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District III
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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 292420

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

1. Operator Name and Address		2. OGRID Number
V-F PETROLEUM INC P.O. Box 1889 Midland, TX 79702		24010
		3. API Number 30-015-48055
4. Property Code 330182	5. Property Name COURTMAN 4 STATE COM	6. Well No. 221H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	4	19S	28E	H	2040	N	100	E	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
E	4	19S	28E	E	2310	N	100	W	Eddy

9. Pool Information

PALMILLO;BONE SPRING, SOUTHWWEST	96413

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	OIL		State	3530
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	12028	Bone Spring		3/1/2021
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	450	450	0
Int1	12.25	9.625	40	3500	825	0
Prod	8.75	5.5	17	12028	1350	3000

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	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. **I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.** Signature:		**OIL CONSERVATION DIVISION**	
Printed Name:	Electronically filed by Pam O'Neil	Approved By:	Kurt Simmons
Title:	Regulatory Manager	Title:	Petroleum Specialist - A
Email Address:	pamo@vfpetroleum.com	Approved Date: 2/12/2021	Expiration Date: 2/12/2023
Date: 2/11/2021	Phone: 432-683-3344	Conditions of Approval Attached	

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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, New Mexico 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	Pool Name
	96413	PALMILLO; BONE SPRING, SOUTHWEST

Property Code	Property Name	Well Number
	COURTMAN 4 STATE COM	221H

OGRID No.	Operator Name	Elevation
24010	V-F PETROLEUM INC.	3530'

Surface Location

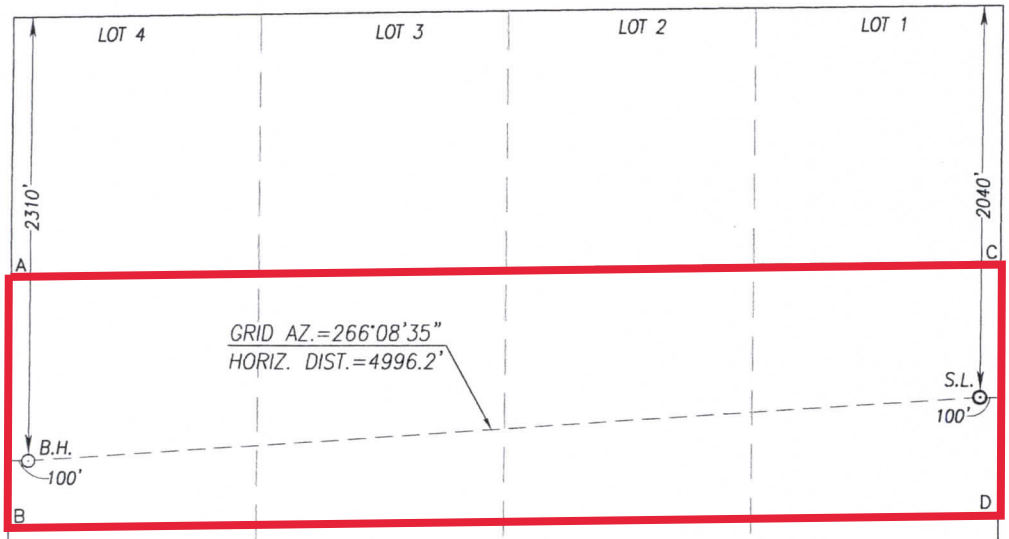
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	4	19-S	28-E		2040	NORTH	100	EAST	EDDY

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
E	4	19-S	28-E		2310	NORTH	100	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160		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



BOTTOM HOLE LOCATION
NAD 27 NME
Y= 614877.2 N
X= 544565.2 E
LAT.=32.690313° N
LONG.=104.188476° W

CORNER COORDINATES TABLE
NAD 27 NME
A – Y= 615846.8 N, X= 544475.2 E
B – Y= 614531.0 N, X= 544461.7 E
C – Y= 615921.3 N, X= 549655.4 E
D – Y= 614603.4 N, X= 549643.3 E

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 615213.2 N
X= 549548.9 E
LAT.=32.691216° N
LONG.=104.172276° W

BOTTOM HOLE LOCATION
NAD 83 NME
Y= 614939.5 N
X= 585744.8 E
LAT.=32.690429° N
LONG.=104.188986° W

CORNER COORDINATES TABLE
NAD 83 NME
A – Y= 615909.1 N, X= 585654.7 E
B – Y= 614593.3 N, X= 585641.3 E
C – Y= 615983.6 N, X= 590834.9 E
D – Y= 614665.7 N, X= 590822.9 E

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 615275.5 N
X= 590728.5 E
LAT.=32.691333° N
LONG.=104.172785° W

OPERATOR CERTIFICATION

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

Signature — Date: 2/10/21

Jason Lodge
Printed Name

Jason@vfpetroleum.com
E-mail Address

SURVEYOR CERTIFICATION

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

FEBRUARY 06, 2019
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

6/07/2019

Certificate Number: Gary G. Eidson 12641
Ronald J. Eidson 3239

ACK. REL. W.O. 19110113 JWSC W.O.: 19.13.0703

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Energy, Minerals and Natural Resources
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1220 S. St Francis Dr.
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GAS CAPTURE PLAN

