

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

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

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

Form C-101
August 1, 2011

Permit 333316

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

1. Operator Name and Address V-F PETROLEUM INC P.O. Box 1889 Midland, TX 79702		2. OGRID Number 24010
		3. API Number 30-025-51026
4. Property Code 333754	5. Property Name CACHE RIVER 29 32 STATE COM	6. Well No. 302H

7. Surface Location

UL - Lot K	Section 29	Township 21S	Range 35E	Lot Idn K	Feet From 2363	N/S Line S	Feet From 2242	E/W Line W	County Lea
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8. Proposed Bottom Hole Location

UL - Lot N	Section 32	Township 21S	Range 35E	Lot Idn N	Feet From 101	N/S Line S	Feet From 1980	E/W Line W	County Lea
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9. Pool Information

WC-025 G-09 S173615C;UPPER PENN	98333
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3655
16. Multiple N	17. Proposed Depth 18360	18. Formation 3rd Bone Spring Sand	19. Contractor	20. Spud Date 4/21/2023
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	54.5	1835	1560	0
Int1	12.25	9.625	40	5500	1350	0
Prod	8.75	5.5	20	18360	1985	5000

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	Cameron
Double Ram	10000	5000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Pam O'Neil	Approved By: Paul F Kautz	
Title: Regulatory Manager	Title: Geologist	
Email Address: pamo@vfpetroleum.com	Approved Date: 2/1/2023	Expiration Date: 2/1/2025
Date: 1/27/2023	Phone: 432-683-3344	Conditions of Approval Attached

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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code 98136	Pool Name WC-025 G-07 S223505N; BONE SPRING
Property Code	Property Name CACHE RIVER 29 32 STATE COM		Well Number #302H
OGRID No. 24010	Operator Name V-F PETROLEUM INC		Elevation 3655'

Surface Location

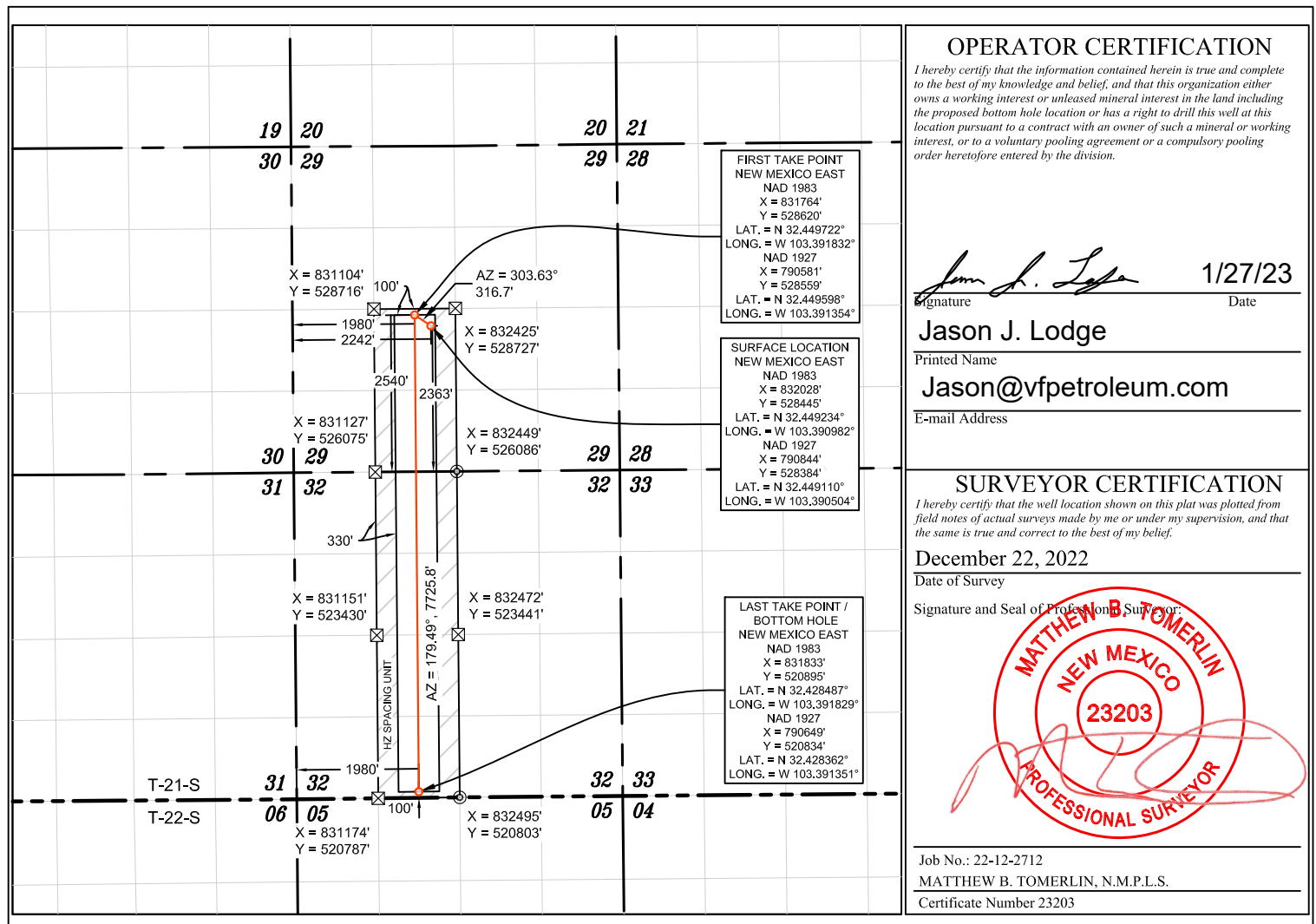
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	29	21 S	35 E		2363	SOUTH	2242	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	32	21 S	35 E		100	SOUTH	1980	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
240.00		C	

