

Well Name: RANA SALADA FED COM 0106	Well Location: T23S / R28E / SEC 1 / NWSW /	County or Parish/State:
Well Number: 133H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM091078	Unit or CA Name:	Unit or CA Number:
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 06/11/2021	Time Sundry Submitted: 12:41
Date proposed operation will begin: 07/15/2021	

Procedure Description: Request to move Surface Hole Location from 2,350' FSL & 125' FWL, Section 1, T-23-S, R-28-E, NWSW, to 2,310' FSL & 25' FEL, Section 2, T-23-S, R-28-E, NESE. No new surface disturbance. See attachment for revised C102, Horizontal Plan, and Anti-Collision Report.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

RSFC_0106_133H_SHL_Sundry_Request_20210611124116.pdf

Well Name: RANA SALADA FED COM 0106	Well Location: T23S / R28E / SEC 1 / NWSW /	County or Parish/State:
Well Number: 133H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM091078	Unit or CA Name:	Unit or CA Number:
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Operator Certification

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

Operator Electronic Signature: JUSTIN CARTER	Signed on: JUN 11, 2021 12:41 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

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: Cody Layton	BLM POC Title: Assistant Field Manager Lands & Minerals
BLM POC Phone: 5752345959	BLM POC Email Address: clayton@blm.gov
Disposition: Approved	Disposition Date: 06/14/2021
Signature: Cody R. Layton	

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

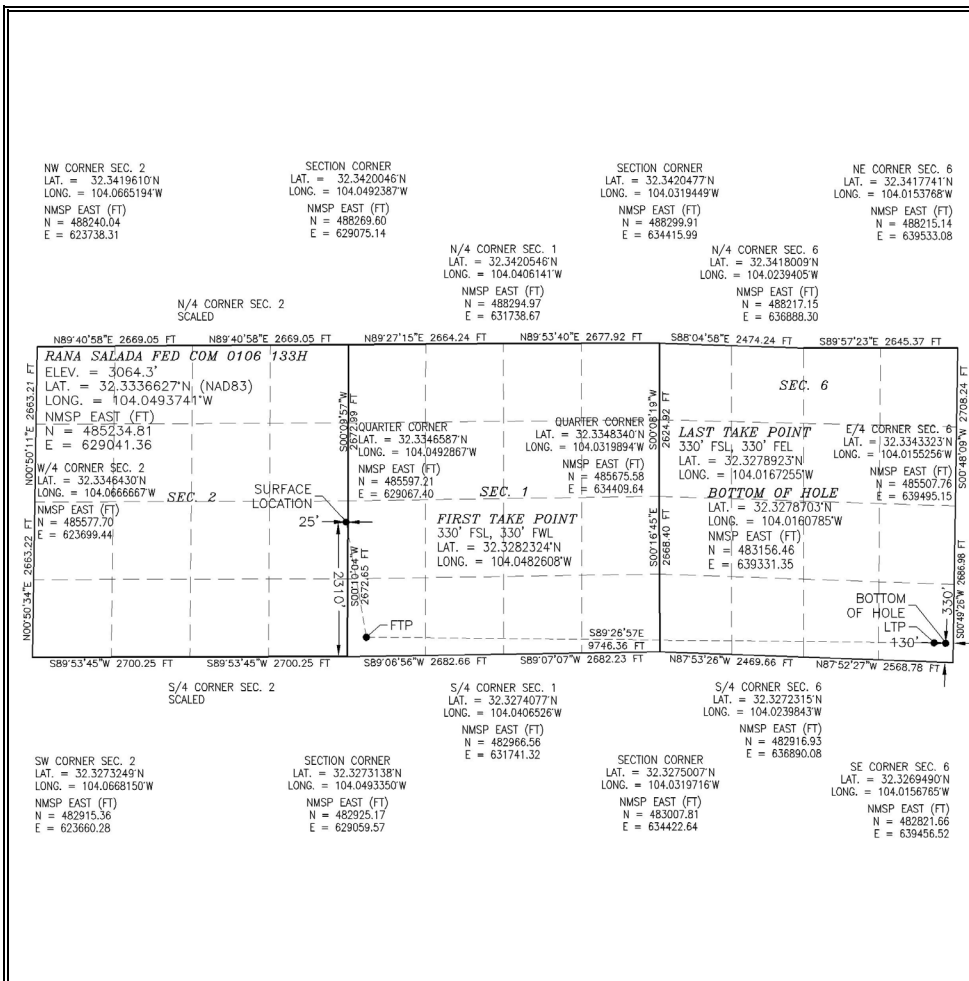
¹ API Number 30-015-	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp Gas Pool
⁴ Property Code	⁵ Property Name RANA SALADA FED COM 0106	⁶ Well Number 133H
⁷ OGRID No. 372920	⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC	⁹ Elevation 3064.3

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	2	23 S	28 E		2310	SOUTH	25	EAST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	6	23 S	29 E		330	SOUTH	130	EAST	EDDY

¹² Dedicated Acres 633.49	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁷ OPERATOR CERTIFICATION

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

Justin Carter 6/2/2021
Signature Date

Justin Carter

Printed Name

jcarter@novoog.com

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JUNE 1, 2021

Date of Survey

ALIMON F. JARAMILLO
Signature and Seal of Professional Surveyor:
Certificate Number: 12797

Surveyor No. 8121B

Intent ☐ As Drilled ☐

API #		
Operator Name: NOVO OIL & GAS NORTHERN DELAWARE, LLC	Property Name: RANA SALADA FED COM 0106	Well Number 133H

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 M	Section 1	Township 23S	Range 28E	Lot	Feet 330	From N/S SOUTH	Feet 330	From E/W WEST	County EDDY
Latitude 32.3282324					Longitude 104.0482608				NAD 83

Last Take Point (LTP)

UL P	Section 6	Township 23S	Range 29E	Lot	Feet 330	From N/S SOUTH	Feet 330	From E/W EAST	County EDDY
Latitude 32.3278923					Longitude 104.0167255				NAD 83

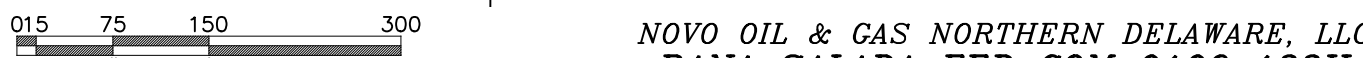
Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

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

TABLE 1



FILIMON, JARAMILLO, 10/05/2015, 12797

JUNE 1, 2021

SURVEY NO. 8121B

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

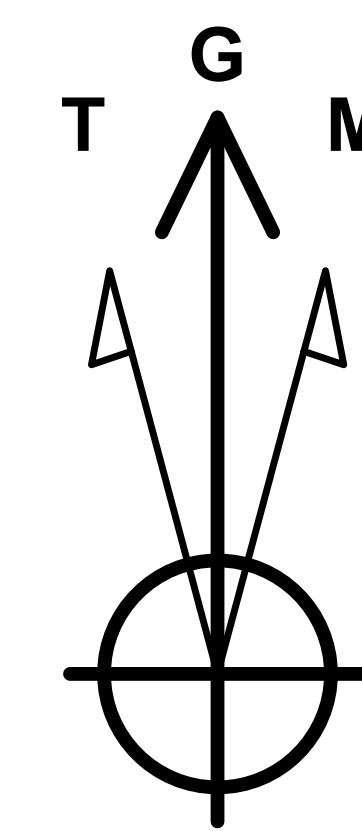
WELL DETAILS: Rana Salada Fed Com 0106 133H Plan 1

GL Elev (ft.): 3064.3
+N/-S 0.0 +E/-W 0.0 Northing 485234.81 Easting 629041.36 Latitude 32° 20' 1.186 N Longitude 104° 2' 57.747 W

