

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

**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 378308

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

|                                                                                         |                                            |                               |
|-----------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------|
| 1. Operator Name and Address<br>V-F PETROLEUM INC<br>P.O. Box 1889<br>Midland, TX 79702 |                                            | 2. OGRID Number<br>24010      |
|                                                                                         |                                            | 3. API Number<br>30-015-55777 |
| 4. Property Code<br>329325                                                              | 5. Property Name<br>Lightfoot 19 State Com | 6. Well No.<br>234H           |

**7. Surface Location**

|               |               |                 |              |         |                  |               |                  |               |                |
|---------------|---------------|-----------------|--------------|---------|------------------|---------------|------------------|---------------|----------------|
| UL - Lot<br>A | Section<br>19 | Township<br>19S | Range<br>28E | Lot Idn | Feet From<br>330 | N/S Line<br>N | Feet From<br>100 | E/W Line<br>E | County<br>Eddy |
|---------------|---------------|-----------------|--------------|---------|------------------|---------------|------------------|---------------|----------------|

**8. Proposed Bottom Hole Location**

|               |               |                 |              |              |                  |               |                   |               |                |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|----------------|
| UL - Lot<br>B | Section<br>24 | Township<br>19S | Range<br>27E | Lot Idn<br>B | Feet From<br>330 | N/S Line<br>N | Feet From<br>2530 | E/W Line<br>E | County<br>Eddy |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|----------------|

**9. Pool Information**

|                               |       |
|-------------------------------|-------|
| WINCHESTER; BONE SPRING, WEST | 97569 |
|-------------------------------|-------|

**Additional Well Information**

|                           |                             |                                        |                         |                                    |
|---------------------------|-----------------------------|----------------------------------------|-------------------------|------------------------------------|
| 11. Work Type<br>New Well | 12. Well Type<br>OIL        | 13. Cable/Rotary                       | 14. Lease Type<br>State | 15. Ground Level Elevation<br>3517 |
| 16. Multiple<br>N         | 17. Proposed Depth<br>16029 | 18. Formation<br>Bone Spring           | 19. Contractor          | 20. Spud Date<br>1/2/2025          |
| 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 | 17.5      | 13.375      | 48               | 450           | 510             | 0             |
| Int1 | 12.25     | 9.625       | 40               | 3500          | 950             | 0             |
| Prod | 8.75      | 5.5         | 20               | 16029         | 3150            | 1850          |

**Casing/Cement Program: Additional Comments**

|  |
|--|
|  |
|--|

**22. Proposed Blowout Prevention Program**

| Type       | Working Pressure | Test Pressure | Manufacturer |
|------------|------------------|---------------|--------------|
| Annular    | 3000             | 3000          | TBD          |
| Double Ram | 3000             | 3000          | TBD          |

|                                                                                                                                                                                                                                                                                                    |                                        |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------|
| 23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.<br>I further certify I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. | <b>OIL CONSERVATION DIVISION</b>       |                                 |
| Signature:                                                                                                                                                                                                                                                                                         |                                        |                                 |
| Printed Name: Electronically filed by Pam O'Neil                                                                                                                                                                                                                                                   | Approved By: Ward Rikala               |                                 |
| Title: Regulatory Manager                                                                                                                                                                                                                                                                          | Title: Petroleum Specialist Supervisor |                                 |
| Email Address: pamo@vfpetroleum.com                                                                                                                                                                                                                                                                | Approved Date: 11/21/2024              | Expiration Date: 11/21/2026     |
| Date: 11/20/2024                                                                                                                                                                                                                                                                                   | Phone: 432-683-3344                    | Conditions of Approval Attached |

|                                                      |                                                                                                     |                                                       |                      |  |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------|--|
| C-102<br>Submit Electronically<br>Via OCD Permitting | State of New Mexico<br>Energy, Minerals & Natural Resources Department<br>OIL CONSERVATION DIVISION |                                                       | Revised July 9, 2024 |  |
|                                                      | Submittal<br>Type:                                                                                  | <input checked="" type="checkbox"/> Initial Submittal |                      |  |
|                                                      |                                                                                                     | <input type="checkbox"/> Amended Report               |                      |  |
|                                                      |                                                                                                     | <input type="checkbox"/> As Drilled                   |                      |  |

## WELL LOCATION INFORMATION

|                                                                                                                                                        |                                                |                                                                                                                                                        |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| API Number<br><b>30-015-55777</b>                                                                                                                      | Pool Code<br><b>97569</b>                      | Pool Name<br><b>WINCHESTER; BONE SPRING, WEST</b>                                                                                                      |                                        |
| Property Code<br><b>329325</b>                                                                                                                         | Property Name<br><b>LIGHTFOOT 19 STATE COM</b> |                                                                                                                                                        | Well Number<br><b>234H</b>             |
| OGRID No.<br><b>24010</b>                                                                                                                              | Operator Name<br><b>V-F PETROLEUM</b>          |                                                                                                                                                        | Ground Level Elevation<br><b>3517'</b> |
| Surface Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal |                                                | Mineral Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal |                                        |

## Surface Location

|    |         |          |       |     |              |              |            |             |        |
|----|---------|----------|-------|-----|--------------|--------------|------------|-------------|--------|
| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude   | Longitude   | County |
| A  | 19      | 19-S     | 28-E  | -   | 330 FNL      | 100 FEL      | 32.652270° | 104.206798° | EDDY   |

## Bottom Hole Location

|    |         |          |       |     |              |              |            |             |        |
|----|---------|----------|-------|-----|--------------|--------------|------------|-------------|--------|
| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude   | Longitude   | County |
| B  | 24      | 19-S     | 27-E  | -   | 330 FNL      | 2530 FEL     | 32.652109° | 104.231922° | EDDY   |

|                                  |                         |                   |                                                                                                    |                                |
|----------------------------------|-------------------------|-------------------|----------------------------------------------------------------------------------------------------|--------------------------------|
| Dedicated Acres<br><b>243.01</b> | Infill or Defining Well | Defining Well API | Overlapping Spacing Unit (Y/N)                                                                     | Consolidation Code<br><b>C</b> |
| Order Numbers.                   |                         |                   | Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input type="checkbox"/> No |                                |

## Kick Off Point (KOP)

|    |         |          |       |     |              |              |            |             |        |
|----|---------|----------|-------|-----|--------------|--------------|------------|-------------|--------|
| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude   | Longitude   | County |
| A  | 19      | 19-S     | 28-E  | -   | 330 FNL      | 100 FEL      | 32.652270° | 104.206798° | EDDY   |

## First Take Point (FTP)

|    |         |          |       |     |              |              |            |             |        |
|----|---------|----------|-------|-----|--------------|--------------|------------|-------------|--------|
| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude   | Longitude   | County |
| A  | 19      | 19-S     | 28-E  | -   | 330 FNL      | 550 FEL      | 32.652244° | 104.208259° | EDDY   |

## Last Take Point (LTP)

|    |         |          |       |     |              |              |            |             |        |
|----|---------|----------|-------|-----|--------------|--------------|------------|-------------|--------|
| UL | Section | Township | Range | Lot | Ft. from N/S | Ft. from E/W | Latitude   | Longitude   | County |
| B  | 24      | 19-S     | 27-E  | -   | 330 FNL      | 2430 FEL     | 32.652104° | 104.231599° | EDDY   |

|                                           |                                                                                                    |                         |
|-------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|
| Unitized Area or Area of Uniform Interest | Spacing Unit Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical | Ground Floor Elevation: |
|-------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|

## OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

*Cory Walk* **11/11/24**  
Signature Date

**Cory Walk**

Printed Name

**cory@permitswest.com**

E-mail Address

## SURVEYOR CERTIFICATIONS

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.



