.00	9,996.64	11,927.78	10,637.76	27.39	42.50	-177.38	-1,474.94	486.28	923.08	864.39	58.69	15.728	
11,100.00	9,996.11	11,925.14	10,637.82	28.04	42.45	-177.62	-1,474.99	483.63	854.59	796.83	57.76	14.796	
11,200.00	9,995.58	11,922.61	10,637.88	28.73	42.39	-177.84	-1,475.03	481.11	792.81	736.35	56.46	14.042	
11,300.00	9,995.05	11,920.14	10,637.93	29.48	42.34	-178.06	-1,475.08	478.64	739.43	684.72	54.71	13.516	
11,400.00	9,994.52	11,917.59	10,637.98	30.28	42.29	-178.29	-1,475.13	476.09	696.40	643.91	52.48	13.269 SF	
11,500.00	9,993.98	11,914.95	10,638.03	31.13	42.24	-178.52	-1,475.17	473.45	665.70	615.78	49.92	13.335	
11,600.00	9,993.45	11,912.22	10,638.09	32.03	42.18	-178.76	-1,475.23	470.72	649.11	601.68	47.43	13.687	
11,659.17	9,993.14	11,910.56	10,638.12	32.58	42.15	-178.91	-1,475.26	469.06	646.41	600.17	46.24	13.980 CC, ES	
11,700.00	9,992.92	11,909.40	10,638.14	32.97	42.12	-179.01	-1,475.28	467.90	647.70	602.07	45.62	14.196	
11,800.00	9,992.39	11,906.47	10,638.20	33.95	42.06	-179.27	-1,475.34	464.98	661.56	616.58	44.98	14.708	
11,900.00	9,991.86	11,903.45	10,638.25	34.96	42.00	-179.54	-1,475.40	461.95	689.79	644.40	45.38	15.199	
12,000.00	9,991.32	11,900.31	10,638.30	36.01	41.94	-179.82	-1,475.47	458.81	730.70	684.35	46.36	15.762	
12,100.00	9,990.79	11,897.05	10,638.35	37.08	41.87	179.89	-1,475.54	455.56	782.33	734.84	47.49	16.474	
12,200.00	9,990.26	11,893.67	10,638.41	38.18	41.80	179.60	-1,475.61	452.18	842.69	794.14	48.55	17.356	
12,300.00	9,989.73	11,890.16	10,638.46	39.31	41.73	179.28	-1,475.69	448.67	910.05	860.57	49.48	18.392	
12,400.00	9,989.20	11,886.51	10,638.51	40.46	41.65	178.96	-1,475.77	445.02	982.98	932.72	50.26	19.557	
12,500.00	9,988.66	11,882.72	10,638.56	41.63	41.58	178.63	-1,475.86	441.23	1,060.32	1,009.41	50.91	20.826	
12,600.00	9,988.13	11,878.76	10,638.60	42.82	41.50	178.28	-1,475.96	437.28	1,141.18	1,089.73	51.46	22.178	
12,700.00	9,987.60	11,874.64	10,638.65	44.03	41.41	177.91	-1,476.06	433.16	1,224.86	1,172.95	51.91	23.597	
12,800.00	9,987.07	11,870.35	10,638.69	45.25	41.33	177.53	-1,476.16	428.87	1,310.82	1,258.53	52.29	25.070	
12,900.00	9,986.54	11,865.87	10,638.73	46.48	41.24	177.14	-1,476.28	424.38	1,398.64	1,346.03	52.61	26.587	
13,000.00	9,986.00	11,861.18	10,638.77	47.73	41.14	176.72	-1,476.40	419.70	1,487.98	1,435.11	52.88	28.141	
13,100.00	9,985.47	11,856.28	10,638.80	48.99	41.04	176.29	-1,476.54	414.80	1,578.60	1,525.49	53.10	29.727	
13,200.00	9,984.94	11,851.16	10,638.83	50.26	40.94	175.84	-1,476.68	409.68	1,670.27	1,616.98	53.30	31.340	
13,300.00	9,984.41	11,845.78	10,638.86	51.54	40.83	175.37	-1,476.83	404.31	1,762.85	1,709.39	53.46	32.977	
13,400.00	9,983.88	11,840.14	10,638.87	52.83	40.72	174.87	-1,477.00	398.67	1,856.18	1,802.59	53.59	34.637	
13,500.00	9,983.34	11,834.22	10,638.88	54.13	40.60	174.35	-1,477.18	392.75	1,950.16	1,896.46	53.70	36.316	
13,600.00	9,982.81	11,828.00	10,638.89	55.44	40.47	173.81	-1,477.37	386.53	2,044.71	1,990.92	53.79	38.014	
13,700.00	9,982.28	11,828.00	10,638.89	56.75	40.47	173.81	-1,477.37	386.53	2,139.74	2,085.75	53.99	39.632	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - Rana Salada Fed Com 0106 236H - Wellbore #1 - FINAL SURVEYS													Offset Site Error:	0.00 usft	
Survey Program:		260-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
3,800.00	3,782.40	4,645.36	4,474.86	12.63	20.97	155.05	-1,717.79	-629.70	2,187.06	2,160.92	26.14	83.665			
3,900.00	3,881.54	4,732.00	4,555.92	13.01	21.52	155.58	-1,687.29	-632.15	2,167.11	2,140.14	26.97	80.342			
4,000.00	3,980.68	4,812.84	4,631.53	13.40	22.04	156.10	-1,658.88	-635.32	2,147.87	2,120.06	27.81	77.234			
4,100.00	4,079.82	4,886.67	4,700.67	13.78	22.50	156.60	-1,633.25	-639.04	2,129.71	2,101.07	28.64	74.360			
4,200.00	4,178.96	4,953.62	4,763.54	14.17	22.91	157.06	-1,610.56	-642.93	2,112.91	2,083.45	29.45	71.734			
4,300.00	4,278.11	5,015.00	4,821.47	14.56	23.27	157.48	-1,590.64	-646.75	2,097.86	2,067.61	30.25	69.349			
4,400.00	4,377.25	5,068.13	4,871.95	14.96	23.56	157.84	-1,574.41	-650.12	2,084.87	2,053.87	31.00	67.254			
4,500.00	4,476.39	5,125.25	4,926.63	15.35	23.87	158.21	-1,558.30	-653.66	2,074.16	2,042.40	31.75	65.322			
4,600.00	4,575.53	5,204.00	5,002.55	15.75	24.26	158.68	-1,537.75	-657.62	2,065.10	2,032.54	32.56	63.417			
4,700.00	4,674.67	5,263.64	5,058.85	16.15	25.02	159.49	-1,497.00	-659.79	2,055.21	2,021.63	33.58	61.203			
4,800.00	4,773.81	5,312.99	5,103.30	16.54	25.79	160.19	-1,455.51	-657.58	2,041.80	2,007.26	34.54	59.114			
4,900.00	4,872.95	5,361.46	5,198.31	16.95	26.35	160.73	-1,425.61	-656.89	2,027.95	1,992.53	35.42	57.249			
5,000.00	4,972.10	5,410.93	5,297.50	17.35	27.07	161.52	-1,386.55	-659.65	2,014.00	1,977.55	36.45	55.255			
5,100.00	5,071.24	5,462.78	5,363.52	17.75	27.68	162.22	-1,352.73	-662.64	1,998.69	1,961.24	37.45	53.368			
5,200.00	5,170.38	5,516.89	5,413.71	18.16	28.49	163.18	-1,308.91	-668.32	1,983.37	1,944.77	38.60	51.384			
5,300.00	5,269.52	5,572.41	5,469.03	18.56	28.90	163.69	-1,286.08	-671.60	1,968.20	1,928.66	39.54	49.779			
5,400.00	5,368.66	5,628.86	5,520.90	18.97	29.26	164.16	-1,265.85	-674.76	1,954.76	1,914.32	40.45	48.330			
5,500.00	5,467.80	5,684.00	5,571.23	19.37	29.57	164.57	-1,249.07	-677.79	1,943.57	1,902.25	41.31	47.047			
5,600.00	5,566.94	5,739.25	5,624.09	19.78	30.07	165.24	-1,222.37	-683.52	1,933.92	1,891.60	42.33	45.690			
5,700.00	5,666.08	5,794.58	5,679.70	20.19	30.91	166.38	-1,176.88	-692.63	1,923.42	1,879.81	43.62	44.099			
5,800.00	5,765.23	5,850.47	5,735.31	20.60	31.38	167.01	-1,150.83	-696.36	1,912.70	1,868.09	44.61	42.872			
5,900.00	5,864.37	5,906.00	5,791.83	21.01	31.74	167.48	-1,131.22	-698.76	1,903.43	1,857.90	45.52	41.814			
6,000.00	5,963.51	5,962.00	5,848.34	21.42	32.21	168.06	-1,105.92	-700.46	1,895.43	1,848.96	46.47	40.785			
6,100.00	6,062.65	6,017.79	5,903.44	21.84	32.46	168.37	-1,092.18	-700.58	1,888.84	1,841.59	47.25	39.974			
6,200.00	6,161.82	6,074.19	5,989.81	22.23	32.82	168.77	-1,073.76	-700.41	1,883.85	1,835.78	48.07	39.193			
6,300.00	6,261.31	6,136.94	6,057.75	22.67	33.59	169.54	-1,033.48	-697.88	1,874.39	1,825.24	49.16	38.130			
6,400.00	6,361.08	6,198.59	6,115.58	23.13	34.11	170.07	-1,005.90	-698.05	1,859.59	1,809.42	50.17	37.063			
6,500.00	6,461.03	6,259.76	6,172.48	23.53	34.63	170.66	-977.67	-700.53	1,841.32	1,790.14	51.17	35.981			
6,600.00	6,561.03	6,321.00	6,231.17	23.61	34.94	-139.25	-961.03	-702.45	1,821.20	1,769.48	51.72	35.214			
6,700.00	6,661.03	6,385.00	6,291.54	23.65	35.42	-138.63	-935.43	-705.86	1,802.64	1,750.29	52.35	34.434			
6,800.00	6,761.03	6,448.58	6,352.91	23.69	35.60	-138.39	-925.98	-707.50	1,786.26	1,733.54	52.72	33.880			
6,900.00	6,861.03	6,510.00	6,413.70	23.74	35.86	-138.03	-912.88	-710.63	1,772.41	1,719.27	53.14	33.352			
7,000.00	6,961.03	6,572.82	6,475.76	23.78	36.14	-137.60	-898.79	-715.37	1,760.81	1,707.21	53.59	32.855			
7,100.00	7,061.03	6,635.53	6,538.55	23.83	36.44	-137.12	-884.08	-721.93	1,751.27	1,697.20	54.07	32.389			
7,200.00	7,161.03	6,698.95	6,601.76	23.87	36.91	-136.31	-861.11	-733.99	1,743.13	1,688.30	54.83	31.792			
7,300.00	7,261.03	6,762.16	6,664.41	23.92	37.47	-135.32	-832.79	-748.09	1,733.39	1,677.68	55.71	31.112			
7,400.00	7,361.03	6,825.05	6,727.99	23.96	37.84	-134.63	-813.92	-758.47	1,724.74	1,668.41	56.33	30.619			
7,500.00	7,461.03	6,889.80	6,791.55	24.01	38.19	-133.97	-796.82	-769.33	1,718.17	1,661.28	56.89	30.200			
7,600.00	7,561.03	6,954.00	6,856.63	24.05	38.56	-133.25	-778.71	-781.85	1,713.55	1,656.04	57.51	29.794			
7,700.00	7,661.03	7,018.28	6,919.44	24.10	38.89	-132.59	-762.67	-793.38	1,710.30	1,652.24	58.06	29.456			
7,800.00	7,761.03	7,082.26	6,982.66	24.15	39.35	-131.74	-741.53	-807.59	1,707.18	1,648.33	58.84	29.013			
7,900.00	7,861.03	7,145.84	7,047.58	24.19	39.80	-130.92	-719.68	-819.66	1,702.49	1,642.91	59.58	28.574			
8,000.00	7,961.03	7,210.79	7,112.09	24.24	40.10	-130.41	-705.93	-826.86	1,698.29	1,638.25	60.05	28.284			
8,100.00	8,061.03	7,275.74	7,177.04	24.29	40.39	-129.96	-693.63	-832.97	1,694.81	1,634.33	60.49	28.019			
8,200.00	8,161.03	7,340.27	7,242.64	24.34	40.69	-129.51	-680.72	-838.58	1,691.15	1,630.19	60.96	27.741			
8,300.00	8,261.03	7,405.70	7,307.16	24.38	40.98	-129.06	-668.01	-843.76	1,687.18	1,625.77	61.41	27.473			
8,400.00	8,361.03	7,471.51	7,372.06	24.43	41.27	-128.63	-655.74	-848.80	1,683.29	1,621.44	61.84	27.218			
8,500.00	8,461.03	7,537.92	7,438.49	24.48	41.81	-127.82	-631.11	-855.95	1,677.60	1,614.97	62.63	26.787			
8,600.00	8,561.03	7,604.19	7,504.87	24.53	42.08	-127.45	-618.64	-857.22	1,670.14	1,607.13	63.01	26.507			
8,700.00	8,661.03	7,670.18	7,571.17	24.57	42.34	-127.13	-607.22	-857.74	1,663.18	1,599.82	63.36	26.248			
8,800.00	8,761.03	7,736.71	7,636.11	24.62	42.58	-126.83	-596.64	-857.77	1,656.52	1,592.82	63.70	26.006			
8,900.00	8,861.03	7,802.75	7,702.65	24.67	42.81	-126.57	-587.09	-857.56	1,650.19	1,586.19	64.01	25.782			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - Rana Salada Fed Com 0106 236H - Wellbore #1 - FINAL SURVEYS												Offset Site Error:	0.00 usft
Survey Program: 260-MWD												Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,000.00	8,961.03	9,385.67	9,050.19	24.72	43.02	-126.34	-578.77	-857.27	1,644.42	1,580.13	64.29	25.578	
9,100.00	9,061.03	9,475.62	9,139.82	24.77	43.21	-126.13	-571.19	-857.07	1,639.25	1,574.69	64.56	25.392	
9,200.00	9,161.03	12,098.91	10,605.18	24.82	54.93	174.77	-213.44	520.86	1,568.54	1,520.57	47.97	32.701	
9,300.00	9,261.03	12,096.74	10,605.26	24.87	54.90	174.98	-213.45	518.69	1,476.93	1,428.04	48.88	30.213	
9,400.00	9,361.03	12,094.45	10,605.34	24.92	54.87	175.19	-213.47	516.41	1,386.47	1,336.59	49.88	27.795	
9,500.00	9,461.01	12,092.04	10,605.43	24.92	54.85	-5.47	-213.49	514.00	1,296.96	1,246.02	50.94	25.461	
9,600.00	9,559.81	12,089.41	10,605.53	24.81	54.82	-8.34	-213.51	511.37	1,203.35	1,151.52	51.84	23.215	
9,700.00	9,654.58	12,086.58	10,605.65	24.67	54.78	-18.65	-213.54	508.54	1,105.60	1,053.15	52.45	21.078	
9,800.00	9,742.44	12,083.63	10,605.77	24.53	54.75	-137.68	-213.56	505.60	1,005.89	953.15	52.74	19.074	
9,900.00	9,820.71	12,080.65	10,605.89	24.39	54.72	-169.30	-213.59	502.62	907.11	854.49	52.62	17.239	
10,000.00	9,887.02	12,077.75	10,606.02	24.30	54.68	-173.99	-213.62	499.72	813.14	761.14	52.00	15.637	
10,100.00	9,939.35	12,075.04	10,606.14	24.27	54.65	-175.77	-213.65	497.02	729.23	678.49	50.75	14.370	
10,200.00	9,976.12	12,072.67	10,606.25	24.32	54.63	-176.64	-213.67	494.65	662.22	613.47	48.75	13.585	
10,300.00	9,996.21	12,070.76	10,606.34	24.46	54.60	-177.09	-213.69	492.74	619.92	573.79	46.14	13.437 SF	
10,398.73	10,001.70	12,069.33	10,606.40	24.71	54.59	-177.28	-213.71	491.32	606.19	562.75	43.44	13.953 CC, ES	
10,400.00	9,999.84	12,069.39	10,606.40	24.71	54.59	-177.28	-213.71	491.37	608.05	564.64	43.41	14.007	
10,500.00	9,999.30	12,068.14	10,606.46	25.02	54.58	-177.40	-213.72	490.13	616.59	575.05	41.54	14.844	
10,600.00	9,998.77	12,066.87	10,606.52	25.39	54.56	-177.52	-213.74	488.86	640.81	599.57	41.24	15.539	
10,700.00	9,998.24	12,065.57	10,606.59	25.81	54.55	-177.64	-213.75	487.56	679.03	636.79	42.24	16.074	
10,800.00	9,997.71	12,064.25	10,606.65	26.28	54.53	-177.76	-213.77	486.24	729.06	685.18	43.88	16.614	