SECTION DETAILS

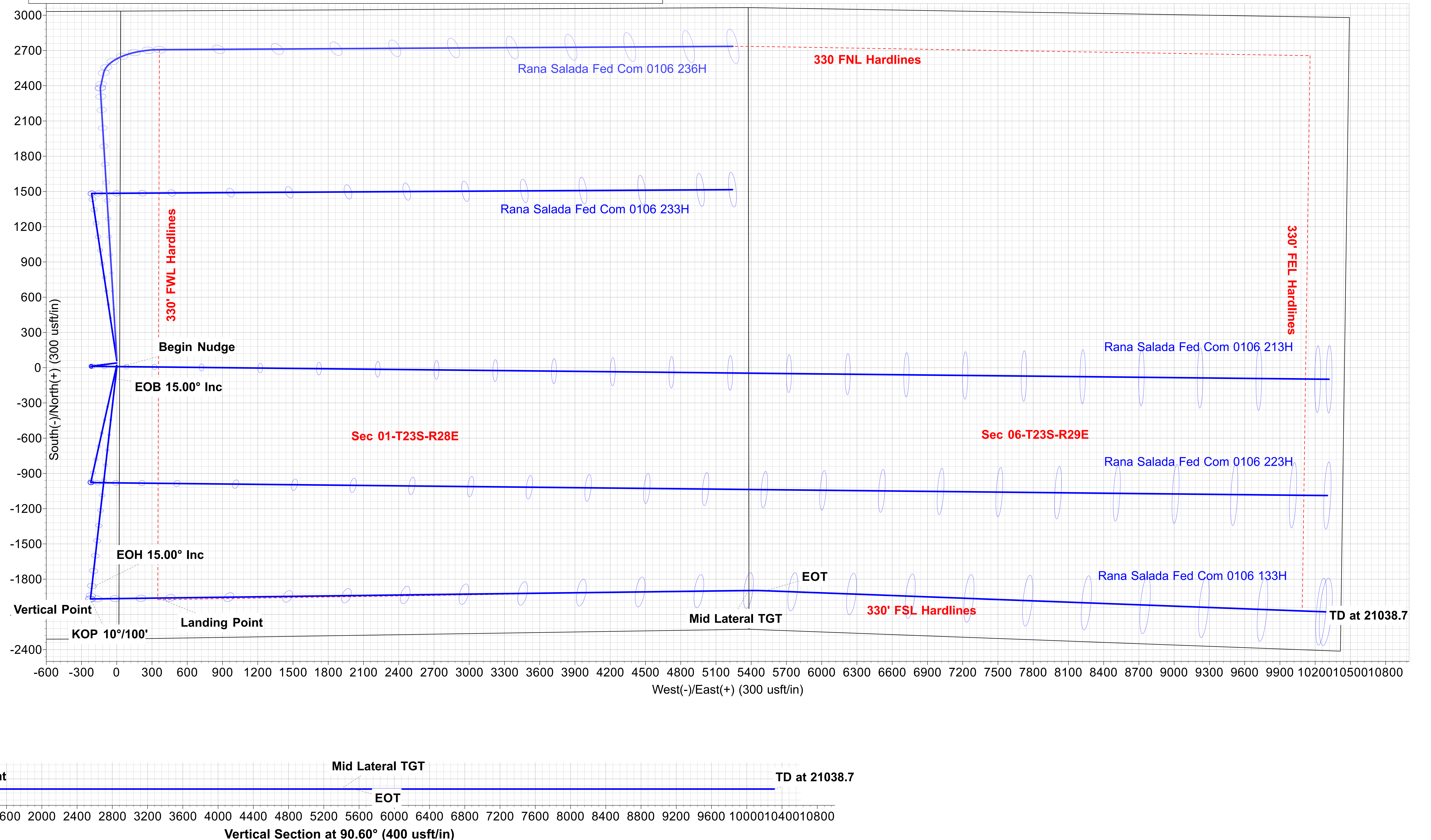
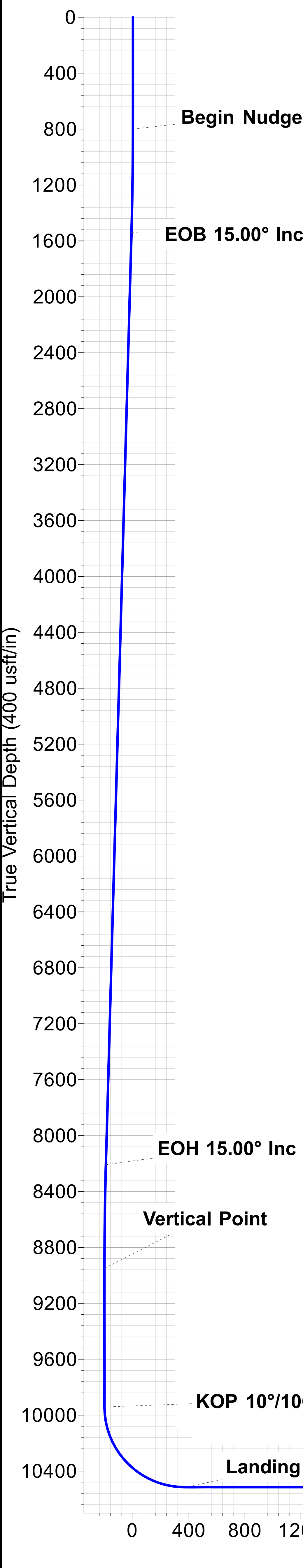
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
1549.8	15.00	186.48	1541.3	-96.9	-11.0	2.00	186.48	-10.0	Begin Nudge
8452.3	15.00	186.48	8208.7	-1871.6	-212.7	0.00	0.00	-193.1	EOB 15.00° Inc
9202.1	0.00	0.00	8950.0	-1968.5	-223.7	2.00	180.00	-203.1	EOH 15.00° Inc
10194.1	0.00	0.00	9942.0	-1968.5	-223.7	0.00	0.00	-203.1	Vertical Point
11094.1	90.00	89.27	10515.0	-1961.2	349.2	10.00	89.27	369.7	KOP 10°/100'
16121.5	90.00	89.27	10515.0	-1897.0	5376.2	0.00	0.00	5395.8	Landing Point
16265.9	90.00	92.16	10515.0	-1898.8	5520.5	2.00	89.99	5540.1	Mid Lateral TGT
21038.7	90.00	92.16	10515.0	-2078.3	10290.0	0.00	0.00	10311.2	EOT
									TD at 21038.7

Project: EDDY CO., NM (NAD83)
Site: SEC 02-T23S-R28E
Well: Rana Salada Fed Com 0106 133H
Wellbore: Wellbore #1
Design: Plan 1



Azimuths to Grid North
True North: -0.15°
Magnetic North: 6.63°

Magnetic Field
Strength: 47516.0nT
Dip Angle: 59.93°
Date: 6/2/2021
Model: IGRF2020





NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 02-T23S-R28E

Rana Salada Fed Com 0106 133H

Wellbore #1

Plan 1

Anticollision Report

08 June, 2021





SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
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 100.0usft
Depth Range:	Unlimited
Results Limited by:	Maximum centre distance of 738.7usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program		Date	6/8/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	21,038.7	Plan 1 (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference	Offset	Distance		Separation	Warning
	Measured	Measured	Between	Between		
	Depth	Depth	Centres	Ellipses		
Offset Well - Wellbore - Design	(usft)	(usft)	(usft)	(usft)	Factor	
SEC 02-T23S-R28E						
Rana Salada Fed Com 0106 213H - Wellbore #1 - Plan 1	800.0	801.0	40.0	36.4	11.029	CC, ES
Rana Salada Fed Com 0106 213H - Wellbore #1 - Plan 1	900.0	901.0	41.7	37.7	10.345	SF
Rana Salada Fed Com 0106 223H - Wellbore #1 - Plan 1	800.0	800.5	20.0	16.4	5.516	CC, ES
Rana Salada Fed Com 0106 223H - Wellbore #1 - Plan 1	900.0	900.5	21.7	17.7	5.389	SF
Rana Salada Fed Com 0106 233H - Wellbore #1 - Plan 1	800.0	801.5	60.0	56.4	16.539	CC, ES
Rana Salada Fed Com 0106 233H - Wellbore #1 - Plan 1	1,000.0	1,001.3	66.9	62.5	15.113	SF
Rana Salada Fed Com 0106 236H - Wellbore #1 - Plan 1	616.0	618.0	80.0	77.1	28.137	CC
Rana Salada Fed Com 0106 236H - Wellbore #1 - Plan 1	700.0	701.9	80.0	76.8	25.005	ES
Rana Salada Fed Com 0106 236H - Wellbore #1 - Plan 1	900.0	896.1	88.6	84.6	22.008	SF

Offset Design:	SEC 02-T23S-R28E - Rana Salada Fed Com 0106 213H - Wellbore #1 - Plan 1										Offset Site Error:	0.0 usft
Survey Program:	O-MWD										Offset Well Error:	0.5 usft
Reference	Offset	Semi Major Axis	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	Distance	Rule Assigned:	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	1.0	1.0	0.5	0.5	0.17	40.0	0.1	40.0			
100.0	100.0	101.0	101.0	0.5	0.5	0.17	40.0	0.1	40.0	1.06	37.878	
200.0	200.0	201.0	201.0	0.6	0.6	0.17	40.0	0.1	40.0	1.27	31.404	
300.0	300.0	301.0	301.0	0.8	0.8	0.17	40.0	0.1	40.0	1.59	25.129	
400.0	400.0	401.0	401.0	1.0	1.0	0.17	40.0	0.1	40.0	1.96	20.388	
500.0	500.0	501.0	501.0	1.2	1.2	0.17	40.0	0.1	40.0	2.36	16.950	
600.0	600.0	601.0	601.0	1.4	1.4	0.17	40.0	0.1	40.0	2.77	14.422	
700.0	700.0	701.0	701.0	1.6	1.6	0.17	40.0	0.1	40.0	3.20	12.512	
800.0	800.0	801.0	801.0	1.8	1.8	0.17	40.0	0.1	40.0	3.63	11.029	CC, ES
900.0	900.0	901.0	901.0	2.0	2.0	173.95	40.0	0.1	41.7	4.03	10.345	SF
1,000.0	999.8	1,000.8	1,000.8	2.2	2.2	174.61	40.0	0.1	46.9	4.43	10.601	
1,100.0	1,099.5	1,100.5	1,100.5	2.4	2.5	175.44	40.0	0.1	55.6	4.83	11.505	
1,200.0	1,198.7	1,199.7	1,199.7	2.6	2.7	176.24	40.0	0.1	67.8	5.25	12.907	
1,300.0	1,297.5	1,298.5	1,298.5	2.8	2.9	176.93	40.0	0.1	83.4	5.68	14.688	
1,400.0	1,395.6	1,396.6	1,396.6	3.1	3.1	177.49	40.0	0.1	102.5	6.11	16.761	
1,500.0	1,493.1	1,494.1	1,494.1	3.5	3.3	177.92	40.0	0.1	124.9	6.56	19.056	
1,600.0	1,589.8	1,591.7	1,591.7	3.9	3.5	177.70	39.8	-1.3	150.1	6.99	21.455	
1,700.0	1,686.4	1,689.3	1,689.2	4.3	3.7	176.50	39.2	-6.0	175.0	7.42	23.589	