*Gary G. Eidson* **09/26/2024**  
Signature and Seal of Professional Surveyor

Gary G. Eidson 12641

**FEBRUARY 13, 2019**

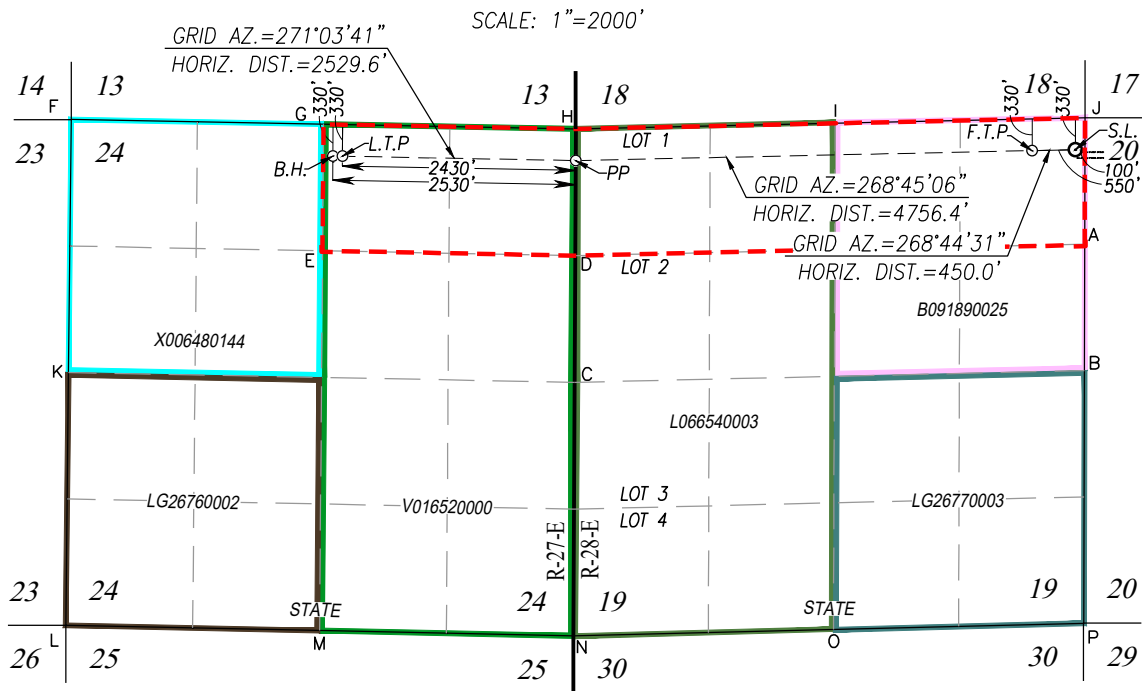
Certificate Number

Date of Survey

PAGE 1 OF 2

ACK REV.:9/25/2024 REL. W.O.: 21130327 JWSC W.O.: 24.13.0321

Note: 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



BOTTOM HOLE LOCATION  
NAD 27 NME  
Y= 600921.4 N  
X= 531369.6 E  
LAT.=32.651993° N  
LONG.=104.231412° W

LAST TAKE POINT  
NAD 27 NME  
Y= 600919.5 N  
X= 531468.9 E  
LAT.=32.651988° N  
LONG.=104.231089° W

PENETRATION POINT  
GEODETTIC COORDINATES  
NAD 27 NME  
Y= 600874.5 N  
X= 533898.1 E  
LAT.=32.651857° N  
LONG.=104.223196° W

FIRST TAKE POINT  
NAD 27 NME  
Y= 600978.1 N  
X= 538652.2 E  
LAT.=32.652128° N  
LONG.=104.207750° W

SURFACE LOCATION  
GEODETTIC COORDINATES  
NAD 27 NME  
Y= 600988.0 N  
X= 539102.0 E  
LAT.=32.652153° N  
LONG.=104.206288° W

330.0' FNL-2530.0' FEL  
SEC. 24

330.0' FNL-2430.0' FEL  
SEC. 24

330.0' FNL  
SEC. 19 & 24

330.0' FNL-550.0' FEL  
SEC. 19

330.0' FNL-100.0' FEL  
SEC. 19

BOTTOM HOLE LOCATION  
NAD 83 NME  
Y= 600983.3 N  
X= 572549.3 E  
LAT.=32.652109° N  
LONG.=104.231922° W

LAST TAKE POINT  
NAD 83 NME  
Y= 600981.4 N  
X= 572648.7 E  
LAT.=32.652104° N  
LONG.=104.231599° W

PENETRATION POINT  
GEODETTIC COORDINATES  
NAD 83 NME  
Y= 600936.4 N  
X= 575077.9 E  
LAT.=32.651974° N  
LONG.=104.223706° W

FIRST TAKE POINT  
NAD 83 NME  
Y= 601040.0 N  
X= 579832.0 E  
LAT.=32.652244° N  
LONG.=104.208259° W

SURFACE LOCATION  
GEODETTIC COORDINATES  
NAD 83 NME  
Y= 601049.9 N  
X= 580281.8 E  
LAT.=32.652270° N  
LONG.=104.206798° W

#### CORNER COORDINATES TABLE NAD 27 NME

A - Y= 600004.7 N, X= 539199.4 E  
B - Y= 598689.2 N, X= 539195.9 E  
C - Y= 598565.7 N, X= 533886.6 E  
D - Y= 599885.1 N, X= 533893.2 E  
E - Y= 599935.2 N, X= 531262.0 E  
F - Y= 601301.7 N, X= 528645.6 E  
G - Y= 601253.2 N, X= 531272.2 E  
H - Y= 601204.4 N, X= 533899.7 E  
I - Y= 601263.2 N, X= 536600.0 E  
J - Y= 601320.1 N, X= 539203.0 E  
K - Y= 598668.8 N, X= 528616.8 E  
L - Y= 596036.6 N, X= 528588.6 E  
M - Y= 595981.9 N, X= 531231.4 E  
N - Y= 595926.8 N, X= 533873.3 E  
O - Y= 595993.7 N, X= 536581.8 E  
P - Y= 596058.2 N, X= 539188.8 E

#### CORNER COORDINATES TABLE NAD 83 NME

A - Y= 600066.6 N, X= 580379.2 E  
B - Y= 598751.1 N, X= 580375.7 E  
C - Y= 598627.5 N, X= 575066.4 E  
D - Y= 599946.9 N, X= 575073.0 E  
E - Y= 599997.0 N, X= 572441.8 E  
F - Y= 601363.5 N, X= 569825.4 E  
G - Y= 601315.0 N, X= 572451.9 E  
H - Y= 601266.3 N, X= 575079.5 E  
I - Y= 601325.2 N, X= 577779.8 E  
J - Y= 601382.1 N, X= 580382.8 E  
K - Y= 598730.6 N, X= 569796.6 E  
L - Y= 596098.3 N, X= 569768.5 E  
M - Y= 596043.7 N, X= 572411.2 E  
N - Y= 595988.6 N, X= 575053.2 E  
O - Y= 596055.5 N, X= 577761.6 E  
P - Y= 596120.1 N, X= 580368.6 E

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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 378308

