**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 354188

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

| 1. Operator Name and Address | 2. OGRID Number |
|---|---|
| Silverback Operating II, LLC<br>19707 IH10 West, Suite 201<br>San Antonio, TX 78256 | 330968 |
| | 3. API Number: 30-015-54391 |

| 4. Property Code | 5. Property Name | 6. Well No. |
|---|---|---|
| 335016 | Roche | 101H |

**7. Surface Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet From | N/S Line | Feet From | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 1 | 19S | 25E | | 165 | S | 427 | W | Eddy |

**8. Proposed Bottom Hole Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet From | N/S Line | Feet From | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|
| D | 11 | 19S | 25E | D | 680 | N | 100 | W | Eddy |

**9. Pool Information**

| | |
|---|---|
| PENASCO DRAW;SA-YESO (ASSOC) | 50270 |

**Additional Well Information**

| 11. Work Type | 12. Well Type | 13. Cable/Rotary | 14. Lease Type | 15. Ground Level Elevation |
|---|---|---|---|---|
| New Well | OIL | | Private | 3415 |
| **16. Multiple** | **17. Proposed Depth** | **18. Formation** | **19. Contractor** | **20. Spud Date** |
| N | 8596 | Yeso | | 2/7/2024 |
| 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 | 1271 | 282 | 0 |
| Prod | 8.75 | 7 | 32 | 3590 | 190 | 0 |
| Prod | 8.75 | 5.5 | 20 | 8596 | 1552 | 2365 |

**Casing/Cement Program: Additional Comments**

**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.**

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 |
| Date: | 11/16/2023 | Phone: 303-513-0990 | Conditions of Approval Attached |

Expiration Date: 11/29/2025

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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 | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-015 -54391 | 50270 | Penasco Draw, SA-YESO |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 335016 | ROCHE | 101H |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 330968 | SILVERBACK OPERATING II, LLC | 3,415' |

## [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 | | 165' | 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 |
|---|---|---|---|---|---|---|---|---|---|
| D | 11 | 19-S | 25-E | | 680' | NORTH | 100' | WEST | EDDY |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| 320 | Infill | | |

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.

**SURFACE HOLE LOCATION (SHL)**
NAD 83, NM EAST ZONE, U.S. FOOT
X: 506767.19
Y: 612170.53
LAT.: N32.682851
LONG.: W104.445695

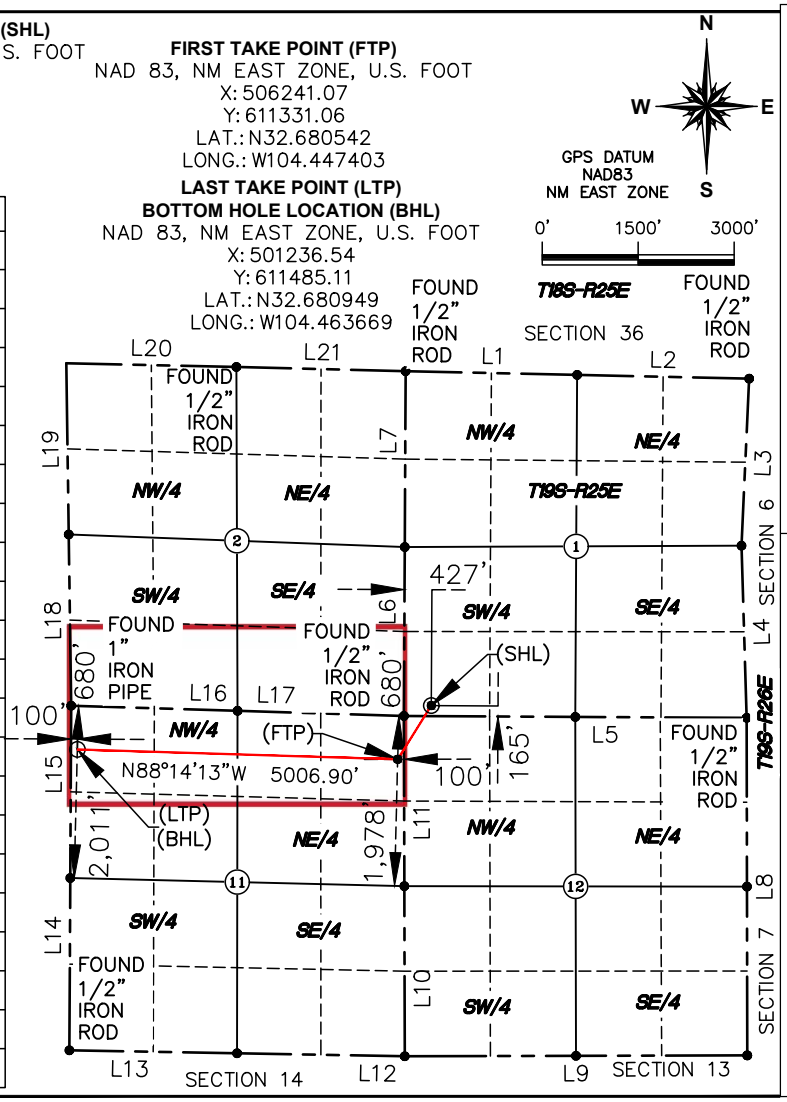
**FIRST TAKE POINT (FTP)**
NAD 83, NM EAST ZONE, U.S. FOOT
X: 506241.07
Y: 611331.06
LAT.: N32.680542
LONG.: W104.447403

**LAST TAKE POINT (LTP)**
**BOTTOM HOLE LOCATION (BHL)**
NAD 83, NM EAST ZONE, U.S. FOOT
X: 501236.54
Y: 611485.11
LAT.: N32.680949
LONG.: W104.463669

GPS DATUM
NAD83
NM EAST ZONE

0' 1500' 3000'

| LINE TABLE | | |
|---|---|---|
| LINE # | BEARING | LENGTH |
| L1 | S88°45'39"E | 2,680' |
| L2 | S88°45'16"E | 2,688' |
| L3 | S02°37'33"W | 2,613' |
| L4 | S01°43'23"E | 2,691' |
| L5 | N89°40'55"W | 5,355' |
| L6 | N00°17'00"E | 2,639' |
| L7 | N00°17'09"E | 2,748' |
| L8 | S00°06'06"E | 5,273' |
| L9 | S89°51'13"W | 5,351' |
| L10 | N00°08'24"W | 2,658' |
| L11 | N00°08'24"W | 2,658' |
| L12 | N88°58'36"W | 2,621' |
| L13 | N88°58'59"W | 2,620' |
| L14 | N00°17'39"E | 2,692' |
| L15 | N00°17'39"E | 2,692' |
| L16 | S88°14'28"E | 2,601' |
| L17 | S88°13'57"E | 2,601' |
| L18 | N00°48'52"W | 2,676' |
| L19 | N00°48'52"W | 2,676' |
| L20 | S88°44'49"E | 2,658' |
| L21 | S88°34'25"E | 2,646' |




## [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:

MATTHEW C. BISSETT
NEW MEXICO
20450
PROFESSIONAL SURVEYOR

20450
Certificate Number

**District I**
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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 354188

## PERMIT CONDITIONS OF APPROVAL

| Operator Name and Address: | API Number: |
|---|---|
| Silverback Operating II, LLC [330968]<br>19707 IH10 West, Suite 201<br>San Antonio, TX 78256 | 30-015-54391 |
| | Well: Roche #101H |

| 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.

# Section 2 – Enhanced Plan

**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

| Well | API | Anticipated Average Natural Gas Rate MCF/D | Anticipated Volume of Natural Gas for the First Year MCF |
|---|---|---|---|
| See Attached | | | |
| | | | |

**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 |
|---|---|---|---|---|
| See Attached | | | | |
| | | | | |

**XI. Map.** ☒ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☒ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☒ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☒ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

## 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: Fatma Abdallah |
| Printed Name: Fatma Abdallah |
| Title: Regulatory Manager |
| E-mail Address: fabdallah@silverbackexp.com |
| Date: 11/16/23 |
| Phone: 210-585-3316 |

| **OIL CONSERVATION DIVISION**<br>**(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

| Well Name | API | ULSTR | Footages | Anticipated Oil BBL/D | Anticipated Gas MCF/D | Anticipated Produced Water BBL/D |
|---|---|---|---|---|---|---|
| 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

| Well Name | API | Spud date | TD Reached Date | Completion Commencement Date | Initial Flow Back Date | First Production Date |
|---|---|---|---|---|---|---|
| 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