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



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Rana Salada Fed Com 0106 213H - Wellbore #1 - Plan 1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.5 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,800.0	1,782.9	1,786.1	1,785.8	4.7	3.9	175.34	38.5	-11.5	199.9	192.0	7.86	25.439	
1,900.0	1,879.5	1,882.9	1,882.4	5.2	4.1	174.43	37.8	-17.0	224.8	216.5	8.31	27.065	
2,000.0	1,976.1	1,979.7	1,979.1	5.7	4.3	173.71	37.1	-22.5	249.8	241.0	8.76	28.498	
2,100.0	2,072.7	2,076.5	2,075.7	6.2	4.5	173.12	36.4	-27.9	274.8	265.5	9.23	29.765	
2,200.0	2,169.3	2,173.3	2,172.3	6.6	4.8	172.63	35.7	-33.4	299.8	290.1	9.71	30.890	
2,300.0	2,265.9	2,270.0	2,269.0	7.1	5.0	172.21	35.0	-38.9	324.8	314.6	10.19	31.892	
2,400.0	2,362.5	2,366.8	2,365.6	7.6	5.2	171.85	34.2	-44.4	349.9	339.2	10.67	32.789	
2,500.0	2,459.1	2,463.6	2,462.2	8.1	5.4	171.54	33.5	-49.9	374.9	363.8	11.16	33.595	
2,600.0	2,555.7	2,560.4	2,558.9	8.6	5.6	171.27	32.8	-55.4	400.0	388.3	11.65	34.321	
2,700.0	2,652.3	2,657.2	2,655.5	9.1	5.8	171.03	32.1	-60.9	425.1	412.9	12.15	34.979	
2,800.0	2,748.9	2,754.0	2,752.1	9.6	6.1	170.82	31.4	-66.4	450.2	437.5	12.65	35.577	
2,900.0	2,845.5	2,850.8	2,848.8	10.1	6.3	170.63	30.7	-71.9	475.2	462.1	13.16	36.121	
3,000.0	2,942.1	2,947.6	2,945.4	10.7	6.5	170.46	30.0	-77.4	500.3	486.7	13.66	36.619	
3,100.0	3,038.7	3,044.4	3,042.0	11.2	6.7	170.30	29.3	-82.9	525.4	511.3	14.17	37.076	
3,200.0	3,135.3	3,141.2	3,138.7	11.7	7.0	170.16	28.6	-88.4	550.5	535.9	14.68	37.496	
3,300.0	3,231.9	3,238.0	3,235.3	12.2	7.2	170.03	27.8	-93.9	575.6	560.4	15.20	37.883	
3,400.0	3,328.5	3,334.7	3,331.9	12.7	7.4	169.92	27.1	-99.4	600.7	585.0	15.71	38.241	
3,500.0	3,425.1	3,431.5	3,428.5	13.2	7.7	169.81	26.4	-104.9	625.8	609.6	16.22	38.573	
3,600.0	3,521.6	3,528.3	3,525.2	13.7	7.9	169.71	25.7	-110.4	651.0	634.2	16.74	38.881	
3,700.0	3,618.2	3,625.1	3,621.8	14.2	8.1	169.62	25.0	-115.9	676.1	658.8	17.26	39.169	
3,800.0	3,714.8	3,721.9	3,718.4	14.8	8.4	169.53	24.3	-121.4	701.2	683.4	17.78	39.437	
3,900.0	3,811.4	3,818.7	3,815.1	15.3	8.6	169.45	23.6	-126.8	726.3	708.0	18.30	39.687	



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Rana Salada Fed Com 0106 223H - Wellbore #1 - Plan 1													Offset Site Error: 0.0 usft
Survey Program: 0-MWD													Offset Well Error: 0.5 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
0.0	0.0	0.5	0.5	0.5	0.5	0.17	20.0	0.1	20.0				
100.0	100.0	100.5	100.5	0.5	0.5	0.17	20.0	0.1	20.0	18.9	1.06	18.945	
200.0	200.0	200.5	200.5	0.6	0.6	0.17	20.0	0.1	20.0	18.7	1.27	15.710	
300.0	300.0	300.5	300.5	0.8	0.8	0.17	20.0	0.1	20.0	18.4	1.59	12.571	
400.0	400.0	400.5	400.5	1.0	1.0	0.17	20.0	0.1	20.0	18.0	1.96	10.199	
500.0	500.0	500.5	500.5	1.2	1.2	0.17	20.0	0.1	20.0	17.6	2.36	8.479	
600.0	600.0	600.5	600.5	1.4	1.4	0.17	20.0	0.1	20.0	17.2	2.77	7.214	
700.0	700.0	700.5	700.5	1.6	1.6	0.17	20.0	0.1	20.0	16.8	3.20	6.258	
800.0	800.0	800.5	800.5	1.8	1.8	0.17	20.0	0.1	20.0	16.4	3.63	5.516 CC, ES	
900.0	900.0	900.5	900.5	2.0	2.0	174.19	20.0	0.1	21.7	17.7	4.03	5.389 SF	
1,000.0	999.8	1,000.3	1,000.3	2.2	2.2	175.31	20.0	0.1	26.9	22.5	4.43	6.087	
1,100.0	1,099.5	1,100.0	1,100.0	2.4	2.5	176.44	20.0	0.1	35.6	30.8	4.83	7.373	
1,200.0	1,198.7	1,199.2	1,199.2	2.6	2.7	177.34	20.0	0.1	47.8	42.6	5.25	9.106	
1,300.0	1,297.5	1,298.0	1,298.0	2.8	2.9	177.98	20.0	0.1	63.4	57.8	5.68	11.176	
1,400.0	1,395.6	1,396.1	1,396.1	3.1	3.1	178.44	20.0	0.1	82.5	76.4	6.11	13.501	
1,500.0	1,493.1	1,493.6	1,493.6	3.5	3.3	178.76	20.0	0.1	105.0	98.4	6.55	16.019	
1,600.0	1,589.8	1,594.5	1,594.5	3.9	3.5	178.92	18.5	-0.3	129.0	122.0	6.98	18.473	
1,700.0	1,686.4	1,697.2	1,697.1	4.3	3.7	178.87	13.4	-1.4	149.9	142.6	7.38	20.314	
1,800.0	1,782.9	1,801.4	1,800.9	4.7	3.9	178.66	4.5	-3.4	167.4	159.6	7.79	21.481	
1,900.0	1,879.5	1,906.8	1,905.5	5.2	4.1	178.34	-8.2	-6.2	181.2	173.0	8.21	22.064	
2,000.0	1,976.1	2,013.2	2,010.4	5.7	4.3	177.90	-24.8	-9.8	191.5	182.8	8.65	22.146	
2,100.0	2,072.7	2,120.1	2,115.3	6.2	4.6	177.34	-45.3	-14.4	198.1	189.0	9.09	21.797	
2,200.0	2,169.3	2,223.0	2,215.5	6.6	4.9	176.70	-68.0	-19.4	201.6	192.0	9.56	21.099	
2,300.0	2,265.9	2,323.0	2,312.8	7.1	5.3	176.08	-90.4	-24.4	204.9	194.8	10.05	20.387	
2,400.0	2,362.5	2,422.9	2,410.0	7.6	5.6	175.48	-112.8	-29.3	208.2	197.6	10.55	19.732	
2,500.0	2,459.1	2,522.8	2,507.3	8.1	6.0	174.90	-135.3	-34.3	211.5	200.4	11.06	19.114	
2,600.0	2,555.7	2,622.7	2,604.5	8.6	6.4	174.33	-157.7	-39.3	214.8	203.2	11.59	18.539	
2,700.0	2,652.3	2,722.7	2,701.8	9.1	6.7	173.79	-180.1	-44.2	218.2	206.0	12.12	18.001	
2,800.0	2,748.9	2,822.6	2,799.0	9.6	7.1	173.26	-202.5	-49.2	221.5	208.9	12.66	17.499	
2,900.0	2,845.5	2,922.5	2,896.3	10.1	7.6	172.75	-224.9	-54.1	224.9	211.7	13.21	17.030	
3,000.0	2,942.1	3,022.4	2,993.6	10.7	8.0	172.25	-247.3	-59.1	228.3	214.6	13.76	16.590	
3,100.0	3,038.7	3,122.3	3,090.8	11.2	8.4	171.76	-269.7	-64.0	231.8	217.4	14.33	16.177	
3,200.0	3,135.3	3,222.3	3,188.1	11.7	8.8	171.30	-292.1	-69.0	235.2	220.3	14.90	15.790	
3,300.0	3,231.9	3,322.2	3,285.3	12.2	9.3	170.84	-314.5	-74.0	238.7	223.2	15.47	15.425	
3,400.0	3,328.5	3,422.1	3,382.6	12.7	9.7	170.40	-336.9	-78.9	242.1	226.1	16.05	15.082	
3,500.0	3,425.1	3,522.0	3,479.8	13.2	10.1	169.97	-359.3	-83.9	245.6	229.0	16.64	14.759	
3,600.0	3,521.6	3,622.0	3,577.1	13.7	10.6	169.55	-381.7	-88.8	249.1	231.9	17.24	14.453	
3,700.0	3,618.2	3,721.9	3,674.3	14.2	11.0	169.14	-404.1	-93.8	252.6	234.8	17.83	14.165	
3,800.0	3,714.8	3,821.8	3,771.6	14.8	11.5	168.75	-426.5	-98.7	256.2	237.7	18.44	13.892	
3,900.0	3,811.4	3,921.7	3,868.8	15.3	11.9	168.36	-448.9	-103.7	259.7	240.6	19.05	13.633	
4,000.0	3,908.0	4,021.6	3,966.1	15.8	12.4	167.99	-471.3	-108.7	263.2	243.6	19.66	13.388	
4,100.0	4,004.6	4,121.6	4,063.3	16.3	12.8	167.62	-493.7	-113.6	266.8	246.5	20.28	13.155	
4,200.0	4,101.2	4,221.5	4,160.6	16.8	13.3	167.27	-516.1	-118.6	270.4	249.5	20.90	12.934	
4,300.0	4,197.8	4,321.4	4,257.8	17.3	13.8	166.92	-538.5	-123.5	273.9	252.4	21.53	12.724	
4,400.0	4,294.4	4,421.3	4,355.1	17.9	14.2	166.59	-561.0	-128.5	277.5	255.4	22.16	12.523	
4,500.0	4,391.0	4,521.3	4,452.3	18.4	14.7	166.26	-583.4	-133.4	281.1	258.3	22.80	12.332	
4,600.0	4,487.6	4,621.2	4,549.6	18.9	15.1	165.94	-605.8	-138.4	284.7	261.3	23.44	12.150	
4,700.0	4,584.2	4,721.1	4,646.8	19.4	15.6	165.63	-628.2	-143.4	288.4	264.3	24.08	11.976	
4,800.0	4,680.8	4,821.0	4,744.1	19.9	16.1	165.33	-650.6	-148.3	292.0	267.3	24.72	11.809	
4,900.0	4,777.4	4,921.0	4,841.3	20.5	16.5	165.03	-673.0	-153.3	295.6	270.2	25.37	11.650	
5,000.0	4,874.0	5,020.9	4,938.6	21.0	17.0	164.74	-695.4	-158.2	299.2	273.2	26.03	11.497	
5,100.0	4,970.6	5,120.8	5,035.8	21.5	17.5	164.46	-717.8	-163.2	302.9	276.2	26.68	11.351	