## PERMIT CONDITIONS OF APPROVAL

|                                                                                               |                                       |
|-----------------------------------------------------------------------------------------------|---------------------------------------|
| Operator Name and Address:<br>V-F PETROLEUM INC [24010]<br>P.O. Box 1889<br>Midland, TX 79702 | API Number:<br>30-015-55777           |
|                                                                                               | Well:<br>Lightfoot 19 State Com #234H |

| OCD Reviewer | Condition                                                                                                                                                                                                                                                             |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ward.rikala  | Notify the OCD 24 hours prior to casing & cement.                                                                                                                                                                                                                     |
| ward.rikala  | File As Drilled C-102 and a directional Survey with C-104 completion packet.                                                                                                                                                                                          |
| 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 Cement Bond Log (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  | A [C-103] Sub. Drilling (C-103N) is required within (10) days of 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:** V-F Petroleum Inc. **OGRID:** 24010 **Date:** 11/11/2024

**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 |
|------------------------------|-----|--------------|-----------------|-----------------------|-----------------------|----------------------------------|
| Lightfoot 19 State Com #224H |     | A 19 19S 28E | 390FNL & 100FEL | 650                   | 900                   | 1,200                            |
| Lightfoot 19 State Com #234H |     | A 19 19S 28E | 330FNL & 100FEL | 750                   | 900                   | 1,200                            |

**IV. Central Delivery Point Name:** Lightfoot North 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 |
|------------------------------|-----|------------|-----------------|------------------------------|------------------------|-----------------------|
| Lightfoot 19 State Com #224H |     | 03/04/2025 | 03/26/2025      | 07/01/2025                   | 07/15/2025             | 07/15/2025            |
| Lightfoot 19 State Com #234H |     | 03/28/2025 | 04/19/2025      | 07/01/2025                   | 07/15/2025             | 07/15/2025            |

**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 |
|------|-----|--------------------------------------------|----------------------------------------------------------|
|      |     |                                            |                                                          |
|      |     |                                            |                                                          |

**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 |
|----------|--------|-----------------|----------------------------------|-----------------------------------------------------------|
|          |        |                 |                                  |                                                           |
|          |        |                 |                                  |                                                           |

**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:



Printed Name: Bill Pierce

Title: Operations Manager

E-mail Address: bill@vfpetroleum.com

Date: 11/11/2024

Phone: (432) 683-3344

**OIL CONSERVATION DIVISION****(Only applicable when submitted as a standalone form)**

Approved By:

Title:

Approval Date:

Conditions of Approval:

**V-F Petroleum Inc  
Natural Gas Management Plan - Attachment**

**VI: Separation Equipment**

V-F Petroleum Inc (V-F) has sized all separation equipment to be adequate to handle the maximum anticipated production facility rates for all three phases. Adequate separation relates to retention time for Liquid-Liquid separation and velocity for Gas-Liquid separation. Ancillary equipment and metering will be selected to be serviced without flow interruptions or the need to release gas from the well.

**VII: Operational Practices**Drilling Operations

V-F will capture or combust natural gas using best industry practices and control technologies during drilling operations. A properly sized flare stack will be located at a minimum of 100 feet from the nearest surface hole location. Gas may be vented in an emergency to avoid a risk of an immediate and substantial adverse impact on safety, public health, or the environment.

Completion/Recompletion Operations

During initial flowback, V-F will route flowback fluids into a completion or storage tank, and if possible, flare instead of vent any natural gas with a properly sized flare stack until it is able to flow through a separator and down a line for sales. In the unlikely event that produced natural gas does not meet pipeline specifications, V-F will flare it for 60 days or until the natural gas meets pipeline specifications, whichever is sooner.

Production Operations

Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D (1) through (4). If there is no adequate takeaway for the separator gas, all effected wells will be shut in until takeaway issues are resolved. Exceptions would be emergency or major malfunction situations.

Performance Standards

All completion, production separation equipment, and storage tanks will be properly sized to handle the maximum anticipated volumes and pressures associated with each well. Any permanent storage tank associated with production operations that is routed to a flare or control device, will be equipped with an automatic gauging system that reduces the venting of natural gas. A properly sized flare stack will be securely anchored and installed at least 100 feet away from both the well(s) and storage tanks, and will be equipped with an automatic ignitor or continuous pilot. V-F will conduct AVO inspections on the frequency specified in 19.15.27.8 E (5) (b) and (c). V-F will do everything possible to minimize waste and will resolve emergencies as quickly and safely as possible.

Measurement and Estimation

Any vented or flared natural gas volumes will be estimated and reported appropriately. V-F will install equipment to measure the volume of natural gas flared from existing process piping or a flowline piped from equipment such as high-pressure separators, heater treaters, or vapor recovery units. All measuring equipment will adhere to industry standards set forth by the American Petroleum Institute Manual of Petroleum Measurement Standards Chapter 14.10. Measuring equipment will not be designed or equipped with a manifold that allows diversion of natural gas around a metering element, except for the sole purpose of inspecting and servicing the measurement equipment. Flared/vented

**V-F Petroleum Inc  
Natural Gas Management Plan - Attachment**

natural gas will be estimated if metering is not practical due to low flow rate or low pressures. This estimation will include but will not be limited to an annual GOR test reported to the division.

**VIII: Best Management Practices**

V-F will utilize best management practices to minimize venting during active and planned maintenance. Potential actions that will be considered include, but are not limited to:

- Venting limited to the depressurizing of the subject equipment to ensure a safe repair
- Identifying alternate capture methods
- Temporarily reduce production or shut-in wells during maintenance
- Flare if natural gas does not meet pipeline specifications
- Perform preventative maintenance to avoid potential equipment failure

Petroleum, Inc.  
 Project: Eddy County, NM  
 Site: Sec 19-T19S-R28E  
 Well: Lightfoot 19 State Com 234H  
 Wellbore: Wellbore #1  
 Plan: Plan #1 (Lightfoot 19 State Com 234H/Wellbore #1)

WELL DETAILS: Lightfoot 19 State Com 234H

Ground Elevation: 3517.0  
 RKB Elevation: 3517+20 @ 3537.0usft  
 Rig Name:

Northing 601049.90 Easting 580281.80 Latitude 32° 39' 8.171 N Longitude 104° 12' 24.472 W



