

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

Form C-101
August 1, 2011

Permit 354408

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address Silverback Operating II, LLC 19707 IH10 West, Suite 201 San Antonio, TX 78256		2. OGRID Number 330968
		3. API Number 30-015-54388
4. Property Code 335016	5. Property Name Roche	6. Well No. 103H

7. Surface Location

UL - Lot M	Section 1	Township 19S	Range 25E	Lot Idn	Feet From 205	N/S Line S	Feet From 427	E/W Line W	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot M	Section 2	Township 19S	Range 25E	Lot Idn M	Feet From 920	N/S Line S	Feet From 100	E/W Line W	County Eddy
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9. Pool Information

PENASCO DRAW;SA-YESO (ASSOC)	50270
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 3416
16. Multiple N	17. Proposed Depth 8384	18. Formation Yeso	19. Contractor	20. Spud Date 2/17/2024
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12.25	9.625	36	1270	281	0
Prod	8.75	7	32	3354	172	0
Prod	8.75	5.5	20	8384	1557	2138

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	5000	Shaffer

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Matthew Alley	Approved By: Ward Rikala	
Title: Chief Financial Officer	Title:	
Email Address: malley@silverbackexp.com	Approved Date: 11/29/2023	Expiration Date: 11/29/2025
Date: 11/17/2023	Phone: 303-513-0990	Conditions of Approval Attached

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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 -54388	² Pool Code 50270	³ Pool Name Penasco Draw, SA-YESO
⁴ Property Code 335016	⁵ Property Name ROCHE	⁶ Well Number 103H
⁷ OGRID No. 330968	⁸ Operator Name SILVERBACK OPERATING II, LLC	⁹ Elevation 3,416'

¹⁰ Surface Location

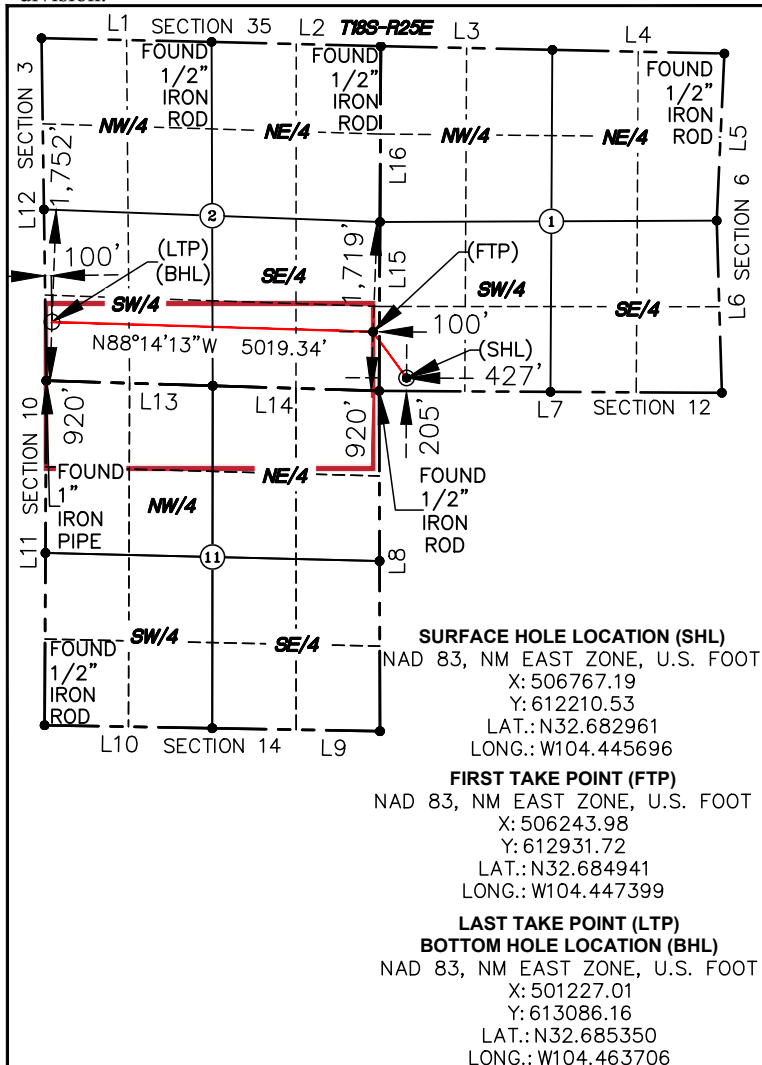
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	1	19-S	25-E		205'	SOUTH	427'	WEST	EDDY

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
M	2	19-S	25-E		920'	SOUTH	100'	WEST	EDDY

¹² Dedicated Acres 320	¹³ Joint or Infill 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.



LINE TABLE		
LINE #	BEARING	LENGTH
L1	S88°44'49"E	2,658'
L2	S88°34'25"E	2,646'
L3	S88°45'39"E	2,680'
L4	S88°45'16"E	2,688'
L5	S02°37'33"W	2,613'
L6	S01°43'23"E	2,691'
L7	N89°40'55"W	5,355'
L8	S00°08'24"E	5,317'
L9	N88°58'36"W	2,621'
L10	N88°58'59"W	2,620'
L11	N00°17'39"E	5,384'
L12	N00°48'52"W	5,351'
L13	S88°14'28"E	2,601'
L14	S88°13'57"E	2,601'
L15	N00°17'00"E	2,639'
L16	N00°17'09"E	2,748'

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.

Fatma Abdallah 11/14/2023
Signature Date

Fatma Abdallah

Printed Name

fabdallah@silverbackexp.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.

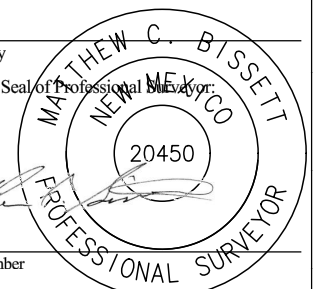
11/13/23

Date of Survey

Signature and Seal of Professional Surveyor

20450

Certificate Number



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

Form APD Conditions

Permit 354408

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: Silverback Operating II, LLC [330968] 19707 IH10 West, Suite 201 San Antonio, TX 78256	API Number: 30-015-54388
	Well: Roche #103H

OCD Reviewer	Condition
ward.rikala	Notify OCD 24 hours prior to casing & cement
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing
ward.rikala	If cement does not circulate on any string , a CBL is required for that string of casing.
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system
ward.rikala	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Silverback Operating II, LLC. **OGRID:** 330968 **Date:** 11 / 16 / 23

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
See Attached						

IV. Central Delivery Point Name: Roche CTB [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
See Attached						

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

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

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

☐

IX.

X.

XI.

XII.

☒

XIII.

☒

☐

XIV.

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature: <i>Fatma Abdallah</i>
Printed Name: Fatma Abdallah
Title: Regulatory Manager
E-mail Address: fabdallah@silverbackexp.com
Date: 11/16/23
Phone: 210-585-3316
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Separation Equipment

Silverback Operating II (LLC) has sampled existing producing wells and performed laboratory testing to determine composition. Performance of existing producing wells was analyzed to predict expected production volumes including a low probably, high volume production case (approximately 75% higher than type curve or most likely amount of production). Production composition and the volumes were utilized as inputs to a process model which predicts relative amounts of gas, oil and water throughout the process. The high volume case was used to size equipment, piping and instrumentation. Equipment sizing is based on drop settlement and limits the amount of carry over to the gas phase.

Each well has a dedicated 3 phase separator and gas from that separator is taken directly to gas sales. Facility piping and pipeline were sized to allow peak volumes to flow with minimal pressure loss and deliver to midstream gatherer at an acceptable pressure. Water is conveyed directly to tankage.

Oil from 3 phase separators is comingled and conveyed to a heated separator for enhanced liquid-liquid separation and degassing. Vapors from the heater treater are routed to flare. Oil and water storage tanks vapor outlets are common and utilize a closed vent vapor system to ensure all working & breathing and flashing losses are routed to the flare which is sized to accommodate peak expected production volume. Flash volumes were estimated using the high volume case and process modeling software.

Operational Practices

Silverback Operating II, LLC will ensure pipeline connectivity before producing hydrocarbons and will operate a closed vent vapor capture system that is designed to capture all associated and evolved gas during normal operation. Venting will only occur during maintenance activities or equipment failure or upset. Silverback may utilize the following from list A-I of Section 3 for its operations to minimize flaring:

- Power generation on lease – Natural gas driven gen set to produce power required to run supply well pad electrical loads
- Compression on lease – gas lift or gas compression as required
- Liquids removal on lease – gas pressure will be used to convey fluids as needed

Best Management Practices

Silverback utilizes automate engineering controls included in facility design to minimize venting and flaring. Additionally, operational best practices support minimization of flare and venting as described below.

If the main gas outlet becomes unavailable and pressure increases on the outlet sales line, produced gas will be routed directly to the facility flare. The facility control system will alert personnel to the need for maintenance and appropriate response to the temporary flaring event.

The facility design includes a closed vent vapor capture system to route flash or evolved from the heater treater and tanks to the flare.

For maintenance activities, Silverback will utilize the facility flare to blowdown equipment and piping whenever practical to minimize venting

Section 1-Plan Description -III. Wells

<u>Well Name</u>	<u>API</u>	<u>ULSTR</u>	<u>Footages</u>	<u>Anticipated Oil BBL/D</u>	<u>Anticipated Gas MCF/D</u>	<u>Anticipated Produced Water BBL/D</u>
Roche 101	Pending	M-1-19S-25E	165' FSL & 427' FWL	515	440	3000
Roche 102	Pending	M-1-19S-25E	185' FSL & 427' FWL	515	440	3000
Roche 103	Pending	M-1-19S-25E	205' FSL & 427' FWL	515	440	3000

V. Anticipated Schedule						
<u>Well Name</u>	<u>API</u>	<u>Spud date</u>	<u>TD Reached Date</u>	<u>Completion Commencement Date</u>	<u>Initial Flow Back Date</u>	<u>First Production Date</u>
Roche 101	Pending	2/7/2024	4/22/2024	5/18/2024	6/9/2024	6/9/2024
Roche 102	Pending	2/12/2024	5/1/2024	5/18/2024	6/10/2024	6/10/2024
Roche 103	Pending	2/17/2024	5/11/2024	5/18/2024	6/11/2024	6/11/2024