Date: 2/12/2021

☒ Original

☐ Amended - Reason for Amendment:

Operator & OGRID No.: [24010] V-F PETROLEUM INC

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
COURTMAN 4 STATE COM #221H	30-015-48055	H-4-19S-28E	2040N 0100E	1500	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP OPERATING COMPANY, LP and will be connected to DCP OPERATING COMPANY, LP High/Low Pressure gathering system located in Eddy County, New Mexico. It will require 1500' of pipeline to connect the facility to High/Low Pressure gathering system. V-F PETROLEUM INC provides (periodically) to DCP OPERATING COMPANY, LP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, V-F PETROLEUM INC and DCP OPERATING COMPANY, LP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP OPERATING COMPANY, LP Processing Plant located in Sec. 20, Twn. 19S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP OPERATING COMPANY, LP system at that time. Based on current information, it is V-F PETROLEUM INC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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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 Comments

Permit 292420

PERMIT COMMENTS

Operator Name and Address:	API Number:
V-F PETROLEUM INC [24010] P.O. Box 1889 Midland, TX 79702	30-015-48055
	Well: COURTMAN 4 STATE COM #221H

Created By	Comment	Comment Date

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Form APD Conditions

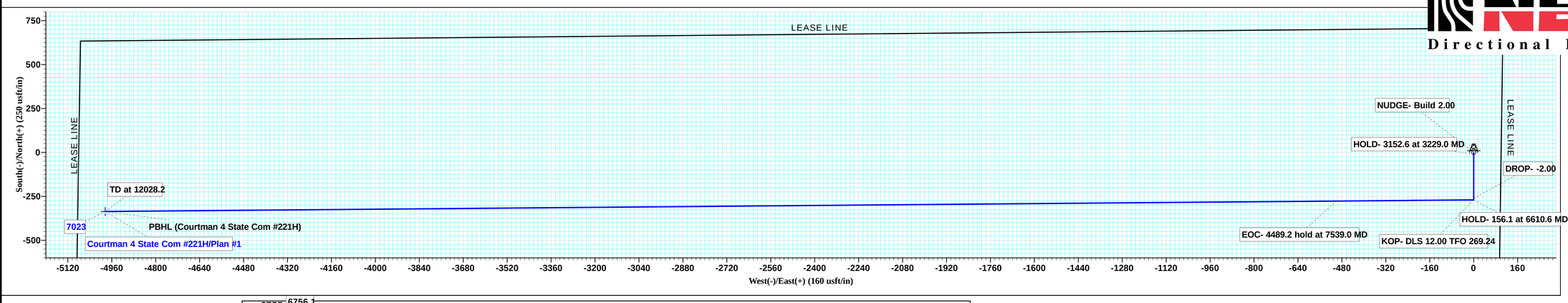
Permit 292420

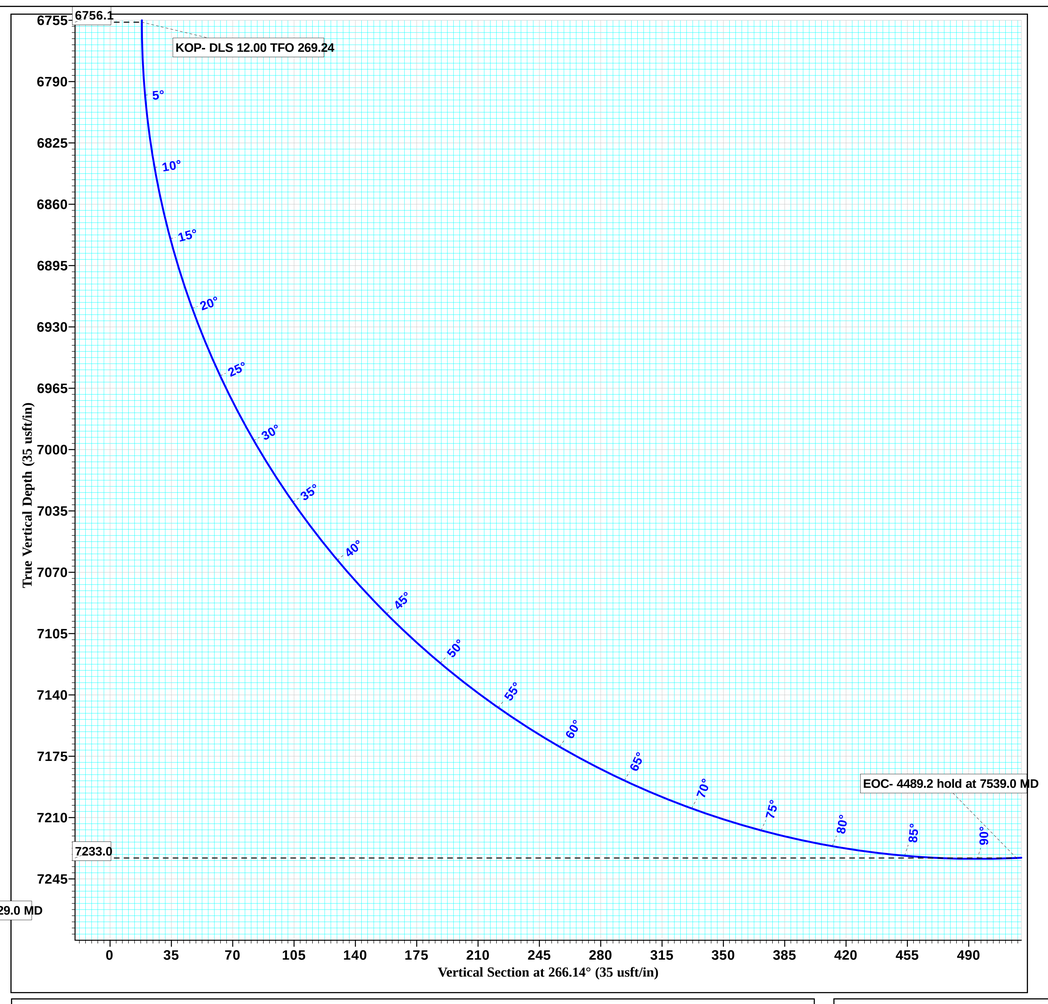
PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
V-F PETROLEUM INC [24010] P.O. Box 1889 Midland, TX 79702	30-015-48055
	Well: COURTMAN 4 STATE COM #221H

