District I
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Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 337135

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

1. Operator Name and Address	2. OGRID Number
COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	229137
	3. API Number 30-015-53671

4. Property Code	5. Property Name	6. Well No.
333884	TANGO STATE COM	501H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
M	11	24S	27E		660	S	220	W	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
P	11	24S	27E	P	660	S	50	E	Eddy

9. Pool Information

WILDCAT;BONE SPRING	96403

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	OIL		State	3169
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	12505	Bone Spring		4/30/2023
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ **We will be using a closed-loop system in lieu of lined pits**

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	14.75	10.75	45.5	655	450	0
Int1	9.875	7.625	29.7	2380	1700	0
Prod	6.75	5.5	23	12505	1950	1880

Casing/Cement Program: Additional Comments

Drill 14-3/4" hole to ~655' w/ fresh water spud mud. Run 10-3/4" 45.5# J55 BTC casing to TD and cement to surface in one stage. Drill 9-7/8" hole to ~2,380' with cut brine. Run 7-5/8 29.7# HCL80 BTC to TD and cement to surface in one stage. Drill 6-3/4" vertical, to ~12,505' with OBM. Run 5.5" 23# P110 BTC casing from TD to surface and cement to 1880' in one stage.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	5000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.** Signature:		**OIL CONSERVATION DIVISION**		
Printed Name:	Electronically filed by Robyn Russell	Approved By:	Dean McClure	
Title:	Supervisor Delaware Regulatory	Title:	Petroleum Specialist - A	
Email Address:	robyn.m.russell@conocophillips.com	Approved Date:	4/4/2023	Expiration Date: 4/4/2025
Date:	3/28/2023 Phone: 432-685-4385	Conditions of Approval Attached		

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Phone: (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, 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
30-015- 53671	96415	WILLOW LAKE;BONE SPRING, WEST

[4] Property Code	[5] Property Name	[6] Well Number
333884	TANGO STATE COM	501H

[7] OGRID No.	[8] Operator Name	[9] Elevation
229137	COG OPERATING LLC	3,169.30'

[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	11	24-S	27-E		660'	SOUTH	220'	WEST	EDDY

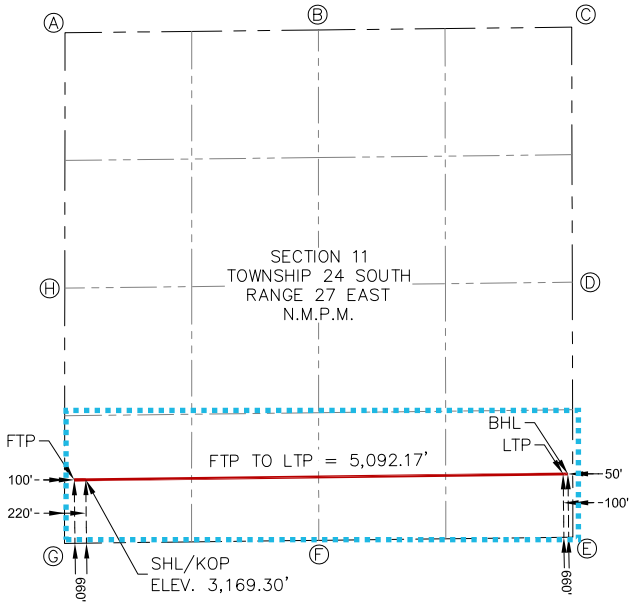
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	11	24-S	27-E		660'	SOUTH	50'	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

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]



SURFACE HOLE LOCATION / KICK OFF POINT
660' FSL & 220' FWL
NEW MEXICO EAST-NAD 83
NORTH:446,209.43'
EAST:592,065.07'
LAT:32.22659960
LONG:-104.16928506
FIRST TAKE POINT
660' FSL & 100' FWL
NEW MEXICO EAST-NAD 83
NORTH:446,207.97'
EAST:591,945.07'
LAT:32.22659609
LONG:-104.16967314
LAST TAKE POINT
660' FSL & 100' FEL
NEW MEXICO EAST-NAD 83
NORTH:446,270.05'
EAST:597,036.86'
LAT:32.22674434
LONG:-104.15320648
BOTTOM HOLE LOCATION
660' FSL & 50' FEL
NEW MEXICO EAST-NAD 83
NORTH:446,270.66'
EAST:597,086.86'
LAT:32.22674579
LONG:-104.15304479