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



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Rana Salada Fed Com 0106 223H - Wellbore #1 - Plan 1													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.5 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,200.0	5,067.2	5,220.7	5,133.1	22.0	17.9	164.18	-740.2	-168.2	306.5	279.2	27.34	11.211		
5,300.0	5,163.8	5,320.6	5,230.3	22.5	18.4	163.91	-762.6	-173.1	310.2	282.2	28.01	11.077		
5,400.0	5,260.3	5,420.6	5,327.6	23.1	18.9	163.65	-785.0	-178.1	313.9	285.2	28.67	10.948		
5,500.0	5,356.9	5,520.5	5,424.8	23.6	19.3	163.39	-807.4	-183.0	317.6	288.2	29.34	10.824		
5,600.0	5,453.5	5,620.4	5,522.1	24.1	19.8	163.14	-829.8	-188.0	321.2	291.2	30.01	10.705		
5,700.0	5,550.1	5,720.3	5,619.4	24.6	20.3	162.90	-852.2	-192.9	324.9	294.2	30.68	10.590		
5,800.0	5,646.7	5,820.3	5,716.6	25.1	20.7	162.66	-874.6	-197.9	328.6	297.3	31.36	10.479		
5,900.0	5,743.3	5,920.2	5,813.9	25.7	21.2	162.42	-897.0	-202.9	332.3	300.3	32.04	10.373		
6,000.0	5,839.9	6,013.2	5,904.6	26.2	21.6	162.26	-917.2	-207.3	336.7	304.1	32.66	10.309		
6,100.0	5,936.5	6,100.0	5,989.7	26.7	21.9	162.28	-933.6	-210.9	343.9	310.8	33.17	10.370		
6,200.0	6,033.1	6,192.6	6,081.1	27.2	22.1	162.50	-948.2	-214.2	354.0	320.4	33.62	10.529		
6,300.0	6,129.7	6,281.5	6,169.2	27.7	22.4	162.87	-959.6	-216.7	366.9	332.9	33.98	10.797		
6,400.0	6,226.3	6,369.6	6,256.8	28.3	22.5	163.37	-968.2	-218.6	382.6	348.4	34.26	11.167		
6,500.0	6,322.9	6,456.7	6,343.7	28.8	22.7	163.97	-974.1	-219.9	401.2	366.7	34.48	11.634		
6,600.0	6,419.5	6,542.7	6,429.7	29.3	22.8	164.66	-977.5	-220.7	422.6	387.9	34.65	12.195		
6,700.0	6,516.1	6,629.6	6,516.6	29.8	23.0	165.40	-978.3	-220.8	446.7	411.9	34.80	12.835		
6,800.0	6,612.7	6,726.2	6,613.2	30.3	23.1	166.19	-978.3	-220.8	471.8	436.7	35.09	13.446		
6,900.0	6,709.3	6,822.8	6,709.8	30.9	23.2	166.91	-978.3	-220.8	497.0	461.7	35.40	14.042		
7,000.0	6,805.9	6,919.4	6,806.4	31.4	23.3	167.55	-978.3	-220.8	522.3	486.6	35.72	14.622		
7,100.0	6,902.5	7,016.0	6,903.0	31.9	23.4	168.13	-978.3	-220.8	547.7	511.6	36.06	15.187		
7,200.0	6,999.0	7,112.6	6,999.5	32.4	23.5	168.66	-978.3	-220.8	573.0	536.6	36.42	15.736		
7,300.0	7,095.6	7,209.2	7,096.1	32.9	23.7	169.15	-978.3	-220.8	598.5	561.7	36.78	16.271		
7,400.0	7,192.2	7,305.8	7,192.7	33.5	23.8	169.60	-978.3	-220.8	623.9	586.8	37.16	16.791		
7,500.0	7,288.8	7,402.3	7,289.3	34.0	23.9	170.01	-978.3	-220.8	649.4	611.9	37.54	17.297		
7,600.0	7,385.4	7,498.9	7,385.9	34.5	24.0	170.39	-978.3	-220.8	674.9	637.0	37.94	17.790		
7,700.0	7,482.0	7,595.5	7,482.5	35.0	24.1	170.74	-978.3	-220.8	700.5	662.1	38.34	18.270		
7,800.0	7,578.6	7,692.1	7,579.1	35.5	24.3	171.07	-978.3	-220.8	726.1	687.3	38.75	18.738		



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Rana Salada Fed Com 0106 233H - Wellbore #1 - Plan 1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.5 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.5	1.5	0.5	0.5	0.17	60.0	0.2	60.0				
100.0	100.0	101.5	101.5	0.5	0.5	0.17	60.0	0.2	60.0	58.9	1.06	56.797	
200.0	200.0	201.5	201.5	0.6	0.6	0.17	60.0	0.2	60.0	58.7	1.27	47.080	
300.0	300.0	301.5	301.5	0.8	0.8	0.17	60.0	0.2	60.0	58.4	1.59	37.673	
400.0	400.0	401.5	401.5	1.0	1.0	0.17	60.0	0.2	60.0	58.0	1.96	30.567	
500.0	500.0	501.5	501.5	1.2	1.2	0.17	60.0	0.2	60.0	57.6	2.36	25.414	
600.0	600.0	601.5	601.5	1.4	1.4	0.17	60.0	0.2	60.0	57.2	2.77	21.624	
700.0	700.0	701.5	701.5	1.6	1.6	0.17	60.0	0.2	60.0	56.8	3.20	18.761	
800.0	800.0	801.5	801.5	1.8	1.8	0.17	60.0	0.2	60.0	56.4	3.63	16.539 CC, ES	
900.0	900.0	901.5	901.5	2.0	2.0	173.86	60.0	0.2	61.7	57.7	4.04	15.299	
1,000.0	999.8	1,001.3	1,001.3	2.2	2.3	174.33	60.0	0.2	66.9	62.5	4.43	15.113 SF	
1,100.0	1,099.5	1,101.0	1,101.0	2.4	2.5	174.97	60.0	0.2	75.6	70.8	4.84	15.637	
1,200.0	1,198.7	1,200.2	1,200.2	2.6	2.7	175.65	60.0	0.2	87.8	82.5	5.25	16.708	
1,300.0	1,297.5	1,299.0	1,299.0	2.8	2.9	176.29	60.0	0.2	103.4	97.7	5.68	18.202	
1,400.0	1,395.6	1,397.1	1,397.1	3.1	3.1	176.84	60.0	0.2	122.4	116.3	6.11	20.022	
1,500.0	1,493.1	1,494.6	1,494.6	3.5	3.3	177.31	60.0	0.2	144.9	138.3	6.56	22.095	
1,600.0	1,589.8	1,586.2	1,586.2	3.9	3.5	177.58	61.3	0.0	171.7	164.7	7.00	24.522	
1,700.0	1,686.4	1,675.9	1,675.8	4.3	3.7	177.61	65.3	-0.6	201.8	194.4	7.42	27.186	
1,800.0	1,782.9	1,763.8	1,763.4	4.7	3.9	177.47	72.0	-1.6	234.8	227.0	7.84	29.958	
1,900.0	1,879.5	1,849.7	1,848.9	5.2	4.1	177.23	81.1	-3.0	270.6	262.4	8.24	32.825	
2,000.0	1,976.1	1,933.7	1,932.1	5.7	4.3	176.95	92.4	-4.7	309.1	300.4	8.64	35.774	
2,100.0	2,072.7	2,015.6	2,012.9	6.2	4.6	176.64	105.8	-6.7	350.2	341.2	9.03	38.797	
2,200.0	2,169.3	2,100.0	2,095.6	6.6	4.8	176.30	121.9	-9.1	393.8	384.4	9.43	41.749	
2,300.0	2,265.9	2,175.1	2,168.9	7.1	5.0	176.00	138.3	-11.6	439.8	430.0	9.78	44.960	
2,400.0	2,362.5	2,260.9	2,252.3	7.6	5.3	175.68	158.1	-14.6	487.1	476.9	10.22	47.664	
2,500.0	2,459.1	2,349.0	2,338.0	8.1	5.6	175.41	178.5	-17.6	534.4	523.7	10.67	50.086	
2,600.0	2,555.7	2,437.1	2,423.6	8.6	5.9	175.19	198.8	-20.7	581.7	570.5	11.13	52.256	
2,700.0	2,652.3	2,525.2	2,509.3	9.1	6.3	175.00	219.1	-23.7	629.0	617.4	11.60	54.237	
2,800.0	2,748.9	2,613.3	2,594.9	9.6	6.6	174.83	239.5	-26.8	676.3	664.2	12.07	56.047	
2,900.0	2,845.5	2,701.4	2,680.6	10.1	6.9	174.69	259.8	-29.8	723.6	711.0	12.54	57.705	