OCD Reviewer	Condition
ksimmons	Notify OCD 24 hours prior to casing & cement
ksimmons	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ksimmons	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Surface casing must be set 25' below top of Rustler Anhydrite or salt in order to seal off protectable water
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	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
kpickford	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
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104

NEXUS II
Directional Drilling Specialists





V-F Petroleum Inc
Project: Eddy County (NAD 83 NME)
Site: (Courtman) Sec-4_T-19-S_R-28-E
Well: Courtman 4 State Com #221H
Wellbore: OWB
Design: Plan #1
Lat: 32° 41' 28.798 N
Long: 104° 10' 22.027 W
Pad GL: 3530.0
KB: KB @ 3550.0usft

WELL DETAILS: Courtman 4 State Com #221H

3530.0

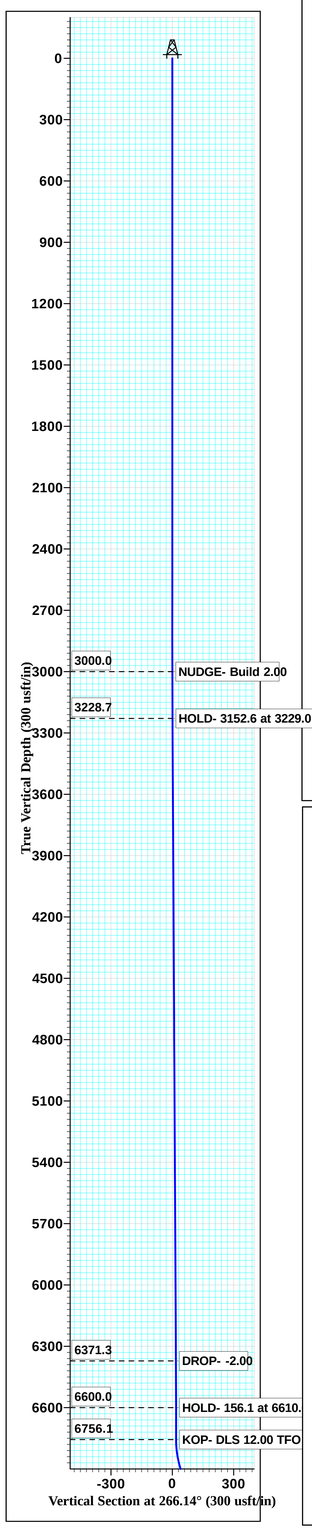
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	615275.50	590728.50	32° 41' 28.798 N	104° 10' 22.027 W