Section 2- Enhanced Plan

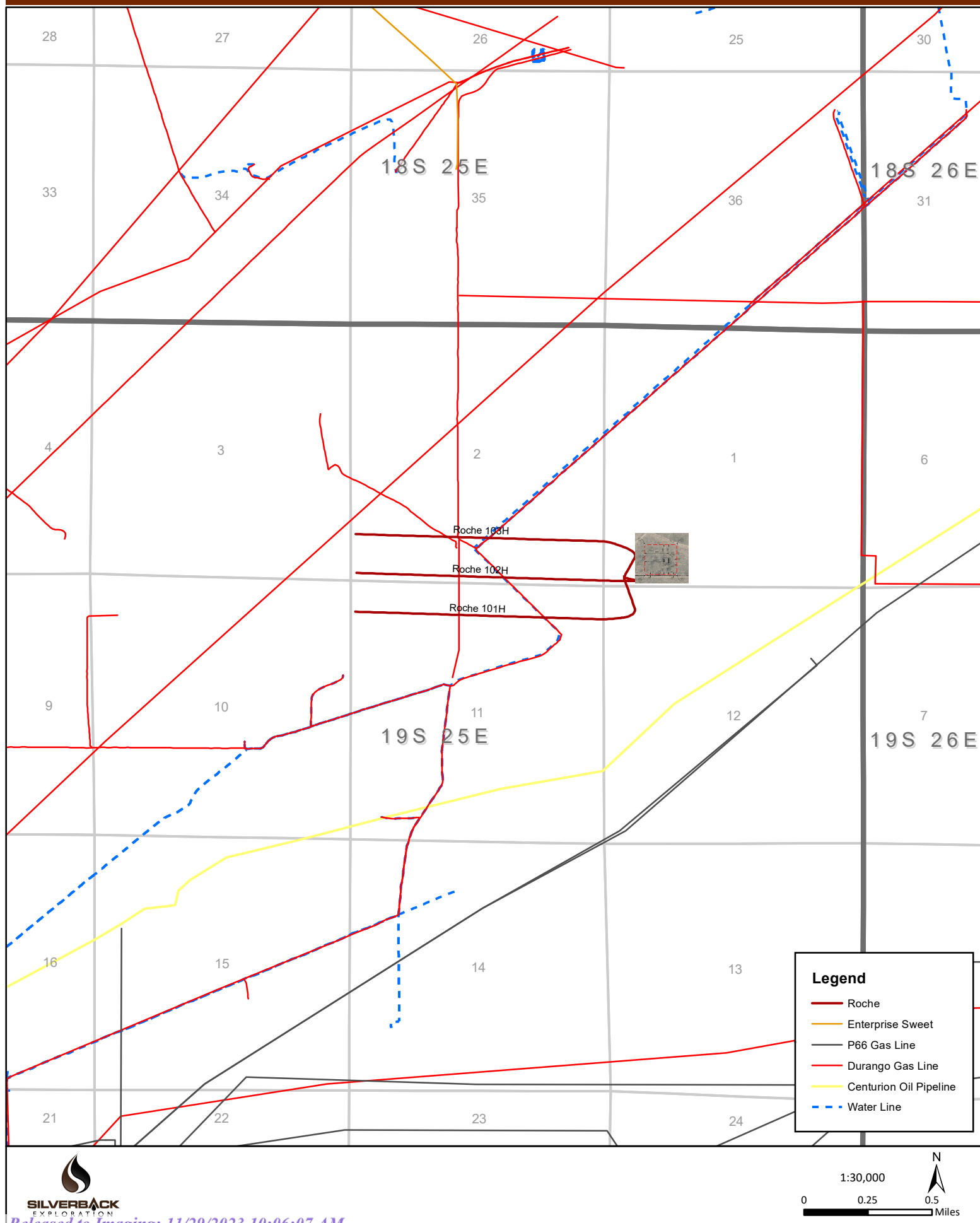
IX. Anticipated Natural Gas Production

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF
Roche 101	Pending	440	160600
Roche 102	Pending	440	160600
Roche 103	Pending	440	160600

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in
Silverback Operating II, LLC	Roche CTB	M-1-19S-25E	6/9/2024	1890 MCF/D

Silverback Exploration Roche



Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

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
Latitude					Longitude			NAD	

Last Take Point (LTP)

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

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.

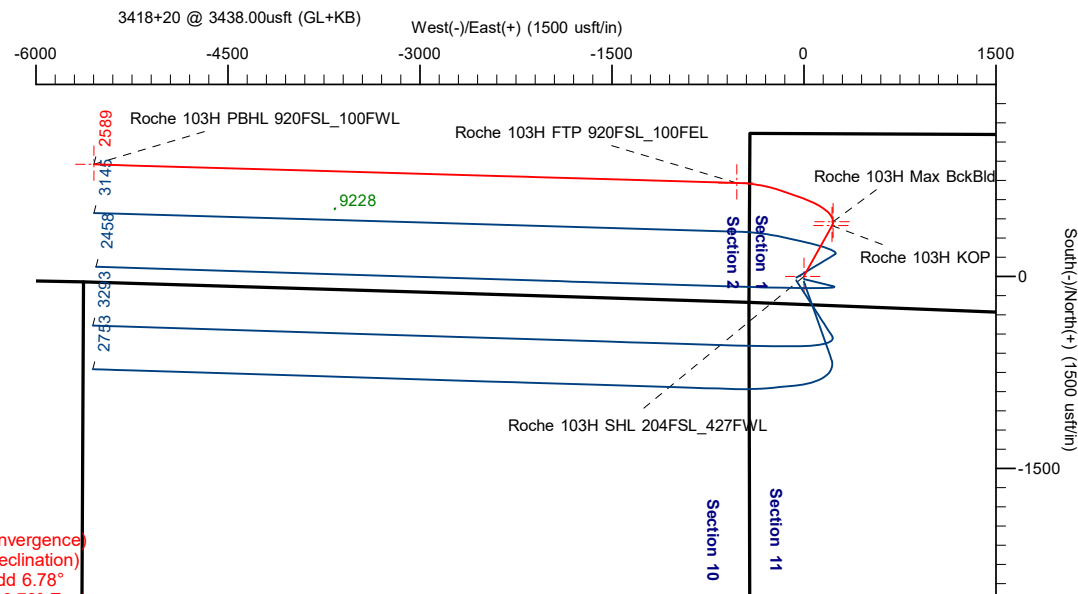
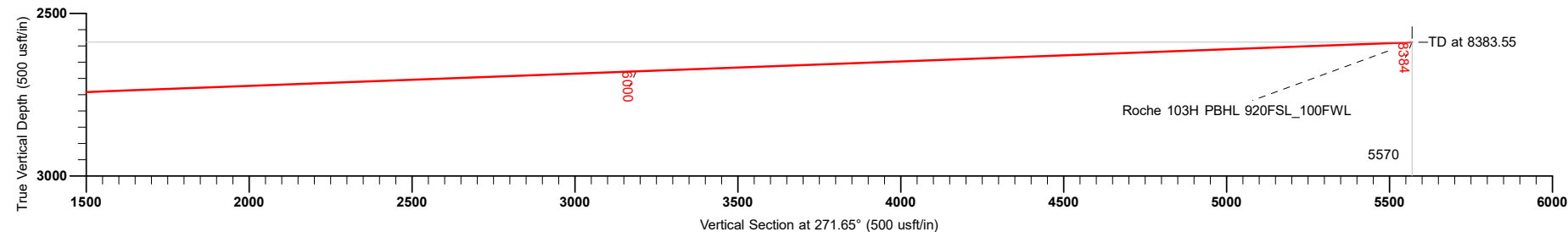
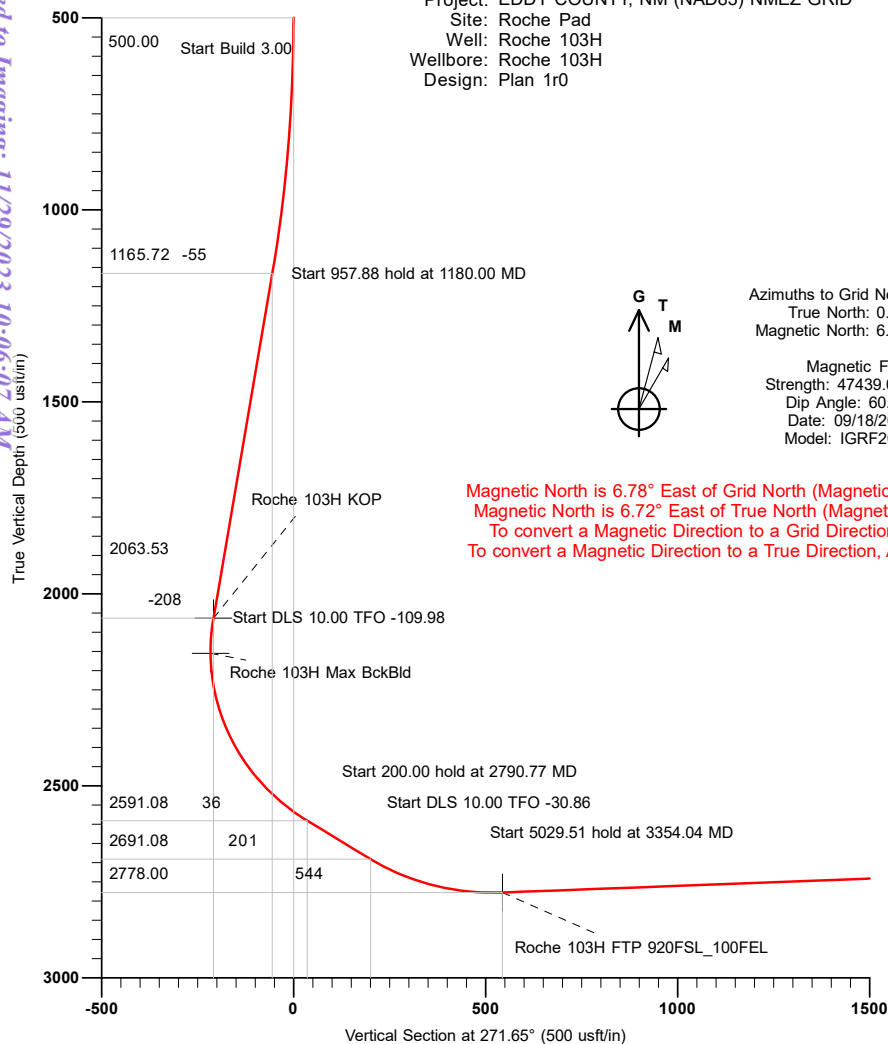
API #		
Operator Name:	Property Name:	Well Number

Estimated Formation Tops

Formation:	Top:	Formation:	Top:

Released to Imaging: 11/29/2023 10:06:07 AM

Project: EDDY COUNTY, NM (NAD83) NMEZ GRID
Site: Roche Pad
Well: Roche 103H
Wellbore: Roche 103H
Design: Plan 1r0



DESIGN TARGET DETAILS								
Name			TVD	+N/-S	+E/-W	Northing	Easting	Shape
Roché 103H SHL 204FSL_427FWL			0.00	0.00	0.00	612210.50	506767.20	Point
Roché 103H KOP			2063.64	396.83	219.97	612607.33	506987.17	Point
Roché 103H Max BckBld			2155.10	427.70	228.25	612638.20	506995.45	Point
Roché 103H PBHL 920FSL_100FWL			2589.00	875.40	-5546.60	613085.90	501220.60	Point
Roché 103H FTP 920FSL_100FEL			2778.00	730.70	-523.60	612941.20	506243.60	Point

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSector	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.00
3	1180.00	20.40	29.00	1165.72	104.76	58.07	3.00	29.00	-55.03	Start 957.88 hold at 1180.00 MD
4	2137.89	20.40	29.00	2063.53	396.79	219.94	0.00	0.00	-208.43	Start DLS 10.00 TFO -109.98
5	2790.77	60.00	289.35	2591.08	614.92	181.37	0.00	-109.98	35.62	Start 200.00 hold at 2790.77 MD
6	2990.77	60.00	289.35	2691.08	671.41	-181.37	0.00	0.00	200.62	Start DLS 10.00 TFO -30.86
7	3354.04	92.15	271.65	2778.00	730.52	-522.72	0.00	-30.86	543.55	Start 5039.51 hold at 3354.04 MD
8	8383.55	92.15	271.65	2589.00	875.40	-5546.60	0.00	0.00	5569.51	TD at 8383.55

SILVERBACK EXPLORATION

3418+20 @ 3438.00usft (GL+KB)