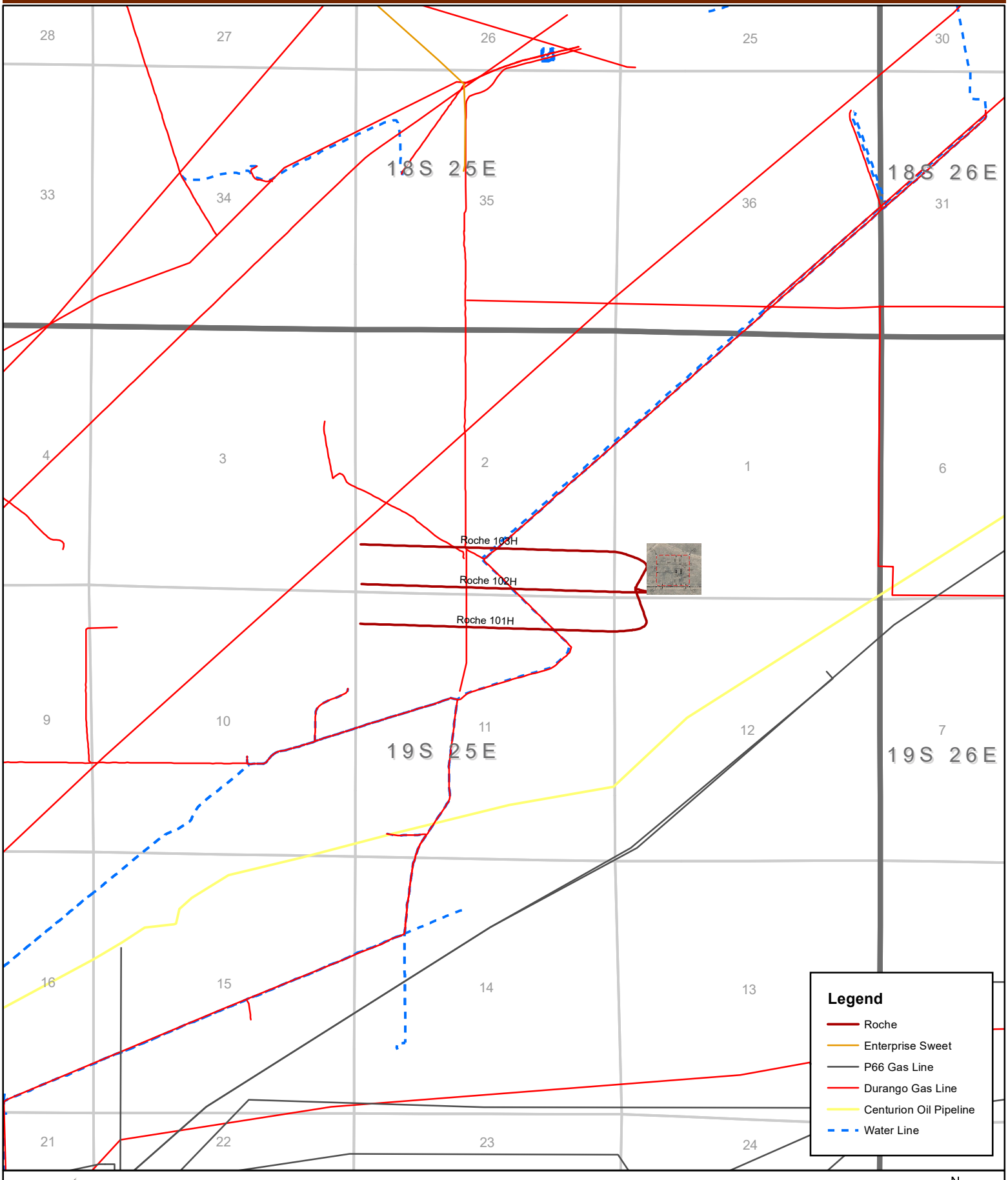
IX. Anticipated Natural Gas Production

| 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 | 170000 |
| | | | | |

# 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: |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

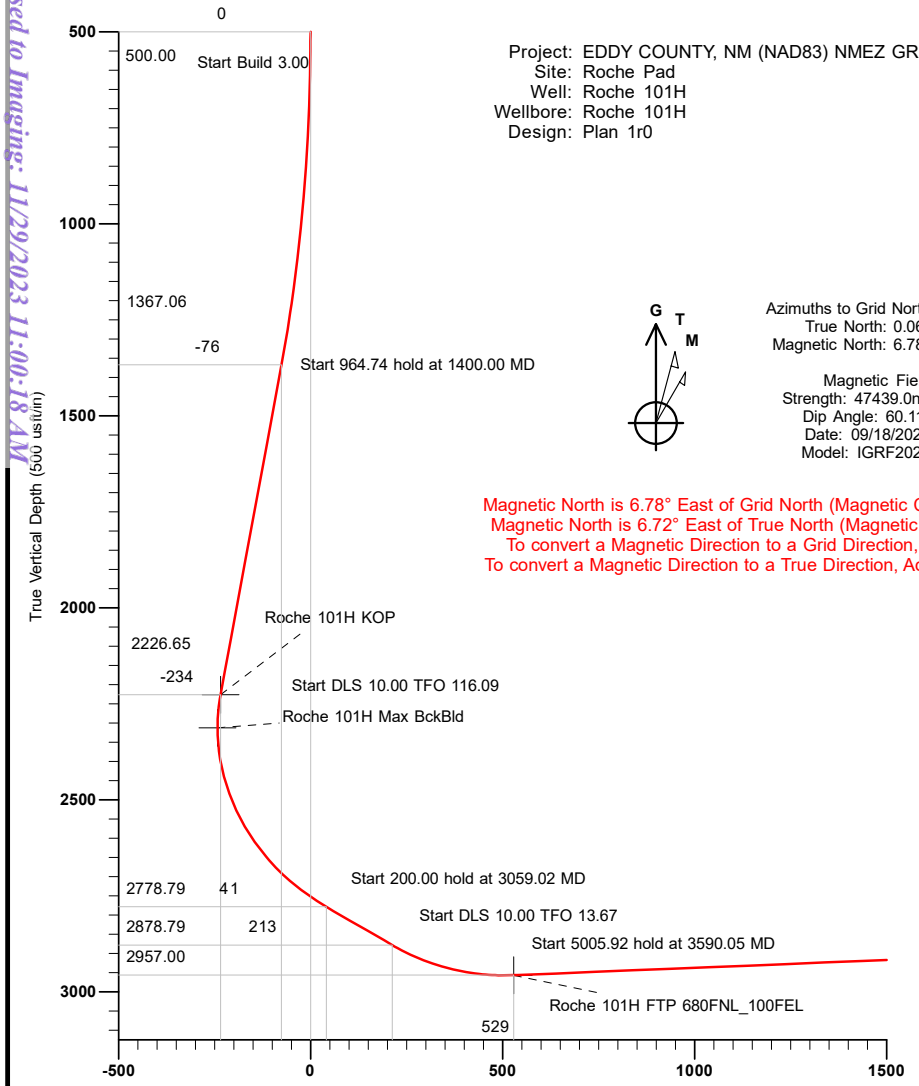
# SILVERBACK EXPLORATION

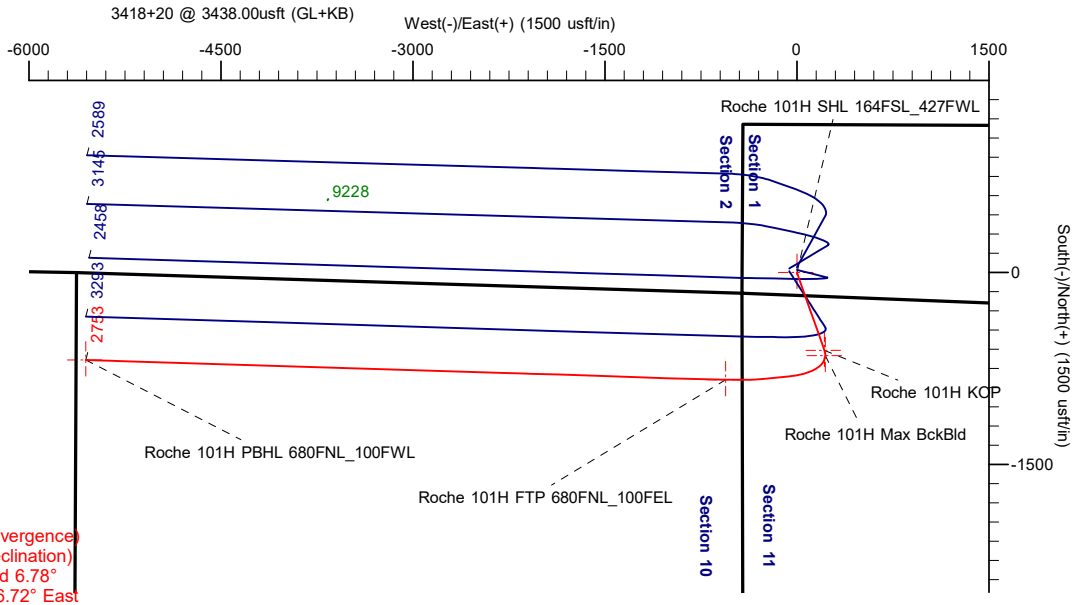
Project: EDDY COUNTY, NM (NAD83) NMEZ GRID
Site: Roche Pad
Well: Roche 101H
Wellbore: Roche 101H
Design: Plan 1r0

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



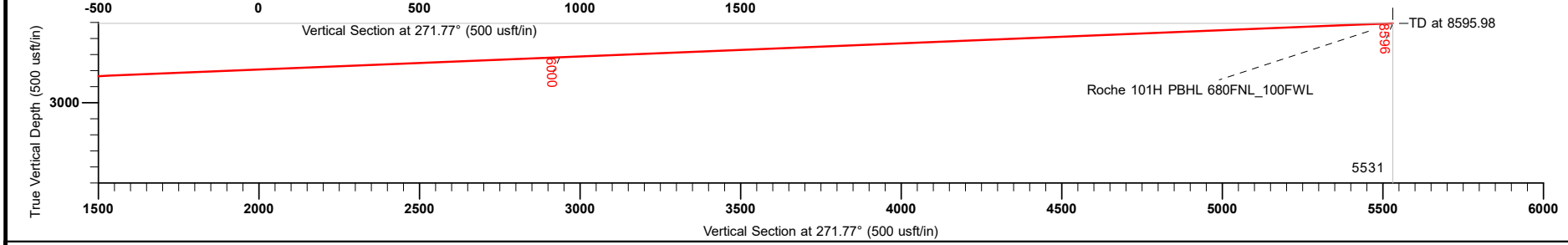




DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Shape |
|---|---|---|---|---|---|---|
| Roche 101H SHL 164FSL_427FWL | 0.00 | 0.00 | 0.00 | 612170.50 | 506767.20 | Point |
| Roche 101H KOP | 2226.65 | -609.08 | 215.69 | 611561.42 | 506982.89 | Point |
| Roche 101H Max BckBld | 2312.71 | -649.11 | 222.34 | 611521.39 | 506989.54 | Point |
| Roche 101H PBHL 680FNL_100FWL | 2753.00 | -684.60 | -5554.80 | 611485.90 | 501212.40 | Point |
| Roche 101H FTP 680FNL_100FEL | 2957.00 | -838.70 | -555.50 | 611331.80 | 506211.70 | Point |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | 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 | 1400.00 | 27.00 | 160.50 | 1367.06 | -196.22 | 69.49 | 3.00 | 160.50 | -75.51 | Start 964.74 hold at 1400.00 MD |
| 4 | 2364.74 | 27.00 | 160.50 | 2226.65 | -609.08 | 215.69 | 0.00 | 0.00 | -234.40 | Start DLS 10.00 TFO 116.09 |
| 5 | 3059.02 | 60.00 | 264.35 | 2778.79 | -812.80 | -66.25 | 10.00 | 116.09 | 41.11 | Start 200.00 hold at 3059.02 MD |
| 6 | 3259.02 | 60.00 | 264.35 | 2878.79 | -829.85 | -238.61 | 0.00 | 0.00 | 212.87 | Start DLS 10.00 TFO 13.67 |
| 7 | 3590.05 | 92.34 | 271.77 | 2957.00 | -839.11 | -555.42 | 10.00 | 13.67 | 529.24 | Start 5005.92 hold at 3590.05 MD |
| 8 | 8595.98 | 92.34 | 271.77 | 2753.00 | -684.60 | -5554.80 | 0.00 | 0.00 | 5531.00 | TD at 8595.98 |




Plan: Plan 1r0 (Roche 101H/Roche 101H)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
17:43, September 18 2023

PRIME SOLUTIONS SERVICES

# SILVERBACK EXPLORATION

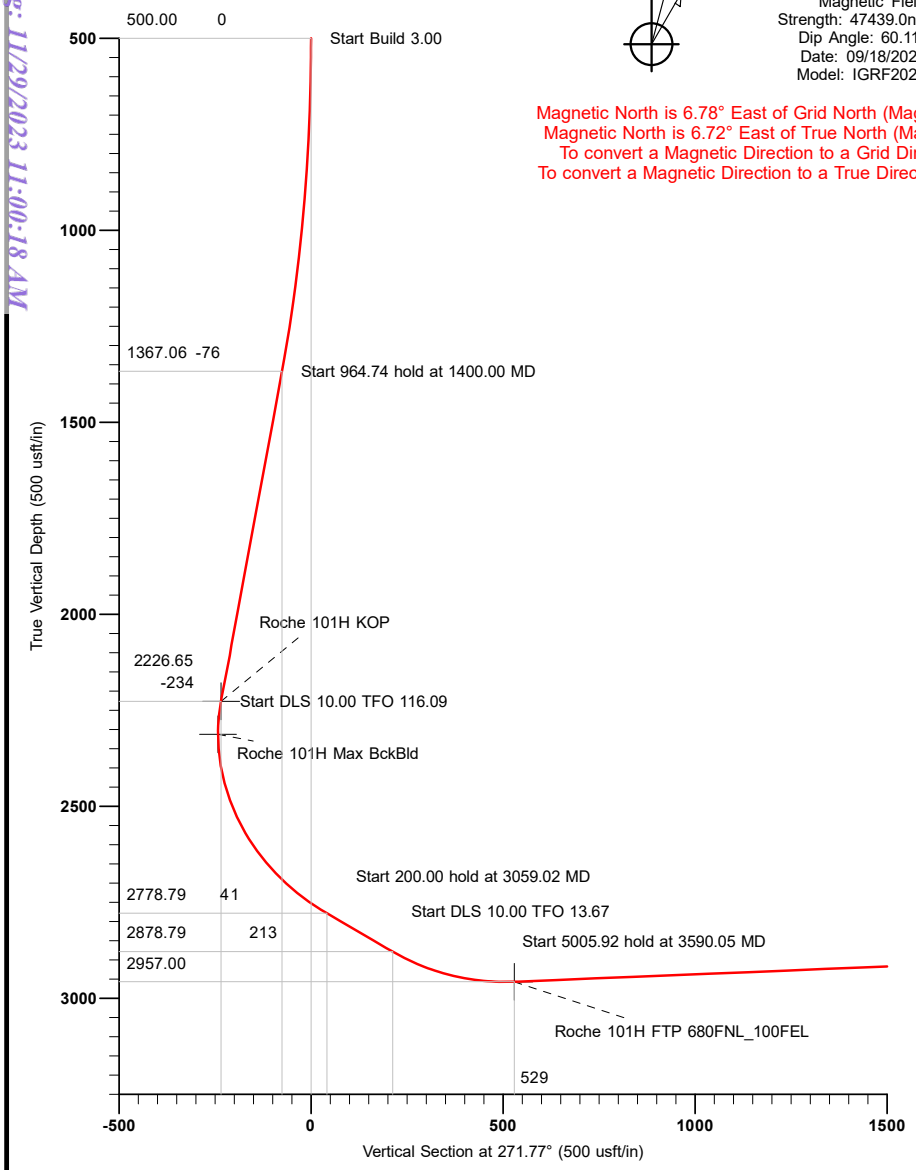
Project: EDDY COUNTY, NM (NAD83) NMEZ GRID
Site: Roche Pad
Well: Roche 101H
Wellbore: Roche 101H
Design: Plan 1r0

