Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 11/06/2020

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Approval Date: 11/06/2020

Additional Operator Remarks

Location of Well

0. SHL: TR M / 280 FSL / 680 FWL / TWSP: 26S / RANGE: 35E / SECTION: 17 / LAT: 32.036817 / LONG: -103.395769 (TVD: 0 feet, MD: 0 feet)

PPP: TR M / 195 FSL / 933 FWL / TWSP: 26S / RANGE: 35E / SECTION: 17 / LAT: 32.0365834 / LONG: -103.3949532 (TVD: 9235 feet, MD: 9240 feet)

BHL: TR D / 10 FNL / 990 FWL / TWSP: 26S / RANGE: 35E / SECTION: 17 / LAT: 32.050539 / LONG: -103.394794 (TVD: 12476 feet, MD: 17406 feet)

BLM Point of Contact

Name: Tanja Baca
Title: Land Law Examiner
Phone: (575) 234-5940
Email: tabaca@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM104706

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
EL CAMPEON NORTH 17 FED 321H

2. Name of Operator
TITUS OIL AND GAS PRODUCTION
Contact: RYAN DELONG
E-Mail: rdelong@titusoil.com

9. API Well No.

3a. Address
420 THROCKMORTON ST., SUITE 1150
FORT WORTH, TX 76102

3b. Phone No. (include area code)
Ph: 817-852-6358

10. Field and Pool or Exploratory Area
WC-025 G08 S263412K

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 17 T26S R35E Tract M 280FSL 680FWL
32.036816 N Lat, 103.395767 W Lon

11. County or Parish, State
LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Titus respectfully requests the following changes to the approved APD:

Name change from El Campeon North 17 Fed 321H to Love Shack Fed Com 321H

SHL change from 280 FSL and 680 FWL to 269 FSL and 644 FWL, Sec 17 26S-35E(see attached C-102/plat and drilling plan)

BHL change from 10 FNL and 990 FWL, Sec 17 26S-35E to 10 FNL and 330 FWL, Sec 8 26S-35E, Lea County, NM (see attached C-102/plat and drilling plan)

Lateral change from 990 FWL to 330 FWL (see attached C-102/plat, directional plan, and drilling plan)

Approved 25 12/28/20
Approved. DCS. 12/23/2020. DOI-BLM-NM-P020-2020-0756-EA. Same COAs apply

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #541470 verified by the BLM Well Information System
For TITUS OIL AND GAS PRODUCTION L, sent to the Hobbs
Committed to AFMSS for processing by DEBORAH HAM on 12/21/2020 (21DMH0078SE)

Name *(Printed/Typed)* RYAN DELONG — Title REGULATORY MANAGER

Signature (Electronic Submission) — Date 12/18/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Chris Walls — Title Acting APM — Date 12/29/20

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. — Office CFO

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.

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Additional data for EC transaction #541470 that would not fit on the form

32. Additional remarks, continued

Changes to casing/cement to support lateral shift and 2-mile extension (see attached drilling plan)

Changes to well TVD/MD to support new well design and 2-mile extensions (see attached drilling plan)

BOP change from 5M to 3M on 9-7/8 intermediate (see attached drilling plan)

Titus requests a variance to use a 5M annular in the 10M MASP portion of the well (see attached 5M Variance Well Plan)

Attachments: Updated C-102/Survey Plat, Updated Drilling Plan, Updated Directional Plan, Updated Directional AC Report, 5M Variance Well Plan

Revisions to Operator-Submitted EC Data for Sundry Notice #541470

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM104706	NMNM104706
Agreement:		
Operator:	TITUS OIL&GAS PRODUCTION, LLC 420 THROCKMORTON STREET SUITE 1150 FORT WORTH, TX 76102 Ph: 817-852-6358	TITUS OIL AND GAS PRODUCTION L 420 THROCKMORTON ST., SUITE 1150 FORT WORTH, TX 76102 Ph: 8178526358
Admin Contact:	RYAN DELONG REGULATORY MANAGER E-Mail: rdelong@titusoil.com Ph: 817-852-6358	RYAN DELONG REGULATORY MANAGER E-Mail: rdelong@titusoil.com Ph: 817-852-6358
Tech Contact:	RYAN DELONG REGULATORY MANAGER E-Mail: rdelong@titusoil.com Ph: 817-852-6358	RYAN DELONG REGULATORY MANAGER E-Mail: rdelong@titusoil.com Ph: 817-852-6358
Location: State: County:	 NM LEA	 NM LEA
Field/Pool:	WILDCAT; BONE SPRING	WC-025 G08 S263412K
Well/Facility:	EL CAMPEON NORTH 17 FED 321H Sec 17 T26S R35E Mer NMP 280FSL 680FWL 32.036817 N Lat, 103.395769 W Lon	EL CAMPEON NORTH 17 FED 321H Sec 17 T26S R35E Tract M 280FSL 680FWL 32.036816 N Lat, 103.395767 W Lon

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	2 Pool Code	3 Pool Name
30-025-48402	96672	WC-025 G-08 S263412K; Bone Spring

4 Property Code	5 Property Name	6 Well Number
329869	LOVE SHACK FED COM	321H

7 OGRID No.	8 Operator Name	9 Elevation
373986	TITUS OIL & GAS PRODUCTION LLC	3202'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	17	26-S	35-E		269'	SOUTH	644'	WEST	LEA

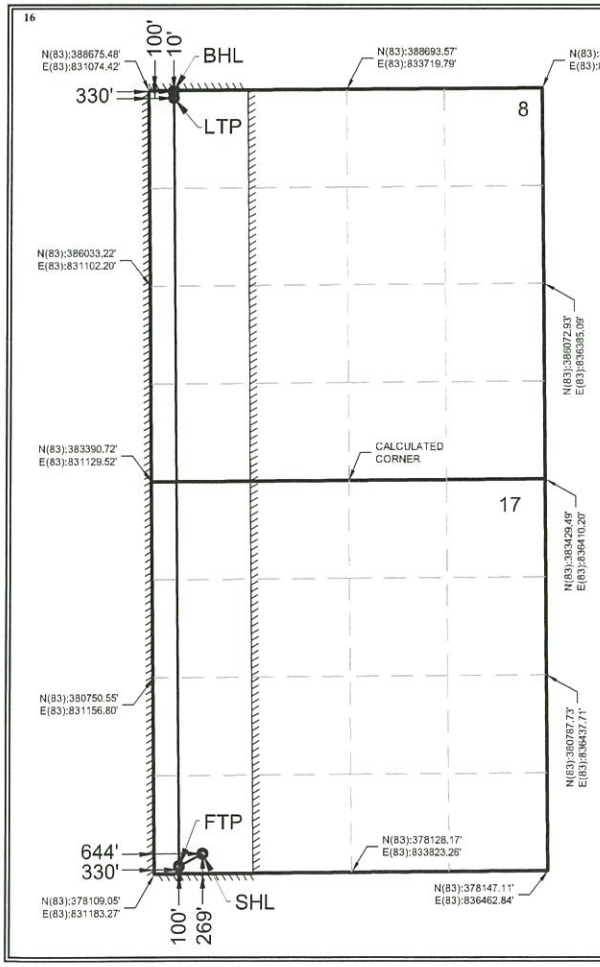
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	8	26-S	35-E		10'	NORTH	330'	WEST	LEA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320	Y		

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.

[16]



BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=831404.52 LAT.= 32.06506805° N
Y=388667.73 LONG.= 103.39695369° W
NEW MEXICO EAST - NAD 27
X=790216.89 LAT.= 32.06494182° N
Y=388610.16 LONG.= 103.39649121° W
10' FNL, 330' FWL - SECTION 8
10' FNL, 330' FWL - LEASE

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=831405.46 LAT.= 32.06482066° N
Y=388577.74 LONG.= 103.39695315° W
NEW MEXICO EAST - NAD 27
X=790217.83 LAT.= 32.06469443° N
Y=388520.16 LONG.= 103.39649069° W
100' FNL, 330' FWL - SECTION 8
100' FNL, 330' FWL - LEASE

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=831512.26 LAT.= 32.03632516° N
Y=378211.44 LONG.= 103.39689868° W
NEW MEXICO EAST - NAD 27
X=790324.16 LAT.= 32.03619878° N
Y=378154.14 LONG.= 103.39643784° W
100' FSL, 330' FWL - SECTION 17
100' FSL, 330' FWL - LEASE

SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X= 831824.61 LAT.= 32.03678862° N
Y= 378382.76 LONG.= 103.39588599° W
NEW MEXICO EAST - NAD 27
X= 790636.52 LAT.= 32.03666223° N
Y= 378325.46 LONG.= 103.39542515° W
269' FSL, 644' FWL - SECTION 17
269' FSL, 644' FWL - LEASE

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 1/15/2020
Date

Ryan DeLong - Regulatory Manager
Printed Name

rdelong@titusoil.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date of Survey

Signature and Seal of Professional Surveyor

GARRETT J SMELKER
NEW MEXICO
25036
01/14/2020
PROFESSIONAL SURVEYOR

Certificate Number

Titus Oil & Gas Production, LLC - Loveshack Fed Com 321H

1. Geologic Formations

TVD of target	12,411' EOL	Pilot hole depth	NA
MD at TD:	22,822'	Deepest expected fresh water:	250'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1035	Water	
Top of Salt	1542	Salt	
Base of Salt	5034	Salt	
Lamar	5340	Salt Water	
Delaware	5375	Salt Water	
Bone Spring Lime	9241	Oil/Gas	
1st Bone Spring	10474	Oil/Gas	
2nd Bone Spring	11028	Oil/Gas	
3rd Bone Spring	12118	Target Oil/Gas	
Wolfcamp	12497	Not Penetrated	
Wolfcamp X Sand	12549	Not Penetrated	
Wolfcamp Y Sand	12613	Not Penetrated	
Wolfcamp A	12645	Not Penetrated	
Wolfcamp B	12959	Not Penetrated	

2. Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
13.5"	0	1060	10.75"	45.5	J55	BTC	4.31	0.82	14.82
9.875"	0	11800	7.625"	29.7	L80HP	BTC	1.13	1.18	2.07
6.75"	0	11300	5.5"	23	P110	BTC	1.67	1.69	3.26
6.75"	11300	22,822	5"	18	P110	BTC	1.67	1.69	3.26
				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.

Variance requested to waive minimum SF for surface casing burst. Surface SF Burst > 0.7 frac gradient at the shoe. Casing burst is stronger than the next intervals formation FG.

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 500' 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 - Loveshack Fed Com 321H

	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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	440	13.5	1.75	9	8	Lead: Class C + 4% Gel + 1% CaCl2
	250	14.8	1.34	6.34	4	Tail: Class C + 2% CaCl2
Inter.	1450	10.3	3.6	21.48	16	TXI Lightwieght Blend
	250	15	1.27	5.7	4	Tail: 85:15 Class H
Prod	380	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	1330	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	50%
Production	11,300'	35% OH in Lateral (KOP to EOL)

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

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		3M
			Pipe Ram		
			Double Ram		
			Other*		
6-3/4"	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			VBR Ram	x	
			VBR Ram	x	
			Other*		

See attached 5M Annular Variance Well Control plan for TItus Oil & Gas Production, LLC.

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.	
	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?
N	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.	

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	9-5/8" Int shoe	Nova N-Gauge	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	10 - 13.5	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.

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 13.5 ppg may be utilized.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

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.
Y	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	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7425 psi at 12411' TVD
Abnormal Temperature	NO 180 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

PHOENIX
TECHNOLOGY SERVICES

Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)
Love Shack Fed Com
321H

OH
Plan 1 01-14-20

Anticollision Report

14 January, 2020

TITUS
OIL GAS LLC

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Reference	Plan 1 01-14-20		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 50,000.00 u	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 1/14/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	22,821.82	Plan 1 01-14-20 (OH)	MWD+HDGM+MS	OWSG Rev.2 MWD + HDGM + Multi-Station Corr

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Grevey Com						
211H - OH - Surveys	8,219.23	8,214.30	107.06	45.18	1.730	CC
211H - OH - Surveys	12,000.00	12,001.55	131.05	45.02	1.523	ES, SF
Love Shack Fed Com						
431H - OH - Plan 1 01-14-20	1,415.99	1,417.99	59.88	49.97	6.043	CC
431H - OH - Plan 1 01-14-20	1,500.00	1,501.98	59.88	49.38	5.703	ES
431H - OH - Plan 1 01-14-20	22,822.29	23,084.26	711.22	440.27	2.625	SF
511H - OH - Plan 1 01-14-20	1,502.70	1,504.71	29.97	19.45	2.850	CC
511H - OH - Plan 1 01-14-20	1,600.00	1,602.27	30.29	19.12	2.711	ES
511H - OH - Plan 1 01-14-20	12,000.00	11,999.44	128.52	44.44	1.529	SF

Offset Design Grevey Com - 211H - OH - Surveys — **Offset Site Error:** 1.00 usft

Survey Program: 171-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	1.00	1.41	148.05	-593.31	369.97	699.54				
100.00	100.00	78.76	78.76	1.01	1.48	148.06	-593.37	369.86	699.20	696.73	2.47	283.637	
200.00	200.00	178.97	178.97	1.11	1.74	148.11	-593.59	369.38	699.14	696.40	2.74	255.022	
247.72	247.72	226.22	226.22	1.20	2.01	148.14	-593.77	369.07	699.12	696.13	2.99	233.591	
300.00	300.00	277.99	277.98	1.31	2.35	148.17	-594.03	368.69	699.14	695.82	3.32	210.348	
400.00	400.00	375.69	375.68	1.57	2.98	148.26	-594.73	367.92	699.34	695.45	3.89	179.690	
500.00	500.00	472.26	472.24	1.86	3.61	148.36	-595.94	367.14	699.99	695.53	4.46	157.006	
600.00	600.00	571.27	571.23	2.17	4.24	148.49	-597.63	366.34	701.02	695.88	5.13	136.519	
700.00	700.00	671.64	671.59	2.49	4.88	148.63	-599.35	365.48	702.03	696.36	5.67	123.806	
800.00	800.00	772.80	772.73	2.82	5.49	148.76	-601.01	364.53	702.94	696.67	6.27	112.027	
900.00	900.00	874.19	874.10	3.16	6.09	148.90	-602.50	363.49	703.67	696.72	6.94	101.328	
1,000.00	1,000.00	976.07	975.96	3.50	6.48	149.03	-603.75	362.39	704.16	696.53	7.63	92.286	
1,100.00	1,100.00	1,074.63	1,074.52	3.85	6.81	149.14	-604.76	361.39	704.53	696.24	8.29	84.988	
1,200.00	1,200.00	1,171.83	1,171.70	4.20	7.13	149.25	-606.16	360.61	705.34	696.41	8.94	78.938	
1,300.00	1,300.00	1,272.45	1,272.31	4.54	7.56	149.37	-607.67	359.87	706.26	696.67	9.59	73.611	
1,400.00	1,400.00	1,373.47	1,373.31	4.90	8.02	149.48	-609.08	359.12	707.09	696.82	10.27	68.836	
1,500.00	1,500.00	1,475.26	1,475.10	5.25	8.52	149.57	-610.22	358.40	707.70	696.72	10.98	64.450	
1,600.00	1,599.99	1,580.04	1,579.87	5.58	8.97	-66.56	-611.04	357.52	707.42	695.66	11.77	60.115	

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

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Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Grevey Com - 211H - OH - Surveys — **Offset Site Error:** 1.00 usft

Survey Program: 171-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,700.00	1,699.91	1,687.84	1,687.64	5.91	9.37	-66.74	-611.36	355.38	705.11	692.49	12.62	55.874	
1,800.00	1,799.69	1,804.96	1,804.69	6.24	9.71	-67.14	-610.46	351.36	700.16	686.04	14.12	49.579	
1,900.00	1,899.27	1,923.13	1,922.65	6.57	10.07	-67.81	-606.92	345.33	691.41	675.88	15.54	44.501	
2,000.00	1,998.72	2,034.64	2,033.78	6.91	10.58	-68.39	-601.95	337.65	680.08	663.00	17.08	39.824	
2,100.00	2,098.17	2,138.41	2,137.04	7.25	11.25	-68.88	-596.44	328.94	667.27	648.94	18.34	36.386	
2,200.00	2,197.63	2,234.56	2,232.74	7.60	11.74	-69.38	-591.27	321.23	654.66	635.42	19.24	34.022	
2,300.00	2,297.08	2,330.30	2,328.08	7.95	12.17	-69.93	-586.24	314.17	642.56	622.50	20.06	32.031	
2,400.00	2,396.53	2,425.73	2,423.17	8.30	12.53	-70.51	-581.64	307.46	631.09	610.29	20.80	30.341	
2,500.00	2,495.98	2,521.75	2,518.88	8.66	12.90	-71.12	-577.42	301.08	620.24	598.70	21.53	28.801	
2,600.00	2,595.44	2,618.15	2,615.02	9.01	13.28	-71.80	-573.25	295.35	609.93	587.66	22.27	27.391	
2,700.00	2,694.89	2,716.72	2,713.36	9.37	13.66	-72.55	-569.09	289.95	600.06	577.06	23.00	26.085	
2,800.00	2,794.34	2,816.85	2,813.22	9.74	14.06	-73.25	-565.25	283.76	590.20	566.46	23.75	24.856	
2,900.00	2,893.79	2,916.79	2,912.86	10.10	14.47	-73.91	-561.79	276.87	580.29	555.79	24.50	23.688	
3,000.00	2,993.25	3,016.66	3,012.41	10.47	14.89	-74.54	-558.51	269.58	570.35	545.09	25.25	22.586	
3,100.00	3,092.70	3,119.15	3,114.53	10.83	15.31	-75.15	-555.25	261.48	560.18	534.17	26.02	21.533	
3,200.00	3,192.15	3,222.15	3,217.06	11.20	15.73	-75.71	-551.93	252.33	549.42	522.64	26.78	20.517	
3,300.00	3,291.60	3,326.02	3,320.36	11.57	16.16	-76.23	-548.41	242.05	537.95	510.40	27.55	19.530	
3,400.00	3,391.06	3,428.46	3,422.13	11.94	16.58	-76.69	-544.68	230.91	525.68	497.37	28.31	18.570	
3,500.00	3,490.51	3,524.71	3,517.75	12.31	16.98	-77.16	-541.17	220.55	513.52	484.46	29.06	17.669	
3,600.00	3,589.96	3,621.46	3,613.96	12.68	17.37	-77.70	-537.76	210.81	501.95	472.14	29.82	16.835	
3,700.00	3,689.41	3,719.80	3,711.79	13.05	17.77	-78.35	-534.14	201.55	490.73	460.17	30.56	16.059	
3,800.00	3,788.87	3,818.47	3,809.99	13.43	18.17	-79.09	-530.22	192.81	479.75	448.45	31.30	15.328	
3,900.00	3,888.32	3,918.12	3,909.16	13.80	18.57	-79.84	-526.47	183.72	468.84	436.80	32.04	14.635	
4,000.00	3,987.77	4,017.90	4,008.41	14.17	18.97	-80.55	-523.07	174.11	457.90	425.12	32.77	13.971	
4,100.00	4,087.22	4,117.78	4,107.75	14.55	19.37	-81.27	-519.74	164.23	446.89	413.38	33.51	13.335	
4,200.00	4,186.68	4,216.21	4,205.63	14.92	19.76	-82.00	-516.44	154.41	435.90	401.65	34.25	12.728	
4,300.00	4,286.13	4,313.28	4,302.22	15.30	20.15	-82.80	-513.25	145.25	425.41	390.43	34.98	12.163	
4,400.00	4,385.58	4,412.21	4,400.69	15.67	20.54	-83.69	-510.09	136.35	415.40	379.69	35.70	11.635	
4,500.00	4,485.03	4,512.52	4,500.51	16.05	20.94	-84.57	-507.12	126.88	405.31	368.89	36.42	11.127	
4,600.00	4,584.49	4,608.99	4,596.50	16.43	21.32	-85.39	-504.55	117.62	395.41	358.26	37.15	10.644	
4,700.00	4,684.10	4,704.00	4,691.14	16.80	21.69	-85.94	-502.38	109.54	386.79	348.91	37.87	10.213	
4,800.00	4,783.91	4,804.41	4,791.22	17.16	22.08	-86.23	-500.27	101.71	379.05	340.45	38.60	9.820	
4,900.00	4,883.85	4,906.73	4,893.16	17.52	22.48	-86.12	-497.73	93.22	370.86	331.53	39.33	9.429	
5,000.00	4,983.84	5,006.24	4,992.27	17.86	22.87	130.49	-494.97	84.72	362.48	322.41	40.07	9.047	
5,100.00	5,083.84	5,105.63	5,091.27	18.19	23.25	131.01	-492.09	76.46	354.28	313.49	40.79	8.685	
5,200.00	5,183.84	5,209.44	5,194.63	18.52	23.58	131.49	-488.23	67.61	345.42	303.97	41.45	8.334	
5,300.00	5,283.84	5,307.25	5,292.00	18.86	23.89	131.92	-484.23	59.29	336.34	294.22	42.12	7.986	
5,400.00	5,383.84	5,402.46	5,386.86	19.19	24.20	132.36	-480.86	51.74	328.09	285.28	42.80	7.665	
5,500.00	5,483.84	5,499.35	5,483.48	19.52	24.56	132.87	-478.59	45.01	321.38	277.85	43.53	7.383	
5,600.00	5,583.84	5,608.93	5,592.61	19.86	25.10	133.62	-475.51	35.70	313.25	268.82	44.43	7.051	
5,700.00	5,683.84	5,713.69	5,696.63	20.20	25.64	134.58	-471.29	23.98	302.38	257.06	45.33	6.671	
5,800.00	5,783.84	5,813.38	5,795.52	20.53	26.17	135.65	-467.14	12.09	291.01	244.75	46.25	6.292	
5,900.00	5,883.84	5,912.39	5,893.71	20.87	26.61	136.85	-463.14	0.04	279.65	232.57	47.08	5.939	
6,000.00	5,983.84	6,010.98	5,991.51	21.21	26.99	138.15	-459.31	-11.86	268.61	220.77	47.84	5.614	
6,100.00	6,083.84	6,110.11	6,089.86	21.55	27.37	139.58	-455.59	-23.74	257.87	209.27	48.60	5.306	
6,200.00	6,183.84	6,209.44	6,188.39	21.89	27.75	141.15	-451.89	-35.75	247.27	197.91	49.36	5.009	
6,300.00	6,283.84	6,308.09	6,286.25	22.23	28.13	142.84	-448.26	-47.61	236.93	186.81	50.13	4.727	
6,400.00	6,383.84	6,406.68	6,384.11	22.57	28.51	144.62	-444.71	-59.12	227.09	176.20	50.89	4.462	
6,500.00	6,483.84	6,505.90	6,482.61	22.91	28.90	146.54	-441.19	-70.51	217.65	166.00	51.65	4.214	
6,600.00	6,583.84	6,605.15	6,581.14	23.25	29.28	148.63	-437.67	-81.91	208.48	156.08	52.40	3.979	
6,700.00	6,683.84	6,703.94	6,679.23	23.60	29.67	150.87	-434.26	-93.12	199.74	146.60	53.15	3.758	
6,800.00	6,783.84	6,802.80	6,777.42	23.94	30.05	153.27	-430.98	-104.10	191.58	137.70	53.88	3.555	