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.



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

Form APD Conditions

Permit 333316

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: V-F PETROLEUM INC [24010] P.O. Box 1889 Midland, TX 79702	API Number: 30-025-51026
	Well: CACHE RIVER 29 32 STATE COM #302H

OCD Reviewer	Condition
pkautz	Notify OCD 24 hours prior to casing & cement
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	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
pkautz	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
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing
pkautz	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud

V-F Petroleum, Inc.
 Project: Lea County, NM
 Site: Sec 29-T215-R35E
 Well: Cache River 29-32 State Com 302H
 Wellbore: Wellbore #1
 Plan: Plan #2 (Cache River 29-32 State Com 302H/Wellbore #1)

WELL DETAILS: Cache River 29-32 State Com 302H

Ground Elevation: 3655.00
 RKB Elevation: 3655+25 @ 3680.00usft
 Rig Name:

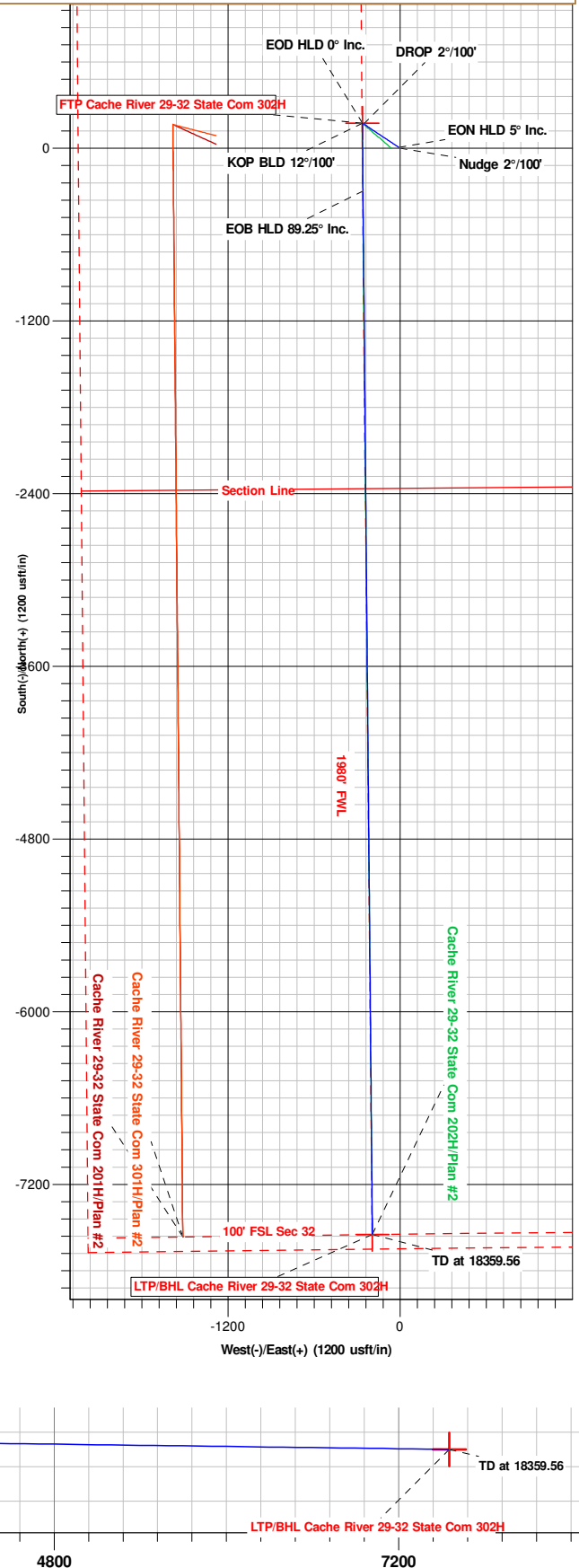
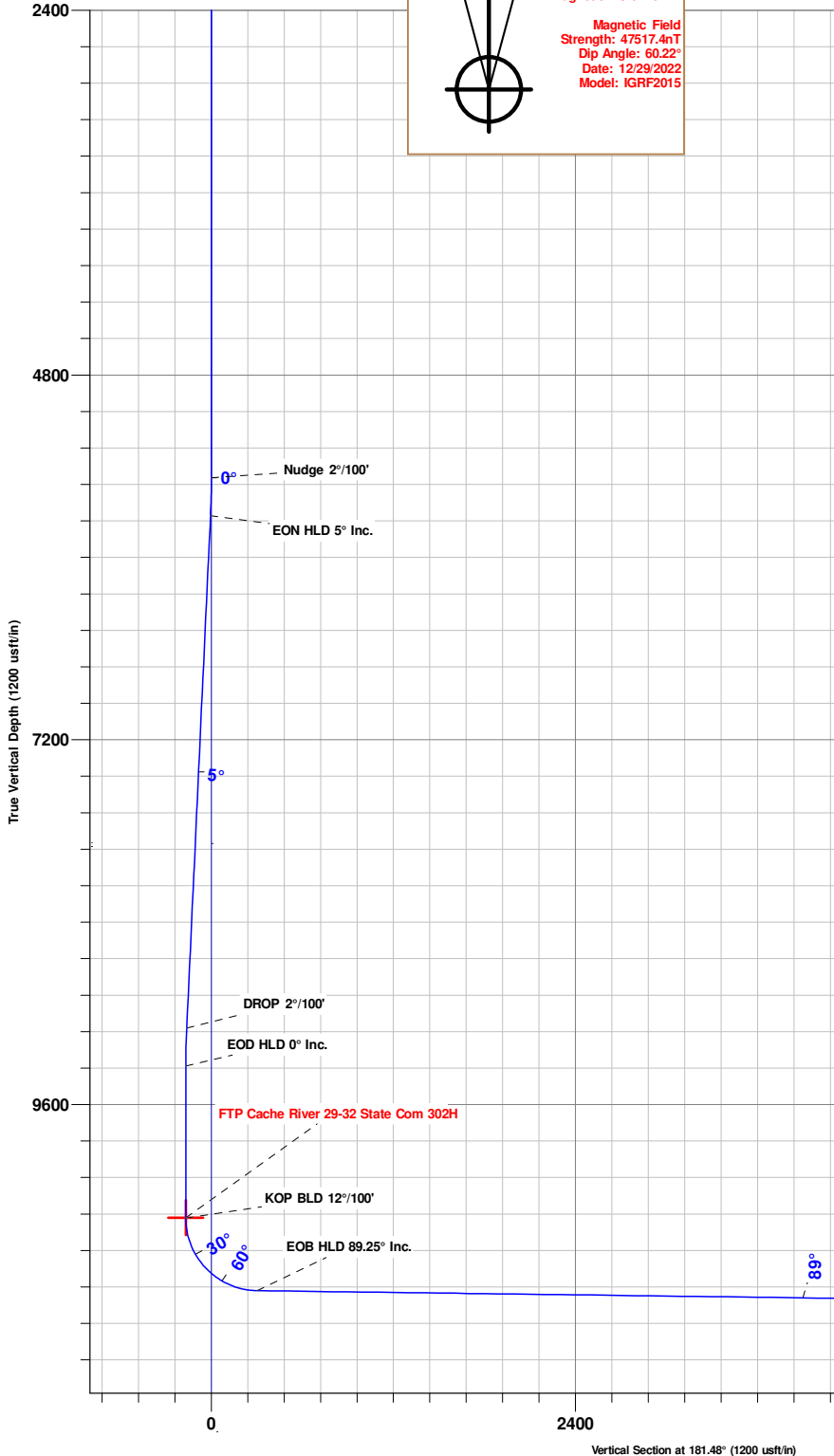