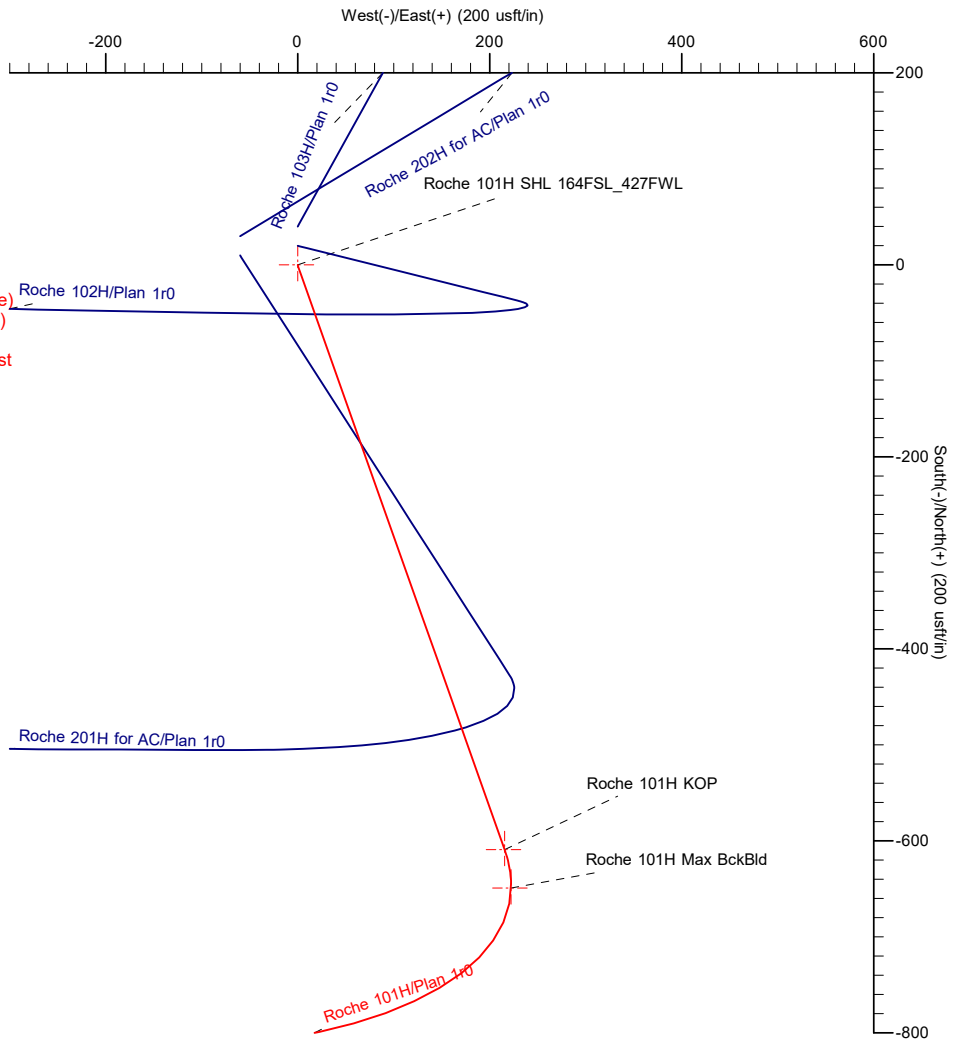
3418+20 @ 3438.00usft (GL+KB)

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 101H SHL 164FSL_427FWL | 0.00 | 0.00 | 0.00 | 612170.50 | 506767.20 | Point |
| Roche 101H KOP | 2226.65 | -609.08 | 215.69 | 611561.42 | 506982.89 | Point |
| Roche 101H Max BckBld | 2312.71 | -649.11 | 222.34 | 611521.39 | 506989.54 | Point |
| Roche 101H PBHL 680FNL_100FWL | 2753.00 | -684.60 | -5554.80 | 611485.90 | 501212.40 | Point |
| Roche 101H FTP 680FNL_100FEL | 2957.00 | -838.70 | -555.50 | 611331.80 | 506211.70 | Point |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | 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 | 1400.00 | 27.00 | 160.50 | 1367.06 | -196.22 | 69.49 | 3.00 | 160.50 | -75.51 | Start 964.74 hold at 1400.00 MD |
| 4 | 2364.74 | 27.00 | 160.50 | 2226.65 | -609.08 | 215.69 | 0.00 | 0.00 | -234.40 | Start DLS 10.00 TFO 116.09 |
| 5 | 3059.02 | 60.00 | 264.35 | 2778.79 | -812.80 | -66.25 | 10.00 | 116.09 | 41.11 | Start 200.00 hold at 3059.02 MD |
| 6 | 3259.02 | 60.00 | 264.35 | 2878.79 | -829.85 | -238.61 | 0.00 | 0.00 | 212.87 | Start DLS 10.00 TFO 13.67 |
| 7 | 3590.05 | 92.34 | 271.77 | 2957.00 | -839.11 | -555.42 | 10.00 | 13.67 | 529.24 | Start 5005.92 hold at 3590.05 MD |
| 8 | 8595.98 | 92.34 | 271.77 | 2753.00 | -684.60 | -5554.80 | 0.00 | 0.00 | 5531.00 | TD at 8595.98 |

Plan: Plan 1r0 (Roche 101H/Roche 101H)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
17:48, September 18 2023

**PRIME SOLUTIONS SERVICES**

# SILVERBACK EXPLORATION

**EDDY COUNTY, NM (NAD83) NMEZ GRID**
**Roche Pad**
**Roche 101H**

**Roche 101H**

**Plan: Plan 1r0**

# Standard Planning Report

**18 September, 2023**

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | PRIME_EDM | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Roche 101H | | |
| **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 101H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | -40.00 usft | **Northing:** | 612,170.50 usft | **Latitude:** | 32.6828506 |
| | **+E/-W** | 0.00 usft | **Easting:** | 506,767.20 usft | **Longitude:** | -104.4456954 |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,418.00 usft |

**Wellbore** Roche 101H

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2020 | 09/18/23 | 6.72 | 60.11 | 47,438.95834047 |

**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 | 271.77 |

**Plan Survey Tool Program** **Date** 09/18/23

| | Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
|---|---|---|---|---|---|
| 1 | 0.00 | 8,595.98 | Plan 1r0 (Roche 101H) | MWD<br>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 | |
| 1,400.00 | 27.00 | 160.50 | 1,367.06 | -196.22 | 69.49 | 3.00 | 3.00 | 0.00 | 160.50 | |
| 2,364.74 | 27.00 | 160.50 | 2,226.65 | -609.08 | 215.69 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,059.02 | 60.00 | 264.35 | 2,778.80 | -812.80 | -66.25 | 10.00 | 4.75 | 14.96 | 116.09 | |
| 3,259.02 | 60.00 | 264.35 | 2,878.80 | -829.85 | -238.61 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,590.05 | 92.34 | 271.77 | 2,957.00 | -839.11 | -555.42 | 10.00 | 9.77 | 2.24 | 13.67 | |
| 8,595.98 | 92.34 | 271.77 | 2,753.00 | -684.60 | -5,554.80 | 0.00 | 0.00 | 0.00 | 0.00 | Roche 101H PBHL 68 |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | PRIME_EDM | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Roche 101H | | |
| **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 | 160.50 | 599.95 | -2.47 | 0.87 | -0.95 | 3.00 | 3.00 | 0.00 |
| 700.00 | 6.00 | 160.50 | 699.63 | -9.86 | 3.49 | -3.80 | 3.00 | 3.00 | 0.00 |
| 800.00 | 9.00 | 160.50 | 798.77 | -22.16 | 7.85 | -8.53 | 3.00 | 3.00 | 0.00 |
| 900.00 | 12.00 | 160.50 | 897.08 | -39.34 | 13.93 | -15.14 | 3.00 | 3.00 | 0.00 |
| 1,000.00 | 15.00 | 160.50 | 994.31 | -61.34 | 21.72 | -23.61 | 3.00 | 3.00 | 0.00 |
| 1,100.00 | 18.00 | 160.50 | 1,090.18 | -88.11 | 31.20 | -33.91 | 3.00 | 3.00 | 0.00 |
| 1,200.00 | 21.00 | 160.50 | 1,184.43 | -119.58 | 42.34 | -46.02 | 3.00 | 3.00 | 0.00 |
| 1,300.00 | 24.00 | 160.50 | 1,276.81 | -155.65 | 55.12 | -59.90 | 3.00 | 3.00 | 0.00 |
| 1,400.00 | 27.00 | 160.50 | 1,367.06 | -196.22 | 69.49 | -75.51 | 3.00 | 3.00 | 0.00 |
| **Start 964.74 hold at 1400.00 MD** | | | | | | | | | |
| 1,500.00 | 27.00 | 160.50 | 1,456.16 | -239.02 | 84.64 | -91.98 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 27.00 | 160.50 | 1,545.26 | -281.81 | 99.80 | -108.45 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 27.00 | 160.50 | 1,634.36 | -324.61 | 114.95 | -124.92 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 27.00 | 160.50 | 1,723.46 | -367.40 | 130.10 | -141.39 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 27.00 | 160.50 | 1,812.56 | -410.20 | 145.26 | -157.86 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 27.00 | 160.50 | 1,901.66 | -452.99 | 160.41 | -174.33 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 27.00 | 160.50 | 1,990.76 | -495.79 | 175.57 | -190.80 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 27.00 | 160.50 | 2,079.86 | -538.58 | 190.72 | -207.27 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 27.00 | 160.50 | 2,168.96 | -581.38 | 205.88 | -223.74 | 0.00 | 0.00 | 0.00 |
| 2,364.74 | 27.00 | 160.50 | 2,226.65 | -609.08 | 215.69 | -234.40 | 0.00 | 0.00 | 0.00 |
| **Start DLS 10.00 TFO 116.09** | | | | | | | | | |
| 2,400.00 | 25.63 | 167.84 | 2,258.26 | -624.09 | 219.97 | -239.14 | 10.00 | -3.88 | 20.81 |
| 2,500.00 | 24.08 | 191.49 | 2,349.22 | -665.33 | 220.46 | -240.91 | 10.00 | -1.55 | 23.65 |
| 2,600.00 | 26.28 | 214.56 | 2,439.93 | -703.65 | 203.80 | -225.43 | 10.00 | 2.20 | 23.08 |
| 2,700.00 | 31.46 | 232.41 | 2,527.64 | -737.88 | 170.48 | -193.19 | 10.00 | 5.18 | 17.84 |
| 2,800.00 | 38.42 | 245.02 | 2,609.68 | -766.99 | 121.52 | -145.15 | 10.00 | 6.96 | 12.61 |
| 2,900.00 | 46.35 | 254.08 | 2,683.55 | -790.09 | 58.40 | -82.78 | 10.00 | 7.94 | 9.06 |
| 3,000.00 | 54.84 | 260.96 | 2,747.02 | -806.48 | -16.95 | -7.97 | 10.00 | 8.48 | 6.87 |
| 3,059.02 | 60.00 | 264.35 | 2,778.80 | -812.80 | -66.25 | 41.11 | 10.00 | 8.75 | 5.75 |
| **Start 200.00 hold at 3059.02 MD** | | | | | | | | | |
| 3,100.00 | 60.00 | 264.35 | 2,799.29 | -816.29 | -101.57 | 76.31 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 60.00 | 264.35 | 2,849.29 | -824.82 | -187.75 | 162.18 | 0.00 | 0.00 | 0.00 |
| 3,259.02 | 60.00 | 264.35 | 2,878.80 | -829.85 | -238.61 | 212.87 | 0.00 | 0.00 | 0.00 |
| **Start DLS 10.00 TFO 13.67** | | | | | | | | | |
| 3,300.00 | 63.99 | 265.43 | 2,898.04 | -833.07 | -274.64 | 248.78 | 10.00 | 9.73 | 2.63 |
| 3,400.00 | 73.74 | 267.79 | 2,934.05 | -838.52 | -367.64 | 341.56 | 10.00 | 9.76 | 2.36 |
| 3,500.00 | 83.52 | 269.92 | 2,953.74 | -840.44 | -465.53 | 439.35 | 10.00 | 9.78 | 2.13 |
| 3,590.05 | 92.34 | 271.77 | 2,957.00 | -839.11 | -555.42 | 529.24 | 10.00 | 9.79 | 2.05 |
| **Start 5005.92 hold at 3590.05 MD** | | | | | | | | | |
| 3,600.00 | 92.34 | 271.77 | 2,956.59 | -838.81 | -565.36 | 539.18 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 92.34 | 271.77 | 2,952.52 | -835.72 | -665.22 | 639.09 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 92.34 | 271.77 | 2,948.44 | -832.63 | -765.09 | 739.01 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 92.34 | 271.77 | 2,944.37 | -829.55 | -864.96 | 838.93 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 92.34 | 271.77 | 2,940.29 | -826.46 | -964.83 | 938.84 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 92.34 | 271.77 | 2,936.22 | -823.37 | -1,064.70 | 1,038.76 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 92.34 | 271.77 | 2,932.14 | -820.29 | -1,164.57 | 1,138.68 | 0.00 | 0.00 | 0.00 |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | PRIME_EDM | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Roche 101H | | |
| **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) |
|---|---|---|---|---|---|---|---|---|---|
| 4,300.00 | 92.34 | 271.77 | 2,928.07 | -817.20 | -1,264.44 | 1,238.60 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 92.34 | 271.77 | 2,923.99 | -814.11 | -1,364.31 | 1,338.51 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 92.34 | 271.77 | 2,919.92 | -811.03 | -1,464.18 | 1,438.43 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 92.34 | 271.77 | 2,915.84 | -807.94 | -1,564.05 | 1,538.35 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 92.34 | 271.77 | 2,911.77 | -804.85 | -1,663.92 | 1,638.26 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 92.34 | 271.77 | 2,907.69 | -801.77 | -1,763.79 | 1,738.18 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 92.34 | 271.77 | 2,903.62 | -798.68 | -1,863.66 | 1,838.10 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 92.34 | 271.77 | 2,899.54 | -795.59 | -1,963.52 | 1,938.01 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 92.34 | 271.77 | 2,895.46 | -792.51 | -2,063.39 | 2,037.93 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 92.34 | 271.77 | 2,891.39 | -789.42 | -2,163.26 | 2,137.85 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 92.34 | 271.77 | 2,887.31 | -786.33 | -2,263.13 | 2,237.76 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 92.34 | 271.77 | 2,883.24 | -783.25 | -2,363.00 | 2,337.68 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 92.34 | 271.77 | 2,879.16 | -780.16 | -2,462.87 | 2,437.60 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 92.34 | 271.77 | 2,875.09 | -777.07 | -2,562.74 | 2,537.52 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 92.34 | 271.77 | 2,871.01 | -773.99 | -2,662.61 | 2,637.43 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 92.34 | 271.77 | 2,866.94 | -770.90 | -2,762.48 | 2,737.35 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 92.34 | 271.77 | 2,862.86 | -767.81 | -2,862.35 | 2,837.27 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 92.34 | 271.77 | 2,858.79 | -764.73 | -2,962.22 | 2,937.18 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 92.34 | 271.77 | 2,854.71 | -761.64 | -3,062.09 | 3,037.10 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 92.34 | 271.77 | 2,850.64 | -758.55 | -3,161.96 | 3,137.02 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 92.34 | 271.77 | 2,846.56 | -755.47 | -3,261.82 | 3,236.93 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 92.34 | 271.77 | 2,842.49 | -752.38 | -3,361.69 | 3,336.85 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 92.34 | 271.77 | 2,838.41 | -749.29 | -3,461.56 | 3,436.77 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 92.34 | 271.77 | 2,834.34 | -746.21 | -3,561.43 | 3,536.69 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 92.34 | 271.77 | 2,830.26 | -743.12 | -3,661.30 | 3,636.60 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 92.34 | 271.77 | 2,826.19 | -740.03 | -3,761.17 | 3,736.52 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 92.34 | 271.77 | 2,822.11 | -736.95 | -3,861.04 | 3,836.44 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 92.34 | 271.77 | 2,818.04 | -733.86 | -3,960.91 | 3,936.35 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 92.34 | 271.77 | 2,813.96 | -730.77 | -4,060.78 | 4,036.27 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 92.34 | 271.77 | 2,809.89 | -727.69 | -4,160.65 | 4,136.19 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 92.34 | 271.77 | 2,805.81 | -724.60 | -4,260.52 | 4,236.10 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 92.34 | 271.77 | 2,801.74 | -721.51 | -4,360.39 | 4,336.02 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 92.34 | 271.77 | 2,797.66 | -718.43 | -4,460.26 | 4,435.94 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 92.34 | 271.77 | 2,793.59 | -715.34 | -4,560.13 | 4,535.85 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 92.34 | 271.77 | 2,789.51 | -712.26 | -4,659.99 | 4,635.77 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 92.34 | 271.77 | 2,785.44 | -709.17 | -4,759.86 | 4,735.69 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 92.34 | 271.77 | 2,781.36 | -706.08 | -4,859.73 | 4,835.61 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 92.34 | 271.77 | 2,777.29 | -703.00 | -4,959.60 | 4,935.52 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 92.34 | 271.77 | 2,773.21 | -699.91 | -5,059.47 | 5,035.44 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 92.34 | 271.77 | 2,769.14 | -696.82 | -5,159.34 | 5,135.36 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 92.34 | 271.77 | 2,765.06 | -693.74 | -5,259.21 | 5,235.27 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 92.34 | 271.77 | 2,760.99 | -690.65 | -5,359.08 | 5,335.19 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 92.34 | 271.77 | 2,756.91 | -687.56 | -5,458.95 | 5,435.11 | 0.00 | 0.00 | 0.00 |
| 8,595.98 | 92.34 | 271.77 | 2,753.00 | -684.60 | -5,554.80 | 5,531.00 | 0.00 | 0.00 | 0.00 |
| **TD at 8595.98** | | | | | | | | | |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | PRIME_EDM | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Roche 101H | | |
| **Design:** | Plan 1r0 | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| Roche 101H SHL 164FS<br>- plan hits target center<br>- Point | 0.00 | 360.00 | 0.00 | 0.00 | 0.00 | 612,170.50 | 506,767.20 | 32.6828506 | -104.4456954 |
| Roche 101H KOP<br>- plan hits target center<br>- Point | 0.00 | 360.00 | 2,226.65 | -609.08 | 215.69 | 611,561.42 | 506,982.89 | 32.6811770 | -104.4449923 |
| Roche 101H Max BckBl<br>- plan misses target center by 0.01usft at 2460.01usft MD (2312.72 TVD, -649.12 N, 222.34 E)<br>- Point | 0.00 | 360.00 | 2,312.71 | -649.11 | 222.34 | 611,521.39 | 506,989.54 | 32.6810670 | -104.4449705 |
| Roche 101H PBHL 680F<br>- plan hits target center<br>- Point | 0.00 | 360.00 | 2,753.00 | -684.60 | -5,554.80 | 611,485.90 | 501,212.40 | 32.6809513 | -104.4637471 |
| Roche 101H FTP 680FN<br>- plan misses target center by 0.41usft at 3590.14usft MD (2956.99 TVD, -839.11 N, -555.51 E)<br>- Point | 0.00 | 360.00 | 2,957.00 | -838.70 | -555.50 | 611,331.80 | 506,211.70 | 32.6805436 | -104.4474980 |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 500.00 | 500.00 | 0.00 | 0.00 | Start Build 3.00 |
| 1,400.00 | 1,367.06 | -196.22 | 69.49 | Start 964.74 hold at 1400.00 MD |
| 2,364.74 | 2,226.65 | -609.08 | 215.69 | Start DLS 10.00 TFO 116.09 |
| 3,059.02 | 2,778.80 | -812.80 | -66.25 | Start 200.00 hold at 3059.02 MD |
| 3,259.02 | 2,878.80 | -829.85 | -238.61 | Start DLS 10.00 TFO 13.67 |
| 3,590.05 | 2,957.00 | -839.11 | -555.42 | Start 5005.92 hold at 3590.05 MD |
| 8,595.98 | 2,753.00 | -684.60 | -5,554.80 | TD at 8595.98 |