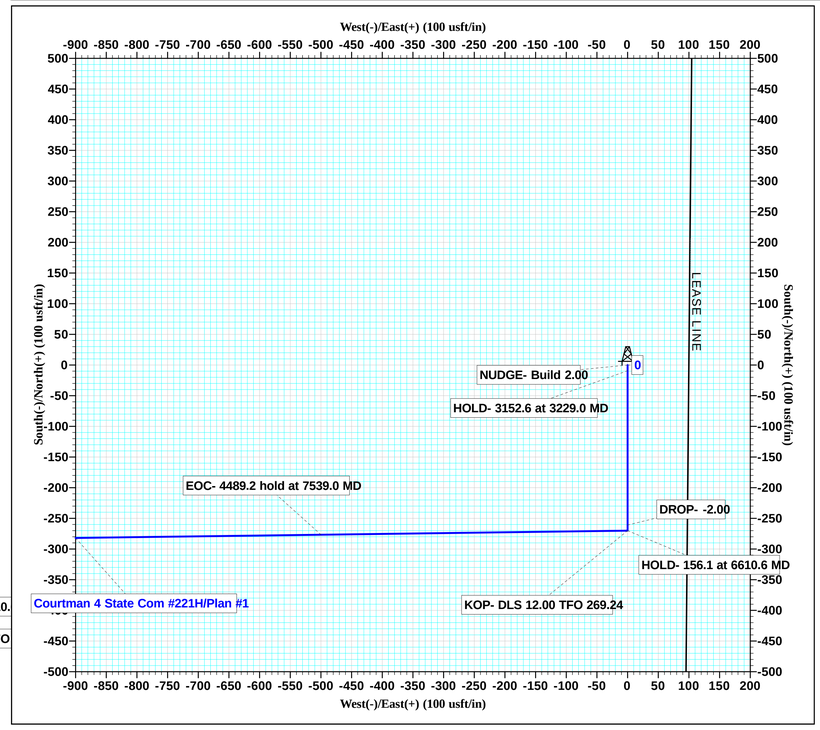
SECTION DETAILS

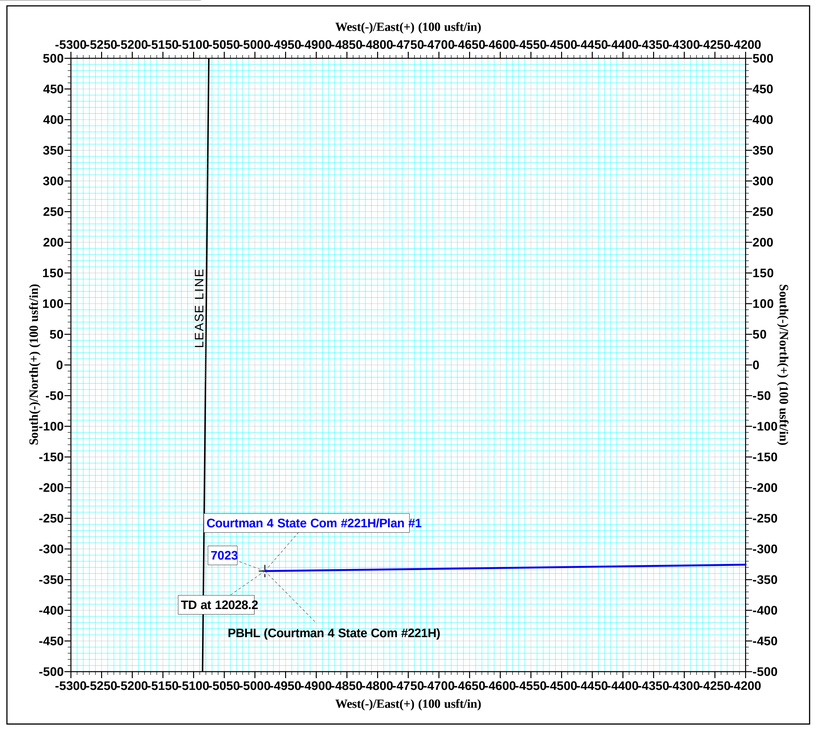
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	NUDGE- Build 2.00
3229.0	4.58	180.00	3228.7	-9.1	0.0	2.00	180.00	0.6	HOLD- 3152.6 at 3229.0 MD
6381.6	4.58	180.00	6371.3	-260.9	0.0	0.00	0.00	17.5	DROP- -2.00
6610.6	0.00	0.00	6600.0	-270.0	0.0	2.00	180.00	18.2	HOLD- 156.1 at 6610.6 MD
6766.7	0.00	0.00	6756.1	-270.0	0.0	0.00	0.00	18.2	KOP- DLS 12.00 TFO 269.24
7539.0	92.68	269.24	7233.0	-276.6	-499.8	12.00	269.24	517.2	EOC- 4489.2 hold at 7539.0 MD
12028.2	92.68	269.24	7023.0	-336.0	-4983.7	0.00	0.00	4995.0	TD at 12028.2

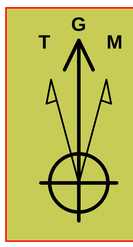
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (Courtman 4 State Com #221H)	7023.0	-336.0	-4983.7	614939.50	585744.80





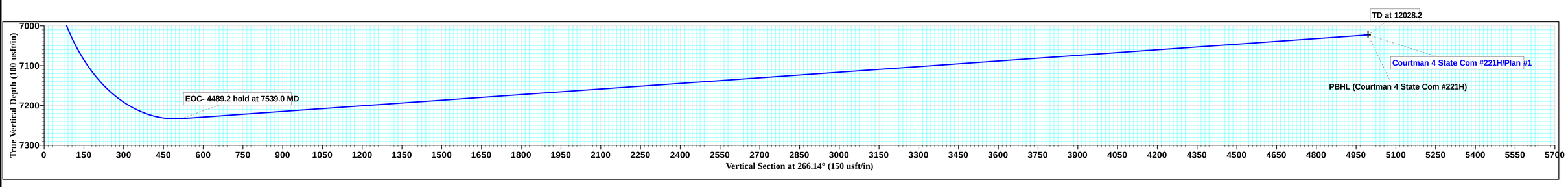




Azimuths to Grid North
True North: -0.09°
Magnetic North: 6.96°

Magnetic Field
Strength: 47941.3nT
Dip Angle: 60.37°
Date: 06/25/2019
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.96°