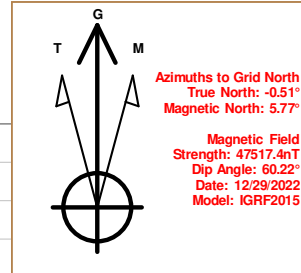
Northing 528445.00 Easting 832028.00 Latitude 32.449234 Longitude -103.390980

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSEct
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5476.99	0.00	0.00	5476.99	0.00	0.00	0.00	0.00	0.00
5726.99	5.00	303.54	5726.67	6.02	-9.09	2.00	303.54	-5.79
9111.09	5.00	303.54	9097.89	168.99	-254.92	0.00	0.00	-162.35
9361.09	0.00	0.00	9347.58	175.01	-264.01	2.00	180.00	-168.13
10361.09	0.00	0.00	10347.58	175.01	-264.01	0.00	0.00	-168.13
11104.83	89.25	179.49	10825.00	-296.18	-259.80	12.00	179.49	302.79
18359.56	89.25	179.49	10920.00	-7550.00	-195.00	0.00	0.00	7552.52

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
FTP Cache River 29-32 State Com 302H	10344.74	175.00	-264.00	528620.00	831764.00	32.449721	-103.391831	Point
- plan miss target center by 0.01usft at 10359.25usft MD (10344.74 TVD, 175.01 N, -264.01 E)								
LTP/BHL Cache River 29-32 State Com 302H	10920.00	-7550.00	-195.00	520895.00	831833.00	32.428488	-103.391828	Point
- plan hits target center								



V-F Petroleum, Inc.