10,900.00	9,997.18	12,062.90	10,606.72	26.81	54.52	-177.89	-213.78	484.88	788.65	743.00	45.64	17.278	
11,000.00	9,996.64	12,061.51	10,606.79	27.39	54.50	-178.02	-213.80	483.50	855.80	808.52	47.28	18.101	
11,100.00	9,996.11	12,060.10	10,606.86	28.04	54.49	-178.15	-213.82	482.09	928.89	880.18	48.70	19.073	
11,200.00	9,995.58	12,058.65	10,606.94	28.73	54.47	-178.29	-213.83	480.65	1,006.61	956.70	49.91	20.169	
11,300.00	9,995.05	12,057.17	10,607.01	29.48	54.45	-178.43	-213.85	479.17	1,087.97	1,037.05	50.92	21.365	
11,400.00	9,994.52	12,055.66	10,607.09	30.28	54.44	-178.57	-213.87	477.66	1,172.22	1,120.44	51.77	22.641	
11,500.00	9,993.98	12,054.12	10,607.17	31.13	54.42	-178.72	-213.89	476.12	1,258.77	1,206.28	52.49	23.981	
11,600.00	9,993.45	12,052.54	10,607.26	32.03	54.40	-178.87	-213.91	474.54	1,347.18	1,294.09	53.10	25.372	
11,700.00	9,992.92	12,050.92	10,607.35	32.97	54.39	-179.02	-213.93	472.92	1,437.12	1,383.50	53.62	26.803	
11,800.00	9,992.39	12,049.26	10,607.44	33.95	54.37	-179.17	-213.96	471.27	1,528.30	1,474.23	54.06	28.269	
11,900.00	9,991.86	12,047.56	10,607.54	34.96	54.35	-179.33	-213.98	469.57	1,620.52	1,566.07	54.45	29.761	
12,000.00	9,991.32	12,045.82	10,607.63	36.01	54.33	-179.50	-214.00	467.84	1,713.61	1,658.82	54.79	31.277	
12,100.00	9,990.79	12,044.27	10,607.72	37.08	54.31	-179.64	-214.03	466.29	1,807.44	1,752.35	55.09	32.810	
12,200.00	9,990.26	12,042.23	10,607.84	38.18	54.29	-179.84	-214.06	464.26	1,901.90	1,846.55	55.35	34.361	
12,300.00	9,989.73	12,040.19	10,607.96	39.31	54.27	179.97	-214.09	462.22	1,996.89	1,941.30	55.58	35.926	
12,400.00	9,989.20	12,038.14	10,608.08	40.46	54.25	179.78	-214.12	460.17	2,092.35	2,036.55	55.79	37.501	
12,500.00	9,988.66	12,036.09	10,608.20	41.63	54.22	179.59	-214.15	458.12	2,188.21	2,132.23	55.98	39.086	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0.50 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	89.31	0.24	20.00	20.00	18.83	1.18	17.003	
100.00	100.00	100.00	100.00	0.66	0.52	89.31	0.24	20.00	20.00	17.95	2.05	9.753	
200.00	200.00	200.00	200.00	1.35	0.70	89.31	0.24	20.00	20.00	17.20	2.80	7.132	
300.00	300.00	300.00	300.00	1.82	0.99	89.31	0.24	20.00	20.00	16.50	3.50	5.715	
400.00	400.00	400.00	400.00	2.19	1.31	89.31	0.24	20.00	20.00	15.84	4.16	4.811	
500.00	500.00	500.00	500.00	2.51	1.65	89.31	0.24	20.00	20.00	15.21	4.79	4.177	
600.00	600.00	600.00	600.00	2.80	1.99	89.31	0.24	20.00	20.00	14.60	5.40	3.704	
700.00	700.00	700.00	700.00	3.06	2.34	89.31	0.24	20.00	20.00	14.01	5.99	3.337	
800.00	800.00	800.00	800.00	3.30	2.69	89.31	0.24	20.00	20.00	13.43	6.58	3.042	
900.00	900.00	900.00	900.00	3.53	3.04	89.31	0.24	20.00	20.00	12.85	7.15	2.799	
1,000.00	1,000.00	1,000.00	1,000.00	3.75	3.40	89.31	0.24	20.00	20.00	12.29	7.71	2.595	
1,100.00	1,100.00	1,100.00	1,100.00	3.96	3.75	89.31	0.24	20.00	20.00	11.74	8.26	2.421	
1,200.00	1,200.00	1,200.00	1,200.00	4.15	4.11	89.31	0.24	20.00	20.00	11.19	8.81	2.271	
1,300.00	1,300.00	1,300.00	1,300.00	4.34	4.46	89.31	0.24	20.00	20.00	10.65	9.35	2.140	
1,400.00	1,400.00	1,400.00	1,400.00	4.53	4.82	89.31	0.24	20.00	20.00	10.12	9.88	2.024 CC	
1,500.00	1,500.00	1,500.00	1,500.00	4.70	5.18	89.31	0.24	20.00	20.00	9.84	10.46	1.940 Collision Risk Procedures Req., ES	
1,600.00	1,599.98	1,599.34	1,599.32	5.03	5.53	41.11	0.82	21.62	20.30	10.09	11.19	1.902 Collision Risk Procedures Req., SF	
1,700.00	1,699.84	1,698.66	1,698.50	5.68	5.87	45.40	2.57	26.48	21.28	11.36	11.79	1.963 Collision Risk Procedures Req.	
1,800.00	1,799.45	1,797.94	1,797.40	6.27	6.22	51.67	5.49	34.56	23.16	12.17	12.60	2.513	
1,900.00	1,898.72	1,897.15	1,895.88	6.60	6.58	58.61	9.56	45.86	26.21	13.14	13.72	3.026	
2,000.00	1,997.86	1,996.22	1,993.75	6.80	6.95	61.38	14.77	60.33	31.67	13.72	14.32	3.688	
2,100.00	2,097.00	2,094.96	2,090.69	7.03	7.34	59.96	21.11	77.91	39.76	14.32	14.98	5.295	
2,200.00	2,196.14	2,193.12	2,186.38	7.28	7.75	56.61	28.52	98.50	50.59	15.64	6.038	6.725	
2,300.00	2,295.28	2,290.75	2,280.76	7.54	8.19	52.78	36.99	121.99	64.32	16.30	7.359	7.945	
2,400.00	2,394.42	2,389.56	2,375.96	7.82	8.66	49.82	45.95	146.87	79.30	17.65	8.485	8.985	
2,500.00	2,493.56	2,488.36	2,471.16	8.11	9.15	47.80	54.92	171.74	94.43	18.33	8.485	8.985	
2,600.00	2,592.70	2,587.16	2,566.36	8.42	9.65	46.34	63.88	196.62	109.64	19.02	8.985	9.448	
2,700.00	2,691.85	2,685.97	2,661.56	8.73	10.17	45.23	72.84	221.50	124.90	20.41	9.777	10.276	
2,800.00	2,790.99	2,784.77	2,756.76	9.05	10.70	44.37	81.81	246.38	140.19	21.11	10.647	10.992	
2,900.00	2,890.13	2,883.58	2,851.96	9.39	11.24	43.67	90.77	271.25	155.51	21.82	11.315	11.617	
3,000.00	2,989.27	2,982.38	2,947.16	9.73	11.78	43.10	99.74	296.13	170.85	22.53	12.165	12.414	
3,100.00	3,088.41	3,081.18	3,042.36	10.07	12.34	42.63	108.70	321.01	186.20	23.25	12.648	12.869	
3,200.00	3,187.55	3,179.99	3,137.55	10.42	12.90	42.23	117.66	345.89	201.57	24.70	13.077	13.274	
3,300.00	3,286.69	3,278.79	3,232.75	10.78	13.46	41.88	126.63	370.76	216.94	25.42	13.636	13.803	
3,400.00	3,385.83	3,377.59	3,327.95	11.14	14.04	41.58	135.59	395.64	232.32	26.89	14.113	14.257	
3,500.00	3,484.98	3,476.40	3,423.15	11.51	14.61	41.32	144.55	420.52	247.70	27.62	14.647	14.811	
3,600.00	3,584.12	3,575.20	3,518.35	11.88	15.19	41.09	153.52	445.40	263.09	28.36	15.113	15.274	
3,700.00	3,683.26	3,674.00	3,613.55	12.25	15.77	40.88	162.48	470.27	278.48	29.10	15.647	15.811	
3,800.00	3,782.40	3,772.81	3,708.75	12.63	16.36	40.69	171.45	495.15	293.88	29.84	16.113	16.274	
3,900.00	3,881.54	3,871.61	3,803.95	13.01	16.95	40.53	180.41	520.03	309.28	30.59	16.647	16.811	
4,000.00	3,980.68	3,970.42	3,899.15	13.40	17.54	40.38	189.37	544.91	324.68	31.33	17.113	17.274	
4,100.00	4,079.82	4,069.22	3,994.35	13.78	18.13	40.24	198.34	569.79	340.08	32.08	17.647	17.811	
4,200.00	4,178.96	4,168.02	4,089.55	14.17	18.73	40.11	207.30	594.66	355.48	32.86	18.113	18.274	
4,300.00	4,278.11	4,266.83	4,184.75	14.56	19.33	40.00	216.27	619.54	370.89	33.59	18.647	18.811	
4,400.00	4,377.25	4,365.63	4,279.95	14.96	19.92	39.89	225.23	644.42	386.29	34.33	19.113	19.274	
4,500.00	4,476.39	4,464.43	4,375.15	15.35	20.52	39.80	234.19	669.30	401.70	35.08	19.647	19.811	
4,600.00	4,575.53	4,563.24	4,470.35	15.75	21.13	39.71	243.16	694.17	417.11	35.81	20.113	20.274	
4,700.00	4,674.67	4,662.04	4,565.54	16.15	21.73	39.62	252.12	719.05	432.52	36.54	20.647	20.811	
4,800.00	4,773.81	4,760.84	4,660.74	16.54	22.33	39.54	261.08	743.93	447.93	37.28	21.113	21.274	
4,900.00	4,872.95	4,859.65	4,755.94	16.95	22.94	39.47	270.05	768.81	463.34	38.01	21.647	21.811	
5,000.00	4,972.10	4,958.45	4,851.14	17.35	23.54	39.40	279.01	793.68	478.76	38.75	22.113	22.274	
5,100.00	5,071.24	5,057.26	4,946.34	17.75	24.15	39.34	287.98	818.56	494.17	39.48	22.647	22.811	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+IGRF		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.50 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,170.38	5,156.06	5,041.54	18.16	24.76	39.28	296.94	843.44	509.58	474.49	35.09	14.524			
5,300.00	5,269.52	5,254.86	5,136.74	18.56	25.37	39.22	305.90	868.32	525.00	489.15	35.84	14.648			
5,400.00	5,368.66	5,353.67	5,231.94	18.97	25.98	39.17	314.87	893.19	540.41	503.81	36.60	14.767			
5,500.00	5,467.80	5,452.47	5,327.14	19.37	26.59	39.12	323.83	918.07	555.82	518.47	37.35	14.880			
5,600.00	5,566.94	5,551.27	5,422.34	19.78	27.20	39.07	332.80	942.95	571.24	533.13	38.11	14.989			
5,700.00	5,666.08	5,650.08	5,517.54	20.19	27.81	39.03	341.76	967.83	586.66	547.79	38.87	15.093			
5,800.00	5,765.23	5,748.88	5,612.74	20.60	28.42	38.98	350.72	992.70	602.07	562.44	39.63	15.193			
5,900.00	5,864.37	5,847.68	5,707.94	21.01	29.04	38.94	359.69	1,017.58	617.49	577.10	40.39	15.289			
6,000.00	5,963.51	5,965.63	5,821.96	21.42	29.74	38.94	369.91	1,045.95	631.81	590.49	41.32	15.291			
6,100.00	6,062.65	6,091.60	5,944.96	21.84	30.43	39.09	379.10	1,071.46	642.16	599.92	42.24	15.201			
6,200.00	6,161.82	6,218.36	6,069.83	22.23	31.03	39.40	386.49	1,091.97	648.55	605.48	43.06	15.061			
6,300.00	6,261.31	6,345.51	6,195.92	22.67	31.56	39.70	392.01	1,107.30	652.91	609.09	43.82	14.899			
6,400.00	6,361.08	6,472.91	6,322.85	23.13	32.02	39.90	395.64	1,117.37	655.78	611.27	44.51	14.732			
6,500.00	6,461.03	6,600.45	6,450.28	23.53	32.41	39.99	397.35	1,122.12	657.14	612.07	45.07	14.581			
6,600.00	6,561.03	6,711.20	6,561.03	23.61	32.69	89.72	397.50	1,122.52	657.25	611.86	45.39	14.479			
6,700.00	6,661.03	6,811.20	6,661.03	23.65	32.94	89.72	397.50	1,122.52	657.25	611.50	45.76	14.364			
6,800.00	6,761.03	6,911.20	6,761.03	23.69	33.20	89.72	397.50	1,122.52	657.25	611.13	46.12	14.250			
6,900.00	6,861.03	7,011.20	6,861.03	23.74	33.45	89.72	397.50	1,122.52	657.25	610.76	46.49	14.138			
7,000.00	6,961.03	7,111.20	6,961.03	23.78	33.71	89.72	397.50	1,122.52	657.25	610.39	46.86	14.027			
7,100.00	7,061.03	7,211.20	7,061.03	23.83	33.97	89.72	397.50	1,122.52	657.25	610.02	47.23	13.917			
7,200.00	7,161.03	7,311.20	7,161.03	23.87	34.23	89.72	397.50	1,122.52	657.25	609.65	47.60	13.808			
7,300.00	7,261.03	7,411.20	7,261.03	23.92	34.50	89.72	397.50	1,122.52	657.25	609.28	47.97	13.701			
7,400.00	7,361.03	7,511.20	7,361.03	23.96	34.76	89.72	397.50	1,122.52	657.25	608.91	48.34	13.595			
7,500.00	7,461.03	7,611.20	7,461.03	24.01	35.03	89.72	397.50	1,122.52	657.25	608.53	48.72	13.491			
7,600.00	7,561.03	7,711.20	7,561.03	24.05	35.30	89.72	397.50	1,122.52	657.25	608.16	49.09	13.388			
7,700.00	7,661.03	7,811.20	7,661.03	24.10	35.57	89.72	397.50	1,122.52	657.25	607.78	49.47	13.286			
7,800.00	7,761.03	7,911.20	7,761.03	24.15	35.84	89.72	397.50	1,122.52	657.25	607.40	49.85	13.185			
7,900.00	7,861.03	8,011.20	7,861.03	24.19	36.11	89.72	397.50	1,122.52	657.25	607.03	50.23	13.086			
8,000.00	7,961.03	8,111.20	7,961.03	24.24	36.39	89.72	397.50	1,122.52	657.25	606.65	50.61	12.988			
8,100.00	8,061.03	8,211.20	8,061.03	24.29	36.67	89.72	397.50	1,122.52	657.25	606.27	50.99	12.891			
8,200.00	8,161.03	8,311.20	8,161.03	24.34	36.94	89.72	397.50	1,122.52	657.25	605.89	51.37	12.795			
8,300.00	8,261.03	8,411.20	8,261.03	24.38	37.22	89.72	397.50	1,122.52	657.25	605.50	51.75	12.701			
8,400.00	8,361.03	8,511.20	8,361.03	24.43	37.50	89.72	397.50	1,122.52	657.25	605.12	52.13	12.608			
8,500.00	8,461.03	8,611.20	8,461.03	24.48	37.78	89.72	397.50	1,122.52	657.25	604.74	52.52	12.515			
8,600.00	8,561.03	8,711.20	8,561.03	24.53	38.07	89.72	397.50	1,122.52	657.25	604.35	52.90	12.424			
8,700.00	8,661.03	8,811.20	8,661.03	24.57	38.35	89.72	397.50	1,122.52	657.25	603.97	53.29	12.335			
8,800.00	8,761.03	8,911.20	8,761.03	24.62	38.64	89.72	397.50	1,122.52	657.25	603.58	53.67	12.246			
8,900.00	8,861.03	9,011.20	8,861.03	24.67	38.92	89.72	397.50	1,122.52	657.25	603.19	54.06	12.158			
9,000.00	8,961.03	9,111.20	8,961.03	24.72	39.21	89.72	397.50	1,122.52	657.25	602.81	54.45	12.072			
9,100.00	9,061.03	9,211.20	9,061.03	24.77	39.50	89.72	397.50	1,122.52	657.25	602.42	54.83	11.986			
9,200.00	9,161.03	9,311.20	9,161.03	24.82	39.79	89.72	397.50	1,122.52	657.25	602.03	55.22	11.902			
9,300.00	9,261.03	9,411.44	9,261.26	24.87	40.08	89.77	396.99	1,122.52	657.25	601.65	55.60	11.821			
9,358.60	9,319.63	9,470.08	9,319.63	24.90	40.21	90.24	391.52	1,122.50	657.22	601.46	55.76	11.786			