V-F Petroleum Inc

Eddy County (NAD 83 NME)
(Courtman) Sec-4_T-19-S_R-28-E
Courtman 4 State Com #221H

OWB

Plan: Plan #1

Standard Planning Report

26 June, 2019

INTREPID

Microsoft
Planning Report

Database:	EDM 10_13	**Local Co-ordinate Reference:**	Well Courtman 4 State Com #221H
Company:	V-F Petroleum Inc	**TVD Reference:**	KB @ 3550.0usft
Project:	Eddy County (NAD 83 NME)	**MD Reference:**	KB @ 3550.0usft
Site:	(Courtman) Sec-4_T-19-S_R-28-E	**North Reference:**	Grid
Well:	Courtman 4 State Com #221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #1		

Project Eddy County (NAD 83 NME)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site (Courtman) Sec-4_T-19-S_R-28-E

Site Position:		**Northing:**	616,325.40 usft	**Latitude:**	32° 41' 39.187 N
From:	Map	**Easting:**	590,738.10 usft	**Longitude:**	104° 10' 21.896 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.09 °

Well Courtman 4 State Com #221H

Well Position	**+N/-S**	-1,049.9 usft	**Northing:**	615,275.50 usft	**Latitude:**	32° 41' 28.798 N
	+E/-W	-9.6 usft	**Easting:**	590,728.50 usft	**Longitude:**	104° 10' 22.027 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,530.0 usft

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/25/2019	7.05	60.37	47,941.32400859

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	266.14

Plan Survey Tool Program **Date** 06/26/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	12,028.2	Plan #1 (OWB)	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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,229.0	4.58	180.00	3,228.7	-9.1	0.0	2.00	2.00	0.00	180.00	
6,381.6	4.58	180.00	6,371.3	-260.9	0.0	0.00	0.00	0.00	0.00	
6,610.6	0.00	0.00	6,600.0	-270.0	0.0	2.00	-2.00	0.00	180.00	
6,766.7	0.00	0.00	6,756.1	-270.0	0.0	0.00	0.00	0.00	0.00	
7,539.0	92.68	269.24	7,233.0	-276.6	-499.8	12.00	12.00	-11.75	269.24	
12,028.2	92.68	269.24	7,023.0	-336.0	-4,983.7	0.00	0.00	0.00	0.00	PBHL (Courtman 4

Microsoft
Planning Report

Database:	EDM 10_13	**Local Co-ordinate Reference:**	Well Courtman 4 State Com #221H
Company:	V-F Petroleum Inc	**TVD Reference:**	KB @ 3550.0usft
Project:	Eddy County (NAD 83 NME)	**MD Reference:**	KB @ 3550.0usft
Site:	(Courtman) Sec-4_T-19-S_R-28-E	**North Reference:**	Grid
Well:	Courtman 4 State Com #221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
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
NUDGE- Build 2.00									
3,100.0	2.00	180.00	3,100.0	-1.7	0.0	0.1	2.00	2.00	0.00
3,200.0	4.00	180.00	3,199.8	-7.0	0.0	0.5	2.00	2.00	0.00
3,229.0	4.58	180.00	3,228.7	-9.1	0.0	0.6	2.00	2.00	0.00
HOLD- 3152.6 at 3229.0 MD									
3,300.0	4.58	180.00	3,299.5	-14.8	0.0	1.0	0.00	0.00	0.00
3,400.0	4.58	180.00	3,399.2	-22.8	0.0	1.5	0.00	0.00	0.00
3,500.0	4.58	180.00	3,498.9	-30.8	0.0	2.1	0.00	0.00	0.00
3,600.0	4.58	180.00	3,598.6	-38.8	0.0	2.6	0.00	0.00	0.00
3,700.0	4.58	180.00	3,698.3	-46.8	0.0	3.1	0.00	0.00	0.00
3,800.0	4.58	180.00	3,797.9	-54.7	0.0	3.7	0.00	0.00	0.00
3,900.0	4.58	180.00	3,897.6	-62.7	0.0	4.2	0.00	0.00	0.00
4,000.0	4.58	180.00	3,997.3	-70.7	0.0	4.8	0.00	0.00	0.00
4,100.0	4.58	180.00	4,097.0	-78.7	0.0	5.3	0.00	0.00	0.00
4,200.0	4.58	180.00	4,196.7	-86.7	0.0	5.8	0.00	0.00	0.00
4,300.0	4.58	180.00	4,296.3	-94.7	0.0	6.4	0.00	0.00	0.00
4,400.0	4.58	180.00	4,396.0	-102.6	0.0	6.9	0.00	0.00	0.00
4,500.0	4.58	180.00	4,495.7	-110.6	0.0	7.4	0.00	0.00	0.00
4,600.0	4.58	180.00	4,595.4	-118.6	0.0	8.0	0.00	0.00	0.00
4,700.0	4.58	180.00	4,695.1	-126.6	0.0	8.5	0.00	0.00	0.00
4,800.0	4.58	180.00	4,794.7	-134.6	0.0	9.1	0.00	0.00	0.00
4,900.0	4.58	180.00	4,894.4	-142.6	0.0	9.6	0.00	0.00	0.00