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6,900.00	6,883.84	6,901.82	6,875.83	24.28	30.43	155.72	-427.66	-114.57	183.98	129.38	54.60	3.369	
7,000.00	6,983.84	7,001.63	6,975.09	24.63	30.81	158.17	-424.15	-124.41	176.85	121.55	55.30	3.198	
7,100.00	7,083.84	7,103.46	7,076.35	24.97	31.20	160.64	-419.40	-134.12	169.11	113.15	55.96	3.022	
7,200.00	7,183.84	7,203.99	7,176.24	25.32	31.58	163.10	-413.32	-143.54	160.42	103.80	56.62	2.833	
7,300.00	7,283.84	7,302.74	7,274.40	25.66	31.95	165.69	-407.33	-152.51	152.12	94.84	57.29	2.655	
7,400.00	7,383.84	7,401.59	7,372.71	26.01	32.32	168.47	-401.69	-161.17	144.57	86.64	57.93	2.495	
7,500.00	7,483.84	7,500.53	7,471.16	26.35	32.69	171.43	-396.37	-169.52	137.78	79.23	58.56	2.353	
7,600.00	7,583.84	7,600.19	7,570.35	26.70	33.07	174.63	-391.22	-177.70	131.64	72.49	59.14	2.226	
7,700.00	7,683.84	7,700.24	7,669.89	27.04	33.44	178.23	-385.69	-186.14	125.58	65.90	59.68	2.104	
7,800.00	7,783.84	7,799.70	7,768.81	27.39	33.82	-177.74	-379.93	-194.71	119.80	59.62	60.18	1.991	
7,900.00	7,883.84	7,898.96	7,867.55	27.74	34.19	-173.39	-374.35	-203.20	114.83	54.19	60.64	1.894	
8,000.00	7,983.84	7,997.85	7,965.96	28.09	34.56	-168.85	-369.15	-211.43	110.90	49.84	61.05	1.816	
8,100.00	8,083.84	8,096.79	8,064.50	28.43	34.94	-164.37	-364.66	-219.16	108.28	46.83	61.45	1.762	
8,200.00	8,183.84	8,195.35	8,162.70	28.78	35.31	-159.95	-361.00	-226.71	107.09	45.28	61.81	1.733	
8,219.23	8,203.07	8,214.30	8,181.57	28.85	35.38	-159.09	-360.41	-228.20	107.06	45.18	61.88	1.730	CC
8,300.00	8,283.84	8,293.85	8,260.84	29.13	35.68	-155.50	-358.32	-234.63	107.62	45.47	62.15	1.732	
8,400.00	8,383.84	8,394.47	8,361.08	29.48	36.06	-150.95	-355.60	-242.89	108.91	46.42	62.49	1.743	
8,500.00	8,483.84	8,494.93	8,461.14	29.83	36.44	-146.29	-351.87	-251.04	109.97	47.14	62.83	1.750	
8,600.00	8,583.84	8,594.01	8,559.81	30.17	36.82	-141.64	-347.92	-259.28	111.65	48.46	63.19	1.767	
8,700.00	8,683.84	8,693.16	8,658.50	30.52	37.20	-137.09	-344.22	-267.92	114.51	50.92	63.58	1.801	
8,800.00	8,783.84	8,792.75	8,757.67	30.87	37.58	-132.91	-340.80	-276.48	118.17	54.14	64.03	1.846	
8,900.00	8,883.84	8,892.92	8,857.45	31.22	37.96	-129.21	-337.65	-284.69	122.30	57.76	64.54	1.895	
9,000.00	8,983.84	8,994.35	8,958.57	31.57	38.34	-125.93	-334.19	-291.83	125.81	60.70	65.11	1.932	
9,100.00	9,083.84	9,095.40	9,059.38	31.92	38.71	-123.07	-330.42	-297.55	128.36	62.65	65.71	1.953	
9,200.00	9,183.84	9,195.98	9,159.83	32.27	39.08	-120.90	-327.41	-301.95	130.50	64.14	66.35	1.967	
9,300.00	9,283.84	9,296.72	9,260.49	32.62	39.44	-119.37	-325.22	-305.17	132.17	65.16	67.01	1.972	
9,400.00	9,383.84	9,397.53	9,361.25	32.97	39.80	-118.11	-323.19	-307.56	133.29	65.60	67.69	1.969	
9,500.00	9,483.84	9,498.02	9,461.70	33.32	40.15	-117.03	-321.26	-309.27	133.90	65.53	68.37	1.958	
9,600.00	9,583.84	9,598.38	9,562.04	33.67	40.50	-116.07	-319.40	-310.59	134.25	65.19	69.06	1.944	
9,700.00	9,683.84	9,698.19	9,661.82	34.03	40.84	-115.13	-317.53	-311.79	134.53	64.76	69.77	1.928	
9,800.00	9,783.84	9,797.87	9,761.47	34.38	41.19	-114.06	-315.45	-313.31	135.04	64.57	70.47	1.916	
9,900.00	9,883.84	9,898.13	9,861.69	34.73	41.53	-112.90	-313.17	-314.92	135.61	64.44	71.17	1.905	
10,000.00	9,983.84	9,998.48	9,962.00	35.08	41.88	-111.73	-310.76	-316.33	136.00	64.13	71.87	1.892	
10,100.00	10,083.84	10,099.64	10,063.12	35.43	42.20	-110.52	-308.00	-317.22	135.84	63.26	72.58	1.872	
10,200.00	10,183.84	10,200.56	10,163.99	35.78	42.52	-109.23	-304.81	-317.34	134.87	61.58	73.29	1.840	
10,300.00	10,283.84	10,300.55	10,263.93	36.13	42.82	-107.94	-301.57	-317.16	133.66	59.64	74.03	1.806	
10,400.00	10,383.84	10,400.36	10,363.69	36.49	43.13	-106.70	-298.47	-316.92	132.52	57.75	74.77	1.772	
10,500.00	10,483.84	10,499.78	10,463.08	36.84	43.43	-105.76	-296.17	-316.78	131.73	56.21	75.52	1.744	
10,600.00	10,583.84	10,599.59	10,562.89	37.19	43.73	-105.21	-294.86	-316.72	131.32	55.08	76.24	1.723	
10,700.00	10,683.84	10,699.91	10,663.20	37.54	44.02	-105.10	-294.47	-316.27	130.79	53.87	76.92	1.700	
10,800.00	10,783.84	10,800.06	10,763.35	37.90	44.32	-105.27	-294.64	-315.46	130.05	52.42	77.63	1.675	
10,900.00	10,883.84	10,900.07	10,863.35	38.25	44.62	-104.85	-293.53	-314.95	129.27	50.89	78.38	1.649	
11,000.00	10,983.84	10,999.31	10,962.57	38.60	44.92	-104.02	-291.58	-314.86	128.69	49.57	79.12	1.626	
11,019.88	11,003.72	11,018.96	10,982.22	38.67	44.98	-103.92	-291.36	-314.89	128.67	49.41	79.27	1.623	
11,100.00	11,083.84	11,098.17	11,061.43	38.95	45.22	-103.82	-291.20	-315.22	128.96	49.12	79.84	1.615	
11,200.00	11,183.84	11,198.17	11,161.41	39.31	45.51	-104.29	-292.43	-315.77	129.79	49.23	80.56	1.611	
11,300.00	11,283.84	11,298.53	11,261.74	39.66	45.81	-105.31	-294.81	-315.74	130.37	49.11	81.26	1.604	
11,400.00	11,383.84	11,398.09	11,361.23	40.01	46.11	-106.97	-298.62	-315.26	130.97	49.02	81.95	1.598	
11,500.00	11,483.84	11,500.84	11,463.90	40.37	46.43	-108.58	-302.11	-314.10	130.93	48.35	82.58	1.586	
11,600.00	11,583.84	11,599.80	11,562.83	40.72	46.73	-109.75	-304.37	-312.45	130.11	46.84	83.27	1.563	
11,618.39	11,602.23	11,617.71	11,580.73	40.78	46.78	-110.04	-304.96	-312.20	130.07	46.67	83.40	1.560	
11,700.00	11,683.84	11,697.33	11,660.27	41.07	47.01	-111.47	-308.25	-311.67	130.76	46.77	83.99	1.557	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Grevey Com - 211H - OH - Surveys — **Offset Site Error:** 1.00 usft

Survey Program: 171-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,800.00	11,783.84	11,797.86	11,760.71	41.43	47.31	-113.26	-312.66	-311.57	132.34	47.65	84.69	1.563	
11,900.00	11,883.84	11,901.76	11,864.58	41.78	47.63	-114.23	-314.48	-310.17	131.80	46.48	85.32	1.545	
11,975.75	11,959.51	11,977.30	11,940.10	42.05	47.86	-106.65	-315.05	-308.54	131.38	45.52	85.87	1.530	
12,000.00	11,983.73	12,001.55	11,964.34	42.13	47.93	-106.91	-315.29	-307.99	131.05	45.02	86.03	1.523	ES, SF
12,100.00	12,081.74	12,099.33	12,062.08	42.46	48.22	-114.77	-316.28	-305.67	136.51	49.55	86.96	1.570	
12,200.00	12,174.93	12,191.12	12,153.84	42.76	48.50	-125.52	-317.47	-303.43	154.72	66.46	88.27	1.753	
12,300.00	12,260.46	12,263.00	12,225.62	43.01	48.73	-133.75	-320.15	-300.81	192.59	103.00	89.58	2.150	
12,400.00	12,335.74	12,310.00	12,272.20	43.21	48.94	-136.50	-325.57	-298.31	254.81	164.74	90.07	2.829	
12,500.00	12,398.47	12,343.17	12,304.57	43.38	49.10	-133.72	-332.42	-295.97	336.19	245.97	90.22	3.726	
12,600.00	12,446.77	12,357.00	12,317.93	43.56	49.17	-118.64	-335.81	-294.83	428.12	338.03	90.09	4.752	
12,700.00	12,479.14	12,357.00	12,317.93	43.74	49.17	-81.56	-335.81	-294.83	524.79	434.77	90.02	5.830	
12,800.00	12,494.62	12,357.00	12,317.93	43.90	49.17	-45.32	-335.81	-294.83	622.00	531.59	90.41	6.880	
12,900.00	12,495.46	12,343.76	12,305.15	44.05	49.11	-30.61	-332.56	-295.92	717.67	627.04	90.64	7.918	
13,000.00	12,494.60	12,333.28	12,294.97	44.24	49.06	-22.88	-330.19	-296.72	814.12	723.24	90.88	8.958	
13,100.00	12,493.75	12,310.00	12,272.20	44.46	48.94	-13.51	-325.57	-298.31	911.67	820.87	90.80	10.040	
13,200.00	12,492.89	12,310.00	12,272.20	44.72	48.94	-4.71	-325.57	-298.31	1,009.23	918.10	91.13	11.075	
13,300.00	12,492.04	12,310.00	12,272.20	45.00	48.94	3.70	-325.57	-298.31	1,107.28	1,015.90	91.37	12.118	
13,400.00	12,491.19	12,310.00	12,272.20	45.32	48.94	3.70	-325.57	-298.31	1,205.64	1,114.08	91.56	13.167	
13,500.00	12,490.34	12,310.00	12,272.20	45.67	48.94	3.70	-325.57	-298.31	1,304.26	1,212.54	91.72	14.220	
13,600.00	12,489.49	12,310.00	12,272.20	46.06	48.94	3.70	-325.57	-298.31	1,403.07	1,311.22	91.84	15.277	
13,700.00	12,488.64	12,310.00	12,272.20	46.48	48.94	3.70	-325.57	-298.31	1,502.04	1,410.09	91.95	16.335	
13,800.00	12,487.78	12,310.00	12,272.20	46.93	48.94	3.70	-325.57	-298.31	1,601.13	1,509.09	92.04	17.396	
13,900.00	12,486.93	12,289.78	12,252.26	47.41	48.85	3.09	-322.51	-299.49	1,699.66	1,607.70	91.96	18.483	
14,000.00	12,486.08	12,287.52	12,250.02	47.92	48.84	3.03	-322.24	-299.61	1,798.80	1,706.78	92.02	19.548	
14,100.00	12,485.23	12,285.46	12,247.97	48.47	48.83	2.97	-322.00	-299.72	1,898.01	1,805.93	92.08	20.613	
14,200.00	12,484.38	12,283.57	12,246.10	49.04	48.82	2.93	-321.79	-299.82	1,997.29	1,905.16	92.13	21.678	
14,300.00	12,483.53	12,263.00	12,225.62	49.64	48.73	2.47	-320.15	-300.81	2,097.20	2,005.14	92.06	22.782	
14,400.00	12,482.68	12,263.00	12,225.62	50.27	48.73	2.47	-320.15	-300.81	2,196.49	2,104.37	92.12	23.844	
14,500.00	12,481.83	12,263.00	12,225.62	50.92	48.73	2.47	-320.15	-300.81	2,295.85	2,203.67	92.18	24.906	
14,600.00	12,480.98	12,263.00	12,225.62	51.60	48.73	2.47	-320.15	-300.81	2,395.26	2,303.02	92.24	25.968	
14,700.00	12,480.13	12,263.00	12,225.62	52.30	48.73	2.47	-320.15	-300.81	2,494.72	2,402.42	92.29	27.030	
14,800.00	12,479.27	12,263.00	12,225.62	53.03	48.73	2.47	-320.15	-300.81	2,594.22	2,501.87	92.35	28.092	
14,900.00	12,478.42	12,263.00	12,225.62	53.78	48.73	2.47	-320.15	-300.81	2,693.75	2,601.35	92.40	29.154	
15,000.00	12,477.57	12,263.00	12,225.62	54.54	48.73	2.47	-320.15	-300.81	2,793.32	2,700.87	92.45	30.215	
15,100.00	12,476.72	12,263.00	12,225.62	55.33	48.73	2.47	-320.15	-300.81	2,892.92	2,800.42	92.50	31.276	
15,200.00	12,475.87	12,263.00	12,225.62	56.14	48.73	2.47	-320.15	-300.81	2,992.55	2,900.00	92.55	32.336	
15,300.00	12,475.02	12,263.00	12,225.62	56.97	48.73	2.47	-320.15	-300.81	3,092.20	2,999.60	92.59	33.396	
15,400.00	12,474.17	12,263.00	12,225.62	57.81	48.73	2.47	-320.15	-300.81	3,191.87	3,099.23	92.64	34.455	
15,500.00	12,473.32	12,263.00	12,225.62	58.67	48.73	2.47	-320.15	-300.81	3,291.56	3,198.87	92.69	35.513	
15,600.00	12,472.47	12,263.00	12,225.62	59.55	48.73	2.47	-320.15	-300.81	3,391.27	3,298.53	92.73	36.570	
15,700.00	12,471.61	12,263.00	12,225.62	60.45	48.73	2.47	-320.15	-300.81	3,490.99	3,398.21	92.78	37.626	
15,800.00	12,470.76	12,263.00	12,225.62	61.36	48.73	2.47	-320.15	-300.81	3,590.74	3,497.91	92.83	38.682	
15,900.00	12,469.91	12,263.00	12,225.62	62.28	48.73	2.47	-320.15	-300.81	3,690.49	3,597.62	92.87	39.736	
16,000.00	12,469.06	12,263.00	12,225.62	63.22	48.73	2.47	-320.15	-300.81	3,790.26	3,697.34	92.92	40.790	
16,100.00	12,468.21	12,263.00	12,225.62	64.17	48.73	2.47	-320.15	-300.81	3,890.04	3,797.07	92.97	41.842	
16,200.00	12,467.36	12,263.00	12,225.62	65.13	48.73	2.47	-320.15	-300.81	3,989.83	3,896.81	93.02	42.893	
16,300.00	12,466.51	12,263.00	12,225.62	66.10	48.73	2.47	-320.15	-300.81	4,089.63	3,996.57	93.07	43.943	
16,400.00	12,465.66	12,263.00	12,225.62	67.09	48.73	2.47	-320.15	-300.81	4,189.44	4,096.33	93.12	44.991	
16,500.00	12,464.81	12,263.00	12,225.62	68.08	48.73	2.47	-320.15	-300.81	4,289.26	4,196.10	93.17	46.038	
16,600.00	12,463.96	12,263.00	12,225.62	69.09	48.73	2.47	-320.15	-300.81	4,389.09	4,295.87	93.22	47.084	
16,700.00	12,463.10	12,263.00	12,225.62	70.11	48.73	2.47	-320.15	-300.81	4,488.93	4,395.66	93.27	48.129	
16,800.00	12,462.25	12,263.00	12,225.62	71.13	48.73	2.47	-320.15	-300.81	4,588.77	4,495.45	93.32	49.172	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Grevey Com - 211H - OH - Surveys — **Offset Site Error:** 1.00 usft

Survey Program: 171-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,900.00	12,461.40	12,263.00	12,225.62	72.17	48.73	2.47	-320.15	-300.81	4,688.62	4,595.25	93.37	50.213	
17,000.00	12,460.55	12,263.00	12,225.62	73.21	48.73	2.47	-320.15	-300.81	4,788.48	4,695.05	93.43	51.253	
17,100.00	12,459.70	12,263.00	12,225.62	74.27	48.73	2.47	-320.15	-300.81	4,888.34	4,794.86	93.48	52.292	
17,200.00	12,458.85	12,263.00	12,225.62	75.33	48.73	2.47	-320.15	-300.81	4,988.20	4,894.67	93.54	53.329	
17,300.00	12,458.00	12,263.00	12,225.62	76.40	48.73	2.47	-320.15	-300.81	5,088.08	4,994.48	93.59	54.364	
17,400.00	12,457.15	12,263.00	12,225.62	77.47	48.73	2.47	-320.15	-300.81	5,187.95	5,094.31	93.65	55.398	
17,500.00	12,456.30	12,263.00	12,225.62	78.56	48.73	2.47	-320.15	-300.81	5,287.84	5,194.13	93.71	56.430	
17,600.00	12,455.44	12,263.00	12,225.62	79.65	48.73	2.47	-320.15	-300.81	5,387.72	5,293.96	93.76	57.460	
17,700.00	12,454.59	12,263.00	12,225.62	80.74	48.73	2.47	-320.15	-300.81	5,487.61	5,393.79	93.82	58.488	
17,800.00	12,453.74	12,263.00	12,225.62	81.85	48.73	2.47	-320.15	-300.81	5,587.51	5,493.62	93.88	59.515	
17,900.00	12,452.89	12,263.00	12,225.62	82.96	48.73	2.47	-320.15	-300.81	5,687.41	5,593.46	93.94	60.540	
18,000.00	12,452.04	12,263.00	12,225.62	84.07	48.73	2.47	-320.15	-300.81	5,787.31	5,693.30	94.01	61.563	
18,100.00	12,451.19	12,263.00	12,225.62	85.19	48.73	2.47	-320.15	-300.81	5,887.21	5,793.14	94.07	62.585	
18,200.00	12,450.34	12,263.00	12,225.62	86.32	48.73	2.47	-320.15	-300.81	5,987.12	5,892.99	94.13	63.604	
18,300.00	12,449.49	12,263.00	12,225.62	87.45	48.73	2.47	-320.15	-300.81	6,087.03	5,992.84	94.20	64.622	
18,400.00	12,448.64	12,263.00	12,225.62	88.58	48.73	2.47	-320.15	-300.81	6,186.95	6,092.69	94.26	65.637	
18,500.00	12,447.79	12,226.86	12,189.54	89.72	48.62	1.88	-318.54	-302.26	6,286.49	6,192.25	94.24	66.704	
18,600.00	12,446.93	12,225.58	12,188.27	90.87	48.61	1.87	-318.49	-302.31	6,386.39	6,292.08	94.31	67.718	
18,700.00	12,446.08	12,224.34	12,187.02	92.02	48.61	1.85	-318.45	-302.35	6,486.28	6,391.91	94.37	68.730	
18,800.00	12,445.23	12,223.12	12,185.81	93.17	48.60	1.83	-318.41	-302.40	6,586.18	6,491.74	94.44	69.740	
18,900.00	12,444.38	12,221.92	12,184.61	94.33	48.60	1.82	-318.36	-302.44	6,686.08	6,591.58	94.51	70.747	
19,000.00	12,443.53	12,220.76	12,183.45	95.49	48.60	1.80	-318.32	-302.48	6,785.99	6,691.41	94.57	71.753	
19,100.00	12,442.68	12,219.61	12,182.31	96.65	48.59	1.79	-318.28	-302.52	6,885.89	6,791.25	94.64	72.757	
19,200.00	12,441.83	12,218.50	12,181.19	97.82	48.59	1.77	-318.24	-302.56	6,985.80	6,891.09	94.71	73.758	
19,300.00	12,440.98	12,217.40	12,180.10	99.00	48.58	1.76	-318.21	-302.60	7,085.71	6,990.93	94.78	74.757	
19,400.00	12,440.13	12,216.33	12,179.03	100.17	48.58	1.75	-318.17	-302.63	7,185.62	7,090.77	94.85	75.754	
19,500.00	12,439.27	12,215.28	12,177.98	101.35	48.58	1.73	-318.14	-302.67	7,285.53	7,190.61	94.93	76.749	
19,600.00	12,438.42	12,214.25	12,176.95	102.53	48.57	1.72	-318.10	-302.70	7,385.45	7,290.45	95.00	77.742	
19,700.00	12,437.57	12,213.24	12,175.94	103.72	48.57	1.71	-318.07	-302.74	7,485.37	7,390.29	95.07	78.732	
19,800.00	12,436.72	12,212.25	12,174.95	104.91	48.57	1.70	-318.04	-302.77	7,585.28	7,490.14	95.15	79.720	
19,900.00	12,435.87	12,211.29	12,173.99	106.10	48.56	1.69	-318.01	-302.80	7,685.20	7,589.98	95.22	80.706	
20,000.00	12,435.02	12,210.34	12,173.04	107.29	48.56	1.68	-317.98	-302.83	7,785.13	7,689.82	95.30	81.689	
20,100.00	12,434.17	12,209.40	12,172.11	108.49	48.56	1.66	-317.95	-302.87	7,885.05	7,789.67	95.38	82.671	
20,200.00	12,433.32	12,208.49	12,171.19	109.69	48.55	1.65	-317.93	-302.90	7,984.97	7,889.52	95.46	83.649	
20,300.00	12,432.47	12,207.59	12,170.30	110.89	48.55	1.64	-317.90	-302.92	8,084.90	7,989.36	95.54	84.626	
20,400.00	12,431.62	12,206.71	12,169.42	112.09	48.55	1.63	-317.87	-302.95	8,184.83	8,089.21	95.62	85.600	
20,500.00	12,430.76	12,205.85	12,168.56	113.30	48.55	1.62	-317.85	-302.98	8,284.76	8,189.06	95.70	86.572	
20,600.00	12,429.91	12,205.00	12,167.71	114.51	48.54	1.62	-317.83	-303.01	8,384.69	8,288.91	95.78	87.541	
20,700.00	12,429.06	12,204.17	12,166.88	115.72	48.54	1.61	-317.80	-303.03	8,484.62	8,388.75	95.86	88.508	
20,800.00	12,428.21	12,203.36	12,166.06	116.93	48.54	1.60	-317.78	-303.06	8,584.55	8,488.60	95.95	89.473	
20,900.00	12,427.36	12,164.00	12,126.73	118.15	48.41	1.24	-317.00	-304.14	8,684.87	8,588.92	95.95	90.513	
21,000.00	12,426.51	12,164.00	12,126.73	119.37	48.41	1.24	-317.00	-304.14	8,784.79	8,688.75	96.04	91.472	
21,100.00	12,425.66	12,164.00	12,126.73	120.59	48.41	1.24	-317.00	-304.14	8,884.71	8,788.59	96.13	92.428	
21,200.00	12,424.81	12,164.00	12,126.73	121.81	48.41	1.24	-317.00	-304.14	8,984.63	8,888.42	96.21	93.381	
21,300.00	12,423.96	12,164.00	12,126.73	123.03	48.41	1.24	-317.00	-304.14	9,084.56	8,988.25	96.30	94.332	
21,400.00	12,423.10	12,164.00	12,126.73	124.25	48.41	1.24	-317.00	-304.14	9,184.48	9,088.09	96.39	95.281	
21,500.00	12,422.25	12,164.00	12,126.73	125.48	48.41	1.24	-317.00	-304.14	9,284.41	9,187.92	96.48	96.227	
21,600.00	12,421.40	12,164.00	12,126.73	126.71	48.41	1.24	-317.00	-304.14	9,384.34	9,287.76	96.58	97.170	
21,700.00	12,420.55	12,164.00	12,126.73	127.94	48.41	1.24	-317.00	-304.14	9,484.27	9,387.60	96.67	98.111	
21,800.00	12,419.70	12,164.00	12,126.73	129.17	48.41	1.24	-317.00	-304.14	9,584.20	9,487.44	96.76	99.050	
21,900.00	12,418.85	12,164.00	12,126.73	130.40	48.41	1.24	-317.00	-304.14	9,684.13	9,587.28	96.86	99.985	
22,000.00	12,418.00	12,164.00	12,126.73	131.64	48.41	1.24	-317.00	-304.14	9,784.07	9,687.12	96.95	100.919	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Grevey Com - 211H - OH - Surveys — **Offset Site Error:** 1.00 usft