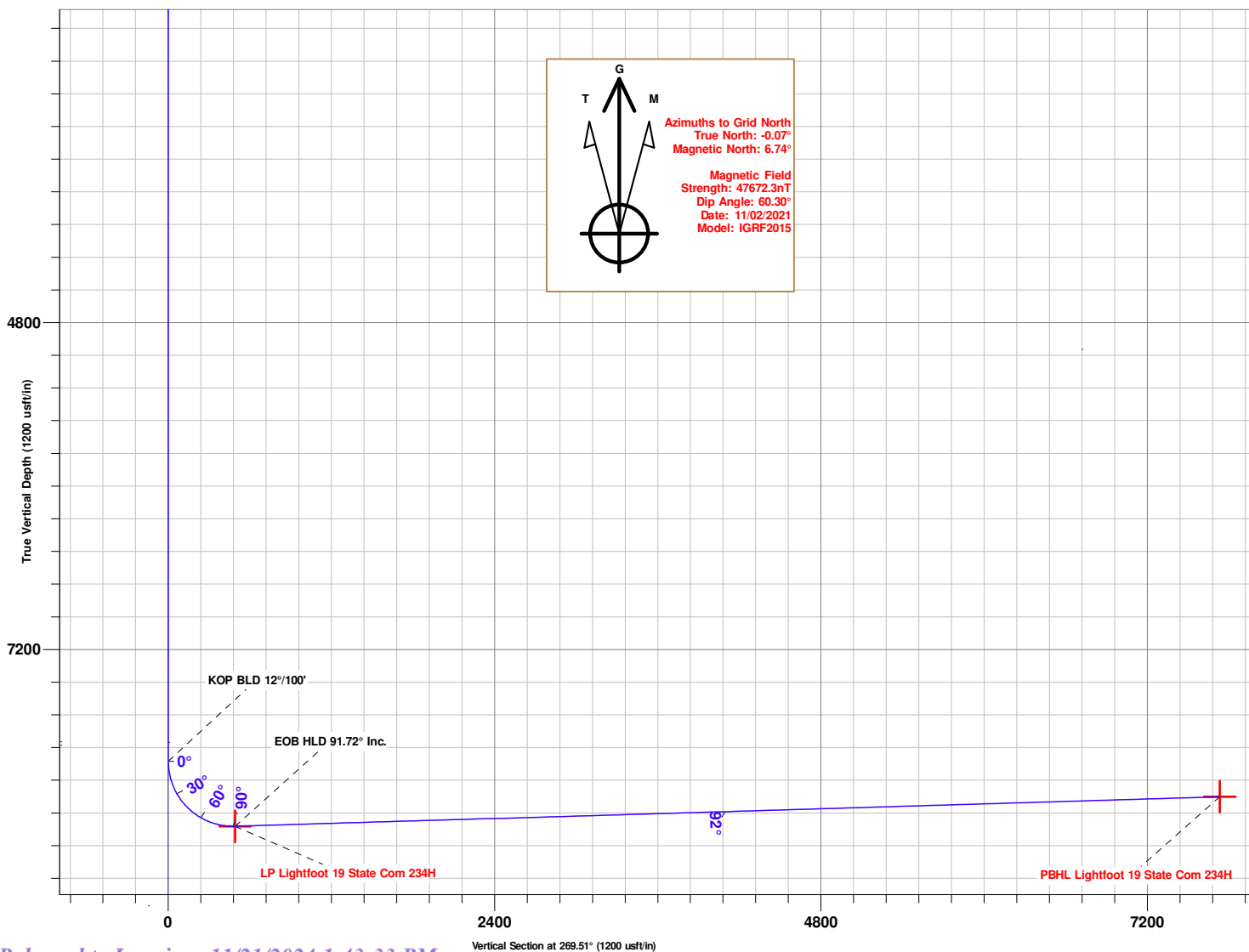
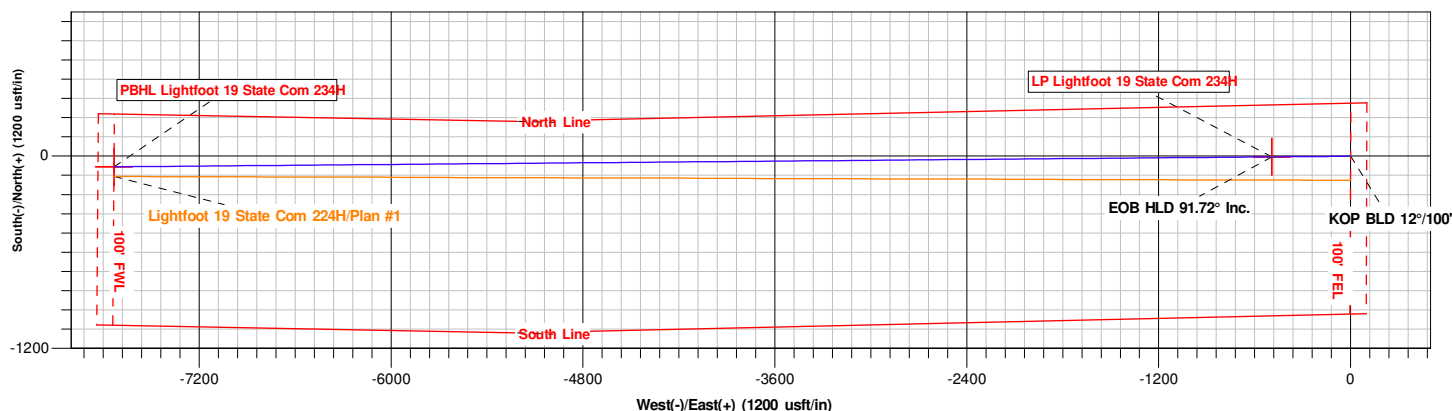
## SECTION DETAILS

| MD      | Inc   | Azi    | TVD    | +N/-S | +E/-W   | Dleg  | TFace  | Vsect  |
|---------|-------|--------|--------|-------|---------|-------|--------|--------|
| 0.0     | 0.00  | 0.00   | 0.0    | 0.0   | 0.0     | 0.00  | 0.00   | 0.0    |
| 8020.7  | 0.00  | 0.00   | 8020.7 | 0.0   | 0.0     | 0.00  | 0.00   | 0.0    |
| 8785.0  | 91.72 | 269.51 | 8498.0 | -4.2  | -491.7  | 12.00 | 269.51 | 491.8  |
| 16029.3 | 91.72 | 269.51 | 8281.0 | -66.6 | -7732.5 | 0.00  | 0.00   | 7732.8 |

## DESIGN TARGET DETAILS

| Name                             | TVD    | +N/-S | +E/-W   | Northing  | Easting   | Latitude        | Longitude         | Shape |
|----------------------------------|--------|-------|---------|-----------|-----------|-----------------|-------------------|-------|
| PBHL Lightfoot 19 State Com 234H | 8281.0 | -66.6 | -7732.5 | 600983.30 | 572549.30 | 32° 39' 7.594 N | 104° 13' 54.919 W | Point |
| LP Lightfoot 19 State Com 234H   | 8498.0 | -4.2  | -491.7  | 601045.70 | 579790.10 | 32° 39' 8.135 N | 104° 12' 30.223 W | Point |

- plan hits target center  
 - plan misses target center by 0.1usft at 8785.0usft MD (8498.0 TVD, -4.2 N, -491.7 E)





## **V-F Petroleum, Inc.**

**Eddy County, NM**

**Sec 19-T19S-R28E**

**Lightfoot 19 State Com 234H**

**Wellbore #1**

**Plan: Plan #1**

## **Standard Planning Report**

**02 November, 2021**



Microsoft  
Planning Report

|           |                             |                              |                                  |
|-----------|-----------------------------|------------------------------|----------------------------------|
| Database: | EDM 5000.15 Single User Db  | Local Co-ordinate Reference: | Well Lightfoot 19 State Com 234H |
| Company:  | V-F Petroleum, Inc.         | TVD Reference:               | 3517+20 @ 3537.0usft             |
| Project:  | Eddy County, NM             | MD Reference:                | 3517+20 @ 3537.0usft             |
| Site:     | Sec 19-T19S-R28E            | North Reference:             | Grid                             |
| Well:     | Lightfoot 19 State Com 234H | Survey Calculation Method:   | Minimum Curvature                |
| Wellbore: | Wellbore #1                 |                              |                                  |
| Design:   | Plan #1                     |                              |                                  |

|             |                           |               |                |
|-------------|---------------------------|---------------|----------------|
| Project     | Eddy County, NM           |               |                |
| Map System: | US State Plane 1983       | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983 |               |                |
| Map Zone:   | New Mexico Eastern Zone   |               |                |

