

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Well Name: LONESOME DOVE FED COM	Well Location: T26S / R35E / SEC 17 / NESW / 32.0410408 / -103.3914525	County or Parish/State: LEA / NM
Well Number: 112H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM104706	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548148	Well Status: Approved Application for Permit to Drill	Operator: TITUS OIL AND GAS PRODUCTION LLC

Notice of Intent

Sundry ID: 2671803

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 05/16/2022

Time Sundry Submitted: 07:33

Date proposed operation will begin: 05/20/2022

Procedure Description: Depth change from 10,445' TVD and 18,741' MD to 10,451' TVD and 18,819' MD; FTP change from 2541' FNL to 2640' FNL; Casing and cement program changes to tapered slim-hole; Choke hose change for rig accuracy; Added language to APD Drilling Plan for bradenhead squeeze; BOP change from 2M/3M to 3M/5M; Mud program changes; Change to multi-bowl wellhead. Attachments: Updated C-102 Updated APD Drilling Plan Updated Directional Plan Updated AC Plan Updated Choke Hose Certs 3M/5M BOP Information Multi-Bowl Wellhead Schematic

NOI Attachments

Procedure Description

- AFS___Multi_Bowl_Schematic_20220516073258.pdf
- 5M___H_P_614___BOP___CHOKE___FLEX_HOSE_APD_INFORMATION_20220516073038.pdf
- 3M___H_P_614___BOP___CHOKE___FLEX_HOSE_APD_INFORMATION_20220516073027.pdf
- Choke_Hose_SN_66552_20220516072646.pdf
- Lonesome_Dove_Fed_Com_112H___Plan_3_05_15_22_AC_Report_20220516072646.pdf
- LONESOME_DOVE_FED_COM_112H_C102_rev2_20220516072646.pdf
- Lonesome_Dove_Fed_Com_112H___Plan_3_05_15_22_20220516072646.pdf
- Lonesome_Dove_Fed_Com_112H___APD_Temp_20220516072646.pdf

Well Name: LONESOME DOVE FED COM

Well Location: T26S / R35E / SEC 17 / NESW / 32.0410408 / -103.3914525

County or Parish/State: LEA / NM

Well Number: 112H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM104706

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002548148

Well Status: Approved Application for Permit to Drill

Operator: TITUS OIL AND GAS PRODUCTION LLC

Conditions of Approval

Additional

LonesomeDoveFedCom112HCOA_20220519085804.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: RYAN DELONG

Signed on: MAY 16, 2022 07:33 AM

Name: TITUS OIL AND GAS PRODUCTION LLC

Title: Regulatory Manager

Street Address: 420 Throckmorton Street, Suite 1150

City: Fort Worth

State: TX

Phone: (817) 852-6370

Email address: rdelong@titusoil.com

Field

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 05/20/2022

Signature: Chris Walls

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-025-48148		2 Pool Code 96672		3 Pool Name WC-025 G-08 S263412K; Bone Spring	
4 Property Code 329881		5 Property Name LONESOME DOVE FED COM			6 Well Number 112H
7 OGRID No. 373986		8 Operator Name TITUS OIL & GAS PRODUCTION LLC			9 Elevation 3217'

¹⁰ Surface Location

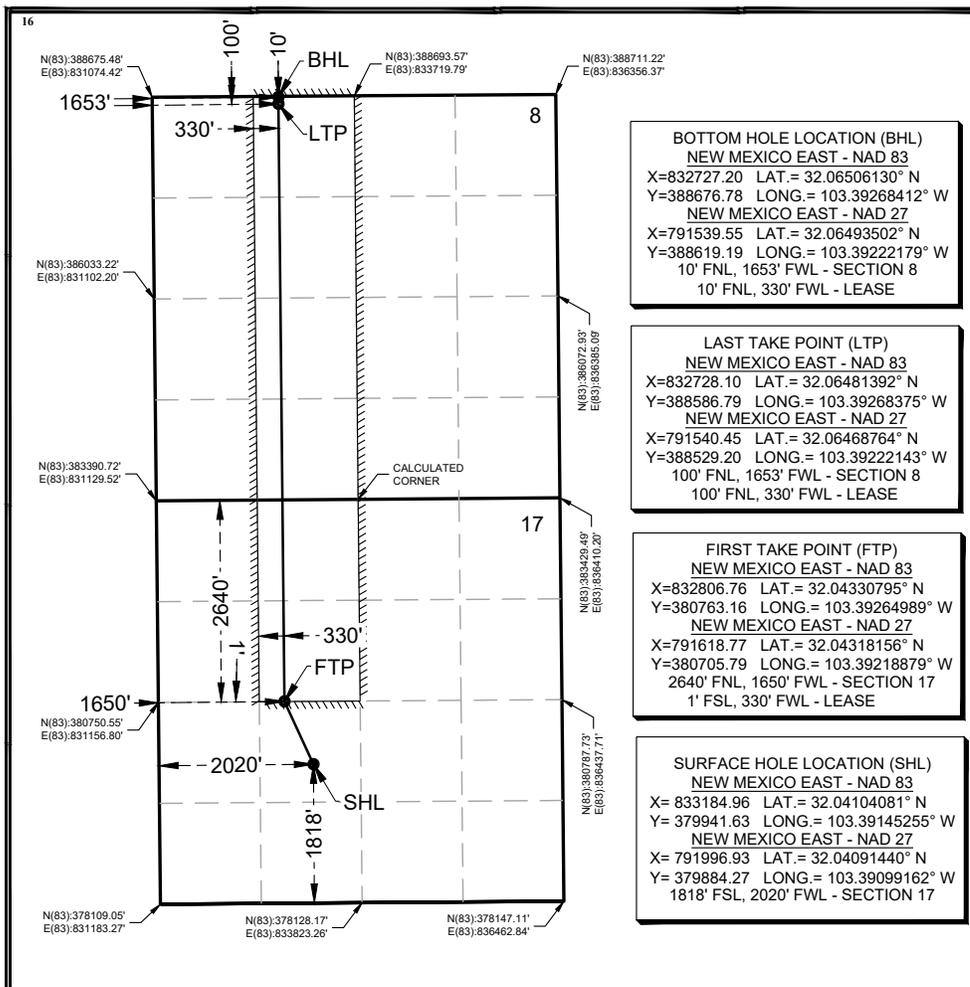
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	17	26-S	35-E		1818'	SOUTH	2020'	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	8	26-S	35-E		10'	NORTH	1653'	WEST	LEA

12 Dedicated Acres 240	13 Joint or Infill Y	14 Consolidation Code	15 Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=832727.20 LAT.= 32.06506130° N
Y=388676.78 LONG.= 103.39268412° W
NEW MEXICO EAST - NAD 27
X=791539.55 LAT.= 32.06493502° N
Y=388619.19 LONG.= 103.39222179° W
10' FNL, 1653' FWL - SECTION 8
10' FNL, 330' FWL - LEASE