CORNER COORDINATES NEW MEXICO EAST - NAD 83
A-CALCULATED CORNER N:450,865.50', E:591,849.80'
B-CALCULATED CORNER N:450,894.80', E:594,488.00'
C-FOUND 1/2" IRON ROD W/ CAP N:450,923.97', E:597,126.07'
D-FOUND 1-1/2" IRON PIPE N:448,267.63', E:597,132.31'
E-FOUND 1-1/2" IRON PIPE N:445,611.24', E:597,138.37'
F-CALCULATED CORNER N:445,578.90', E:594,491.35'
G-FOUND 1/2" REBAR N:445,546.70', E:591,844.40'
H-CALCULATED CORNER N:448,206.10', E:591,847.10'

[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.

Mayte Reyes 3/7/2023
Signature Date

Mayte Reyes 3/7/2023
Printed Name Date

mayte.x.reyes@cop.com 3/7/2023
Email Address Date

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on thi 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: 3/28/23

MARK J. MURRAY P.L.S. NO. 12177

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

Form APD Comments

Permit 337135

PERMIT COMMENTS

Operator Name and Address:	API Number:
COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701	30-015-53671
	Well: TANGO STATE COM #501H

Created By	Comment	Comment Date
mreyes4	OIL: COG Operating has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore we do not believe that an H2S Contingency Plan would be necessary.	3/28/2023

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

Form APD Conditions

Permit 337135

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
COG OPERATING LLC [229137] 600 W Illinois Ave Midland, TX 79701	30-015-53671
	Well: TANGO STATE COM #501H

OCD Reviewer	Condition
dmcclure	Notify OCD 24 hours prior to casing & cement
dmcclure	Will require a File As Drilled C-102 and a Directional Survey with the C-104
dmcclure	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
dmcclure	Cement is required to circulate on both surface and intermediate1 strings of casing
dmcclure	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system
dmcclure	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud

COG OPERATING LLC
HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. HYDROGEN SULFIDE 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:

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

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

a. The effects of H2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
b. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
c. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

2. H_2S SAFETY EQUIPMENT AND SYSTEMS

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 H2S. If H2S greater than 100 ppm is encountered in the gas stream we will shut in and install H2S equipment.

a. Well Control Equipment:
   Flare line.
   Choke manifold with remotely operated choke.
   Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
   Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

b. Protective equipment for essential personnel:
Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

c. H2S detection and monitoring equipment:
2 - portable H2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.

d. Visual warning systems:
Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

e. Mud Program:
The mud program has been designed to minimize the volume of H2S circulated to the surface.

f. Metallurgy:
All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

g. Communication:
Company vehicles equipped with cellular telephone.

COG OPERATING LLC has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H2S contingency plan is necessary.

W A R N I N G

YOU ARE ENTERING AN H_2S AREA
AUTHORIZED PERSONNEL ONLY

1. ***BEARDS OR CONTACT LENSES NOT ALLOWED***
2. ***HARD HATS REQUIRED***
3. ***SMOKING IN DESIGNATED AREAS ONLY***
4. ***BE WIND CONSCIOUS AT ALL TIMES***
5. ***CK WITH COG OPERATING LLC FOREMAN AT MAIN OFFICE***

COG OPERATING LLC

1-575-748-6940

EMERGENCY CALL LIST

	OFFICE
COG OPERATING LLC OFFICE	575-748-6940
CHAD GREGORY	432-894-5590

EMERGENCY RESPONSE NUMBERS

	OFFICE
STATE POLICE	575-748-9718
EDDY COUNTY SHERIFF	575-746-2701
EMERGENCY MEDICAL SERVICES (AMBULANCE)	911 or 575-746-2701
EDDY COUNTY EMERGENCY MANAGEMENT (HARRY BURGESS)	575-887-9511
STATE EMERGENCY RESPONSE CENTER (SERC)	575-476-9620
CARLSBAD POLICE DEPARTMENT	575-885-2111
CARLSBAD FIRE DEPARTMENT	575-885-3125
NEW MEXICO OIL CONSERVATION DIVISION	575-748-1283
INDIAN FIRE & SAFETY	800-530-8693
HALLIBURTON SERVICES	800-844-8451