9,400.00	9,361.03	9,510.57	9,359.45	24.92	40.30	90.87	384.27	1,122.47	657.27	601.42	55.85	11.769			
9,500.00	9,461.01	9,603.11	9,447.87	24.92	40.46	-87.06	357.30	1,122.35	658.19	602.23	55.96	11.761			
9,600.00	9,559.81	9,690.65	9,526.50	24.81	40.56	-84.54	319.01	1,122.19	660.53	604.53	56.00	11.796			
9,700.00	9,654.58	9,774.92	9,595.83	24.67	40.61	-82.18	271.26	1,121.99	663.90	607.90	56.00	11.855			
9,800.00	9,742.44	9,856.56	9,655.64	24.53	40.63	-80.05	215.78	1,121.76	667.91	611.91	56.00	11.928			
9,900.00	9,820.71	9,936.14	9,705.77	24.39	40.62	-78.18	154.07	1,121.49	672.13	616.10	56.03	11.997			
10,000.00	9,887.02	10,014.10	9,746.14	24.30	40.60	-76.62	87.44	1,121.21	676.16	620.00	56.15	12.041			
10,100.00	9,939.35	10,090.85	9,776.69	24.27	40.57	-75.39	17.09	1,120.91	679.64	623.20	56.44	12.042			
10,200.00	9,976.12	10,166.75	9,797.39	24.32	40.55	-74.52	-55.87	1,120.61	682.29	625.37	56.93	11.986			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD+IGRF		Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.50 usft
Reference	Vertical	Measured	Vertical	Reference	Offset	Highside				Distance					
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,300.00	9,996.21	10,242.11	9,808.23	24.46	40.57	-74.01	-130.39	1,120.29	683.90	626.25	57.65	11.864			
10,400.00	9,999.84	10,326.19	9,809.81	24.71	40.62	-73.88	-214.43	1,119.93	684.34	625.87	58.46	11.705			
10,500.00	9,999.30	10,426.19	9,809.29	25.02	40.76	-73.88	-314.42	1,119.51	684.37	625.09	59.27	11.546			
10,600.00	9,998.77	10,526.19	9,808.78	25.39	41.00	-73.88	-414.42	1,119.09	684.39	624.14	60.25	11.359			
10,700.00	9,998.24	10,626.19	9,808.26	25.81	41.33	-73.88	-514.42	1,118.67	684.42	623.03	61.39	11.149			
10,800.00	9,997.71	10,726.19	9,807.74	26.28	41.75	-73.89	-614.42	1,118.24	684.45	621.78	62.67	10.921			
10,900.00	9,997.18	10,826.19	9,807.22	26.81	42.28	-73.89	-714.41	1,117.82	684.48	620.38	64.10	10.679			
11,000.00	9,996.64	10,926.19	9,806.70	27.39	42.90	-73.89	-814.41	1,117.40	684.51	618.86	65.65	10.427			
11,100.00	9,996.11	11,026.19	9,806.18	28.04	43.61	-73.89	-914.41	1,116.97	684.54	617.21	67.32	10.168			
11,200.00	9,995.58	11,126.19	9,805.66	28.73	44.41	-73.89	-1,014.41	1,116.55	684.56	615.45	69.11	9.906			
11,300.00	9,995.05	11,226.19	9,805.14	29.48	45.28	-73.89	-1,114.41	1,116.13	684.59	613.59	71.00	9.642			
11,400.00	9,994.52	11,326.19	9,804.62	30.28	46.23	-73.90	-1,214.40	1,115.70	684.62	611.64	72.98	9.380			
11,500.00	9,993.98	11,426.19	9,804.10	31.13	47.24	-73.90	-1,314.40	1,115.28	684.65	609.59	75.06	9.122			
11,600.00	9,993.45	11,526.19	9,803.58	32.03	48.31	-73.90	-1,414.40	1,114.86	684.68	607.46	77.21	8.867			
11,700.00	9,992.92	11,626.19	9,803.06	32.97	49.43	-73.90	-1,514.40	1,114.43	684.70	605.26	79.44	8.619			
11,800.00	9,992.39	11,726.19	9,802.54	33.95	50.61	-73.90	-1,614.39	1,114.01	684.73	602.99	81.74	8.377			
11,900.00	9,991.86	11,826.19	9,802.03	34.96	51.83	-73.91	-1,714.39	1,113.59	684.76	600.66	84.10	8.142			
12,000.00	9,991.32	11,926.19	9,801.51	36.01	53.09	-73.91	-1,814.39	1,113.16	684.79	598.27	86.52	7.915			
12,100.00	9,990.79	12,026.19	9,800.99	37.08	54.40	-73.91	-1,914.39	1,112.74	684.82	595.83	88.99	7.695			
12,200.00	9,990.26	12,126.19	9,800.47	38.18	55.74	-73.91	-2,014.39	1,112.32	684.85	593.33	91.51	7.484			
12,300.00	9,989.73	12,226.19	9,799.95	39.31	57.12	-73.91	-2,114.38	1,111.89	684.87	590.80	94.08	7.280			
12,400.00	9,989.20	12,326.19	9,799.43	40.46	58.52	-73.91	-2,214.38	1,111.47	684.90	588.22	96.69	7.084			
12,500.00	9,988.66	12,426.19	9,798.91	41.63	59.96	-73.92	-2,314.38	1,111.05	684.93	585.60	99.33	6.895			
12,600.00	9,988.13	12,526.19	9,798.39	42.82	61.42	-73.92	-2,414.38	1,110.63	684.96	582.95	102.01	6.714			
12,700.00	9,987.60	12,626.19	9,797.87	44.03	62.91	-73.92	-2,514.37	1,110.20	684.99	580.26	104.73	6.541			
12,800.00	9,987.07	12,726.19	9,797.35	45.25	64.42	-73.92	-2,614.37	1,109.78	685.02	577.55	107.47	6.374			
12,900.00	9,986.54	12,826.19	9,796.83	46.48	65.95	-73.92	-2,714.37	1,109.36	685.04	574.80	110.24	6.214			
13,000.00	9,986.00	12,926.19	9,796.31	47.73	67.50	-73.93	-2,814.37	1,108.93	685.07	572.03	113.04	6.060			
13,100.00	9,985.47	13,026.19	9,795.80	48.99	69.07	-73.93	-2,914.37	1,108.51	685.10	569.24	115.86	5.913			
13,200.00	9,984.94	13,126.19	9,795.28	50.26	70.65	-73.93	-3,014.36	1,108.09	685.13	566.42	118.71	5.772			
13,300.00	9,984.41	13,226.19	9,794.76	51.54	72.26	-73.93	-3,114.36	1,107.66	685.16	563.59	121.57	5.636			
13,400.00	9,983.88	13,326.19	9,794.24	52.83	73.87	-73.93	-3,214.36	1,107.24	685.18	560.73	124.46	5.505			
13,500.00	9,983.34	13,426.19	9,793.72	54.13	75.51	-73.93	-3,314.36	1,106.82	685.21	557.85	127.36	5.380			
13,600.00	9,982.81	13,526.19	9,793.20	55.44	77.15	-73.94	-3,414.35	1,106.39	685.24	554.96	130.28	5.260			
13,700.00	9,982.28	13,626.19	9,792.68	56.75	78.81	-73.94	-3,514.35	1,105.97	685.27	552.06	133.21	5.144			
13,800.00	9,981.75	13,726.19	9,792.16	58.07	80.48	-73.94	-3,614.35	1,105.55	685.30	549.13	136.16	5.033			
13,900.00	9,981.22	13,826.19	9,791.64	59.39	82.16	-73.94	-3,714.35	1,105.12	685.33	546.20	139.13	4.926			
14,000.00	9,980.68	13,926.19	9,791.12	60.73	83.85	-73.94	-3,814.35	1,104.70	685.35	543.25	142.10	4.823			
14,100.00	9,980.15	14,026.19	9,790.60	62.06	85.55	-73.94	-3,914.34	1,104.28	685.38	540.29	145.09	4.724			
14,200.00	9,979.62	14,126.19	9,790.08	63.40	87.26	-73.95	-4,014.34	1,103.85	685.41	537.32	148.09	4.628			
14,300.00	9,979.09	14,226.19	9,789.57	64.75	88.98	-73.95	-4,114.34	1,103.43	685.44	534.34	151.10	4.536			
14,400.00	9,978.56	14,326.19	9,789.05	66.10	90.70	-73.95	-4,214.34	1,103.01	685.47	531.34	154.13	4.447			
14,500.00	9,978.02	14,426.19	9,788.53	67.45	92.44	-73.95	-4,314.33	1,102.59	685.50	528.34	157.16	4.362			
14,600.00	9,977.49	14,526.19	9,788.01	68.81	94.18	-73.95	-4,414.33	1,102.16	685.52	525.33	160.20	4.279			
14,700.00	9,976.96	14,626.19	9,787.49	70.17	95.92	-73.96	-4,514.33	1,101.74	685.55	522.31	163.24	4.200			
14,800.00	9,976.43	14,726.19	9,786.97	71.54	97.68	-73.96	-4,614.33	1,101.32	685.58	519.28	166.30	4.123			
14,900.00	9,975.90	14,826.19	9,786.45	72.91	99.44	-73.96	-4,714.33	1,100.89	685.61	516.24	169.37	4.048			
15,000.00	9,975.36	14,926.19	9,785.93	74.28	101.20	-73.96	-4,814.32	1,100.47	685.64	513.20	172.44	3.976			
15,100.00	9,974.83	15,026.19	9,785.41	75.65	102.97	-73.96	-4,914.32	1,100.05	685.67	510.15	175.51	3.907			
15,200.00	9,974.30	15,126.19	9,784.89	77.03	104.75	-73.96	-5,014.32	1,099.62	685.69	507.09	178.60	3.839			
15,300.00	9,973.77	15,226.19	9,784.37	78.41	106.53	-73.97	-5,114.32	1,099.20	685.72	504.03	181.69	3.774			
15,400.00	9,973.24	15,326.19	9,783.85	79.79	108.32	-73.97	-5,214.31	1,098.78	685.75	500.96	184.79	3.711			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-211H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IGRF													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	
15,500.00	9,972.70	15,426.19	9,783.34	81.17	110.11	-73.97	-5,314.31	1,098.35	685.78	497.89	187.89	3.650	
15,600.00	9,972.17	15,526.19	9,782.82	82.56	111.90	-73.97	-5,414.31	1,097.93	685.81	494.81	191.00	3.591	
15,700.00	9,971.64	15,626.19	9,782.30	83.94	113.70	-73.97	-5,514.31	1,097.51	685.83	491.73	194.11	3.533	
15,800.00	9,971.11	15,726.19	9,781.78	85.33	115.51	-73.98	-5,614.30	1,097.08	685.86	488.64	197.23	3.478	
15,900.00	9,970.58	15,826.19	9,781.26	86.72	117.31	-73.98	-5,714.30	1,096.66	685.89	485.54	200.35	3.423	
16,000.00	9,970.04	15,926.19	9,780.74	88.11	119.12	-73.98	-5,814.30	1,096.24	685.92	482.44	203.48	3.371	
16,100.00	9,969.51	16,026.19	9,780.22	89.51	120.93	-73.98	-5,914.30	1,095.82	685.95	479.34	206.61	3.320	
16,200.00	9,968.98	16,126.19	9,779.70	90.90	122.75	-73.98	-6,014.30	1,095.39	685.98	476.24	209.74	3.271	
16,300.00	9,968.45	16,226.19	9,779.18	92.30	124.57	-73.98	-6,114.29	1,094.97	686.00	473.13	212.88	3.223	
16,400.00	9,967.92	16,326.19	9,778.66	93.70	126.39	-73.99	-6,214.29	1,094.55	686.03	470.01	216.02	3.176	
16,500.00	9,967.38	16,426.19	9,778.14	95.10	128.22	-73.99	-6,314.29	1,094.12	686.06	466.89	219.17	3.130	
16,600.00	9,966.85	16,526.19	9,777.62	96.50	130.05	-73.99	-6,414.29	1,093.70	686.09	463.77	222.32	3.086	
16,700.00	9,966.32	16,626.19	9,777.11	97.90	131.88	-73.99	-6,514.28	1,093.28	686.12	460.65	225.47	3.043	
16,800.00	9,965.79	16,726.19	9,776.59	99.31	133.71	-73.99	-6,614.28	1,092.85	686.15	457.52	228.62	3.001	
16,900.00	9,965.26	16,826.19	9,776.07	100.71	135.55	-74.00	-6,714.28	1,092.43	686.17	454.39	231.78	2.960	
17,000.00	9,964.72	16,926.19	9,775.55	102.12	137.38	-74.00	-6,814.28	1,092.01	686.20	451.26	234.94	2.921	
17,100.00	9,964.19	17,026.19	9,775.03	103.52	139.22	-74.00	-6,914.28	1,091.58	686.23	448.12	238.11	2.882	
17,200.00	9,963.66	17,126.19	9,774.51	104.93	141.07	-74.00	-7,014.27	1,091.16	686.26	444.99	241.27	2.844	
17,300.00	9,963.13	17,226.19	9,773.99	106.34	142.91	-74.00	-7,114.27	1,090.74	686.29	441.85	244.44	2.808	
17,400.00	9,962.60	17,326.19	9,773.47	107.75	144.76	-74.00	-7,214.27	1,090.31	686.32	438.70	247.61	2.772	
17,500.00	9,962.06	17,426.19	9,772.95	109.16	146.60	-74.01	-7,314.27	1,089.89	686.34	435.56	250.79	2.737	
17,600.00	9,961.53	17,526.19	9,772.43	110.57	148.45	-74.01	-7,414.26	1,089.47	686.37	432.41	253.96	2.703	
17,700.00	9,961.00	17,626.19	9,771.91	111.98	150.30	-74.01	-7,514.26	1,089.04	686.40	429.26	257.14	2.669	
17,800.00	9,960.47	17,726.19	9,771.39	113.39	152.16	-74.01	-7,614.26	1,088.62	686.43	426.11	260.32	2.637	
17,804.60	9,960.44	17,730.80	9,771.37	113.46	152.24	-74.01	-7,618.86	1,088.60	686.43	425.96	260.47	2.635	
17,887.95	9,960.00	17,803.00	9,771.00	114.65	153.62	-74.01	-7,691.07	1,088.30	686.54	423.29	263.26	2.608	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-231H - 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	-90.92	-0.32	-20.00	20.00				
100.00	100.00	100.00	100.00	0.66	0.66	-90.92	-0.32	-20.00	20.00	18.69	1.32	15.186	
200.00	200.00	200.00	200.00	1.35	1.35	-90.92	-0.32	-20.00	20.00	17.31	2.70	7.416	
300.00	300.00	300.00	300.00	1.82	1.82	-90.92	-0.32	-20.00	20.00	16.37	3.63	5.504	
400.00	400.00	400.00	400.00	2.19	2.19	-90.92	-0.32	-20.00	20.00	15.62	4.38	4.566	
500.00	500.00	500.00	500.00	2.51	2.51	-90.92	-0.32	-20.00	20.00	14.98	5.02	3.982	
600.00	600.00	600.00	600.00	2.80	2.80	-90.92	-0.32	-20.00	20.00	14.41	5.60	3.574	
700.00	700.00	700.00	700.00	3.06	3.06	-90.92	-0.32	-20.00	20.00	13.88	6.12	3.268	
800.00	800.00	800.00	800.00	3.30	3.30	-90.92	-0.32	-20.00	20.00	13.39	6.61	3.027	
900.00	900.00	900.00	900.00	3.53	3.53	-90.92	-0.32	-20.00	20.00	12.94	7.07	2.831	
1,000.00	1,000.00	1,000.00	1,000.00	3.75	3.75	-90.92	-0.32	-20.00	20.00	12.50	7.50	2.668	
1,100.00	1,100.00	1,100.00	1,100.00	3.96	3.96	-90.92	-0.32	-20.00	20.00	12.09	7.91	2.529	
1,200.00	1,200.00	1,200.00	1,200.00	4.15	4.15	-90.92	-0.32	-20.00	20.00	11.70	8.31	2.408	
1,300.00	1,300.00	1,300.00	1,300.00	4.34	4.34	-90.92	-0.32	-20.00	20.00	11.32	8.69	2.303	
1,400.00	1,400.00	1,400.00	1,400.00	4.53	4.53	-90.92	-0.32	-20.00	20.00	10.95	9.05	2.209	
1,500.00	1,500.00	1,500.00	1,500.00	4.70	4.70	-90.92	-0.32	-20.00	20.00	10.59	9.41	2.126	CC, ES, SF
1,600.00	1,599.98	1,599.68	1,599.66	5.03	5.05	-139.34	1.26	-20.71	22.05	12.21	9.84	2.241	
1,700.00	1,699.84	1,699.10	1,698.94	5.68	5.69	-136.57	5.99	-22.84	28.22	17.68	10.53	2.679	