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=832728.10 LAT.= 32.06481392° N
Y=388586.79 LONG.= 103.39268375° W
NEW MEXICO EAST - NAD 27
X=791540.45 LAT.= 32.06468764° N
Y=388529.20 LONG.= 103.39222143° W
100' FNL, 1653' FWL - SECTION 8
100' FNL, 330' FWL - LEASE

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=832806.76 LAT.= 32.04330795° N
Y=380763.16 LONG.= 103.39264989° W
NEW MEXICO EAST - NAD 27
X=791618.77 LAT.= 32.04318156° N
Y=380705.79 LONG.= 103.39218879° W
2640' FNL, 1650' FWL - SECTION 17
1' FSL, 330' FWL - LEASE

SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X= 833184.96 LAT.= 32.04104081° N
Y= 379941.63 LONG.= 103.39145255° W
NEW MEXICO EAST - NAD 27
X= 791996.93 LAT.= 32.04091440° N
Y= 379884.27 LONG.= 103.39099162° W
1818' FSL, 2020' FWL - SECTION 17

17 OPERATOR CERTIFICATION

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

Signature: *Ryan DeLong* Date: 5/16/2022

Printed Name: Ryan DeLong - Regulatory Manager

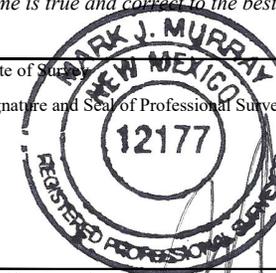
E-mail Address: rdelong@titusoil.com

18 SURVEYOR CERTIFICATION

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

Date of Survey: 5/10/2022

Signature and Seal of Professional Surveyor: *Mark J. Murray*



Certificate Number: 12177

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 112H

1. Geologic Formations

TVD of target	10,451' EOL	Pilot hole depth	NA
MD at TD:	18,819'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1051	Water	
Top of Salt	1580	Salt	
Base of Salt	5072	Salt	
Lamar	5389	Salt Water	
Delaware	5422	Salt Water	
Bone Spring Lime	9360	Oil/Gas	
1st Bone Spring	10458	Target Oil/Gas	
2nd Bone Spring	11083	Not Penetrated	
3rd Bone Spring	12204	Not Penetrated	
Wolfcamp	12571	Not Penetrated	
x	x	Not Penetrated	
x	x	Not Penetrated	
x	x	Not Penetrated	
x	x	Not Penetrated	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
	From	To							
13.5"	0	1080	10.75"	45.5	J55	BTC	4.23	0.91	14.55
9.875"	0	10700	7.625"	29.7	HCL80	BTC	1.32	1.70	2.28
6.75"	0	10500	5.5"	20	P110	BTC	2.84	3.11	3.88
6.75"	10500	18,819	5"	18	P110	BTC	2.84	3.11	3.88
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse.
 Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface and
 All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5" casing will be run back 200' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 112H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef? If yes, does production casing cement tie back a minimum of 50' above the Reef? Is well within the designated 4 string boundary?	N
Is well located in SOPA but not in R-111-P? If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA? If yes, are the first three strings cemented to surface? Is 2 nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst? If yes, are there two strings cemented to surface? (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst? If yes, are there three strings cemented to surface?	N

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 112H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	250	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Int	900	10.3	3.6	22.95	16	TXI Lightweight Blend
	250	15.0	1.27	5.72	8	Tail: Class H
Prod	350	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	950	14.2	1.3	6.2	19	Tail: 50:50:2 Class H Blend

Contingency remediation cement plan for intermediate casing if cmt is not circulated to surface:1st Stage - Bradenhead Stage Notes

Operator will pump 1000+ sx of Class C and allow cement to fall into place. Operator will not put any fluid on top of the cement after the fall. This will leave annuls filled with air to TOC. We will WOC +/- 2 hrs (or when surface samples are firm enough) to ensure cement is set up. TOC will be above the Lamar allowing for the fill up stage.

2nd Stage - Fill Up Stage Notes

After WOC to allow the Bradenhead Stage to set up, operator will proceed with the Fill Up Stage. Since there is only air in the annulus (no fluid will be placed in annulus after bradenhead stage), we will pump cement with opposite valve set to allow air to displace out. Fill up cement will be mixed and pumped until returns are taken to surface to complete the fill up. This will confirm a solid column of cement in the annulus all the way to surface completing the top out job. Operator will WOC after cement returns have been taken to surface.

Casing String	TOC	% Excess
Surface	0'	50%
1 st Intermediate	0'	50%
Production	10,200'	35% OH in Lateral (KOP to EOL)

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 112H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
9-7/8"	13-5/8"	3M	Annular	x	3000 psi
			Blind Ram		
			Pipe Ram		3M
			Double Ram		
			Other*		
6-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			VBR Ram	x	
			VBR Ram	x	
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2.
Y	On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 112H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	7-5/8" Int shoe	BDM	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	8.8 - 9.4	35-45	<20

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
N	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned	Interval
N Resistivity	Pilot Hole TD to ICP
N Density	Pilot Hole TD to ICP
Y CBL	Production casing (If cement not circulated to surface)
Y Mud log	Intermediate shoe to TD
N PEX	

Titus Oil & Gas Production, LLC - Lonesome Dove Fed Com 112H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5110 psi at 10451' TVD
Abnormal Temperature	NO 160 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