|                       |     |                  |                 |            |                   |        |
|-----------------------|-----|------------------|-----------------|------------|-------------------|--------|
| Site                  |     | Sec 19-T19S-R28E |                 |            |                   |        |
| Site Position:        |     | Northing:        | 598,207.90 usft | Latitude:  | 32° 38' 40.049 N  |        |
| From:                 | Map | Easting:         | 580,274.30 usft | Longitude: | 104° 12' 24.599 W |        |
| Position Uncertainty: |     | 0.0 usft         | Slot Radius:    | 13-3/16 "  | Grid Convergence: | 0.07 ° |

|                      |                             |              |                     |                 |               |                   |
|----------------------|-----------------------------|--------------|---------------------|-----------------|---------------|-------------------|
| Well                 | Lightfoot 19 State Com 234H |              |                     |                 |               |                   |
| Well Position        | +N/-S                       | 2,842.0 usft | Northing:           | 601,049.90 usft | Latitude:     | 32° 39' 8.171 N   |
|                      | +E/-W                       | 7.5 usft     | Easting:            | 580,281.80 usft | Longitude:    | 104° 12' 24.472 W |
| Position Uncertainty |                             | 0.0 usft     | Wellhead Elevation: |                 | Ground Level: | 3,517.0 usft      |

|           |             |             |                 |               |                     |
|-----------|-------------|-------------|-----------------|---------------|---------------------|
| Wellbore  | Wellbore #1 |             |                 |               |                     |
| Magnetics | Model Name  | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|           | IGRF2015    | 11/02/21    | 6.81            | 60.30         | 47,672.27259593     |

|                   |                         |              |               |               |
|-------------------|-------------------------|--------------|---------------|---------------|
| Design            | Plan #1                 |              |               |               |
| Audit Notes:      |                         |              |               |               |
| Version:          | Phase:                  | PLAN         | Tie On Depth: | 0.0           |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft)  | Direction (°) |
|                   | 0.0                     | 0.0          | 0.0           | 269.51        |

|                          |                 |                   |                       |                     |
|--------------------------|-----------------|-------------------|-----------------------|---------------------|
| Plan Survey Tool Program | Date            | 11/02/21          |                       |                     |
| Depth From (usft)        | Depth To (usft) | Survey (Wellbore) | Tool Name             | Remarks             |
| 1                        | 0.0             | 16,028.6          | Plan #1 (Wellbore #1) | 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                |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                       |
| 8,020.7               | 0.00            | 0.00        | 8,020.7               | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                       |
| 8,785.0               | 91.72           | 269.51      | 8,498.0               | -4.2         | -491.7       | 12.00                   | 12.00                  | -11.84                | 269.51  |                       |
| 16,029.3              | 91.72           | 269.51      | 8,281.0               | -66.6        | -7,732.5     | 0.00                    | 0.00                   | 0.00                  | 0.00    | PBHL Lightfoot 19 Sta |



**Microsoft**  
Planning Report

|                  |                             |                                     |                                  |
|------------------|-----------------------------|-------------------------------------|----------------------------------|
| <b>Database:</b> | EDM 5000.15 Single User Db  | <b>Local Co-ordinate Reference:</b> | Well Lightfoot 19 State Com 234H |
| <b>Company:</b>  | V-F Petroleum, Inc.         | <b>TVD Reference:</b>               | 3517+20 @ 3537.0usft             |
| <b>Project:</b>  | Eddy County, NM             | <b>MD Reference:</b>                | 3517+20 @ 3537.0usft             |
| <b>Site:</b>     | Sec 19-T19S-R28E            | <b>North Reference:</b>             | Grid                             |
| <b>Well:</b>     | Lightfoot 19 State Com 234H | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Wellbore:</b> | Wellbore #1                 |                                     |                                  |
| <b>Design:</b>   | Plan #1                     |                                     |                                  |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 100.0                 | 0.00            | 0.00        | 100.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 200.0                 | 0.00            | 0.00        | 200.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 300.0                 | 0.00            | 0.00        | 300.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 400.0                 | 0.00            | 0.00        | 400.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 500.0                 | 0.00            | 0.00        | 500.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 600.0                 | 0.00            | 0.00        | 600.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 700.0                 | 0.00            | 0.00        | 700.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 800.0                 | 0.00            | 0.00        | 800.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 900.0                 | 0.00            | 0.00        | 900.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,000.0               | 0.00            | 0.00        | 1,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,200.0               | 0.00            | 0.00        | 1,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,300.0               | 0.00            | 0.00        | 1,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,400.0               | 0.00            | 0.00        | 1,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,500.0               | 0.00            | 0.00        | 1,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,600.0               | 0.00            | 0.00        | 1,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,700.0               | 0.00            | 0.00        | 1,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,800.0               | 0.00            | 0.00        | 1,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,900.0               | 0.00            | 0.00        | 1,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,000.0               | 0.00            | 0.00        | 2,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,100.0               | 0.00            | 0.00        | 2,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,200.0               | 0.00            | 0.00        | 2,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,300.0               | 0.00            | 0.00        | 2,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,400.0               | 0.00            | 0.00        | 2,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,500.0               | 0.00            | 0.00        | 2,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,600.0               | 0.00            | 0.00        | 2,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,700.0               | 0.00            | 0.00        | 2,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,800.0               | 0.00            | 0.00        | 2,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,900.0               | 0.00            | 0.00        | 2,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,000.0               | 0.00            | 0.00        | 3,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,100.0               | 0.00            | 0.00        | 3,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,200.0               | 0.00            | 0.00        | 3,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,300.0               | 0.00            | 0.00        | 3,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,400.0               | 0.00            | 0.00        | 3,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,500.0               | 0.00            | 0.00        | 3,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,600.0               | 0.00            | 0.00        | 3,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,700.0               | 0.00            | 0.00        | 3,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,800.0               | 0.00            | 0.00        | 3,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,900.0               | 0.00            | 0.00        | 3,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,000.0               | 0.00            | 0.00        | 4,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,100.0               | 0.00            | 0.00        | 4,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,200.0               | 0.00            | 0.00        | 4,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,300.0               | 0.00            | 0.00        | 4,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,400.0               | 0.00            | 0.00        | 4,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,500.0               | 0.00            | 0.00        | 4,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,600.0               | 0.00            | 0.00        | 4,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,700.0               | 0.00            | 0.00        | 4,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,800.0               | 0.00            | 0.00        | 4,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,900.0               | 0.00            | 0.00        | 4,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,000.0               | 0.00            | 0.00        | 5,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,100.0               | 0.00            | 0.00        | 5,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,200.0               | 0.00            | 0.00        | 5,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,300.0               | 0.00            | 0.00        | 5,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |



**Microsoft**  
Planning Report

|                  |                             |                                     |                                  |
|------------------|-----------------------------|-------------------------------------|----------------------------------|
| <b>Database:</b> | EDM 5000.15 Single User Db  | <b>Local Co-ordinate Reference:</b> | Well Lightfoot 19 State Com 234H |
| <b>Company:</b>  | V-F Petroleum, Inc.         | <b>TVD Reference:</b>               | 3517+20 @ 3537.0usft             |
| <b>Project:</b>  | Eddy County, NM             | <b>MD Reference:</b>                | 3517+20 @ 3537.0usft             |
| <b>Site:</b>     | Sec 19-T19S-R28E            | <b>North Reference:</b>             | Grid                             |
| <b>Well:</b>     | Lightfoot 19 State Com 234H | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Wellbore:</b> | Wellbore #1                 |                                     |                                  |
| <b>Design:</b>   | Plan #1                     |                                     |                                  |

| Planned Survey          |                 |             |                       |              |              |                         |                         |                        |                       |
|-------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)   | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,400.0                 | 0.00            | 0.00        | 5,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,500.0                 | 0.00            | 0.00        | 5,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,600.0                 | 0.00            | 0.00        | 5,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,700.0                 | 0.00            | 0.00        | 5,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,800.0                 | 0.00            | 0.00        | 5,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,900.0                 | 0.00            | 0.00        | 5,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,000.0                 | 0.00            | 0.00        | 6,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,100.0                 | 0.00            | 0.00        | 6,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,200.0                 | 0.00            | 0.00        | 6,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,300.0                 | 0.00            | 0.00        | 6,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,400.0                 | 0.00            | 0.00        | 6,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,500.0                 | 0.00            | 0.00        | 6,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,600.0                 | 0.00            | 0.00        | 6,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,700.0                 | 0.00            | 0.00        | 6,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,800.0                 | 0.00            | 0.00        | 6,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,900.0                 | 0.00            | 0.00        | 6,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,000.0                 | 0.00            | 0.00        | 7,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,100.0                 | 0.00            | 0.00        | 7,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,200.0                 | 0.00            | 0.00        | 7,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,300.0                 | 0.00            | 0.00        | 7,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,400.0                 | 0.00            | 0.00        | 7,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,500.0                 | 0.00            | 0.00        | 7,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,600.0                 | 0.00            | 0.00        | 7,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,700.0                 | 0.00            | 0.00        | 7,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,800.0                 | 0.00            | 0.00        | 7,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,900.0                 | 0.00            | 0.00        | 7,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,000.0                 | 0.00            | 0.00        | 8,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,020.7                 | 0.00            | 0.00        | 8,020.7               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| <b>KOP BLD 12°/100'</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,025.0                 | 0.52            | 269.51      | 8,025.0               | 0.0          | 0.0          | 0.0                     | 12.00                   | 12.00                  | 0.00                  |
| 8,050.0                 | 3.52            | 269.51      | 8,050.0               | 0.0          | -0.9         | 0.9                     | 12.00                   | 12.00                  | 0.00                  |
| 8,075.0                 | 6.52            | 269.51      | 8,074.9               | 0.0          | -3.1         | 3.1                     | 12.00                   | 12.00                  | 0.00                  |
| 8,100.0                 | 9.52            | 269.51      | 8,099.6               | -0.1         | -6.6         | 6.6                     | 12.00                   | 12.00                  | 0.00                  |
| 8,125.0                 | 12.52           | 269.51      | 8,124.2               | -0.1         | -11.3        | 11.3                    | 12.00                   | 12.00                  | 0.00                  |
| 8,150.0                 | 15.52           | 269.51      | 8,148.4               | -0.1         | -17.4        | 17.4                    | 12.00                   | 12.00                  | 0.00                  |
| 8,175.0                 | 18.52           | 269.51      | 8,172.3               | -0.2         | -24.7        | 24.7                    | 12.00                   | 12.00                  | 0.00                  |
| 8,200.0                 | 21.52           | 269.51      | 8,195.8               | -0.3         | -33.3        | 33.3                    | 12.00                   | 12.00                  | 0.00                  |
| 8,225.0                 | 24.52           | 269.51      | 8,218.8               | -0.4         | -43.0        | 43.0                    | 12.00                   | 12.00                  | 0.00                  |
| 8,250.0                 | 27.52           | 269.51      | 8,241.3               | -0.5         | -54.0        | 54.0                    | 12.00                   | 12.00                  | 0.00                  |
| 8,275.0                 | 30.52           | 269.51      | 8,263.1               | -0.6         | -66.1        | 66.1                    | 12.00                   | 12.00                  | 0.00                  |
| 8,300.0                 | 33.52           | 269.51      | 8,284.3               | -0.7         | -79.4        | 79.4                    | 12.00                   | 12.00                  | 0.00                  |
| 8,325.0                 | 36.52           | 269.51      | 8,304.8               | -0.8         | -93.7        | 93.7                    | 12.00                   | 12.00                  | 0.00                  |
| 8,350.0                 | 39.52           | 269.51      | 8,324.5               | -0.9         | -109.1       | 109.1                   | 12.00                   | 12.00                  | 0.00                  |
| 8,375.0                 | 42.52           | 269.51      | 8,343.4               | -1.1         | -125.5       | 125.5                   | 12.00                   | 12.00                  | 0.00                  |
| 8,400.0                 | 45.52           | 269.51      | 8,361.3               | -1.2         | -142.9       | 142.9                   | 12.00                   | 12.00                  | 0.00                  |
| 8,425.0                 | 48.52           | 269.51      | 8,378.4               | -1.4         | -161.2       | 161.2                   | 12.00                   | 12.00                  | 0.00                  |
| 8,450.0                 | 51.52           | 269.51      | 8,394.5               | -1.6         | -180.3       | 180.3                   | 12.00                   | 12.00                  | 0.00                  |
| 8,475.0                 | 54.52           | 269.51      | 8,409.5               | -1.7         | -200.3       | 200.3                   | 12.00                   | 12.00                  | 0.00                  |
| 8,500.0                 | 57.52           | 269.51      | 8,423.5               | -1.9         | -221.0       | 221.0                   | 12.00                   | 12.00                  | 0.00                  |
| 8,525.0                 | 60.52           | 269.51      | 8,436.3               | -2.1         | -242.5       | 242.5                   | 12.00                   | 12.00                  | 0.00                  |
| 8,550.0                 | 63.52           | 269.51      | 8,448.1               | -2.3         | -264.5       | 264.5                   | 12.00                   | 12.00                  | 0.00                  |
| 8,575.0                 | 66.52           | 269.51      | 8,458.6               | -2.5         | -287.2       | 287.2                   | 12.00                   | 12.00                  | 0.00                  |
| 8,600.0                 | 69.52           | 269.51      | 8,468.0               | -2.7         | -310.4       | 310.4                   | 12.00                   | 12.00                  | 0.00                  |