1,800.00	1,799.45	1,798.28	1,797.77	6.27	5.91	-134.29	13.54	-26.24	38.40	27.37	11.03	3.481	
1,900.00	1,898.72	1,897.44	1,896.54	6.60	6.09	-135.15	21.62	-29.88	51.25	39.82	11.42	4.487	
2,000.00	1,997.86	1,996.51	1,995.21	6.80	6.31	-136.37	29.69	-33.51	64.81	53.03	11.78	5.502	
2,100.00	2,097.00	2,095.58	2,093.88	7.03	6.55	-137.16	37.75	-37.14	78.40	66.23	12.17	6.443	
2,200.00	2,196.14	2,194.65	2,192.55	7.28	6.80	-137.72	45.82	-40.77	92.00	79.43	12.57	7.320	
2,300.00	2,295.28	2,293.71	2,291.23	7.54	7.06	-138.14	53.88	-44.41	105.60	92.62	12.98	8.137	
2,400.00	2,394.42	2,392.78	2,389.90	7.82	7.33	-138.46	61.95	-48.04	119.21	105.81	13.40	8.898	
2,500.00	2,493.56	2,491.85	2,488.57	8.11	7.61	-138.71	70.02	-51.67	132.82	118.99	13.83	9.605	
2,600.00	2,592.70	2,590.92	2,587.24	8.42	7.91	-138.92	78.08	-55.30	146.43	132.17	14.27	10.265	
2,700.00	2,691.85	2,689.99	2,686.91	8.73	8.20	-139.10	86.15	-58.93	160.05	145.33	14.71	10.879	
2,800.00	2,790.99	2,789.05	2,784.59	9.05	8.51	-139.24	94.21	-62.56	173.66	158.50	15.17	11.451	
2,900.00	2,890.13	2,888.12	2,883.26	9.39	8.82	-139.37	102.28	-66.20	187.28	171.65	15.63	11.985	
3,000.00	2,989.27	2,987.19	2,981.93	9.73	9.14	-139.47	110.35	-69.83	200.90	184.80	16.09	12.484	
3,100.00	3,088.41	3,086.26	3,080.60	10.07	9.46	-139.57	118.41	-73.46	214.51	197.95	16.56	12.950	
3,200.00	3,187.55	3,185.32	3,179.27	10.42	9.79	-139.65	126.48	-77.09	228.13	211.09	17.04	13.387	
3,300.00	3,286.69	3,284.39	3,277.95	10.78	10.12	-139.72	134.54	-80.72	241.75	224.23	17.52	13.796	
3,400.00	3,385.83	3,383.46	3,376.62	11.14	10.46	-139.79	142.61	-84.36	255.37	237.36	18.01	14.180	
3,500.00	3,484.98	3,482.53	3,475.29	11.51	10.80	-139.85	150.68	-87.99	268.99	250.49	18.50	14.541	
3,600.00	3,584.12	3,581.60	3,573.96	11.88	11.14	-139.90	158.74	-91.62	282.61	263.62	18.99	14.880	
3,700.00	3,683.26	3,680.66	3,672.64	12.25	11.49	-139.95	166.81	-95.25	296.23	276.74	19.49	15.200	
3,800.00	3,782.40	3,779.73	3,771.31	12.63	11.83	-139.99	174.88	-98.88	309.85	289.86	19.99	15.501	
3,900.00	3,881.54	3,878.80	3,869.98	13.01	12.18	-140.03	182.94	-102.51	323.47	302.98	20.49	15.786	
4,000.00	3,980.68	3,977.87	3,968.65	13.40	12.54	-140.07	191.01	-106.15	337.09	316.09	21.00	16.055	
4,100.00	4,079.82	4,076.94	4,067.32	13.78	12.89	-140.10	199.07	-109.78	350.71	329.20	21.50	16.309	
4,200.00	4,178.96	4,176.00	4,166.00	14.17	13.25	-140.14	207.14	-113.41	364.33	342.31	22.01	16.550	
4,300.00	4,278.11	4,275.07	4,264.67	14.56	13.60	-140.16	215.21	-117.04	377.95	355.42	22.53	16.779	
4,400.00	4,377.25	4,374.14	4,363.34	14.96	13.96	-140.19	223.27	-120.67	391.57	368.53	23.04	16.996	
4,500.00	4,476.39	4,473.21	4,462.01	15.35	14.32	-140.22	231.34	-124.31	405.19	381.64	23.55	17.202	
4,600.00	4,575.53	4,572.27	4,560.68	15.75	14.69	-140.24	239.40	-127.94	418.81	394.74	24.07	17.399	
4,700.00	4,674.67	4,671.34	4,659.36	16.15	15.05	-140.26	247.47	-131.57	432.43	407.84	24.59	17.586	
4,800.00	4,773.81	4,770.41	4,758.03	16.54	15.41	-140.28	255.54	-135.20	446.05	420.94	25.11	17.764	
4,900.00	4,872.95	4,869.48	4,856.70	16.95	15.78	-140.30	263.60	-138.83	459.67	434.04	25.63	17.934	
5,000.00	4,972.10	4,968.55	4,955.37	17.35	16.15	-140.32	271.67	-142.46	473.29	447.14	26.15	18.096	
5,100.00	5,071.24	5,067.61	5,054.05	17.75	16.51	-140.34	279.73	-146.10	486.92	460.24	26.68	18.251	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-231H - 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)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,200.00	5,170.38	5,166.68	5,152.72	18.16	16.88	-140.36	287.80	-149.73	500.54	473.33	27.20	18.400			
5,300.00	5,269.52	5,265.75	5,251.39	18.56	17.25	-140.37	295.87	-153.36	514.16	486.43	27.73	18.542			
5,400.00	5,368.66	5,364.82	5,350.06	18.97	17.62	-140.39	303.93	-156.99	527.78	499.52	28.26	18.678			
5,500.00	5,467.80	5,463.89	5,448.73	19.37	17.99	-140.40	312.00	-160.62	541.40	512.61	28.79	18.808			
5,600.00	5,566.94	5,562.95	5,547.41	19.78	18.36	-140.42	320.07	-164.26	555.02	525.71	29.31	18.934			
5,700.00	5,666.08	5,662.02	5,646.08	20.19	18.74	-140.43	328.13	-167.89	568.64	538.80	29.84	19.054			
5,800.00	5,765.23	5,761.09	5,744.75	20.60	19.11	-140.44	336.20	-171.52	582.26	551.89	30.37	19.169			
5,900.00	5,864.37	5,860.16	5,843.42	21.01	19.48	-140.45	344.26	-175.15	595.88	564.98	30.91	19.281			
6,000.00	5,963.51	5,959.23	5,942.09	21.42	19.85	-140.46	352.33	-178.78	609.51	578.07	31.44	19.387			
6,100.00	6,062.65	6,058.29	6,040.77	21.84	20.23	-140.47	360.40	-182.41	623.13	591.16	31.97	19.490			
6,200.00	6,161.82	6,157.38	6,139.46	22.23	20.60	-140.53	368.46	-186.05	636.57	604.09	32.48	19.597			
6,300.00	6,261.31	6,256.72	6,238.40	22.67	20.97	-140.52	376.55	-189.69	647.87	614.86	33.01	19.626			
6,400.00	6,361.08	6,365.72	6,347.11	23.13	21.38	-140.38	383.74	-192.92	655.84	622.25	33.58	19.529			
6,500.00	6,461.03	6,475.75	6,457.07	23.53	21.81	-140.32	387.17	-194.47	659.59	625.49	34.10	19.341			
6,600.00	6,561.03	6,579.71	6,561.03	23.61	21.95	-90.59	387.46	-194.60	659.92	625.65	34.26	19.261			
6,700.00	6,661.03	6,679.71	6,661.03	23.65	22.00	-90.59	387.46	-194.60	659.92	625.53	34.38	19.194			
6,800.00	6,761.03	6,779.71	6,761.03	23.69	22.05	-90.59	387.46	-194.60	659.92	625.41	34.51	19.123			
6,900.00	6,861.03	6,879.71	6,861.03	23.74	22.11	-90.59	387.46	-194.60	659.92	625.28	34.64	19.052			
7,000.00	6,961.03	6,979.71	6,961.03	23.78	22.16	-90.59	387.46	-194.60	659.92	625.15	34.77	18.982			
7,100.00	7,061.03	7,079.71	7,061.03	23.83	22.21	-90.59	387.46	-194.60	659.92	625.02	34.89	18.912			
7,200.00	7,161.03	7,179.71	7,161.03	23.87	22.26	-90.59	387.46	-194.60	659.92	624.89	35.02	18.843			
7,300.00	7,261.03	7,279.71	7,261.03	23.92	22.32	-90.59	387.46	-194.60	659.92	624.76	35.15	18.773			
7,400.00	7,361.03	7,379.71	7,361.03	23.96	22.37	-90.59	387.46	-194.60	659.92	624.63	35.28	18.704			
7,500.00	7,461.03	7,479.71	7,461.03	24.01	22.42	-90.59	387.46	-194.60	659.92	624.50	35.41	18.636			
7,600.00	7,561.03	7,579.71	7,561.03	24.05	22.48	-90.59	387.46	-194.60	659.92	624.37	35.54	18.568			
7,700.00	7,661.03	7,679.71	7,661.03	24.10	22.53	-90.59	387.46	-194.60	659.92	624.24	35.67	18.500			
7,800.00	7,761.03	7,779.71	7,761.03	24.15	22.58	-90.59	387.46	-194.60	659.92	624.11	35.80	18.433			
7,900.00	7,861.03	7,879.71	7,861.03	24.19	22.64	-90.59	387.46	-194.60	659.92	623.98	35.93	18.366			
8,000.00	7,961.03	7,979.71	7,961.03	24.24	22.69	-90.59	387.46	-194.60	659.92	623.85	36.06	18.299			
8,100.00	8,061.03	8,079.71	8,061.03	24.29	22.74	-90.59	387.46	-194.60	659.92	623.72	36.19	18.233			
8,200.00	8,161.03	8,179.71	8,161.03	24.34	22.80	-90.59	387.46	-194.60	659.92	623.59	36.32	18.167			
8,300.00	8,261.03	8,279.71	8,261.03	24.38	22.85	-90.59	387.46	-194.60	659.92	623.46	36.46	18.102			
8,400.00	8,361.03	8,379.71	8,361.03	24.43	22.91	-90.59	387.46	-194.60	659.92	623.33	36.59	18.036			
8,500.00	8,461.03	8,479.71	8,461.03	24.48	22.96	-90.59	387.46	-194.60	659.92	623.20	36.72	17.972			
8,600.00	8,561.03	8,579.71	8,561.03	24.53	23.02	-90.59	387.46	-194.60	659.92	623.06	36.85	17.907			
8,700.00	8,661.03	8,679.71	8,661.03	24.57	23.07	-90.59	387.46	-194.60	659.92	622.93	36.98	17.843			
8,800.00	8,761.03	8,779.71	8,761.03	24.62	23.13	-90.59	387.46	-194.60	659.92	622.80	37.12	17.779			
8,900.00	8,861.03	8,879.71	8,861.03	24.67	23.18	-90.59	387.46	-194.60	659.92	622.67	37.25	17.716			
9,000.00	8,961.03	8,979.71	8,961.03	24.72	23.24	-90.59	387.46	-194.60	659.92	622.53	37.38	17.653			
9,100.00	9,061.03	9,079.71	9,061.03	24.77	23.29	-90.59	387.46	-194.60	659.92	622.40	37.52	17.590			
9,200.00	9,161.03	9,179.71	9,161.03	24.82	23.35	-90.59	387.46	-194.60	659.92	622.27	37.65	17.528			
9,200.65	9,161.68	9,180.36	9,161.68	24.82	23.35	-90.59	387.46	-194.60	659.92	622.27	37.65	17.528			
9,300.00	9,261.03	9,279.10	9,260.40	24.87	23.33	-90.68	386.49	-194.60	659.93	622.20	37.74	17.489			
9,400.00	9,361.03	9,375.20	9,355.42	24.92	23.28	-91.86	372.90	-194.67	660.32	622.57	37.75	17.492			
9,500.00	9,461.01	9,464.80	9,440.82	24.92	23.22	85.55	346.09	-194.79	662.06	624.34	37.72	17.552			
9,600.00	9,559.81	9,550.00	9,517.22	24.81	23.12	83.00	308.55	-194.96	665.25	627.68	37.57	17.708			
9,700.00	9,654.58	9,631.66	9,584.45	24.67	23.02	80.66	262.33	-195.17	669.35	632.00	37.35	17.922			
9,800.00	9,742.44	9,711.25	9,643.01	24.53	22.91	78.58	208.53	-195.42	673.90	636.80	37.11	18.161			
9,900.00	9,820.71	9,789.00	9,692.50	24.39	22.82	76.78	148.63	-195.69	678.46	641.56	36.90	18.387			
10,000.00	9,887.02	9,865.35	9,732.76	24.30	22.74	75.32	83.83	-195.99	682.60	645.82	36.77	18.562			
10,100.00	9,939.35	9,940.66	9,763.70	24.27	22.68	74.22	15.23	-196.30	685.98	649.21	36.77	18.657			
10,200.00	9,976.12	10,015.28	9,785.22	24.32	22.65	73.49	-56.16	-196.63	688.33	651.42	36.91	18.648			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-231H - 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)			
10,300.00	9,996.21	10,089.50	9,797.25	24.46	22.66	73.15	-129.35	-196.96	689.47	652.25	37.22	18.526	
10,400.00	9,999.84	10,168.82	9,799.90	24.71	22.72	73.14	-208.58	-197.32	689.47	651.79	37.68	18.297	
10,500.00	9,999.30	10,268.82	9,799.38	25.02	22.83	73.14	-308.58	-197.78	689.47	651.06	38.42	17.948	
10,600.00	9,998.77	10,368.82	9,798.86	25.39	22.97	73.14	-408.57	-198.24	689.47	650.14	39.33	17.529	
10,700.00	9,998.24	10,468.82	9,798.34	25.81	23.15	73.15	-508.57	-198.70	689.46	649.04	40.42	17.057	
10,800.00	9,997.71	10,568.82	9,797.82	26.28	23.37	73.15	-608.57	-199.15	689.46	647.80	41.67	16.548	
10,900.00	9,997.18	10,668.82	9,797.30	26.81	23.65	73.15	-708.57	-199.61	689.46	646.40	43.05	16.014	
11,000.00	9,996.64	10,768.82	9,796.79	27.39	24.01	73.15	-808.56	-200.07	689.45	644.88	44.57	15.468	
11,100.00	9,996.11	10,868.82	9,796.27	28.04	24.45	73.15	-908.56	-200.52	689.45	643.24	46.21	14.920	
11,200.00	9,995.58	10,968.82	9,795.75	28.73	24.99	73.15	-1,008.56	-200.98	689.45	641.50	47.95	14.378	
11,300.00	9,995.05	11,068.82	9,795.23	29.48	25.64	73.15	-1,108.56	-201.44	689.45	639.66	49.79	13.847	
11,400.00	9,994.52	11,168.82	9,794.71	30.28	26.40	73.15	-1,208.55	-201.89	689.44	637.73	51.71	13.333	
11,500.00	9,993.98	11,268.82	9,794.19	31.13	27.25	73.15	-1,308.55	-202.35	689.44	635.73	53.71	12.836	
11,600.00	9,993.45	11,368.82	9,793.67	32.03	28.19	73.16	-1,408.55	-202.81	689.44	633.66	55.78	12.361	
11,700.00	9,992.92	11,468.82	9,793.16	32.97	29.20	73.16	-1,508.55	-203.27	689.43	631.53	57.90	11.907	
11,800.00	9,992.39	11,568.82	9,792.64	33.95	30.27	73.16	-1,608.55	-203.72	689.43	629.34	60.08	11.474	
11,900.00	9,991.86	11,668.82	9,792.12	34.96	31.38	73.16	-1,708.54	-204.18	689.43	627.11	62.32	11.064	
12,000.00	9,991.32	11,768.82	9,791.60	36.01	32.53	73.16	-1,808.54	-204.64	689.42	624.83	64.59	10.674	
12,100.00	9,990.79	11,868.82	9,791.08	37.08	33.72	73.16	-1,908.54	-205.09	689.42	622.52	66.90	10.305	
12,200.00	9,990.26	11,968.82	9,790.56	38.18	34.93	73.16	-2,008.54	-205.55	689.42	620.16	69.25	9.955	
12,300.00	9,989.73	12,068.82	9,790.05	39.31	36.17	73.16	-2,108.53	-206.01	689.41	617.78	71.63	9.624	
12,400.00	9,989.20	12,168.82	9,789.53	40.46	37.42	73.16	-2,208.53	-206.46	689.41	615.37	74.04	9.311	
12,500.00	9,988.66	12,268.82	9,789.01	41.63	38.69	73.17	-2,308.53	-206.92	689.41	612.93	76.48	9.014	