Microsoft
Planning Report

Database:	EDM 10_13	**Local Co-ordinate Reference:**	Well Courtman 4 State Com #221H
Company:	V-F Petroleum Inc	**TVD Reference:**	KB @ 3550.0usft
Project:	Eddy County (NAD 83 NME)	**MD Reference:**	KB @ 3550.0usft
Site:	(Courtman) Sec-4_T-19-S_R-28-E	**North Reference:**	Grid
Well:	Courtman 4 State Com #221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.0	4.58	180.00	4,994.1	-150.5	0.0	10.1	0.00	0.00	0.00
5,100.0	4.58	180.00	5,093.8	-158.5	0.0	10.7	0.00	0.00	0.00
5,200.0	4.58	180.00	5,193.5	-166.5	0.0	11.2	0.00	0.00	0.00
5,300.0	4.58	180.00	5,293.1	-174.5	0.0	11.7	0.00	0.00	0.00
5,400.0	4.58	180.00	5,392.8	-182.5	0.0	12.3	0.00	0.00	0.00
5,500.0	4.58	180.00	5,492.5	-190.5	0.0	12.8	0.00	0.00	0.00
5,600.0	4.58	180.00	5,592.2	-198.5	0.0	13.3	0.00	0.00	0.00
5,700.0	4.58	180.00	5,691.9	-206.4	0.0	13.9	0.00	0.00	0.00
5,800.0	4.58	180.00	5,791.5	-214.4	0.0	14.4	0.00	0.00	0.00
5,900.0	4.58	180.00	5,891.2	-222.4	0.0	15.0	0.00	0.00	0.00
6,000.0	4.58	180.00	5,990.9	-230.4	0.0	15.5	0.00	0.00	0.00
6,100.0	4.58	180.00	6,090.6	-238.4	0.0	16.0	0.00	0.00	0.00
6,200.0	4.58	180.00	6,190.3	-246.4	0.0	16.6	0.00	0.00	0.00
6,300.0	4.58	180.00	6,290.0	-254.3	0.0	17.1	0.00	0.00	0.00
6,381.6	4.58	180.00	6,371.3	-260.9	0.0	17.5	0.00	0.00	0.00
DROP- -2.00									
6,400.0	4.21	180.00	6,389.6	-262.3	0.0	17.6	2.00	-2.00	0.00
6,500.0	2.21	180.00	6,489.5	-267.9	0.0	18.0	2.00	-2.00	0.00
6,600.0	0.21	180.00	6,589.4	-270.0	0.0	18.2	2.00	-2.00	0.00
6,610.6	0.00	0.00	6,600.0	-270.0	0.0	18.2	2.00	-2.00	0.00
HOLD- 156.1 at 6610.6 MD									
6,700.0	0.00	0.00	6,689.4	-270.0	0.0	18.2	0.00	0.00	0.00
6,766.7	0.00	0.00	6,756.1	-270.0	0.0	18.2	0.00	0.00	0.00
KOP- DLS 12.00 TFO 269.24									
6,775.0	1.00	269.24	6,764.4	-270.0	-0.1	18.2	12.00	12.00	0.00
6,800.0	4.00	269.24	6,789.4	-270.0	-1.2	19.3	12.00	12.00	0.00
6,825.0	7.00	269.24	6,814.3	-270.0	-3.6	21.7	12.00	12.00	0.00
6,850.0	10.00	269.24	6,839.0	-270.1	-7.3	25.4	12.00	12.00	0.00
6,875.0	13.00	269.24	6,863.5	-270.2	-12.2	30.4	12.00	12.00	0.00
6,900.0	16.00	269.24	6,887.7	-270.2	-18.5	36.6	12.00	12.00	0.00
6,925.0	19.00	269.24	6,911.6	-270.3	-26.0	44.1	12.00	12.00	0.00
6,950.0	22.00	269.24	6,935.0	-270.5	-34.8	52.9	12.00	12.00	0.00
6,975.0	25.00	269.24	6,957.9	-270.6	-44.7	62.8	12.00	12.00	0.00
7,000.0	28.00	269.24	6,980.3	-270.7	-55.9	74.0	12.00	12.00	0.00
7,025.0	31.00	269.24	7,002.0	-270.9	-68.2	86.3	12.00	12.00	0.00
7,050.0	34.00	269.24	7,023.1	-271.1	-81.6	99.7	12.00	12.00	0.00
7,075.0	37.00	269.24	7,043.5	-271.3	-96.1	114.2	12.00	12.00	0.00
7,100.0	40.00	269.24	7,063.0	-271.5	-111.7	129.7	12.00	12.00	0.00
7,125.0	43.00	269.24	7,081.7	-271.7	-128.3	146.3	12.00	12.00	0.00
7,150.0	46.00	269.24	7,099.6	-271.9	-145.8	163.7	12.00	12.00	0.00
7,175.0	49.00	269.24	7,116.5	-272.2	-164.2	182.2	12.00	12.00	0.00
7,200.0	52.00	269.24	7,132.4	-272.4	-183.5	201.4	12.00	12.00	0.00
7,225.0	55.00	269.24	7,147.2	-272.7	-203.6	221.5	12.00	12.00	0.00
7,250.0	58.00	269.24	7,161.0	-273.0	-224.4	242.3	12.00	12.00	0.00
7,275.0	61.00	269.24	7,173.7	-273.3	-246.0	263.8	12.00	12.00	0.00
7,300.0	64.00	269.24	7,185.2	-273.6	-268.1	285.9	12.00	12.00	0.00
7,325.0	67.00	269.24	7,195.6	-273.9	-290.9	308.7	12.00	12.00	0.00
7,350.0	70.00	269.24	7,204.8	-274.2	-314.1	331.9	12.00	12.00	0.00
7,375.0	73.00	269.24	7,212.7	-274.5	-337.9	355.5	12.00	12.00	0.00
7,400.0	76.00	269.24	7,219.4	-274.8	-361.9	379.6	12.00	12.00	0.00
7,425.0	79.00	269.24	7,224.8	-275.1	-386.3	404.0	12.00	12.00	0.00
7,450.0	82.00	269.24	7,228.9	-275.4	-411.0	428.6	12.00	12.00	0.00
7,475.0	85.00	269.24	7,231.7	-275.8	-435.8	453.4	12.00	12.00	0.00