# SILVERBACK EXPLORATION

**EDDY COUNTY, NM (NAD83) NMEZ GRID**
**Roche Pad**
**Roche 101H**

**Roche 101H**
**Plan 1r0**

# Anticollision Report

**18 September, 2023**

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 | 8,595.98 | Plan 1r0 (Roche 101H) | MWD | OWSG MWD - Standard |

**Summary**

| Site Name / Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation | Warning |
|---|---|---|---|---|---|---|
| Roche Pad | | | | | | |
| Rio Penasco KD Com 1 - Rio Penasco KD Com 1 - Rio | | | | | | Out of range |
| Roche 102H - Roche 102H - Plan 1r0 | 500.00 | 500.00 | 20.00 | 16.05 | 5.062 | CC, ES |
| Roche 102H - Roche 102H - Plan 1r0 | 8,595.98 | 8,111.80 | 852.62 | 590.81 | 3.257 | SF |
| Roche 103H - Roche 103H - Plan 1r0 | 500.00 | 500.00 | 40.00 | 36.05 | 10.125 | CC, ES |
| Roche 103H - Roche 103H - Plan 1r0 | 700.00 | 694.67 | 58.79 | 50.14 | 6.800 | SF |
| Roche 201H - Roche 201H for AC - Plan 1r0 | 1,064.16 | 1,073.46 | 47.80 | 35.96 | 4.036 | CC |
| Roche 201H - Roche 201H for AC - Plan 1r0 | 1,100.00 | 1,109.17 | 48.14 | 35.48 | 3.802 | ES |
| Roche 201H - Roche 201H for AC - Plan 1r0 | 1,200.00 | 1,208.49 | 53.11 | 38.01 | 3.517 | SF |
| Roche 202H - Roche 202H for AC - Plan 1r0 | 500.00 | 500.00 | 67.08 | 63.75 | 20.151 | CC |
| Roche 202H - Roche 202H for AC - Plan 1r0 | 600.00 | 601.75 | 67.66 | 62.99 | 14.478 | ES |
| Roche 202H - Roche 202H for AC - Plan 1r0 | 800.00 | 801.22 | 80.03 | 71.62 | 9.518 | SF |