12,600.00	9,988.13	12,368.82	9,788.49	42.82	39.98	73.17	-2,408.53	-207.38	689.40	610.47	78.94	8.733	
12,700.00	9,987.60	12,468.82	9,787.97	44.03	41.28	73.17	-2,508.52	-207.84	689.40	607.98	81.42	8.467	
12,800.00	9,987.07	12,568.82	9,787.45	45.25	42.59	73.17	-2,608.52	-208.29	689.40	605.48	83.92	8.215	
12,900.00	9,986.54	12,668.82	9,786.93	46.48	43.91	73.17	-2,708.52	-208.75	689.39	602.95	86.44	7.975	
13,000.00	9,986.00	12,768.82	9,786.42	47.73	45.24	73.17	-2,808.52	-209.21	689.39	600.41	88.98	7.748	
13,100.00	9,985.47	12,868.82	9,785.90	48.99	46.57	73.17	-2,908.51	-209.66	689.39	597.86	91.53	7.532	
13,200.00	9,984.94	12,968.82	9,785.38	50.26	47.92	73.17	-3,008.51	-210.12	689.38	595.29	94.09	7.327	
13,300.00	9,984.41	13,068.82	9,784.86	51.54	49.27	73.17	-3,108.51	-210.58	689.38	592.71	96.67	7.131	
13,400.00	9,983.88	13,168.82	9,784.34	52.83	50.62	73.18	-3,208.51	-211.03	689.38	590.12	99.26	6.945	
13,500.00	9,983.34	13,268.82	9,783.82	54.13	51.98	73.18	-3,308.50	-211.49	689.37	587.52	101.86	6.768	
13,600.00	9,982.81	13,368.82	9,783.31	55.44	53.35	73.18	-3,408.50	-211.95	689.37	584.90	104.47	6.599	
13,700.00	9,982.28	13,468.82	9,782.79	56.75	54.72	73.18	-3,508.50	-212.41	689.37	582.28	107.09	6.437	
13,800.00	9,981.75	13,568.82	9,782.27	58.07	56.09	73.18	-3,608.50	-212.86	689.37	579.65	109.72	6.283	
13,900.00	9,981.22	13,668.82	9,781.75	59.39	57.47	73.18	-3,708.49	-213.32	689.36	577.01	112.36	6.136	
14,000.00	9,980.68	13,768.82	9,781.23	60.73	58.85	73.18	-3,808.49	-213.78	689.36	574.36	115.00	5.994	
14,100.00	9,980.15	13,868.82	9,780.71	62.06	60.23	73.18	-3,908.49	-214.23	689.36	571.71	117.65	5.859	
14,200.00	9,979.62	13,968.82	9,780.19	63.40	61.61	73.18	-4,008.49	-214.69	689.35	569.04	120.31	5.730	
14,300.00	9,979.09	14,068.82	9,779.68	64.75	63.00	73.19	-4,108.49	-215.15	689.35	566.38	122.97	5.606	
14,400.00	9,978.56	14,168.82	9,779.16	66.10	64.39	73.19	-4,208.48	-215.60	689.35	563.70	125.64	5.487	
14,500.00	9,978.02	14,268.82	9,778.64	67.45	65.79	73.19	-4,308.48	-216.06	689.34	561.03	128.32	5.372	
14,600.00	9,977.49	14,368.82	9,778.12	68.81	67.18	73.19	-4,408.48	-216.52	689.34	558.34	131.00	5.262	
14,700.00	9,976.96	14,468.82	9,777.60	70.17	68.58	73.19	-4,508.48	-216.98	689.34	555.66	133.68	5.157	
14,800.00	9,976.43	14,568.82	9,777.08	71.54	69.98	73.19	-4,608.47	-217.43	689.33	552.96	136.37	5.055	
14,900.00	9,975.90	14,668.82	9,776.57	72.91	71.38	73.19	-4,708.47	-217.89	689.33	550.27	139.06	4.957	
15,000.00	9,975.36	14,768.82	9,776.05	74.28	72.78	73.19	-4,808.47	-218.35	689.33	547.57	141.76	4.863	
15,100.00	9,974.83	14,868.82	9,775.53	75.65	74.19	73.19	-4,908.47	-218.80	689.32	544.86	144.46	4.772	
15,200.00	9,974.30	14,968.82	9,775.01	77.03	75.59	73.20	-5,008.46	-219.26	689.32	542.15	147.17	4.684	
15,300.00	9,973.77	15,068.82	9,774.49	78.41	77.00	73.20	-5,108.46	-219.72	689.32	539.44	149.88	4.599	
15,400.00	9,973.24	15,168.82	9,773.97	79.79	78.41	73.20	-5,208.46	-220.17	689.31	536.73	152.59	4.518	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-01-231H - 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		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		
15,500.00	9,972.70	15,268.82	9,773.45	81.17	79.82	73.20	-5,308.46	-220.63	689.31	534.01	155.30	4.439			
15,600.00	9,972.17	15,368.82	9,772.94	82.56	81.23	73.20	-5,408.45	-221.09	689.31	531.29	158.02	4.362			
15,700.00	9,971.64	15,468.82	9,772.42	83.94	82.64	73.20	-5,508.45	-221.55	689.30	528.57	160.74	4.288			
15,800.00	9,971.11	15,568.82	9,771.90	85.33	84.06	73.20	-5,608.45	-222.00	689.30	525.84	163.46	4.217			
15,900.00	9,970.58	15,668.82	9,771.38	86.72	85.47	73.20	-5,708.45	-222.46	689.30	523.11	166.18	4.148			
16,000.00	9,970.04	15,768.82	9,770.86	88.11	86.88	73.20	-5,808.44	-222.92	689.30	520.38	168.91	4.081			
16,100.00	9,969.51	15,868.82	9,770.34	89.51	88.30	73.20	-5,908.44	-223.37	689.29	517.65	171.64	4.016			
16,200.00	9,968.98	15,968.82	9,769.83	90.90	89.72	73.21	-6,008.44	-223.83	689.29	514.92	174.37	3.953			
16,300.00	9,968.45	16,068.82	9,769.31	92.30	91.13	73.21	-6,108.44	-224.29	689.29	512.18	177.11	3.892			
16,400.00	9,967.92	16,168.82	9,768.79	93.70	92.55	73.21	-6,208.44	-224.74	689.28	509.44	179.84	3.833			
16,500.00	9,967.38	16,268.82	9,768.27	95.10	93.97	73.21	-6,308.43	-225.20	689.28	506.70	182.58	3.775			
16,600.00	9,966.85	16,368.82	9,767.75	96.50	95.39	73.21	-6,408.43	-225.66	689.28	503.96	185.32	3.719			
16,700.00	9,966.32	16,468.82	9,767.23	97.90	96.81	73.21	-6,508.43	-226.12	689.27	501.21	188.06	3.665			
16,800.00	9,965.79	16,568.82	9,766.71	99.31	98.23	73.21	-6,608.43	-226.57	689.27	498.47	190.80	3.613			
16,900.00	9,965.26	16,668.82	9,766.20	100.71	99.65	73.21	-6,708.42	-227.03	689.27	495.72	193.55	3.561			
17,000.00	9,964.72	16,768.82	9,765.68	102.12	101.07	73.21	-6,808.42	-227.49	689.26	492.97	196.29	3.511			
17,100.00	9,964.19	16,868.82	9,765.16	103.52	102.49	73.22	-6,908.42	-227.94	689.26	490.22	199.04	3.463			
17,200.00	9,963.66	16,968.82	9,764.64	104.93	103.92	73.22	-7,008.42	-228.40	689.26	487.47	201.79	3.416			
17,300.00	9,963.13	17,068.82	9,764.12	106.34	105.34	73.22	-7,108.41	-228.86	689.25	484.72	204.54	3.370			
17,400.00	9,962.60	17,168.82	9,763.60	107.75	106.76	73.22	-7,208.41	-229.31	689.25	481.97	207.29	3.325			
17,500.00	9,962.06	17,268.82	9,763.09	109.16	108.19	73.22	-7,308.41	-229.77	689.25	479.21	210.04	3.282			
17,600.00	9,961.53	17,368.82	9,762.57	110.57	109.61	73.22	-7,408.41	-230.23	689.24	476.45	212.79	3.239			
17,700.00	9,961.00	17,468.82	9,762.05	111.98	111.04	73.22	-7,508.40	-230.69	689.24	473.70	215.55	3.198			
17,800.00	9,960.47	17,568.82	9,761.53	113.39	112.46	73.22	-7,608.40	-231.14	689.24	470.94	218.30	3.157			
17,887.95	9,960.00	17,656.77	9,761.07	114.65	113.72	73.22	-7,696.35	-231.54	689.24	468.51	220.72	3.123			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-COM-0112-222H - 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
4,100.00	4,079.82	4,799.58	4,693.81	13.78	18.72	41.45	219.45	2,354.36	2,189.22	2,159.04	30.18	72.540
4,200.00	4,178.96	4,893.07	4,783.73	14.17	19.15	41.45	227.45	2,330.06	2,153.72	2,122.80	30.92	69.663
4,300.00	4,278.11	4,986.55	4,873.64	14.56	19.59	41.46	235.44	2,305.76	2,118.22	2,086.56	31.66	66.912
4,400.00	4,377.25	5,080.04	4,963.56	14.96	20.02	41.47	243.44	2,281.45	2,082.72	2,050.32	32.40	64.281
4,500.00	4,476.39	5,173.53	5,053.48	15.35	20.46	41.47	251.44	2,257.15	2,047.22	2,014.07	33.15	61.763
4,600.00	4,575.53	5,267.01	5,143.40	15.75	20.90	41.48	259.43	2,232.85	2,011.72	1,977.82	33.90	59.350
4,700.00	4,674.67	5,360.50	5,233.31	16.15	21.33	41.49	267.43	2,208.55	1,976.22	1,941.57	34.65	57.037
4,800.00	4,773.81	5,453.99	5,323.23	16.54	21.78	41.49	275.42	2,184.25	1,940.72	1,905.32	35.40	54.819
4,900.00	4,872.95	5,547.47	5,413.15	16.95	22.22	41.50	283.42	2,159.94	1,905.22	1,869.06	36.16	52.690
5,000.00	4,972.10	5,640.96	5,503.07	17.35	22.66	41.51	291.42	2,135.64	1,869.72	1,832.80	36.92	50.645
5,100.00	5,071.24	5,734.45	5,592.98	17.75	23.10	41.52	299.41	2,111.34	1,834.22	1,796.54	37.68	48.680
5,200.00	5,170.38	5,827.93	5,682.90	18.16	23.55	41.52	307.41	2,087.04	1,798.72	1,760.28	38.44	46.791
5,300.00	5,269.52	5,921.42	5,772.82	18.56	24.00	41.53	315.40	2,062.74	1,763.22	1,724.02	39.21	44.973
5,400.00	5,368.66	6,014.90	5,862.74	18.97	24.44	41.54	323.40	2,038.44	1,727.72	1,687.75	39.97	43.222
5,500.00	5,467.80	6,108.39	5,952.66	19.37	24.89	41.55	331.40	2,014.13	1,692.22	1,651.48	40.74	41.536
5,600.00	5,566.94	6,201.88	6,042.57	19.78	25.34	41.56	339.39	1,989.83	1,656.72	1,615.21	41.51	39.910
5,700.00	5,666.08	6,295.36	6,132.49	20.19	25.79	41.57	347.39	1,965.53	1,621.22	1,578.94	42.28	38.343
5,800.00	5,765.23	6,388.85	6,222.41	20.60	26.24	41.58	355.38	1,941.23	1,585.73	1,542.67	43.05	36.830
5,900.00	5,864.37	6,482.34	6,312.33	21.01	26.69	41.59	363.38	1,916.93	1,550.23	1,506.40	43.83	35.370
6,000.00	5,963.51	6,575.82	6,402.24	21.42	27.14	41.61	371.38	1,892.62	1,514.73	1,470.13	44.60	33.961
6,100.00	6,062.65	6,643.21	6,467.19	21.84	27.48	41.62	379.39	1,875.56	1,479.93	1,434.59	45.34	32.642
6,200.00	6,161.82	6,700.00	6,522.23	22.23	27.76	41.49	381.36	1,862.28	1,447.27	1,401.23	46.03	31.441
6,300.00	6,261.31	6,771.68	6,592.08	22.67	28.15	41.09	386.39	1,847.00	1,418.58	1,371.77	46.81	30.304
6,400.00	6,361.08	6,837.82	6,656.87	23.13	28.51	40.71	390.54	1,834.37	1,394.57	1,346.99	47.58	29.311
6,500.00	6,461.03	6,900.00	6,718.05	23.53	28.84	40.37	394.02	1,823.81	1,375.31	1,327.04	48.27	28.493
6,600.00	6,561.03	6,972.92	6,790.08	23.61	29.21	89.86	397.57	1,813.02	1,360.38	1,311.64	48.73	27.914
6,700.00	6,661.03	7,041.34	6,857.91	23.65	29.55	89.74	400.37	1,804.49	1,347.91	1,298.78	49.14	27.432
6,800.00	6,761.03	7,100.00	6,916.21	23.69	29.84	89.65	402.38	1,798.41	1,337.77	1,288.31	49.46	27.049
6,900.00	6,861.03	7,179.30	6,995.22	23.74	30.19	89.56	404.49	1,791.98	1,329.80	1,279.96	49.84	26.684
7,000.00	6,961.03	7,248.68	7,064.47	23.78	30.48	89.50	405.78	1,788.07	1,324.17	1,274.05	50.12	26.421
7,100.00	7,061.03	7,318.21	7,133.96	23.83	30.72	89.47	406.54	1,785.74	1,320.83	1,270.51	50.33	26.245
7,200.00	7,161.03	7,389.39	7,205.13	23.87	30.85	89.46	406.78	1,785.02	1,319.80	1,269.40	50.40	26.184
7,300.00	7,261.03	7,469.39	7,305.13	23.92	30.87	89.46	406.78	1,785.02	1,319.80	1,269.32	50.48	26.144
7,400.00	7,361.03	7,549.39	7,405.13	23.96	30.90	89.46	406.78	1,785.02	1,319.80	1,269.23	50.56	26.101
7,500.00	7,461.03	7,629.39	7,505.13	24.01	30.93	89.46	406.78	1,785.02	1,319.80	1,269.15	50.65	26.058
7,600.00	7,561.03	7,709.39	7,605.13	24.05	30.96	89.46	406.78	1,785.02	1,319.80	1,269.07	50.73	26.015
7,700.00	7,661.03	7,789.39	7,705.13	24.10	31.00	89.46	406.78	1,785.02	1,319.80	1,268.98	50.82	25.971
7,800.00	7,761.03	7,869.39	7,805.13	24.15	31.03	89.46	406.78	1,785.02	1,319.80	1,268.90	50.90	25.928
7,900.00	7,861.03	7,949.39	7,905.13	24.19	31.06	89.46	406.78	1,785.02	1,319.80	1,268.81	50.99	25.885
8,000.00	7,961.03	8,029.39	8,005.13	24.24	31.09	89.46	406.78	1,785.02	1,319.80	1,268.73	51.07	25.841
8,100.00	8,061.03	8,109.39	8,105.13	24.29	31.12	89.46	406.78	1,785.02	1,319.80	1,268.64	51.16	25.798
8,200.00	8,161.03	8,189.39	8,205.13	24.34	31.16	89.46	406.78	1,785.02	1,319.80	1,268.55	51.25	25.754
8,300.00	8,261.03	8,269.39	8,305.13	24.38	31.19	89.46	406.78	1,785.02	1,319.80	1,268.47	51.33	25.711
8,400.00	8,361.03	8,349.39	8,405.13	24.43	31.22	89.46	406.78	1,785.02	1,319.80	1,268.38	51.42	25.667
8,500.00	8,461.03	8,429.39	8,505.13	24.48	31.25	89.46	406.78	1,785.02	1,319.80	1,268.29	51.51	25.623
8,600.00	8,561.03	8,509.39	8,605.13	24.53	31.29	89.46	406.78	1,785.02	1,319.80	1,268.20	51.60	25.580
8,700.00	8,661.03	8,589.39	8,705.13	24.57	31.32	89.46	406.78	1,785.02	1,319.80	1,268.11	51.68	25.536
8,800.00	8,761.03	8,669.39	8,805.13	24.62	31.35	89.46	406.78	1,785.02	1,319.80	1,268.03	51.77	25.492
8,900.00	8,861.03	8,749.39	8,905.13	24.67	31.39	89.46	406.78	1,785.02	1,319.80	1,267.94	51.86	25.448
9,000.00	8,961.03	8,829.39	9,005.13	24.72	31.42	89.46	406.78	1,785.02	1,319.80	1,267.85	51.95	25.405
9,100.00	9,061.03	8,909.39	9,105.13	24.77	31.46	89.46	406.78	1,785.02	1,319.80	1,267.76	52.04	25.361
9,200.00	9,161.03	8,989.39	9,205.13	24.82	31.49	89.46	406.78	1,785.02	1,319.80	1,267.67	52.13	25.317