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



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design: SEC 02-T23S-R28E - Rana Salada Fed Com 0106 236H - Wellbore #1 - Plan 1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.5 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	2.0	2.0	0.5	0.5	0.17	80.0	0.2	80.0				
100.0	100.0	102.0	102.0	0.5	0.5	0.17	80.0	0.2	80.0	78.9	1.06	75.694	
200.0	200.0	202.0	202.0	0.6	0.6	0.17	80.0	0.2	80.0	78.7	1.28	62.731	
300.0	300.0	302.0	302.0	0.8	0.8	0.17	80.0	0.2	80.0	78.4	1.59	50.197	
400.0	400.0	402.0	402.0	1.0	1.0	0.17	80.0	0.2	80.0	78.0	1.96	40.730	
500.0	500.0	502.0	502.0	1.2	1.2	0.17	80.0	0.2	80.0	77.6	2.36	33.867	
600.0	600.0	602.0	602.0	1.4	1.4	0.17	80.0	0.2	80.0	77.2	2.78	28.818	
616.0	616.0	618.0	618.0	1.4	1.4	0.17	80.0	0.2	80.0	77.1	2.84	28.137 CC	
700.0	700.0	701.9	701.9	1.6	1.6	0.17	80.0	0.2	80.0	76.8	3.20	25.005 ES	
800.0	800.0	800.0	800.0	1.8	1.8	0.09	81.7	0.1	81.8	78.1	3.62	22.554	
900.0	900.0	896.1	895.9	2.0	2.0	173.52	86.7	-0.2	88.6	84.6	4.03	22.008 SF	
1,000.0	999.8	992.0	991.5	2.2	2.2	173.53	94.8	-0.7	102.3	97.9	4.42	23.151	
1,100.0	1,099.5	1,086.2	1,085.0	2.4	2.5	173.60	105.9	-1.3	122.6	117.8	4.82	25.449	
1,200.0	1,198.7	1,178.1	1,175.9	2.6	2.7	173.69	119.7	-2.2	149.5	144.3	5.22	28.622	
1,300.0	1,297.5	1,267.3	1,263.6	2.8	3.0	173.77	135.9	-3.2	182.7	177.1	5.63	32.459	
1,400.0	1,395.6	1,353.2	1,347.6	3.1	3.3	173.83	154.0	-4.3	221.9	215.9	6.03	36.799	
1,500.0	1,493.1	1,435.5	1,427.4	3.5	3.6	173.87	173.7	-5.5	267.0	260.6	6.43	41.526	
1,600.0	1,589.8	1,514.0	1,503.1	3.9	3.9	173.94	194.6	-6.7	317.2	310.4	6.82	46.494	
1,700.0	1,686.4	1,589.8	1,575.6	4.3	4.3	174.01	216.8	-8.1	370.1	362.9	7.19	51.490	
1,800.0	1,782.9	1,672.5	1,654.2	4.7	4.7	174.05	242.3	-9.6	424.3	416.7	7.61	55.782	
1,900.0	1,879.5	1,756.5	1,734.1	5.2	5.1	174.09	268.2	-11.2	478.6	470.5	8.04	59.519	
2,000.0	1,976.1	1,840.5	1,814.0	5.7	5.5	174.11	294.1	-12.8	532.9	524.4	8.49	62.767	
2,100.0	2,072.7	1,924.5	1,893.9	6.2	6.0	174.13	320.0	-14.4	587.1	578.2	8.94	65.645	
2,200.0	2,169.3	2,008.5	1,973.7	6.6	6.5	174.15	345.9	-15.9	641.4	632.0	9.40	68.200	
2,300.0	2,265.9	2,092.5	2,053.6	7.1	6.9	174.17	371.8	-17.5	695.7	685.8	9.87	70.478	

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



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB 25' + GL @ 3089.3usft

Offset Depths are relative to Offset Datum

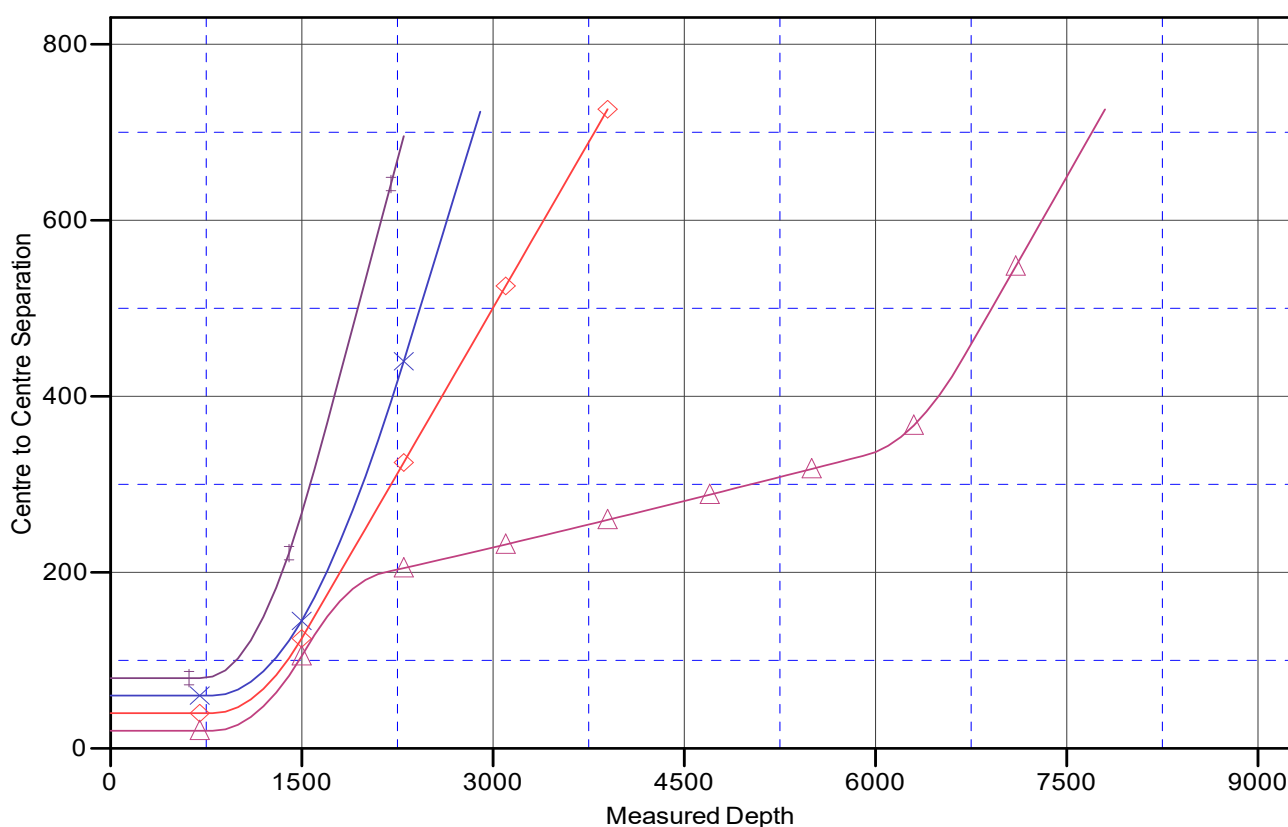
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Rana Salada Fed Com 0106 133H

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

Grid Convergence at Surface is: 0.15°

Ladder Plot



LEGEND

Rana Salada FedCom 0106 213H, Wellbore#1, Plan 1 V0
 Rana Salada FedCom 0106 223H, Wellbore#1, Plan 1 V0
 Rana Salada FedCom 0106 236H, Wellbore#1, Plan 1 V0

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



SB Directional Services

Anticollision Report



Company:	NOVO Oil & Gas	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Project:	EDDY CO., NM (NAD83)	TVD Reference:	RKB 25' + GL @ 3089.3usft
Reference Site:	SEC 02-T23S-R28E	MD Reference:	RKB 25' + GL @ 3089.3usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.5 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB 25' + GL @ 3089.3usft

Offset Depths are relative to Offset Datum

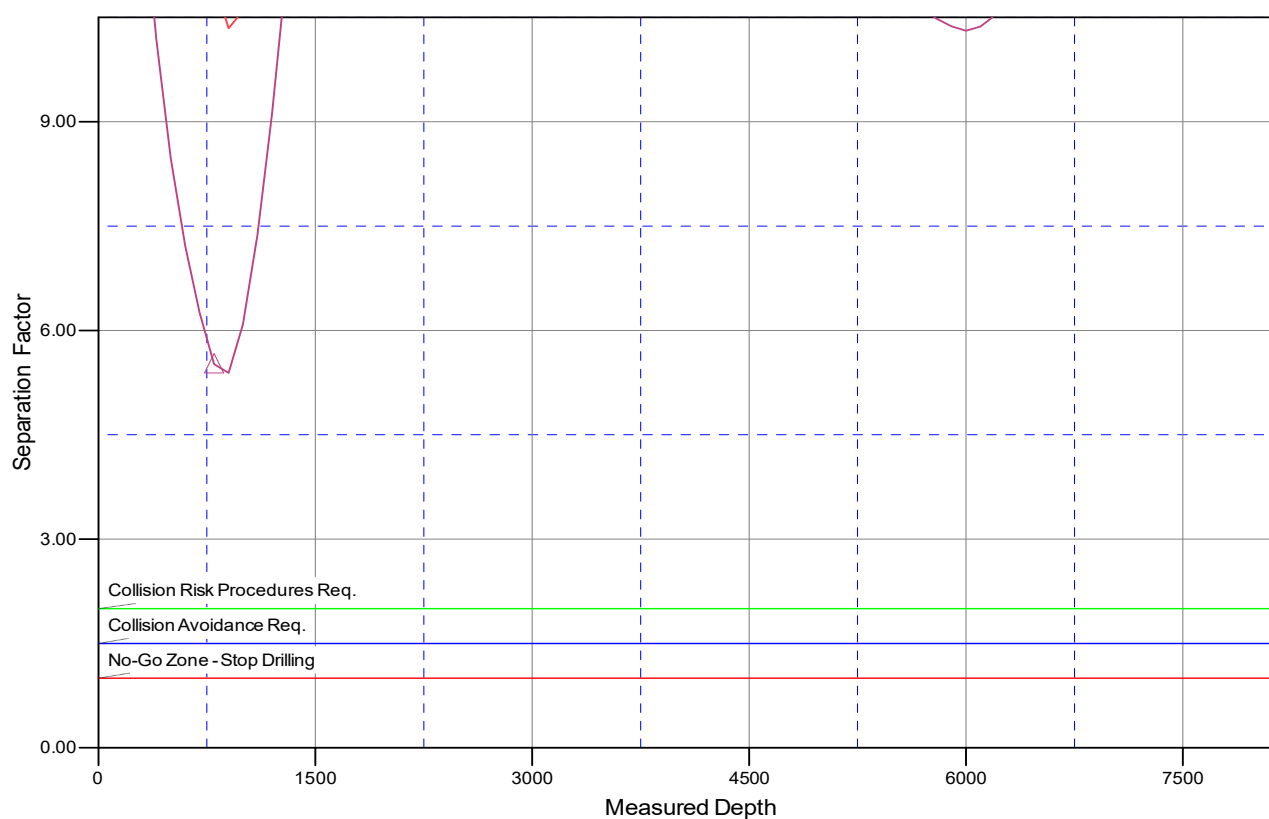
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Rana Salada Fed Com 0106 133H

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

Grid Convergence at Surface is: 0.15°

Separation Factor Plot



LEGEND

Rana Salada FedCom0106 213H, Wellbore#1, Plan 1 V0
 Rana Salada FedCom0106 233H, Wellbore#1, Plan 1 V0
 Rana Salada FedCom0106 236H, Wellbore#1, Plan 1 V0



NOVO Oil & Gas

EDDY CO., NM (NAD83)