**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 Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 0.00 | 20.00 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.31 | 0.31 | 0.00 | 20.00 | 0.00 | 20.00 | 19.52 | 0.48 | 41.677 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.95 | 0.95 | 0.00 | 20.00 | 0.00 | 20.00 | 18.47 | 1.53 | 13.112 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 1.46 | 1.46 | 0.00 | 20.00 | 0.00 | 20.00 | 17.61 | 2.39 | 8.358 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 1.89 | 1.89 | 0.00 | 20.00 | 0.00 | 20.00 | 16.81 | 3.19 | 6.277 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 2.31 | 2.31 | 0.00 | 20.00 | 0.00 | 20.00 | 16.05 | 3.95 | 5.062 | CC, ES |
| 600.00 | 599.95 | 600.19 | 600.15 | 2.71 | 2.99 | -156.09 | 19.36 | 2.55 | 21.90 | 16.87 | 5.02 | 4.359 | |
| 700.00 | 699.63 | 700.02 | 699.65 | 4.58 | 4.69 | -146.66 | 17.47 | 10.15 | 28.13 | 20.97 | 7.16 | 3.931 | |
| 800.00 | 798.77 | 799.11 | 797.89 | 5.92 | 5.99 | -137.90 | 14.35 | 22.68 | 39.42 | 31.01 | 8.41 | 4.687 | |
| 900.00 | 897.08 | 897.26 | 894.42 | 7.01 | 6.67 | -131.74 | 10.06 | 39.87 | 55.86 | 46.41 | 9.45 | 5.909 | |
| 1,000.00 | 994.31 | 995.11 | 990.34 | 7.97 | 6.84 | -129.96 | 5.38 | 58.64 | 76.36 | 65.81 | 10.54 | 7.242 | |
| 1,100.00 | 1,090.18 | 1,092.19 | 1,085.50 | 8.81 | 7.04 | -131.03 | 0.74 | 77.26 | 100.19 | 88.45 | 11.74 | 8.534 | |
| 1,200.00 | 1,184.43 | 1,188.23 | 1,179.64 | 9.59 | 7.26 | -133.21 | -3.85 | 95.67 | 127.51 | 114.50 | 13.01 | 9.800 | |
| 1,300.00 | 1,276.81 | 1,282.96 | 1,272.50 | 10.30 | 7.49 | -135.71 | -8.38 | 113.84 | 158.60 | 144.28 | 14.32 | 11.076 | |
| 1,400.00 | 1,367.06 | 1,376.12 | 1,363.83 | 10.96 | 7.72 | -138.20 | -12.84 | 131.71 | 193.68 | 178.05 | 15.63 | 12.393 | |
| 1,500.00 | 1,456.16 | 1,468.42 | 1,454.30 | 11.31 | 7.96 | -140.89 | -17.25 | 149.41 | 231.04 | 214.37 | 16.66 | 13.865 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,600.00 | 1,545.26 | 1,560.71 | 1,544.78 | 11.52 | 8.21 | -142.84 | -21.67 | 167.11 | 268.72 | 251.20 | 17.52 | 15.338 | |
| 1,700.00 | 1,634.36 | 1,653.01 | 1,635.25 | 11.75 | 8.47 | -144.30 | -26.08 | 184.81 | 306.60 | 288.24 | 18.35 | 16.707 | |
| 1,800.00 | 1,723.46 | 1,745.30 | 1,725.73 | 12.00 | 8.74 | -145.45 | -30.49 | 202.51 | 344.61 | 325.44 | 19.17 | 17.976 | |
| 1,900.00 | 1,812.56 | 1,837.60 | 1,816.20 | 12.27 | 9.01 | -146.37 | -34.91 | 220.21 | 382.72 | 362.74 | 19.98 | 19.152 | |
| 2,000.00 | 1,901.66 | 1,935.47 | 1,912.54 | 12.58 | 9.42 | -147.52 | -39.50 | 236.56 | 420.58 | 399.72 | 20.87 | 20.157 | |
| 2,100.00 | 1,990.76 | 2,035.59 | 2,012.45 | 12.93 | 9.98 | -150.53 | -43.63 | 237.88 | 456.95 | 435.17 | 21.77 | 20.986 | |
| 2,200.00 | 2,079.86 | 2,127.38 | 2,102.99 | 13.34 | 10.99 | -154.73 | -46.74 | 223.80 | 493.49 | 471.03 | 22.46 | 21.973 | |
| 2,300.00 | 2,168.96 | 2,207.84 | 2,179.66 | 13.83 | 11.65 | -159.25 | -48.88 | 199.71 | 532.64 | 509.71 | 22.93 | 23.231 | |
| 2,400.00 | 2,258.26 | 2,276.96 | 2,242.30 | 14.42 | 12.13 | -171.86 | -50.24 | 170.61 | 576.19 | 552.95 | 23.24 | 24.794 | |
| 2,500.00 | 2,349.22 | 2,342.40 | 2,297.99 | 15.26 | 12.54 | 158.25 | -51.10 | 136.31 | 622.07 | 598.66 | 23.41 | 26.571 | |
| 2,600.00 | 2,439.93 | 2,406.85 | 2,348.67 | 15.99 | 12.89 | 130.15 | -51.54 | 96.55 | 667.14 | 643.52 | 23.62 | 28.244 | |
| 2,700.00 | 2,527.64 | 2,470.73 | 2,394.18 | 16.73 | 13.18 | 108.59 | -51.56 | 51.78 | 709.18 | 685.26 | 23.91 | 29.655 | |
| 2,800.00 | 2,609.68 | 2,534.27 | 2,434.25 | 17.44 | 13.43 | 93.55 | -51.17 | 2.51 | 746.55 | 722.23 | 24.32 | 30.701 | |
| 2,900.00 | 2,683.55 | 2,599.46 | 2,469.46 | 18.09 | 13.63 | 83.21 | -50.36 | -52.31 | 778.01 | 753.10 | 24.91 | 31.233 | |
| 3,000.00 | 2,747.02 | 2,696.20 | 2,517.83 | 18.68 | 13.83 | 76.33 | -48.90 | -136.07 | 800.41 | 773.95 | 26.46 | 30.248 | |
| 3,100.00 | 2,799.29 | 2,794.89 | 2,567.17 | 19.18 | 14.25 | 74.00 | -47.41 | -221.53 | 812.06 | 783.69 | 28.37 | 28.623 | |
| 3,200.00 | 2,849.29 | 2,860.83 | 2,596.67 | 19.70 | 14.79 | 73.88 | -46.28 | -280.44 | 823.73 | 794.07 | 29.66 | 27.776 | |
| 3,300.00 | 2,898.04 | 2,925.16 | 2,618.75 | 20.40 | 15.59 | 72.30 | -44.94 | -340.82 | 838.76 | 807.62 | 31.14 | 26.936 | |
| 3,400.00 | 2,934.05 | 2,988.79 | 2,633.79 | 21.39 | 16.57 | 70.01 | -43.41 | -402.59 | 850.63 | 817.61 | 33.02 | 25.765 | |
| 3,500.00 | 2,953.74 | 3,050.00 | 2,641.72 | 22.58 | 17.64 | 68.81 | -41.76 | -463.24 | 857.47 | 822.33 | 35.14 | 24.400 | |
| 3,600.00 | 2,956.59 | 3,115.85 | 2,642.97 | 23.97 | 18.87 | 68.57 | -39.80 | -529.01 | 859.12 | 821.50 | 37.62 | 22.836 | |
| 3,700.00 | 2,952.52 | 3,215.85 | 2,639.28 | 25.52 | 20.87 | 68.60 | -36.71 | -628.90 | 858.98 | 817.79 | 41.19 | 20.855 | |
| 3,800.00 | 2,948.44 | 3,315.85 | 2,635.58 | 27.23 | 22.97 | 68.62 | -33.62 | -728.78 | 858.85 | 813.89 | 44.95 | 19.105 | |
| 3,900.00 | 2,944.37 | 3,415.85 | 2,631.89 | 29.06 | 25.14 | 68.65 | -30.53 | -828.66 | 858.72 | 809.85 | 48.87 | 17.572 | |
| 4,000.00 | 2,940.29 | 3,515.85 | 2,628.19 | 30.99 | 27.36 | 68.67 | -27.43 | -928.55 | 858.58 | 805.68 | 52.90 | 16.230 | |
| 4,100.00 | 2,936.22 | 3,615.85 | 2,624.50 | 33.00 | 29.62 | 68.69 | -24.34 | -1,028.43 | 858.45 | 801.43 | 57.02 | 15.055 | |
| 4,200.00 | 2,932.14 | 3,715.85 | 2,620.80 | 35.06 | 31.91 | 68.72 | -21.25 | -1,128.31 | 858.32 | 797.10 | 61.21 | 14.021 | |
| 4,300.00 | 2,928.07 | 3,815.85 | 2,617.11 | 37.18 | 34.23 | 68.74 | -18.16 | -1,228.20 | 858.18 | 792.72 | 65.47 | 13.108 | |
| 4,400.00 | 2,923.99 | 3,915.85 | 2,613.41 | 39.34 | 36.57 | 68.76 | -15.06 | -1,328.08 | 858.05 | 788.28 | 69.77 | 12.298 | |
| 4,500.00 | 2,919.92 | 4,015.85 | 2,609.72 | 41.53 | 38.92 | 68.79 | -11.97 | -1,427.96 | 857.92 | 783.81 | 74.11 | 11.576 | |
| 4,600.00 | 2,915.84 | 4,115.85 | 2,606.02 | 43.76 | 41.28 | 68.81 | -8.88 | -1,527.85 | 857.79 | 779.29 | 78.49 | 10.928 | |
| 4,700.00 | 2,911.77 | 4,215.85 | 2,602.33 | 46.01 | 43.65 | 68.84 | -5.79 | -1,627.73 | 857.65 | 774.76 | 82.90 | 10.346 | |
| 4,800.00 | 2,907.69 | 4,315.85 | 2,598.63 | 48.28 | 46.04 | 68.86 | -2.69 | -1,727.61 | 857.52 | 770.19 | 87.33 | 9.820 | |
| 4,900.00 | 2,903.62 | 4,415.85 | 2,594.94 | 50.56 | 48.43 | 68.88 | 0.40 | -1,827.50 | 857.39 | 765.61 | 91.78 | 9.342 | |
| 5,000.00 | 2,899.54 | 4,515.84 | 2,591.24 | 52.87 | 50.83 | 68.91 | 3.49 | -1,927.38 | 857.26 | 761.01 | 96.25 | 8.906 | |
| 5,100.00 | 2,895.46 | 4,615.84 | 2,587.55 | 55.18 | 53.23 | 68.93 | 6.58 | -2,027.26 | 857.13 | 756.39 | 100.74 | 8.508 | |
| 5,200.00 | 2,891.39 | 4,715.84 | 2,583.85 | 57.51 | 55.64 | 68.95 | 9.68 | -2,127.14 | 857.00 | 751.75 | 105.24 | 8.143 | |
| 5,300.00 | 2,887.31 | 4,815.84 | 2,580.15 | 59.85 | 58.05 | 68.98 | 12.77 | -2,227.03 | 856.86 | 747.11 | 109.76 | 7.807 | |
| 5,400.00 | 2,883.24 | 4,915.84 | 2,576.46 | 62.20 | 60.47 | 69.00 | 15.86 | -2,326.91 | 856.73 | 742.45 | 114.28 | 7.497 | |
| 5,500.00 | 2,879.16 | 5,015.84 | 2,572.76 | 64.56 | 62.89 | 69.03 | 18.95 | -2,426.79 | 856.60 | 737.78 | 118.82 | 7.209 | |
| 5,600.00 | 2,875.09 | 5,115.84 | 2,569.07 | 66.92 | 65.31 | 69.05 | 22.05 | -2,526.68 | 856.47 | 733.10 | 123.37 | 6.942 | |
| 5,700.00 | 2,871.01 | 5,215.84 | 2,565.37 | 69.30 | 67.74 | 69.07 | 25.14 | -2,626.56 | 856.34 | 728.42 | 127.92 | 6.694 | |
| 5,800.00 | 2,866.94 | 5,315.84 | 2,561.68 | 71.67 | 70.16 | 69.10 | 28.23 | -2,726.44 | 856.21 | 723.73 | 132.48 | 6.463 | |
| 5,900.00 | 2,862.86 | 5,415.84 | 2,557.98 | 74.06 | 72.59 | 69.12 | 31.32 | -2,826.33 | 856.08 | 719.03 | 137.05 | 6.246 | |
| 6,000.00 | 2,858.79 | 5,515.84 | 2,554.29 | 76.44 | 75.03 | 69.15 | 34.42 | -2,926.21 | 855.95 | 714.32 | 141.63 | 6.044 | |
| 6,100.00 | 2,854.71 | 5,615.84 | 2,550.59 | 78.84 | 77.46 | 69.17 | 37.51 | -3,026.09 | 855.82 | 709.61 | 146.21 | 5.853 | |
| 6,200.00 | 2,850.64 | 5,715.84 | 2,546.90 | 81.23 | 79.89 | 69.19 | 40.60 | -3,125.98 | 855.69 | 704.89 | 150.80 | 5.674 | |
| 6,300.00 | 2,846.56 | 5,815.84 | 2,543.20 | 83.63 | 82.33 | 69.22 | 43.69 | -3,225.86 | 855.56 | 700.17 | 155.39 | 5.506 | |
| 6,400.00 | 2,842.49 | 5,915.83 | 2,539.51 | 86.04 | 84.77 | 69.24 | 46.79 | -3,325.74 | 855.43 | 695.44 | 159.99 | 5.347 | |
| 6,500.00 | 2,838.41 | 6,015.83 | 2,535.81 | 88.44 | 87.21 | 69.27 | 49.88 | -3,425.62 | 855.30 | 690.71 | 164.59 | 5.196 | |
| 6,600.00 | 2,834.34 | 6,115.83 | 2,532.12 | 90.85 | 89.65 | 69.29 | 52.97 | -3,525.51 | 855.17 | 685.97 | 169.20 | 5.054 | |
| 6,700.00 | 2,830.26 | 6,215.83 | 2,528.42 | 93.26 | 92.09 | 69.31 | 56.06 | -3,625.39 | 855.04 | 681.23 | 173.81 | 4.919 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6,800.00 | 2,826.19 | 6,315.83 | 2,524.73 | 95.68 | 94.53 | 69.34 | 59.16 | -3,725.27 | 854.91 | 676.49 | 178.43 | 4.791 | |
| 6,900.00 | 2,822.11 | 6,415.83 | 2,521.03 | 98.09 | 96.97 | 69.36 | 62.25 | -3,825.16 | 854.78 | 671.74 | 183.04 | 4.670 | |
| 7,000.00 | 2,818.04 | 6,515.83 | 2,517.34 | 100.51 | 99.42 | 69.39 | 65.34 | -3,925.04 | 854.65 | 666.99 | 187.67 | 4.554 | |
| 7,100.00 | 2,813.96 | 6,615.83 | 2,513.64 | 102.93 | 101.86 | 69.41 | 68.43 | -4,024.92 | 854.53 | 662.23 | 192.29 | 4.444 | |
| 7,200.00 | 2,809.89 | 6,715.83 | 2,509.95 | 105.36 | 104.31 | 69.43 | 71.53 | -4,124.81 | 854.40 | 657.48 | 196.92 | 4.339 | |
| 7,300.00 | 2,805.81 | 6,815.83 | 2,506.25 | 107.78 | 106.75 | 69.46 | 74.62 | -4,224.69 | 854.27 | 652.72 | 201.55 | 4.238 | |
| 7,400.00 | 2,801.74 | 6,915.83 | 2,502.55 | 110.20 | 109.20 | 69.48 | 77.71 | -4,324.57 | 854.14 | 647.95 | 206.19 | 4.143 | |
| 7,500.00 | 2,797.66 | 7,015.83 | 2,498.86 | 112.63 | 111.65 | 69.51 | 80.80 | -4,424.46 | 854.01 | 643.19 | 210.82 | 4.051 | |
| 7,600.00 | 2,793.59 | 7,115.83 | 2,495.16 | 115.06 | 114.09 | 69.53 | 83.90 | -4,524.34 | 853.89 | 638.42 | 215.46 | 3.963 | |
| 7,700.00 | 2,789.51 | 7,215.83 | 2,491.47 | 117.49 | 116.54 | 69.55 | 86.99 | -4,624.22 | 853.76 | 633.65 | 220.11 | 3.879 | |
| 7,800.00 | 2,785.44 | 7,315.82 | 2,487.77 | 119.92 | 118.99 | 69.58 | 90.08 | -4,724.11 | 853.63 | 628.88 | 224.75 | 3.798 | |
| 7,900.00 | 2,781.36 | 7,415.82 | 2,484.08 | 122.35 | 121.44 | 69.60 | 93.17 | -4,823.99 | 853.50 | 624.10 | 229.40 | 3.721 | |
| 8,000.00 | 2,777.29 | 7,515.82 | 2,480.38 | 124.78 | 123.89 | 69.63 | 96.27 | -4,923.87 | 853.38 | 619.33 | 234.05 | 3.646 | |
| 8,100.00 | 2,773.21 | 7,615.82 | 2,476.69 | 127.22 | 126.34 | 69.65 | 99.36 | -5,023.75 | 853.25 | 614.55 | 238.70 | 3.575 | |
| 8,200.00 | 2,769.14 | 7,715.82 | 2,472.99 | 129.65 | 128.79 | 69.67 | 102.45 | -5,123.64 | 853.12 | 609.77 | 243.36 | 3.506 | |
| 8,300.00 | 2,765.06 | 7,815.82 | 2,469.30 | 132.09 | 131.24 | 69.70 | 105.55 | -5,223.52 | 852.99 | 604.98 | 248.01 | 3.439 | |
| 8,400.00 | 2,760.99 | 7,915.82 | 2,465.60 | 134.53 | 133.69 | 69.72 | 108.64 | -5,323.40 | 852.87 | 600.20 | 252.67 | 3.375 | |
| 8,500.00 | 2,756.91 | 8,015.82 | 2,461.91 | 136.96 | 136.14 | 69.75 | 111.73 | -5,423.29 | 852.74 | 595.41 | 257.33 | 3.314 | |
| 8,595.98 | 2,753.00 | 8,111.80 | 2,458.36 | 139.30 | 138.49 | 69.77 | 114.70 | -5,519.15 | 852.62 | 590.81 | 261.81 | 3.257 | SF |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **Database:** | PRIME_EDM |
| **Reference Design:** | Plan 1r0 | **Offset TVD Reference:** | Reference Datum |