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-COM-0112-222H - 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		
9,300.00	9,261.03	9,489.39	9,305.13	24.87	31.52	89.46	406.78	1,785.02	1,319.80	1,267.58	52.22	25.273			
9,400.00	9,361.03	9,589.39	9,405.13	24.92	31.56	89.46	406.78	1,785.02	1,319.80	1,267.49	52.31	25.229			
9,500.00	9,461.01	9,690.49	9,506.21	24.92	31.56	-90.80	405.76	1,785.02	1,319.80	1,267.44	52.36	25.206			
9,600.00	9,559.81	9,793.80	9,608.23	24.81	31.46	-90.79	390.36	1,784.95	1,319.80	1,267.51	52.28	25.243			
9,700.00	9,654.58	9,897.00	9,705.73	24.67	31.34	-90.75	356.96	1,784.79	1,319.78	1,267.65	52.13	25.317			
9,800.00	9,742.44	9,999.97	9,795.48	24.53	31.23	-90.69	306.77	1,784.57	1,319.77	1,267.84	51.93	25.414			
9,900.00	9,820.71	10,102.63	9,874.58	24.39	31.15	-90.60	241.56	1,784.27	1,319.75	1,268.02	51.73	25.513			
10,000.00	9,887.02	10,204.88	9,940.57	24.30	31.12	-90.50	163.63	1,783.91	1,319.72	1,268.15	51.58	25.588			
10,100.00	9,939.35	10,306.66	9,991.48	24.27	31.18	-90.38	75.65	1,783.51	1,319.70	1,268.18	51.52	25.613			
10,200.00	9,976.12	10,407.92	10,025.90	24.32	31.33	-90.26	-19.44	1,783.08	1,319.69	1,268.08	51.61	25.569			
10,300.00	9,996.21	10,508.63	10,043.03	24.46	31.59	-90.12	-118.55	1,782.63	1,319.68	1,267.81	51.87	25.442			
10,351.12	10,000.52	10,559.84	10,045.00	24.59	31.76	-90.02	-169.70	1,782.40	1,319.68	1,267.61	52.07	25.343	CC		
10,400.00	9,999.84	10,608.77	10,044.74	24.71	31.95	-90.04	-218.63	1,782.18	1,319.68	1,267.38	52.30	25.234			
10,500.00	9,999.30	10,708.77	10,044.22	25.02	32.36	-90.04	-318.63	1,781.72	1,319.68	1,266.78	52.90	24.945			
10,600.00	9,998.77	10,808.77	10,043.70	25.39	32.83	-90.04	-418.63	1,781.27	1,319.68	1,266.02	53.67	24.590			
10,700.00	9,998.24	10,908.77	10,043.19	25.81	33.35	-90.04	-518.63	1,780.81	1,319.69	1,265.11	54.58	24.180			
10,800.00	9,997.71	11,008.77	10,042.67	26.28	33.90	-90.04	-618.62	1,780.36	1,319.69	1,264.06	55.62	23.725			
10,900.00	9,997.18	11,108.77	10,042.15	26.81	34.50	-90.04	-718.62	1,779.90	1,319.69	1,262.89	56.80	23.234			
11,000.00	9,996.64	11,208.77	10,041.63	27.39	35.13	-90.04	-818.62	1,779.45	1,319.69	1,261.60	58.09	22.716			
11,100.00	9,996.11	11,308.77	10,041.11	28.04	35.80	-90.04	-918.62	1,779.00	1,319.69	1,260.19	59.50	22.179			
11,200.00	9,995.58	11,408.77	10,040.59	28.73	36.51	-90.04	-1,018.61	1,778.54	1,319.69	1,258.68	61.01	21.630			
11,300.00	9,995.05	11,508.77	10,040.07	29.48	37.25	-90.04	-1,118.61	1,778.09	1,319.70	1,257.08	62.62	21.075			
11,400.00	9,994.52	11,608.77	10,039.55	30.28	38.02	-90.04	-1,218.61	1,777.63	1,319.70	1,255.38	64.31	20.520			
11,500.00	9,993.98	11,708.77	10,039.03	31.13	38.82	-90.04	-1,318.61	1,777.18	1,319.70	1,253.61	66.09	19.969			
11,600.00	9,993.45	11,808.77	10,038.51	32.03	39.66	-90.04	-1,418.61	1,776.72	1,319.70	1,251.76	67.94	19.425			
11,700.00	9,992.92	11,908.77	10,037.99	32.97	40.52	-90.04	-1,518.60	1,776.27	1,319.70	1,249.84	69.86	18.891			
11,800.00	9,992.39	12,008.77	10,037.47	33.95	41.41	-90.04	-1,618.60	1,775.81	1,319.70	1,247.86	71.84	18.369			
11,900.00	9,991.86	12,108.77	10,036.95	34.96	42.32	-90.04	-1,718.60	1,775.36	1,319.71	1,245.82	73.88	17.862			
12,000.00	9,991.32	12,208.77	10,036.44	36.01	43.26	-90.04	-1,818.60	1,774.90	1,319.71	1,243.73	75.98	17.369			
12,100.00	9,990.79	12,308.77	10,035.92	37.08	44.22	-90.04	-1,918.59	1,774.45	1,319.71	1,241.59	78.12	16.893			
12,200.00	9,990.26	12,408.77	10,035.40	38.18	45.21	-90.05	-2,018.59	1,774.00	1,319.71	1,239.40	80.31	16.432			
12,300.00	9,989.73	12,508.77	10,034.88	39.31	46.22	-90.05	-2,118.59	1,773.54	1,319.71	1,237.17	82.54	15.988			
12,400.00	9,989.20	12,608.77	10,034.36	40.46	47.24	-90.05	-2,218.59	1,773.09	1,319.71	1,234.90	84.81	15.560			
12,500.00	9,988.66	12,708.77	10,033.84	41.63	48.29	-90.05	-2,318.58	1,772.63	1,319.72	1,232.60	87.12	15.149			
12,600.00	9,988.13	12,808.77	10,033.32	42.82	49.35	-90.05	-2,418.58	1,772.18	1,319.72	1,230.26	89.46	14.753			
12,700.00	9,987.60	12,908.77	10,032.80	44.03	50.44	-90.05	-2,518.58	1,771.72	1,319.72	1,227.90	91.82	14.372			
12,800.00	9,987.07	13,008.77	10,032.28	45.25	51.53	-90.05	-2,618.58	1,771.27	1,319.72	1,225.50	94.22	14.007			
12,900.00	9,986.54	13,108.77	10,031.76	46.48	52.65	-90.05	-2,718.57	1,770.81	1,319.72	1,223.08	96.64	13.656			
13,000.00	9,986.00	13,208.77	10,031.24	47.73	53.78	-90.05	-2,818.57	1,770.36	1,319.72	1,220.64	99.09	13.319			
13,100.00	9,985.47	13,308.77	10,030.72	48.99	54.92	-90.05	-2,918.57	1,769.90	1,319.73	1,218.17	101.56	12.995			
13,200.00	9,984.94	13,408.77	10,030.20	50.26	56.07	-90.05	-3,018.57	1,769.45	1,319.73	1,215.68	104.05	12.684			
13,300.00	9,984.41	13,508.77	10,029.69	51.54	57.24	-90.05	-3,118.56	1,768.99	1,319.73	1,213.17	106.56	12.385			
13,400.00	9,983.88	13,608.77	10,029.17	52.83	58.42	-90.05	-3,218.56	1,768.54	1,319.73	1,210.65	109.08	12.098			
13,500.00	9,983.34	13,708.77	10,028.65	54.13	59.61	-90.05	-3,318.56	1,768.09	1,319.73	1,208.11	111.63	11.823			
13,600.00	9,982.81	13,808.77	10,028.13	55.44	60.81	-90.05	-3,418.56	1,767.63	1,319.73	1,205.55	114.19	11.558			
13,700.00	9,982.28	13,908.77	10,027.61	56.75	62.02	-90.05	-3,518.56	1,767.18	1,319.74	1,202.97	116.76	11.303			
13,800.00	9,981.75	14,008.77	10,027.09	58.07	63.24	-90.05	-3,618.55	1,766.72	1,319.74	1,200.39	119.35	11.058			
13,900.00	9,981.22	14,108.77	10,026.57	59.39	64.47	-90.05	-3,718.55	1,766.27	1,319.74	1,197.79	121.95	10.822			
14,000.00	9,980.68	14,208.77	10,026.05	60.73	65.71	-90.06	-3,818.55	1,765.81	1,319.74	1,195.18	124.56	10.595			
14,100.00	9,980.15	14,308.77	10,025.53	62.06	66.95	-90.06	-3,918.55	1,765.36	1,319.74	1,192.55	127.19	10.376			
14,200.00	9,979.62	14,408.77	10,025.01	63.40	68.20	-90.06	-4,018.54	1,764.90	1,319.74	1,189.92	129.83	10.166			
14,300.00	9,979.09	14,508.77	10,024.49	64.75	69.46	-90.06	-4,118.54	1,764.45	1,319.75	1,187.28	132.47	9.963			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 - RANA-SALADA-FED-COM-0112-222H - 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)					
14,400.00	9,978.56	14,608.77	10,023.97	66.10	70.73	-90.06	-4,218.54	1,763.99	1,319.75	1,184.62	135.13	9.767			
14,500.00	9,978.02	14,708.77	10,023.45	67.45	72.00	-90.06	-4,318.54	1,763.54	1,319.75	1,181.96	137.79	9.578			
14,600.00	9,977.49	14,808.77	10,022.94	68.81	73.28	-90.06	-4,418.53	1,763.09	1,319.75	1,179.29	140.46	9.396			
14,700.00	9,976.96	14,908.77	10,022.42	70.17	74.57	-90.06	-4,518.53	1,762.63	1,319.75	1,176.61	143.14	9.220			
14,800.00	9,976.43	15,008.77	10,021.90	71.54	75.86	-90.06	-4,618.53	1,762.18	1,319.76	1,173.92	145.83	9.050			
14,900.00	9,975.90	15,108.77	10,021.38	72.91	77.15	-90.06	-4,718.53	1,761.72	1,319.76	1,171.23	148.53	8.886			
15,000.00	9,975.36	15,208.77	10,020.86	74.28	78.45	-90.06	-4,818.52	1,761.27	1,319.76	1,168.53	151.23	8.727			
15,100.00	9,974.83	15,308.77	10,020.34	75.65	79.76	-90.06	-4,918.52	1,760.81	1,319.76	1,165.82	153.94	8.573			
15,200.00	9,974.30	15,408.77	10,019.82	77.03	81.07	-90.06	-5,018.52	1,760.36	1,319.76	1,163.11	156.65	8.425			
15,300.00	9,973.77	15,508.77	10,019.30	78.41	82.38	-90.06	-5,118.52	1,759.90	1,319.76	1,160.39	159.37	8.281			
15,400.00	9,973.24	15,608.77	10,018.78	79.79	83.70	-90.06	-5,218.51	1,759.45	1,319.77	1,157.67	162.10	8.142			
15,500.00	9,972.70	15,708.77	10,018.26	81.17	85.02	-90.06	-5,318.51	1,758.99	1,319.77	1,154.94	164.83	8.007			
15,600.00	9,972.17	15,808.77	10,017.74	82.56	86.35	-90.06	-5,418.51	1,758.54	1,319.77	1,152.20	167.57	7.876			
15,700.00	9,971.64	15,908.77	10,017.22	83.94	87.68	-90.06	-5,518.51	1,758.09	1,319.77	1,149.46	170.31	7.749			
15,800.00	9,971.11	16,008.77	10,016.70	85.33	89.01	-90.06	-5,618.51	1,757.63	1,319.77	1,146.72	173.05	7.626			
15,900.00	9,970.58	16,108.77	10,016.19	86.72	90.35	-90.07	-5,718.50	1,757.18	1,319.77	1,143.97	175.80	7.507			
16,000.00	9,970.04	16,208.77	10,015.67	88.11	91.69	-90.07	-5,818.50	1,756.72	1,319.78	1,141.22	178.56	7.391			
16,100.00	9,969.51	16,308.77	10,015.15	89.51	93.03	-90.07	-5,918.50	1,756.27	1,319.78	1,138.46	181.31	7.279			
16,200.00	9,968.98	16,408.77	10,014.63	90.90	94.37	-90.07	-6,018.50	1,755.81	1,319.78	1,135.70	184.08	7.170			
16,300.00	9,968.45	16,508.77	10,014.11	92.30	95.72	-90.07	-6,118.49	1,755.36	1,319.78	1,132.94	186.84	7.064			
16,400.00	9,967.92	16,608.77	10,013.59	93.70	97.07	-90.07	-6,218.49	1,754.90	1,319.78	1,130.17	189.61	6.961			
16,500.00	9,967.38	16,708.77	10,013.07	95.10	98.43	-90.07	-6,318.49	1,754.45	1,319.78	1,127.40	192.38	6.860			
16,600.00	9,966.85	16,808.77	10,012.55	96.50	99.78	-90.07	-6,418.49	1,753.99	1,319.79	1,124.63	195.16	6.763			
16,700.00	9,966.32	16,908.77	10,012.03	97.90	101.14	-90.07	-6,518.48	1,753.54	1,319.79	1,121.85	197.93	6.668			
16,800.00	9,965.79	17,008.77	10,011.51	99.31	102.50	-90.07	-6,618.48	1,753.09	1,319.79	1,119.07	200.72	6.575			
16,900.00	9,965.26	17,108.77	10,010.99	100.71	103.86	-90.07	-6,718.48	1,752.63	1,319.79	1,116.29	203.50	6.485			
17,000.00	9,964.72	17,208.77	10,010.47	102.12	105.23	-90.07	-6,818.48	1,752.18	1,319.79	1,113.51	206.29	6.398			
17,100.00	9,964.19	17,308.77	10,009.95	103.52	106.59	-90.07	-6,918.47	1,751.72	1,319.79	1,110.72	209.07	6.313			
17,200.00	9,963.66	17,408.77	10,009.44	104.93	107.96	-90.07	-7,018.47	1,751.27	1,319.80	1,107.93	211.87	6.229			
17,300.00	9,963.13	17,508.77	10,008.92	106.34	109.33	-90.07	-7,118.47	1,750.81	1,319.80	1,105.14	214.66	6.148			
17,400.00	9,962.60	17,608.77	10,008.40	107.75	110.70	-90.07	-7,218.47	1,750.36	1,319.80	1,102.34	217.46	6.069			
17,500.00	9,962.06	17,708.77	10,007.88	109.16	112.08	-90.07	-7,318.46	1,749.90	1,319.80	1,099.55	220.25	5.992			
17,600.00	9,961.53	17,808.77	10,007.36	110.57	113.45	-90.07	-7,418.46	1,749.45	1,319.80	1,096.75	223.05	5.917			
17,700.00	9,961.00	17,908.77	10,006.84	111.98	114.83	-90.08	-7,518.46	1,748.99	1,319.80	1,093.95	225.86	5.844			
17,800.00	9,960.47	18,008.77	10,006.32	113.39	116.21	-90.08	-7,618.46	1,748.54	1,319.81	1,091.15	228.66	5.772			
17,800.27	9,960.47	18,009.04	10,006.32	113.40	116.21	-90.08	-7,618.73	1,748.54	1,319.81	1,091.14	228.67	5.772			
17,887.95	9,960.00	18,071.00	10,006.00	114.65	117.13	-90.08	-7,680.69	1,748.26	1,320.06	1,089.47	230.59	5.725 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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 14-T23S-28E - CB Boba Fett 14 11 Fed 09 403H Package 9 - Wellbore #1 - Design #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)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
8,100.00	8,061.03	23,214.85	9,716.92	24.29	211.49	-102.74	99.73	-837.38	2,175.26	1,992.55	182.71	11.906			
8,200.00	8,161.03	23,214.85	9,716.92	24.34	211.49	-102.74	99.73	-837.38	2,097.22	1,911.57	185.66	11.296			
8,300.00	8,261.03	23,214.85	9,716.92	24.38	211.49	-102.74	99.73	-837.38	2,021.13	1,832.36	188.77	10.707			
8,400.00	8,361.03	23,214.85	9,716.92	24.43	211.49	-102.74	99.73	-837.38	1,947.19	1,755.16	192.03	10.140			
8,500.00	8,461.03	23,214.85	9,716.92	24.48	211.49	-102.74	99.73	-837.38	1,875.68	1,680.25	195.43	9.598			
8,600.00	8,561.03	23,214.85	9,716.92	24.53	211.49	-102.74	99.73	-837.38	1,806.86	1,607.92	198.95	9.082			
8,700.00	8,661.03	23,214.85	9,716.92	24.57	211.49	-102.74	99.73	-837.38	1,741.08	1,538.51	202.57	8.595			
8,800.00	8,761.03	23,214.85	9,716.92	24.62	211.49	-102.74	99.73	-837.38	1,678.68	1,472.44	206.24	8.139			
8,900.00	8,861.03	23,214.85	9,716.92	24.67	211.49	-102.74	99.73	-837.38	1,620.05	1,410.13	209.92	7.717			
9,000.00	8,961.03	23,214.85	9,716.92	24.72	211.49	-102.74	99.73	-837.38	1,565.62	1,352.09	213.54	7.332			
9,100.00	9,061.03	23,214.85	9,716.92	24.77	211.49	-102.74	99.73	-837.38	1,515.84	1,298.84	217.00	6.985			
9,200.00	9,161.03	23,214.85	9,716.92	24.82	211.49	-102.74	99.73	-837.38	1,471.18	1,250.97	220.21	6.681			
9,300.00	9,261.03	23,214.85	9,716.92	24.87	211.49	-102.74	99.73	-837.38	1,432.12	1,209.07	223.06	6.420			
9,400.00	9,361.03	23,214.85	9,716.92	24.92	211.49	-102.74	99.73	-837.38	1,399.14	1,173.72	225.42	6.207			
9,500.00	9,461.01	23,214.85	9,716.92	24.92	211.49	77.85	99.73	-837.38	1,372.44	1,145.28	227.16	6.042			
9,600.00	9,559.81	23,214.85	9,716.92	24.81	211.49	80.12	99.73	-837.38	1,349.88	1,121.37	228.51	5.907			
9,700.00	9,654.58	23,214.85	9,716.92	24.67	211.49	81.97	99.73	-837.38	1,331.48	1,101.91	229.57	5.800			
9,800.00	9,742.44	23,214.85	9,716.92	24.53	211.49	83.32	99.73	-837.38	1,317.97	1,087.71	230.27	5.724			
9,900.00	9,820.71	23,214.85	9,716.92	24.39	211.49	84.13	99.73	-837.38	1,309.93	1,079.42	230.51	5.683			
9,987.81	9,879.64	23,214.85	9,716.92	24.31	211.49	84.35	99.73	-837.38	1,307.65	1,077.35	230.30	5.678 SF			
10,000.00	9,887.02	23,214.85	9,716.92	24.30	211.49	84.35	99.73	-837.38	1,307.69	1,077.46	230.24	5.680			
10,100.00	9,939.35	23,193.99	9,716.79	24.27	211.19	83.57	78.87	-837.38	1,311.20	1,082.14	229.06	5.724			
10,200.00	9,976.12	23,101.35	9,716.24	24.32	209.87	81.61	-13.77	-837.38	1,315.90	1,089.14	226.76	5.803			
10,300.00	9,996.21	23,003.64	9,715.66	24.46	208.47	80.46	-111.48	-837.38	1,318.74	1,093.86	224.87	5.864			
10,400.00	9,999.84	22,903.81	9,715.07	24.71	207.05	80.24	-211.30	-837.38	1,319.00	1,095.48	223.51	5.901			
10,500.00	9,999.30	22,803.81	9,714.48	25.02	205.62	80.23	-311.30	-837.38	1,318.56	1,096.19	222.37	5.930			
10,600.00	9,998.77	22,703.81	9,713.88	25.39	204.19	80.23	-411.30	-837.38	1,318.12	1,096.79	221.33	5.956			
10,700.00	9,998.24	22,603.81	9,713.29	25.81	202.76	80.22	-511.30	-837.38	1,317.68	1,097.31	220.37	5.979			
10,800.00	9,997.71	22,503.81	9,712.70	26.28	201.34	80.21	-611.29	-837.38	1,317.24	1,097.75	219.49	6.001			
10,900.00	9,997.18	22,403.81	9,712.10	26.81	199.91	80.21	-711.29	-837.38	1,316.80	1,098.11	218.69	6.021			
11,000.00	9,996.64	22,303.82	9,711.51	27.39	198.48	80.20	-811.29	-837.38	1,316.36	1,098.40	217.96	6.039			
11,100.00	9,996.11	22,203.82	9,710.92	28.04	197.05	80.20	-911.28	-837.38	1,315.92	1,098.63	217.30	6.056			
11,200.00	9,995.58	22,103.82	9,710.32	28.73	195.63	80.19	-1,011.28	-837.38	1,315.48	1,098.80	216.69	6.071			
11,300.00	9,995.05	22,003.82	9,709.73	29.48	194.20	80.18	-1,111.28	-837.38	1,315.04	1,098.91	216.13	6.084			
11,400.00	9,994.52	21,903.82	9,709.14	30.28	192.77	80.18	-1,211.28	-837.38	1,314.61	1,098.98	215.63	6.097			
11,500.00	9,993.98	21,803.82	9,708.54	31.13	191.35	80.17	-1,311.27	-837.38	1,314.17	1,099.00	215.16	6.108			
11,600.00	9,993.45	21,703.82	9,707.95	32.03	189.92	80.17	-1,411.27	-837.38	1,313.73	1,098.99	214.74	6.118			
11,700.00	9,992.92	21,603.82	9,707.36	32.97	188.50	80.16	-1,511.27	-837.38	1,313.29	1,098.94	214.35	6.127			
11,800.00	9,992.39	21,503.82	9,706.76	33.95	187.07	80.15	-1,611.26	-837.38	1,312.85	1,098.85	213.99	6.135			
11,900.00	9,991.86	21,403.82	9,706.17	34.96	185.64	80.15	-1,711.26	-837.38	1,312.41	1,098.74	213.67	6.142			
12,000.00	9,991.32	21,303.83	9,705.58	36.01	184.22	80.14	-1,811.26	-837.38	1,311.97	1,098.61	213.36	6.149			
12,100.00	9,990.79	21,203.83	9,704.98	37.08	182.79	80.14	-1,911.26	-837.38	1,311.53	1,098.45	213.08	6.155			
12,200.00	9,990.26	21,103.83	9,704.39	38.18	181.37	80.13	-2,011.25	-837.38	1,311.09	1,098.27	212.83	6.160			
12,300.00	9,989.73	21,003.83	9,703.80	39.31	179.94	80.12	-2,111.25	-837.38	1,310.65	1,098.07	212.59	6.165			
12,400.00	9,989.20	20,903.83	9,703.20	40.46	178.52	80.12	-2,211.25	-837.38	1,310.22	1,097.85	212.37	6.170			
12,500.00	9,988.66	20,803.83	9,702.61	41.63	177.10	80.11	-2,311.24	-837.38	1,309.78	1,097.62	212.16	6.173			
12,600.00	9,988.13	20,703.83	9,702.02	42.82	175.67	80.11	-2,411.24	-837.38	1,309.34	1,097.37	211.97	6.177			
12,700.00	9,987.60	20,603.83	9,701.42	44.03	174.25	80.10	-2,511.24	-837.38	1,308.90	1,097.11	211.79	6.180			
12,800.00	9,987.07	20,503.83	9,700.83	45.25	172.83	80.09	-2,611.24	-837.38	1,308.46	1,096.83	211.63	6.183			
12,900.00	9,986.54	20,403.84	9,700.24	46.48	171.40	80.09	-2,711.23	-837.38	1,308.02	1,096.55	211.47	6.185			
13,000.00	9,986.00	20,303.84	9,699.64	47.73	169.98	80.08	-2,811.23	-837.38	1,307.58	1,096.25	211.33	6.187			
13,100.00	9,985.47	20,203.84	9,699.05	48.99	168.56	80.08	-2,911.23	-837.38	1,307.14	1,095.95	211.19	6.189			