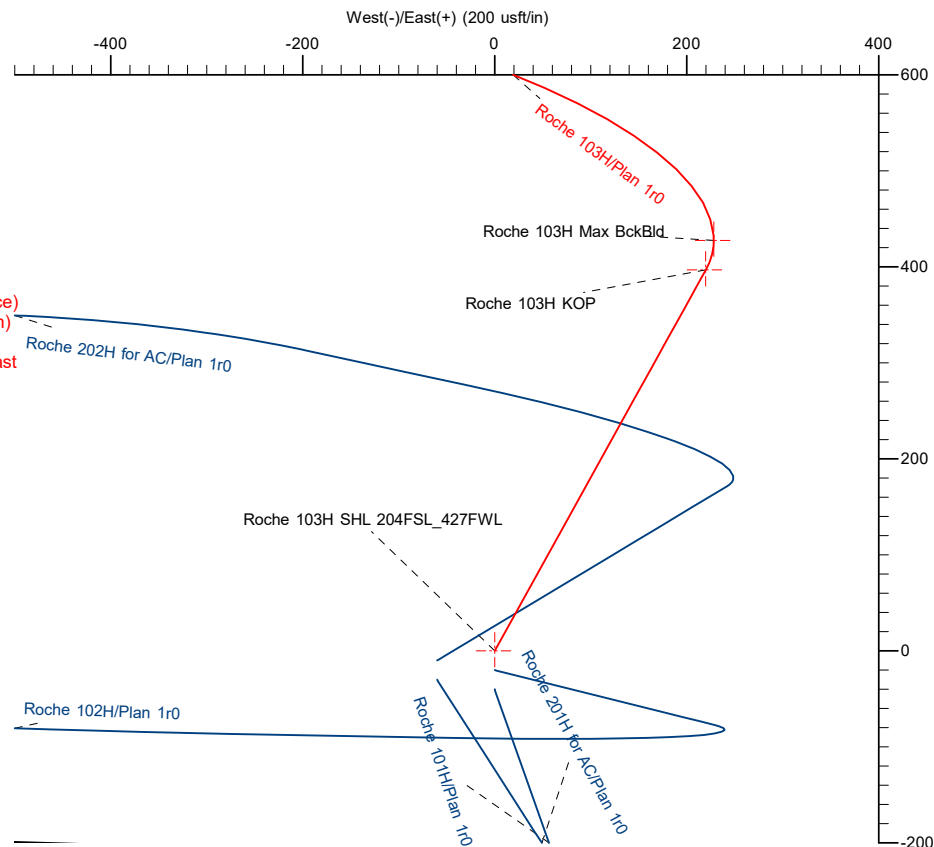
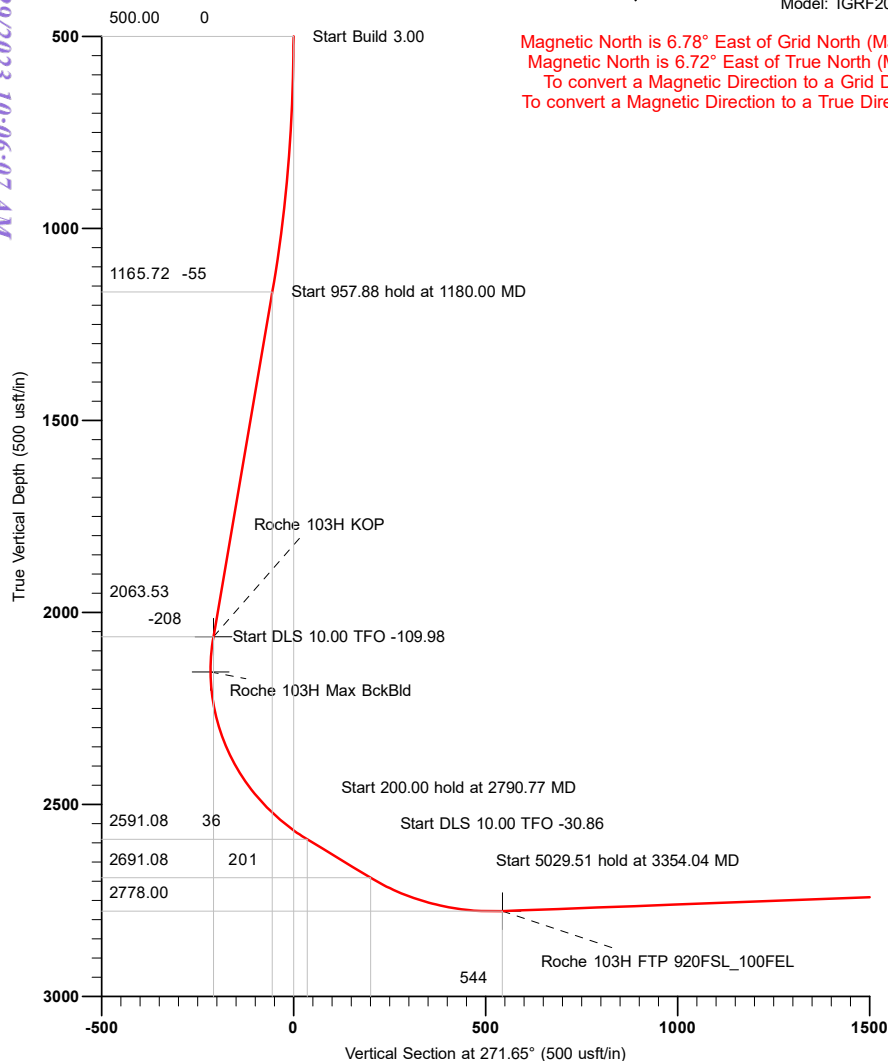
Project: EDDY COUNTY, NM (NAD83) NMEZ GRID
Site: Roche Pad
Well: Roche 103H
Wellbore: Roche 103H
Design: Plan 1r0



Azimuths to Grid North
True North: 0.06°
Magnetic North: 6.78°

Magnetic Field
Strength: 47439.0nT
Dip Angle: 60.11°
Date: 09/18/2023
Model: IGRF2020

Magnetic North is 6.78° East of Grid North (Magnetic Convergence)
Magnetic North is 6.72° East of True North (Magnetic Declination)
To convert a Magnetic Direction to a Grid Direction, Add 6.78°
To convert a Magnetic Direction to a True Direction, Add 6.72° East



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Roche 103H SHL 204FSL_427FWL	0.00	0.00	0.00	612210.50	506767.20	Point
Roche 103H KOP	2063.64	396.83	219.97	612607.33	506987.17	Point
Roche 103H Max BckBld	2155.10	427.70	228.25	612638.20	506995.45	Point
Roche 103H PBHL 920FSL_100FWL	2589.00	875.40	-5546.60	613085.90	501220.60	Point
Roche 103H FTP 920FSL_100FEL	2778.00	730.70	-523.60	612941.20	506243.60	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.00
3	1180.00	20.40	29.00	1165.72	104.76	58.07	3.00	29.00	-55.03	Start 957.88 hold at 1180.00 MD
4	2137.88	20.40	29.00	2063.53	396.79	219.94	0.00	0.00	-208.43	Start DLS 10.00 TFO -109.98
5	2790.77	60.00	289.35	2591.08	614.02	-17.95	10.00	-109.98	35.62	Start 200.00 hold at 2790.77 MD
6	2990.77	60.00	289.35	2691.08	671.41	-181.37	0.00	0.00	200.62	Start DLS 10.00 TFO -30.86
7	3354.04	92.15	271.65	2778.00	730.75	-522.72	10.00	-30.86	543.55	Start 5029.51 hold at 3354.04 MD
8	8383.55	92.15	271.65	2589.00	875.40	-5546.60	0.00	0.00	5569.51	TD at 8383.55

SILVERBACK EXPLORATION

EDDY COUNTY, NM (NAD83) NMEZ GRID

Roche Pad

Roche 103H

Roche 103H

Plan: Plan 1r0

Standard Planning Report

18 September, 2023

Planning Report

Database:	PRIME_EDM	Local Co-ordinate Reference:	Well Roche 103H
Company:	SILVERBACK EXPLORATION	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site:	Roche Pad	North Reference:	Grid
Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Roche 103H		
Design:	Plan 1r0		

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

Site	Roche Pad					
Site Position:		Northing:	612,210.50 usft	Latitude:	32.6829605	
From:	Map	Easting:	506,767.20 usft	Longitude:	-104.4456955	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.06 °

Well	Roche 103H					
Well Position	+N/-S	0.00 usft	Northing:	612,210.50 usft	Latitude:	32.6829605
	+E/-W	0.00 usft	Easting:	506,767.20 usft	Longitude:	-104.4456955
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,418.00 usft

Wellbore	Roche 103H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	09/18/23	6.72	60.11	47,439.02300251

Design	Plan 1r0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	271.65

Plan Survey Tool Program	Date	09/18/23		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	8,383.55 Plan 1r0 (Roche 103H)	MWD	
			OWSG MWD - Standard	

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,180.00	20.40	29.00	1,165.72	104.76	58.07	3.00	3.00	0.00	29.00	
2,137.88	20.40	29.00	2,063.53	396.79	219.94	0.00	0.00	0.00	0.00	
2,790.77	60.00	289.35	2,591.08	614.02	-17.95	10.00	6.07	-15.26	-109.98	
2,990.77	60.00	289.35	2,691.08	671.41	-181.37	0.00	0.00	0.00	0.00	
3,354.04	92.15	271.65	2,778.00	730.75	-522.72	10.00	8.85	-4.87	-30.86	
8,383.55	92.15	271.65	2,589.00	875.40	-5,546.60	0.00	0.00	0.00	0.00	Roche 103H PBHL 92

Planning Report

Database:	PRIME_EDM	Local Co-ordinate Reference:	Well Roche 103H
Company:	SILVERBACK EXPLORATION	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site:	Roche Pad	North Reference:	Grid
Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Roche 103H		
Design:	Plan 1r0		

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
Start Build 3.00									
600.00	3.00	29.00	599.95	2.29	1.27	-1.20	3.00	3.00	0.00
700.00	6.00	29.00	699.63	9.15	5.07	-4.81	3.00	3.00	0.00
800.00	9.00	29.00	798.77	20.57	11.40	-10.80	3.00	3.00	0.00
900.00	12.00	29.00	897.08	36.50	20.23	-19.17	3.00	3.00	0.00
1,000.00	15.00	29.00	994.31	56.92	31.55	-29.90	3.00	3.00	0.00
1,100.00	18.00	29.00	1,090.18	81.76	45.32	-42.94	3.00	3.00	0.00
1,180.00	20.40	29.00	1,165.72	104.76	58.07	-55.03	3.00	3.00	0.00
Start 957.88 hold at 1180.00 MD									
1,200.00	20.40	29.00	1,184.47	110.86	61.45	-58.23	0.00	0.00	0.00
1,300.00	20.40	29.00	1,278.20	141.35	78.35	-74.25	0.00	0.00	0.00
1,400.00	20.40	29.00	1,371.93	171.84	95.25	-90.26	0.00	0.00	0.00
1,500.00	20.40	29.00	1,465.65	202.32	112.15	-106.28	0.00	0.00	0.00
1,600.00	20.40	29.00	1,559.38	232.81	129.05	-122.29	0.00	0.00	0.00
1,700.00	20.40	29.00	1,653.11	263.30	145.95	-138.31	0.00	0.00	0.00
1,800.00	20.40	29.00	1,746.84	293.78	162.85	-154.32	0.00	0.00	0.00
1,900.00	20.40	29.00	1,840.57	324.27	179.75	-170.33	0.00	0.00	0.00
2,000.00	20.40	29.00	1,934.29	354.76	196.64	-186.35	0.00	0.00	0.00
2,100.00	20.40	29.00	2,028.02	385.24	213.54	-202.36	0.00	0.00	0.00
2,137.88	20.40	29.00	2,063.53	396.79	219.94	-208.43	0.00	0.00	0.00
Start DLS 10.00 TFO -109.98									
2,200.00	19.15	10.94	2,122.04	416.28	227.13	-215.05	10.00	-2.01	-29.07
2,300.00	21.05	342.07	2,216.17	449.56	224.71	-211.67	10.00	1.90	-28.87
2,400.00	26.68	321.42	2,307.74	484.29	205.13	-191.10	10.00	5.63	-20.65
2,500.00	34.25	308.42	2,393.97	519.42	168.99	-153.97	10.00	7.57	-13.01
2,600.00	42.73	299.85	2,472.22	553.88	117.38	-101.39	10.00	8.48	-8.57
2,700.00	51.67	293.71	2,540.13	586.62	51.88	-34.97	10.00	8.94	-6.14
2,790.77	60.00	289.35	2,591.08	614.02	-17.95	35.62	10.00	9.18	-4.81
Start 200.00 hold at 2790.77 MD									
2,800.00	60.00	289.35	2,595.70	616.67	-25.49	43.23	0.00	0.00	0.00
2,900.00	60.00	289.35	2,645.70	645.36	-107.20	125.73	0.00	0.00	0.00
2,990.77	60.00	289.35	2,691.08	671.41	-181.37	200.62	0.00	0.00	0.00
Start DLS 10.00 TFO -30.86									
3,000.00	60.79	288.81	2,695.64	674.03	-188.95	208.28	10.00	8.60	-5.88
3,100.00	69.51	283.39	2,737.65	699.01	-276.05	296.06	10.00	8.72	-5.41
3,200.00	78.37	278.57	2,765.30	717.21	-370.27	390.77	10.00	8.86	-4.82
3,300.00	87.31	274.05	2,777.75	728.07	-468.77	489.54	10.00	8.94	-4.52
3,354.04	92.15	271.65	2,778.00	730.75	-522.72	543.55	10.00	8.96	-4.44
Start 5029.51 hold at 3354.04 MD									
3,400.00	92.15	271.65	2,776.28	732.07	-568.63	589.48	0.00	0.00	0.00
3,500.00	92.15	271.65	2,772.52	734.95	-668.52	689.41	0.00	0.00	0.00
3,600.00	92.15	271.65	2,768.76	737.82	-768.41	789.33	0.00	0.00	0.00
3,700.00	92.15	271.65	2,765.00	740.70	-868.30	889.26	0.00	0.00	0.00
3,800.00	92.15	271.65	2,761.25	743.58	-968.18	989.19	0.00	0.00	0.00
3,900.00	92.15	271.65	2,757.49	746.45	-1,068.07	1,089.12	0.00	0.00	0.00
4,000.00	92.15	271.65	2,753.73	749.33	-1,167.96	1,189.05	0.00	0.00	0.00
4,100.00	92.15	271.65	2,749.97	752.20	-1,267.85	1,288.98	0.00	0.00	0.00