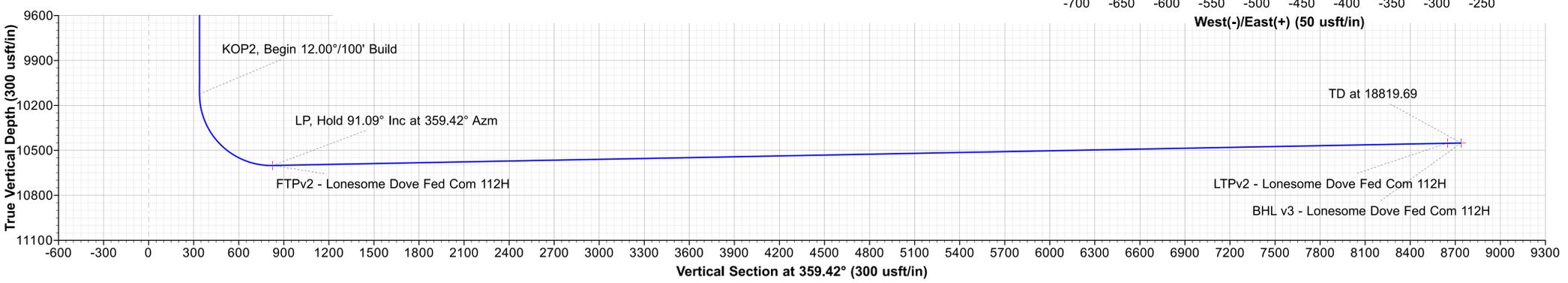
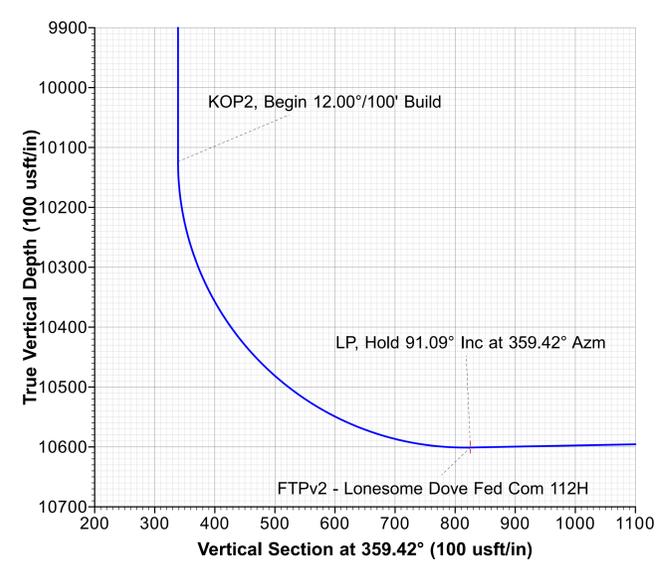
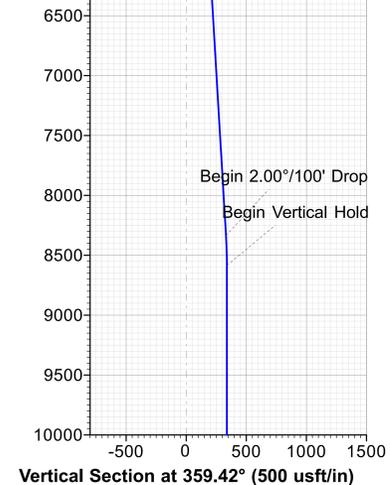
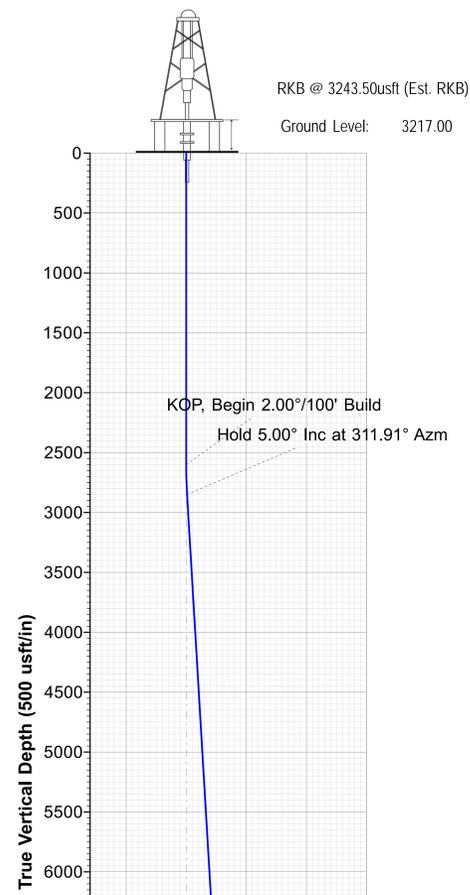
Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other Facets of Operation

Y	Is it a walking operation?
N	Is casing pre-set?

x	H2S Plan.
x	BOP & Choke Schematics.
x	Directional Plan
x	Multibowl Schematic



WELL DETAILS											
	+N/-S	+E/-W	Northing	Ground Level	Easting	Latitude	Longitude				
	0.00	0.00	379941.63	3217.00	833184.96	32° 2' 27.746916 N	103° 23' 29.229180 W				
DESIGN TARGET DETAILS											
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
BHL v3 - Lonesome Dove Fed Com 112H	10451.00	8735.15	-457.76	388676.78	832727.20	32° 3' 54.220667 N	103° 23' 33.662791 W				
LTPv2 - Lonesome Dove Fed Com 112H	10451.00	8645.16	-456.86	388586.79	832728.10	32° 3' 53.330141 N	103° 23' 33.661447 W				
FTPv2 - Lonesome Dove Fed Com 112H	10601.00	821.53	-378.20	380763.16	832806.76	32° 2' 35.908596 N	103° 23' 33.539627 W				
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.00	
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.000	0.000	0.00	KOP, Begin 2.00°/100' Build
3	2849.94	5.00	311.91	2849.62	7.28	-8.11	2.00	311.907	7.36		Hold 5.00° Inc at 311.91° Azm
4	8356.64	5.00	311.91	8335.38	327.77	-365.20	0.00	0.000	331.45		Begin 2.00°/100' Drop
5	8606.58	0.00	0.00	8585.00	335.04	-373.31	2.00	180.000	338.80		Begin Vertical Hold
6	10145.20	0.00	0.00	10123.62	335.04	-373.31	0.00	0.000	338.80		KOP2, Begin 12.00°/100' Build
7	10904.25	91.09	359.42	10601.00	821.53	-378.20	12.00	359.424	825.32		LP, Hold 91.09° Inc at 359.42° Azm
8	18819.69	91.09	359.42	10451.00	8735.15	-457.76	0.00	0.000	8739.34		BHL v3 - Lonesome Dove Fed Com 112H TD at 18819.69

Map System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone Name: New Mexico Eastern Zone