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 14-T23S-28E - CB Boba Fett 14 11 Fed 09 403H Package 9 - Wellbore #1 - Design #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)	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
13,200.00	9,984.94	20,103.84	9,698.46	50.26	167.14	80.07	-3,011.22	-837.38	1,306.70	1,095.64	211.07	6.191	
13,300.00	9,984.41	20,003.84	9,697.86	51.54	165.72	80.06	-3,111.22	-837.38	1,306.27	1,095.32	210.95	6.192	
13,400.00	9,983.88	19,903.84	9,697.27	52.83	164.29	80.06	-3,211.22	-837.38	1,305.83	1,094.99	210.84	6.193	
13,500.00	9,983.34	19,803.84	9,696.68	54.13	162.87	80.05	-3,311.22	-837.38	1,305.39	1,094.65	210.74	6.194	
13,600.00	9,982.81	19,703.84	9,696.08	55.44	161.45	80.04	-3,411.21	-837.38	1,304.95	1,094.31	210.64	6.195	
13,700.00	9,982.28	19,603.84	9,695.49	56.75	160.03	80.04	-3,511.21	-837.38	1,304.51	1,093.96	210.55	6.196	
13,800.00	9,981.75	19,503.85	9,694.90	58.07	158.61	80.03	-3,611.21	-837.38	1,304.07	1,093.61	210.46	6.196	
13,900.00	9,981.22	19,403.85	9,694.30	59.39	157.19	80.03	-3,711.20	-837.38	1,303.63	1,093.25	210.38	6.197	
14,000.00	9,980.68	19,303.85	9,693.71	60.73	155.77	80.02	-3,811.20	-837.38	1,303.19	1,092.89	210.31	6.197	
14,100.00	9,980.15	19,203.85	9,693.12	62.06	154.35	80.01	-3,911.20	-837.38	1,302.76	1,092.52	210.24	6.197	
14,200.00	9,979.62	19,103.85	9,692.52	63.40	152.94	80.01	-4,011.20	-837.38	1,302.32	1,092.15	210.17	6.197	
14,300.00	9,979.09	19,003.85	9,691.93	64.75	151.52	80.00	-4,111.19	-837.38	1,301.88	1,091.77	210.11	6.196	
14,400.00	9,978.56	18,903.85	9,691.34	66.10	150.10	80.00	-4,211.19	-837.38	1,301.44	1,091.39	210.05	6.196	
14,500.00	9,978.02	18,803.85	9,690.74	67.45	148.68	79.99	-4,311.19	-837.38	1,301.00	1,091.01	210.00	6.195	
14,600.00	9,977.49	18,703.85	9,690.15	68.81	147.27	79.98	-4,411.19	-837.38	1,300.56	1,090.62	209.94	6.195	
14,700.00	9,976.96	18,603.85	9,689.56	70.17	145.85	79.98	-4,511.18	-837.38	1,300.12	1,090.23	209.90	6.194	
14,800.00	9,976.43	18,503.86	9,688.96	71.54	144.43	79.97	-4,611.18	-837.38	1,299.69	1,089.83	209.85	6.193	
14,900.00	9,975.90	18,403.86	9,688.37	72.91	143.02	79.96	-4,711.18	-837.38	1,299.25	1,089.44	209.81	6.192	
15,000.00	9,975.36	18,303.86	9,687.77	74.28	141.60	79.96	-4,811.17	-837.38	1,298.81	1,089.03	209.77	6.191	
15,100.00	9,974.83	18,203.86	9,687.18	75.65	140.19	79.95	-4,911.17	-837.38	1,298.37	1,088.63	209.74	6.190	
15,200.00	9,974.30	18,103.86	9,686.59	77.03	138.78	79.95	-5,011.17	-837.38	1,297.93	1,088.23	209.71	6.189	
15,300.00	9,973.77	18,003.86	9,685.99	78.41	137.36	79.94	-5,111.17	-837.38	1,297.49	1,087.82	209.68	6.188	
15,400.00	9,973.24	17,903.86	9,685.40	79.79	135.95	79.93	-5,211.16	-837.38	1,297.05	1,087.41	209.65	6.187	
15,500.00	9,972.70	17,803.86	9,684.81	81.17	134.54	79.93	-5,311.16	-837.38	1,296.62	1,086.99	209.62	6.185	
15,600.00	9,972.17	17,703.86	9,684.21	82.56	133.13	79.92	-5,411.16	-837.38	1,296.18	1,086.58	209.60	6.184	
15,700.00	9,971.64	17,603.87	9,683.62	83.94	131.72	79.92	-5,511.15	-837.38	1,295.74	1,086.16	209.58	6.183	
15,800.00	9,971.11	17,503.87	9,683.03	85.33	130.30	79.91	-5,611.15	-837.38	1,295.30	1,085.74	209.56	6.181	
15,900.00	9,970.58	17,403.87	9,682.43	86.72	128.90	79.90	-5,711.15	-837.38	1,294.86	1,085.32	209.55	6.179	
16,000.00	9,970.04	17,303.87	9,681.84	88.11	127.49	79.90	-5,811.15	-837.38	1,294.42	1,084.89	209.53	6.178	
16,100.00	9,969.51	17,203.87	9,681.25	89.51	126.08	79.89	-5,911.14	-837.38	1,293.99	1,084.46	209.52	6.176	
16,200.00	9,968.98	17,103.87	9,680.65	90.90	124.67	79.88	-6,011.14	-837.38	1,293.55	1,084.04	209.51	6.174	
16,300.00	9,968.45	17,003.87	9,680.06	92.30	123.26	79.88	-6,111.14	-837.38	1,293.11	1,083.60	209.50	6.172	
16,400.00	9,967.92	16,903.87	9,679.47	93.70	121.86	79.87	-6,211.13	-837.38	1,292.67	1,083.17	209.50	6.170	
16,500.00	9,967.38	16,803.87	9,678.87	95.10	120.45	79.87	-6,311.13	-837.38	1,292.23	1,082.74	209.50	6.168	
16,600.00	9,966.85	16,703.87	9,678.28	96.50	119.05	79.86	-6,411.13	-837.38	1,291.79	1,082.30	209.49	6.166	
16,700.00	9,966.32	16,603.88	9,677.69	97.90	117.64	79.85	-6,511.13	-837.38	1,291.36	1,081.86	209.49	6.164	
16,800.00	9,965.79	16,503.88	9,677.09	99.31	116.24	79.85	-6,611.12	-837.38	1,290.92	1,081.42	209.50	6.162	
16,900.00	9,965.26	16,403.88	9,676.50	100.71	114.84	79.84	-6,711.12	-837.38	1,290.48	1,080.98	209.50	6.160	
17,000.00	9,964.72	16,303.88	9,675.91	102.12	113.44	79.83	-6,811.12	-837.38	1,290.04	1,080.53	209.51	6.157	
17,100.00	9,964.19	16,203.88	9,675.31	103.52	112.04	79.83	-6,911.11	-837.38	1,289.60	1,080.09	209.52	6.155	
17,200.00	9,963.66	16,103.88	9,674.72	104.93	110.64	79.82	-7,011.11	-837.38	1,289.16	1,079.64	209.53	6.153	
17,300.00	9,963.13	16,003.88	9,674.13	106.34	109.24	79.82	-7,111.11	-837.38	1,288.73	1,079.19	209.54	6.150	
17,400.00	9,962.60	15,903.88	9,673.53	107.75	107.84	79.81	-7,211.11	-837.38	1,288.29	1,078.73	209.55	6.148	
17,500.00	9,962.06	15,803.88	9,672.94	109.16	106.44	79.80	-7,311.10	-837.38	1,287.85	1,078.28	209.57	6.145	
17,600.00	9,961.53	15,703.89	9,672.35	110.57	105.05	79.80	-7,411.10	-837.38	1,287.41	1,077.82	209.59	6.143	
17,700.00	9,961.00	15,603.89	9,671.75	111.98	103.66	79.79	-7,511.10	-837.38	1,286.97	1,077.36	209.61	6.140	
17,800.00	9,960.47	15,503.89	9,671.16	113.39	102.26	79.78	-7,611.09	-837.38	1,286.53	1,076.90	209.63	6.137	
17,887.95	9,960.00	15,415.94	9,670.64	114.65	101.04	79.78	-7,699.05	-837.38	1,286.15	1,076.49	209.66	6.135 CC, ES	