Lea County, NM

Sec 29-T21S-R35E

Cache River 29-32 State Com 302H

Wellbore #1

Plan: Plan #2

Standard Planning Report

17 January, 2023

Microsoft
Planning Report

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Cache River 29-32 State Com 302H
Company:	V-F Petroleum, Inc.	TVD Reference:	3655+25 @ 3680.00usft
Project:	Lea County, NM	MD Reference:	3655+25 @ 3680.00usft
Site:	Sec 29-T21S-R35E	North Reference:	Grid
Well:	Cache River 29-32 State Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Project	Lea 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 29-T21S-R35E			
Site Position:		Northing:	528,473.00 usft	Latitude:	32.449342
From:	Map	Easting:	830,745.00 usft	Longitude:	-103.395139
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	Cache River 29-32 State Com 302H					
Well Position	+N/-S	-28.00 usft	Northing:	528,445.00 usft	Latitude:	32.449234
	+E/-W	1,283.00 usft	Easting:	832,028.00 usft	Longitude:	-103.390981
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level:		3,655.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/29/22	6.28	60.22	47,517.38783784

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	181.48

Plan Survey Tool Program	Date	01/17/23		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,359.56 Plan #2 (Wellbore #1)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,476.99	0.00	0.00	5,476.99	0.00	0.00	0.00	0.00	0.00	0.00	
5,726.99	5.00	303.54	5,726.67	6.02	-9.09	2.00	2.00	0.00	303.54	
9,111.09	5.00	303.54	9,097.89	168.99	-254.92	0.00	0.00	0.00	0.00	
9,361.09	0.00	0.00	9,347.58	175.01	-264.01	2.00	-2.00	0.00	180.00	
10,361.09	0.00	0.00	10,347.58	175.01	-264.01	0.00	0.00	0.00	0.00	
11,104.84	89.25	179.49	10,825.00	-296.18	-259.80	12.00	12.00	24.13	179.49	
18,359.56	89.25	179.49	10,920.00	-7,550.00	-195.00	0.00	0.00	0.00	0.00	LTP/BHL Cache River

Microsoft
Planning Report

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Cache River 29-32 State Com 302H
Company:	V-F Petroleum, Inc.	TVD Reference:	3655+25 @ 3680.00usft
Project:	Lea County, NM	MD Reference:	3655+25 @ 3680.00usft
Site:	Sec 29-T21S-R35E	North Reference:	Grid
Well:	Cache River 29-32 State Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Microsoft
Planning Report