Microsoft
Planning Report

Database:	EDM 10_13	**Local Co-ordinate Reference:**	Well Courtman 4 State Com #221H
Company:	V-F Petroleum Inc	**TVD Reference:**	KB @ 3550.0usft
Project:	Eddy County (NAD 83 NME)	**MD Reference:**	KB @ 3550.0usft
Site:	(Courtman) Sec-4_T-19-S_R-28-E	**North Reference:**	Grid
Well:	Courtman 4 State Com #221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,500.0	88.00	269.24	7,233.3	-276.1	-460.8	478.3	12.00	12.00	0.00
7,525.0	91.00	269.24	7,233.5	-276.4	-485.8	503.3	12.00	12.00	0.00
7,539.0	92.68	269.24	7,233.0	-276.6	-499.8	517.2	12.00	12.00	0.00
EOC- 4489.2 hold at 7539.0 MD									
7,600.0	92.68	269.24	7,230.2	-277.4	-560.7	578.1	0.00	0.00	0.00
7,700.0	92.68	269.24	7,225.5	-278.7	-660.6	677.8	0.00	0.00	0.00
7,800.0	92.68	269.24	7,220.8	-280.1	-760.5	777.6	0.00	0.00	0.00
7,900.0	92.68	269.24	7,216.2	-281.4	-860.3	877.3	0.00	0.00	0.00
8,000.0	92.68	269.24	7,211.5	-282.7	-960.2	977.1	0.00	0.00	0.00
8,100.0	92.68	269.24	7,206.8	-284.0	-1,060.1	1,076.8	0.00	0.00	0.00
8,200.0	92.68	269.24	7,202.1	-285.4	-1,160.0	1,176.5	0.00	0.00	0.00
8,300.0	92.68	269.24	7,197.4	-286.7	-1,259.9	1,276.3	0.00	0.00	0.00
8,400.0	92.68	269.24	7,192.8	-288.0	-1,359.7	1,376.0	0.00	0.00	0.00
8,500.0	92.68	269.24	7,188.1	-289.3	-1,459.6	1,475.8	0.00	0.00	0.00
8,600.0	92.68	269.24	7,183.4	-290.7	-1,559.5	1,575.5	0.00	0.00	0.00
8,700.0	92.68	269.24	7,178.7	-292.0	-1,659.4	1,675.3	0.00	0.00	0.00
8,800.0	92.68	269.24	7,174.0	-293.3	-1,759.3	1,775.0	0.00	0.00	0.00
8,900.0	92.68	269.24	7,169.4	-294.6	-1,859.2	1,874.8	0.00	0.00	0.00
9,000.0	92.68	269.24	7,164.7	-295.9	-1,959.0	1,974.5	0.00	0.00	0.00
9,100.0	92.68	269.24	7,160.0	-297.3	-2,058.9	2,074.2	0.00	0.00	0.00
9,200.0	92.68	269.24	7,155.3	-298.6	-2,158.8	2,174.0	0.00	0.00	0.00
9,300.0	92.68	269.24	7,150.6	-299.9	-2,258.7	2,273.7	0.00	0.00	0.00
9,400.0	92.68	269.24	7,146.0	-301.2	-2,358.6	2,373.5	0.00	0.00	0.00
9,500.0	92.68	269.24	7,141.3	-302.6	-2,458.4	2,473.2	0.00	0.00	0.00
9,600.0	92.68	269.24	7,136.6	-303.9	-2,558.3	2,573.0	0.00	0.00	0.00
9,700.0	92.68	269.24	7,131.9	-305.2	-2,658.2	2,672.7	0.00	0.00	0.00
9,800.0	92.68	269.24	7,127.3	-306.5	-2,758.1	2,772.5	0.00	0.00	0.00
9,900.0	92.68	269.24	7,122.6	-307.8	-2,858.0	2,872.2	0.00	0.00	0.00
10,000.0	92.68	269.24	7,117.9	-309.2	-2,957.9	2,971.9	0.00	0.00	0.00
10,100.0	92.68	269.24	7,113.2	-310.5	-3,057.7	3,071.7	0.00	0.00	0.00