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-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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: Valkyrie Pad (Grid) - Valkyrie 12 WXY Federal Com 11H - Wellbore #1 - Final Surveys													Offset Site Error: 0.00 usft
Survey Program: 237-													Offset Well Error: 0.50 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
17,600.00	9,961.53	10,226.00	9,683.40	110.57	31.59	24.86	-9,509.24	327.74	2,109.79	2,056.25	53.54	39.404	
17,700.00	9,961.00	10,226.00	9,683.40	111.98	31.59	24.86	-9,509.24	327.74	2,010.36	1,956.66	53.70	37.434	
17,800.00	9,960.47	10,226.00	9,683.40	113.39	31.59	24.86	-9,509.24	327.74	1,910.99	1,857.11	53.88	35.467	
17,887.95	9,960.00	10,226.00	9,683.40	114.65	31.59	24.86	-9,509.24	327.74	1,823.65	1,760.79	62.86	29.012 CC, ES, SF	

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



Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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: Valkyrie Pad (Grid) - Valkyrie 12 WXY Federal Com 7H - Wellbore #1 - Final Surveys												Offset Site Error:	0.00 usft
Survey Program: 237-												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)			
16,200.00	9,968.98	10,229.50	9,702.48	90.90	34.27	15.57	-8,176.72	373.95	2,174.24	2,123.54	50.70	42.884	
16,300.00	9,968.45	10,231.70	9,702.51	92.30	34.28	14.95	-8,176.79	376.16	2,074.66	2,023.97	50.69	40.929	
16,400.00	9,967.92	10,233.92	9,702.53	93.70	34.29	14.31	-8,176.86	378.37	1,975.12	1,924.45	50.67	38.980	
16,500.00	9,967.38	10,236.15	9,702.55	95.10	34.31	13.67	-8,176.92	380.60	1,875.63	1,824.99	50.64	37.038	
16,600.00	9,966.85	10,238.39	9,702.58	96.50	34.32	13.03	-8,176.99	382.84	1,776.18	1,725.58	50.60	35.102	
16,700.00	9,966.32	10,240.64	9,702.60	97.90	34.33	12.37	-8,177.06	385.09	1,676.80	1,626.26	50.55	33.172	
16,800.00	9,965.79	10,242.91	9,702.61	99.31	34.35	11.71	-8,177.13	387.36	1,577.50	1,527.01	50.48	31.247	
16,900.00	9,965.26	10,245.18	9,702.63	100.71	34.36	11.04	-8,177.20	389.64	1,478.28	1,427.88	50.41	29.327	
17,000.00	9,964.72	10,247.47	9,702.64	102.12	34.38	10.37	-8,177.27	391.92	1,379.18	1,328.86	50.32	27.410	
17,100.00	9,964.19	10,249.78	9,702.65	103.52	34.39	9.68	-8,177.34	394.22	1,280.21	1,229.99	50.21	25.496	
17,200.00	9,963.66	10,252.09	9,702.66	104.93	34.40	8.99	-8,177.41	396.54	1,181.40	1,131.31	50.10	23.582	
17,300.00	9,963.13	10,254.42	9,702.67	106.34	34.42	8.30	-8,177.48	398.86	1,082.82	1,032.83	49.98	21.665	
17,400.00	9,962.60	10,256.76	9,702.67	107.75	34.43	7.60	-8,177.55	401.20	984.51	934.63	49.87	19.741	
17,500.00	9,962.06	10,259.11	9,702.67	109.16	34.45	6.89	-8,177.62	403.55	886.57	836.77	49.80	17.804	
17,600.00	9,961.53	10,261.48	9,702.67	110.57	34.46	6.17	-8,177.69	405.92	789.14	739.33	49.80	15.845	
17,700.00	9,961.00	10,266.00	9,702.66	111.98	34.49	4.80	-8,177.83	410.44	692.44	642.49	49.95	13.863	
17,800.00	9,960.47	10,266.40	9,702.66	113.39	34.49	4.68	-8,177.85	410.84	596.80	546.28	50.52	11.812	
17,887.95	9,960.00	10,269.67	9,702.65	114.65	34.52	3.69	-8,177.94	414.11	514.06	453.27	60.79	8.457 CC, ES, SF	

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



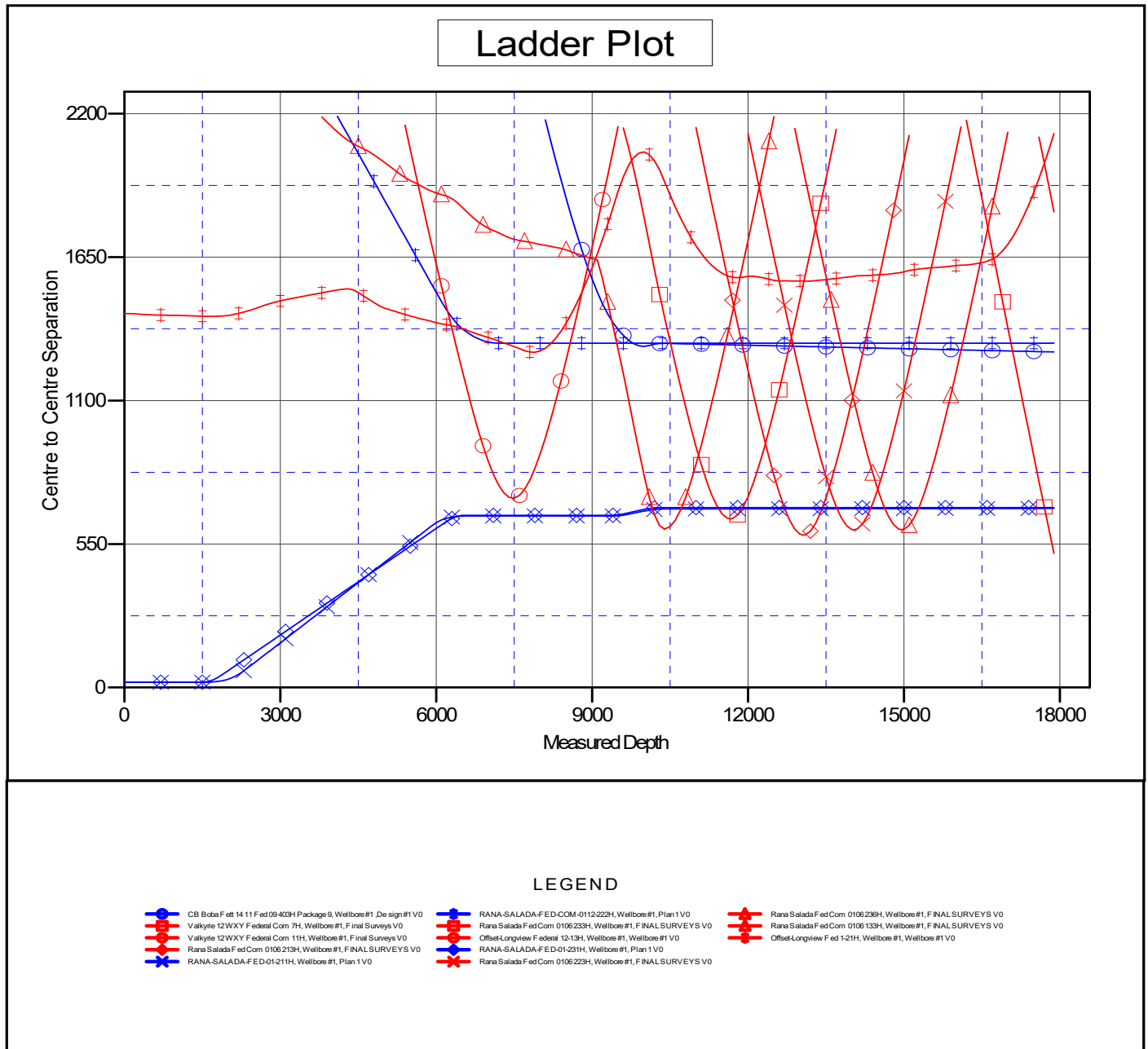
Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 25' +GL 3067.10' @ 3092.10usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.3333334

Coordinates are relative to: RANA-SALADA-FED-01-131H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.15°



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



Anticollision Report

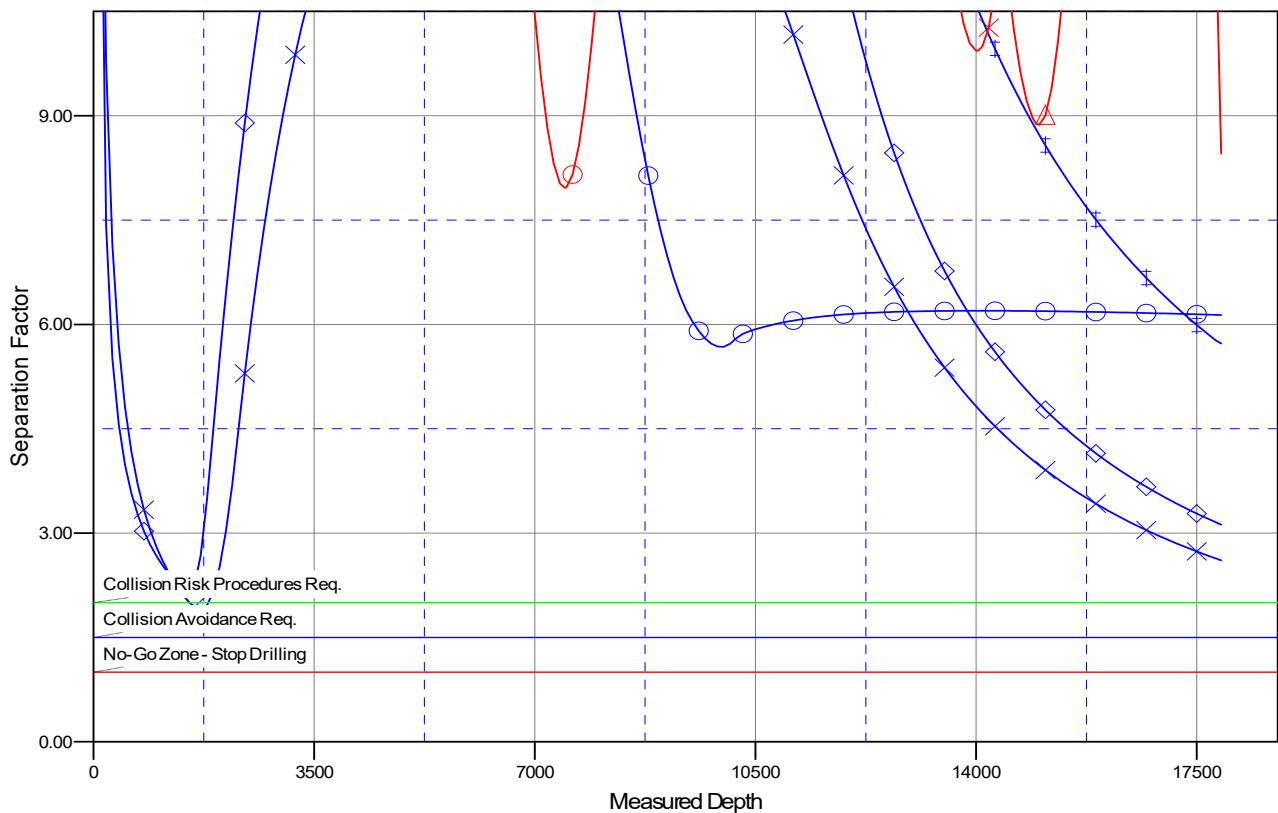


Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well RANA-SALADA-FED-01-131H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' +GL 3067.10' @ 3092.10usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	RANA-SALADA-FED-01-131H	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 25' +GL 3067.10' @ 3092.10usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.33333334

Coordinates are relative to: RANA-SALADA-FED-01-131H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.15°

Separation Factor Plot



LEGEND

CB Boba Fed 14 11 Fed 09 403H Package 9, Wellbore #1, Design #1 V0	RANA-SALADA-FED-COM-011222H, Wellbore #1, Plan 1 V0	Rana Salada Fed Com 0106236H, Wellbore #1, FINAL SURVEYS V0
Valkyrie 12 WXY Fed Com 7H, Wellbore #1, Final Surveys V0	Rana Salada Fed Com 0106233H, Wellbore #1, FINAL SURVEYS V0	Rana Salada Fed Com 0106133H, Wellbore #1, FINAL SURVEYS V0
Valkyrie 12 WXY Fed Com 11H, Wellbore #1, Final Surveys V0	Offset-Longview Fed 12-13H, Wellbore #1, Wellbore #1 V0	Offset-Longview Fed 1-21H, Wellbore #1, Wellbore #1 V0
Rana Salada Fed Com 0106213H, Wellbore #1, FINAL SURVEYS V0	RANA-SALADA-FED-01-231H, Wellbore #1, Plan 1 V0	
RANA-SALADA-FED-01-211H, Wellbore #1, Plan 1 V0	Rana Salada Fed Com 0106233H, Wellbore #1, FINAL SURVEYS V0	

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

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 30-015-48582	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp Gas Pool
⁴ Property Code 330695	⁵ Property Name RANA SALADA FED 01	⁶ Well Number 131H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3067.1

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	1	23S	28E		144	NORTH	527	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	12	23S	28E		2510	NORTH	990	WEST	EDDY

¹² Dedicated Acres 479.16	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. <i>Justin Carter</i> 11.1.2022 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 12, 2022 Date of Survey <i>Justin Carter</i> Signature and Seal of Professional Surveyor: LS 12797 Certificate Number: 12797 Survey No. 8100B
--	--

Intent ☐ As Drilled ☐

API #		
Operator Name: NOVO OIL & GAS NORTHERN DELAWARE, LLC	Property Name: RANA SALADA FED 01	Well Number 131H

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
	1	23S	28E	4	330	NORTH	990	WEST	EDDY
Latitude 32.3411163					Longitude 104.0460396				NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
E	12	23S	28E	1	2310	NORTH	990	WEST	EDDY
Latitude 32.3209987					Longitude 104.0462091				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

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

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

CONDITIONS

Action 212265

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 212265
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	None	10/13/2023