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: COG Operating LLC **OGRID:** 229137 **Date:** 03 / 28 / 23

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Tango State Com 501H	30-015-	M-11-24S-27E	660' FSL & 220' FEL	± 1000	± 2000	± 3400

IV. Central Delivery Point Name: _____ [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Tango State Com 501H	Pending	4/8/2023	± 25 days from spud	8/6/2023	8/16/2023	8/21/2023

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

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

VI. Separation Equipment

How Operator will size separation equipment to optimize gas capture:

All ConocoPhillips production facility equipment will be sized per industry standards (API 12J) with adequate retention time to effectively separate all phases of production. Each project will take into consideration the number of wells and type curves for each formation pool to ensure adequate facility capacity. Design considerations will also include review of all piping, tanks, VRU's and associated equipment to ensure optimized gas capture minimized risk of release.

VII. Operational Practices

Actions Operator will take to comply with the requirements below:

B. Drilling Operations

- During drilling, flare stacks will be located a minimum of 100 feet from the nearest surface hole location. All gas is captured or combusted. If an emergency or malfunction occurs, gas will be flared or vented for public health, safety, and the environment and be properly reported to the NMOCD pursuant to 19.15.27.8.G.
- Measure or estimate the volume of natural gas that is vented, flared or beneficially used during drilling, completion and production operations, regardless of the reason or authorization for such venting or flaring.

C. Completion Operations

- During completion operations, operator does not produce oil or gas but maintains adequate well control through completion operations.
- Individual well test separators will be set to properly separate gas and liquids. A temporary test separator will be utilized initially to process volumes. In addition, separators will be tied into flowback tanks which will be tied into the gas processing equipment for sales down a pipeline.

D. Venting and flaring during production operations

- During each phase of well life (drilling, completion and production) of a ConocoPhillips well, COP personnel will follow all necessary procedures to ensure both the operation and the equipment are within the NMAC 19.15.27.8 Subsection D guidelines.
- During well operations that require unloading of the well to atmospheric pressure, all reasonable actions will be taken to minimize vented gas
- Through the life of the well all flaring shall be measured, and venting events quantified using the data available and industry best practice.

E. Performance standards for separation, storage tank and flare equipment

- All storage tanks and separation equipment are designed minimize risk of liquid or vapor release and optimize gas capture. This includes automation for automatic gauging and pressure monitoring.

- All flare stacks are equipped with auto ignition devices and/or continuous pilots and are designed to operate at maximum combustion efficiency pursuant NMAC 19.15.27.8 Subsection E. Flares will follow COP spacing guidelines to ensure they are a safe distance from combustibles and operations equipment.
- COP personnel will conduct routine AVO inspections on a regular basis per NMAC 19.15.27.8 Subsection E guidelines.

F. Measurement of vented and flared natural gas.

- Measurement equipment will be installed to quantify gas flared during drilling, completion and production of the well.
- All measurement devices installed will meet accuracy ratings per AGA and API standards.
- Measurement devices will be installed without manifolds that allow diversion of gas around the metering element, except for the sole purpose of inspection of servicing the measurement device.

VIII. Best Management Practices

- Operator will curtail or shut in production, within reasonable limits, during upset conditions to minimize venting and flaring.
- When feasible, Operator will use equipment to capture gas that would otherwise be vented or flared.
- During completions and production operations Operator will minimize blowdowns to atmosphere
- When feasible, Operator will use electric or air actuated equipment to reduce bleed emissions

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	Mayte Reyes
Printed Name:	Mayte Reyes
Title:	Sr. Regulatory Coodinator
E-mail Address:	mayte.x.reyes@conocophillips.com
Date:	3/28/2023
Phone:	575-748-6945

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

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

DELAWARE BASIN WEST

TOMAHAWK PROSPECT (NM-E)
TANGO STATE PROJECT
TANGO STATE #501H

OWB

Plan: PWP0

Standard Planning Report

06 March, 2023

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	**Local Co-ordinate Reference:**	Well TANGO STATE #501H
Company:	DELAWARE BASIN WEST	**TVD Reference:**	GL @ 3169.3usft
Project:	TOMAHAWK PROSPECT (NM-E)	**MD Reference:**	GL @ 3169.3usft
Site:	TANGO STATE PROJECT	**North Reference:**	Grid
Well:	TANGO STATE #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project TOMAHAWK PROSPECT (NM-E)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site TANGO STATE PROJECT