SEC 02-T23S-R28E

Rana Salada Fed Com 0106 133H

Wellbore #1

Plan: Plan 1

Standard Planning Report

08 June, 2021





SB Directional Services

Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	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° 20' 1.977 N
From:	Map	Easting:	629,041.60 usft	Longitude:	104° 2' 57.742 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	Rana Salada Fed Com 0106 133H					
Well Position	+N/-S	0.0 usft	Northing:	485,234.81 usft	Latitude:	32° 20' 1.186 N
	+E/-W	0.0 usft	Easting:	629,041.36 usft	Longitude:	104° 2' 57.747 W
Position Uncertainty		0.5 usft	Wellhead Elevation:	usft	Ground Level:	3,064.3 usft
Grid Convergence:		0.15 °				

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	6/2/2021	6.78	59.93	47,515.99717565

Design	Plan 1				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	90.60	

Plan Survey Tool Program	Date	6/8/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	21,038.7	Plan 1 (Wellbore #1)	MWD	
				MWD - Standard	



SB Directional Services

Planning Report



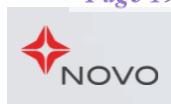
Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,549.8	15.00	186.48	1,541.3	-96.9	-11.0	2.00	2.00	0.00	186.48	
8,452.3	15.00	186.48	8,208.7	-1,871.6	-212.7	0.00	0.00	0.00	0.00	
9,202.1	0.00	0.01	8,950.0	-1,968.5	-223.7	2.00	-2.00	0.00	180.00	
10,194.1	0.00	0.01	9,942.0	-1,968.5	-223.7	0.00	0.00	0.00	0.01	
11,094.1	90.00	89.27	10,515.0	-1,961.2	349.2	10.00	10.00	9.92	89.27	
16,121.5	90.00	89.27	10,515.0	-1,897.0	5,376.2	0.00	0.00	0.00	0.00	Mid Lateral TGT
16,265.9	90.00	92.16	10,515.0	-1,898.8	5,520.5	2.00	0.00	2.00	89.99	
21,038.7	90.00	92.16	10,515.0	-2,078.3	10,290.0	0.00	0.00	0.00	0.00	PBHL Rana Salada 1:



SB Directional Services

Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
Begin Nudge									
900.0	2.00	186.48	900.0	-1.7	-0.2	-0.2	2.00	2.00	0.00
1,000.0	4.00	186.48	999.8	-6.9	-0.8	-0.7	2.00	2.00	0.00
1,100.0	6.00	186.48	1,099.5	-15.6	-1.8	-1.6	2.00	2.00	0.00
1,200.0	8.00	186.48	1,198.7	-27.7	-3.1	-2.9	2.00	2.00	0.00
1,300.0	10.00	186.48	1,297.5	-43.2	-4.9	-4.5	2.00	2.00	0.00
1,400.0	12.00	186.48	1,395.6	-62.2	-7.1	-6.4	2.00	2.00	0.00
1,500.0	14.00	186.48	1,493.1	-84.6	-9.6	-8.7	2.00	2.00	0.00
1,549.8	15.00	186.48	1,541.3	-96.9	-11.0	-10.0	2.00	2.00	0.00
EOB 15.00° Inc									
1,600.0	15.00	186.48	1,589.8	-109.8	-12.5	-11.3	0.00	0.00	0.00
1,700.0	15.00	186.48	1,686.4	-135.6	-15.4	-14.0	0.00	0.00	0.00
1,800.0	15.00	186.48	1,782.9	-161.3	-18.3	-16.6	0.00	0.00	0.00
1,900.0	15.00	186.48	1,879.5	-187.0	-21.2	-19.3	0.00	0.00	0.00
2,000.0	15.00	186.48	1,976.1	-212.7	-24.2	-21.9	0.00	0.00	0.00
2,100.0	15.00	186.48	2,072.7	-238.4	-27.1	-24.6	0.00	0.00	0.00
2,200.0	15.00	186.48	2,169.3	-264.1	-30.0	-27.2	0.00	0.00	0.00
2,300.0	15.00	186.48	2,265.9	-289.8	-32.9	-29.9	0.00	0.00	0.00
2,400.0	15.00	186.48	2,362.5	-315.5	-35.9	-32.5	0.00	0.00	0.00
2,500.0	15.00	186.48	2,459.1	-341.2	-38.8	-35.2	0.00	0.00	0.00
2,600.0	15.00	186.48	2,555.7	-366.9	-41.7	-37.9	0.00	0.00	0.00
2,700.0	15.00	186.48	2,652.3	-392.7	-44.6	-40.5	0.00	0.00	0.00
2,800.0	15.00	186.48	2,748.9	-418.4	-47.5	-43.2	0.00	0.00	0.00
2,900.0	15.00	186.48	2,845.5	-444.1	-50.5	-45.8	0.00	0.00	0.00
3,000.0	15.00	186.48	2,942.1	-469.8	-53.4	-48.5	0.00	0.00	0.00
3,100.0	15.00	186.48	3,038.7	-495.5	-56.3	-51.1	0.00	0.00	0.00
3,200.0	15.00	186.48	3,135.3	-521.2	-59.2	-53.8	0.00	0.00	0.00
3,300.0	15.00	186.48	3,231.9	-546.9	-62.2	-56.4	0.00	0.00	0.00
3,400.0	15.00	186.48	3,328.5	-572.6	-65.1	-59.1	0.00	0.00	0.00
3,500.0	15.00	186.48	3,425.1	-598.3	-68.0	-61.7	0.00	0.00	0.00
3,600.0	15.00	186.48	3,521.6	-624.0	-70.9	-64.4	0.00	0.00	0.00
3,700.0	15.00	186.48	3,618.2	-649.7	-73.8	-67.0	0.00	0.00	0.00
3,800.0	15.00	186.48	3,714.8	-675.5	-76.8	-69.7	0.00	0.00	0.00
3,900.0	15.00	186.48	3,811.4	-701.2	-79.7	-72.3	0.00	0.00	0.00
4,000.0	15.00	186.48	3,908.0	-726.9	-82.6	-75.0	0.00	0.00	0.00
4,100.0	15.00	186.48	4,004.6	-752.6	-85.5	-77.6	0.00	0.00	0.00
4,200.0	15.00	186.48	4,101.2	-778.3	-88.4	-80.3	0.00	0.00	0.00
4,300.0	15.00	186.48	4,197.8	-804.0	-91.4	-82.9	0.00	0.00	0.00
4,400.0	15.00	186.48	4,294.4	-829.7	-94.3	-85.6	0.00	0.00	0.00
4,500.0	15.00	186.48	4,391.0	-855.4	-97.2	-88.2	0.00	0.00	0.00
4,600.0	15.00	186.48	4,487.6	-881.1	-100.1	-90.9	0.00	0.00	0.00
4,700.0	15.00	186.48	4,584.2	-906.8	-103.1	-93.6	0.00	0.00	0.00
4,800.0	15.00	186.48	4,680.8	-932.6	-106.0	-96.2	0.00	0.00	0.00
4,900.0	15.00	186.48	4,777.4	-958.3	-108.9	-98.9	0.00	0.00	0.00
5,000.0	15.00	186.48	4,874.0	-984.0	-111.8	-101.5	0.00	0.00	0.00



SB Directional Services

Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	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)
5,100.0	15.00	186.48	4,970.6	-1,009.7	-114.7	-104.2	0.00	0.00	0.00
5,200.0	15.00	186.48	5,067.2	-1,035.4	-117.7	-106.8	0.00	0.00	0.00
5,300.0	15.00	186.48	5,163.8	-1,061.1	-120.6	-109.5	0.00	0.00	0.00
5,400.0	15.00	186.48	5,260.3	-1,086.8	-123.5	-112.1	0.00	0.00	0.00
5,500.0	15.00	186.48	5,356.9	-1,112.5	-126.4	-114.8	0.00	0.00	0.00
5,600.0	15.00	186.48	5,453.5	-1,138.2	-129.3	-117.4	0.00	0.00	0.00
5,700.0	15.00	186.48	5,550.1	-1,163.9	-132.3	-120.1	0.00	0.00	0.00
5,800.0	15.00	186.48	5,646.7	-1,189.7	-135.2	-122.7	0.00	0.00	0.00
5,900.0	15.00	186.48	5,743.3	-1,215.4	-138.1	-125.4	0.00	0.00	0.00
6,000.0	15.00	186.48	5,839.9	-1,241.1	-141.0	-128.0	0.00	0.00	0.00
6,100.0	15.00	186.48	5,936.5	-1,266.8	-144.0	-130.7	0.00	0.00	0.00
6,200.0	15.00	186.48	6,033.1	-1,292.5	-146.9	-133.3	0.00	0.00	0.00
6,300.0	15.00	186.48	6,129.7	-1,318.2	-149.8	-136.0	0.00	0.00	0.00
6,400.0	15.00	186.48	6,226.3	-1,343.9	-152.7	-138.6	0.00	0.00	0.00
6,500.0	15.00	186.48	6,322.9	-1,369.6	-155.6	-141.3	0.00	0.00	0.00
6,600.0	15.00	186.48	6,419.5	-1,395.3	-158.6	-143.9	0.00	0.00	0.00
6,700.0	15.00	186.48	6,516.1	-1,421.0	-161.5	-146.6	0.00	0.00	0.00
6,800.0	15.00	186.48	6,612.7	-1,446.7	-164.4	-149.2	0.00	0.00	0.00
6,900.0	15.00	186.48	6,709.3	-1,472.5	-167.3	-151.9	0.00	0.00	0.00
7,000.0	15.00	186.48	6,805.9	-1,498.2	-170.3	-154.6	0.00	0.00	0.00
7,100.0	15.00	186.48	6,902.5	-1,523.9	-173.2	-157.2	0.00	0.00	0.00
7,200.0	15.00	186.48	6,999.0	-1,549.6	-176.1	-159.9	0.00	0.00	0.00
7,300.0	15.00	186.48	7,095.6	-1,575.3	-179.0	-162.5	0.00	0.00	0.00
7,400.0	15.00	186.48	7,192.2	-1,601.0	-181.9	-165.2	0.00	0.00	0.00
7,500.0	15.00	186.48	7,288.8	-1,626.7	-184.9	-167.8	0.00	0.00	0.00
7,600.0	15.00	186.48	7,385.4	-1,652.4	-187.8	-170.5	0.00	0.00	0.00
7,700.0	15.00	186.48	7,482.0	-1,678.1	-190.7	-173.1	0.00	0.00	0.00
7,800.0	15.00	186.48	7,578.6	-1,703.8	-193.6	-175.8	0.00	0.00	0.00
7,900.0	15.00	186.48	7,675.2	-1,729.6	-196.5	-178.4	0.00	0.00	0.00
8,000.0	15.00	186.48	7,771.8	-1,755.3	-199.5	-181.1	0.00	0.00	0.00
8,100.0	15.00	186.48	7,868.4	-1,781.0	-202.4	-183.7	0.00	0.00	0.00
8,200.0	15.00	186.48	7,965.0	-1,806.7	-205.3	-186.4	0.00	0.00	0.00
8,300.0	15.00	186.48	8,061.6	-1,832.4	-208.2	-189.0	0.00	0.00	0.00
8,400.0	15.00	186.48	8,158.2	-1,858.1	-211.2	-191.7	0.00	0.00	0.00
8,452.3	15.00	186.48	8,208.7	-1,871.6	-212.7	-193.1	0.00	0.00	0.00
EOH 15.00° Inc									
8,500.0	14.04	186.48	8,254.9	-1,883.4	-214.0	-194.3	2.00	-2.00	0.00
8,600.0	12.04	186.48	8,352.3	-1,905.9	-216.6	-196.6	2.00	-2.00	0.00
8,700.0	10.04	186.48	8,450.4	-1,924.9	-218.7	-198.6	2.00	-2.00	0.00
8,800.0	8.04	186.48	8,549.2	-1,940.5	-220.5	-200.2	2.00	-2.00	0.00
8,900.0	6.04	186.48	8,648.4	-1,952.7	-221.9	-201.4	2.00	-2.00	0.00
9,000.0	4.04	186.48	8,748.0	-1,961.4	-222.9	-202.3	2.00	-2.00	0.00
9,100.0	2.04	186.48	8,847.9	-1,966.7	-223.5	-202.9	2.00	-2.00	0.00
9,202.1	0.00	186.48	8,950.0	-1,968.5	-223.7	-203.1	2.00	-2.00	0.00
Vertical Point									
9,300.0	0.00	0.00	9,047.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
9,400.0	0.00	0.00	9,147.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
9,500.0	0.00	0.00	9,247.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
9,600.0	0.00	0.00	9,347.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
9,700.0	0.00	0.00	9,447.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
9,800.0	0.00	0.00	9,547.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
9,900.0	0.00	0.00	9,647.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
10,000.0	0.00	0.00	9,747.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
10,100.0	0.00	0.00	9,847.9	-1,968.5	-223.7	-203.1	0.00	0.00	0.00