Survey Program: 171-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
22,100.00	12,417.15	12,164.00	12,126.73	132.87	48.41	1.24	-317.00	-304.14	9,884.00	9,786.96	97.05	101.849	
22,200.00	12,416.30	12,164.00	12,126.73	134.11	48.41	1.24	-317.00	-304.14	9,983.94	9,886.80	97.14	102.777	
22,300.00	12,415.45	12,164.00	12,126.73	135.35	48.41	1.24	-317.00	-304.14	10,083.88	9,986.64	97.24	103.703	
22,400.00	12,414.59	12,164.00	12,126.73	136.59	48.41	1.24	-317.00	-304.14	10,183.82	10,086.48	97.34	104.625	
22,500.00	12,413.74	12,164.00	12,126.73	137.83	48.41	1.24	-317.00	-304.14	10,283.76	10,186.32	97.43	105.545	
22,600.00	12,412.89	12,164.00	12,126.73	139.07	48.41	1.24	-317.00	-304.14	10,383.70	10,286.16	97.53	106.463	
22,700.00	12,412.04	12,164.00	12,126.73	140.31	48.41	1.24	-317.00	-304.14	10,483.64	10,386.01	97.63	107.378	
22,800.00	12,411.19	12,164.00	12,126.73	141.56	48.41	1.24	-317.00	-304.14	10,583.58	10,485.85	97.73	108.290	
22,822.29	12,411.00	12,164.00	12,126.73	141.82	48.41	1.24	-317.00	-304.14	10,605.87	10,501.51	104.36	101.632	

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 431H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	2.00	2.00	1.00	1.00	89.63	0.38	59.88	59.88				
100.00	100.00	102.00	102.00	1.01	1.01	89.63	0.38	59.88	59.88	57.86	2.02	29.670	
200.00	200.00	202.00	202.00	1.11	1.12	89.63	0.38	59.88	59.88	57.65	2.23	26.846	
300.00	300.00	302.00	302.00	1.31	1.32	89.63	0.38	59.88	59.88	57.25	2.63	22.787	
400.00	400.00	402.00	402.00	1.57	1.57	89.63	0.38	59.88	59.88	56.74	3.14	19.067	
500.00	500.00	502.00	502.00	1.86	1.86	89.63	0.38	59.88	59.88	56.16	3.72	16.090	
600.00	600.00	602.00	602.00	2.17	2.17	89.63	0.38	59.88	59.88	55.54	4.34	13.787	
700.00	700.00	702.00	702.00	2.49	2.50	89.63	0.38	59.88	59.88	54.89	4.99	11.999	
800.00	800.00	802.00	802.00	2.82	2.83	89.63	0.38	59.88	59.88	54.23	5.65	10.590	
900.00	900.00	902.00	902.00	3.16	3.17	89.63	0.38	59.88	59.88	53.55	6.33	9.459	
1,000.00	1,000.00	1,002.00	1,002.00	3.50	3.51	89.63	0.38	59.88	59.88	52.87	7.01	8.537	
1,100.00	1,100.00	1,102.00	1,102.00	3.85	3.86	89.63	0.38	59.88	59.88	52.18	7.70	7.773	
1,200.00	1,200.00	1,202.00	1,202.00	4.20	4.20	89.63	0.38	59.88	59.88	51.48	8.40	7.130	
1,300.00	1,300.00	1,302.00	1,302.00	4.54	4.55	89.63	0.38	59.88	59.88	50.78	9.10	6.583	
1,400.00	1,400.00	1,402.00	1,402.00	4.90	4.90	89.63	0.38	59.88	59.88	50.08	9.80	6.112	
1,415.99	1,415.99	1,417.99	1,417.99	4.95	4.96	89.63	0.38	59.88	59.88	49.97	9.91	6.043	CC
1,500.00	1,500.00	1,501.98	1,501.98	5.25	5.25	89.64	0.38	59.88	59.88	49.38	10.50	5.703	ES
1,600.00	1,599.99	1,600.79	1,600.78	5.58	5.59	-126.60	-0.50	60.87	61.66	50.49	11.17	5.521	
1,700.00	1,699.91	1,700.00	1,699.91	5.91	5.91	-126.97	-3.10	63.79	66.92	55.10	11.81	5.665	
1,800.00	1,799.69	1,797.70	1,797.40	6.24	6.24	-127.49	-7.33	68.54	75.64	63.18	12.45	6.075	
1,900.00	1,899.27	1,895.44	1,894.73	6.57	6.56	-128.02	-13.21	75.16	87.81	74.72	13.10	6.705	
2,000.00	1,998.72	1,994.37	1,993.12	6.91	6.90	-128.58	-20.09	82.88	101.80	88.04	13.76	7.397	
2,100.00	2,098.17	2,093.39	2,091.59	7.25	7.24	-129.00	-26.98	90.62	115.79	101.36	14.44	8.020	
2,200.00	2,197.63	2,192.40	2,190.06	7.60	7.59	-129.32	-33.86	98.36	129.79	114.67	15.12	8.585	
2,300.00	2,297.08	2,291.41	2,288.53	7.95	7.94	-129.59	-40.75	106.09	143.80	127.99	15.81	9.097	
2,400.00	2,396.53	2,390.42	2,387.00	8.30	8.29	-129.81	-47.63	113.83	157.80	141.30	16.50	9.564	
2,500.00	2,495.98	2,489.44	2,485.47	8.66	8.64	-129.99	-54.52	121.57	171.81	154.61	17.20	9.991	
2,600.00	2,595.44	2,588.45	2,583.94	9.01	9.00	-130.14	-61.40	129.30	185.82	167.92	17.90	10.382	
2,700.00	2,694.89	2,687.46	2,682.41	9.37	9.35	-130.28	-68.29	137.04	199.83	181.23	18.60	10.742	
2,800.00	2,794.34	2,786.47	2,780.88	9.74	9.71	-130.39	-75.17	144.78	213.84	194.53	19.31	11.073	
2,900.00	2,893.79	2,885.49	2,879.35	10.10	10.07	-130.49	-82.06	152.51	227.85	207.83	20.02	11.380	
3,000.00	2,993.25	2,984.50	2,977.82	10.47	10.44	-130.58	-88.94	160.25	241.87	221.13	20.74	11.664	
3,100.00	3,092.70	3,083.51	3,076.29	10.83	10.80	-130.66	-95.83	167.98	255.88	234.43	21.45	11.928	
3,200.00	3,192.15	3,182.53	3,174.76	11.20	11.16	-130.73	-102.71	175.72	269.89	247.72	22.17	12.174	
3,300.00	3,291.60	3,281.54	3,273.23	11.57	11.53	-130.80	-109.60	183.46	283.91	261.02	22.89	12.404	
3,400.00	3,391.06	3,380.55	3,371.70	11.94	11.90	-130.86	-116.49	191.19	297.92	274.31	23.61	12.618	
3,500.00	3,490.51	3,479.56	3,470.17	12.31	12.26	-130.91	-123.37	198.93	311.94	287.60	24.33	12.819	
3,600.00	3,589.96	3,578.58	3,568.64	12.68	12.63	-130.96	-130.26	206.67	325.95	300.89	25.06	13.008	
3,700.00	3,689.41	3,677.59	3,667.11	13.05	13.00	-131.00	-137.14	214.40	339.97	314.18	25.78	13.185	
3,800.00	3,788.87	3,776.60	3,765.58	13.43	13.37	-131.04	-144.03	222.14	353.98	327.47	26.51	13.353	
3,900.00	3,888.32	3,875.61	3,864.05	13.80	13.74	-131.08	-150.91	229.88	368.00	340.76	27.24	13.510	
4,000.00	3,987.77	3,974.63	3,962.52	14.17	14.11	-131.12	-157.80	237.61	382.01	354.04	27.97	13.659	
4,100.00	4,087.22	4,073.64	4,060.99	14.55	14.48	-131.15	-164.68	245.35	396.03	367.33	28.70	13.800	
4,200.00	4,186.68	4,172.65	4,159.45	14.92	14.85	-131.18	-171.57	253.08	410.04	380.61	29.43	13.934	
4,300.00	4,286.13	4,271.66	4,257.92	15.30	15.22	-131.21	-178.45	260.82	424.06	393.90	30.16	14.060	
4,400.00	4,385.58	4,370.68	4,356.39	15.67	15.59	-131.23	-185.34	268.56	438.07	407.18	30.89	14.181	
4,500.00	4,485.03	4,469.69	4,454.86	16.05	15.97	-131.26	-192.22	276.29	452.09	420.46	31.63	14.295	
4,600.00	4,584.49	4,568.71	4,553.34	16.43	16.34	-131.30	-199.11	284.03	466.09	433.73	32.36	14.403	
4,700.00	4,684.10	4,667.86	4,651.95	16.80	16.71	-131.32	-206.00	291.78	478.98	445.89	33.09	14.475	
4,800.00	4,783.91	4,767.19	4,750.73	17.16	17.09	-131.09	-212.91	299.54	490.16	456.34	33.82	14.494	
4,900.00	4,883.85	4,866.61	4,849.61	17.52	17.46	-130.62	-219.82	307.31	499.67	465.13	34.54	14.466	
5,000.00	4,983.84	4,966.06	4,948.51	17.86	17.84	86.19	-226.74	315.08	507.57	472.32	35.25	14.400	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 431H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,083.84	5,065.51	5,047.42	18.19	18.21	87.01	-233.66	322.85	514.98	479.03	35.95	14.326	
5,200.00	5,183.84	5,164.97	5,146.33	18.52	18.59	87.82	-240.57	330.62	522.49	485.85	36.65	14.257	
5,300.00	5,283.84	5,272.34	5,253.19	18.86	18.99	88.60	-247.51	338.42	529.58	492.18	37.40	14.158	
5,400.00	5,383.84	5,383.48	5,364.06	19.19	19.40	89.17	-252.66	344.21	534.71	496.53	38.17	14.008	
5,500.00	5,483.84	5,494.98	5,475.46	19.52	19.80	89.50	-255.68	347.59	537.71	498.79	38.92	13.815	
5,600.00	5,583.84	5,605.38	5,585.84	19.86	20.18	89.59	-256.54	348.56	538.57	498.94	39.64	13.588	
5,700.00	5,683.84	5,705.38	5,685.84	20.20	20.51	89.59	-256.54	348.56	538.57	498.27	40.31	13.361	
5,800.00	5,783.84	5,805.38	5,785.84	20.53	20.84	89.59	-256.54	348.56	538.57	497.59	40.98	13.142	
5,900.00	5,883.84	5,905.38	5,885.84	20.87	21.17	89.59	-256.54	348.56	538.57	496.92	41.65	12.929	
6,000.00	5,983.84	6,005.38	5,985.84	21.21	21.51	89.59	-256.54	348.56	538.57	496.24	42.33	12.723	
6,100.00	6,083.84	6,105.38	6,085.84	21.55	21.84	89.59	-256.54	348.56	538.57	495.57	43.01	12.523	
6,200.00	6,183.84	6,205.38	6,185.84	21.89	22.17	89.59	-256.54	348.56	538.57	494.89	43.68	12.329	
6,300.00	6,283.84	6,305.38	6,285.84	22.23	22.51	89.59	-256.54	348.56	538.57	494.21	44.36	12.140	
6,400.00	6,383.84	6,405.38	6,385.84	22.57	22.85	89.59	-256.54	348.56	538.57	493.53	45.04	11.956	
6,500.00	6,483.84	6,505.38	6,485.84	22.91	23.18	89.59	-256.54	348.56	538.57	492.85	45.73	11.778	
6,600.00	6,583.84	6,605.38	6,585.84	23.25	23.52	89.59	-256.54	348.56	538.57	492.16	46.41	11.605	
6,700.00	6,683.84	6,705.38	6,685.84	23.60	23.86	89.59	-256.54	348.56	538.57	491.48	47.09	11.437	
6,800.00	6,783.84	6,805.38	6,785.84	23.94	24.20	89.59	-256.54	348.56	538.57	490.80	47.78	11.273	
6,900.00	6,883.84	6,905.38	6,885.84	24.28	24.54	89.59	-256.54	348.56	538.57	490.11	48.46	11.113	
7,000.00	6,983.84	7,005.38	6,985.84	24.63	24.88	89.59	-256.54	348.56	538.57	489.42	49.15	10.958	
7,100.00	7,083.84	7,105.38	7,085.84	24.97	25.22	89.59	-256.54	348.56	538.57	488.74	49.84	10.807	
7,200.00	7,183.84	7,205.38	7,185.84	25.32	25.56	89.59	-256.54	348.56	538.57	488.05	50.52	10.660	
7,300.00	7,283.84	7,305.38	7,285.84	25.66	25.90	89.59	-256.54	348.56	538.57	487.36	51.21	10.516	
7,400.00	7,383.84	7,405.38	7,385.84	26.01	26.24	89.59	-256.54	348.56	538.57	486.67	51.90	10.377	
7,500.00	7,483.84	7,505.38	7,485.84	26.35	26.58	89.59	-256.54	348.56	538.57	485.98	52.59	10.240	
7,600.00	7,583.84	7,605.38	7,585.84	26.70	26.93	89.59	-256.54	348.56	538.57	485.29	53.28	10.108	
7,700.00	7,683.84	7,705.38	7,685.84	27.04	27.27	89.59	-256.54	348.56	538.57	484.60	53.98	9.978	
7,800.00	7,783.84	7,805.38	7,785.84	27.39	27.61	89.59	-256.54	348.56	538.57	483.91	54.67	9.852	
7,900.00	7,883.84	7,905.38	7,885.84	27.74	27.96	89.59	-256.54	348.56	538.57	483.21	55.36	9.728	
8,000.00	7,983.84	8,005.38	7,985.84	28.09	28.30	89.59	-256.54	348.56	538.57	482.52	56.06	9.608	
8,100.00	8,083.84	8,105.38	8,085.84	28.43	28.65	89.59	-256.54	348.56	538.57	481.82	56.75	9.490	
8,200.00	8,183.84	8,205.38	8,185.84	28.78	28.99	89.59	-256.54	348.56	538.57	481.13	57.44	9.376	
8,300.00	8,283.84	8,305.38	8,285.84	29.13	29.34	89.59	-256.54	348.56	538.57	480.43	58.14	9.263	
8,400.00	8,383.84	8,405.38	8,385.84	29.48	29.68	89.59	-256.54	348.56	538.57	479.74	58.84	9.154	
8,500.00	8,483.84	8,505.38	8,485.84	29.83	30.03	89.59	-256.54	348.56	538.57	479.04	59.53	9.047	
8,600.00	8,583.84	8,605.38	8,585.84	30.17	30.38	89.59	-256.54	348.56	538.57	478.35	60.23	8.942	
8,700.00	8,683.84	8,705.38	8,685.84	30.52	30.72	89.59	-256.54	348.56	538.57	477.65	60.93	8.840	
8,800.00	8,783.84	8,805.38	8,785.84	30.87	31.07	89.59	-256.54	348.56	538.57	476.95	61.62	8.740	
8,900.00	8,883.84	8,905.38	8,885.84	31.22	31.42	89.59	-256.54	348.56	538.57	476.25	62.32	8.642	
9,000.00	8,983.84	9,005.38	8,985.84	31.57	31.76	89.59	-256.54	348.56	538.57	475.55	63.02	8.546	
9,100.00	9,083.84	9,105.38	9,085.84	31.92	32.11	89.59	-256.54	348.56	538.57	474.85	63.72	8.452	
9,200.00	9,183.84	9,205.38	9,185.84	32.27	32.46	89.59	-256.54	348.56	538.57	474.15	64.42	8.361	
9,300.00	9,283.84	9,305.38	9,285.84	32.62	32.81	89.59	-256.54	348.56	538.57	473.46	65.12	8.271	
9,400.00	9,383.84	9,405.38	9,385.84	32.97	33.15	89.59	-256.54	348.56	538.57	472.76	65.82	8.183	
9,500.00	9,483.84	9,505.38	9,485.84	33.32	33.50	89.59	-256.54	348.56	538.57	472.05	66.52	8.097	
9,600.00	9,583.84	9,605.38	9,585.84	33.67	33.85	89.59	-256.54	348.56	538.57	471.35	67.22	8.012	
9,700.00	9,683.84	9,705.38	9,685.84	34.03	34.20	89.59	-256.54	348.56	538.57	470.65	67.92	7.929	
9,800.00	9,783.84	9,805.38	9,785.84	34.38	34.55	89.59	-256.54	348.56	538.57	469.95	68.62	7.848	
9,900.00	9,883.84	9,905.38	9,885.84	34.73	34.90	89.59	-256.54	348.56	538.57	469.25	69.32	7.769	
10,000.00	9,983.84	10,005.38	9,985.84	35.08	35.25	89.59	-256.54	348.56	538.57	468.55	70.03	7.691	
10,100.00	10,083.84	10,105.38	10,085.84	35.43	35.60	89.59	-256.54	348.56	538.57	467.84	70.73	7.615	
10,200.00	10,183.84	10,205.38	10,185.84	35.78	35.95	89.59	-256.54	348.56	538.57	467.14	71.43	7.540	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 431H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	10,283.84	10,305.38	10,285.84	36.13	36.30	89.59	-256.54	348.56	538.57	466.44	72.13	7.466	
10,400.00	10,383.84	10,405.38	10,385.84	36.49	36.65	89.59	-256.54	348.56	538.57	465.74	72.84	7.394	
10,500.00	10,483.84	10,505.38	10,485.84	36.84	37.00	89.59	-256.54	348.56	538.57	465.03	73.54	7.323	
10,600.00	10,583.84	10,605.38	10,585.84	37.19	37.35	89.59	-256.54	348.56	538.57	464.33	74.25	7.254	
10,700.00	10,683.84	10,705.38	10,685.84	37.54	37.70	89.59	-256.54	348.56	538.57	463.62	74.95	7.186	
10,800.00	10,783.84	10,805.38	10,785.84	37.90	38.05	89.59	-256.54	348.56	538.57	462.92	75.65	7.119	
10,900.00	10,883.84	10,905.38	10,885.84	38.25	38.40	89.59	-256.54	348.56	538.57	462.22	76.36	7.053	
11,000.00	10,983.84	11,005.38	10,985.84	38.60	38.75	89.59	-256.54	348.56	538.57	461.51	77.06	6.989	
11,100.00	11,083.84	11,105.38	11,085.84	38.95	39.10	89.59	-256.54	348.56	538.57	460.81	77.77	6.925	
11,200.00	11,183.84	11,205.38	11,185.84	39.31	39.46	89.59	-256.54	348.56	538.57	460.10	78.47	6.863	
11,300.00	11,283.84	11,305.38	11,285.84	39.66	39.81	89.59	-256.54	348.56	538.57	459.40	79.18	6.802	
11,400.00	11,383.84	11,405.38	11,385.84	40.01	40.16	89.59	-256.54	348.56	538.57	458.69	79.88	6.742	
11,500.00	11,483.84	11,505.38	11,485.84	40.37	40.51	89.59	-256.54	348.56	538.57	457.98	80.59	6.683	
11,600.00	11,583.84	11,605.38	11,585.84	40.72	40.86	89.59	-256.54	348.56	538.57	457.28	81.30	6.625	
11,700.00	11,683.84	11,705.38	11,685.84	41.07	41.21	89.59	-256.54	348.56	538.57	456.57	82.00	6.568	
11,800.00	11,783.84	11,805.38	11,785.84	41.43	41.57	89.59	-256.54	348.56	538.57	455.87	82.71	6.512	
11,900.00	11,883.84	11,905.38	11,885.84	41.78	41.92	89.59	-256.54	348.56	538.57	455.16	83.42	6.457	
11,901.53	11,885.37	11,906.90	11,887.37	41.79	41.92	98.99	-256.54	348.56	538.57	455.15	83.43	6.456	
12,000.00	11,983.73	12,005.26	11,985.73	42.13	42.27	99.28	-256.54	348.56	539.09	454.97	84.12	6.409	
12,100.00	12,081.74	12,103.27	12,083.74	42.46	42.61	100.90	-256.54	348.56	542.53	457.74	84.79	6.399	
12,200.00	12,174.93	12,196.46	12,176.93	42.76	42.94	103.53	-256.54	348.56	550.72	465.31	85.41	6.448	
12,300.00	12,260.46	12,298.48	12,278.59	43.01	43.30	106.80	-249.70	348.49	565.19	479.21	85.98	6.573	
12,400.00	12,335.74	12,413.20	12,389.42	43.21	43.66	109.74	-220.83	348.19	584.69	498.34	86.35	6.771	
12,500.00	12,398.47	12,541.98	12,504.16	43.38	44.00	112.18	-162.95	347.60	607.60	521.29	86.30	7.040	
12,600.00	12,446.77	12,687.54	12,614.56	43.56	44.29	113.90	-68.69	346.62	631.76	546.03	85.72	7.370	
12,700.00	12,479.14	12,850.81	12,705.71	43.74	44.52	114.60	66.10	345.24	654.69	569.82	84.87	7.714	
12,800.00	12,494.62	13,028.59	12,757.52	43.90	44.77	113.91	235.40	343.49	673.99	589.56	84.43	7.983	
12,900.00	12,495.46	13,167.25	12,762.81	44.05	44.96	112.79	373.79	342.07	688.31	603.51	84.80	8.117	
13,000.00	12,494.60	13,266.57	12,761.96	44.24	45.13	112.36	473.09	341.04	699.07	613.83	85.24	8.201	
13,100.00	12,493.75	13,366.23	12,761.11	44.46	45.34	112.07	572.74	340.02	706.65	620.94	85.71	8.245	
13,200.00	12,492.89	13,466.11	12,760.25	44.72	45.58	111.91	672.62	338.99	711.00	624.79	86.21	8.247	
13,300.00	12,492.04	13,566.10	12,759.40	45.00	45.86	111.88	772.60	337.96	712.15	625.40	86.75	8.209	
13,400.00	12,491.19	13,666.10	12,758.54	45.32	46.17	111.88	872.59	336.93	712.14	624.79	87.35	8.153	
13,500.00	12,490.34	13,766.10	12,757.69	45.67	46.52	111.88	972.58	335.90	712.13	624.12	88.01	8.091	
13,600.00	12,489.49	13,866.10	12,756.83	46.06	46.90	111.88	1,072.57	334.87	712.12	623.38	88.74	8.025	
13,700.00	12,488.64	13,966.10	12,755.98	46.48	47.31	111.88	1,172.56	333.83	712.11	622.58	89.53	7.954	
13,800.00	12,487.78	14,066.10	12,755.12	46.93	47.75	111.88	1,272.55	332.80	712.10	621.72	90.39	7.879	
13,900.00	12,486.93	14,166.10	12,754.26	47.41	48.23	111.88	1,372.54	331.77	712.09	620.79	91.30	7.799	
14,000.00	12,486.08	14,266.10	12,753.41	47.92	48.73	111.88	1,472.53	330.74	712.08	619.81	92.27	7.717	
14,100.00	12,485.23	14,366.10	12,752.55	48.47	49.27	111.88	1,572.52	329.71	712.07	618.77	93.30	7.632	
14,200.00	12,484.38	14,466.10	12,751.70	49.04	49.83	111.88	1,672.52	328.68	712.06	617.67	94.39	7.544	
14,300.00	12,483.53	14,566.10	12,750.84	49.64	50.42	111.88	1,772.51	327.65	712.05	616.53	95.53	7.454	
14,400.00	12,482.68	14,666.10	12,749.99	50.27	51.04	111.88	1,872.50	326.62	712.04	615.33	96.72	7.362	
14,500.00	12,481.83	14,766.10	12,749.13	50.92	51.68	111.88	1,972.49	325.59	712.03	614.08	97.96	7.269	
14,600.00	12,480.98	14,866.10	12,748.28	51.60	52.35	111.88	2,072.48	324.56	712.02	612.78	99.24	7.175	
14,700.00	12,480.13	14,966.10	12,747.42	52.30	53.04	111.88	2,172.47	323.53	712.01	611.44	100.57	7.080	
14,800.00	12,479.27	15,066.10	12,746.57	53.03	53.76	111.88	2,272.46	322.50	712.00	610.05	101.95	6.984	
14,900.00	12,478.42	15,166.10	12,745.71	53.78	54.49	111.88	2,372.45	321.47	711.99	608.63	103.37	6.888	
15,000.00	12,477.57	15,266.10	12,744.86	54.54	55.25	111.88	2,472.44	320.44	711.98	607.16	104.83	6.792	
15,100.00	12,476.72	15,366.10	12,744.00	55.33	56.03	111.88	2,572.44	319.41	711.97	605.65	106.32	6.696	
15,200.00	12,475.87	15,466.10	12,743.15	56.14	56.83	111.88	2,672.43	318.38	711.96	604.11	107.86	6.601	
15,300.00	12,475.02	15,566.10	12,742.29	56.97	57.65	111.88	2,772.42	317.35	711.95	602.53	109.43	6.506	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 431H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	12,474.17	15,666.10	12,741.44	57.81	58.48	111.88	2,872.41	316.32	711.94	600.91	111.03	6.412	
15,500.00	12,473.32	15,766.10	12,740.58	58.67	59.33	111.88	2,972.40	315.29	711.93	599.27	112.67	6.319	
15,600.00	12,472.47	15,866.10	12,739.73	59.55	60.20	111.88	3,072.39	314.26	711.92	597.59	114.34	6.227	
15,700.00	12,471.61	15,966.10	12,738.87	60.45	61.08	111.88	3,172.38	313.23	711.91	595.88	116.03	6.135	
15,800.00	12,470.76	16,066.10	12,738.02	61.36	61.98	111.88	3,272.37	312.20	711.90	594.14	117.76	6.045	
15,900.00	12,469.91	16,166.10	12,737.16	62.28	62.89	111.88	3,372.36	311.17	711.89	592.38	119.51	5.957	
16,000.00	12,469.06	16,266.10	12,736.31	63.22	63.82	111.88	3,472.35	310.14	711.88	590.59	121.29	5.869	
16,100.00	12,468.21	16,366.10	12,735.45	64.17	64.76	111.88	3,572.35	309.11	711.87	588.77	123.10	5.783	
16,200.00	12,467.36	16,466.10	12,734.60	65.13	65.72	111.88	3,672.34	308.08	711.86	586.94	124.93	5.698	
16,300.00	12,466.51	16,566.10	12,733.74	66.10	66.68	111.88	3,772.33	307.05	711.85	585.07	126.78	5.615	
16,400.00	12,465.66	16,666.10	12,732.88	67.09	67.66	111.88	3,872.32	306.02	711.84	583.19	128.65	5.533	
16,500.00	12,464.81	16,766.10	12,732.03	68.08	68.64	111.88	3,972.31	304.99	711.83	581.29	130.55	5.453	
16,600.00	12,463.96	16,866.10	12,731.17	69.09	69.64	111.88	4,072.30	303.96	711.82	579.36	132.46	5.374	
16,700.00	12,463.10	16,966.10	12,730.32	70.11	70.65	111.88	4,172.29	302.93	711.81	577.42	134.40	5.296	
16,800.00	12,462.25	17,066.10	12,729.46	71.13	71.67	111.88	4,272.28	301.90	711.80	575.46	136.35	5.220	
16,900.00	12,461.40	17,166.10	12,728.61	72.17	72.70	111.88	4,372.27	300.87	711.79	573.48	138.32	5.146	
17,000.00	12,460.55	17,266.10	12,727.75	73.21	73.73	111.88	4,472.26	299.84	711.78	571.48	140.31	5.073	
17,100.00	12,459.70	17,366.10	12,726.90	74.27	74.78	111.88	4,572.26	298.81	711.77	569.47	142.31	5.002	
17,200.00	12,458.85	17,466.10	12,726.04	75.33	75.83	111.88	4,672.25	297.78	711.76	567.44	144.33	4.932	
17,300.00	12,458.00	17,566.10	12,725.19	76.40	76.89	111.88	4,772.24	296.75	711.75	565.39	146.36	4.863	
17,400.00	12,457.15	17,666.10	12,724.33	77.47	77.96	111.88	4,872.23	295.71	711.74	563.34	148.41	4.796	
17,500.00	12,456.30	17,766.10	12,723.48	78.56	79.04	111.88	4,972.22	294.68	711.73	561.27	150.47	4.730	
17,600.00	12,455.44	17,866.10	12,722.62	79.65	80.12	111.88	5,072.21	293.65	711.72	559.18	152.54	4.666	
17,700.00	12,454.59	17,966.10	12,721.77	80.74	81.21	111.88	5,172.20	292.62	711.71	557.08	154.63	4.603	
17,800.00	12,453.74	18,066.10	12,720.91	81.85	82.31	111.88	5,272.19	291.59	711.70	554.98	156.73	4.541	
17,900.00	12,452.89	18,166.10	12,720.06	82.96	83.41	111.88	5,372.18	290.56	711.69	552.85	158.84	4.481	
18,000.00	12,452.04	18,266.10	12,719.20	84.07	84.52	111.88	5,472.18	289.53	711.68	550.72	160.96	4.421	
18,100.00	12,451.19	18,366.10	12,718.35	85.19	85.63	111.88	5,572.17	288.50	711.67	548.58	163.09	4.364	
18,200.00	12,450.34	18,466.10	12,717.49	86.32	86.75	111.88	5,672.16	287.47	711.66	546.43	165.24	4.307	
18,300.00	12,449.49	18,566.10	12,716.64	87.45	87.87	111.88	5,772.15	286.44	711.65	544.27	167.39	4.251	
18,400.00	12,448.64	18,666.10	12,715.78	88.58	89.00	111.88	5,872.14	285.41	711.64	542.09	169.55	4.197	
18,500.00	12,447.79	18,766.10	12,714.93	89.72	90.14	111.88	5,972.13	284.38	711.63	539.91	171.72	4.144	
18,600.00	12,446.93	18,866.10	12,714.07	90.87	91.28	111.88	6,072.12	283.35	711.62	537.72	173.90	4.092	
18,700.00	12,446.08	18,966.10	12,713.22	92.02	92.42	111.88	6,172.11	282.32	711.61	535.52	176.09	4.041	
18,800.00	12,445.23	19,066.10	12,712.36	93.17	93.57	111.88	6,272.10	281.29	711.61	533.32	178.29	3.991	
18,900.00	12,444.38	19,166.10	12,711.50	94.33	94.72	111.88	6,372.09	280.26	711.60	531.10	180.49	3.942	
19,000.00	12,443.53	19,266.10	12,710.65	95.49	95.88	111.88	6,472.09	279.23	711.59	528.88	182.71	3.895	
19,100.00	12,442.68	19,366.10	12,709.79	96.65	97.04	111.88	6,572.08	278.20	711.58	526.65	184.93	3.848	
19,200.00	12,441.83	19,466.10	12,708.94	97.82	98.20	111.88	6,672.07	277.17	711.57	524.41	187.15	3.802	
19,300.00	12,440.98	19,566.10	12,708.08	99.00	99.37	111.88	6,772.06	276.14	711.56	522.17	189.39	3.757	
19,400.00	12,440.13	19,666.10	12,707.23	100.17	100.54	111.88	6,872.05	275.11	711.55	519.92	191.63	3.713	
19,500.00	12,439.27	19,766.10	12,706.37	101.35	101.71	111.88	6,972.04	274.08	711.54	517.66	193.87	3.670	
19,600.00	12,438.42	19,866.10	12,705.52	102.53	102.89	111.88	7,072.03	273.05	711.53	515.40	196.12	3.628	
19,700.00	12,437.57	19,966.10	12,704.66	103.72	104.07	111.88	7,172.02	272.02	711.52	513.13	198.38	3.587	
19,800.00	12,436.72	20,066.10	12,703.81	104.91	105.26	111.88	7,272.01	270.99	711.51	510.86	200.65	3.546	
19,900.00	12,435.87	20,166.10	12,702.95	106.10	106.44	111.88	7,372.00	269.96	711.50	508.58	202.92	3.506	
20,000.00	12,435.02	20,266.10	12,702.10	107.29	107.63	111.88	7,472.00	268.93	711.49	506.29	205.19	3.467	
20,100.00	12,434.17	20,366.10	12,701.24	108.49	108.83	111.88	7,571.99	267.90	711.48	504.00	207.47	3.429	
20,200.00	12,433.32	20,466.10	12,700.39	109.69	110.02	111.88	7,671.98	266.87	711.47	501.71	209.76	3.392	
20,300.00	12,432.47	20,566.10	12,699.53	110.89	111.22	111.87	7,771.97	265.84	711.46	499.41	212.05	3.355	
20,400.00	12,431.62	20,666.10	12,698.68	112.09	112.42	111.87	7,871.96	264.81	711.45	497.10	214.34	3.319	
20,500.00	12,430.76	20,766.10	12,697.82	113.30	113.62	111.87	7,971.95	263.78	711.44	494.79	216.64	3.284	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 431H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,600.00	12,429.91	20,866.10	12,696.97	114.51	114.83	111.87	8,071.94	262.75	711.43	492.48	218.95	3.249	
20,700.00	12,429.06	20,966.10	12,696.11	115.72	116.03	111.87	8,171.93	261.72	711.42	490.16	221.25	3.215	
20,800.00	12,428.21	21,066.10	12,695.26	116.93	117.24	111.87	8,271.92	260.69	711.41	487.84	223.57	3.182	
20,900.00	12,427.36	21,166.10	12,694.40	118.15	118.45	111.87	8,371.92	259.66	711.40	485.51	225.88	3.149	
21,000.00	12,426.51	21,266.10	12,693.55	119.37	119.67	111.87	8,471.91	258.62	711.39	483.18	228.20	3.117	
21,100.00	12,425.66	21,366.10	12,692.69	120.59	120.88	111.87	8,571.90	257.59	711.38	480.85	230.53	3.086	
21,200.00	12,424.81	21,466.10	12,691.84	121.81	122.10	111.87	8,671.89	256.56	711.37	478.51	232.85	3.055	
21,300.00	12,423.96	21,566.10	12,690.98	123.03	123.32	111.87	8,771.88	255.53	711.36	476.17	235.18	3.025	
21,400.00	12,423.10	21,666.10	12,690.12	124.25	124.54	111.87	8,871.87	254.50	711.35	473.83	237.52	2.995	
21,500.00	12,422.25	21,766.10	12,689.27	125.48	125.77	111.87	8,971.86	253.47	711.34	471.48	239.86	2.966	
21,600.00	12,421.40	21,866.10	12,688.41	126.71	126.99	111.87	9,071.85	252.44	711.33	469.13	242.20	2.937	
21,700.00	12,420.55	21,966.10	12,687.56	127.94	128.22	111.87	9,171.84	251.41	711.32	466.78	244.54	2.909	
21,800.00	12,419.70	22,066.10	12,686.70	129.17	129.44	111.87	9,271.83	250.38	711.31	464.42	246.89	2.881	
21,900.00	12,418.85	22,166.10	12,685.85	130.40	130.67	111.87	9,371.83	249.35	711.30	462.06	249.24	2.854	
22,000.00	12,418.00	22,266.10	12,684.99	131.64	131.91	111.87	9,471.82	248.32	711.29	459.70	251.59	2.827	
22,100.00	12,417.15	22,366.10	12,684.14	132.87	133.14	111.87	9,571.81	247.29	711.28	457.33	253.95	2.801	
22,200.00	12,416.30	22,466.10	12,683.28	134.11	134.37	111.87	9,671.80	246.26	711.27	454.96	256.30	2.775	
22,300.00	12,415.45	22,566.10	12,682.43	135.35	135.61	111.87	9,771.79	245.23	711.26	452.59	258.67	2.750	
22,400.00	12,414.59	22,666.10	12,681.57	136.59	136.85	111.87	9,871.78	244.20	711.25	450.22	261.03	2.725	
22,500.00	12,413.74	22,766.10	12,680.72	137.83	138.08	111.87	9,971.77	243.17	711.24	447.84	263.40	2.700	
22,600.00	12,412.89	22,866.10	12,679.86	139.07	139.32	111.87	10,071.76	242.14	711.23	445.46	265.76	2.676	
22,700.00	12,412.04	22,966.10	12,679.01	140.31	140.56	111.87	10,171.75	241.11	711.22	443.08	268.14	2.652	
22,800.00	12,411.19	23,066.10	12,678.15	141.56	141.81	111.87	10,271.74	240.08	711.21	440.70	270.51	2.629	
22,818.23	12,411.03	23,084.26	12,678.00	141.77	142.03	111.87	10,289.91	239.89	711.21	440.29	270.92	2.625	
22,822.29	12,411.00	23,084.26	12,678.00	141.82	142.03	111.87	10,289.91	239.89	711.22	440.27	270.95	2.625	SF