10,200.0	92.68	269.24	7,108.5	-311.8	-3,157.6	3,171.4	0.00	0.00	0.00
10,300.0	92.68	269.24	7,103.9	-313.1	-3,257.5	3,271.2	0.00	0.00	0.00
10,400.0	92.68	269.24	7,099.2	-314.5	-3,357.4	3,370.9	0.00	0.00	0.00
10,500.0	92.68	269.24	7,094.5	-315.8	-3,457.3	3,470.7	0.00	0.00	0.00
10,600.0	92.68	269.24	7,089.8	-317.1	-3,557.1	3,570.4	0.00	0.00	0.00
10,700.0	92.68	269.24	7,085.1	-318.4	-3,657.0	3,670.2	0.00	0.00	0.00
10,800.0	92.68	269.24	7,080.5	-319.8	-3,756.9	3,769.9	0.00	0.00	0.00
10,900.0	92.68	269.24	7,075.8	-321.1	-3,856.8	3,869.6	0.00	0.00	0.00
11,000.0	92.68	269.24	7,071.1	-322.4	-3,956.7	3,969.4	0.00	0.00	0.00
11,100.0	92.68	269.24	7,066.4	-323.7	-4,056.5	4,069.1	0.00	0.00	0.00
11,200.0	92.68	269.24	7,061.8	-325.0	-4,156.4	4,168.9	0.00	0.00	0.00
11,300.0	92.68	269.24	7,057.1	-326.4	-4,256.3	4,268.6	0.00	0.00	0.00
11,400.0	92.68	269.24	7,052.4	-327.7	-4,356.2	4,368.4	0.00	0.00	0.00
11,500.0	92.68	269.24	7,047.7	-329.0	-4,456.1	4,468.1	0.00	0.00	0.00
11,600.0	92.68	269.24	7,043.0	-330.3	-4,556.0	4,567.9	0.00	0.00	0.00
11,700.0	92.68	269.24	7,038.4	-331.7	-4,655.8	4,667.6	0.00	0.00	0.00
11,800.0	92.68	269.24	7,033.7	-333.0	-4,755.7	4,767.3	0.00	0.00	0.00
11,900.0	92.68	269.24	7,029.0	-334.3	-4,855.6	4,867.1	0.00	0.00	0.00
12,000.0	92.68	269.24	7,024.3	-335.6	-4,955.5	4,966.8	0.00	0.00	0.00
12,028.2	92.68	269.24	7,023.0	-336.0	-4,983.7	4,995.0	0.00	0.00	0.00
TD at 12028.2									

Microsoft
Planning Report

Database:	EDM 10_13	**Local Co-ordinate Reference:**	Well Courtman 4 State Com #221H
Company:	V-F Petroleum Inc	**TVD Reference:**	KB @ 3550.0usft
Project:	Eddy County (NAD 83 NME)	**MD Reference:**	KB @ 3550.0usft
Site:	(Courtman) Sec-4_T-19-S_R-28-E	**North Reference:**	Grid
Well:	Courtman 4 State Com #221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (Courtman 4 St - plan hits target center - Point	0.00	0.00	7,023.0	-336.0	-4,983.7	614,939.50	585,744.80	32° 41' 25.544 N	104° 11' 20.351 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
3,000.0	3,000.0	0.0	0.0	NUDGE- Build 2.00
3,229.0	3,228.7	-9.1	0.0	HOLD- 3152.6 at 3229.0 MD
6,381.6	6,371.3	-260.9	0.0	DROP- -2.00
6,610.6	6,600.0	-270.0	0.0	HOLD- 156.1 at 6610.6 MD
6,766.7	6,756.1	-270.0	0.0	KOP- DLS 12.00 TFO 269.24
7,539.0	7,233.0	-276.6	-499.8	EOC- 4489.2 hold at 7539.0 MD
12,028.2	7,023.0	-336.0	-4,983.7	TD at 12028.2