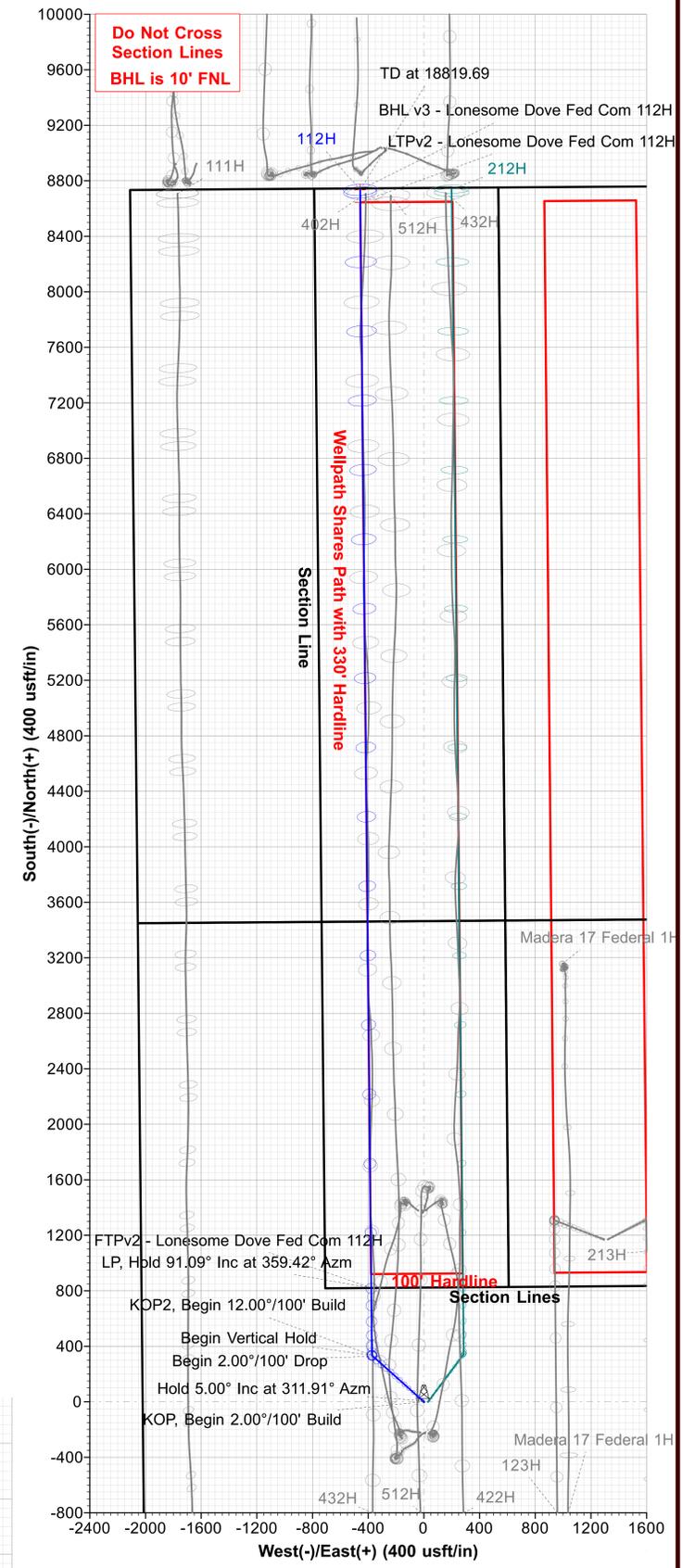
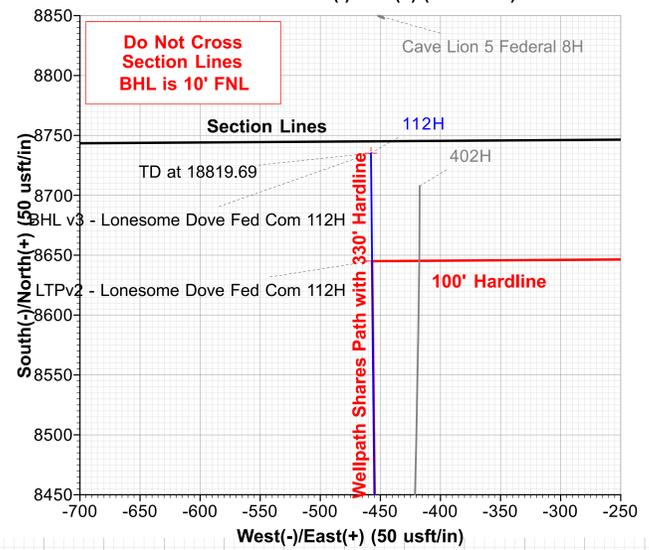
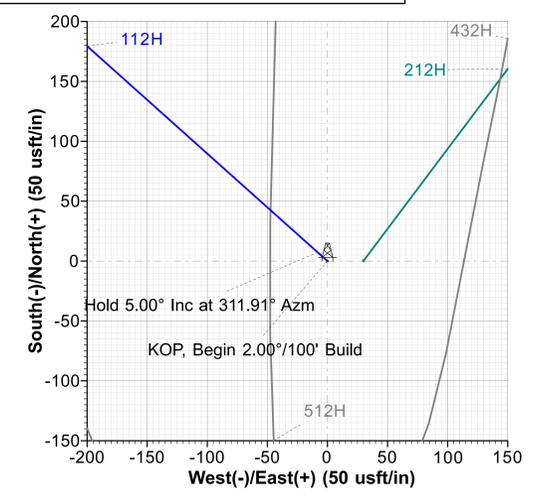
Local Origin: Well 112H, Grid North

Latitude: 32° 2' 27.746916 N
 Longitude: 103° 23' 29.229180 W

Grid East: 833184.96
 Grid North: 379941.63
 Scale Factor: 1.000

Geomagnetic Model: MVHD
 Sample Date: 15-Jul-22
 Magnetic Declination: 6.262°
 Dip Angle from Horizontal: 59.601°
 Magnetic Field Strength: 47355.15384019nT

To convert a Magnetic Direction to a Grid Direction, Add 5.762°
 To convert a Magnetic Direction to a True Direction, Add 6.262° East
 To convert a True Direction to a Grid Direction, Subtract 0.500°





Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)
Lonesome Dove Fed Com (NAD83)
112H

OH

Plan: Plan 3 05-15-22

Standard Planning Report

15 May, 2022





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 112H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3243.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3243.50usft (Est. RKB)
Site:	Lonesome Dove Fed Com (NAD83)	North Reference:	Grid
Well:	112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 05-15-22		

Project	Lea County, NM - (NAD83 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	Lonesome Dove Fed Com (NAD83)				
Site Position:	Northing:	379,941.34 usft	Latitude:	32° 2' 27.746664 N	
From: Map	Easting:	833,154.89 usft	Longitude:	103° 23' 29.578524 W	
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.500 °

Well	112H					
Well Position	+N/-S	0.29 usft	Northing:	379,941.63 usft	Latitude:	32° 2' 27.746916 N
	+E/-W	30.07 usft	Easting:	833,184.96 usft	Longitude:	103° 23' 29.229180 W
Position Uncertainty	1.00 usft		Wellhead Elevation:		Ground Level:	3,217.00 usft

Wellbore	OH			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	7/15/2022	6.262	59.601	47,355.15384019

Design	Plan 3 05-15-22			
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	359.42

Plan Survey Tool Program	Date	5/15/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,819.69 Plan 3 05-15-22 (OH)	MWD+HDGM+MS	OWSG Rev.2 MWD + HDGI	