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 511H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	2.00	2.00	1.00	1.00	89.57	0.23	29.97	29.97				
100.00	100.00	102.00	102.00	1.01	1.01	89.57	0.23	29.97	29.97	27.95	2.02	14.851	
200.00	200.00	202.00	202.00	1.11	1.12	89.57	0.23	29.97	29.97	27.74	2.23	13.437	
300.00	300.00	302.00	302.00	1.31	1.32	89.57	0.23	29.97	29.97	27.35	2.63	11.406	
400.00	400.00	402.00	402.00	1.57	1.57	89.57	0.23	29.97	29.97	26.83	3.14	9.544	
500.00	500.00	502.00	502.00	1.86	1.86	89.57	0.23	29.97	29.97	26.25	3.72	8.054	
600.00	600.00	602.00	602.00	2.17	2.17	89.57	0.23	29.97	29.97	25.63	4.34	6.901	
700.00	700.00	702.00	702.00	2.49	2.50	89.57	0.23	29.97	29.97	24.98	4.99	6.006	
800.00	800.00	802.00	802.00	2.82	2.83	89.57	0.23	29.97	29.97	24.32	5.65	5.301	
900.00	900.00	902.00	902.00	3.16	3.17	89.57	0.23	29.97	29.97	23.64	6.33	4.735	
1,000.00	1,000.00	1,002.00	1,002.00	3.50	3.51	89.57	0.23	29.97	29.97	22.96	7.01	4.273	
1,100.00	1,100.00	1,102.00	1,102.00	3.85	3.86	89.57	0.23	29.97	29.97	22.27	7.70	3.890	
1,200.00	1,200.00	1,202.00	1,202.00	4.20	4.20	89.57	0.23	29.97	29.97	21.57	8.40	3.569	
1,300.00	1,300.00	1,302.00	1,302.00	4.54	4.55	89.57	0.23	29.97	29.97	20.88	9.10	3.295	
1,400.00	1,400.00	1,402.00	1,402.00	4.90	4.90	89.57	0.23	29.97	29.97	20.18	9.80	3.059	
1,500.00	1,500.00	1,502.01	1,502.01	5.25	5.25	89.57	0.23	29.97	29.97	19.47	10.50	2.855	
1,502.70	1,502.70	1,504.71	1,504.71	5.26	5.26	-126.55	0.22	29.97	29.97	19.45	10.52	2.850	CC
1,600.00	1,599.99	1,602.27	1,602.26	5.58	5.59	-126.11	-1.06	29.51	30.29	19.12	11.17	2.711	ES
1,700.00	1,699.91	1,702.53	1,702.43	5.91	5.91	-125.01	-4.83	28.18	31.28	19.46	11.81	2.647	
1,800.00	1,799.69	1,802.76	1,802.45	6.24	6.24	-123.40	-11.08	25.97	32.95	20.49	12.47	2.643	
1,900.00	1,899.27	1,902.97	1,902.22	6.57	6.57	-121.43	-19.79	22.88	35.35	22.22	13.13	2.692	
2,000.00	1,998.72	2,002.92	2,001.63	6.91	6.90	-119.63	-29.64	19.39	38.14	24.33	13.80	2.763	
2,100.00	2,098.17	2,102.88	2,101.03	7.25	7.25	-118.08	-39.50	15.90	40.96	26.48	14.48	2.828	
2,200.00	2,197.63	2,202.83	2,200.44	7.60	7.59	-116.72	-49.36	12.41	43.81	28.64	15.17	2.887	
2,300.00	2,297.08	2,302.78	2,299.84	7.95	7.94	-115.54	-59.21	8.92	46.68	30.81	15.87	2.941	
2,400.00	2,396.53	2,402.74	2,399.25	8.30	8.29	-114.49	-69.07	5.42	49.57	32.99	16.58	2.990	
2,500.00	2,495.98	2,502.69	2,498.66	8.66	8.64	-113.56	-78.92	1.93	52.47	35.19	17.29	3.036	
2,600.00	2,595.44	2,602.65	2,598.06	9.01	9.00	-112.72	-88.78	-1.56	55.39	37.39	18.00	3.077	
2,700.00	2,694.89	2,702.60	2,697.47	9.37	9.36	-111.97	-98.64	-5.05	58.32	39.60	18.72	3.115	
2,800.00	2,794.34	2,802.56	2,796.87	9.74	9.72	-111.29	-108.49	-8.54	61.25	41.81	19.44	3.151	
2,900.00	2,893.79	2,902.51	2,896.28	10.10	10.08	-110.68	-118.35	-12.03	64.20	44.03	20.17	3.183	
3,000.00	2,993.25	3,002.47	2,995.69	10.47	10.45	-110.11	-128.20	-15.53	67.15	46.25	20.90	3.213	
3,100.00	3,092.70	3,102.42	3,095.09	10.83	10.81	-109.60	-138.06	-19.02	70.10	48.48	21.63	3.241	
3,200.00	3,192.15	3,202.37	3,194.50	11.20	11.18	-109.12	-147.92	-22.51	73.06	50.70	22.36	3.267	
3,300.00	3,291.60	3,302.33	3,293.90	11.57	11.55	-108.69	-157.77	-26.00	76.03	52.93	23.10	3.292	
3,400.00	3,391.06	3,402.28	3,393.31	11.94	11.92	-108.28	-167.63	-29.49	79.00	55.16	23.84	3.314	
3,500.00	3,490.51	3,502.24	3,492.72	12.31	12.29	-107.91	-177.48	-32.98	81.97	57.40	24.58	3.335	
3,600.00	3,589.96	3,602.19	3,592.12	12.68	12.66	-107.56	-187.34	-36.47	84.95	59.63	25.32	3.355	
3,700.00	3,689.41	3,702.15	3,691.53	13.05	13.03	-107.23	-197.19	-39.97	87.93	61.87	26.06	3.374	
3,800.00	3,788.87	3,802.10	3,790.93	13.43	13.40	-106.93	-207.05	-43.46	90.91	64.11	26.81	3.391	
3,900.00	3,888.32	3,902.05	3,890.34	13.80	13.78	-106.65	-216.91	-46.95	93.90	66.35	27.55	3.408	
4,000.00	3,987.77	4,002.01	3,989.75	14.17	14.15	-106.38	-226.76	-50.44	96.89	68.59	28.30	3.424	
4,100.00	4,087.22	4,101.96	4,089.15	14.55	14.52	-106.13	-236.62	-53.93	99.88	70.83	29.05	3.438	
4,200.00	4,186.68	4,201.93	4,188.63	14.92	14.90	-106.24	-245.90	-57.22	102.86	73.07	29.80	3.452	
4,300.00	4,286.13	4,301.83	4,288.26	15.30	15.26	-107.68	-252.84	-59.68	105.87	75.34	30.53	3.468	
4,400.00	4,385.58	4,401.53	4,387.84	15.67	15.62	-110.41	-257.32	-61.26	109.09	77.83	31.25	3.490	
4,500.00	4,485.03	4,500.88	4,487.16	16.05	15.97	-114.27	-259.34	-61.98	112.86	80.90	31.96	3.532	
4,600.00	4,584.49	4,600.21	4,586.49	16.43	16.30	-118.82	-259.47	-62.03	117.51	84.89	32.63	3.602	
4,700.00	4,684.10	4,699.82	4,686.10	16.80	16.63	-122.47	-259.47	-62.03	121.98	88.69	33.29	3.664	
4,800.00	4,783.91	4,799.63	4,785.91	17.16	16.97	-124.87	-259.47	-62.03	125.38	91.42	33.97	3.691	
4,900.00	4,883.85	4,899.57	4,885.85	17.52	17.30	-126.19	-259.47	-62.03	127.43	92.78	34.64	3.678	
5,000.00	4,983.84	4,999.56	4,985.84	17.86	17.64	89.58	-259.47	-62.03	127.98	92.66	35.32	3.624	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 511H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,083.84	5,099.56	5,085.84	18.19	17.97	89.58	-259.47	-62.03	127.98	91.99	35.99	3.556	
5,200.00	5,183.84	5,199.56	5,185.84	18.52	18.31	89.58	-259.47	-62.03	127.98	91.32	36.66	3.491	
5,300.00	5,283.84	5,299.56	5,285.84	18.86	18.65	89.58	-259.47	-62.03	127.98	90.65	37.33	3.428	
5,400.00	5,383.84	5,399.56	5,385.84	19.19	18.99	89.58	-259.47	-62.03	127.98	89.97	38.00	3.367	
5,500.00	5,483.84	5,499.56	5,485.84	19.52	19.32	89.58	-259.47	-62.03	127.98	89.30	38.68	3.309	
5,600.00	5,583.84	5,599.56	5,585.84	19.86	19.66	89.58	-259.47	-62.03	127.98	88.62	39.36	3.252	
5,700.00	5,683.84	5,699.56	5,685.84	20.20	20.00	89.58	-259.47	-62.03	127.98	87.94	40.03	3.197	
5,800.00	5,783.84	5,799.56	5,785.84	20.53	20.35	89.58	-259.47	-62.03	127.98	87.26	40.71	3.143	
5,900.00	5,883.84	5,899.56	5,885.84	20.87	20.69	89.58	-259.47	-62.03	127.98	86.58	41.40	3.091	
6,000.00	5,983.84	5,999.56	5,985.84	21.21	21.03	89.58	-259.47	-62.03	127.98	85.90	42.08	3.041	
6,100.00	6,083.84	6,099.56	6,085.84	21.55	21.37	89.58	-259.47	-62.03	127.98	85.21	42.76	2.993	
6,200.00	6,183.84	6,199.56	6,185.84	21.89	21.72	89.58	-259.47	-62.03	127.98	84.53	43.45	2.946	
6,300.00	6,283.84	6,299.56	6,285.84	22.23	22.06	89.58	-259.47	-62.03	127.98	83.84	44.13	2.900	
6,400.00	6,383.84	6,399.56	6,385.84	22.57	22.40	89.58	-259.47	-62.03	127.98	83.16	44.82	2.855	
6,500.00	6,483.84	6,499.56	6,485.84	22.91	22.75	89.58	-259.47	-62.03	127.98	82.47	45.51	2.812	
6,600.00	6,583.84	6,599.56	6,585.84	23.25	23.09	89.58	-259.47	-62.03	127.98	81.78	46.19	2.770	
6,700.00	6,683.84	6,699.56	6,685.84	23.60	23.44	89.58	-259.47	-62.03	127.98	81.09	46.88	2.730	
6,800.00	6,783.84	6,799.56	6,785.84	23.94	23.78	89.58	-259.47	-62.03	127.98	80.40	47.57	2.690	
6,900.00	6,883.84	6,899.56	6,885.84	24.28	24.13	89.58	-259.47	-62.03	127.98	79.71	48.26	2.652	
7,000.00	6,983.84	6,999.56	6,985.84	24.63	24.48	89.58	-259.47	-62.03	127.98	79.02	48.96	2.614	
7,100.00	7,083.84	7,099.56	7,085.84	24.97	24.82	89.58	-259.47	-62.03	127.98	78.33	49.65	2.578	
7,200.00	7,183.84	7,199.56	7,185.84	25.32	25.17	89.58	-259.47	-62.03	127.98	77.63	50.34	2.542	
7,300.00	7,283.84	7,299.56	7,285.84	25.66	25.52	89.58	-259.47	-62.03	127.98	76.94	51.03	2.508	
7,400.00	7,383.84	7,399.56	7,385.84	26.01	25.87	89.58	-259.47	-62.03	127.98	76.25	51.73	2.474	
7,500.00	7,483.84	7,499.56	7,485.84	26.35	26.22	89.58	-259.47	-62.03	127.98	75.55	52.42	2.441	
7,600.00	7,583.84	7,599.56	7,585.84	26.70	26.56	89.58	-259.47	-62.03	127.98	74.86	53.12	2.409	
7,700.00	7,683.84	7,699.56	7,685.84	27.04	26.91	89.58	-259.47	-62.03	127.98	74.16	53.82	2.378	
7,800.00	7,783.84	7,799.56	7,785.84	27.39	27.26	89.58	-259.47	-62.03	127.98	73.46	54.51	2.348	
7,900.00	7,883.84	7,899.56	7,885.84	27.74	27.61	89.58	-259.47	-62.03	127.98	72.77	55.21	2.318	
8,000.00	7,983.84	7,999.56	7,985.84	28.09	27.96	89.58	-259.47	-62.03	127.98	72.07	55.91	2.289	
8,100.00	8,083.84	8,099.56	8,085.84	28.43	28.31	89.58	-259.47	-62.03	127.98	71.37	56.61	2.261	
8,200.00	8,183.84	8,199.56	8,185.84	28.78	28.66	89.58	-259.47	-62.03	127.98	70.67	57.30	2.233	
8,300.00	8,283.84	8,299.56	8,285.84	29.13	29.01	89.58	-259.47	-62.03	127.98	69.97	58.00	2.206	
8,400.00	8,383.84	8,399.56	8,385.84	29.48	29.36	89.58	-259.47	-62.03	127.98	69.27	58.70	2.180	
8,500.00	8,483.84	8,499.56	8,485.84	29.83	29.71	89.58	-259.47	-62.03	127.98	68.57	59.40	2.154	
8,600.00	8,583.84	8,599.56	8,585.84	30.17	30.06	89.58	-259.47	-62.03	127.98	67.87	60.10	2.129	
8,700.00	8,683.84	8,699.56	8,685.84	30.52	30.41	89.58	-259.47	-62.03	127.98	67.17	60.80	2.105	
8,800.00	8,783.84	8,799.56	8,785.84	30.87	30.76	89.58	-259.47	-62.03	127.98	66.47	61.50	2.081	
8,900.00	8,883.84	8,899.56	8,885.84	31.22	31.11	89.58	-259.47	-62.03	127.98	65.77	62.21	2.057	
9,000.00	8,983.84	8,999.56	8,985.84	31.57	31.47	89.58	-259.47	-62.03	127.98	65.07	62.91	2.034	
9,100.00	9,083.84	9,099.56	9,085.84	31.92	31.82	89.58	-259.47	-62.03	127.98	64.37	63.61	2.012	
9,200.00	9,183.84	9,199.56	9,185.84	32.27	32.17	89.58	-259.47	-62.03	127.98	63.66	64.31	1.990	
9,300.00	9,283.84	9,299.56	9,285.84	32.62	32.52	89.58	-259.47	-62.03	127.98	62.96	65.01	1.968	
9,400.00	9,383.84	9,399.56	9,385.84	32.97	32.87	89.58	-259.47	-62.03	127.98	62.26	65.72	1.947	
9,500.00	9,483.84	9,499.56	9,485.84	33.32	33.23	89.58	-259.47	-62.03	127.98	61.55	66.42	1.927	
9,600.00	9,583.84	9,599.56	9,585.84	33.67	33.58	89.58	-259.47	-62.03	127.98	60.85	67.12	1.907	
9,700.00	9,683.84	9,699.56	9,685.84	34.03	33.93	89.58	-259.47	-62.03	127.98	60.15	67.83	1.887	
9,800.00	9,783.84	9,799.56	9,785.84	34.38	34.28	89.58	-259.47	-62.03	127.98	59.44	68.53	1.867	
9,900.00	9,883.84	9,899.56	9,885.84	34.73	34.64	89.58	-259.47	-62.03	127.98	58.74	69.24	1.848	
10,000.00	9,983.84	9,999.56	9,985.84	35.08	34.99	89.58	-259.47	-62.03	127.98	58.03	69.94	1.830	
10,100.00	10,083.84	10,099.56	10,085.84	35.43	35.34	89.58	-259.47	-62.03	127.98	57.33	70.65	1.811	
10,200.00	10,183.84	10,199.56	10,185.84	35.78	35.69	89.58	-259.47	-62.03	127.98	56.62	71.35	1.794	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 511H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	10,283.84	10,299.56	10,285.84	36.13	36.05	89.58	-259.47	-62.03	127.98	55.92	72.06	1.776	
10,400.00	10,383.84	10,399.56	10,385.84	36.49	36.40	89.58	-259.47	-62.03	127.98	55.21	72.76	1.759	
10,500.00	10,483.84	10,499.56	10,485.84	36.84	36.75	89.58	-259.47	-62.03	127.98	54.51	73.47	1.742	
10,600.00	10,583.84	10,599.56	10,585.84	37.19	37.11	89.58	-259.47	-62.03	127.98	53.80	74.17	1.725	
10,700.00	10,683.84	10,699.56	10,685.84	37.54	37.46	89.58	-259.47	-62.03	127.98	53.09	74.88	1.709	
10,800.00	10,783.84	10,799.56	10,785.84	37.90	37.81	89.58	-259.47	-62.03	127.98	52.39	75.59	1.693	
10,900.00	10,883.84	10,899.56	10,885.84	38.25	38.17	89.58	-259.47	-62.03	127.98	51.68	76.29	1.677	
11,000.00	10,983.84	10,999.56	10,985.84	38.60	38.52	89.58	-259.47	-62.03	127.98	50.97	77.00	1.662	
11,100.00	11,083.84	11,099.56	11,085.84	38.95	38.88	89.58	-259.47	-62.03	127.98	50.27	77.71	1.647	
11,200.00	11,183.84	11,199.56	11,185.84	39.31	39.23	89.58	-259.47	-62.03	127.98	49.56	78.42	1.632	
11,300.00	11,283.84	11,299.56	11,285.84	39.66	39.58	89.58	-259.47	-62.03	127.98	48.85	79.12	1.617	
11,400.00	11,383.84	11,399.56	11,385.84	40.01	39.94	89.58	-259.47	-62.03	127.98	48.15	79.83	1.603	
11,500.00	11,483.84	11,499.56	11,485.84	40.37	40.29	89.58	-259.47	-62.03	127.98	47.44	80.54	1.589	
11,600.00	11,583.84	11,599.56	11,585.84	40.72	40.65	89.58	-259.47	-62.03	127.98	46.73	81.25	1.575	
11,700.00	11,683.84	11,699.56	11,685.84	41.07	41.00	89.58	-259.47	-62.03	127.98	46.02	81.95	1.562	
11,800.00	11,783.84	11,799.56	11,785.84	41.43	41.35	89.58	-259.47	-62.03	127.98	45.31	82.66	1.548	
11,900.00	11,883.84	11,899.56	11,885.84	41.78	41.71	89.58	-259.47	-62.03	127.98	44.61	83.37	1.535	
11,900.32	11,884.16	11,899.87	11,886.16	41.78	41.71	98.98	-259.47	-62.03	127.98	44.60	83.37	1.535	
12,000.00	11,983.73	11,999.44	11,985.73	42.13	42.06	100.35	-259.47	-62.03	128.52	44.44	84.08	1.529	SF
12,100.00	12,081.74	12,097.45	12,083.74	42.46	42.41	107.87	-259.47	-62.03	133.33	48.54	84.79	1.572	
12,200.00	12,174.93	12,190.64	12,176.93	42.76	42.74	119.10	-259.47	-62.03	148.71	63.25	85.47	1.740	
12,300.00	12,260.46	12,276.17	12,262.46	43.01	43.04	129.71	-259.47	-62.03	181.26	95.21	86.04	2.107	
12,400.00	12,335.74	12,351.45	12,337.74	43.21	43.31	137.02	-259.47	-62.03	232.84	146.33	86.51	2.692	
12,500.00	12,398.47	12,414.19	12,400.47	43.38	43.53	140.34	-259.47	-62.03	301.07	214.21	86.86	3.466	
12,600.00	12,446.77	12,462.48	12,448.77	43.56	43.71	139.16	-259.47	-62.03	382.18	295.07	87.11	4.387	
12,700.00	12,479.14	12,494.86	12,481.14	43.74	43.82	130.89	-259.47	-62.03	472.38	385.12	87.26	5.413	
12,800.00	12,494.62	12,510.34	12,496.62	43.90	43.88	106.66	-259.47	-62.03	568.06	480.74	87.32	6.505	
12,900.00	12,495.46	13,543.66	13,129.01	44.05	46.25	164.12	384.31	-114.22	656.65	595.19	61.46	10.684	
13,000.00	12,494.60	13,637.29	13,127.72	44.24	46.41	163.43	477.83	-118.24	658.50	596.53	61.97	10.627	
13,100.00	12,493.75	13,733.88	13,126.39	44.46	46.60	162.78	574.41	-119.62	660.26	597.74	62.52	10.560	
13,200.00	12,492.89	13,833.76	13,125.02	44.72	46.83	162.37	674.28	-120.65	661.17	598.12	63.05	10.486	
13,300.00	12,492.04	13,933.75	13,123.65	45.00	47.10	162.27	774.25	-121.68	661.05	597.54	63.51	10.409	
13,400.00	12,491.19	14,033.75	13,122.27	45.32	47.41	162.26	874.23	-122.72	660.55	596.58	63.96	10.327	
13,500.00	12,490.34	14,133.75	13,120.90	45.67	47.74	162.25	974.21	-123.75	660.05	595.58	64.46	10.239	
13,600.00	12,489.49	14,233.75	13,119.53	46.06	48.11	162.24	1,074.20	-124.79	659.55	594.54	65.00	10.147	
13,700.00	12,488.64	14,333.75	13,118.15	46.48	48.52	162.22	1,174.18	-125.82	659.04	593.46	65.58	10.049	
13,800.00	12,487.78	14,433.74	13,116.78	46.93	48.95	162.21	1,274.17	-126.86	658.54	592.34	66.20	9.948	
13,900.00	12,486.93	14,533.74	13,115.41	47.41	49.42	162.20	1,374.15	-127.89	658.04	591.19	66.85	9.843	
14,000.00	12,486.08	14,633.74	13,114.03	47.92	49.91	162.18	1,474.13	-128.93	657.54	590.00	67.54	9.735	
14,100.00	12,485.23	14,733.74	13,112.66	48.47	50.44	162.17	1,574.12	-129.96	657.04	588.77	68.27	9.624	
14,200.00	12,484.38	14,833.74	13,111.29	49.04	50.99	162.16	1,674.10	-130.99	656.54	587.51	69.03	9.511	
14,300.00	12,483.53	14,933.74	13,109.91	49.64	51.57	162.15	1,774.09	-132.03	656.04	586.21	69.83	9.395	
14,400.00	12,482.68	15,033.74	13,108.54	50.27	52.18	162.13	1,874.07	-133.06	655.54	584.88	70.65	9.278	
14,500.00	12,481.83	15,133.74	13,107.17	50.92	52.81	162.12	1,974.05	-134.10	655.03	583.53	71.51	9.160	
14,600.00	12,480.98	15,233.73	13,105.79	51.60	53.46	162.11	2,074.04	-135.13	654.53	582.14	72.40	9.041	
14,700.00	12,480.13	15,333.73	13,104.42	52.30	54.14	162.09	2,174.02	-136.17	654.03	580.72	73.31	8.921	
14,800.00	12,479.27	15,433.73	13,103.05	53.03	54.85	162.08	2,274.00	-137.20	653.53	579.28	74.25	8.801	
14,900.00	12,478.42	15,533.73	13,101.67	53.78	55.57	162.07	2,373.99	-138.24	653.03	577.80	75.22	8.681	
15,000.00	12,477.57	15,633.73	13,100.30	54.54	56.32	162.06	2,473.97	-139.27	652.53	576.31	76.22	8.561	
15,100.00	12,476.72	15,733.73	13,098.93	55.33	57.09	162.04	2,573.96	-140.31	652.03	574.79	77.24	8.441	
15,200.00	12,475.87	15,833.73	13,097.55	56.14	57.87	162.03	2,673.94	-141.34	651.53	573.24	78.29	8.322	
15,300.00	12,475.02	15,933.72	13,096.18	56.97	58.68	162.02	2,773.92	-142.37	651.03	571.67	79.35	8.204	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 511H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	12,474.17	16,033.72	13,094.81	57.81	59.50	162.00	2,873.91	-143.41	650.53	570.08	80.44	8.087	
15,500.00	12,473.32	16,133.72	13,093.43	58.67	60.34	161.99	2,973.89	-144.44	650.02	568.47	81.55	7.970	
15,600.00	12,472.47	16,233.72	13,092.06	59.55	61.19	161.98	3,073.88	-145.48	649.52	566.84	82.69	7.855	
15,700.00	12,471.61	16,333.72	13,090.69	60.45	62.07	161.96	3,173.86	-146.51	649.02	565.19	83.84	7.742	
15,800.00	12,470.76	16,433.72	13,089.32	61.36	62.95	161.95	3,273.84	-147.55	648.52	563.52	85.01	7.629	
15,900.00	12,469.91	16,533.72	13,087.94	62.28	63.86	161.94	3,373.83	-148.58	648.02	561.83	86.19	7.518	
16,000.00	12,469.06	16,633.71	13,086.57	63.22	64.77	161.92	3,473.81	-149.62	647.52	560.12	87.40	7.409	
16,100.00	12,468.21	16,733.71	13,085.20	64.17	65.70	161.91	3,573.79	-150.65	647.02	558.40	88.62	7.301	
16,200.00	12,467.36	16,833.71	13,083.82	65.13	66.64	161.90	3,673.78	-151.68	646.52	556.66	89.86	7.195	
16,300.00	12,466.51	16,933.71	13,082.45	66.10	67.60	161.88	3,773.76	-152.72	646.02	554.91	91.11	7.090	
16,400.00	12,465.66	17,033.71	13,081.08	67.09	68.56	161.87	3,873.75	-153.75	645.52	553.14	92.38	6.988	
16,500.00	12,464.81	17,133.71	13,079.70	68.08	69.54	161.86	3,973.73	-154.79	645.02	551.36	93.66	6.887	
16,600.00	12,463.96	17,233.71	13,078.33	69.09	70.53	161.84	4,073.71	-155.82	644.52	549.56	94.96	6.788	
16,700.00	12,463.10	17,333.71	13,076.96	70.11	71.53	161.83	4,173.70	-156.86	644.02	547.75	96.26	6.690	
16,800.00	12,462.25	17,433.70	13,075.58	71.13	72.54	161.82	4,273.68	-157.89	643.52	545.93	97.59	6.594	
16,900.00	12,461.40	17,533.70	13,074.21	72.17	73.55	161.80	4,373.67	-158.93	643.02	544.10	98.92	6.500	
17,000.00	12,460.55	17,633.70	13,072.84	73.21	74.58	161.79	4,473.65	-159.96	642.52	542.25	100.26	6.408	
17,100.00	12,459.70	17,733.70	13,071.46	74.27	75.62	161.78	4,573.63	-160.99	642.02	540.40	101.62	6.318	
17,200.00	12,458.85	17,833.70	13,070.09	75.33	76.66	161.76	4,673.62	-162.03	641.52	538.53	102.99	6.229	
17,300.00	12,458.00	17,933.70	13,068.72	76.40	77.71	161.75	4,773.60	-163.06	641.02	536.65	104.36	6.142	
17,400.00	12,457.15	18,033.70	13,067.34	77.47	78.77	161.74	4,873.59	-164.10	640.52	534.77	105.75	6.057	
17,500.00	12,456.30	18,133.69	13,065.97	78.56	79.84	161.72	4,973.57	-165.13	640.02	532.87	107.15	5.973	
17,600.00	12,455.44	18,233.69	13,064.60	79.65	80.91	161.71	5,073.55	-166.17	639.52	530.96	108.55	5.891	
17,700.00	12,454.59	18,333.69	13,063.22	80.74	82.00	161.70	5,173.54	-167.20	639.02	529.05	109.97	5.811	
17,800.00	12,453.74	18,433.69	13,061.85	81.85	83.08	161.68	5,273.52	-168.24	638.52	527.12	111.39	5.732	
17,900.00	12,452.89	18,533.69	13,060.48	82.96	84.18	161.67	5,373.50	-169.27	638.02	525.19	112.82	5.655	
18,000.00	12,452.04	18,633.69	13,059.10	84.07	85.28	161.66	5,473.49	-170.30	637.52	523.25	114.26	5.579	
18,100.00	12,451.19	18,733.69	13,057.73	85.19	86.38	161.64	5,573.47	-171.34	637.02	521.31	115.71	5.505	
18,200.00	12,450.34	18,833.68	13,056.36	86.32	87.50	161.63	5,673.46	-172.37	636.52	519.35	117.17	5.433	
18,300.00	12,449.49	18,933.68	13,054.98	87.45	88.61	161.61	5,773.44	-173.41	636.02	517.39	118.63	5.361	
18,400.00	12,448.64	19,033.68	13,053.61	88.58	89.73	161.60	5,873.42	-174.44	635.52	515.42	120.10	5.292	
18,500.00	12,447.79	19,133.68	13,052.24	89.72	90.86	161.59	5,973.41	-175.48	635.02	513.44	121.57	5.223	
18,600.00	12,446.93	19,233.68	13,050.86	90.87	91.99	161.57	6,073.39	-176.51	634.52	511.46	123.06	5.156	
18,700.00	12,446.08	19,333.68	13,049.49	92.02	93.13	161.56	6,173.38	-177.55	634.02	509.47	124.54	5.091	
18,800.00	12,445.23	19,433.68	13,048.12	93.17	94.27	161.55	6,273.36	-178.58	633.52	507.48	126.04	5.026	
18,900.00	12,444.38	19,533.68	13,046.74	94.33	95.42	161.53	6,373.34	-179.61	633.02	505.48	127.54	4.963	
19,000.00	12,443.53	19,633.67	13,045.37	95.49	96.57	161.52	6,473.33	-180.65	632.52	503.47	129.05	4.901	
19,100.00	12,442.68	19,733.67	13,044.00	96.65	97.72	161.50	6,573.31	-181.68	632.02	501.46	130.56	4.841	
19,200.00	12,441.83	19,833.67	13,042.62	97.82	98.88	161.49	6,673.29	-182.72	631.52	499.44	132.07	4.782	
19,300.00	12,440.98	19,933.67	13,041.25	99.00	100.04	161.48	6,773.28	-183.75	631.02	497.42	133.60	4.723	
19,400.00	12,440.13	20,033.67	13,039.88	100.17	101.21	161.46	6,873.26	-184.79	630.52	495.40	135.12	4.666	
19,500.00	12,439.27	20,133.67	13,038.50	101.35	102.37	161.45	6,973.25	-185.82	630.02	493.36	136.66	4.610	
19,600.00	12,438.42	20,233.67	13,037.13	102.53	103.55	161.43	7,073.23	-186.86	629.52	491.33	138.19	4.555	
19,700.00	12,437.57	20,333.66	13,035.76	103.72	104.72	161.42	7,173.21	-187.89	629.02	489.29	139.74	4.502	
19,800.00	12,436.72	20,433.66	13,034.39	104.91	105.90	161.41	7,273.20	-188.93	628.52	487.24	141.28	4.449	
19,900.00	12,435.87	20,533.66	13,033.01	106.10	107.08	161.39	7,373.18	-189.96	628.02	485.19	142.83	4.397	
20,000.00	12,435.02	20,633.66	13,031.64	107.29	108.27	161.38	7,473.17	-190.99	627.53	483.14	144.39	4.346	
20,100.00	12,434.17	20,733.66	13,030.27	108.49	109.45	161.36	7,573.15	-192.03	627.03	481.08	145.94	4.296	
20,200.00	12,433.32	20,833.66	13,028.89	109.69	110.64	161.35	7,673.13	-193.06	626.53	479.02	147.51	4.247	
20,300.00	12,432.47	20,933.66	13,027.52	110.89	111.84	161.34	7,773.12	-194.10	626.03	476.95	149.07	4.199	
20,400.00	12,431.62	21,033.65	13,026.15	112.09	113.03	161.32	7,873.10	-195.13	625.53	474.88	150.64	4.152	
20,500.00	12,430.76	21,133.65	13,024.77	113.30	114.23	161.31	7,973.08	-196.17	625.03	472.81	152.22	4.106	