**Offset Design** Roche Pad - Roche 103H - Roche 103H - Plan 1r0 — **Offset Site Error:** 0.00 usft

**Survey Program:** 0-MWD — **Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 40.00 | 0.00 | 40.00 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.31 | 0.31 | 0.00 | 40.00 | 0.00 | 40.00 | 39.52 | 0.48 | 83.353 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.95 | 0.95 | 0.00 | 40.00 | 0.00 | 40.00 | 38.47 | 1.53 | 26.224 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 1.46 | 1.46 | 0.00 | 40.00 | 0.00 | 40.00 | 37.61 | 2.39 | 16.717 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 1.89 | 1.89 | 0.00 | 40.00 | 0.00 | 40.00 | 36.81 | 3.19 | 12.554 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 2.31 | 2.31 | 0.00 | 40.00 | 0.00 | 40.00 | 36.05 | 3.95 | 10.125 | CC, ES |
| 600.00 | 599.95 | 597.98 | 597.94 | 2.71 | 3.35 | -159.99 | 42.20 | 1.22 | 44.71 | 39.21 | 5.50 | 8.125 | |
| 700.00 | 699.63 | 694.67 | 694.33 | 4.58 | 4.95 | -158.91 | 48.67 | 4.81 | 58.79 | 50.14 | 8.65 | 6.800 | SF |
| 800.00 | 798.77 | 788.84 | 787.74 | 5.92 | 6.16 | -157.88 | 59.07 | 10.57 | 82.02 | 71.12 | 10.90 | 7.525 | |
| 900.00 | 897.08 | 879.40 | 876.91 | 7.01 | 7.13 | -157.03 | 72.85 | 18.21 | 114.07 | 101.38 | 12.69 | 8.988 | |
| 1,000.00 | 994.31 | 965.45 | 960.85 | 7.97 | 7.94 | -156.31 | 89.36 | 27.36 | 154.48 | 140.31 | 14.17 | 10.902 | |
| 1,100.00 | 1,090.18 | 1,046.27 | 1,038.85 | 8.81 | 8.64 | -155.63 | 107.86 | 37.62 | 202.69 | 187.28 | 15.40 | 13.158 | |
| 1,200.00 | 1,184.43 | 1,121.38 | 1,110.48 | 9.59 | 9.21 | -154.95 | 127.63 | 48.58 | 258.11 | 241.70 | 16.41 | 15.730 | |
| 1,300.00 | 1,276.81 | 1,192.03 | 1,177.00 | 10.30 | 9.56 | -154.20 | 148.43 | 60.11 | 320.08 | 302.91 | 17.17 | 18.647 | |
| 1,400.00 | 1,367.06 | 1,266.68 | 1,246.97 | 10.96 | 9.69 | -153.59 | 171.19 | 72.72 | 386.55 | 368.72 | 17.84 | 21.669 | |
| 1,500.00 | 1,456.16 | 1,339.71 | 1,315.41 | 11.31 | 9.83 | -154.18 | 193.45 | 85.06 | 454.80 | 436.50 | 18.30 | 24.854 | |
| 1,600.00 | 1,545.26 | 1,412.73 | 1,383.86 | 11.52 | 9.98 | -154.62 | 215.72 | 97.40 | 523.06 | 504.38 | 18.68 | 28.007 | |
| 1,700.00 | 1,634.36 | 1,485.76 | 1,452.31 | 11.75 | 10.14 | -154.96 | 237.98 | 109.74 | 591.33 | 572.25 | 19.08 | 30.990 | |
| 1,800.00 | 1,723.46 | 1,558.79 | 1,520.75 | 12.00 | 10.31 | -155.22 | 260.24 | 122.08 | 659.62 | 640.11 | 19.51 | 33.806 | |
| 1,900.00 | 1,812.56 | 1,631.81 | 1,589.20 | 12.27 | 10.49 | -155.44 | 282.51 | 134.42 | 727.91 | 707.94 | 19.96 | 36.464 | |
| 2,000.00 | 1,901.66 | 1,704.84 | 1,657.65 | 12.58 | 10.67 | -155.62 | 304.77 | 146.76 | 796.20 | 775.77 | 20.43 | 38.968 | |
| 2,100.00 | 1,990.76 | 1,777.87 | 1,726.09 | 12.93 | 10.86 | -155.77 | 327.03 | 159.11 | 864.50 | 843.58 | 20.92 | 41.318 | |
| 2,200.00 | 2,079.86 | 1,850.89 | 1,794.54 | 13.34 | 11.06 | -155.90 | 349.30 | 171.45 | 932.80 | 911.37 | 21.43 | 43.526 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -80.54 | 10.00 | -60.00 | 60.83 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.31 | 0.31 | -80.54 | 10.00 | -60.00 | 60.83 | 60.40 | 0.43 | 142.475 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.95 | 0.95 | -80.54 | 10.00 | -60.00 | 60.83 | 59.45 | 1.38 | 44.143 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 1.46 | 1.46 | -80.54 | 10.00 | -60.00 | 60.83 | 58.63 | 2.20 | 27.681 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 1.89 | 1.89 | -80.54 | 10.00 | -60.00 | 60.83 | 57.86 | 2.96 | 20.520 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 2.31 | 2.31 | -80.54 | 10.00 | -60.00 | 60.83 | 57.12 | 3.71 | 16.390 | |
| 600.00 | 599.95 | 602.18 | 602.13 | 2.71 | 2.66 | 119.27 | 7.70 | -58.52 | 60.30 | 55.51 | 4.79 | 12.591 | |
| 700.00 | 699.63 | 704.33 | 703.94 | 4.58 | 4.60 | 120.24 | 0.81 | -54.10 | 58.73 | 52.46 | 6.27 | 9.368 | |
| 800.00 | 798.77 | 806.42 | 805.11 | 5.92 | 5.97 | 121.97 | -10.64 | -46.75 | 56.16 | 48.48 | 7.68 | 7.311 | |
| 900.00 | 897.08 | 908.43 | 905.33 | 7.01 | 7.04 | 124.65 | -26.61 | -36.50 | 52.66 | 43.49 | 9.17 | 5.744 | |
| 1,000.00 | 994.31 | 1,009.46 | 1,003.56 | 7.97 | 7.44 | 128.93 | -46.45 | -23.76 | 48.74 | 38.13 | 10.61 | 4.593 | |
| 1,064.16 | 1,055.99 | 1,073.46 | 1,065.66 | 8.51 | 7.56 | 134.04 | -59.48 | -15.39 | 47.80 | 35.96 | 11.84 | 4.036 | CC |
| 1,100.00 | 1,090.18 | 1,109.17 | 1,100.31 | 8.81 | 7.63 | 137.69 | -66.75 | -10.73 | 48.14 | 35.48 | 12.66 | 3.802 | ES |
| 1,200.00 | 1,184.43 | 1,208.49 | 1,196.67 | 9.59 | 7.84 | 149.44 | -86.97 | 2.25 | 53.11 | 38.01 | 15.10 | 3.517 | SF |
| 1,300.00 | 1,276.81 | 1,307.13 | 1,292.39 | 10.30 | 8.07 | 160.43 | -107.05 | 15.15 | 64.82 | 47.60 | 17.23 | 3.763 | |
| 1,400.00 | 1,367.06 | 1,404.84 | 1,387.19 | 10.96 | 8.30 | 168.61 | -126.94 | 27.92 | 83.27 | 64.44 | 18.83 | 4.423 | |
| 1,500.00 | 1,456.16 | 1,501.99 | 1,481.45 | 11.31 | 8.55 | 174.02 | -146.72 | 40.61 | 105.34 | 85.59 | 19.75 | 5.333 | |
| 1,600.00 | 1,545.26 | 1,599.13 | 1,575.72 | 11.52 | 8.81 | 177.55 | -166.50 | 53.31 | 128.01 | 107.62 | 20.38 | 6.280 | |
| 1,700.00 | 1,634.36 | 1,696.28 | 1,669.98 | 11.75 | 9.09 | -179.98 | -186.27 | 66.01 | 151.00 | 130.02 | 20.97 | 7.200 | |
| 1,800.00 | 1,723.46 | 1,793.43 | 1,764.24 | 12.00 | 9.37 | -178.17 | -206.05 | 78.70 | 174.18 | 152.63 | 21.55 | 8.081 | |
| 1,900.00 | 1,812.56 | 1,890.57 | 1,858.50 | 12.27 | 9.67 | -176.78 | -225.83 | 91.40 | 197.49 | 175.35 | 22.14 | 8.920 | |
| 2,000.00 | 1,901.66 | 1,987.72 | 1,952.76 | 12.58 | 9.98 | -175.69 | -245.61 | 104.10 | 220.89 | 198.15 | 22.74 | 9.713 | |
| 2,100.00 | 1,990.76 | 2,084.87 | 2,047.02 | 12.93 | 10.30 | -174.80 | -265.38 | 116.79 | 244.35 | 220.99 | 23.36 | 10.462 | |
| 2,200.00 | 2,079.86 | 2,182.01 | 2,141.28 | 13.34 | 10.64 | -174.08 | -285.16 | 129.49 | 267.85 | 243.86 | 23.99 | 11.165 | |
| 2,300.00 | 2,168.96 | 2,279.16 | 2,235.54 | 13.83 | 11.01 | -173.46 | -304.94 | 142.19 | 291.39 | 266.75 | 24.64 | 11.827 | |
| 2,400.00 | 2,258.26 | 2,376.34 | 2,329.84 | 14.42 | 11.39 | 179.90 | -324.72 | 154.89 | 314.61 | 289.31 | 25.30 | 12.437 | |
| 2,500.00 | 2,349.22 | 2,473.06 | 2,423.68 | 15.26 | 11.79 | 159.39 | -344.41 | 167.53 | 333.67 | 307.64 | 26.03 | 12.819 | |
| 2,600.00 | 2,439.93 | 2,566.70 | 2,514.54 | 15.99 | 12.21 | 141.96 | -363.47 | 179.77 | 349.08 | 322.23 | 26.86 | 12.999 | |
| 2,700.00 | 2,527.64 | 2,654.42 | 2,599.65 | 16.73 | 12.61 | 131.31 | -381.33 | 191.23 | 364.34 | 336.71 | 27.63 | 13.186 | |
| 2,800.00 | 2,609.68 | 2,733.54 | 2,676.43 | 17.44 | 12.98 | 126.22 | -397.44 | 201.57 | 383.97 | 355.64 | 28.33 | 13.554 | |
| 2,900.00 | 2,683.55 | 2,801.68 | 2,742.54 | 18.09 | 13.31 | 123.73 | -411.31 | 210.48 | 412.41 | 383.45 | 28.96 | 14.241 | |
| 3,000.00 | 2,747.02 | 2,856.75 | 2,795.97 | 18.68 | 13.58 | 121.31 | -422.52 | 217.67 | 452.63 | 423.11 | 29.51 | 15.336 | |
| 3,100.00 | 2,799.29 | 2,915.05 | 2,852.67 | 19.18 | 13.88 | 123.13 | -434.30 | 224.30 | 504.93 | 474.78 | 30.15 | 16.745 | |
| 3,200.00 | 2,849.29 | 3,038.48 | 2,973.62 | 19.70 | 14.56 | 135.27 | -457.30 | 220.02 | 562.86 | 531.69 | 31.16 | 18.061 | |
| 3,300.00 | 2,898.04 | 3,292.59 | 3,206.71 | 20.40 | 16.00 | 146.62 | -492.25 | 130.76 | 613.02 | 582.24 | 30.77 | 19.920 | |
| 3,400.00 | 2,934.05 | 3,596.78 | 3,406.83 | 21.39 | 17.29 | 148.88 | -505.19 | -93.52 | 640.13 | 610.94 | 29.18 | 21.935 | |
| 3,500.00 | 2,953.74 | 3,691.39 | 3,454.13 | 22.58 | 17.62 | 147.69 | -504.90 | -175.46 | 668.67 | 638.55 | 30.13 | 22.196 | |
| 3,600.00 | 2,956.59 | 4,127.25 | 3,564.23 | 23.97 | 22.58 | 150.80 | -497.91 | -588.02 | 697.10 | 664.18 | 32.92 | 21.176 | |
| 3,700.00 | 2,952.52 | 4,227.24 | 3,558.78 | 25.52 | 24.32 | 150.75 | -494.83 | -687.81 | 695.90 | 661.06 | 34.83 | 19.978 | |
| 3,800.00 | 2,948.44 | 4,327.23 | 3,553.33 | 27.23 | 26.19 | 150.69 | -491.75 | -787.60 | 694.69 | 657.83 | 36.86 | 18.846 | |
| 3,900.00 | 2,944.37 | 4,427.22 | 3,547.88 | 29.06 | 28.15 | 150.64 | -488.67 | -887.40 | 693.49 | 654.50 | 38.99 | 17.787 | |
| 4,000.00 | 2,940.29 | 4,527.21 | 3,542.43 | 30.99 | 30.18 | 150.58 | -485.59 | -987.19 | 692.29 | 651.09 | 41.20 | 16.803 | |
| 4,100.00 | 2,936.22 | 4,627.20 | 3,536.98 | 33.00 | 32.28 | 150.53 | -482.51 | -1,086.99 | 691.09 | 647.61 | 43.48 | 15.893 | |
| 4,200.00 | 2,932.14 | 4,727.19 | 3,531.53 | 35.06 | 34.43 | 150.47 | -479.43 | -1,186.78 | 689.89 | 644.06 | 45.83 | 15.053 | |
| 4,300.00 | 2,928.07 | 4,827.18 | 3,526.08 | 37.18 | 36.61 | 150.41 | -476.35 | -1,286.58 | 688.69 | 640.46 | 48.23 | 14.279 | |
| 4,400.00 | 2,923.99 | 4,927.17 | 3,520.63 | 39.34 | 38.83 | 150.36 | -473.27 | -1,386.37 | 687.49 | 636.81 | 50.68 | 13.565 | |
| 4,500.00 | 2,919.92 | 5,027.16 | 3,515.19 | 41.53 | 41.08 | 150.30 | -470.19 | -1,486.16 | 686.29 | 633.12 | 53.17 | 12.907 | |
| 4,600.00 | 2,915.84 | 5,127.15 | 3,509.74 | 43.76 | 43.35 | 150.24 | -467.11 | -1,585.96 | 685.10 | 629.39 | 55.70 | 12.299 | |
| 4,700.00 | 2,911.77 | 5,227.14 | 3,504.29 | 46.01 | 45.63 | 150.19 | -464.03 | -1,685.75 | 683.90 | 625.63 | 58.27 | 11.737 | |
| 4,800.00 | 2,907.69 | 5,327.13 | 3,498.84 | 48.28 | 47.94 | 150.13 | -460.95 | -1,785.55 | 682.70 | 621.84 | 60.86 | 11.217 | |
| 4,900.00 | 2,903.62 | 5,427.12 | 3,493.39 | 50.56 | 50.26 | 150.07 | -457.87 | -1,885.34 | 681.51 | 618.02 | 63.49 | 10.735 | |
| 5,000.00 | 2,899.54 | 5,527.11 | 3,487.94 | 52.87 | 52.59 | 150.02 | -454.79 | -1,985.14 | 680.31 | 614.18 | 66.13 | 10.287 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **Database:** | PRIME_EDM |
| **Reference Design:** | Plan 1r0 | **Offset TVD Reference:** | Reference Datum |