SB Directional Services

Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	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)
10,194.1	0.00	0.00	9,942.0	-1,968.5	-223.7	-203.1	0.00	0.00	0.00
KOP 10°/100'									
10,200.0	0.59	89.27	9,947.9	-1,968.5	-223.7	-203.0	9.94	9.94	0.00
10,250.0	5.59	89.27	9,997.8	-1,968.5	-221.0	-200.4	10.00	10.00	0.00
10,300.0	10.59	89.27	10,047.3	-1,968.4	-213.9	-193.3	10.00	10.00	0.00
10,350.0	15.59	89.27	10,095.9	-1,968.2	-202.6	-182.0	10.00	10.00	0.00
10,400.0	20.59	89.27	10,143.5	-1,968.0	-187.1	-166.5	10.00	10.00	0.00
10,450.0	25.59	89.27	10,189.4	-1,967.8	-167.5	-146.9	10.00	10.00	0.00
10,500.0	30.59	89.27	10,233.5	-1,967.5	-144.0	-123.4	10.00	10.00	0.00
10,550.0	35.59	89.27	10,275.4	-1,967.1	-116.7	-96.1	10.00	10.00	0.00
10,600.0	40.59	89.27	10,314.8	-1,966.7	-85.9	-65.3	10.00	10.00	0.00
10,650.0	45.59	89.27	10,351.3	-1,966.3	-51.7	-31.1	10.00	10.00	0.00
10,700.0	50.59	89.27	10,384.7	-1,965.8	-14.5	6.0	10.00	10.00	0.00
10,750.0	55.59	89.27	10,414.7	-1,965.3	25.4	46.0	10.00	10.00	0.00
10,800.0	60.59	89.27	10,441.1	-1,964.8	67.8	88.4	10.00	10.00	0.00
10,850.0	65.59	89.27	10,463.7	-1,964.2	112.4	133.0	10.00	10.00	0.00
10,900.0	70.59	89.27	10,482.4	-1,963.6	158.8	179.3	10.00	10.00	0.00
10,950.0	75.59	89.27	10,496.9	-1,963.0	206.6	227.1	10.00	10.00	0.00
11,000.0	80.59	89.27	10,507.2	-1,962.4	255.5	276.0	10.00	10.00	0.00
11,050.0	85.59	89.27	10,513.3	-1,961.8	305.1	325.6	10.00	10.00	0.00
11,094.1	90.00	89.27	10,515.0	-1,961.2	349.2	369.7	10.00	10.00	0.00
Landing Point									
11,100.0	90.00	89.27	10,515.0	-1,961.1	355.1	375.6	0.05	0.05	0.00
11,200.0	90.00	89.27	10,515.0	-1,959.8	455.1	475.6	0.00	0.00	0.00
11,300.0	90.00	89.27	10,515.0	-1,958.6	555.1	575.5	0.00	0.00	0.00
11,400.0	90.00	89.27	10,515.0	-1,957.3	655.1	675.5	0.00	0.00	0.00
11,500.0	90.00	89.27	10,515.0	-1,956.0	755.0	775.5	0.00	0.00	0.00
11,600.0	90.00	89.27	10,515.0	-1,954.7	855.0	875.5	0.00	0.00	0.00
11,700.0	90.00	89.27	10,515.0	-1,953.5	955.0	975.4	0.00	0.00	0.00
11,800.0	90.00	89.27	10,515.0	-1,952.2	1,055.0	1,075.4	0.00	0.00	0.00
11,900.0	90.00	89.27	10,515.0	-1,950.9	1,155.0	1,175.4	0.00	0.00	0.00
12,000.0	90.00	89.27	10,515.0	-1,949.6	1,255.0	1,275.3	0.00	0.00	0.00
12,100.0	90.00	89.27	10,515.0	-1,948.4	1,355.0	1,375.3	0.00	0.00	0.00
12,200.0	90.00	89.27	10,515.0	-1,947.1	1,455.0	1,475.3	0.00	0.00	0.00
12,300.0	90.00	89.27	10,515.0	-1,945.8	1,555.0	1,575.3	0.00	0.00	0.00
12,400.0	90.00	89.27	10,515.0	-1,944.5	1,655.0	1,675.2	0.00	0.00	0.00
12,500.0	90.00	89.27	10,515.0	-1,943.3	1,755.0	1,775.2	0.00	0.00	0.00
12,600.0	90.00	89.27	10,515.0	-1,942.0	1,855.0	1,875.2	0.00	0.00	0.00
12,700.0	90.00	89.27	10,515.0	-1,940.7	1,954.9	1,975.2	0.00	0.00	0.00
12,800.0	90.00	89.27	10,515.0	-1,939.4	2,054.9	2,075.1	0.00	0.00	0.00
12,900.0	90.00	89.27	10,515.0	-1,938.1	2,154.9	2,175.1	0.00	0.00	0.00
13,000.0	90.00	89.27	10,515.0	-1,936.9	2,254.9	2,275.1	0.00	0.00	0.00
13,100.0	90.00	89.27	10,515.0	-1,935.6	2,354.9	2,375.1	0.00	0.00	0.00
13,200.0	90.00	89.27	10,515.0	-1,934.3	2,454.9	2,475.0	0.00	0.00	0.00
13,300.0	90.00	89.27	10,515.0	-1,933.0	2,554.9	2,575.0	0.00	0.00	0.00
13,400.0	90.00	89.27	10,515.0	-1,931.8	2,654.9	2,675.0	0.00	0.00	0.00
13,500.0	90.00	89.27	10,515.0	-1,930.5	2,754.9	2,774.9	0.00	0.00	0.00
13,600.0	90.00	89.27	10,515.0	-1,929.2	2,854.9	2,874.9	0.00	0.00	0.00
13,700.0	90.00	89.27	10,515.0	-1,927.9	2,954.9	2,974.9	0.00	0.00	0.00
13,800.0	90.00	89.27	10,515.0	-1,926.7	3,054.9	3,074.9	0.00	0.00	0.00
13,900.0	90.00	89.27	10,515.0	-1,925.4	3,154.8	3,174.8	0.00	0.00	0.00
14,000.0	90.00	89.27	10,515.0	-1,924.1	3,254.8	3,274.8	0.00	0.00	0.00
14,100.0	90.00	89.27	10,515.0	-1,922.8	3,354.8	3,374.8	0.00	0.00	0.00