# Microsoft Planning Report

|                  |                             |                                     |                                  |
|------------------|-----------------------------|-------------------------------------|----------------------------------|
| <b>Database:</b> | EDM 5000.15 Single User Db  | <b>Local Co-ordinate Reference:</b> | Well Lightfoot 19 State Com 234H |
| <b>Company:</b>  | V-F Petroleum, Inc.         | <b>TVD Reference:</b>               | 3517+20 @ 3537.0usft             |
| <b>Project:</b>  | Eddy County, NM             | <b>MD Reference:</b>                | 3517+20 @ 3537.0usft             |
| <b>Site:</b>     | Sec 19-T19S-R28E            | <b>North Reference:</b>             | Grid                             |
| <b>Well:</b>     | Lightfoot 19 State Com 234H | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Wellbore:</b> | Wellbore #1                 |                                     |                                  |
| <b>Design:</b>   | Plan #1                     |                                     |                                  |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 8,625.0               | 72.52           | 269.51      | 8,476.1               | -2.9         | -334.0       | 334.0                   | 12.00                   | 12.00                  | 0.00                  |
| 8,650.0               | 75.52           | 269.51      | 8,483.0               | -3.1         | -358.0       | 358.0                   | 12.00                   | 12.00                  | 0.00                  |
| 8,675.0               | 78.52           | 269.51      | 8,488.6               | -3.3         | -382.4       | 382.4                   | 12.00                   | 12.00                  | 0.00                  |
| 8,700.0               | 81.52           | 269.51      | 8,492.9               | -3.5         | -407.0       | 407.0                   | 12.00                   | 12.00                  | 0.00                  |
| 8,725.0               | 84.52           | 269.51      | 8,496.0               | -3.7         | -431.8       | 431.8                   | 12.00                   | 12.00                  | 0.00                  |
| 8,750.0               | 87.52           | 269.51      | 8,497.7               | -3.9         | -456.8       | 456.8                   | 12.00                   | 12.00                  | 0.00                  |
| 8,775.0               | 90.52           | 269.51      | 8,498.1               | -4.1         | -481.7       | 481.8                   | 12.00                   | 12.00                  | 0.00                  |
| 8,785.0               | 91.72           | 269.51      | 8,498.0               | -4.2         | -491.7       | 491.8                   | 12.00                   | 12.00                  | 0.00                  |
| EOB HLD 91.72° Inc.   |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,800.0               | 91.72           | 269.51      | 8,497.5               | -4.4         | -506.7       | 506.8                   | 0.00                    | 0.00                   | 0.00                  |
| 8,900.0               | 91.72           | 269.51      | 8,494.5               | -5.2         | -606.7       | 606.7                   | 0.00                    | 0.00                   | 0.00                  |
| 9,000.0               | 91.72           | 269.51      | 8,491.5               | -6.1         | -706.6       | 706.7                   | 0.00                    | 0.00                   | 0.00                  |
| 9,100.0               | 91.72           | 269.51      | 8,488.5               | -6.9         | -806.6       | 806.6                   | 0.00                    | 0.00                   | 0.00                  |
| 9,200.0               | 91.72           | 269.51      | 8,485.5               | -7.8         | -906.5       | 906.6                   | 0.00                    | 0.00                   | 0.00                  |
| 9,300.0               | 91.72           | 269.51      | 8,482.5               | -8.7         | -1,006.5     | 1,006.5                 | 0.00                    | 0.00                   | 0.00                  |
| 9,400.0               | 91.72           | 269.51      | 8,479.5               | -9.5         | -1,106.4     | 1,106.5                 | 0.00                    | 0.00                   | 0.00                  |
| 9,500.0               | 91.72           | 269.51      | 8,476.5               | -10.4        | -1,206.4     | 1,206.4                 | 0.00                    | 0.00                   | 0.00                  |
| 9,600.0               | 91.72           | 269.51      | 8,473.5               | -11.3        | -1,306.3     | 1,306.4                 | 0.00                    | 0.00                   | 0.00                  |
| 9,700.0               | 91.72           | 269.51      | 8,470.5               | -12.1        | -1,406.3     | 1,406.4                 | 0.00                    | 0.00                   | 0.00                  |
| 9,800.0               | 91.72           | 269.51      | 8,467.6               | -13.0        | -1,506.3     | 1,506.3                 | 0.00                    | 0.00                   | 0.00                  |
| 9,900.0               | 91.72           | 269.51      | 8,464.6               | -13.8        | -1,606.2     | 1,606.3                 | 0.00                    | 0.00                   | 0.00                  |
| 10,000.0              | 91.72           | 269.51      | 8,461.6               | -14.7        | -1,706.2     | 1,706.2                 | 0.00                    | 0.00                   | 0.00                  |
| 10,100.0              | 91.72           | 269.51      | 8,458.6               | -15.6        | -1,806.1     | 1,806.2                 | 0.00                    | 0.00                   | 0.00                  |
| 10,200.0              | 91.72           | 269.51      | 8,455.6               | -16.4        | -1,906.1     | 1,906.1                 | 0.00                    | 0.00                   | 0.00                  |
| 10,300.0              | 91.72           | 269.51      | 8,452.6               | -17.3        | -2,006.0     | 2,006.1                 | 0.00                    | 0.00                   | 0.00                  |
| 10,400.0              | 91.72           | 269.51      | 8,449.6               | -18.1        | -2,106.0     | 2,106.0                 | 0.00                    | 0.00                   | 0.00                  |
| 10,500.0              | 91.72           | 269.51      | 8,446.6               | -19.0        | -2,205.9     | 2,206.0                 | 0.00                    | 0.00                   | 0.00                  |
| 10,600.0              | 91.72           | 269.51      | 8,443.6               | -19.9        | -2,305.9     | 2,305.9                 | 0.00                    | 0.00                   | 0.00                  |
| 10,700.0              | 91.72           | 269.51      | 8,440.6               | -20.7        | -2,405.8     | 2,405.9                 | 0.00                    | 0.00                   | 0.00                  |
| 10,800.0              | 91.72           | 269.51      | 8,437.6               | -21.6        | -2,505.8     | 2,505.9                 | 0.00                    | 0.00                   | 0.00                  |
| 10,900.0              | 91.72           | 269.51      | 8,434.6               | -22.4        | -2,605.7     | 2,605.8                 | 0.00                    | 0.00                   | 0.00                  |
| 11,000.0              | 91.72           | 269.51      | 8,431.6               | -23.3        | -2,705.7     | 2,705.8                 | 0.00                    | 0.00                   | 0.00                  |
| 11,100.0              | 91.72           | 269.51      | 8,428.6               | -24.2        | -2,805.6     | 2,805.7                 | 0.00                    | 0.00                   | 0.00                  |
| 11,200.0              | 91.72           | 269.51      | 8,425.6               | -25.0        | -2,905.6     | 2,905.7                 | 0.00                    | 0.00                   | 0.00                  |
| 11,300.0              | 91.72           | 269.51      | 8,422.6               | -25.9        | -3,005.5     | 3,005.6                 | 0.00                    | 0.00                   | 0.00                  |
| 11,400.0              | 91.72           | 269.51      | 8,419.6               | -26.7        | -3,105.5     | 3,105.6                 | 0.00                    | 0.00                   | 0.00                  |
| 11,500.0              | 91.72           | 269.51      | 8,416.6               | -27.6        | -3,205.4     | 3,205.5                 | 0.00                    | 0.00                   | 0.00                  |
| 11,600.0              | 91.72           | 269.51      | 8,413.6               | -28.5        | -3,305.4     | 3,305.5                 | 0.00                    | 0.00                   | 0.00                  |
| 11,700.0              | 91.72           | 269.51      | 8,410.7               | -29.3        | -3,405.3     | 3,405.5                 | 0.00                    | 0.00                   | 0.00                  |
| 11,800.0              | 91.72           | 269.51      | 8,407.7               | -30.2        | -3,505.3     | 3,505.4                 | 0.00                    | 0.00                   | 0.00                  |
| 11,900.0              | 91.72           | 269.51      | 8,404.7               | -31.1        | -3,605.2     | 3,605.4                 | 0.00                    | 0.00                   | 0.00                  |
| 12,000.0              | 91.72           | 269.51      | 8,401.7               | -31.9        | -3,705.2     | 3,705.3                 | 0.00                    | 0.00                   | 0.00                  |
| 12,100.0              | 91.72           | 269.51      | 8,398.7               | -32.8        | -3,805.1     | 3,805.3                 | 0.00                    | 0.00                   | 0.00                  |
| 12,200.0              | 91.72           | 269.51      | 8,395.7               | -33.6        | -3,905.1     | 3,905.2                 | 0.00                    | 0.00                   | 0.00                  |
| 12,300.0              | 91.72           | 269.51      | 8,392.7               | -34.5        | -4,005.0     | 4,005.2                 | 0.00                    | 0.00                   | 0.00                  |
| 12,400.0              | 91.72           | 269.51      | 8,389.7               | -35.4        | -4,105.0     | 4,105.1                 | 0.00                    | 0.00                   | 0.00                  |
| 12,500.0              | 91.72           | 269.51      | 8,386.7               | -36.2        | -4,204.9     | 4,205.1                 | 0.00                    | 0.00                   | 0.00                  |
| 12,600.0              | 91.72           | 269.51      | 8,383.7               | -37.1        | -4,304.9     | 4,305.1                 | 0.00                    | 0.00                   | 0.00                  |
| 12,700.0              | 91.72           | 269.51      | 8,380.7               | -37.9        | -4,404.8     | 4,405.0                 | 0.00                    | 0.00                   | 0.00                  |
| 12,800.0              | 91.72           | 269.51      | 8,377.7               | -38.8        | -4,504.8     | 4,505.0                 | 0.00                    | 0.00                   | 0.00                  |
| 12,900.0              | 91.72           | 269.51      | 8,374.7               | -39.7        | -4,604.7     | 4,604.9                 | 0.00                    | 0.00                   | 0.00                  |
| 13,000.0              | 91.72           | 269.51      | 8,371.7               | -40.5        | -4,704.7     | 4,704.9                 | 0.00                    | 0.00                   | 0.00                  |
| 13,100.0              | 91.72           | 269.51      | 8,368.7               | -41.4        | -4,804.6     | 4,804.8                 | 0.00                    | 0.00                   | 0.00                  |
| 13,200.0              | 91.72           | 269.51      | 8,365.7               | -42.2        | -4,904.6     | 4,904.8                 | 0.00                    | 0.00                   | 0.00                  |