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Cache River 29-32 State Com 302H
Company:	V-F Petroleum, Inc.	TVD Reference:	3655+25 @ 3680.00usft
Project:	Lea County, NM	MD Reference:	3655+25 @ 3680.00usft
Site:	Sec 29-T21S-R35E	North Reference:	Grid
Well:	Cache River 29-32 State Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,476.99	0.00	0.00	5,476.99	0.00	0.00	0.00	0.00	0.00	0.00
Nudge 2°/100'									
5,500.00	0.46	303.54	5,500.00	0.05	-0.08	-0.05	2.00	2.00	0.00
5,600.00	2.46	303.54	5,599.96	1.46	-2.20	-1.40	2.00	2.00	0.00
5,700.00	4.46	303.54	5,699.77	4.79	-7.23	-4.61	2.00	2.00	0.00
5,726.99	5.00	303.54	5,726.67	6.02	-9.09	-5.79	2.00	2.00	0.00
EON HLD 5° Inc.									
5,800.00	5.00	303.54	5,799.41	9.54	-14.39	-9.16	0.00	0.00	0.00
5,900.00	5.00	303.54	5,899.02	14.35	-21.65	-13.79	0.00	0.00	0.00
6,000.00	5.00	303.54	5,998.64	19.17	-28.92	-18.42	0.00	0.00	0.00
6,100.00	5.00	303.54	6,098.26	23.99	-36.18	-23.04	0.00	0.00	0.00
6,200.00	5.00	303.54	6,197.88	28.80	-43.45	-27.67	0.00	0.00	0.00
6,300.00	5.00	303.54	6,297.50	33.62	-50.71	-32.30	0.00	0.00	0.00
6,400.00	5.00	303.54	6,397.12	38.43	-57.98	-36.92	0.00	0.00	0.00
6,500.00	5.00	303.54	6,496.74	43.25	-65.24	-41.55	0.00	0.00	0.00
6,600.00	5.00	303.54	6,596.36	48.06	-72.51	-46.18	0.00	0.00	0.00
6,700.00	5.00	303.54	6,695.98	52.88	-79.77	-50.80	0.00	0.00	0.00
6,800.00	5.00	303.54	6,795.60	57.69	-87.03	-55.43	0.00	0.00	0.00
6,900.00	5.00	303.54	6,895.22	62.51	-94.30	-60.05	0.00	0.00	0.00
7,000.00	5.00	303.54	6,994.84	67.33	-101.56	-64.68	0.00	0.00	0.00
7,100.00	5.00	303.54	7,094.46	72.14	-108.83	-69.31	0.00	0.00	0.00
7,200.00	5.00	303.54	7,194.08	76.96	-116.09	-73.93	0.00	0.00	0.00
7,300.00	5.00	303.54	7,293.70	81.77	-123.36	-78.56	0.00	0.00	0.00
7,400.00	5.00	303.54	7,393.32	86.59	-130.62	-83.19	0.00	0.00	0.00
7,500.00	5.00	303.54	7,492.94	91.40	-137.89	-87.81	0.00	0.00	0.00
7,600.00	5.00	303.54	7,592.56	96.22	-145.15	-92.44	0.00	0.00	0.00
7,700.00	5.00	303.54	7,692.18	101.03	-152.41	-97.07	0.00	0.00	0.00
7,800.00	5.00	303.54	7,791.79	105.85	-159.68	-101.69	0.00	0.00	0.00
7,900.00	5.00	303.54	7,891.41	110.66	-166.94	-106.32	0.00	0.00	0.00
8,000.00	5.00	303.54	7,991.03	115.48	-174.21	-110.94	0.00	0.00	0.00
8,100.00	5.00	303.54	8,090.65	120.30	-181.47	-115.57	0.00	0.00	0.00
8,200.00	5.00	303.54	8,190.27	125.11	-188.74	-120.20	0.00	0.00	0.00
8,300.00	5.00	303.54	8,289.89	129.93	-196.00	-124.82	0.00	0.00	0.00
8,400.00	5.00	303.54	8,389.51	134.74	-203.27	-129.45	0.00	0.00	0.00
8,500.00	5.00	303.54	8,489.13	139.56	-210.53	-134.08	0.00	0.00	0.00
8,600.00	5.00	303.54	8,588.75	144.37	-217.79	-138.70	0.00	0.00	0.00
8,700.00	5.00	303.54	8,688.37	149.19	-225.06	-143.33	0.00	0.00	0.00
8,800.00	5.00	303.54	8,787.99	154.00	-232.32	-147.95	0.00	0.00	0.00
8,900.00	5.00	303.54	8,887.61	158.82	-239.59	-152.58	0.00	0.00	0.00
9,000.00	5.00	303.54	8,987.23	163.64	-246.85	-157.21	0.00	0.00	0.00
9,100.00	5.00	303.54	9,086.85	168.45	-254.12	-161.83	0.00	0.00	0.00
9,111.09	5.00	303.54	9,097.89	168.99	-254.92	-162.35	0.00	0.00	0.00
DROP 2°/100'									
9,200.00	3.22	303.54	9,186.57	172.51	-260.23	-165.73	2.00	-2.00	0.00
9,300.00	1.22	303.54	9,286.49	174.65	-263.47	-167.79	2.00	-2.00	0.00
9,361.09	0.00	0.00	9,347.58	175.01	-264.01	-168.13	2.00	-2.00	0.00
EOD HLD 0° Inc.									
9,400.00	0.00	0.00	9,386.49	175.01	-264.01	-168.13	0.00	0.00	0.00
9,500.00	0.00	0.00	9,486.49	175.01	-264.01	-168.13	0.00	0.00	0.00
9,600.00	0.00	0.00	9,586.49	175.01	-264.01	-168.13	0.00	0.00	0.00
9,700.00	0.00	0.00	9,686.49	175.01	-264.01	-168.13	0.00	0.00	0.00
9,800.00	0.00	0.00	9,786.49	175.01	-264.01	-168.13	0.00	0.00	0.00