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

PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Offset Design Love Shack Fed Com - 511H - OH - Plan 1 01-14-20 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM+MS — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,600.00	12,429.91	21,233.65	13,023.40	114.51	115.43	161.29	8,073.07	-197.20	624.53	470.74	153.79	4.061	
20,700.00	12,429.06	21,333.65	13,022.03	115.72	116.63	161.28	8,173.05	-198.24	624.03	468.66	155.38	4.016	
20,800.00	12,428.21	21,433.65	13,020.65	116.93	117.84	161.27	8,273.04	-199.27	623.53	466.57	156.96	3.973	
20,900.00	12,427.36	21,533.65	13,019.28	118.15	119.04	161.25	8,373.02	-200.30	623.03	464.49	158.55	3.930	
21,000.00	12,426.51	21,633.65	13,017.91	119.37	120.25	161.24	8,473.00	-201.34	622.54	462.40	160.14	3.887	
21,100.00	12,425.66	21,733.65	13,016.53	120.59	121.46	161.22	8,572.99	-202.37	622.04	460.30	161.73	3.846	
21,200.00	12,424.81	21,833.64	13,015.16	121.81	122.68	161.21	8,672.97	-203.41	621.54	458.21	163.33	3.805	
21,300.00	12,423.96	21,933.64	13,013.79	123.03	123.89	161.19	8,772.96	-204.44	621.04	456.11	164.93	3.766	
21,400.00	12,423.10	22,033.64	13,012.41	124.25	125.11	161.18	8,872.94	-205.48	620.54	454.01	166.53	3.726	
21,500.00	12,422.25	22,133.64	13,011.04	125.48	126.33	161.17	8,972.92	-206.51	620.04	451.91	168.14	3.688	
21,600.00	12,421.40	22,233.64	13,009.67	126.71	127.55	161.15	9,072.91	-207.55	619.54	449.80	169.74	3.650	
21,700.00	12,420.55	22,333.64	13,008.29	127.94	128.77	161.14	9,172.89	-208.58	619.04	447.69	171.36	3.613	
21,800.00	12,419.70	22,433.64	13,006.92	129.17	130.00	161.12	9,272.87	-209.61	618.55	445.58	172.97	3.576	
21,900.00	12,418.85	22,533.63	13,005.55	130.40	131.22	161.11	9,372.86	-210.65	618.05	443.46	174.59	3.540	
22,000.00	12,418.00	22,633.63	13,004.17	131.64	132.45	161.09	9,472.84	-211.68	617.55	441.35	176.20	3.505	
22,100.00	12,417.15	22,733.63	13,002.80	132.87	133.68	161.08	9,572.83	-212.72	617.05	439.23	177.83	3.470	
22,200.00	12,416.30	22,833.63	13,001.43	134.11	134.91	161.06	9,672.81	-213.75	616.55	437.10	179.45	3.436	
22,300.00	12,415.45	22,933.63	13,000.05	135.35	136.14	161.05	9,772.79	-214.79	616.05	434.98	181.08	3.402	
22,400.00	12,414.59	23,033.63	12,998.68	136.59	137.38	161.03	9,872.78	-215.82	615.56	432.85	182.70	3.369	
22,500.00	12,413.74	23,133.63	12,997.31	137.83	138.61	161.02	9,972.76	-216.86	615.06	430.72	184.33	3.337	
22,600.00	12,412.89	23,233.62	12,995.93	139.07	139.85	161.01	10,072.75	-217.89	614.56	428.59	185.97	3.305	
22,700.00	12,412.04	23,333.62	12,994.56	140.31	141.09	160.99	10,172.73	-218.92	614.06	426.46	187.60	3.273	
22,800.00	12,411.19	23,433.62	12,993.19	141.56	142.32	160.98	10,272.71	-219.96	613.56	424.33	189.24	3.242	
22,816.68	12,411.05	23,447.25	12,993.00	141.75	142.49	160.97	10,286.34	-220.10	613.49	424.13	189.36	3.240	
22,822.29	12,411.00	23,447.25	12,993.00	141.82	142.49	160.97	10,286.34	-220.10	613.51	424.24	189.27	3.241	