Planning Report

Database:	PRIME_EDM	Local Co-ordinate Reference:	Well Roche 103H
Company:	SILVERBACK EXPLORATION	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site:	Roche Pad	North Reference:	Grid
Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Roche 103H		
Design:	Plan 1r0		

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)	
4,200.00	92.15	271.65	2,746.21	755.08	-1,367.74	1,388.91	0.00	0.00	0.00	
4,300.00	92.15	271.65	2,742.46	757.96	-1,467.62	1,488.84	0.00	0.00	0.00	
4,400.00	92.15	271.65	2,738.70	760.83	-1,567.51	1,588.77	0.00	0.00	0.00	
4,500.00	92.15	271.65	2,734.94	763.71	-1,667.40	1,688.70	0.00	0.00	0.00	
4,600.00	92.15	271.65	2,731.18	766.58	-1,767.29	1,788.63	0.00	0.00	0.00	
4,700.00	92.15	271.65	2,727.42	769.46	-1,867.18	1,888.56	0.00	0.00	0.00	
4,800.00	92.15	271.65	2,723.67	772.34	-1,967.06	1,988.49	0.00	0.00	0.00	
4,900.00	92.15	271.65	2,719.91	775.21	-2,066.95	2,088.42	0.00	0.00	0.00	
5,000.00	92.15	271.65	2,716.15	778.09	-2,166.84	2,188.35	0.00	0.00	0.00	
5,100.00	92.15	271.65	2,712.39	780.96	-2,266.73	2,288.28	0.00	0.00	0.00	
5,200.00	92.15	271.65	2,708.64	783.84	-2,366.62	2,388.20	0.00	0.00	0.00	
5,300.00	92.15	271.65	2,704.88	786.72	-2,466.50	2,488.13	0.00	0.00	0.00	
5,400.00	92.15	271.65	2,701.12	789.59	-2,566.39	2,588.06	0.00	0.00	0.00	
5,500.00	92.15	271.65	2,697.36	792.47	-2,666.28	2,687.99	0.00	0.00	0.00	
5,600.00	92.15	271.65	2,693.60	795.34	-2,766.17	2,787.92	0.00	0.00	0.00	
5,700.00	92.15	271.65	2,689.85	798.22	-2,866.06	2,887.85	0.00	0.00	0.00	
5,800.00	92.15	271.65	2,686.09	801.10	-2,965.94	2,987.78	0.00	0.00	0.00	
5,900.00	92.15	271.65	2,682.33	803.97	-3,065.83	3,087.71	0.00	0.00	0.00	
6,000.00	92.15	271.65	2,678.57	806.85	-3,165.72	3,187.64	0.00	0.00	0.00	
6,100.00	92.15	271.65	2,674.81	809.72	-3,265.61	3,287.57	0.00	0.00	0.00	
6,200.00	92.15	271.65	2,671.06	812.60	-3,365.50	3,387.50	0.00	0.00	0.00	
6,300.00	92.15	271.65	2,667.30	815.48	-3,465.38	3,487.43	0.00	0.00	0.00	
6,400.00	92.15	271.65	2,663.54	818.35	-3,565.27	3,587.36	0.00	0.00	0.00	
6,500.00	92.15	271.65	2,659.78	821.23	-3,665.16	3,687.29	0.00	0.00	0.00	
6,600.00	92.15	271.65	2,656.02	824.10	-3,765.05	3,787.22	0.00	0.00	0.00	
6,700.00	92.15	271.65	2,652.27	826.98	-3,864.94	3,887.15	0.00	0.00	0.00	
6,800.00	92.15	271.65	2,648.51	829.86	-3,964.82	3,987.07	0.00	0.00	0.00	
6,900.00	92.15	271.65	2,644.75	832.73	-4,064.71	4,087.00	0.00	0.00	0.00	
7,000.00	92.15	271.65	2,640.99	835.61	-4,164.60	4,186.93	0.00	0.00	0.00	
7,100.00	92.15	271.65	2,637.23	838.48	-4,264.49	4,286.86	0.00	0.00	0.00	
7,200.00	92.15	271.65	2,633.48	841.36	-4,364.38	4,386.79	0.00	0.00	0.00	
7,300.00	92.15	271.65	2,629.72	844.24	-4,464.26	4,486.72	0.00	0.00	0.00	
7,400.00	92.15	271.65	2,625.96	847.11	-4,564.15	4,586.65	0.00	0.00	0.00	
7,500.00	92.15	271.65	2,622.20	849.99	-4,664.04	4,686.58	0.00	0.00	0.00	
7,600.00	92.15	271.65	2,618.45	852.87	-4,763.93	4,786.51	0.00	0.00	0.00	
7,700.00	92.15	271.65	2,614.69	855.74	-4,863.82	4,886.44	0.00	0.00	0.00	
7,800.00	92.15	271.65	2,610.93	858.62	-4,963.70	4,986.37	0.00	0.00	0.00	
7,900.00	92.15	271.65	2,607.17	861.49	-5,063.59	5,086.30	0.00	0.00	0.00	
8,000.00	92.15	271.65	2,603.41	864.37	-5,163.48	5,186.23	0.00	0.00	0.00	
8,100.00	92.15	271.65	2,599.66	867.25	-5,263.37	5,286.16	0.00	0.00	0.00	
8,200.00	92.15	271.65	2,595.90	870.12	-5,363.26	5,386.09	0.00	0.00	0.00	
8,300.00	92.15	271.65	2,592.14	873.00	-5,463.14	5,486.02	0.00	0.00	0.00	
8,383.55	92.15	271.65	2,589.00	875.40	-5,546.60	5,569.51	0.00	0.00	0.00	
TD at 8383.55										

Planning Report

Database:	PRIME_EDM	Local Co-ordinate Reference:	Well Roche 103H
Company:	SILVERBACK EXPLORATION	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site:	Roche Pad	North Reference:	Grid
Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Roche 103H		
Design:	Plan 1r0		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Roche 103H SHL 204FE - plan hits target center - Point	0.00	360.00	0.00	0.00	0.00	612,210.50	506,767.20	32.6829605	-104.4456955
Roche 103H KOP - plan misses target center by 0.01usft at 2138.00usft MD (2063.64 TVD, 396.83 N, 219.97 E) - Point	0.00	0.00	2,063.64	396.83	219.97	612,607.33	506,987.17	32.6840519	-104.4449819
Roche 103H Max BckBlk - plan misses target center by 0.02usft at 2234.98usft MD (2155.08 TVD, 427.69 N, 228.25 E) - Point	0.00	360.00	2,155.10	427.70	228.25	612,638.20	506,995.45	32.6841368	-104.4449551
Roche 103H PBHL 920F - plan hits target center - Point	0.00	360.00	2,589.00	875.40	-5,546.60	613,085.90	501,220.60	32.6853493	-104.4637268
Roche 103H FTP 920FE - plan misses target center by 0.08usft at 3354.91usft MD (2777.97 TVD, 730.78 N, -523.60 E) - Point	0.00	360.00	2,778.00	730.70	-523.60	612,941.20	506,243.60	32.6849675	-104.4473999

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 3.00
1,180.00	1,165.72	104.76	58.07	Start 957.88 hold at 1180.00 MD
2,137.88	2,063.53	396.79	219.94	Start DLS 10.00 TFO -109.98
2,790.77	2,591.08	614.02	-17.95	Start 200.00 hold at 2790.77 MD
2,990.77	2,691.08	671.41	-181.37	Start DLS 10.00 TFO -30.86
3,354.04	2,778.00	730.75	-522.72	Start 5029.51 hold at 3354.04 MD
8,383.55	2,589.00	875.40	-5,546.60	TD at 8383.55

SILVERBACK EXPLORATION

EDDY COUNTY, NM (NAD83) NMEZ GRID

Roche Pad

Roche 103H

Roche 103H

Plan 1r0

Anticollision Report

18 September, 2023

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Reference	Plan 1r0		
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 ellipse separation of 0.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	09/18/23		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	8,383.55	Plan 1r0 (Roche 103H)	MWD	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation	Warning
Offset Well - Wellbore - Design						
Roche Pad						
Rio Penasco KD Com 1 - Rio Penasco KD Com 1 - Rio	6,491.69	2,676.99	289.07	152.76	2.121	CC, ES, SF
Roche 101H - Roche 101H - Plan 1r0	500.00	500.00	40.00	36.05	10.125	CC, ES
Roche 101H - Roche 101H - Plan 1r0	700.00	694.40	58.76	50.13	6.810	SF
Roche 102H - Roche 102H - Plan 1r0	500.00	500.00	20.00	16.05	5.062	CC, ES
Roche 102H - Roche 102H - Plan 1r0	8,348.48	8,122.27	810.45	536.76	2.961	SF
Roche 201H - Roche 201H for AC - Plan 1r0	500.00	500.00	67.08	62.60	14.950	CC, ES
Roche 201H - Roche 201H for AC - Plan 1r0	800.00	795.76	91.52	81.40	9.045	SF
Roche 202H - Roche 202H for AC - Plan 1r0	893.11	901.99	51.38	38.09	3.865	CC
Roche 202H - Roche 202H for AC - Plan 1r0	900.00	908.84	51.40	38.00	3.835	ES
Roche 202H - Roche 202H for AC - Plan 1r0	1,000.00	1,008.10	55.35	40.69	3.776	SF