Microsoft
Planning Report

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Cache River 29-32 State Com 302H
Company:	V-F Petroleum, Inc.	TVD Reference:	3655+25 @ 3680.00usft
Project:	Lea County, NM	MD Reference:	3655+25 @ 3680.00usft
Site:	Sec 29-T21S-R35E	North Reference:	Grid
Well:	Cache River 29-32 State Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,900.00	0.00	0.00	9,886.49	175.01	-264.01	-168.13	0.00	0.00	0.00
10,000.00	0.00	0.00	9,986.49	175.01	-264.01	-168.13	0.00	0.00	0.00
10,100.00	0.00	0.00	10,086.49	175.01	-264.01	-168.13	0.00	0.00	0.00
10,200.00	0.00	0.00	10,186.49	175.01	-264.01	-168.13	0.00	0.00	0.00
10,300.00	0.00	0.00	10,286.49	175.01	-264.01	-168.13	0.00	0.00	0.00
10,361.09	0.00	0.00	10,347.58	175.01	-264.01	-168.13	0.00	0.00	0.00
KOP BLD 12°/100'									
10,375.00	1.67	179.49	10,361.49	174.81	-264.01	-167.93	12.00	12.00	0.00
10,400.00	4.67	179.49	10,386.45	173.42	-263.99	-166.55	12.00	12.00	0.00
10,425.00	7.67	179.49	10,411.30	170.74	-263.97	-163.87	12.00	12.00	0.00
10,450.00	10.67	179.49	10,435.98	166.75	-263.93	-159.88	12.00	12.00	0.00
10,475.00	13.67	179.49	10,460.41	161.49	-263.89	-154.62	12.00	12.00	0.00
10,500.00	16.67	179.49	10,484.54	154.94	-263.83	-148.08	12.00	12.00	0.00
10,525.00	19.67	179.49	10,508.29	147.15	-263.76	-140.29	12.00	12.00	0.00
10,550.00	22.67	179.49	10,531.60	138.12	-263.68	-131.27	12.00	12.00	0.00
10,575.00	25.67	179.49	10,554.40	127.89	-263.59	-121.04	12.00	12.00	0.00
10,600.00	28.67	179.49	10,576.64	116.48	-263.49	-109.63	12.00	12.00	0.00
10,625.00	31.67	179.49	10,598.25	103.91	-263.37	-97.08	12.00	12.00	0.00
10,650.00	34.67	179.49	10,619.18	90.24	-263.25	-83.41	12.00	12.00	0.00
10,675.00	37.67	179.49	10,639.36	75.49	-263.12	-68.67	12.00	12.00	0.00
10,700.00	40.67	179.49	10,658.74	59.70	-262.98	-52.89	12.00	12.00	0.00
10,725.00	43.67	179.49	10,677.26	42.92	-262.83	-36.12	12.00	12.00	0.00
10,750.00	46.67	179.49	10,694.89	25.19	-262.67	-18.40	12.00	12.00	0.00
10,775.00	49.67	179.49	10,711.56	6.56	-262.50	0.22	12.00	12.00	0.00
10,800.00	52.67	179.49	10,727.23	-12.91	-262.33	19.68	12.00	12.00	0.00
10,825.00	55.67	179.49	10,741.87	-33.17	-262.15	39.93	12.00	12.00	0.00
10,850.00	58.67	179.49	10,755.42	-54.18	-261.96	60.92	12.00	12.00	0.00
10,875.00	61.67	179.49	10,767.85	-75.86	-261.77	82.59	12.00	12.00	0.00
10,900.00	64.67	179.49	10,779.14	-98.17	-261.57	104.89	12.00	12.00	0.00
10,925.00	67.67	179.49	10,789.23	-121.03	-261.36	127.74	12.00	12.00	0.00
10,950.00	70.67	179.49	10,798.12	-144.39	-261.16	151.09	12.00	12.00	0.00
10,975.00	73.67	179.49	10,805.78	-168.19	-260.94	174.87	12.00	12.00	0.00
11,000.00	76.67	179.49	10,812.18	-192.35	-260.73	199.02	12.00	12.00	0.00
11,025.00	79.67	179.49	10,817.30	-216.82	-260.51	223.47	12.00	12.00	0.00
11,050.00	82.67	179.49	10,821.14	-241.52	-260.29	248.16	12.00	12.00	0.00
11,075.00	85.67	179.49	10,823.68	-266.38	-260.07	273.01	12.00	12.00	0.00
11,100.00	88.67	179.49	10,824.91	-291.35	-259.84	297.96	12.00	12.00	0.00
11,104.84	89.25	179.49	10,825.00	-296.18	-259.80	302.79	12.00	12.00	0.00
EOB HLD 89.25° Inc.									
11,200.00	89.25	179.49	10,826.25	-391.34	-258.95	397.89	0.00	0.00	0.00
11,300.00	89.25	179.49	10,827.56	-491.32	-258.06	497.82	0.00	0.00	0.00
11,400.00	89.25	179.49	10,828.87	-591.31	-257.16	597.75	0.00	0.00	0.00
11,500.00	89.25	179.49	10,830.17	-691.30	-256.27	697.69	0.00	0.00	0.00
11,600.00	89.25	179.49	10,831.48	-791.29	-255.38	797.62	0.00	0.00	0.00
11,700.00	89.25	179.49	10,832.79	-891.27	-254.48	897.55	0.00	0.00	0.00
11,800.00	89.25	179.49	10,834.10	-991.26	-253.59	997.48	0.00	0.00	0.00
11,900.00	89.25	179.49	10,835.41	-1,091.25	-252.70	1,097.41	0.00	0.00	0.00
12,000.00	89.25	179.49	10,836.72	-1,191.24	-251.80	1,197.34	0.00	0.00	0.00
12,100.00	89.25	179.49	10,838.03	-1,291.22	-250.91	1,297.27	0.00	0.00	0.00
12,200.00	89.25	179.49	10,839.34	-1,391.21	-250.02	1,397.20	0.00	0.00	0.00
12,300.00	89.25	179.49	10,840.65	-1,491.20	-249.12	1,497.13	0.00	0.00	0.00
12,400.00	89.25	179.49	10,841.96	-1,591.19	-248.23	1,597.07	0.00	0.00	0.00
12,500.00	89.25	179.49	10,843.27	-1,691.17	-247.34	1,697.00	0.00	0.00	0.00
12,600.00	89.25	179.49	10,844.58	-1,791.16	-246.44	1,796.93	0.00	0.00	0.00