Site Position:		**Northing:**	446,131.77 usft	**Latitude:**	32° 13' 35.137 N
From:	Map	**Easting:**	550,722.40 usft	**Longitude:**	104° 10' 9.500 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well TANGO STATE #501H

Well Position	**+N/-S**	0.0 usft	**Northing:**	446,149.71 usft	**Latitude:**	32° 13' 35.314 N
	+E/-W	0.0 usft	**Easting:**	550,762.21 usft	**Longitude:**	104° 10' 9.036 W
Position Uncertainty		3.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,169.3 usft
Grid Convergence:		0.09 °				

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2022	9/1/2023	6.86	59.85	47,379.88245133

Design PWP0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	89.30

Plan Survey Tool Program **Date** 3/6/2023

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	2,000.0	PWP0 (OWB)	r.5 SDI_KPR_WL_NS-CT SDI Keeper Wireline Gyrocomp	
2	2,000.0	7,089.8	PWP0 (OWB)	r.5 MWD+IFR1 OWSG MWD + IFR1 rev.5	
3	7,089.8	12,504.5	PWP0 (OWB)	r.5 MWD+IFR1+MS OWSG MWD + IFR1 + Multi-St	

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	**Local Co-ordinate Reference:**	Well TANGO STATE #501H
Company:	DELAWARE BASIN WEST	**TVD Reference:**	GL @ 3169.3usft
Project:	TOMAHAWK PROSPECT (NM-E)	**MD Reference:**	GL @ 3169.3usft
Site:	TANGO STATE PROJECT	**North Reference:**	Grid
Well:	TANGO STATE #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,089.8	0.00	0.00	7,089.8	0.0	0.0	0.00	0.00	0.00	0.00	
7,839.8	90.00	89.30	7,567.3	5.8	477.4	12.00	12.00	0.00	89.30	
12,454.4	90.00	89.30	7,567.3	62.0	5,091.7	0.00	0.00	0.00	0.00	
12,504.5	90.00	89.30	7,567.3	62.6	5,141.7	0.00	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	**Local Co-ordinate Reference:**	Well TANGO STATE #501H
Company:	DELAWARE BASIN WEST	**TVD Reference:**	GL @ 3169.3usft
Project:	TOMAHAWK PROSPECT (NM-E)	**MD Reference:**	GL @ 3169.3usft
Site:	TANGO STATE PROJECT	**North Reference:**	Grid
Well:	TANGO STATE #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Start 5089.8 hold at 2000.0 MD									
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	**Local Co-ordinate Reference:**	Well TANGO STATE #501H
Company:	DELAWARE BASIN WEST	**TVD Reference:**	GL @ 3169.3usft
Project:	TOMAHAWK PROSPECT (NM-E)	**MD Reference:**	GL @ 3169.3usft
Site:	TANGO STATE PROJECT	**North Reference:**	Grid
Well:	TANGO STATE #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,089.8	0.00	0.00	7,089.8	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 12.00									
7,100.0	1.22	89.30	7,100.0	0.0	0.1	0.1	12.00	12.00	0.00
7,125.0	4.22	89.30	7,125.0	0.0	1.3	1.3	12.00	12.00	0.00
7,150.0	7.22	89.30	7,149.8	0.0	3.8	3.8	12.00	12.00	0.00
7,175.0	10.22	89.30	7,174.5	0.1	7.6	7.6	12.00	12.00	0.00
7,200.0	13.22	89.30	7,199.0	0.2	12.7	12.7	12.00	12.00	0.00
7,225.0	16.22	89.30	7,223.2	0.2	19.0	19.0	12.00	12.00	0.00