PHOENIX TECHNOLOGY SERVICES

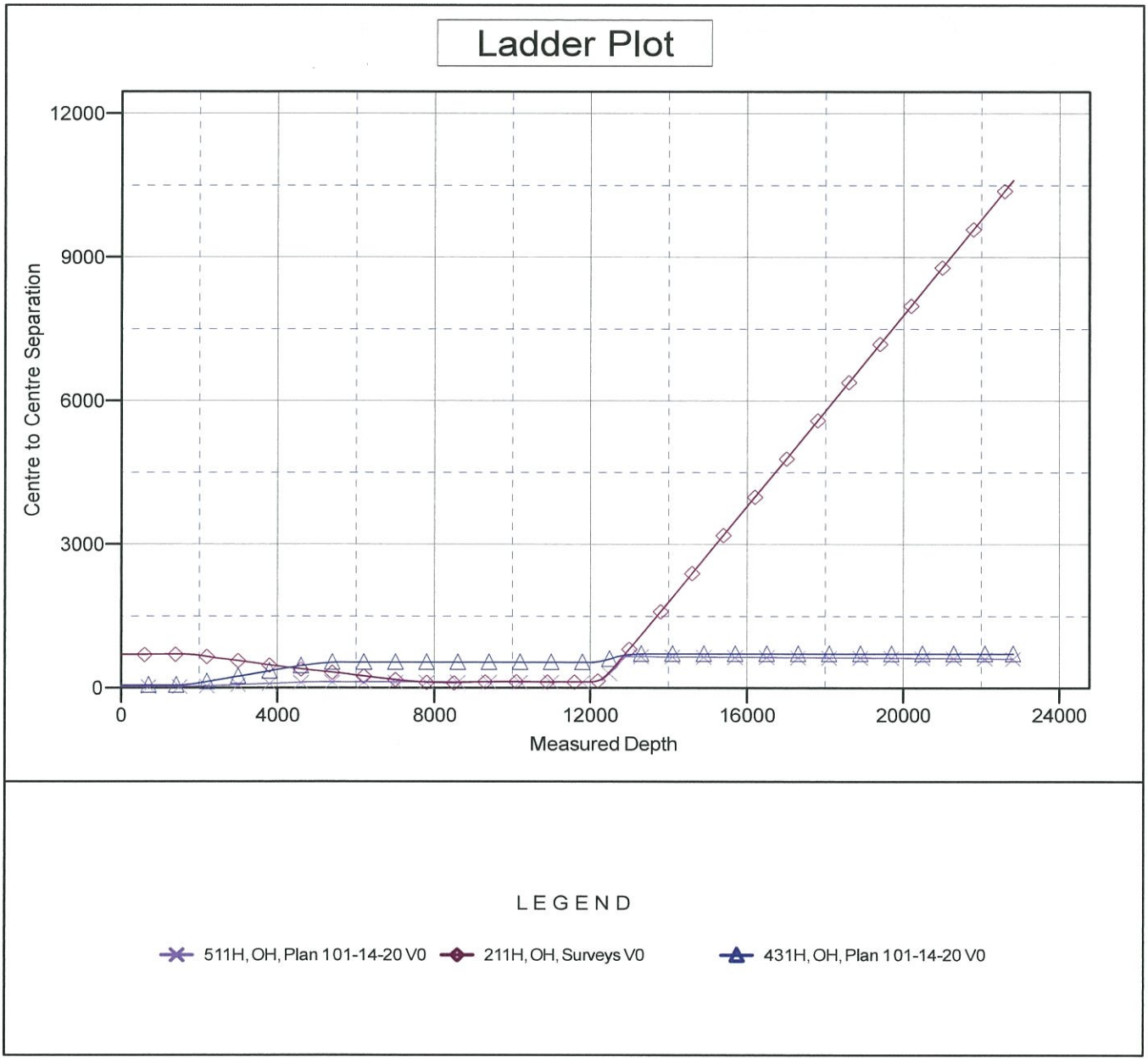
Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3228.50usft (Est KB)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W

Coordinates are relative to: 321H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.50°



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

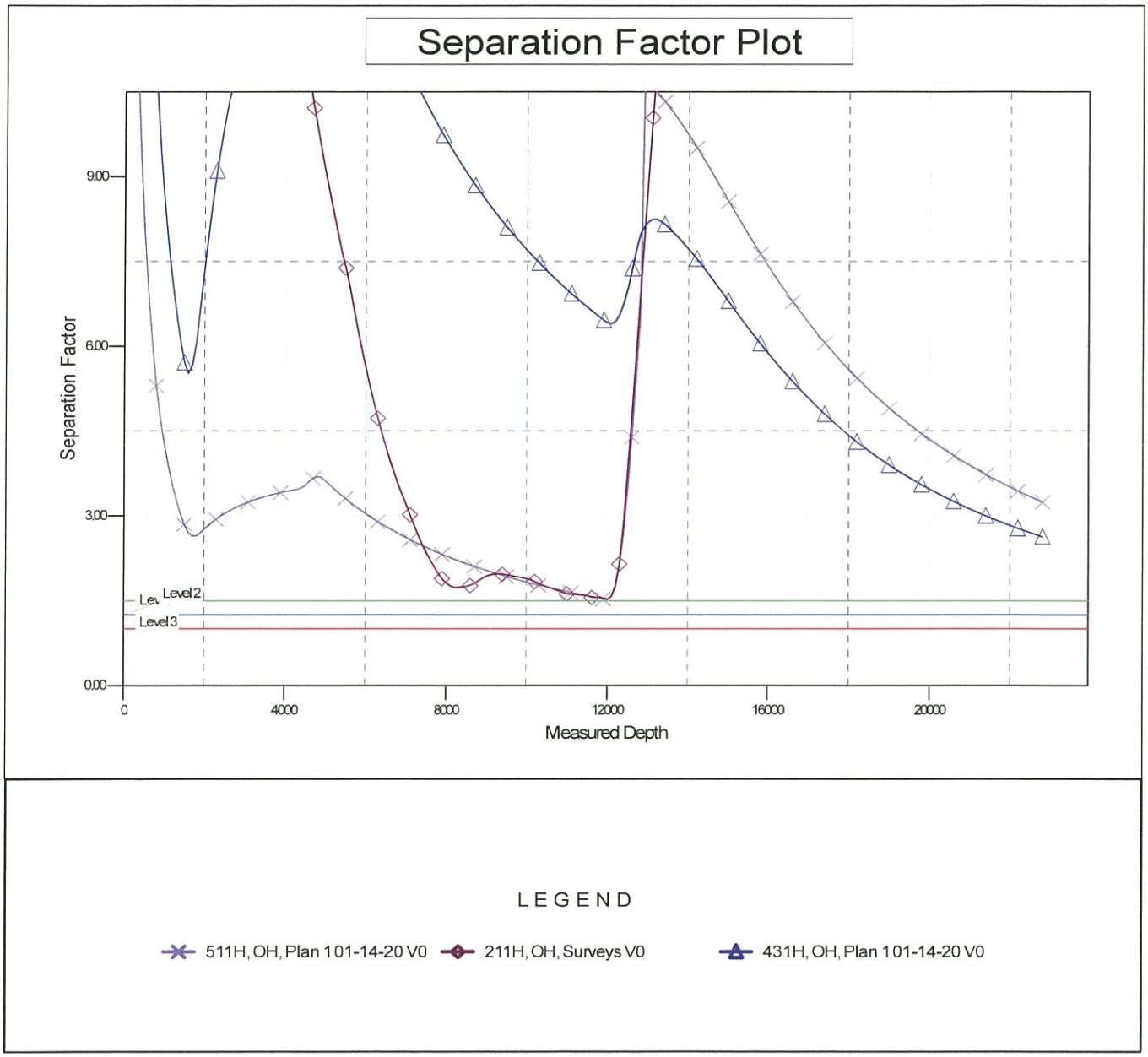
PHOENIX TECHNOLOGY SERVICES

Anticollision Report

TITUS OIL GAS LLC

Company:	Titus Oil & Gas Production, LLC	**Local Co-ordinate Reference:**	Well 321H
Project:	Lea County, NM - (NAD83 NME)	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Reference Site:	Love Shack Fed Com	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA Compass
Reference Design:	Plan 1 01-14-20	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3228.50usft (Est KB)	Coordinates are relative to: 321H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 19' 60.000000 W	Grid Convergence at Surface is: 0.50°



1. Component and Preventer Compatibility Table

The table below covers drilling and casing of the 10M MASP portion of the well and outlines the tubulars and the compatible preventers in use. Combined with the mud program, the below documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Component	OD	Preventer	RWP
Drill pipe	4.5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
HWDP	4.5"		
Jars	4.5"		
Drill collars and MWD tools	4.75-5.75"		
Mud Motor	4.75-5.75"		
Production casing	5.5" x 5"		
ALL	0 - 13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram with compatible range listed in chart.

2. Well Control and Shut-In Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are minimum tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The maximum pressure at which well control is transferred from the annular to another compatible ram is 2500 psi.

Drilling:

1. Sound the alarm (alert rig crew)
2. Space out the drill string
3. Shut down pumps and stop the rotary
4. Shut-in the well with the annular with HCR and choke in closed position
5. Confirm the well is shut-in
6. Notify contractor and company representatives
7. Read and record the following data
   - Time of shut-in
   - SIDPP and SICP
   - Pit gain
8. If pressure has increased to or is anticipated to increase to 2500 psi, confirm spacing and close the upper pipe rams.
9. Prepare for well kill operation.

Tripping:

1. Sound alarm (alert rig crew)
2. Stab full opening safety valve and close the valve
3. Space out the drill string
4. Shut-in the well with the annular with HCR and choke in closed position
5. Confirm shut-in
6. Notify contractor and company representatives
7. Read and record the following data:

- Time of shut-in
- SIDPP and SICP
- Pit gain

8. If pressure has increased to or is anticipated to increase to 2500 psi, confirm spacing and close the upper pipe rams.
9. Prepare for well kill operation.

Running Casing

1. Sound alarm (alert rig crew)
2. Stab crossover and valve and close the valve
3. Shut-in the well with annular with HCR and choke in closed position
4. Confirm shut-in
5. Notify contractor and company representatives
6. Read and record the following data
   - Time of shut-in
   - SIDPP and SICP
   - Pit gain
7. If pressure has increased to or is anticipated to increase to 2500 psi, confirm spacing and close the upper pipe rams.
8. Prepare for well kill operation

No Pipe in Hole (Open Hole)

1. Well will be shut in with blind rams and choke in closed position, while HCR is open at any point when pipe or BHA are not in BOP stack. If pressure increase is observed:
2. Sound alarm (alert crew)
3. Confirm shut-in
4. Notify contractor and company representatives
5. Read and record the following data
   - Time of shut-in
   - Time of pressure increase
   - SICP
6. Prepare for well kill operation

Pulling BHA through BOP Stack

1. Prior to pulling last joint/stand of drillpipe through the stack, perform a flow check. If well is flowing:
   a. Sound alarm (alert crew)
   b. Stab full opening safety valve and close the valve
   c. Space out the drill string
   d. Shut-in the well with the annular with HCR and choke in closed position
   e. Confirm shut-in
   f. Notify contractor and company representatives
   g. Read and record the following data
      - Time of shut-in
      - SIDPP and SICP
      - Pit gain
   h. If pressure has increased to or is anticipated to increase to 2500 psi, confirm spacing and close the upper pipe rams.
   i. Prepare for well kill operation.

2. With BHA in the stack:
    a. If possible to pick up high enough, pull BHA clear of the stack
        i. Follow "Open Hole" procedure above
    b. If impossible to pick up high enough to pull BHA clear of the stack:
        i. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
        ii. Space out drill string with tooljoint just beneath the upper pipe ram.
        iii. Shut-in the well with upper pipe ram with HCR and choke in closed position
        iv. Confirm shut-in
        v. Notify contractor and company representatives
        vi. Read and record the following:
            - Time of shut-in
            - SIDPP and SICP
            - Pit gain
        vii. Prepare for well kill operation.

3. Well Control Drills

Well control drills are specific to the rig equipment, personnel and operation at the time a kick occurs. Each crew will execute one drill weekly relevant to ongoing operations, but will make a reasonable attempt to vary the type of drills. The drills will be recorded in the daily drilling log. Below are minimum tasks for respective well control drills.

Drilling/Pit:

Action	Responsible Party
Initiate Drill • Lift Flow Sensor or Pit Float to indicate a kick • Immediately record start time	Company Representative / Rig Manager
Recognition • Driller and/or Crew recognizes indicator • Driller stop drilling, pick up off bottom and spaces out drill string, stop pumps and rotary • Conduct flow check	Driller
Initiate Action • Sound alarm, notify rig crew that the well is flowing	Company Representative / Rig Manager
Reaction • Driller moves BOP remote and stands by • Crew is at their assigned stations • Time is stopped • Record time and drill type in the Drilling Report	Driller / Crew

Tripping Pit Drills (either in the hole or out of the hole)

Action	Responsible Party
Initiate Drill • Lift Flow Sensor or Pit Float to indicate a kick • Immediately record start time	Company Representative / Rig Manager
Recognition • Driller recognizes indicator • Suspends tripping operations • Conduct Flow Check	Driller
Initiate Action • Sound alarm, notify rig crew that the well is flowing	Company Representative / Rig Manager
Reaction • Position tool joint above rotary and set slips • Stab FOSV and close valve • Driller moves to BOP remote and stands by • Crew is at their assigned stations • Time is stopped • Record time and drill type in the Drilling Report	Driller / Crew

Choke

Action	Responsible Party
• Have designated choke operator on station at the choke panel • Close annular preventer • Pressure annulus up 200-300 psi • Pump slowly to bump the float and obtain SIDPP • At choke operator instruction, slowly bring pumps online to slow pump rate while holding casing pressure constant at the SICP. • Allow time for the well to stabilize. Mark and record circulating drillpipe pressure. • Measure time lag on drillpipe gauge after choke adjustments. • Hold casing pressure constant as pumps are slowed down while choke is closed. • Record time and drill type in the Drilling Report	Company Man / Rig Manager & Rig Crew

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 10/26/2020

☐ Original Operator & OGRID No.: 373986

☒ Amended - Reason for Amendment: Added Love Shack Fed Com 111H well

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 – El Campeon CTB 17S

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
Love Shack Fed Com 321H	30-025-48402	Sec 17, T26S, R35E	269' FSL & 644' FWL			El Campeon CTB 17S will be utilized
Love Shack Fed Com 431H		Sec 17, T26S, R35E	269' FSL & 704' FWL			El Campeon CTB 17S will be utilized
Love Shack Fed Com 511H		Sec 17, T26S, R35E	269' FSL & 674' FWL			El Campeon CTB 17S will be utilized
Love Shack Fed Com 111H		Sec 17, T26S, R35E	269' FSL & 614' FWL			El Campeon CTB 17S will be utilized
Lonesome Dove Fed Com 032H		Sec 17, T26S, R35E	1818' FSL & 1990' FWL			El Campeon CTB 17S will be utilized
Lonesome Dove Fed Com 112H		Sec 17, T26S, R35E	1818' FSL & 2020' FWL			El Campeon CTB 17S will be utilized
Lonesome Dove Fed Com 122H		Sec 17, T26S, R35E	1818' FSL & 2050' FWL			El Campeon CTB 17S will be utilized
Lonesome Dove Fed Com 322H		Sec 17, T26S, R35E	1592' FSL & 1990' FWL			El Campeon CTB 17S will be utilized
Lonesome Dove Fed Com 432H		Sec 17, T26S, R35E	1592' FSL & 2050' FWL			El Campeon CTB 17S will be utilized
Lonesome Dove Fed Com 512H		Sec 17, T26S, R35E	1592' FSL & 2020' FWL			El Campeon CTB 17S will be utilized

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, where a gas transporter system is in place. The gas produced from production facility is dedicated to Lucid and is connected to a Lucid low pressure gathering system located in Lea County, New Mexico. Titus provides (periodically) to Lucid a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Titus and Lucid have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at a Lucid's Red Hills Plant located in Sec 13, T24S, R33E near Jal, NM. 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. 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 well(s) start flowing through the production facilities, unless there are operational issues on Lucid's system at that time. Based on current information, it is Titus'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 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

Titus Oil & Gas Production, LLC - Loveshack Fed Com 321H

1. Geologic Formations

TVD of target	12,411' EOL	Pilot hole depth	NA
MD at TD:	22,822'	Deepest expected fresh water:	250'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1035	Water	
Top of Salt	1542	Salt	
Base of Salt	5034	Salt	
Lamar	5340	Salt Water	
Delaware	5375	Salt Water	
Bone Spring Lime	9241	Oil/Gas	
1st Bone Spring	10474	Oil/Gas	
2nd Bone Spring	11028	Oil/Gas	
3rd Bone Spring	12118	Target Oil/Gas	
Wolfcamp	12497	Not Penetrated	
Wolfcamp X Sand	12549	Not Penetrated	
Wolfcamp Y Sand	12613	Not Penetrated	
Wolfcamp A	12645	Not Penetrated	
Wolfcamp B	12959	Not Penetrated	

2. Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
13.5"	0	1060	10.75"	45.5	J55	BTC	4.31	0.82	14.82
9.875"	0	11800	7.625"	29.7	L80HP	BTC	1.13	1.18	2.07
6.75"	0	11300	5.5"	23	P110	BTC	1.67	1.69	3.26
6.75"	11300	22,822	5"	18	P110	BTC	1.67	1.69	3.26
			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.

Variance requested to waive minimum SF for surface casing burst. Surface SF Burst > 0.7 frac gradient at the shoe. Casing burst is stronger than the next intervals formation FG.

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 500’ 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 - Loveshack Fed Com 321H

	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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Titus Oil & Gas Production, LLC - Loveshack Fed Com 321H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	440	13.5	1.75	9	8	Lead: Class C + 4% Gel + 1% CaCl2
	250	14.8	1.34	6.34	4	Tail: Class C + 2% CaCl2
Inter.	1450	10.3	3.6	21.48	16	TXI Lightwieght Blend
	250	15	1.27	5.7	4	Tail: 85:15 Class H
Prod	380	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	1330	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	50%
Production	11,300'	35% OH in Lateral (KOP to EOL)

Titus Oil & Gas Production, LLC - Loveshack Fed Com 321H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

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		3M
			Pipe Ram		
			Double Ram		
			Other*		
6-3/4"	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			VBR Ram	x	
			VBR Ram	x	
			Other*		

See attached 5M Annular Variance Well Control plan for TItus Oil & Gas Production, LLC.

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.
	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?
N	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.

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	9-5/8" Int shoe	Nova N-Gauge	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	10 - 13.5	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.

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 13.5 ppg may be utilized.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

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.
Y	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 - Loveshack Fed Com 321H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7425 psi at 12411' TVD
Abnormal Temperature	NO 180 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

Project: Lea County, NM - (NAD83 NME)
Site: Love Shack Fed Com
Well: 321H
Wellbore: OH
Design: Plan 1 01-14-20
Rig: Est KB

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T G M

Azimuths to Grid North
True North: -0.50°
Magnetic North: 6.00°

Magnetic Field
Strength: 47590.4snT
Dip Angle: 59.65°
Date: 2/29/2020
Model: MVHD

RKB @ 3228.50usft (Est KB)
Ground Level: 3202.00

WELL DETAILS

Ground Level: 3202.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	378382.76	831824.61	32° 2' 12.439032 N	103° 23' 45.189564 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - Love Shack Fed Com 321H	12411.00	10284.97	-420.09	388667.73	831404.52	32° 3' 54.244980 N	103° 23' 49.033284 W
LTP - Love Shack Fed Com 321H	12411.00	10194.97	-419.15	388577.74	831405.46	32° 3' 53.354376 N	103° 23' 49.031340 W
FTP - Love Shack Fed Com 321H	12501.00	-171.33	-312.35	378211.44	831512.26	32° 2' 10.770576 N	103° 23' 48.835248 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00		KOP, Begin 1.50°/100' Build
3	1899.90	6.00	216.12	1899.17	-16.89	-12.33	1.50	216.12	-16.77		Hold 6.00° Inc at 230.00° Azm
4	4584.26	6.00	216.12	4568.83	-243.51	-177.67	0.00	0.00	-241.66		Begin 1.50°/100' Drop
5	4984.16	0.00	0.00	4968.00	-260.40	-190.00	1.50	180.00	-258.43		Begin Vertical Hold
6	11939.16	0.00	0.00	11923.00	-260.40	-190.00	0.00	0.00	-258.43		KOP2, Begin 10.00°/100' Build
7	12844.06	90.49	350.60	12495.94	309.70	-284.38	10.00	350.60	312.61		LP, Hold 90.49° Inc, Begin 2.00°/100' Turn
8	13284.78	90.49	359.41	12492.17	748.30	-322.69	2.00	89.98	751.59		Hold 359.41° Azm
9	22822.29	90.49	359.41	12411.00	10284.97	-420.09	0.00	0.00	10288.75	BHL - Love Shack Fed Com 321H	TD at 22822.29

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

Local Origin: Well 321H, Grid North

Latitude: 32° 2' 12.439032 N
Longitude: 103° 23' 45.189564 W

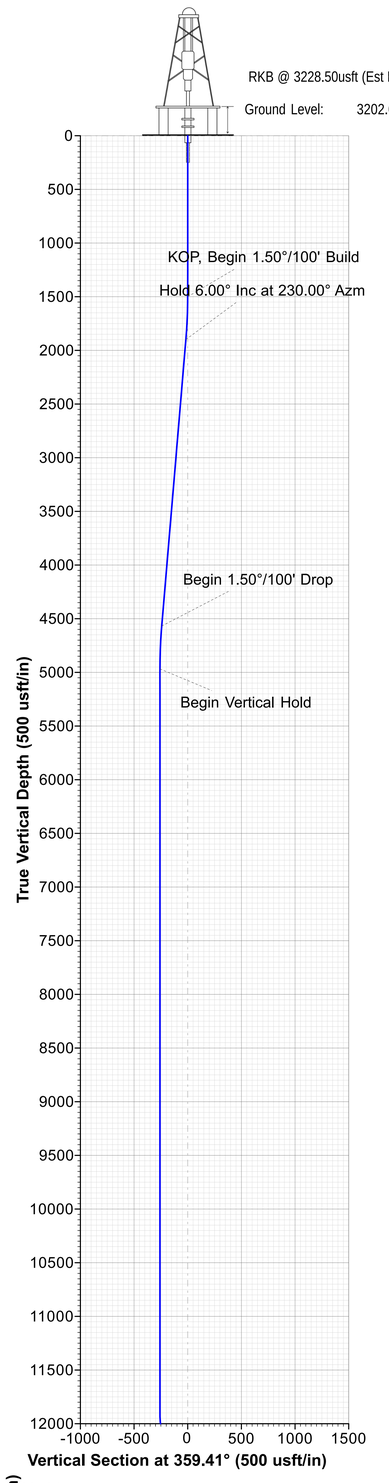
Grid East: 831824.61
Grid North: 378382.76
Scale Factor: 1.000

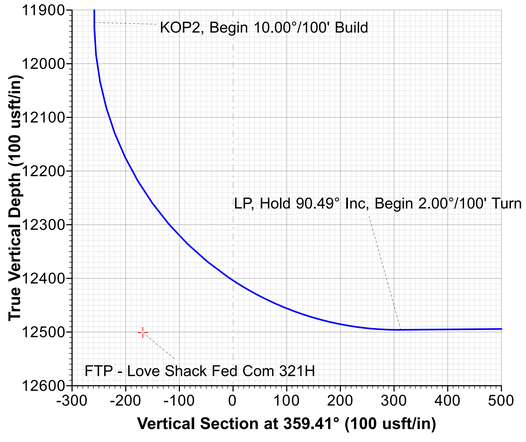
Geomagnetic Model: MVHD
Sample Date: 29-Feb-20
Magnetic Declination: 6.49°
Dip Angle from Horizontal: 59.65°
Magnetic Field Strength: 47590.38390379nT