Offset Design		Roche Pad - Rio Penasco KD Com 1 - Rio Penasco KD Com 1 - Rio Penasco KD Com 1 AsDrilled											Offset Site Error:		0.00 usft
Survey Program:		90-DIPMETER											Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
5,600.00	2,693.60	2,710.20	2,693.09	72.52	49.17	-96.51	531.99	-3,665.17	936.78	856.98	79.80	11.739			
5,700.00	2,689.85	2,706.48	2,689.36	74.91	49.12	-95.78	532.00	-3,665.17	842.29	759.28	83.01	10.146			
5,800.00	2,686.09	2,702.75	2,685.64	77.30	49.08	-95.05	532.01	-3,665.17	749.22	662.20	87.01	8.610			
5,900.00	2,682.33	2,699.02	2,681.91	79.69	49.03	-94.31	532.01	-3,665.17	658.16	566.10	92.06	7.150			
6,000.00	2,678.57	2,695.30	2,678.19	82.09	48.98	-93.58	532.02	-3,665.17	570.07	471.61	98.47	5.789			
6,100.00	2,674.81	2,691.57	2,674.46	84.49	48.93	-92.84	532.02	-3,665.17	486.59	379.98	106.61	4.564			
6,200.00	2,671.06	2,687.85	2,670.74	86.90	48.89	-92.11	532.03	-3,665.17	410.52	293.87	116.66	3.519			
6,300.00	2,667.30	2,684.12	2,667.01	89.30	48.84	-91.37	532.03	-3,665.17	346.78	219.05	127.73	2.715			
6,400.00	2,663.54	2,680.40	2,663.29	91.71	48.79	-90.63	532.03	-3,665.17	303.25	167.03	136.22	2.226			
6,491.69	2,660.09	2,676.99	2,659.88	93.93	48.75	-89.96	532.04	-3,665.17	289.07	152.76	136.31	2.121	CC, ES, SF		
6,500.00	2,659.78	2,676.68	2,659.57	94.13	48.74	-89.90	532.04	-3,665.17	289.19	153.36	135.84	2.129			
6,600.00	2,656.02	2,672.96	2,655.85	96.54	48.70	-89.16	532.04	-3,665.17	308.67	183.51	125.16	2.466			
6,700.00	2,652.27	2,669.24	2,652.13	98.96	48.65	-88.42	532.04	-3,665.17	356.22	245.29	110.94	3.211			
6,800.00	2,648.51	2,665.52	2,648.41	101.38	48.60	-87.69	532.04	-3,665.17	422.48	323.84	98.63	4.283			
6,900.00	2,644.75	2,661.80	2,644.69	103.80	48.55	-86.95	532.04	-3,665.17	500.05	410.73	89.32	5.598			
7,000.00	2,640.99	2,658.08	2,640.97	106.22	48.51	-86.22	532.04	-3,665.17	584.45	501.99	82.46	7.088			
7,100.00	2,637.23	2,654.34	2,637.23	108.65	48.46	-85.49	531.45	-3,665.17	673.39	595.97	77.42	8.698			

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design	Roche Pad - Rio Penasco KD Com 1 - Rio Penasco KD Com 1 - Rio Penasco KD Com 1 AsDrilled											Offset Site Error:	0.00 usft
Survey Program:	90-DIPMETER											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
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	Warning
7,200.00	2,633.48	2,650.58	2,633.48	111.08	48.41	-84.75	531.45	-3,665.17	764.81	691.26	73.55	10.399	
7,300.00	2,629.72	2,646.83	2,629.72	113.50	48.36	-84.02	531.45	-3,665.17	858.13	787.57	70.56	12.162	
7,400.00	2,625.96	2,643.07	2,625.96	115.93	48.31	-83.28	531.45	-3,665.17	952.79	884.58	68.21	13.968	

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design Roche Pad - Roche 101H - Roche 101H - Plan 1r0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	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	0.00	0.00	180.00	-40.00	0.00	40.00					
100.00	100.00	100.00	100.00	0.31	0.31	180.00	-40.00	0.00	40.00	39.52	0.48	83.353		
200.00	200.00	200.00	200.00	0.95	0.95	180.00	-40.00	0.00	40.00	38.47	1.53	26.224		
300.00	300.00	300.00	300.00	1.46	1.46	180.00	-40.00	0.00	40.00	37.61	2.39	16.717		
400.00	400.00	400.00	400.00	1.89	1.89	180.00	-40.00	0.00	40.00	36.81	3.19	12.554		
500.00	500.00	500.00	500.00	2.31	2.31	180.00	-40.00	0.00	40.00	36.05	3.95	10.125 CC, ES		
600.00	599.95	597.85	597.80	3.37	2.70	151.45	-42.36	0.84	44.71	39.20	5.51	8.118		
700.00	699.63	694.40	694.07	5.04	4.47	152.34	-49.32	3.30	58.76	50.13	8.63	6.810 SF		
800.00	798.77	788.44	787.35	6.29	5.76	153.07	-60.49	7.26	81.96	71.06	10.91	7.516		
900.00	897.08	878.89	876.41	7.34	6.78	153.47	-75.31	12.50	113.97	101.25	12.73	8.956		
1,000.00	994.31	964.84	960.26	8.26	7.63	153.58	-93.06	18.79	154.32	140.08	14.24	10.837		
1,100.00	1,090.18	1,045.57	1,038.18	9.09	8.35	153.46	-112.96	25.84	202.47	186.95	15.52	13.044		
1,200.00	1,184.47	1,120.65	1,109.79	9.57	8.97	153.33	-134.23	33.37	257.75	241.30	16.46	15.663		
1,300.00	1,278.20	1,191.47	1,176.46	9.75	9.52	153.58	-156.71	41.33	317.11	300.02	17.09	18.556		
1,400.00	1,371.93	1,258.84	1,239.03	9.96	10.00	153.55	-180.25	49.66	379.08	361.42	17.66	21.462		
1,500.00	1,465.65	1,322.86	1,297.64	10.18	10.45	153.37	-204.53	58.26	443.46	425.27	18.20	24.370		
1,600.00	1,559.38	1,383.64	1,352.45	10.41	10.85	153.11	-229.28	67.03	510.09	491.40	18.69	27.287		
1,700.00	1,653.11	1,452.69	1,414.01	10.66	11.14	152.79	-258.77	77.47	578.29	559.08	19.21	30.106		
1,800.00	1,746.84	1,525.72	1,479.07	10.92	11.36	152.51	-290.02	88.54	646.57	626.86	19.71	32.811		
1,900.00	1,840.57	1,598.75	1,544.14	11.20	11.51	152.28	-321.28	99.60	714.86	694.71	20.14	35.493		
2,000.00	1,934.29	1,671.77	1,609.21	11.50	11.68	152.10	-352.53	110.67	783.15	762.55	20.60	38.016		
2,100.00	2,028.02	1,744.80	1,674.28	11.82	11.86	151.94	-383.78	121.74	851.45	830.37	21.08	40.394		
2,200.00	2,122.04	1,817.34	1,738.91	12.22	12.05	174.39	-414.82	132.73	920.02	898.47	21.55	42.685		
2,300.00	2,216.17	1,886.61	1,800.63	13.21	12.24	-150.41	-444.47	143.23	989.24	967.25	22.00	44.975		

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design Roche Pad - Roche 102H - Roche 102H - Plan 1r0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	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	0.00	0.00	180.00	-20.00	0.00	20.00					
100.00	100.00	100.00	100.00	0.31	0.31	180.00	-20.00	0.00	20.00	19.52	0.48	41.677		
200.00	200.00	200.00	200.00	0.95	0.95	180.00	-20.00	0.00	20.00	18.47	1.53	13.112		
300.00	300.00	300.00	300.00	1.46	1.46	180.00	-20.00	0.00	20.00	17.61	2.39	8.358		
400.00	400.00	400.00	400.00	1.89	1.89	180.00	-20.00	0.00	20.00	16.81	3.19	6.277		
500.00	500.00	500.00	500.00	2.31	2.31	180.00	-20.00	0.00	20.00	16.05	3.95	5.062	CC, ES	
600.00	599.95	599.65	599.60	3.37	2.98	147.81	-20.63	2.52	22.95	17.91	5.04	4.554		
700.00	699.63	698.69	698.33	5.04	4.66	141.81	-22.50	10.02	32.06	25.12	6.94	4.621		
800.00	798.77	796.56	795.37	6.29	5.96	136.91	-25.56	22.30	47.52	39.01	8.51	5.585		
900.00	897.08	892.93	890.17	7.34	6.66	133.64	-29.73	39.04	69.20	59.53	9.67	7.153		
1,000.00	994.31	989.43	984.77	8.26	6.83	133.00	-34.35	57.55	95.37	84.82	10.55	9.040		
1,100.00	1,090.18	1,084.86	1,078.32	9.09	7.03	134.12	-38.91	75.85	125.03	113.52	11.52	10.857		
1,200.00	1,184.47	1,179.00	1,170.59	9.57	7.24	136.01	-43.41	93.90	158.26	145.86	12.40	12.760		
1,300.00	1,278.20	1,272.66	1,262.41	9.75	7.46	137.99	-47.89	111.87	192.83	179.70	13.14	14.680		
1,400.00	1,371.93	1,366.32	1,354.22	9.96	7.70	139.37	-52.37	129.83	227.55	213.68	13.87	16.406		
1,500.00	1,465.65	1,459.98	1,446.04	10.18	7.94	140.38	-56.85	147.79	262.34	247.73	14.61	17.955		
1,600.00	1,559.38	1,553.64	1,537.85	10.41	8.19	141.15	-61.33	165.76	297.20	281.83	15.36	19.343		
1,700.00	1,653.11	1,647.31	1,629.67	10.66	8.45	141.77	-65.81	183.72	332.09	315.96	16.13	20.588		
1,800.00	1,746.84	1,740.97	1,721.48	10.92	8.73	142.26	-70.28	201.68	367.01	350.10	16.91	21.707		
1,900.00	1,840.57	1,834.63	1,813.30	11.20	9.00	142.67	-74.76	219.65	401.95	384.26	17.69	22.720		
2,000.00	1,934.29	1,933.51	1,910.59	11.50	9.41	143.35	-79.41	236.36	436.63	418.05	18.57	23.508		
2,100.00	2,028.02	2,035.27	2,012.13	11.82	9.98	145.94	-83.62	237.90	469.76	450.29	19.47	24.122		
2,200.00	2,122.04	2,130.05	2,105.59	12.22	11.02	168.79	-86.82	223.18	503.39	483.24	20.15	24.986		
2,300.00	2,216.17	2,220.14	2,191.06	13.21	11.74	-157.17	-89.15	195.09	540.11	519.56	20.56	26.276		
2,400.00	2,307.74	2,307.14	2,268.46	14.08	12.33	-131.89	-90.69	155.59	578.45	557.11	21.34	27.109		
2,500.00	2,393.97	2,392.13	2,337.49	14.67	12.81	-114.99	-91.48	106.13	616.71	594.50	22.21	27.766		
2,600.00	2,472.22	2,475.99	2,397.70	15.20	13.20	-103.36	-91.54	47.88	653.41	630.39	23.03	28.375		
2,700.00	2,540.13	2,559.38	2,448.54	15.79	13.51	-95.06	-90.91	-18.14	687.27	663.31	23.96	28.687		
2,800.00	2,595.70	2,650.04	2,494.75	16.52	13.72	-89.69	-89.60	-96.10	716.93	691.57	25.35	28.276		
2,900.00	2,645.70	2,746.23	2,542.84	17.39	14.00	-89.87	-88.14	-179.39	744.19	716.97	27.22	27.336		
3,000.00	2,695.64	2,835.03	2,585.94	18.42	14.55	-89.42	-86.75	-256.99	771.65	742.36	29.30	26.337		
3,100.00	2,737.65	2,916.87	2,616.29	19.64	15.48	-84.89	-85.13	-332.91	795.51	763.85	31.66	25.125		
3,200.00	2,765.30	3,000.00	2,635.73	21.04	16.76	-82.04	-83.12	-413.63	811.91	777.47	34.45	23.571		
3,300.00	2,777.75	3,082.32	2,643.28	22.59	18.24	-80.67	-80.82	-495.51	820.42	782.93	37.49	21.883		
3,400.00	2,776.28	3,175.61	2,640.77	24.22	20.05	-80.50	-77.96	-588.70	821.53	780.50	41.03	20.023		
3,500.00	2,772.52	3,275.61	2,637.07	25.92	22.11	-80.51	-74.86	-688.58	821.31	776.36	44.95	18.274		
3,600.00	2,768.76	3,375.61	2,633.38	27.73	24.26	-80.51	-71.77	-788.47	821.08	772.05	49.03	16.746		
3,700.00	2,765.00	3,475.61	2,629.68	29.64	26.46	-80.51	-68.68	-888.35	820.86	767.61	53.24	15.417		
3,800.00	2,761.25	3,575.61	2,625.98	31.62	28.71	-80.51	-65.59	-988.23	820.63	763.08	57.56	14.257		
3,900.00	2,757.49	3,675.61	2,622.29	33.67	30.99	-80.51	-62.49	-1,088.12	820.41	758.46	61.95	13.242		
4,000.00	2,753.73	3,775.61	2,618.59	35.77	33.30	-80.51	-59.40	-1,188.00	820.19	753.77	66.41	12.350		
4,100.00	2,749.97	3,875.61	2,614.90	37.91	35.62	-80.52	-56.31	-1,287.88	819.96	749.04	70.92	11.561		
4,200.00	2,746.21	3,975.61	2,611.20	40.09	37.97	-80.52	-53.22	-1,387.77	819.74	744.26	75.48	10.861		
4,300.00	2,742.46	4,075.61	2,607.51	42.30	40.33	-80.52	-50.12	-1,487.65	819.51	739.45	80.07	10.235		
4,400.00	2,738.70	4,175.61	2,603.81	44.54	42.70	-80.52	-47.03	-1,587.53	819.29	734.61	84.69	9.674		
4,500.00	2,734.94	4,275.61	2,600.12	46.80	45.08	-80.52	-43.94	-1,687.42	819.07	729.74	89.33	9.169		
4,600.00	2,731.18	4,375.61	2,596.42	49.07	47.47	-80.53	-40.85	-1,787.30	818.84	724.85	94.00	8.711		
4,700.00	2,727.42	4,475.61	2,592.73	51.37	49.86	-80.53	-37.75	-1,887.19	818.62	719.94	98.68	8.296		
4,800.00	2,723.67	4,575.60	2,589.03	53.68	52.26	-80.53	-34.66	-1,987.07	818.40	715.02	103.38	7.916		
4,900.00	2,719.91	4,675.60	2,585.34	56.00	54.67	-80.53	-31.57	-2,086.95	818.17	710.08	108.09	7.569		
5,000.00	2,716.15	4,775.60	2,581.64	58.34	57.08	-80.53	-28.48	-2,186.84	817.95	705.13	112.82	7.250		
5,100.00	2,712.39	4,875.60	2,577.95	60.68	59.50	-80.53	-25.38	-2,286.72	817.72	700.17	117.56	6.956		