Microsoft
Planning Report

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Cache River 29-32 State Com 302H
Company:	V-F Petroleum, Inc.	TVD Reference:	3655+25 @ 3680.00usft
Project:	Lea County, NM	MD Reference:	3655+25 @ 3680.00usft
Site:	Sec 29-T21S-R35E	North Reference:	Grid
Well:	Cache River 29-32 State Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,700.00	89.25	179.49	10,845.89	-1,891.15	-245.55	1,896.86	0.00	0.00	0.00
12,800.00	89.25	179.49	10,847.20	-1,991.14	-244.66	1,996.79	0.00	0.00	0.00
12,900.00	89.25	179.49	10,848.51	-2,091.12	-243.76	2,096.72	0.00	0.00	0.00
13,000.00	89.25	179.49	10,849.82	-2,191.11	-242.87	2,196.65	0.00	0.00	0.00
13,100.00	89.25	179.49	10,851.13	-2,291.10	-241.98	2,296.58	0.00	0.00	0.00
13,200.00	89.25	179.49	10,852.44	-2,391.09	-241.09	2,396.51	0.00	0.00	0.00
13,300.00	89.25	179.49	10,853.75	-2,491.07	-240.19	2,496.44	0.00	0.00	0.00
13,400.00	89.25	179.49	10,855.06	-2,591.06	-239.30	2,596.38	0.00	0.00	0.00
13,500.00	89.25	179.49	10,856.36	-2,691.05	-238.41	2,696.31	0.00	0.00	0.00
13,600.00	89.25	179.49	10,857.67	-2,791.04	-237.51	2,796.24	0.00	0.00	0.00
13,700.00	89.25	179.49	10,858.98	-2,891.02	-236.62	2,896.17	0.00	0.00	0.00
13,800.00	89.25	179.49	10,860.29	-2,991.01	-235.73	2,996.10	0.00	0.00	0.00
13,900.00	89.25	179.49	10,861.60	-3,091.00	-234.83	3,096.03	0.00	0.00	0.00
14,000.00	89.25	179.49	10,862.91	-3,190.99	-233.94	3,195.96	0.00	0.00	0.00
14,100.00	89.25	179.49	10,864.22	-3,290.97	-233.05	3,295.89	0.00	0.00	0.00
14,200.00	89.25	179.49	10,865.53	-3,390.96	-232.15	3,395.82	0.00	0.00	0.00
14,300.00	89.25	179.49	10,866.84	-3,490.95	-231.26	3,495.76	0.00	0.00	0.00
14,400.00	89.25	179.49	10,868.15	-3,590.94	-230.37	3,595.69	0.00	0.00	0.00
14,500.00	89.25	179.49	10,869.46	-3,690.92	-229.47	3,695.62	0.00	0.00	0.00
14,600.00	89.25	179.49	10,870.77	-3,790.91	-228.58	3,795.55	0.00	0.00	0.00
14,700.00	89.25	179.49	10,872.08	-3,890.90	-227.69	3,895.48	0.00	0.00	0.00
14,800.00	89.25	179.49	10,873.39	-3,990.89	-226.79	3,995.41	0.00	0.00	0.00
14,900.00	89.25	179.49	10,874.70	-4,090.87	-225.90	4,095.34	0.00	0.00	0.00
15,000.00	89.25	179.49	10,876.01	-4,190.86	-225.01	4,195.27	0.00	0.00	0.00
15,100.00	89.25	179.49	10,877.32	-4,290.85	-224.11	4,295.20	0.00	0.00	0.00
15,200.00	89.25	179.49	10,878.63	-4,390.83	-223.22	4,395.13	0.00	0.00	0.00
15,300.00	89.25	179.49	10,879.94	-4,490.82	-222.33	4,495.07	0.00	0.00	0.00
15,400.00	89.25	179.49	10,881.25	-4,590.81	-221.43	4,595.00	0.00	0.00	0.00
15,500.00	89.25	179.49	10,882.55	-4,690.80	-220.54	4,694.93	0.00	0.00	0.00
15,600.00	89.25	179.49	10,883.86	-4,790.78	-219.65	4,794.86	0.00	0.00	0.00
15,700.00	89.25	179.49	10,885.17	-4,890.77	-218.76	4,894.79	0.00	0.00	0.00
15,800.00	89.25	179.49	10,886.48	-4,990.76	-217.86	4,994.72	0.00	0.00	0.00
15,900.00	89.25	179.49	10,887.79	-5,090.75	-216.97	5,094.65	0.00	0.00	0.00
16,000.00	89.25	179.49	10,889.10	-5,190.73	-216.08	5,194.58	0.00	0.00	0.00
16,100.00	89.25	179.49	10,890.41	-5,290.72	-215.18	5,294.51	0.00	0.00	0.00
16,200.00	89.25	179.49	10,891.72	-5,390.71	-214.29	5,394.44	0.00	0.00	0.00
16,300.00	89.25	179.49	10,893.03	-5,490.70	-213.40	5,494.38	0.00	0.00	0.00
16,400.00	89.25	179.49	10,894.34	-5,590.68	-212.50	5,594.31	0.00	0.00	0.00
16,500.00	89.25	179.49	10,895.65	-5,690.67	-211.61	5,694.24	0.00	0.00	0.00
16,600.00	89.25	179.49	10,896.96	-5,790.66	-210.72	5,794.17	0.00	0.00	0.00
16,700.00	89.25	179.49	10,898.27	-5,890.65	-209.82	5,894.10	0.00	0.00	0.00
16,800.00	89.25	179.49	10,899.58	-5,990.63	-208.93	5,994.03	0.00	0.00	0.00
16,900.00	89.25	179.49	10,900.89	-6,090.62	-208.04	6,093.96	0.00	0.00	0.00
17,000.00	89.25	179.49	10,902.20	-6,190.61	-207.14	6,193.89	0.00	0.00	0.00
17,100.00	89.25	179.49	10,903.51	-6,290.60	-206.25	6,293.82	0.00	0.00	0.00
17,200.00	89.25	179.49	10,904.82	-6,390.58	-205.36	6,393.76	0.00	0.00	0.00
17,300.00	89.25	179.49	10,906.13	-6,490.57	-204.46	6,493.69	0.00	0.00	0.00
17,400.00	89.25	179.49	10,907.43	-6,590.56	-203.57	6,593.62	0.00	0.00	0.00
17,500.00	89.25	179.49	10,908.74	-6,690.55	-202.68	6,693.55	0.00	0.00	0.00
17,600.00	89.25	179.49	10,910.05	-6,790.53	-201.78	6,793.48	0.00	0.00	0.00
17,700.00	89.25	179.49	10,911.36	-6,890.52	-200.89	6,893.41	0.00	0.00	0.00
17,800.00	89.25	179.49	10,912.67	-6,990.51	-200.00	6,993.34	0.00	0.00	0.00
17,900.00	89.25	179.49	10,913.98	-7,090.50	-199.10	7,093.27	0.00	0.00	0.00
18,000.00	89.25	179.49	10,915.29	-7,190.48	-198.21	7,193.20	0.00	0.00	0.00