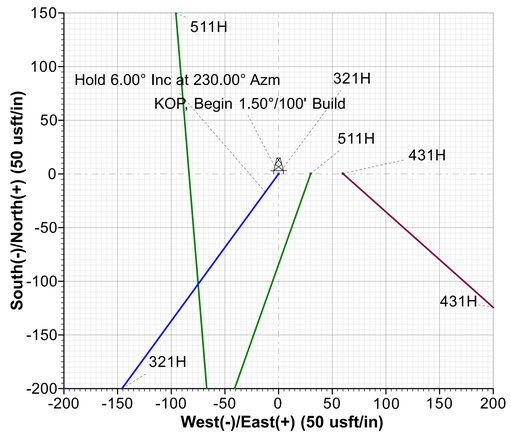
To convert a Magnetic Direction to a Grid Direction, Add 6.00°
To convert a Magnetic Direction to a True Direction, Add 6.49° East
To convert a True Direction to a Grid Direction, Subtract 0.50°

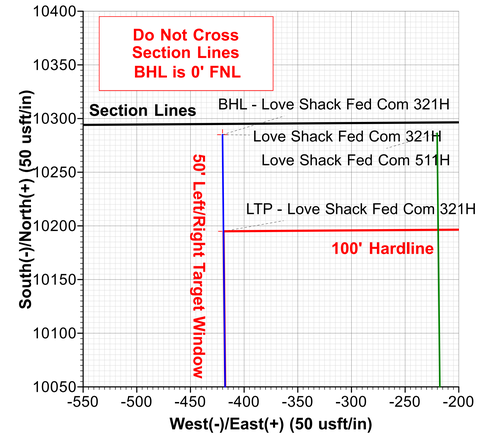
LEGEND

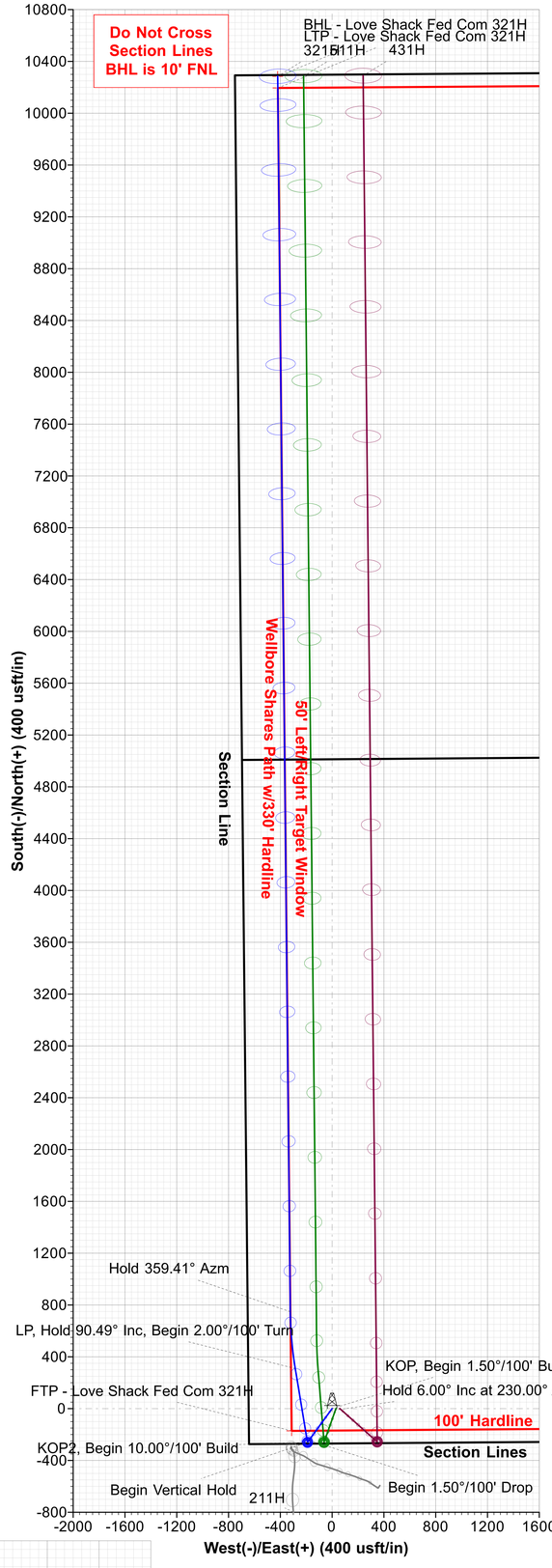
- 511H, OH, Plan 1 01-14-20 V0
- 211H, OH, Surveys V0
- 431H, OH, Plan 1 01-14-20 V0
- Plan 1 01-14-20

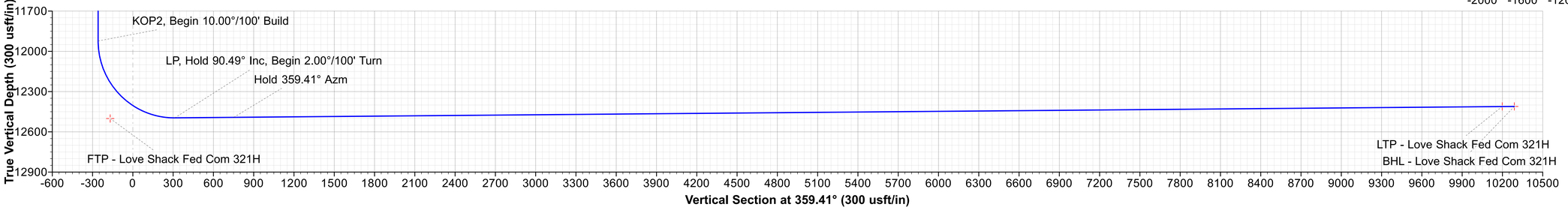












Date: 13:58, January 14 2020

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Titus Oil & Gas Production, LLC

Lea County, NM - (NAD83 NME)
Love Shack Fed Com
321H

OH

Plan: Plan 1 01-14-20

Standard Planning Report

14 January, 2020

TITUS OIL GAS LLC

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 321H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site:	Love Shack Fed Com	**North Reference:**	Grid
Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-14-20		

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 Love Shack Fed Com

Site Position:		**Northing:**	378,382.76 usft	**Latitude:**	32° 2' 12.439032 N
From:	Map	**Easting:**	831,824.61 usft	**Longitude:**	103° 23' 45.189564 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.50 °

Well 321H

Well Position	**+N/-S**	0.00 usft	**Northing:**	378,382.76 usft	**Latitude:**	32° 2' 12.439032 N
	+E/-W	0.00 usft	**Easting:**	831,824.61 usft	**Longitude:**	103° 23' 45.189564 W
Position Uncertainty		1.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,202.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	2/29/2020	6.49	59.65	47,590.38390379

Design Plan 1 01-14-20

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.41

Plan Survey Tool Program **Date** 1/14/2020

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,821.82	Plan 1 01-14-20 (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	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,899.90	6.00	216.12	1,899.17	-16.89	-12.33	1.50	1.50	0.00	216.12	
4,584.26	6.00	216.12	4,568.83	-243.51	-177.67	0.00	0.00	0.00	0.00	
4,984.16	0.00	0.00	4,968.00	-260.40	-190.00	1.50	-1.50	0.00	180.00	
11,939.16	0.00	0.00	11,923.00	-260.40	-190.00	0.00	0.00	0.00	0.00	
12,844.06	90.49	350.60	12,495.94	309.70	-284.38	10.00	10.00	0.00	350.60	
13,284.78	90.49	359.41	12,492.17	748.30	-322.69	2.00	0.00	2.00	89.98	
22,822.29	90.49	359.41	12,411.00	10,284.97	-420.09	0.00	0.00	0.00	0.00	BHL - Love Shack F

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 321H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site:	Love Shack Fed Com	**North Reference:**	Grid
Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-14-20		

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
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 1.50°/100' Build									
1,600.00	1.50	216.12	1,599.99	-1.06	-0.77	-1.05	1.50	1.50	0.00
1,700.00	3.00	216.12	1,699.91	-4.23	-3.09	-4.20	1.50	1.50	0.00
1,800.00	4.50	216.12	1,799.69	-9.51	-6.94	-9.44	1.50	1.50	0.00
1,899.90	6.00	216.12	1,899.17	-16.90	-12.33	-16.77	1.50	1.50	0.00
Hold 6.00° Inc at 230.00° Azm									
1,900.00	6.00	216.12	1,899.27	-16.90	-12.33	-16.78	0.00	0.00	0.00
2,000.00	6.00	216.12	1,998.72	-25.35	-18.49	-25.15	0.00	0.00	0.00
2,100.00	6.00	216.12	2,098.17	-33.79	-24.65	-33.53	0.00	0.00	0.00
2,200.00	6.00	216.12	2,197.63	-42.23	-30.81	-41.91	0.00	0.00	0.00
2,300.00	6.00	216.12	2,297.08	-50.67	-36.97	-50.29	0.00	0.00	0.00
2,400.00	6.00	216.12	2,396.53	-59.11	-43.13	-58.67	0.00	0.00	0.00
2,500.00	6.00	216.12	2,495.98	-67.55	-49.29	-67.04	0.00	0.00	0.00
2,600.00	6.00	216.12	2,595.44	-76.00	-55.45	-75.42	0.00	0.00	0.00
2,700.00	6.00	216.12	2,694.89	-84.44	-61.61	-83.80	0.00	0.00	0.00
2,800.00	6.00	216.12	2,794.34	-92.88	-67.77	-92.18	0.00	0.00	0.00
2,900.00	6.00	216.12	2,893.79	-101.32	-73.93	-100.56	0.00	0.00	0.00
3,000.00	6.00	216.12	2,993.25	-109.76	-80.09	-108.93	0.00	0.00	0.00
3,100.00	6.00	216.12	3,092.70	-118.21	-86.25	-117.31	0.00	0.00	0.00
3,200.00	6.00	216.12	3,192.15	-126.65	-92.41	-125.69	0.00	0.00	0.00
3,300.00	6.00	216.12	3,291.60	-135.09	-98.57	-134.07	0.00	0.00	0.00
3,400.00	6.00	216.12	3,391.06	-143.53	-104.73	-142.45	0.00	0.00	0.00
3,500.00	6.00	216.12	3,490.51	-151.97	-110.89	-150.82	0.00	0.00	0.00
3,600.00	6.00	216.12	3,589.96	-160.42	-117.05	-159.20	0.00	0.00	0.00
3,700.00	6.00	216.12	3,689.41	-168.86	-123.21	-167.58	0.00	0.00	0.00
3,800.00	6.00	216.12	3,788.87	-177.30	-129.37	-175.96	0.00	0.00	0.00
3,900.00	6.00	216.12	3,888.32	-185.74	-135.53	-184.34	0.00	0.00	0.00
4,000.00	6.00	216.12	3,987.77	-194.18	-141.68	-192.71	0.00	0.00	0.00
4,100.00	6.00	216.12	4,087.22	-202.62	-147.84	-201.09	0.00	0.00	0.00
4,200.00	6.00	216.12	4,186.68	-211.07	-154.00	-209.47	0.00	0.00	0.00
4,300.00	6.00	216.12	4,286.13	-219.51	-160.16	-217.85	0.00	0.00	0.00
4,400.00	6.00	216.12	4,385.58	-227.95	-166.32	-226.23	0.00	0.00	0.00
4,500.00	6.00	216.12	4,485.03	-236.39	-172.48	-234.60	0.00	0.00	0.00
4,584.26	6.00	216.12	4,568.83	-243.51	-177.67	-241.66	0.00	0.00	0.00
Begin 1.50°/100' Drop									
4,600.00	5.76	216.12	4,584.49	-244.81	-178.62	-242.96	1.50	-1.50	0.00
4,700.00	4.26	216.12	4,684.10	-251.87	-183.77	-249.96	1.50	-1.50	0.00
4,800.00	2.76	216.12	4,783.91	-256.81	-187.38	-254.87	1.50	-1.50	0.00
4,900.00	1.26	216.12	4,883.85	-259.65	-189.45	-257.69	1.50	-1.50	0.00
4,984.16	0.00	0.00	4,968.00	-260.40	-190.00	-258.43	1.50	-1.50	0.00
Begin Vertical Hold									
11,939.16	0.00	0.00	11,923.00	-260.40	-190.00	-258.43	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
12,000.00	6.08	350.60	11,983.73	-257.22	-190.53	-255.24	10.00	10.00	0.00
12,100.00	16.08	350.60	12,081.74	-238.27	-193.66	-236.27	10.00	10.00	0.00
12,200.00	26.08	350.60	12,174.93	-202.83	-199.53	-200.76	10.00	10.00	0.00
12,300.00	36.08	350.60	12,260.46	-151.96	-207.95	-149.81	10.00	10.00	0.00
12,400.00	46.08	350.60	12,335.74	-87.20	-218.67	-84.95	10.00	10.00	0.00
12,500.00	56.08	350.60	12,398.47	-10.54	-231.36	-8.16	10.00	10.00	0.00
12,600.00	66.08	350.60	12,446.77	75.71	-245.64	78.24	10.00	10.00	0.00
12,700.00	76.08	350.60	12,479.14	168.92	-261.07	171.60	10.00	10.00	0.00

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 321H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site:	Love Shack Fed Com	**North Reference:**	Grid
Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-14-20		

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)
12,800.00	86.08	350.60	12,494.62	266.26	-277.19	269.10	10.00	10.00	0.00
12,844.06	90.49	350.60	12,495.94	309.70	-284.38	312.61	10.00	10.00	0.00
LP, Hold 90.49° Inc, Begin 2.00°/100' Turn									
12,900.00	90.49	351.72	12,495.46	364.97	-292.98	367.97	2.00	0.00	2.00
13,000.00	90.49	353.72	12,494.60	464.16	-305.65	467.28	2.00	0.00	2.00
13,100.00	90.49	355.72	12,493.75	563.72	-314.85	566.94	2.00	0.00	2.00
13,200.00	90.49	357.72	12,492.89	663.55	-320.57	666.82	2.00	0.00	2.00
13,284.78	90.49	359.41	12,492.17	748.30	-322.69	751.58	2.00	0.00	2.00
Hold 359.41° Azm									
13,300.00	90.49	359.41	12,492.04	763.52	-322.85	766.80	0.00	0.00	0.00
13,400.00	90.49	359.41	12,491.19	863.51	-323.87	866.80	0.00	0.00	0.00
13,500.00	90.49	359.41	12,490.34	963.50	-324.89	966.79	0.00	0.00	0.00
13,600.00	90.49	359.41	12,489.49	1,063.49	-325.91	1,066.79	0.00	0.00	0.00
13,700.00	90.49	359.41	12,488.64	1,163.48	-326.94	1,166.79	0.00	0.00	0.00
13,800.00	90.49	359.41	12,487.78	1,263.47	-327.96	1,266.78	0.00	0.00	0.00
13,900.00	90.49	359.41	12,486.93	1,363.47	-328.98	1,366.78	0.00	0.00	0.00
14,000.00	90.49	359.41	12,486.08	1,463.46	-330.00	1,466.78	0.00	0.00	0.00
14,100.00	90.49	359.41	12,485.23	1,563.45	-331.02	1,566.77	0.00	0.00	0.00
14,200.00	90.49	359.41	12,484.38	1,663.44	-332.04	1,666.77	0.00	0.00	0.00
14,300.00	90.49	359.41	12,483.53	1,763.43	-333.06	1,766.77	0.00	0.00	0.00
14,400.00	90.49	359.41	12,482.68	1,863.42	-334.08	1,866.76	0.00	0.00	0.00
14,500.00	90.49	359.41	12,481.83	1,963.41	-335.10	1,966.76	0.00	0.00	0.00
14,600.00	90.49	359.41	12,480.98	2,063.40	-336.13	2,066.76	0.00	0.00	0.00
14,700.00	90.49	359.41	12,480.13	2,163.39	-337.15	2,166.75	0.00	0.00	0.00
14,800.00	90.49	359.41	12,479.27	2,263.39	-338.17	2,266.75	0.00	0.00	0.00
14,900.00	90.49	359.41	12,478.42	2,363.38	-339.19	2,366.74	0.00	0.00	0.00
15,000.00	90.49	359.41	12,477.57	2,463.37	-340.21	2,466.74	0.00	0.00	0.00
15,100.00	90.49	359.41	12,476.72	2,563.36	-341.23	2,566.74	0.00	0.00	0.00
15,200.00	90.49	359.41	12,475.87	2,663.35	-342.25	2,666.73	0.00	0.00	0.00
15,300.00	90.49	359.41	12,475.02	2,763.34	-343.27	2,766.73	0.00	0.00	0.00
15,400.00	90.49	359.41	12,474.17	2,863.33	-344.30	2,866.73	0.00	0.00	0.00
15,500.00	90.49	359.41	12,473.32	2,963.32	-345.32	2,966.72	0.00	0.00	0.00
15,600.00	90.49	359.41	12,472.47	3,063.31	-346.34	3,066.72	0.00	0.00	0.00
15,700.00	90.49	359.41	12,471.61	3,163.31	-347.36	3,166.72	0.00	0.00	0.00
15,800.00	90.49	359.41	12,470.76	3,263.30	-348.38	3,266.71	0.00	0.00	0.00
15,900.00	90.49	359.41	12,469.91	3,363.29	-349.40	3,366.71	0.00	0.00	0.00
16,000.00	90.49	359.41	12,469.06	3,463.28	-350.42	3,466.70	0.00	0.00	0.00
16,100.00	90.49	359.41	12,468.21	3,563.27	-351.44	3,566.70	0.00	0.00	0.00
16,200.00	90.49	359.41	12,467.36	3,663.26	-352.47	3,666.70	0.00	0.00	0.00
16,300.00	90.49	359.41	12,466.51	3,763.25	-353.49	3,766.69	0.00	0.00	0.00
16,400.00	90.49	359.41	12,465.66	3,863.24	-354.51	3,866.69	0.00	0.00	0.00
16,500.00	90.49	359.41	12,464.81	3,963.24	-355.53	3,966.69	0.00	0.00	0.00
16,600.00	90.49	359.41	12,463.96	4,063.23	-356.55	4,066.68	0.00	0.00	0.00
16,700.00	90.49	359.41	12,463.10	4,163.22	-357.57	4,166.68	0.00	0.00	0.00
16,800.00	90.49	359.41	12,462.25	4,263.21	-358.59	4,266.68	0.00	0.00	0.00
16,900.00	90.49	359.41	12,461.40	4,363.20	-359.61	4,366.67	0.00	0.00	0.00
17,000.00	90.49	359.41	12,460.55	4,463.19	-360.64	4,466.67	0.00	0.00	0.00
17,100.00	90.49	359.41	12,459.70	4,563.18	-361.66	4,566.66	0.00	0.00	0.00
17,200.00	90.49	359.41	12,458.85	4,663.17	-362.68	4,666.66	0.00	0.00	0.00
17,300.00	90.49	359.41	12,458.00	4,763.16	-363.70	4,766.66	0.00	0.00	0.00
17,400.00	90.49	359.41	12,457.15	4,863.16	-364.72	4,866.65	0.00	0.00	0.00
17,500.00	90.49	359.41	12,456.30	4,963.15	-365.74	4,966.65	0.00	0.00	0.00
17,600.00	90.49	359.41	12,455.44	5,063.14	-366.76	5,066.65	0.00	0.00	0.00
17,700.00	90.49	359.41	12,454.59	5,163.13	-367.78	5,166.64	0.00	0.00	0.00

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 321H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site:	Love Shack Fed Com	**North Reference:**	Grid
Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-14-20		

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)
17,800.00	90.49	359.41	12,453.74	5,263.12	-368.80	5,266.64	0.00	0.00	0.00
17,900.00	90.49	359.41	12,452.89	5,363.11	-369.83	5,366.64	0.00	0.00	0.00
18,000.00	90.49	359.41	12,452.04	5,463.10	-370.85	5,466.63	0.00	0.00	0.00
18,100.00	90.49	359.41	12,451.19	5,563.09	-371.87	5,566.63	0.00	0.00	0.00
18,200.00	90.49	359.41	12,450.34	5,663.09	-372.89	5,666.62	0.00	0.00	0.00
18,300.00	90.49	359.41	12,449.49	5,763.08	-373.91	5,766.62	0.00	0.00	0.00
18,400.00	90.49	359.41	12,448.64	5,863.07	-374.93	5,866.62	0.00	0.00	0.00
18,500.00	90.49	359.41	12,447.79	5,963.06	-375.95	5,966.61	0.00	0.00	0.00
18,600.00	90.49	359.41	12,446.93	6,063.05	-376.97	6,066.61	0.00	0.00	0.00
18,700.00	90.49	359.41	12,446.08	6,163.04	-378.00	6,166.61	0.00	0.00	0.00
18,800.00	90.49	359.41	12,445.23	6,263.03	-379.02	6,266.60	0.00	0.00	0.00
18,900.00	90.49	359.41	12,444.38	6,363.02	-380.04	6,366.60	0.00	0.00	0.00
19,000.00	90.49	359.41	12,443.53	6,463.01	-381.06	6,466.60	0.00	0.00	0.00
19,100.00	90.49	359.41	12,442.68	6,563.01	-382.08	6,566.59	0.00	0.00	0.00
19,200.00	90.49	359.41	12,441.83	6,663.00	-383.10	6,666.59	0.00	0.00	0.00
19,300.00	90.49	359.41	12,440.98	6,762.99	-384.12	6,766.58	0.00	0.00	0.00
19,400.00	90.49	359.41	12,440.13	6,862.98	-385.14	6,866.58	0.00	0.00	0.00
19,500.00	90.49	359.41	12,439.27	6,962.97	-386.17	6,966.58	0.00	0.00	0.00
19,600.00	90.49	359.41	12,438.42	7,062.96	-387.19	7,066.57	0.00	0.00	0.00
19,700.00	90.49	359.41	12,437.57	7,162.95	-388.21	7,166.57	0.00	0.00	0.00
19,800.00	90.49	359.41	12,436.72	7,262.94	-389.23	7,266.57	0.00	0.00	0.00
19,900.00	90.49	359.41	12,435.87	7,362.94	-390.25	7,366.56	0.00	0.00	0.00
20,000.00	90.49	359.41	12,435.02	7,462.93	-391.27	7,466.56	0.00	0.00	0.00
20,100.00	90.49	359.41	12,434.17	7,562.92	-392.29	7,566.56	0.00	0.00	0.00
20,200.00	90.49	359.41	12,433.32	7,662.91	-393.31	7,666.55	0.00	0.00	0.00
20,300.00	90.49	359.41	12,432.47	7,762.90	-394.34	7,766.55	0.00	0.00	0.00
20,400.00	90.49	359.41	12,431.62	7,862.89	-395.36	7,866.55	0.00	0.00	0.00
20,500.00	90.49	359.41	12,430.76	7,962.88	-396.38	7,966.54	0.00	0.00	0.00
20,600.00	90.49	359.41	12,429.91	8,062.87	-397.40	8,066.54	0.00	0.00	0.00
20,700.00	90.49	359.41	12,429.06	8,162.86	-398.42	8,166.53	0.00	0.00	0.00
20,800.00	90.49	359.41	12,428.21	8,262.86	-399.44	8,266.53	0.00	0.00	0.00
20,900.00	90.49	359.41	12,427.36	8,362.85	-400.46	8,366.53	0.00	0.00	0.00
21,000.00	90.49	359.41	12,426.51	8,462.84	-401.48	8,466.52	0.00	0.00	0.00
21,100.00	90.49	359.41	12,425.66	8,562.83	-402.50	8,566.52	0.00	0.00	0.00
21,200.00	90.49	359.41	12,424.81	8,662.82	-403.53	8,666.52	0.00	0.00	0.00
21,300.00	90.49	359.41	12,423.96	8,762.81	-404.55	8,766.51	0.00	0.00	0.00
21,400.00	90.49	359.41	12,423.10	8,862.80	-405.57	8,866.51	0.00	0.00	0.00
21,500.00	90.49	359.41	12,422.25	8,962.79	-406.59	8,966.51	0.00	0.00	0.00
21,600.00	90.49	359.41	12,421.40	9,062.78	-407.61	9,066.50	0.00	0.00	0.00
21,700.00	90.49	359.41	12,420.55	9,162.78	-408.63	9,166.50	0.00	0.00	0.00
21,800.00	90.49	359.41	12,419.70	9,262.77	-409.65	9,266.49	0.00	0.00	0.00
21,900.00	90.49	359.41	12,418.85	9,362.76	-410.67	9,366.49	0.00	0.00	0.00
22,000.00	90.49	359.41	12,418.00	9,462.75	-411.70	9,466.49	0.00	0.00	0.00
22,100.00	90.49	359.41	12,417.15	9,562.74	-412.72	9,566.48	0.00	0.00	0.00
22,200.00	90.49	359.41	12,416.30	9,662.73	-413.74	9,666.48	0.00	0.00	0.00
22,300.00	90.49	359.41	12,415.45	9,762.72	-414.76	9,766.48	0.00	0.00	0.00
22,400.00	90.49	359.41	12,414.59	9,862.71	-415.78	9,866.47	0.00	0.00	0.00
22,500.00	90.49	359.41	12,413.74	9,962.71	-416.80	9,966.47	0.00	0.00	0.00
22,600.00	90.49	359.41	12,412.89	10,062.70	-417.82	10,066.47	0.00	0.00	0.00
22,700.00	90.49	359.41	12,412.04	10,162.69	-418.84	10,166.46	0.00	0.00	0.00
22,800.00	90.49	359.41	12,411.19	10,262.68	-419.87	10,266.46	0.00	0.00	0.00
22,822.29	90.49	359.41	12,411.00	10,284.97	-420.09	10,288.75	0.00	0.00	0.00
TD at 22822.29									