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design Roche Pad - Roche 102H - Roche 102H - Plan 1r0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	2,708.64	4,975.60	2,574.25	63.04	61.91	-80.54	-22.29	-2,386.60	817.50	695.20	122.30	6.684		
5,300.00	2,704.88	5,075.60	2,570.56	65.40	64.34	-80.54	-19.20	-2,486.49	817.28	690.22	127.06	6.432		
5,400.00	2,701.12	5,175.60	2,566.86	67.77	66.76	-80.54	-16.10	-2,586.37	817.05	685.23	131.82	6.198		
5,500.00	2,697.36	5,275.60	2,563.17	70.14	69.19	-80.54	-13.01	-2,686.25	816.83	680.24	136.59	5.980		
5,600.00	2,693.60	5,375.60	2,559.47	72.52	71.62	-80.54	-9.92	-2,786.14	816.60	675.24	141.36	5.777		
5,700.00	2,689.85	5,475.60	2,555.77	74.91	74.05	-80.55	-6.83	-2,886.02	816.38	670.24	146.14	5.586		
5,800.00	2,686.09	5,575.60	2,552.08	77.30	76.48	-80.55	-3.73	-2,985.90	816.16	665.23	150.93	5.408		
5,900.00	2,682.33	5,675.60	2,548.38	79.69	78.91	-80.55	-0.64	-3,085.79	815.93	660.21	155.72	5.240		
6,000.00	2,678.57	5,775.60	2,544.69	82.09	81.35	-80.55	2.45	-3,185.67	815.71	655.19	160.51	5.082		
6,100.00	2,674.81	5,875.60	2,540.99	84.49	83.79	-80.55	5.54	-3,285.56	815.48	650.17	165.31	4.933		
6,200.00	2,671.06	5,975.60	2,537.30	86.90	86.23	-80.56	8.64	-3,385.44	815.26	645.15	170.11	4.792		
6,300.00	2,667.30	6,075.60	2,533.60	89.30	88.67	-80.56	11.73	-3,485.32	815.04	640.12	174.92	4.660		
6,400.00	2,663.54	6,175.60	2,529.91	91.71	91.11	-80.56	14.82	-3,585.21	814.81	635.09	179.72	4.534		
6,500.00	2,659.78	6,275.60	2,526.21	94.13	93.55	-80.56	17.91	-3,685.09	814.59	630.06	184.53	4.414		
6,600.00	2,656.02	6,375.60	2,522.52	96.54	95.99	-80.56	21.01	-3,784.97	814.36	625.02	189.35	4.301		
6,700.00	2,652.27	6,475.60	2,518.82	98.96	98.43	-80.56	24.10	-3,884.86	814.14	619.98	194.16	4.193		
6,800.00	2,648.51	6,575.60	2,515.13	101.38	100.88	-80.57	27.19	-3,984.74	813.92	614.94	198.98	4.091		
6,900.00	2,644.75	6,675.60	2,511.43	103.80	103.32	-80.57	30.28	-4,084.62	813.69	609.90	203.80	3.993		
7,000.00	2,640.99	6,775.60	2,507.74	106.22	105.77	-80.57	33.38	-4,184.51	813.47	604.85	208.62	3.899		
7,100.00	2,637.23	6,875.60	2,504.04	108.65	108.22	-80.57	36.47	-4,284.39	813.25	599.81	213.44	3.810		
7,200.00	2,633.48	6,975.60	2,500.35	111.08	110.66	-80.57	39.56	-4,384.28	813.02	594.76	218.26	3.725		
7,300.00	2,629.72	7,075.60	2,496.65	113.50	113.11	-80.58	42.65	-4,484.16	812.80	589.71	223.09	3.643		
7,400.00	2,625.96	7,175.60	2,492.96	115.93	115.56	-80.58	45.75	-4,584.04	812.57	584.66	227.92	3.565		
7,500.00	2,622.20	7,275.60	2,489.26	118.36	118.01	-80.58	48.84	-4,683.93	812.35	579.61	232.74	3.490		
7,600.00	2,618.45	7,375.60	2,485.57	120.79	120.45	-80.58	51.93	-4,783.81	812.13	574.55	237.57	3.418		
7,700.00	2,614.69	7,475.60	2,481.87	123.23	122.90	-80.58	55.02	-4,883.69	811.90	569.50	242.40	3.349		
7,800.00	2,610.93	7,575.60	2,478.17	125.66	125.35	-80.58	58.12	-4,983.58	811.68	564.44	247.24	3.283		
7,900.00	2,607.17	7,675.60	2,474.48	128.10	127.80	-80.59	61.21	-5,083.46	811.45	559.39	252.07	3.219		
8,000.00	2,603.41	7,775.60	2,470.78	130.53	130.25	-80.59	64.30	-5,183.34	811.23	554.33	256.90	3.158		
8,100.00	2,599.66	7,875.60	2,467.09	132.97	132.70	-80.59	67.39	-5,283.23	811.01	549.27	261.74	3.099		
8,200.00	2,595.90	7,975.60	2,463.39	135.40	135.15	-80.59	70.49	-5,383.11	810.78	544.21	266.57	3.042		
8,300.00	2,592.14	8,075.60	2,459.70	137.84	137.61	-80.59	73.58	-5,482.99	810.56	539.15	271.41	2.986		
8,348.48	2,590.32	8,122.27	2,457.97	139.02	138.74	-80.60	75.02	-5,529.61	810.45	536.76	273.69	2.961 SF		
8,383.55	2,589.00	8,122.27	2,457.97	139.88	138.74	-80.60	75.02	-5,529.61	811.21	537.28	273.93	2.961		

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design Roche Pad - Roche 201H - Roche 201H for AC - Plan 1r0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	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	0.00	0.00	-116.57	-30.00	-60.00	67.08					
100.00	100.00	100.00	100.00	0.31	0.31	-116.57	-30.00	-60.00	67.08	66.49	0.59	113.596		
200.00	200.00	200.00	200.00	0.95	0.95	-116.57	-30.00	-60.00	67.08	65.24	1.84	36.478		
300.00	300.00	300.00	300.00	1.46	1.46	-116.57	-30.00	-60.00	67.08	64.26	2.82	23.810		
400.00	400.00	400.00	400.00	1.89	1.89	-116.57	-30.00	-60.00	67.08	63.40	3.68	18.243		
500.00	500.00	500.00	500.00	2.31	2.31	-116.57	-30.00	-60.00	67.08	62.60	4.49	14.950 CC, ES		
600.00	599.95	600.17	600.13	3.37	2.63	-148.93	-32.21	-58.58	69.08	63.30	5.78	11.942		
700.00	699.63	699.14	698.78	5.04	4.52	-157.70	-38.73	-54.40	76.35	68.41	7.94	9.614		
800.00	798.77	795.76	794.58	6.29	5.84	-168.55	-49.23	-47.65	91.52	81.40	10.12	9.045 SF		
900.00	897.08	889.01	886.32	7.34	6.87	-178.36	-63.22	-38.67	116.32	104.15	12.17	9.557		
1,000.00	994.31	978.53	973.54	8.26	7.38	173.99	-80.15	-27.80	150.81	137.14	13.66	11.038		
1,100.00	1,090.18	1,068.29	1,060.64	9.09	7.55	168.74	-98.43	-16.07	192.63	177.93	14.71	13.100		
1,200.00	1,184.47	1,155.96	1,145.71	9.57	7.73	165.52	-116.28	-4.61	239.70	224.31	15.39	15.574		
1,300.00	1,278.20	1,242.91	1,230.07	9.75	7.92	163.65	-133.98	6.75	288.52	272.70	15.82	18.234		
1,400.00	1,371.93	1,329.86	1,314.44	9.96	8.12	162.31	-151.68	18.12	337.51	321.23	16.28	20.726		
1,500.00	1,465.65	1,416.80	1,398.80	10.18	8.33	161.31	-169.38	29.48	386.61	369.83	16.77	23.051		
1,600.00	1,559.38	1,503.75	1,483.17	10.41	8.56	160.54	-187.08	40.84	435.77	418.49	17.28	25.213		
1,700.00	1,653.11	1,590.70	1,567.53	10.66	8.79	159.92	-204.78	52.21	484.98	467.16	17.82	27.215		
1,800.00	1,746.84	1,677.64	1,651.89	10.92	9.03	159.42	-222.48	63.57	534.23	515.85	18.38	29.068		
1,900.00	1,840.57	1,764.59	1,736.26	11.20	9.28	159.00	-240.18	74.93	583.50	564.54	18.96	30.781		
2,000.00	1,934.29	1,851.53	1,820.62	11.50	9.55	158.64	-257.88	86.30	632.79	613.24	19.55	32.365		
2,100.00	2,028.02	1,938.48	1,904.98	11.82	9.82	158.34	-275.58	97.66	682.10	661.93	20.16	33.829		
2,200.00	2,122.04	2,025.16	1,989.09	12.22	10.10	178.32	-293.23	108.99	731.46	710.70	20.77	35.221		
2,300.00	2,216.17	2,109.41	2,070.83	13.21	10.39	-150.62	-310.38	120.00	780.77	759.39	21.38	36.526		
2,400.00	2,307.74	2,188.63	2,147.70	14.08	10.67	-128.76	-326.51	130.35	829.82	807.57	22.25	37.296		
2,500.00	2,393.97	2,260.42	2,217.36	14.67	10.93	-115.05	-341.12	139.74	878.96	855.93	23.03	38.165		
2,600.00	2,472.22	2,322.59	2,277.68	15.20	11.18	-105.85	-353.78	147.86	928.77	905.21	23.56	39.427		
2,700.00	2,540.13	2,373.25	2,326.84	15.79	11.38	-98.78	-364.09	154.48	979.73	955.83	23.91	40.984		