Plan Sections											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,849.94	5.00	311.91	2,849.62	7.28	-8.11	2.00	2.00	0.00	311.907	0.000	
8,356.64	5.00	311.91	8,335.38	327.77	-365.20	0.00	0.00	0.00	0.00	180.000	
8,606.58	0.00	0.00	8,585.00	335.04	-373.31	2.00	-2.00	0.00	0.00	0.000	
10,145.20	0.00	0.00	10,123.62	335.04	-373.31	0.00	0.00	0.00	0.00	0.000	
10,904.25	91.09	359.42	10,601.00	821.53	-378.20	12.00	12.00	0.00	359.424	0.000	
18,819.69	91.09	359.42	10,451.00	8,735.15	-457.76	0.00	0.00	0.00	0.000	BHL v3 - Lonesome	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 112H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3243.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3243.50usft (Est. RKB)
Site:	Lonesome Dove Fed Com (NAD83)	North Reference:	Grid
Well:	112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 05-15-22		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, Begin 2.00°/100' Build										
2,700.00	2.00	311.91	2,699.98	1.17	-1.30	1.18	2.00	2.00	0.00	
2,800.00	4.00	311.91	2,799.84	4.66	-5.19	4.71	2.00	2.00	0.00	
2,849.94	5.00	311.91	2,849.62	7.28	-8.11	7.36	2.00	2.00	0.00	
Hold 5.00° Inc at 311.91° Azm										
2,900.00	5.00	311.91	2,899.49	10.19	-11.36	10.31	0.00	0.00	0.00	
3,000.00	5.00	311.91	2,999.11	16.01	-17.84	16.19	0.00	0.00	0.00	
3,100.00	5.00	311.91	3,098.73	21.83	-24.32	22.08	0.00	0.00	0.00	
3,200.00	5.00	311.91	3,198.35	27.65	-30.81	27.96	0.00	0.00	0.00	
3,300.00	5.00	311.91	3,297.97	33.47	-37.29	33.85	0.00	0.00	0.00	
3,400.00	5.00	311.91	3,397.59	39.29	-43.78	39.73	0.00	0.00	0.00	
3,500.00	5.00	311.91	3,497.21	45.11	-50.26	45.62	0.00	0.00	0.00	
3,600.00	5.00	311.91	3,596.83	50.93	-56.75	51.50	0.00	0.00	0.00	
3,700.00	5.00	311.91	3,696.45	56.75	-63.23	57.39	0.00	0.00	0.00	
3,800.00	5.00	311.91	3,796.07	62.57	-69.72	63.27	0.00	0.00	0.00	
3,900.00	5.00	311.91	3,895.69	68.39	-76.20	69.16	0.00	0.00	0.00	
4,000.00	5.00	311.91	3,995.31	74.21	-82.69	75.04	0.00	0.00	0.00	
4,100.00	5.00	311.91	4,094.93	80.03	-89.17	80.93	0.00	0.00	0.00	
4,200.00	5.00	311.91	4,194.55	85.85	-95.66	86.81	0.00	0.00	0.00	
4,300.00	5.00	311.91	4,294.17	91.67	-102.14	92.70	0.00	0.00	0.00	
4,400.00	5.00	311.91	4,393.79	97.49	-108.63	98.59	0.00	0.00	0.00	
4,500.00	5.00	311.91	4,493.41	103.31	-115.11	104.47	0.00	0.00	0.00	
4,600.00	5.00	311.91	4,593.03	109.13	-121.60	110.36	0.00	0.00	0.00	
4,700.00	5.00	311.91	4,692.65	114.95	-128.08	116.24	0.00	0.00	0.00	
4,800.00	5.00	311.91	4,792.27	120.77	-134.57	122.13	0.00	0.00	0.00	
4,900.00	5.00	311.91	4,891.89	126.59	-141.05	128.01	0.00	0.00	0.00	
5,000.00	5.00	311.91	4,991.51	132.41	-147.54	133.90	0.00	0.00	0.00	
5,100.00	5.00	311.91	5,091.13	138.23	-154.02	139.78	0.00	0.00	0.00	
5,200.00	5.00	311.91	5,190.74	144.05	-160.50	145.67	0.00	0.00	0.00	
5,300.00	5.00	311.91	5,290.36	149.87	-166.99	151.55	0.00	0.00	0.00	
5,400.00	5.00	311.91	5,389.98	155.69	-173.47	157.44	0.00	0.00	0.00	
5,500.00	5.00	311.91	5,489.60	161.51	-179.96	163.32	0.00	0.00	0.00	
5,600.00	5.00	311.91	5,589.22	167.33	-186.44	169.21	0.00	0.00	0.00	
5,700.00	5.00	311.91	5,688.84	173.15	-192.93	175.09	0.00	0.00	0.00	
5,800.00	5.00	311.91	5,788.46	178.97	-199.41	180.98	0.00	0.00	0.00	
5,900.00	5.00	311.91	5,888.08	184.79	-205.90	186.86	0.00	0.00	0.00	
6,000.00	5.00	311.91	5,987.70	190.61	-212.38	192.75	0.00	0.00	0.00	
6,100.00	5.00	311.91	6,087.32	196.43	-218.87	198.64	0.00	0.00	0.00	
6,200.00	5.00	311.91	6,186.94	202.25	-225.35	204.52	0.00	0.00	0.00	
6,300.00	5.00	311.91	6,286.56	208.07	-231.84	210.41	0.00	0.00	0.00	
6,400.00	5.00	311.91	6,386.18	213.89	-238.32	216.29	0.00	0.00	0.00	
6,500.00	5.00	311.91	6,485.80	219.71	-244.81	222.18	0.00	0.00	0.00	
6,600.00	5.00	311.91	6,585.42	225.53	-251.29	228.06	0.00	0.00	0.00	
6,700.00	5.00	311.91	6,685.04	231.35	-257.78	233.95	0.00	0.00	0.00	
6,800.00	5.00	311.91	6,784.66	237.17	-264.26	239.83	0.00	0.00	0.00	
6,900.00	5.00	311.91	6,884.28	242.99	-270.75	245.72	0.00	0.00	0.00	
7,000.00	5.00	311.91	6,983.90	248.81	-277.23	251.60	0.00	0.00	0.00	
7,100.00	5.00	311.91	7,083.52	254.63	-283.71	257.49	0.00	0.00	0.00	
7,200.00	5.00	311.91	7,183.14	260.45	-290.20	263.37	0.00	0.00	0.00	
7,300.00	5.00	311.91	7,282.76	266.27	-296.68	269.26	0.00	0.00	0.00	
7,400.00	5.00	311.91	7,382.38	272.09	-303.17	275.14	0.00	0.00	0.00	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 112H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3243.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3243.50usft (Est. RKB)
Site:	Lonesome Dove Fed Com (NAD83)	North Reference:	Grid
Well:	112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 05-15-22		