**Offset Design** Roche Pad - Roche 201H - Roche 201H for AC - Plan 1r0

**Survey Program:** 0-MWD

**Offset Site Error:** 0.00 usft

**Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.00 | 2,895.46 | 5,627.10 | 3,482.49 | 55.18 | 54.93 | 149.96 | -451.71 | -2,084.93 | 679.12 | 610.31 | 68.81 | 9.870 | |
| 5,200.00 | 2,891.39 | 5,727.09 | 3,477.04 | 57.51 | 57.29 | 149.90 | -448.63 | -2,184.73 | 677.93 | 606.43 | 71.50 | 9.482 | |
| 5,300.00 | 2,887.31 | 5,827.08 | 3,471.59 | 59.85 | 59.65 | 149.84 | -445.55 | -2,284.52 | 676.73 | 602.52 | 74.21 | 9.119 | |
| 5,400.00 | 2,883.24 | 5,927.07 | 3,466.14 | 62.20 | 62.02 | 149.78 | -442.47 | -2,384.31 | 675.54 | 598.60 | 76.95 | 8.779 | |
| 5,500.00 | 2,879.16 | 6,027.07 | 3,460.69 | 64.56 | 64.39 | 149.72 | -439.38 | -2,484.11 | 674.35 | 594.66 | 79.70 | 8.462 | |
| 5,600.00 | 2,875.09 | 6,127.06 | 3,455.24 | 66.92 | 66.77 | 149.67 | -436.30 | -2,583.90 | 673.16 | 590.70 | 82.46 | 8.163 | |
| 5,700.00 | 2,871.01 | 6,227.05 | 3,449.79 | 69.30 | 69.16 | 149.61 | -433.22 | -2,683.70 | 671.97 | 586.72 | 85.25 | 7.883 | |
| 5,800.00 | 2,866.94 | 6,327.04 | 3,444.34 | 71.67 | 71.55 | 149.55 | -430.14 | -2,783.49 | 670.78 | 582.74 | 88.04 | 7.619 | |
| 5,900.00 | 2,862.86 | 6,427.03 | 3,438.89 | 74.06 | 73.94 | 149.49 | -427.06 | -2,883.29 | 669.59 | 578.74 | 90.86 | 7.370 | |
| 6,000.00 | 2,858.79 | 6,527.02 | 3,433.44 | 76.44 | 76.34 | 149.43 | -423.98 | -2,983.08 | 668.41 | 574.72 | 93.68 | 7.135 | |
| 6,100.00 | 2,854.71 | 6,627.01 | 3,427.99 | 78.84 | 78.75 | 149.37 | -420.90 | -3,082.87 | 667.22 | 570.70 | 96.52 | 6.913 | |
| 6,200.00 | 2,850.64 | 6,727.00 | 3,422.54 | 81.23 | 81.15 | 149.31 | -417.82 | -3,182.67 | 666.03 | 566.66 | 99.37 | 6.702 | |
| 6,300.00 | 2,846.56 | 6,826.99 | 3,417.09 | 83.63 | 83.56 | 149.25 | -414.74 | -3,282.46 | 664.85 | 562.61 | 102.24 | 6.503 | |
| 6,400.00 | 2,842.49 | 6,926.98 | 3,411.64 | 86.04 | 85.97 | 149.19 | -411.66 | -3,382.26 | 663.66 | 558.55 | 105.12 | 6.314 | |
| 6,500.00 | 2,838.41 | 7,026.97 | 3,406.19 | 88.44 | 88.39 | 149.13 | -408.58 | -3,482.05 | 662.48 | 554.47 | 108.01 | 6.134 | |
| 6,600.00 | 2,834.34 | 7,126.96 | 3,400.74 | 90.85 | 90.80 | 149.07 | -405.50 | -3,581.85 | 661.29 | 550.39 | 110.91 | 5.963 | |
| 6,700.00 | 2,830.26 | 7,226.95 | 3,395.29 | 93.26 | 93.22 | 149.00 | -402.42 | -3,681.64 | 660.11 | 546.29 | 113.82 | 5.800 | |
| 6,800.00 | 2,826.19 | 7,326.94 | 3,389.84 | 95.68 | 95.64 | 148.94 | -399.34 | -3,781.44 | 658.93 | 542.19 | 116.74 | 5.644 | |
| 6,900.00 | 2,822.11 | 7,426.93 | 3,384.39 | 98.09 | 98.06 | 148.88 | -396.26 | -3,881.23 | 657.75 | 538.08 | 119.67 | 5.496 | |
| 7,000.00 | 2,818.04 | 7,526.92 | 3,378.94 | 100.51 | 100.49 | 148.82 | -393.18 | -3,981.02 | 656.57 | 533.95 | 122.62 | 5.355 | |
| 7,100.00 | 2,813.96 | 7,626.91 | 3,373.49 | 102.93 | 102.91 | 148.76 | -390.10 | -4,080.82 | 655.39 | 529.82 | 125.57 | 5.219 | |
| 7,200.00 | 2,809.89 | 7,726.90 | 3,368.04 | 105.36 | 105.34 | 148.70 | -387.02 | -4,180.61 | 654.21 | 525.67 | 128.54 | 5.090 | |
| 7,300.00 | 2,805.81 | 7,826.89 | 3,362.59 | 107.78 | 107.77 | 148.63 | -383.94 | -4,280.41 | 653.03 | 521.52 | 131.51 | 4.966 | |
| 7,400.00 | 2,801.74 | 7,926.89 | 3,357.14 | 110.20 | 110.20 | 148.57 | -380.86 | -4,380.20 | 651.86 | 517.36 | 134.50 | 4.847 | |
| 7,500.00 | 2,797.66 | 8,026.88 | 3,351.69 | 112.63 | 112.63 | 148.51 | -377.78 | -4,480.00 | 650.68 | 513.19 | 137.49 | 4.732 | |
| 7,600.00 | 2,793.59 | 8,126.87 | 3,346.24 | 115.06 | 115.06 | 148.44 | -374.70 | -4,579.79 | 649.50 | 509.00 | 140.50 | 4.623 | |
| 7,700.00 | 2,789.51 | 8,226.86 | 3,340.79 | 117.49 | 117.49 | 148.38 | -371.62 | -4,679.58 | 648.33 | 504.81 | 143.52 | 4.517 | |
| 7,800.00 | 2,785.44 | 8,326.85 | 3,335.35 | 119.92 | 119.92 | 148.32 | -368.54 | -4,779.38 | 647.16 | 500.62 | 146.54 | 4.416 | |
| 7,900.00 | 2,781.36 | 8,426.84 | 3,329.90 | 122.35 | 122.36 | 148.25 | -365.45 | -4,879.17 | 645.98 | 496.41 | 149.58 | 4.319 | |
| 8,000.00 | 2,777.29 | 8,526.83 | 3,324.45 | 124.78 | 124.79 | 148.19 | -362.37 | -4,978.97 | 644.81 | 492.19 | 152.62 | 4.225 | |
| 8,100.00 | 2,773.21 | 8,626.82 | 3,319.00 | 127.22 | 127.23 | 148.13 | -359.29 | -5,078.76 | 643.64 | 487.97 | 155.67 | 4.135 | |
| 8,200.00 | 2,769.14 | 8,726.81 | 3,313.55 | 129.65 | 129.67 | 148.06 | -356.21 | -5,178.56 | 642.47 | 483.73 | 158.74 | 4.047 | |
| 8,300.00 | 2,765.06 | 8,826.80 | 3,308.10 | 132.09 | 132.10 | 148.00 | -353.13 | -5,278.35 | 641.30 | 479.49 | 161.81 | 3.963 | |
| 8,400.00 | 2,760.99 | 8,926.79 | 3,302.65 | 134.53 | 134.54 | 147.93 | -350.05 | -5,378.15 | 640.13 | 475.24 | 164.89 | 3.882 | |
| 8,500.00 | 2,756.91 | 9,026.78 | 3,297.20 | 136.96 | 136.77 | 147.87 | -346.97 | -5,477.94 | 638.96 | 471.12 | 167.84 | 3.807 | |
| 8,584.45 | 2,753.47 | 9,103.79 | 3,293.00 | 139.02 | 138.04 | 147.82 | -344.60 | -5,554.80 | 638.02 | 468.18 | 169.84 | 3.757 | |
| 8,595.98 | 2,753.00 | 9,103.79 | 3,293.00 | 139.30 | 138.04 | 147.82 | -344.60 | -5,554.80 | 638.12 | 468.30 | 169.82 | 3.758 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -63.43 | 30.00 | -60.00 | 67.08 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.31 | 0.31 | -63.43 | 30.00 | -60.00 | 67.08 | 66.75 | 0.33 | 200.579 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.95 | 0.95 | -63.43 | 30.00 | -60.00 | 67.08 | 65.95 | 1.13 | 59.496 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 1.46 | 1.46 | -63.43 | 30.00 | -60.00 | 67.08 | 65.21 | 1.87 | 35.787 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 1.89 | 1.89 | -63.43 | 30.00 | -60.00 | 67.08 | 64.48 | 2.60 | 25.755 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 2.31 | 2.31 | -63.43 | 30.00 | -60.00 | 67.08 | 63.75 | 3.33 | 20.151 | CC |
| 600.00 | 599.95 | 601.75 | 601.70 | 2.71 | 3.36 | 139.55 | 31.40 | -57.68 | 67.66 | 62.99 | 4.67 | 14.478 | ES |
| 700.00 | 699.63 | 702.48 | 702.10 | 4.58 | 5.02 | 149.36 | 35.52 | -50.81 | 70.81 | 64.01 | 6.81 | 10.404 | |
| 800.00 | 798.77 | 801.22 | 799.97 | 5.92 | 6.25 | 162.90 | 42.21 | -39.68 | 80.03 | 71.62 | 8.41 | 9.518 | SF |
| 900.00 | 897.08 | 897.54 | 894.88 | 7.01 | 6.48 | 175.69 | 50.69 | -25.57 | 98.34 | 88.41 | 9.93 | 9.907 | |
| 1,000.00 | 994.31 | 992.48 | 988.38 | 7.97 | 6.66 | -175.69 | 59.18 | -11.44 | 125.14 | 113.66 | 11.48 | 10.902 | |
| 1,100.00 | 1,090.18 | 1,085.91 | 1,080.39 | 8.81 | 6.87 | -170.31 | 67.53 | 2.47 | 158.58 | 145.75 | 12.83 | 12.358 | |
| 1,200.00 | 1,184.43 | 1,177.58 | 1,170.66 | 9.59 | 7.08 | -166.99 | 75.73 | 16.11 | 197.54 | 183.53 | 14.01 | 14.097 | |
| 1,300.00 | 1,276.81 | 1,267.23 | 1,258.95 | 10.30 | 7.30 | -164.91 | 83.75 | 29.45 | 241.43 | 226.35 | 15.08 | 16.008 | |
| 1,400.00 | 1,367.06 | 1,354.62 | 1,345.01 | 10.96 | 7.52 | -163.59 | 91.57 | 42.46 | 289.89 | 273.82 | 16.07 | 18.037 | |
| 1,500.00 | 1,456.16 | 1,440.79 | 1,429.87 | 11.31 | 7.75 | -163.12 | 99.27 | 55.29 | 340.58 | 323.82 | 16.76 | 20.322 | |
| 1,600.00 | 1,545.26 | 1,526.97 | 1,514.74 | 11.52 | 7.99 | -162.77 | 106.98 | 68.12 | 391.27 | 373.95 | 17.32 | 22.591 | |
| 1,700.00 | 1,634.36 | 1,613.14 | 1,599.61 | 11.75 | 8.23 | -162.50 | 114.69 | 80.94 | 441.98 | 424.08 | 17.90 | 24.695 | |
| 1,800.00 | 1,723.46 | 1,699.32 | 1,684.47 | 12.00 | 8.48 | -162.28 | 122.39 | 93.77 | 492.69 | 474.20 | 18.49 | 26.645 | |
| 1,900.00 | 1,812.56 | 1,785.49 | 1,769.34 | 12.27 | 8.73 | -162.10 | 130.10 | 106.60 | 543.40 | 524.30 | 19.10 | 28.450 | |
| 2,000.00 | 1,901.66 | 1,871.67 | 1,854.20 | 12.58 | 8.99 | -161.96 | 137.81 | 119.42 | 594.12 | 574.40 | 19.72 | 30.123 | |
| 2,100.00 | 1,990.76 | 1,957.84 | 1,939.07 | 12.93 | 9.26 | -161.84 | 145.51 | 132.25 | 644.84 | 624.48 | 20.36 | 31.673 | |
| 2,200.00 | 2,079.86 | 2,044.02 | 2,023.94 | 13.34 | 9.53 | -161.73 | 153.22 | 145.08 | 695.56 | 674.55 | 21.01 | 33.110 | |
| 2,300.00 | 2,168.96 | 2,130.19 | 2,108.80 | 13.83 | 9.81 | -161.64 | 160.93 | 157.90 | 746.28 | 724.62 | 21.67 | 34.444 | |
| 2,400.00 | 2,258.26 | 2,216.41 | 2,193.71 | 14.42 | 10.09 | -170.08 | 168.64 | 170.74 | 796.87 | 774.54 | 22.33 | 35.688 | |
| 2,500.00 | 2,349.22 | 2,302.38 | 2,278.37 | 15.26 | 10.38 | 164.14 | 176.33 | 183.53 | 845.44 | 822.46 | 22.98 | 36.797 | |
| 2,600.00 | 2,439.93 | 2,385.80 | 2,360.53 | 15.99 | 10.67 | 140.39 | 183.79 | 195.95 | 891.01 | 867.41 | 23.60 | 37.751 | |
| 2,700.00 | 2,527.64 | 2,464.16 | 2,437.69 | 16.73 | 10.94 | 122.90 | 190.80 | 207.61 | 933.76 | 909.59 | 24.17 | 38.632 | |
| 2,800.00 | 2,609.68 | 2,535.05 | 2,507.51 | 17.44 | 11.19 | 111.26 | 197.14 | 218.16 | 974.33 | 949.67 | 24.66 | 39.504 | |