PHOENIX TECHNOLOGY SERVICES

Planning Report

TITUS OIL GAS LLC

Database:	USA Compass	**Local Co-ordinate Reference:**	Well 321H
Company:	Titus Oil & Gas Production, LLC	**TVD Reference:**	RKB @ 3228.50usft (Est KB)
Project:	Lea County, NM - (NAD83 NME)	**MD Reference:**	RKB @ 3228.50usft (Est KB)
Site:	Love Shack Fed Com	**North Reference:**	Grid
Well:	321H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 01-14-20		

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
LTP - Love Shack Fec - plan misses target center by 0.77usft at 22732.30usft MD (12411.77 TVD, 10194.98 N, -419.17 E) - Point	0.00	0.00	12,411.00	10,194.97	-419.15	388,577.74	831,405.46	32° 3' 53.354376 N	3° 23' 49.031340 W
BHL - Love Shack Fec - plan hits target center - Point	0.00	0.00	12,411.00	10,284.97	-420.09	388,667.73	831,404.52	32° 3' 54.244980 N	3° 23' 49.033284 W
FTP - Love Shack Fec - plan misses target center by 199.52usft at 12451.21usft MD (12369.56 TVD, -49.29 N, -224.95 E) - Point	0.00	0.00	12,501.00	-171.33	-312.35	378,211.44	831,512.26	32° 2' 10.770576 N	3° 23' 48.835248 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,500.00	1,500.00	0.00	0.00	KOP, Begin 1.50°/100' Build
1,899.90	1,899.17	-16.90	-12.33	Hold 6.00° Inc at 230.00° Azm
4,584.26	4,568.83	-243.51	-177.67	Begin 1.50°/100' Drop
4,984.16	4,968.00	-260.40	-190.00	Begin Vertical Hold
11,939.16	11,923.00	-260.40	-190.00	KOP2, Begin 10.00°/100' Build
12,844.06	12,495.94	309.70	-284.38	LP, Hold 90.49° Inc, Begin 2.00°/100' Turn
13,284.78	12,492.17	748.30	-322.69	Hold 359.41° Azm
22,822.29	12,411.00	10,284.97	-420.09	TD at 22822.29

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	TITUS OIL AND GAS PRODUCTION LLC
WELL NAME & NO.:	LOVE SHACK FED COM 511H
SURFACE HOLE FOOTAGE:	269'/N & 674'/W
BOTTOM HOLE FOOTAGE	10'/N & 530'/W
LOCATION:	Section 17, T.26 S., R.35 E., NMP
COUNTY:	Lea County, New Mexico
OPERATOR'S NAME:	TITUS OIL AND GAS PRODUCTION LLC
WELL NAME & NO.:	EL CAMPEON NORTH 17 FED 321H
SURFACE HOLE FOOTAGE:	280'/S & 680'/W
BOTTOM HOLE FOOTAGE	0'/N & 990'/W
LOCATION:	Section 17, T.26 S., R.35 E., NMP
COUNTY:	Lea County, New Mexico
OPERATOR'S NAME:	TITUS OIL AND GAS PRODUCTION LLC
WELL NAME & NO.:	EL CAMPEON NORTH 17 FED 431H
SURFACE HOLE FOOTAGE:	280'/N & 650'/W
BOTTOM HOLE FOOTAGE	200'/S & 1980'/E
LOCATION:	Section 17, T.26 S., R.35 E., NMP
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
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- Ground-level Abandoned Well Marker
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☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Access to Cattlemen and Lonesome Dove Infrastructure

No pipelines, access roads, electric lines, or any other infrastructure will be constructed that leads to the Cattleman or Lonesome Dove wells. The only infrastructure that may be built or constructed is infrastructure needed for the El Campeon North or Love Shack wells. The pipelines, access roads, and electric lines leading to the Cattleman or Lonesome Dove wells may be constructed upon approval of the Cattleman and Lonesome Dove wells.

Sundry Notice for Production Corridor

A sundry notice will be filed for infrastructure falling within the analyzed production corridor. The corridor was analyzed without specifications of infrastructure. Any pipelines, flowlines, lift lines, or other oil and gas infrastructure will be applied for in a sundry notice and will need to be approved separately before construction.

Hydrology:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is

required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility. The berm would be maintained through the life of the wells and after interim reclamation has been completed.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

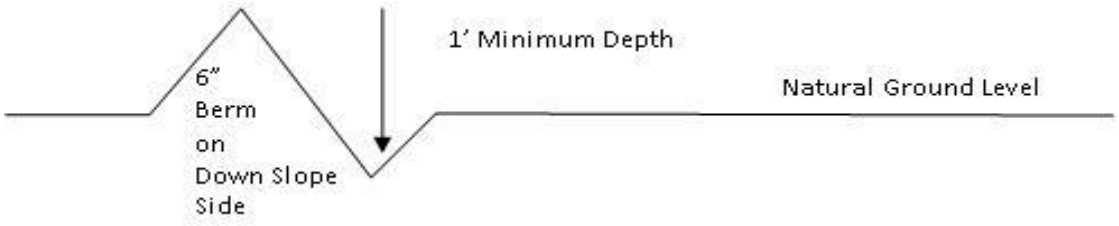
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%}$ + 100' = 200' lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

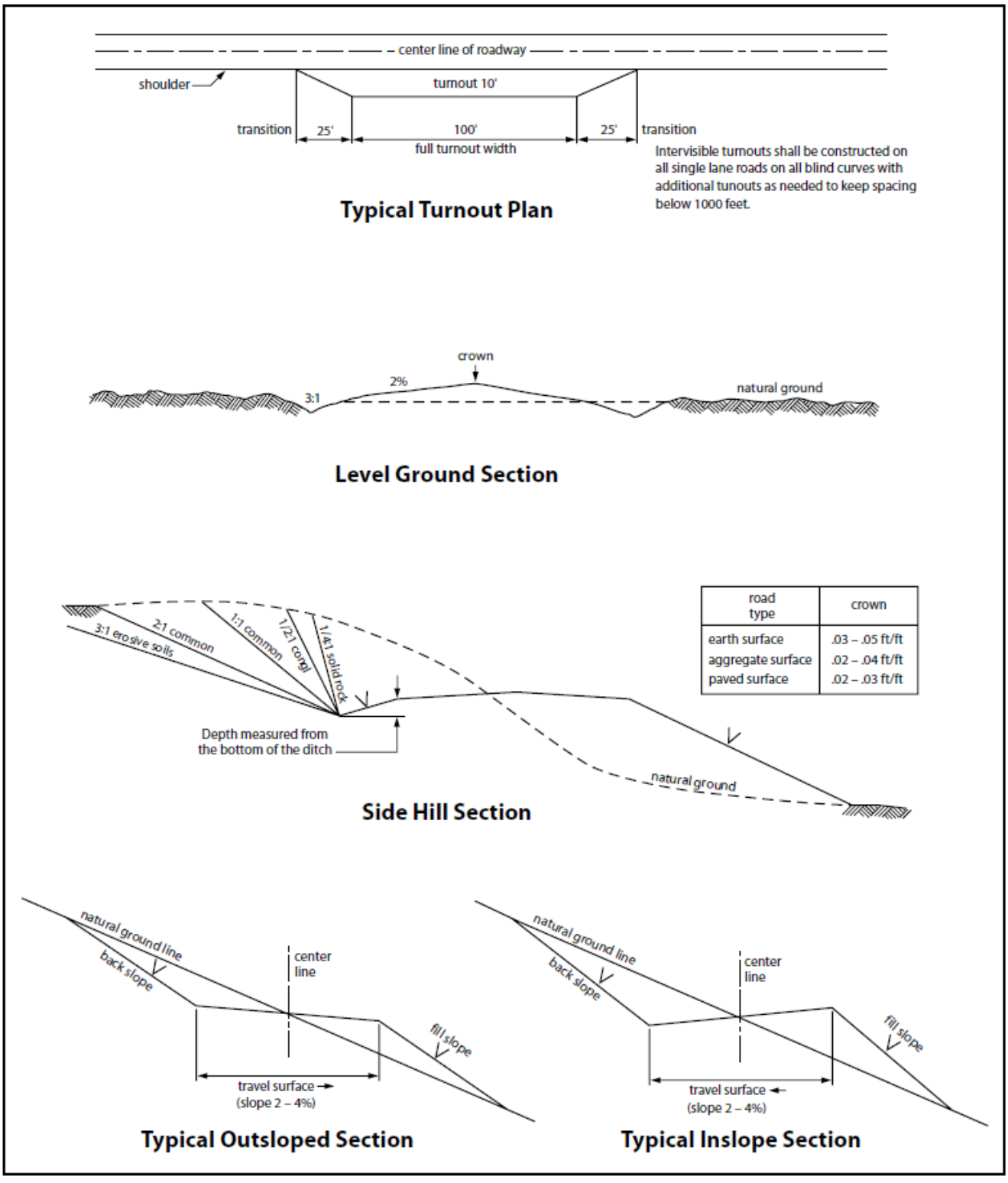


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 11/06/2020

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. OIL AND GAS RELATED SITES

STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statues.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42

U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of

evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site and access roads must undergo "final" reclamation so that the character and productivity of the land are restored. Earthwork for final reclamation must be completed within six (6) months of the abandonment of the site. All pads and facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil

conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - The operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an

impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Exclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. Containment Structures - Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

19. Special Stipulations:

Hydrology Stipulations:

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.

Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Wildlife Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Range Stipulations:

Cattleguards

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease

operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

Fence Requirement
Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Livestock Watering Requirement
Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the

Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Wildlife Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Titus Oil and Gas Production LLC**
LEASE NO.:	**NMNM104706**
WELL NAME & NO.:	El Campeon North Federal 321H
SURFACE HOLE FOOTAGE:	280'/S & 680'/W
BOTTOM HOLE FOOTAGE	10'/N & 990'/W
LOCATION:	Section 17, T.26 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☐ 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 **1,160 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8 inch** intermediate casing and shall be set at approximately **11,900 feet** is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

3. The minimum required fill of cement behind the **5-1/2 inch** production casing with a tie-back into the previous casing of **11,400 feet** 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).'

2. 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**.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

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. In the event the operator has proposed 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 intergrity 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 intergrity 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.

YJ (11/01/2020)

TITUS
Oil & Gas LLC

TITUS Oil & Gas Production, LLC

100 Throckmorton Street
Suite 1630
Fort Worth, TX 76102

Hydrogen Sulfide (H_2S) Contingency Plan

For

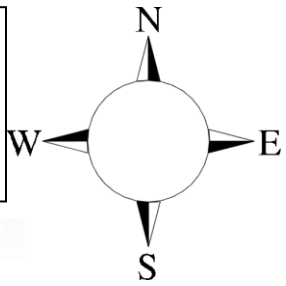
Love Shack Fed Com 321H

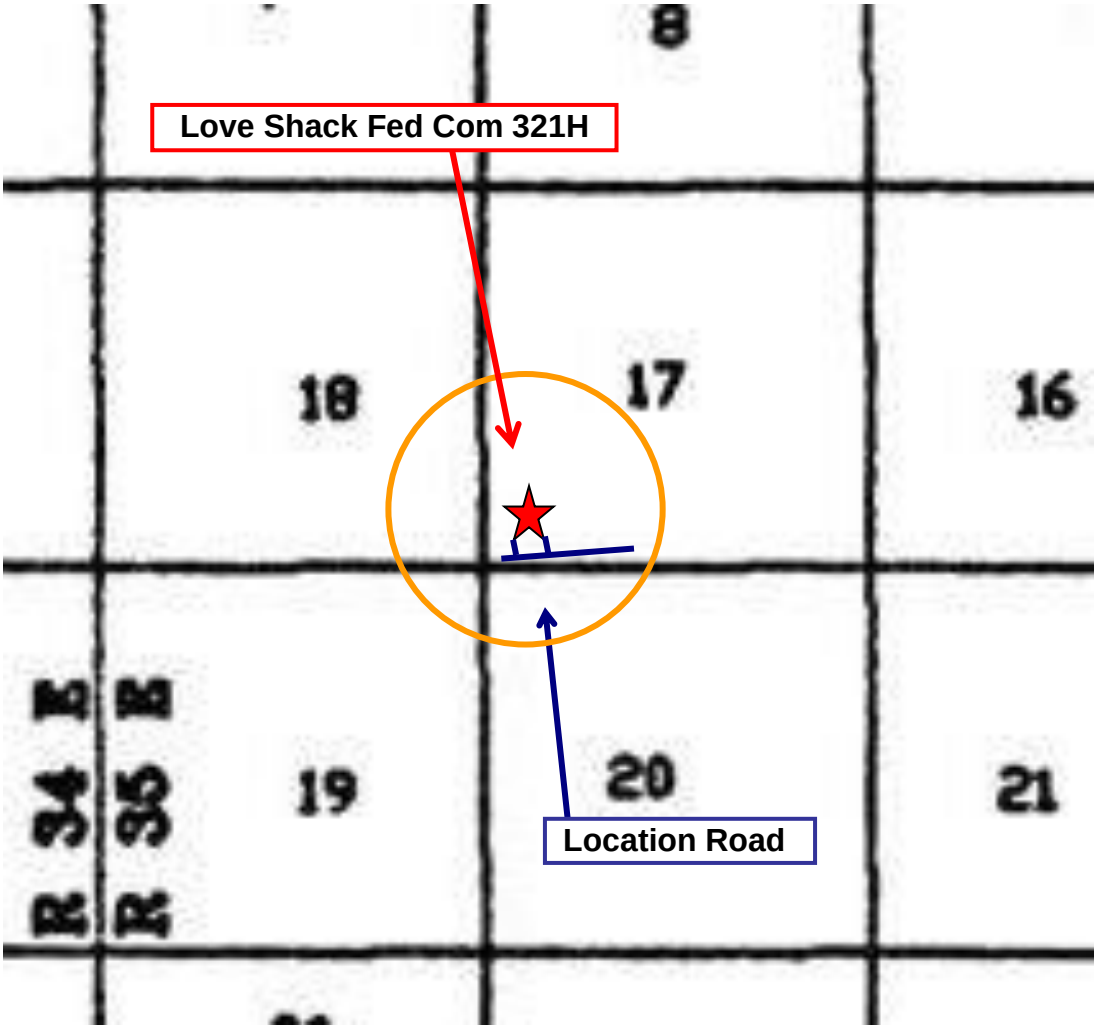
Sec-17 T-26S R-35E
269 FSL & 644’ FWL
LAT. = 32.06506805’ N (NAD83)
LONG = 103.39695369’ W

Lea County NM

Love Shack Fed Com 321H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Titus Oil & Gas personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Titus Oil & Gas Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

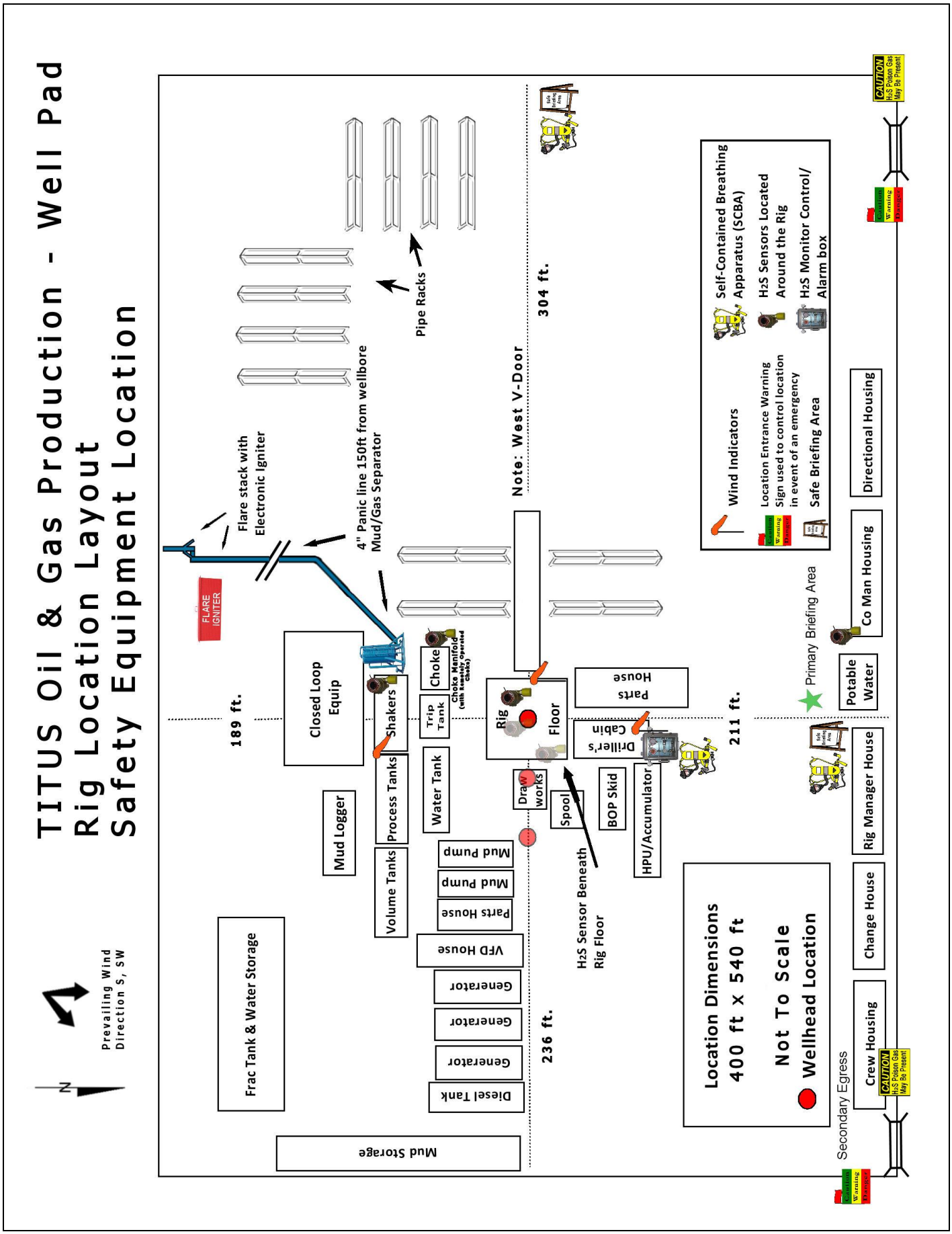
7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

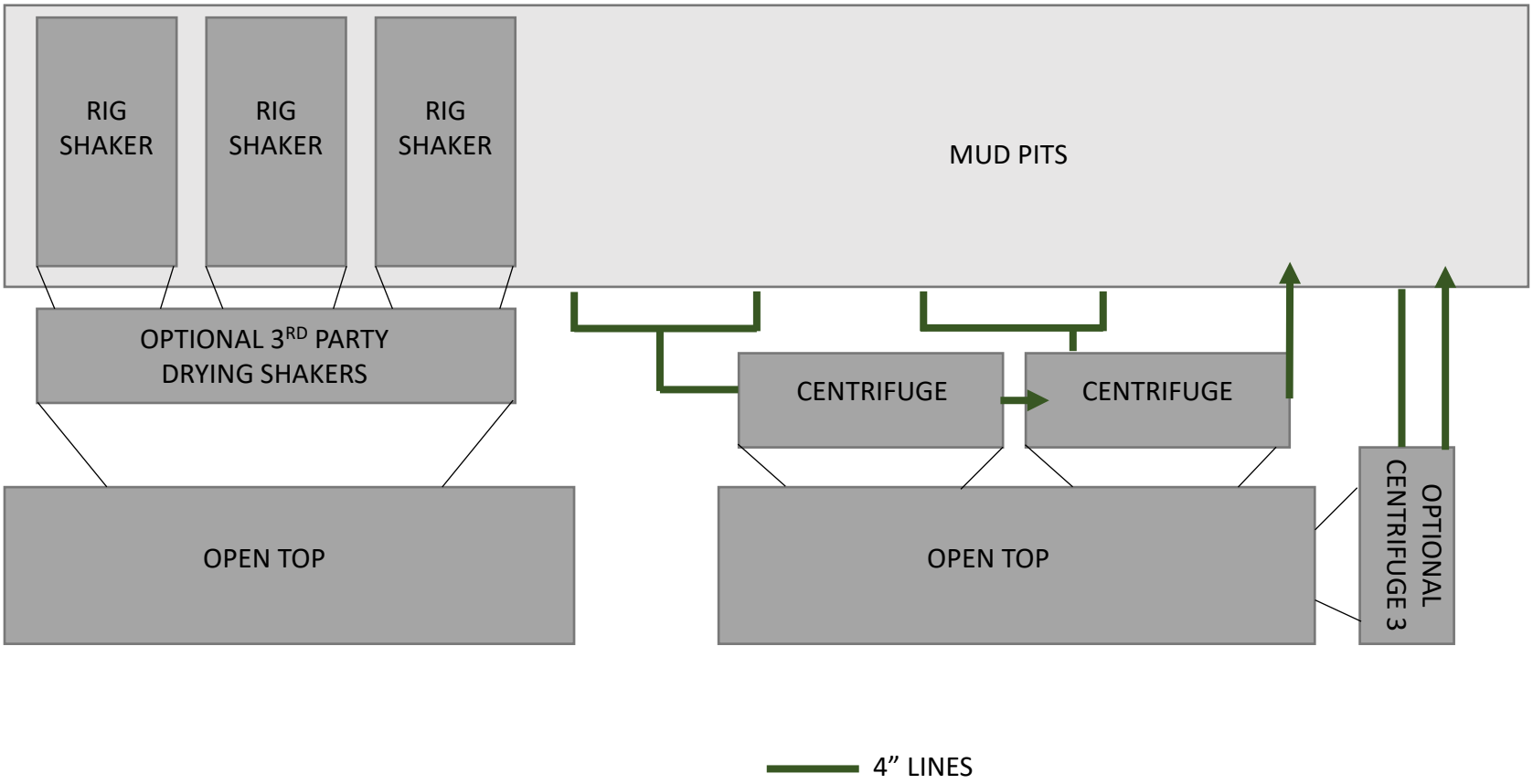
Titus Oil & Gas Company Call List		
Drilling Supervisor –		
Ryan DeLong - **Office** (817) 852-6370 **Mobile** (405) 664-5188		
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control 915-699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small SHARP communications and consulting



Titus Oil & Gas Cont. Plan - Page 8

CLOSED LOOP SCHEMATIC



District I
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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

CONDITIONS

Action 12689

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
TITUS OIL & GAS PRODUCTION, LL	420 Throckmorton St, Ste 1150	Fort Worth, TX76012	373986	12689	FORM 3160-3

OCD Reviewer	Condition
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string