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)	
7,500.00	5.00	311.91	7,482.00	277.91	-309.65	281.03	0.00	0.00	0.00	
7,600.00	5.00	311.91	7,581.62	283.73	-316.14	286.91	0.00	0.00	0.00	
7,700.00	5.00	311.91	7,681.24	289.55	-322.62	292.80	0.00	0.00	0.00	
7,800.00	5.00	311.91	7,780.86	295.37	-329.11	298.69	0.00	0.00	0.00	
7,900.00	5.00	311.91	7,880.48	301.19	-335.59	304.57	0.00	0.00	0.00	
8,000.00	5.00	311.91	7,980.10	307.01	-342.08	310.46	0.00	0.00	0.00	
8,100.00	5.00	311.91	8,079.72	312.83	-348.56	316.34	0.00	0.00	0.00	
8,200.00	5.00	311.91	8,179.33	318.65	-355.05	322.23	0.00	0.00	0.00	
8,300.00	5.00	311.91	8,278.95	324.47	-361.53	328.11	0.00	0.00	0.00	
8,356.64	5.00	311.91	8,335.38	327.77	-365.20	331.45	0.00	0.00	0.00	
Begin 2.00°/100' Drop										
8,400.00	4.13	311.91	8,378.60	330.07	-367.77	333.78	2.00	-2.00	0.00	
8,500.00	2.13	311.91	8,478.45	333.72	-371.84	337.47	2.00	-2.00	0.00	
8,600.00	0.13	311.91	8,578.42	335.04	-373.31	338.80	2.00	-2.00	0.00	
8,606.58	0.00	0.00	8,585.00	335.04	-373.31	338.80	2.00	-2.00	0.00	
Begin Vertical Hold										
10,145.20	0.00	0.00	10,123.62	335.04	-373.31	338.80	0.00	0.00	0.00	
KOP2, Begin 12.00°/100' Build										
10,200.00	6.58	359.42	10,178.30	338.18	-373.35	341.95	12.00	12.00	0.00	
10,300.00	18.58	359.42	10,275.72	359.92	-373.56	363.68	12.00	12.00	0.00	
10,400.00	30.58	359.42	10,366.50	401.43	-373.98	405.19	12.00	12.00	0.00	
10,500.00	42.58	359.42	10,446.66	460.91	-374.58	464.67	12.00	12.00	0.00	
10,600.00	54.58	359.42	10,512.70	535.75	-375.33	539.52	12.00	12.00	0.00	
10,700.00	66.58	359.42	10,561.74	622.69	-376.21	626.46	12.00	12.00	0.00	
10,800.00	78.58	359.42	10,591.63	717.92	-377.16	721.70	12.00	12.00	0.00	
10,900.00	90.58	359.42	10,601.06	817.28	-378.16	821.07	12.00	12.00	0.00	
10,904.25	91.09	359.42	10,601.00	821.53	-378.20	825.32	12.00	12.00	0.00	
LP, Hold 91.09° Inc at 359.42° Azm										
11,000.00	91.09	359.42	10,599.19	917.26	-379.17	921.05	0.00	0.00	0.00	
11,100.00	91.09	359.42	10,597.29	1,017.24	-380.17	1,021.03	0.00	0.00	0.00	
11,200.00	91.09	359.42	10,595.40	1,117.22	-381.18	1,121.02	0.00	0.00	0.00	
11,300.00	91.09	359.42	10,593.50	1,217.19	-382.18	1,221.00	0.00	0.00	0.00	
11,400.00	91.09	359.42	10,591.61	1,317.17	-383.19	1,320.98	0.00	0.00	0.00	
11,500.00	91.09	359.42	10,589.71	1,417.15	-384.19	1,420.96	0.00	0.00	0.00	
11,600.00	91.09	359.42	10,587.82	1,517.12	-385.20	1,520.94	0.00	0.00	0.00	
11,700.00	91.09	359.42	10,585.92	1,617.10	-386.20	1,620.93	0.00	0.00	0.00	
11,800.00	91.09	359.42	10,584.03	1,717.08	-387.21	1,720.91	0.00	0.00	0.00	
11,900.00	91.09	359.42	10,582.13	1,817.05	-388.21	1,820.89	0.00	0.00	0.00	
12,000.00	91.09	359.42	10,580.24	1,917.03	-389.22	1,920.87	0.00	0.00	0.00	
12,100.00	91.09	359.42	10,578.34	2,017.01	-390.22	2,020.86	0.00	0.00	0.00	
12,200.00	91.09	359.42	10,576.45	2,116.99	-391.23	2,120.84	0.00	0.00	0.00	
12,300.00	91.09	359.42	10,574.55	2,216.96	-392.23	2,220.82	0.00	0.00	0.00	
12,400.00	91.09	359.42	10,572.66	2,316.94	-393.24	2,320.80	0.00	0.00	0.00	
12,500.00	91.09	359.42	10,570.76	2,416.92	-394.24	2,420.78	0.00	0.00	0.00	
12,600.00	91.09	359.42	10,568.87	2,516.89	-395.25	2,520.77	0.00	0.00	0.00	
12,700.00	91.09	359.42	10,566.97	2,616.87	-396.25	2,620.75	0.00	0.00	0.00	
12,800.00	91.09	359.42	10,565.08	2,716.85	-397.26	2,720.73	0.00	0.00	0.00	
12,900.00	91.09	359.42	10,563.18	2,816.82	-398.26	2,820.71	0.00	0.00	0.00	
13,000.00	91.09	359.42	10,561.29	2,916.80	-399.27	2,920.69	0.00	0.00	0.00	
13,100.00	91.09	359.42	10,559.39	3,016.78	-400.27	3,020.68	0.00	0.00	0.00	
13,200.00	91.09	359.42	10,557.50	3,116.76	-401.28	3,120.66	0.00	0.00	0.00	
13,300.00	91.09	359.42	10,555.60	3,216.73	-402.28	3,220.64	0.00	0.00	0.00	
13,400.00	91.09	359.42	10,553.70	3,316.71	-403.29	3,320.62	0.00	0.00	0.00	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 112H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3243.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3243.50usft (Est. RKB)
Site:	Lonesome Dove Fed Com (NAD83)	North Reference:	Grid
Well:	112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 05-15-22		