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design Roche Pad - Roche 202H - Roche 202H for AC - Plan 1r0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	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	0.00	0.00	-99.46	-10.00	-60.00	60.83					
100.00	100.00	100.00	100.00	0.31	0.31	-99.46	-10.00	-60.00	60.83	60.30	0.53	115.303		
200.00	200.00	200.00	200.00	0.95	0.95	-99.46	-10.00	-60.00	60.83	59.17	1.66	36.651		
300.00	300.00	300.00	300.00	1.46	1.46	-99.46	-10.00	-60.00	60.83	58.25	2.57	23.637		
400.00	400.00	400.00	400.00	1.89	1.89	-99.46	-10.00	-60.00	60.83	57.43	3.39	17.923		
500.00	500.00	500.00	500.00	2.31	2.31	-99.46	-10.00	-60.00	60.83	56.65	4.18	14.565		
600.00	599.95	603.03	602.98	3.37	3.38	-129.53	-8.57	-57.62	59.96	53.82	6.14	9.770		
700.00	699.63	705.94	705.54	5.04	5.07	-132.89	-4.29	-50.49	57.47	48.21	9.26	6.205		
800.00	798.77	808.60	807.25	6.29	6.28	-139.11	2.81	-38.68	53.80	41.98	11.82	4.550		
893.11	890.34	901.99	899.25	7.27	6.49	-148.09	11.08	-24.91	51.38	38.09	13.29	3.865 CC		
900.00	897.08	908.84	906.00	7.34	6.50	-148.88	11.70	-23.89	51.40	38.00	13.40	3.835 ES		
1,000.00	994.31	1,008.10	1,003.75	8.26	6.70	-161.02	20.57	-9.12	55.35	40.69	14.66	3.776 SF		
1,100.00	1,090.18	1,106.78	1,100.94	9.09	6.92	-171.81	29.40	5.57	66.61	51.14	15.47	4.306		
1,200.00	1,184.47	1,204.65	1,197.32	9.57	7.15	-179.39	38.15	20.14	84.61	68.80	15.81	5.351		
1,300.00	1,278.20	1,302.19	1,293.38	9.75	7.39	-175.77	46.88	34.66	105.19	89.26	15.92	6.605		
1,400.00	1,371.93	1,399.74	1,389.44	9.96	7.64	-172.52	55.60	49.18	126.25	110.08	16.18	7.804		
1,500.00	1,465.65	1,497.29	1,485.51	10.18	7.91	-170.21	64.32	63.70	147.60	131.07	16.53	8.928		
1,600.00	1,559.38	1,594.83	1,581.57	10.41	8.18	-168.47	73.05	78.22	169.11	152.15	16.96	9.970		
1,700.00	1,653.11	1,692.38	1,677.64	10.66	8.46	-167.13	81.77	92.74	190.74	173.29	17.46	10.927		
1,800.00	1,746.84	1,789.92	1,773.70	10.92	8.75	-166.07	90.50	107.26	212.45	194.46	18.00	11.804		
1,900.00	1,840.57	1,887.47	1,869.77	11.20	9.04	-165.20	99.22	121.77	234.22	215.64	18.58	12.607		
2,000.00	1,934.29	1,985.02	1,965.83	11.50	9.35	-164.48	107.95	136.29	256.03	236.84	19.19	13.340		
2,100.00	2,028.02	2,082.56	2,061.89	11.82	9.66	-163.87	116.67	150.81	277.87	258.04	19.83	14.009		
2,200.00	2,122.04	2,179.95	2,157.80	12.22	9.97	-178.92	125.38	165.31	299.54	279.09	20.46	14.643		
2,300.00	2,216.17	2,275.27	2,251.67	13.21	10.29	-153.41	133.90	179.50	320.85	299.83	21.02	15.266		
2,400.00	2,307.74	2,365.64	2,340.67	14.08	10.60	-137.94	141.99	192.95	344.10	322.27	21.83	15.761		
2,500.00	2,393.97	2,448.32	2,422.09	14.67	10.88	-130.62	149.38	205.25	372.87	350.22	22.65	16.462		
2,600.00	2,472.22	2,520.78	2,493.46	15.20	11.14	-126.96	155.86	216.04	410.61	387.27	23.34	17.593		
2,700.00	2,540.13	2,580.84	2,552.60	15.79	11.36	-123.81	161.23	224.98	459.42	435.49	23.93	19.197		
2,800.00	2,595.70	2,626.73	2,597.80	16.52	11.52	-120.17	165.34	231.81	519.52	495.16	24.36	21.327		
2,900.00	2,645.70	2,666.38	2,636.84	17.39	11.67	-124.91	168.88	237.71	588.28	563.68	24.60	23.917		
3,000.00	2,695.64	2,773.49	2,742.78	18.42	12.24	-134.46	179.26	248.64	662.19	636.68	25.51	25.956		
3,100.00	2,737.65	3,413.22	3,256.02	19.64	15.08	-149.15	283.47	-59.69	698.71	671.42	27.29	25.603		
3,200.00	2,765.30	3,510.13	3,304.48	21.04	15.35	-147.23	301.20	-141.73	718.34	689.75	28.59	25.127		
3,300.00	2,777.75	3,838.93	3,414.02	22.59	19.86	-149.30	346.51	-444.37	742.31	710.34	31.96	23.225		
3,400.00	2,776.28	4,008.54	3,410.13	24.22	22.85	-149.07	352.92	-613.65	739.97	704.59	35.38	20.917		
3,500.00	2,772.52	4,108.52	3,404.77	25.92	24.76	-149.01	355.80	-713.45	738.59	701.25	37.33	19.785		
3,600.00	2,768.76	4,208.51	3,399.40	27.73	26.76	-148.94	358.68	-813.25	737.20	697.79	39.42	18.703		
3,700.00	2,765.00	4,308.50	3,394.04	29.64	28.82	-148.88	361.56	-913.06	735.82	694.21	41.61	17.685		
3,800.00	2,761.25	4,408.49	3,388.67	31.62	30.94	-148.81	364.45	-1,012.86	734.44	690.55	43.89	16.735		
3,900.00	2,757.49	4,508.47	3,383.31	33.67	33.11	-148.75	367.33	-1,112.66	733.06	686.82	46.24	15.852		
4,000.00	2,753.73	4,608.46	3,377.95	35.77	35.31	-148.69	370.21	-1,212.46	731.68	683.01	48.67	15.034		
4,100.00	2,749.97	4,708.45	3,372.58	37.91	37.54	-148.62	373.09	-1,312.26	730.30	679.15	51.15	14.276		
4,200.00	2,746.21	4,808.43	3,367.22	40.09	39.80	-148.56	375.98	-1,412.06	728.92	675.23	53.69	13.576		
4,300.00	2,742.46	4,908.42	3,361.85	42.30	42.08	-148.49	378.86	-1,511.86	727.55	671.27	56.28	12.928		
4,400.00	2,738.70	5,008.41	3,356.49	44.54	44.38	-148.42	381.74	-1,611.67	726.17	667.27	58.90	12.328		
4,500.00	2,734.94	5,108.39	3,351.13	46.80	46.70	-148.36	384.63	-1,711.47	724.80	663.23	61.57	11.772		
4,600.00	2,731.18	5,208.38	3,345.76	49.07	49.03	-148.29	387.51	-1,811.27	723.42	659.16	64.27	11.257		
4,700.00	2,727.42	5,308.37	3,340.40	51.37	51.37	-148.23	390.39	-1,911.07	722.05	655.06	66.99	10.778		
4,800.00	2,723.67	5,408.36	3,335.03	53.68	53.72	-148.16	393.27	-2,010.87	720.68	650.93	69.75	10.332		
4,900.00	2,719.91	5,508.34	3,329.67	56.00	56.08	-148.09	396.16	-2,110.67	719.31	646.77	72.54	9.916		
5,000.00	2,716.15	5,608.33	3,324.31	58.34	58.45	-148.02	399.04	-2,210.47	717.94	642.59	75.35	9.529		