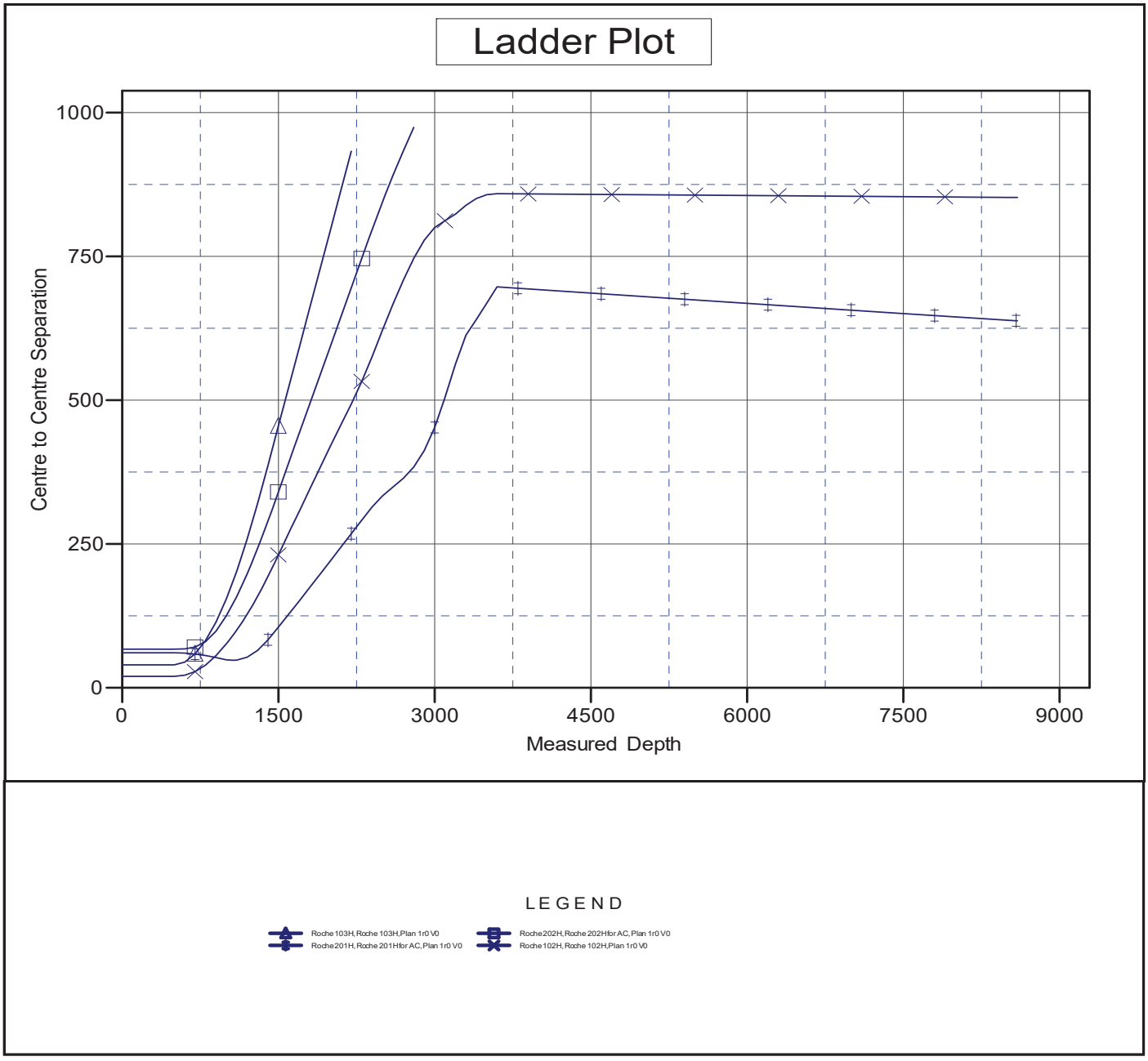
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 101H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: -0.06°



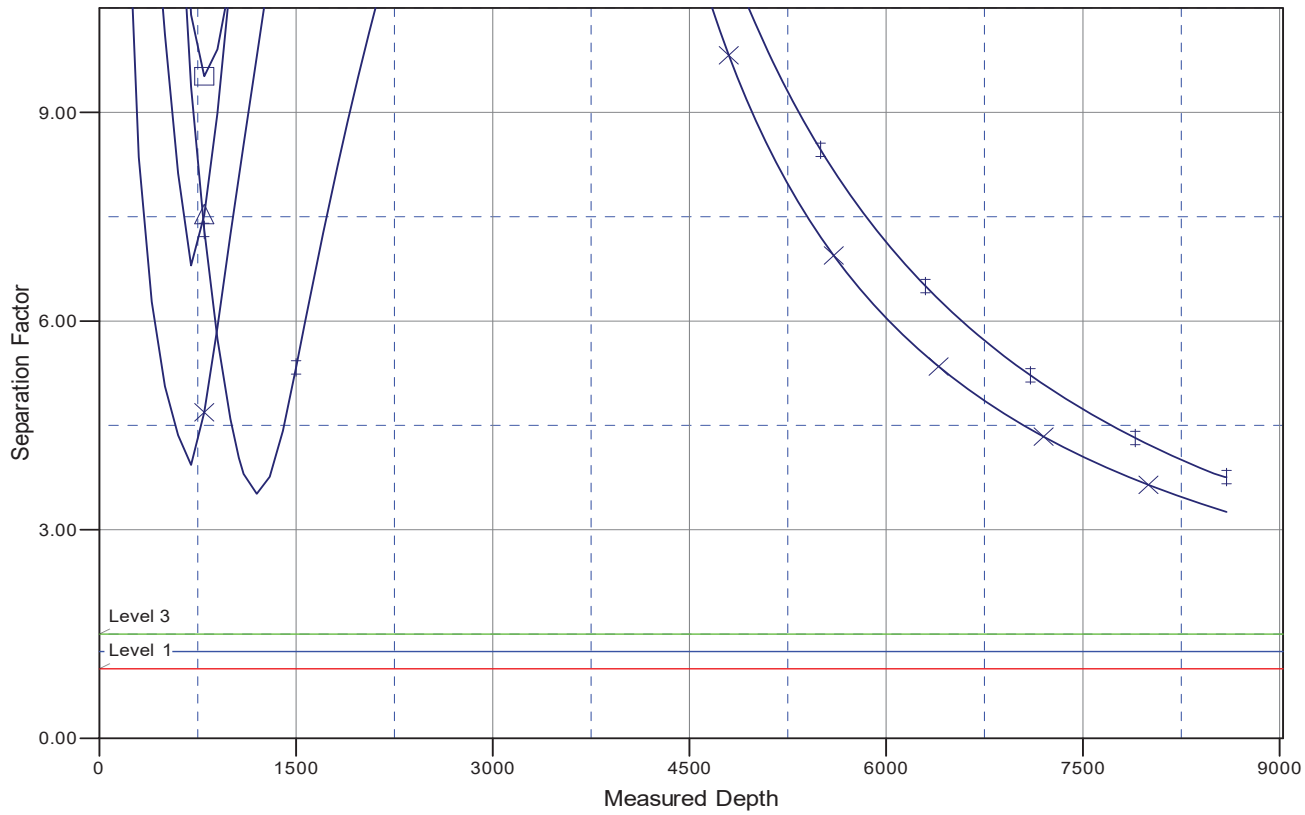
# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | SILVERBACK EXPLORATION | **Local Co-ordinate Reference:** | Well Roche 101H |
| **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 101H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Roche 101H | **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 101H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: -0.06°

## Separation Factor Plot




LEGEND

Roche 103H, Roche 103H, Plan 1r0 V0
Roche 201H, Roche 201H for AC, Plan 1r0 V0
Roche 202H, Roche 202H for AC, Plan 1r0 V0
Roche 102H, Roche 102H, Plan 1r0 V0