# Microsoft Planning Report

**Database:** EDM 5000.15 Single User Db  
**Company:** V-F Petroleum, Inc.  
**Project:** Eddy County, NM  
**Site:** Sec 19-T19S-R28E  
**Well:** Lightfoot 19 State Com 234H  
**Wellbore:** Wellbore #1  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Lightfoot 19 State Com 234H  
**TVD Reference:** 3517+20 @ 3537.0usft  
**MD Reference:** 3517+20 @ 3537.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

| Planned Survey              |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|--|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |  |
| 13,300.0                    | 91.72              | 269.51         | 8,362.7                     | -43.1           | -5,004.6        | 5,004.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,400.0                    | 91.72              | 269.51         | 8,359.7                     | -44.0           | -5,104.5        | 5,104.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,500.0                    | 91.72              | 269.51         | 8,356.7                     | -44.8           | -5,204.5        | 5,204.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,600.0                    | 91.72              | 269.51         | 8,353.8                     | -45.7           | -5,304.4        | 5,304.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,700.0                    | 91.72              | 269.51         | 8,350.8                     | -46.5           | -5,404.4        | 5,404.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,800.0                    | 91.72              | 269.51         | 8,347.8                     | -47.4           | -5,504.3        | 5,504.5                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,900.0                    | 91.72              | 269.51         | 8,344.8                     | -48.3           | -5,604.3        | 5,604.5                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,000.0                    | 91.72              | 269.51         | 8,341.8                     | -49.1           | -5,704.2        | 5,704.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,100.0                    | 91.72              | 269.51         | 8,338.8                     | -50.0           | -5,804.2        | 5,804.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,200.0                    | 91.72              | 269.51         | 8,335.8                     | -50.9           | -5,904.1        | 5,904.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,300.0                    | 91.72              | 269.51         | 8,332.8                     | -51.7           | -6,004.1        | 6,004.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,400.0                    | 91.72              | 269.51         | 8,329.8                     | -52.6           | -6,104.0        | 6,104.2                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,500.0                    | 91.72              | 269.51         | 8,326.8                     | -53.4           | -6,204.0        | 6,204.2                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,600.0                    | 91.72              | 269.51         | 8,323.8                     | -54.3           | -6,303.9        | 6,304.2                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,700.0                    | 91.72              | 269.51         | 8,320.8                     | -55.2           | -6,403.9        | 6,404.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,800.0                    | 91.72              | 269.51         | 8,317.8                     | -56.0           | -6,503.8        | 6,504.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,900.0                    | 91.72              | 269.51         | 8,314.8                     | -56.9           | -6,603.8        | 6,604.0                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,000.0                    | 91.72              | 269.51         | 8,311.8                     | -57.7           | -6,703.7        | 6,704.0                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,100.0                    | 91.72              | 269.51         | 8,308.8                     | -58.6           | -6,803.7        | 6,803.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,200.0                    | 91.72              | 269.51         | 8,305.8                     | -59.5           | -6,903.6        | 6,903.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,300.0                    | 91.72              | 269.51         | 8,302.8                     | -60.3           | -7,003.6        | 7,003.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,400.0                    | 91.72              | 269.51         | 8,299.8                     | -61.2           | -7,103.5        | 7,103.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,500.0                    | 91.72              | 269.51         | 8,296.9                     | -62.0           | -7,203.5        | 7,203.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,600.0                    | 91.72              | 269.51         | 8,293.9                     | -62.9           | -7,303.4        | 7,303.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,700.0                    | 91.72              | 269.51         | 8,290.9                     | -63.8           | -7,403.4        | 7,403.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,800.0                    | 91.72              | 269.51         | 8,287.9                     | -64.6           | -7,503.3        | 7,503.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,900.0                    | 91.72              | 269.51         | 8,284.9                     | -65.5           | -7,603.3        | 7,603.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 16,000.0                    | 91.72              | 269.51         | 8,281.9                     | -66.3           | -7,703.2        | 7,703.5                       | 0.00                          | 0.00                         | 0.00                        |  |
| 16,029.3                    | 91.72              | 269.51         | 8,281.0                     | -66.6           | -7,732.5        | 7,732.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| TD at 16029.3               |                    |                |                             |                 |                 |                               |                               |                              |                             |  |

| Design Targets                                                                                                                |               |              |            |              |              |                 |                |                 |  |                   |
|-------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-----------------|--|-------------------|
| Target Name                                                                                                                   | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude        |  | Longitude         |
| PBHL Lightfoot 19 State<br>- hit/miss target<br>- Shape<br>- Point                                                            | 0.00          | 0.00         | 8,281.0    | -66.6        | -7,732.5     | 600,983.30      | 572,549.30     | 32° 39' 7.594 N |  | 104° 13' 54.919 W |
| LP Lightfoot 19 State Cc<br>- plan misses target center by 0.1usft at 8785.0usft MD (8498.0 TVD, -4.2 N, -491.7 E)<br>- Point | 0.00          | 0.00         | 8,498.0    | -4.2         | -491.7       | 601,045.70      | 579,790.10     | 32° 39' 8.135 N |  | 104° 12' 30.223 W |

| Plan Annotations            |                             |                   |                 |                     |  |
|-----------------------------|-----------------------------|-------------------|-----------------|---------------------|--|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment             |  |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                     |  |
| 8,020.7                     | 8,020.7                     | 0.0               | 0.0             | KOP BLD 12°/100'    |  |
| 8,785.0                     | 8,498.0                     | -4.2              | -491.7          | EOB HLD 91.72° Inc. |  |
| 16,029.3                    | 8,281.0                     | -66.6             | -7,732.5        | TD at 16029.3       |  |