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)	
13,500.00	91.09	359.42	10,551.81	3,416.69	-404.30	3,420.60	0.00	0.00	0.00	
13,600.00	91.09	359.42	10,549.91	3,516.66	-405.30	3,520.59	0.00	0.00	0.00	
13,700.00	91.09	359.42	10,548.02	3,616.64	-406.31	3,620.57	0.00	0.00	0.00	
13,800.00	91.09	359.42	10,546.12	3,716.62	-407.31	3,720.55	0.00	0.00	0.00	
13,900.00	91.09	359.42	10,544.23	3,816.59	-408.32	3,820.53	0.00	0.00	0.00	
14,000.00	91.09	359.42	10,542.33	3,916.57	-409.32	3,920.51	0.00	0.00	0.00	
14,100.00	91.09	359.42	10,540.44	4,016.55	-410.33	4,020.50	0.00	0.00	0.00	
14,200.00	91.09	359.42	10,538.54	4,116.53	-411.33	4,120.48	0.00	0.00	0.00	
14,300.00	91.09	359.42	10,536.65	4,216.50	-412.34	4,220.46	0.00	0.00	0.00	
14,400.00	91.09	359.42	10,534.75	4,316.48	-413.34	4,320.44	0.00	0.00	0.00	
14,500.00	91.09	359.42	10,532.86	4,416.46	-414.35	4,420.42	0.00	0.00	0.00	
14,600.00	91.09	359.42	10,530.96	4,516.43	-415.35	4,520.41	0.00	0.00	0.00	
14,700.00	91.09	359.42	10,529.07	4,616.41	-416.36	4,620.39	0.00	0.00	0.00	
14,800.00	91.09	359.42	10,527.17	4,716.39	-417.36	4,720.37	0.00	0.00	0.00	
14,900.00	91.09	359.42	10,525.28	4,816.36	-418.37	4,820.35	0.00	0.00	0.00	
15,000.00	91.09	359.42	10,523.38	4,916.34	-419.37	4,920.33	0.00	0.00	0.00	
15,100.00	91.09	359.42	10,521.49	5,016.32	-420.38	5,020.32	0.00	0.00	0.00	
15,200.00	91.09	359.42	10,519.59	5,116.30	-421.38	5,120.30	0.00	0.00	0.00	
15,300.00	91.09	359.42	10,517.70	5,216.27	-422.39	5,220.28	0.00	0.00	0.00	
15,400.00	91.09	359.42	10,515.80	5,316.25	-423.39	5,320.26	0.00	0.00	0.00	
15,500.00	91.09	359.42	10,513.91	5,416.23	-424.40	5,420.24	0.00	0.00	0.00	
15,600.00	91.09	359.42	10,512.01	5,516.20	-425.40	5,520.23	0.00	0.00	0.00	
15,700.00	91.09	359.42	10,510.12	5,616.18	-426.41	5,620.21	0.00	0.00	0.00	
15,800.00	91.09	359.42	10,508.22	5,716.16	-427.41	5,720.19	0.00	0.00	0.00	
15,900.00	91.09	359.42	10,506.33	5,816.13	-428.42	5,820.17	0.00	0.00	0.00	
16,000.00	91.09	359.42	10,504.43	5,916.11	-429.42	5,920.15	0.00	0.00	0.00	
16,100.00	91.09	359.42	10,502.54	6,016.09	-430.43	6,020.14	0.00	0.00	0.00	
16,200.00	91.09	359.42	10,500.64	6,116.06	-431.43	6,120.12	0.00	0.00	0.00	
16,300.00	91.09	359.42	10,498.75	6,216.04	-432.44	6,220.10	0.00	0.00	0.00	
16,400.00	91.09	359.42	10,496.85	6,316.02	-433.44	6,320.08	0.00	0.00	0.00	
16,500.00	91.09	359.42	10,494.96	6,416.00	-434.45	6,420.06	0.00	0.00	0.00	
16,600.00	91.09	359.42	10,493.06	6,515.97	-435.45	6,520.05	0.00	0.00	0.00	
16,700.00	91.09	359.42	10,491.17	6,615.95	-436.46	6,620.03	0.00	0.00	0.00	
16,800.00	91.09	359.42	10,489.27	6,715.93	-437.46	6,720.01	0.00	0.00	0.00	
16,900.00	91.09	359.42	10,487.38	6,815.90	-438.47	6,819.99	0.00	0.00	0.00	
17,000.00	91.09	359.42	10,485.48	6,915.88	-439.47	6,919.98	0.00	0.00	0.00	
17,100.00	91.09	359.42	10,483.59	7,015.86	-440.48	7,019.96	0.00	0.00	0.00	
17,200.00	91.09	359.42	10,481.69	7,115.83	-441.48	7,119.94	0.00	0.00	0.00	
17,300.00	91.09	359.42	10,479.80	7,215.81	-442.49	7,219.92	0.00	0.00	0.00	
17,400.00	91.09	359.42	10,477.90	7,315.79	-443.49	7,319.90	0.00	0.00	0.00	
17,500.00	91.09	359.42	10,476.01	7,415.77	-444.50	7,419.89	0.00	0.00	0.00	
17,600.00	91.09	359.42	10,474.11	7,515.74	-445.51	7,519.87	0.00	0.00	0.00	
17,700.00	91.09	359.42	10,472.22	7,615.72	-446.51	7,619.85	0.00	0.00	0.00	
17,800.00	91.09	359.42	10,470.32	7,715.70	-447.52	7,719.83	0.00	0.00	0.00	
17,900.00	91.09	359.42	10,468.43	7,815.67	-448.52	7,819.81	0.00	0.00	0.00	
18,000.00	91.09	359.42	10,466.53	7,915.65	-449.53	7,919.80	0.00	0.00	0.00	
18,100.00	91.09	359.42	10,464.64	8,015.63	-450.53	8,019.78	0.00	0.00	0.00	
18,200.00	91.09	359.42	10,462.74	8,115.60	-451.54	8,119.76	0.00	0.00	0.00	
18,300.00	91.09	359.42	10,460.85	8,215.58	-452.54	8,219.74	0.00	0.00	0.00	
18,400.00	91.09	359.42	10,458.95	8,315.56	-453.55	8,319.72	0.00	0.00	0.00	
18,500.00	91.09	359.42	10,457.06	8,415.54	-454.55	8,419.71	0.00	0.00	0.00	
18,600.00	91.09	359.42	10,455.16	8,515.51	-455.56	8,519.69	0.00	0.00	0.00	
18,700.00	91.09	359.42	10,453.27	8,615.49	-456.56	8,619.67	0.00	0.00	0.00	
18,800.00	91.09	359.42	10,451.37	8,715.47	-457.57	8,719.65	0.00	0.00	0.00	



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 112H
Company:	Titus Oil & Gas Production, LLC	TVD Reference:	RKB @ 3243.50usft (Est. RKB)
Project:	Lea County, NM - (NAD83 NME)	MD Reference:	RKB @ 3243.50usft (Est. RKB)
Site:	Lonesome Dove Fed Com (NAD83)	North Reference:	Grid
Well:	112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 3 05-15-22		