Microsoft
Planning Report

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Cache River 29-32 State Com 302H
Company:	V-F Petroleum, Inc.	TVD Reference:	3655+25 @ 3680.00usft
Project:	Lea County, NM	MD Reference:	3655+25 @ 3680.00usft
Site:	Sec 29-T21S-R35E	North Reference:	Grid
Well:	Cache River 29-32 State Com 302H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
18,100.00	89.25	179.49	10,916.60	-7,290.47	-197.32	7,293.13	0.00	0.00	0.00	
18,200.00	89.25	179.49	10,917.91	-7,390.46	-196.43	7,393.07	0.00	0.00	0.00	
18,300.00	89.25	179.49	10,919.22	-7,490.45	-195.53	7,493.00	0.00	0.00	0.00	
18,359.56	89.25	179.49	10,920.00	-7,550.00	-195.00	7,552.52	0.00	0.00	0.00	
TD at 18359.56										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FTP Cache River 29-32	0.00	0.00	10,344.74	175.00	-264.00	528,620.00	831,764.00	32.449721	-103.391831
- plan misses target center by 0.01usft at 10358.25usft MD (10344.74 TVD, 175.01 N, -264.01 E)									
- Point									
LTP/BHL Cache River 29-32	0.00	0.00	10,920.00	-7,550.00	-195.00	520,895.00	831,833.00	32.428488	-103.391828
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,476.99	5,476.99	0.00	0.00	Nudge 2°/100'	
5,726.99	5,726.67	6.02	-9.09	EON HLD 5° Inc.	
9,111.09	9,097.89	168.99	-254.92	DROP 2°/100'	
9,361.09	9,347.58	175.01	-264.01	EOD HLD 0° Inc.	
10,361.09	10,347.58	175.01	-264.01	KOP BLD 12°/100'	
11,104.84	10,825.00	-296.18	-259.80	EOB HLD 89.25° Inc.	
18,359.56	10,920.00	-7,550.00	-195.00	TD at 18359.56	

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:** 1 / 27 / 2023

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
Cache River 29 32 State Com #201H		L 29 21S 35E	2401 FSL 960 FWL	2000	2500	2000
Cache River 29 32 State Com #301H		L 29 21S 35E	2461 FSL 961 FWL	2000	2500	2000
Cache River 29 32 State Com #202H		K 29 21S 35E	2362 FSL 2182 FWL	2000	2500	2000
Cache River 29 32 State Com #302H		K 29 21S 35E	2363 FSL 2242 FWL	2000	2500	2000

IV. Central Delivery Point Name: Cache River 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
Cache River 29 32 State Com #201H		3/27/23	4/19/23	8/1/23	8/16/23	8/16/23
Cache River 29 32 State Com #301H		3/1/23	3/25/23	8/1/23	8/16/23	8/16/23
Cache River 29 32 State Com #202H		5/18/23	6/10/23	8/1/23	8/16/23	8/16/23
Cache River 29 32 State Com #302H		4/21/23	5/16/23	8/1/23	8/16/23	8/16/23

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:	Jason J. Lodge
Title:	Geologist
E-mail Address:	Jason@vfpetroleum.com
Date:	1/27/23
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 PracticesDrilling 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