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Offset Design Roche Pad - Roche 202H - Roche 202H for AC - Plan 1r0													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	2,712.39	5,708.32	3,318.94	60.68	60.82	-147.96	401.92	-2,310.28	716.57	638.39	78.18	9.166		
5,200.00	2,708.64	5,808.30	3,313.58	63.04	63.20	-147.89	404.80	-2,410.08	715.20	634.17	81.03	8.826		
5,300.00	2,704.88	5,908.29	3,308.21	65.40	65.59	-147.82	407.69	-2,509.88	713.83	629.93	83.90	8.508		
5,400.00	2,701.12	6,008.28	3,302.85	67.77	67.98	-147.75	410.57	-2,609.68	712.47	625.68	86.79	8.209		
5,500.00	2,697.36	6,108.27	3,297.49	70.14	70.38	-147.68	413.45	-2,709.48	711.10	621.40	89.70	7.927		
5,600.00	2,693.60	6,208.25	3,292.12	72.52	72.78	-147.62	416.33	-2,809.28	709.74	617.11	92.63	7.662		
5,700.00	2,689.85	6,308.24	3,286.76	74.91	75.18	-147.55	419.22	-2,909.09	708.38	612.80	95.57	7.412		
5,800.00	2,686.09	6,408.23	3,281.39	77.30	77.59	-147.48	422.10	-3,008.89	707.02	608.48	98.53	7.175		
5,900.00	2,682.33	6,508.21	3,276.03	79.69	80.00	-147.41	424.98	-3,108.69	705.66	604.15	101.51	6.952		
6,000.00	2,678.57	6,608.20	3,270.67	82.09	82.41	-147.34	427.87	-3,208.49	704.30	599.80	104.50	6.740		
6,100.00	2,674.81	6,708.19	3,265.30	84.49	84.82	-147.27	430.75	-3,308.29	702.94	595.44	107.50	6.539		
6,200.00	2,671.06	6,808.17	3,259.94	86.90	87.24	-147.20	433.63	-3,408.09	701.58	591.06	110.52	6.348		
6,300.00	2,667.30	6,908.16	3,254.57	89.30	89.66	-147.13	436.51	-3,507.89	700.22	586.68	113.55	6.167		
6,400.00	2,663.54	7,008.15	3,249.21	91.71	92.08	-147.06	439.40	-3,607.70	698.87	582.28	116.59	5.994		
6,500.00	2,659.78	7,108.14	3,243.85	94.13	94.50	-146.99	442.28	-3,707.50	697.51	577.87	119.65	5.830		
6,600.00	2,656.02	7,208.12	3,238.48	96.54	96.93	-146.91	445.16	-3,807.30	696.16	573.44	122.72	5.673		
6,700.00	2,652.27	7,308.11	3,233.12	98.96	99.36	-146.84	448.04	-3,907.10	694.81	569.01	125.80	5.523		
6,800.00	2,648.51	7,408.10	3,227.75	101.38	101.78	-146.77	450.93	-4,006.90	693.46	564.56	128.89	5.380		
6,900.00	2,644.75	7,508.08	3,222.39	103.80	104.21	-146.70	453.81	-4,106.70	692.11	560.11	132.00	5.243		
7,000.00	2,640.99	7,608.07	3,217.03	106.22	106.64	-146.62	456.69	-4,206.50	690.76	555.64	135.12	5.112		
7,100.00	2,637.23	7,708.06	3,211.66	108.65	109.07	-146.55	459.58	-4,306.31	689.41	551.16	138.25	4.987		
7,200.00	2,633.48	7,808.05	3,206.30	111.08	111.51	-146.48	462.46	-4,406.11	688.06	546.67	141.39	4.866		
7,300.00	2,629.72	7,908.03	3,200.93	113.50	113.94	-146.41	465.34	-4,505.91	686.72	542.17	144.55	4.751		
7,400.00	2,625.96	8,008.02	3,195.57	115.93	116.37	-146.33	468.22	-4,605.71	685.37	537.66	147.71	4.640		
7,500.00	2,622.20	8,108.01	3,190.21	118.36	118.81	-146.26	471.11	-4,705.51	684.03	533.15	150.89	4.533		
7,600.00	2,618.45	8,207.99	3,184.84	120.79	121.24	-146.18	473.99	-4,805.31	682.69	528.62	154.07	4.431		
7,700.00	2,614.69	8,307.98	3,179.48	123.23	123.68	-146.11	476.87	-4,905.11	681.35	524.08	157.27	4.332		
7,800.00	2,610.93	8,407.97	3,174.11	125.66	126.12	-146.03	479.75	-5,004.92	680.01	519.53	160.48	4.237		
7,900.00	2,607.17	8,507.96	3,168.75	128.10	128.56	-145.96	482.64	-5,104.72	678.67	514.97	163.70	4.146		
8,000.00	2,603.41	8,607.94	3,163.39	130.53	131.00	-145.88	485.52	-5,204.52	677.33	510.40	166.94	4.057		
8,100.00	2,599.66	8,707.93	3,158.02	132.97	133.44	-145.81	488.40	-5,304.32	676.00	505.82	170.18	3.972		
8,200.00	2,595.90	8,807.92	3,152.66	135.40	135.88	-145.73	491.28	-5,404.12	674.66	501.23	173.43	3.890		
8,300.00	2,592.14	8,907.90	3,147.29	137.84	138.32	-145.65	494.17	-5,503.92	673.33	496.63	176.70	3.811		
8,352.14	2,590.18	8,951.03	3,144.98	139.11	139.37	-145.62	495.41	-5,546.97	672.69	494.57	178.12	3.777		
8,383.55	2,589.00	8,951.03	3,144.98	139.88	139.37	-145.62	495.41	-5,546.97	673.43	495.49	177.94	3.785		

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

Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Reference Depths are relative to 3418+20 @ 3438.00usft (GL+KB)

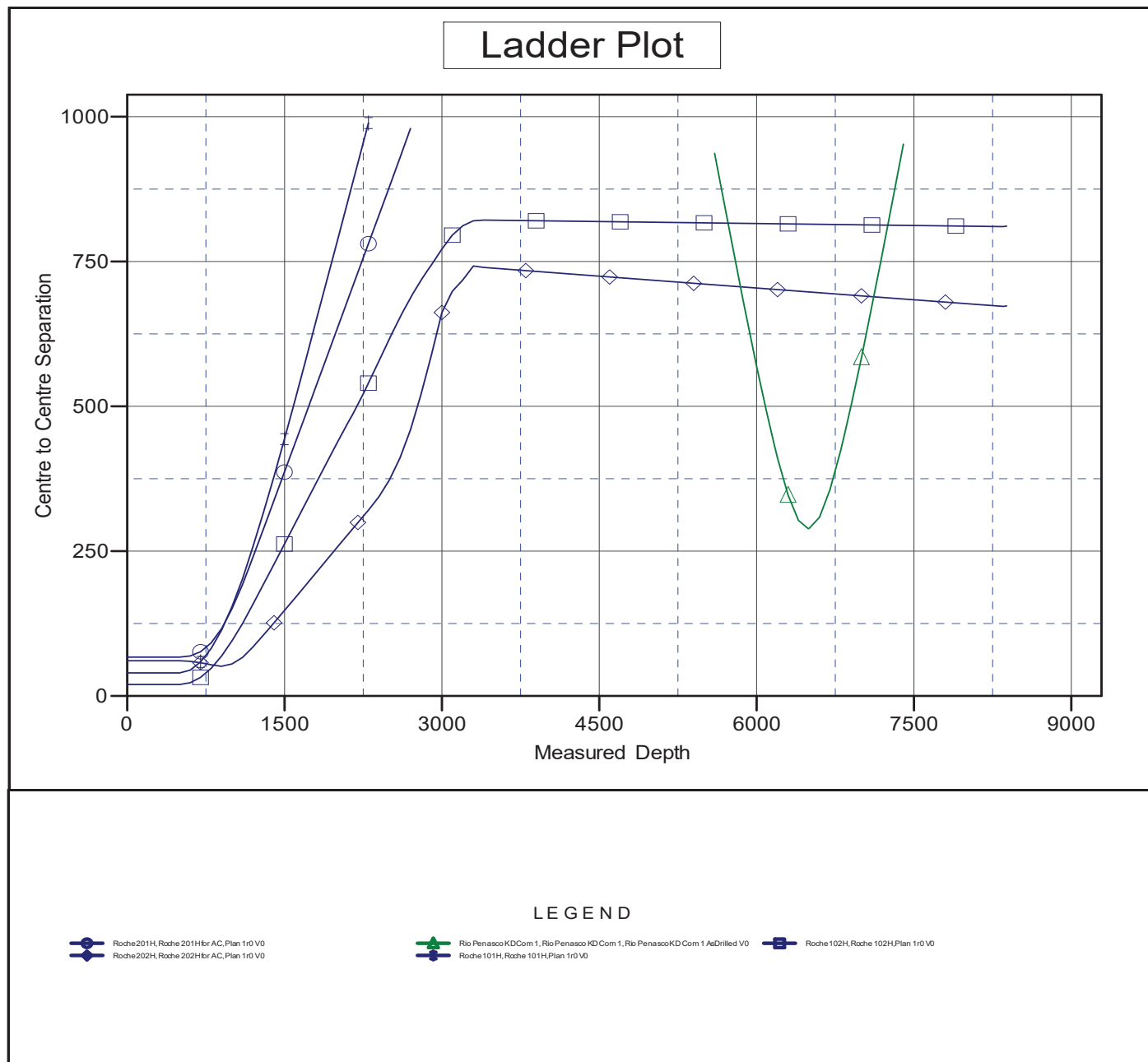
Offset Depths are relative to Offset Datum

Central Meridian is -104.3333333

Coordinates are relative to: Roche 103H

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

Grid Convergence at Surface is: -0.06°



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

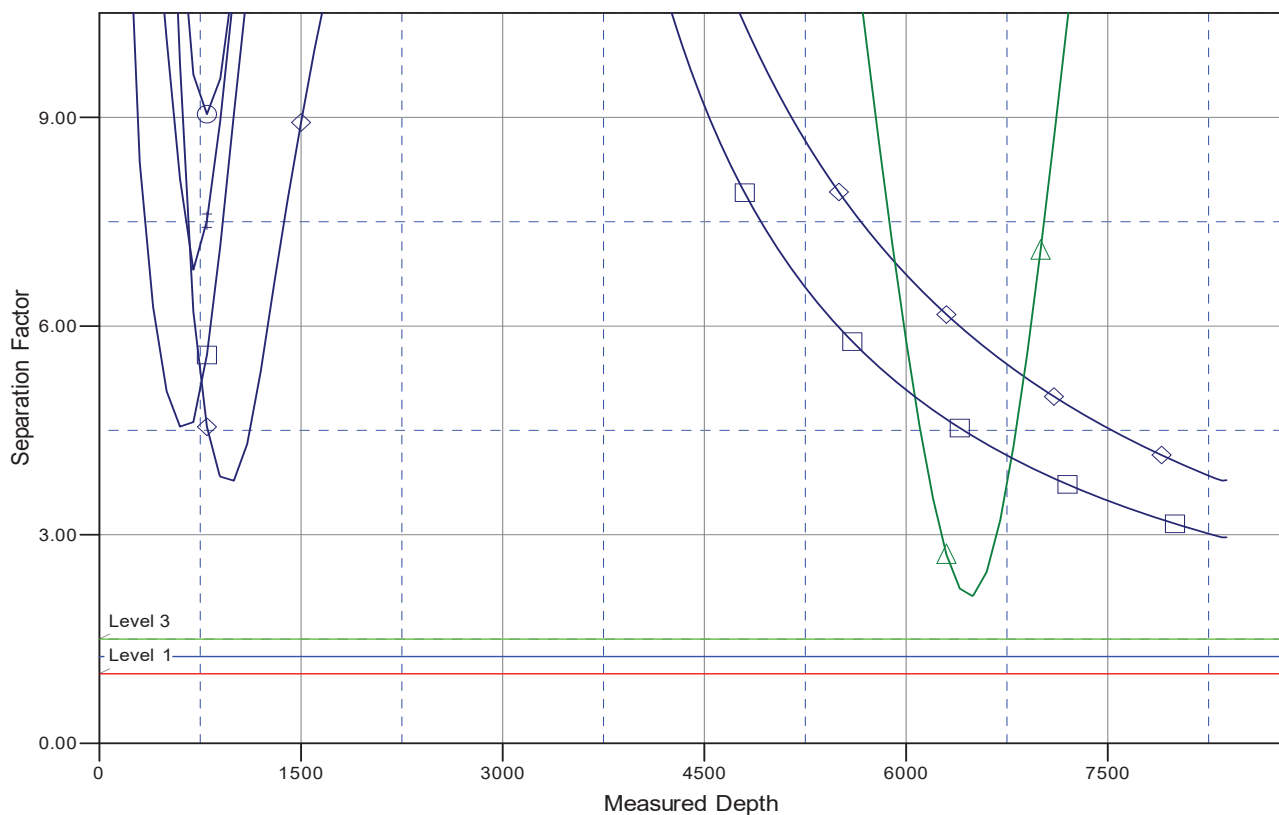
Anticollision Report

Company:	SILVERBACK EXPLORATION	Local Co-ordinate Reference:	Well Roche 103H
Project:	EDDY COUNTY, NM (NAD83) NMEZ GRID	TVD Reference:	3418+20 @ 3438.00usft (GL+KB)
Reference Site:	Roche Pad	MD Reference:	3418+20 @ 3438.00usft (GL+KB)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Roche 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Roche 103H	Database:	PRIME_EDM
Reference Design:	Plan 1r0	Offset TVD Reference:	Reference Datum

Reference Depths are relative to 3418+20 @ 3438.00usft (GL+KB)
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.3333333

Coordinates are relative to: Roche 103H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: -0.06°

Separation Factor Plot



LEGEND

Roche 201H, Roche 201Hbr AC, Plan 1r0 V0
 Roche 202H, Roche 202Hbr AC, Plan 1r0 V0

Rio Penasco KD Com 1, Rio Penasco KD Com 1, Rio Penasco KD Com 1 As Drilled V0
 Roche 101H, Roche 101H, Plan 1r0 V0

Roche 102H, Roche 102H, Plan 1r0 V0