SB Directional Services

Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	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)
14,200.0	90.00	89.27	10,515.0	-1,921.6	3,454.8	3,474.8	0.00	0.00	0.00
14,300.0	90.00	89.27	10,515.0	-1,920.3	3,554.8	3,574.7	0.00	0.00	0.00
14,400.0	90.00	89.27	10,515.0	-1,919.0	3,654.8	3,674.7	0.00	0.00	0.00
14,500.0	90.00	89.27	10,515.0	-1,917.7	3,754.8	3,774.7	0.00	0.00	0.00
14,600.0	90.00	89.27	10,515.0	-1,916.5	3,854.8	3,874.6	0.00	0.00	0.00
14,700.0	90.00	89.27	10,515.0	-1,915.2	3,954.8	3,974.6	0.00	0.00	0.00
14,800.0	90.00	89.27	10,515.0	-1,913.9	4,054.8	4,074.6	0.00	0.00	0.00
14,900.0	90.00	89.27	10,515.0	-1,912.6	4,154.8	4,174.6	0.00	0.00	0.00
15,000.0	90.00	89.27	10,515.0	-1,911.3	4,254.8	4,274.5	0.00	0.00	0.00
15,100.0	90.00	89.27	10,515.0	-1,910.1	4,354.7	4,374.5	0.00	0.00	0.00
15,200.0	90.00	89.27	10,515.0	-1,908.8	4,454.7	4,474.5	0.00	0.00	0.00
15,300.0	90.00	89.27	10,515.0	-1,907.5	4,554.7	4,574.5	0.00	0.00	0.00
15,400.0	90.00	89.27	10,515.0	-1,906.2	4,654.7	4,674.4	0.00	0.00	0.00
15,500.0	90.00	89.27	10,515.0	-1,905.0	4,754.7	4,774.4	0.00	0.00	0.00
15,600.0	90.00	89.27	10,515.0	-1,903.7	4,854.7	4,874.4	0.00	0.00	0.00
15,700.0	90.00	89.27	10,515.0	-1,902.4	4,954.7	4,974.3	0.00	0.00	0.00
15,800.0	90.00	89.27	10,515.0	-1,901.1	5,054.7	5,074.3	0.00	0.00	0.00
15,900.0	90.00	89.27	10,515.0	-1,899.9	5,154.7	5,174.3	0.00	0.00	0.00
16,000.0	90.00	89.27	10,515.0	-1,898.6	5,254.7	5,274.3	0.00	0.00	0.00
16,100.0	90.00	89.27	10,515.0	-1,897.3	5,354.7	5,374.2	0.00	0.00	0.00
16,121.5	90.00	89.27	10,515.0	-1,897.0	5,376.2	5,395.7	0.00	0.00	0.00
Mid Lateral TGT									
16,200.0	90.00	90.84	10,515.0	-1,897.1	5,454.7	5,474.2	2.00	0.00	2.00
16,265.9	90.00	92.16	10,515.0	-1,898.8	5,520.5	5,540.1	2.00	0.00	2.00
EOT									
16,300.0	90.00	92.16	10,515.0	-1,900.1	5,554.6	5,574.2	0.00	0.00	0.00
16,400.0	90.00	92.16	10,515.0	-1,903.9	5,654.5	5,674.2	0.00	0.00	0.00
16,500.0	90.00	92.16	10,515.0	-1,907.6	5,754.5	5,774.1	0.00	0.00	0.00
16,600.0	90.00	92.16	10,515.0	-1,911.4	5,854.4	5,874.1	0.00	0.00	0.00
16,700.0	90.00	92.16	10,515.0	-1,915.2	5,954.3	5,974.1	0.00	0.00	0.00
16,800.0	90.00	92.16	10,515.0	-1,918.9	6,054.3	6,074.0	0.00	0.00	0.00
16,900.0	90.00	92.16	10,515.0	-1,922.7	6,154.2	6,174.0	0.00	0.00	0.00
17,000.0	90.00	92.16	10,515.0	-1,926.4	6,254.1	6,274.0	0.00	0.00	0.00
17,100.0	90.00	92.16	10,515.0	-1,930.2	6,354.0	6,373.9	0.00	0.00	0.00
17,200.0	90.00	92.16	10,515.0	-1,934.0	6,454.0	6,473.9	0.00	0.00	0.00
17,300.0	90.00	92.16	10,515.0	-1,937.7	6,553.9	6,573.8	0.00	0.00	0.00
17,400.0	90.00	92.16	10,515.0	-1,941.5	6,653.8	6,673.8	0.00	0.00	0.00
17,500.0	90.00	92.16	10,515.0	-1,945.3	6,753.8	6,773.8	0.00	0.00	0.00
17,600.0	90.00	92.16	10,515.0	-1,949.0	6,853.7	6,873.7	0.00	0.00	0.00
17,700.0	90.00	92.16	10,515.0	-1,952.8	6,953.6	6,973.7	0.00	0.00	0.00
17,800.0	90.00	92.16	10,515.0	-1,956.5	7,053.6	7,073.7	0.00	0.00	0.00
17,900.0	90.00	92.16	10,515.0	-1,960.3	7,153.5	7,173.6	0.00	0.00	0.00
18,000.0	90.00	92.16	10,515.0	-1,964.1	7,253.4	7,273.6	0.00	0.00	0.00
18,100.0	90.00	92.16	10,515.0	-1,967.8	7,353.3	7,373.5	0.00	0.00	0.00
18,200.0	90.00	92.16	10,515.0	-1,971.6	7,453.3	7,473.5	0.00	0.00	0.00
18,300.0	90.00	92.16	10,515.0	-1,975.3	7,553.2	7,573.5	0.00	0.00	0.00
18,400.0	90.00	92.16	10,515.0	-1,979.1	7,653.1	7,673.4	0.00	0.00	0.00
18,500.0	90.00	92.16	10,515.0	-1,982.9	7,753.1	7,773.4	0.00	0.00	0.00
18,600.0	90.00	92.16	10,515.0	-1,986.6	7,853.0	7,873.4	0.00	0.00	0.00
18,700.0	90.00	92.16	10,515.0	-1,990.4	7,952.9	7,973.3	0.00	0.00	0.00
18,800.0	90.00	92.16	10,515.0	-1,994.1	8,052.8	8,073.3	0.00	0.00	0.00
18,900.0	90.00	92.16	10,515.0	-1,997.9	8,152.8	8,173.2	0.00	0.00	0.00
19,000.0	90.00	92.16	10,515.0	-2,001.7	8,252.7	8,273.2	0.00	0.00	0.00
19,100.0	90.00	92.16	10,515.0	-2,005.4	8,352.6	8,373.2	0.00	0.00	0.00



SB Directional Services

Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Rana Salada Fed Com 0106 133H
Company:	NOVO Oil & Gas	TVD Reference:	RKB 25' + GL @ 3089.3usft
Project:	EDDY CO., NM (NAD83)	MD Reference:	RKB 25' + GL @ 3089.3usft
Site:	SEC 02-T23S-R28E	North Reference:	Grid
Well:	Rana Salada Fed Com 0106 133H	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)	
19,200.0	90.00	92.16	10,515.0	-2,009.2	8,452.6	8,473.1	0.00	0.00	0.00	
19,300.0	90.00	92.16	10,515.0	-2,013.0	8,552.5	8,573.1	0.00	0.00	0.00	
19,400.0	90.00	92.16	10,515.0	-2,016.7	8,652.4	8,673.1	0.00	0.00	0.00	
19,500.0	90.00	92.16	10,515.0	-2,020.5	8,752.4	8,773.0	0.00	0.00	0.00	
19,600.0	90.00	92.16	10,515.0	-2,024.2	8,852.3	8,873.0	0.00	0.00	0.00	
19,700.0	90.00	92.16	10,515.0	-2,028.0	8,952.2	8,973.0	0.00	0.00	0.00	
19,800.0	90.00	92.16	10,515.0	-2,031.8	9,052.1	9,072.9	0.00	0.00	0.00	
19,900.0	90.00	92.16	10,515.0	-2,035.5	9,152.1	9,172.9	0.00	0.00	0.00	
20,000.0	90.00	92.16	10,515.0	-2,039.3	9,252.0	9,272.8	0.00	0.00	0.00	
20,100.0	90.00	92.16	10,515.0	-2,043.0	9,351.9	9,372.8	0.00	0.00	0.00	
20,200.0	90.00	92.16	10,515.0	-2,046.8	9,451.9	9,472.8	0.00	0.00	0.00	
20,300.0	90.00	92.16	10,515.0	-2,050.6	9,551.8	9,572.7	0.00	0.00	0.00	
20,400.0	90.00	92.16	10,515.0	-2,054.3	9,651.7	9,672.7	0.00	0.00	0.00	
20,500.0	90.00	92.16	10,515.0	-2,058.1	9,751.6	9,772.7	0.00	0.00	0.00	
20,600.0	90.00	92.16	10,515.0	-2,061.8	9,851.6	9,872.6	0.00	0.00	0.00	
20,700.0	90.00	92.16	10,515.0	-2,065.6	9,951.5	9,972.6	0.00	0.00	0.00	
20,800.0	90.00	92.16	10,515.0	-2,069.4	10,051.4	10,072.5	0.00	0.00	0.00	
20,900.0	90.00	92.16	10,515.0	-2,073.1	10,151.4	10,172.5	0.00	0.00	0.00	
21,000.0	90.00	92.16	10,515.0	-2,076.9	10,251.3	10,272.5	0.00	0.00	0.00	
21,038.7	90.00	92.16	10,515.0	-2,078.3	10,290.0	10,311.2	0.00	0.00	0.00	
TD at 21038.7										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Mid Lateral TGT - hit/miss target - Shape - Point	0.00	0.00	10,515.0	-1,897.0	5,376.2	483,337.77	634,417.57	32° 19' 42.268 N	104° 1' 55.146 W	
FTP Rana Salada 133H - plan misses target center by 13.3usft at 11093.9usft MD (10515.0 TVD, -1961.2 N, 349.0 E) - Point	0.00	0.01	10,515.0	-1,974.5	349.2	483,260.31	629,390.55	32° 19' 41.637 N	104° 2' 53.738 W	
PBHL Rana Salada 133I - plan hits target center - Point	0.00	0.00	10,515.0	-2,078.3	10,290.0	483,156.46	639,331.35	32° 19' 40.333 N	104° 0' 57.883 W	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
800.0	800.0	0.0	0.0	Begin Nudge	
1,549.8	1,541.3	-96.9	-11.0	EOB 15.00° Inc	
8,452.3	8,208.7	-1,871.6	-212.7	EOH 15.00° Inc	
9,202.1	8,950.0	-1,968.5	-223.7	Vertical Point	
10,194.1	9,942.0	-1,968.5	-223.7	KOP 10°/100'	
11,094.1	10,515.0	-1,961.2	349.2	Landing Point	
16,121.5	10,515.0	-1,897.0	5,376.2	Mid Lateral TGT	
16,265.9	10,515.0	-1,898.8	5,520.5	EOT	
21,038.7	10,515.0	-2,078.3	10,290.0	TD at 21038.7	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 32867

CONDITIONS

Operator: NOVO OIL & GAS NORTHERN DELAWARE, LLC 1001 West Wilshire Blvd Oklahoma City, OK 73116	OGRID: 372920
	Action Number: 32867
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD Conditions of Approval	6/22/2021