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)
18,819.69	91.09	359.42	10,451.00	8,735.15	-457.76	8,739.34	0.00	0.00	0.00
TD at 18819.69									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL v3 - Lonesome D - plan hits target center - Point	0.00	0.00	10,451.00	8,735.15	-457.76	388,676.78	832,727.20	32° 3' 54.220667 N	3° 23' 33.662791 W
LTPv2 - Lonesome Dc - plan misses target center by 1.71usft at 18729.71usft MD (10452.71 TVD, 8645.19 N, -456.86 E) - Point	0.00	0.00	10,451.00	8,645.16	-456.86	388,586.79	832,728.10	32° 3' 53.330141 N	3° 23' 33.661447 W
FTPv2 - Lonesome Dc - plan hits target center - Point	0.00	0.00	10,601.00	821.53	-378.20	380,763.16	832,806.76	32° 2' 35.908596 N	3° 23' 33.539627 W

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,600.00	2,600.00	0.00	0.00	KOP, Begin 2.00°/100' Build	
2,849.94	2,849.62	7.28	-8.11	Hold 5.00° Inc at 311.91° Azm	
8,356.64	8,335.38	327.77	-365.20	Begin 2.00°/100' Drop	
8,606.58	8,585.00	335.04	-373.31	Begin Vertical Hold	
10,145.20	10,123.62	335.04	-373.31	KOP2, Begin 12.00°/100' Build	
10,904.25	10,601.00	821.53	-378.20	LP, Hold 91.09° Inc at 359.42° Azm	
18,819.69	10,451.00	8,735.15	-457.76	TD at 18819.69	

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: Titus Oil & Gas Production, LLC **OGRID:** 373986 **Date:** 5/20/2022

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
Lonesome Dove Fed Com 112H	New Well	K, 17, 26S-35E	1818 FSL & 2020' FWL	1122	2070	3068

IV. Central Delivery Point Name: El Campeon CTB 17S [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
Lonesome Dove Fed Com 112H	New Well	5/31/2022	7/15/2022	7/31/2022	8/12/2022	8/28/2022

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: Ryan DeLong
Title: Regulatory Manager
E-mail Address: rdelong@titusoil.com
Date: 5/20/2022
Phone: 817-852-6370

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

Approved By:
Title:
Approval Date:
Conditions of Approval:

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

Each surface facility design includes the following process equipment: 3-phase vertical separator (one per well), 3-phase heater treater (one per well), one or two sales gas scrubbers, two bulk free water knockouts, two bulk heater treaters, a vapor recover tower (VRT), a vapor recovery unit (VRU) compressor, multiple water and oil tanks, as well as flare liquid scrubbers (HP & LP), flares (HP & LP), and combustors. All process vessels will be sized to separate oil, water, and gas based upon historical & predicted well performance. Each process vessel will be fitted with the appropriately sized PSV as per ASME code requirements to mitigate vessel rupture and loss of containment. Additionally, the process vessels will be fitted with pressure transmitters tied to the facility control system with allow operations to monitor pressures and when necessary, shut-in the facility to avoid vessel over-pressure and potential flaring or venting of natural gas. Natural gas will be preferentially sent to pipeline, and only directed to the HP flare system in upset/emergency situations. Flash gas from the free water knockouts, bulk heater treaters, and VRT will be recompressed using a VRU compressor and will be preferentially redirected to gas sales pipeline. Oil tanks and water tanks will be fitted with 16 oz thief hatches as well as PRVs to protect the tank from rupture/collapse. The tank vapor outlets and tank vapor capture system will be sized to keep the tank pressures below 12 oz. the tank vapor capture system will include a scrubber and combustors. All tank vapors will be combusted to industry standards.

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:

- **During drilling operations** - Gas meters will be installed at the shakers and Volume Totalizers will be installed on the pits. If elevated gas levels, or a pit gain are observed, returns will be diverted to a gas buster. Gas coming off the gas buster will be combusted at the flare stack. A 10' or taller flare will be located at least 100' from the SHL.
- **During Completion Operations, including stimulation and frac plug drill out operations:** hydrocarbon production to surface is minimized. If gas production does occur, gas will be combusted at a flare stack. A 10' or taller flare will be located at least 100' from SHL
- **During production operations:** All process vessels (separators, heater treaters, tanks) will recompress (where necessary) and route gas outlets into the natural gas gathering line. Gas will preferentially be routed to natural gas gathering pipeline and the flare system will only be used during emergency, malfunction, or if the gas does not meet pipeline specifications. In the event of flaring off-specification gas, operations will pull gas samples twice a week and will also route gas back to pipeline as soon as gas meets specifications. Exceptions to this will include only those qualified exceptions per the regulation 19.15.27.8 Subsection D.
- To comply with state performance standards, separation and storage equipment will be designed to handle the maximum anticipated throughput and pressure to minimize waste and reduce the likelihood of venting gas to atmosphere. Additionally, each storage atmospheric tank (oil & water) will be fitted with a level transmitter to facilitate gauging of the tank without opening the thief hatch. Any gas collected through the tank vent system is expected to be recompressed and routed to sales. However, in the event of an emergency, the tank vapor capture system will be designed to combust the gas using a combustor system with a continuous ignitor. The combustor will be properly anchored and will be

located a minimum of 100 feet from the well and storage tanks. Operators will conduct weekly AVO inspections. These AVO inspection records will be stored for the required 5-year period and will be made available upon Division request

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

- When performing routine or preventive maintenance on a vessel or tank, initially all inlet valves are close, and the vessel or tank is allowed to depressurize through the normal outlet connections to gas sales and/or liquid tanks. Once the vessel or tank is depressurized to lowest acceptable sales outlet pressure, usually around 20 psig, a temporary low-pressure flowline is connected from the vessel or tank to the VRU for further pressure reduction. Once depressurized to less than 1-2 psig, the remaining natural gas in the vessel or tank is vented to atmosphere through a controlled pressure relief valve. Once the vessel or tank is depressurized to atmospheric pressure, the vessel or tank can be safely opened, and maintenance performed.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Centennial Resources
LEASE NO.:	NMNM104706
LOCATION:	Section 17, T.26 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Lonesome Dove Fed Com 112H
SURFACE HOLE FOOTAGE:	1818'/S & 2020'/W
BOTTOM HOLE FOOTAGE:	10'/N & 1653'/W

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input checked="" type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1135** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

- hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the tail cement slurry due to cave/karst.

CONTINGENCY

Operator is approved to Bradenhead Squeeze if there is no return of cement to surface. Operator shall contact BLM before starting Bradenhead operation.

Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

The minimum max Mud Weight in this location is 12.5 ppg.

3. The minimum required fill of cement behind the **5-1/2 X 5** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).**

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- a. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- b. Manufacturer representative shall install the test plug for the initial BOP test.
- c. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. **Operator is approve to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the**

wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

- b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall

have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

ZS121621

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 1625 N. French Dr., Hobbs, NM 88240
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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

CONDITIONS

Action 109234

CONDITIONS

Operator: Titus Oil & Gas Production, LLC 420 Throckmorton St, Ste 1150 Fort Worth, TX 76012	OGRID: 373986
	Action Number: 109234
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	REQUIRES NSL	5/23/2022