7,250.0	19.22	89.30	7,247.0	0.3	26.6	26.6	12.00	12.00	0.00
7,275.0	22.22	89.30	7,270.4	0.4	35.5	35.5	12.00	12.00	0.00
7,300.0	25.22	89.30	7,293.3	0.6	45.5	45.5	12.00	12.00	0.00
7,325.0	28.22	89.30	7,315.6	0.7	56.7	56.8	12.00	12.00	0.00
7,350.0	31.22	89.30	7,337.3	0.8	69.1	69.1	12.00	12.00	0.00
7,375.0	34.22	89.30	7,358.3	1.0	82.6	82.7	12.00	12.00	0.00
7,400.0	37.22	89.30	7,378.6	1.2	97.2	97.2	12.00	12.00	0.00
7,425.0	40.22	89.30	7,398.1	1.4	112.9	112.9	12.00	12.00	0.00
7,450.0	43.22	89.30	7,416.8	1.6	129.5	129.5	12.00	12.00	0.00
7,475.0	46.22	89.30	7,434.6	1.8	147.1	147.1	12.00	12.00	0.00
7,500.0	49.22	89.30	7,451.4	2.0	165.6	165.6	12.00	12.00	0.00
7,525.0	52.22	89.30	7,467.2	2.3	184.9	185.0	12.00	12.00	0.00
7,550.0	55.22	89.30	7,482.0	2.5	205.1	205.1	12.00	12.00	0.00
7,575.0	58.22	89.30	7,495.7	2.8	226.0	226.0	12.00	12.00	0.00
7,600.0	61.22	89.30	7,508.3	3.0	247.6	247.6	12.00	12.00	0.00
7,625.0	64.22	89.30	7,519.8	3.3	269.8	269.8	12.00	12.00	0.00
7,650.0	67.22	89.30	7,530.1	3.6	292.6	292.6	12.00	12.00	0.00
7,675.0	70.22	89.30	7,539.1	3.8	315.9	315.9	12.00	12.00	0.00
7,700.0	73.22	89.30	7,547.0	4.1	339.6	339.6	12.00	12.00	0.00
7,725.0	76.22	89.30	7,553.6	4.4	363.7	363.7	12.00	12.00	0.00
7,750.0	79.22	89.30	7,558.9	4.7	388.1	388.2	12.00	12.00	0.00
7,775.0	82.22	89.30	7,562.9	5.0	412.8	412.8	12.00	12.00	0.00
7,800.0	85.22	89.30	7,565.6	5.3	437.6	437.7	12.00	12.00	0.00
7,825.0	88.22	89.30	7,567.1	5.6	462.6	462.6	12.00	12.00	0.00
7,839.8	90.00	89.30	7,567.3	5.8	477.4	477.5	12.00	12.00	0.00
Start 4614.6 hold at 7839.8 MD									
7,900.0	90.00	89.30	7,567.3	6.5	537.6	537.6	0.00	0.00	0.00
8,000.0	90.00	89.30	7,567.3	7.8	637.6	637.6	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	**Local Co-ordinate Reference:**	Well TANGO STATE #501H
Company:	DELAWARE BASIN WEST	**TVD Reference:**	GL @ 3169.3usft
Project:	TOMAHAWK PROSPECT (NM-E)	**MD Reference:**	GL @ 3169.3usft
Site:	TANGO STATE PROJECT	**North Reference:**	Grid
Well:	TANGO STATE #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,100.0	90.00	89.30	7,567.3	9.0	737.6	737.6	0.00	0.00	0.00
8,200.0	90.00	89.30	7,567.3	10.2	837.6	837.6	0.00	0.00	0.00
8,300.0	90.00	89.30	7,567.3	11.4	937.6	937.6	0.00	0.00	0.00
8,400.0	90.00	89.30	7,567.3	12.6	1,037.6	1,037.6	0.00	0.00	0.00
8,500.0	90.00	89.30	7,567.3	13.9	1,137.5	1,137.6	0.00	0.00	0.00
8,600.0	90.00	89.30	7,567.3	15.1	1,237.5	1,237.6	0.00	0.00	0.00
8,700.0	90.00	89.30	7,567.3	16.3	1,337.5	1,337.6	0.00	0.00	0.00
8,800.0	90.00	89.30	7,567.3	17.5	1,437.5	1,437.6	0.00	0.00	0.00
8,900.0	90.00	89.30	7,567.3	18.7	1,537.5	1,537.6	0.00	0.00	0.00
9,000.0	90.00	89.30	7,567.3	19.9	1,637.5	1,637.6	0.00	0.00	0.00
9,100.0	90.00	89.30	7,567.3	21.2	1,737.5	1,737.6	0.00	0.00	0.00
9,200.0	90.00	89.30	7,567.3	22.4	1,837.5	1,837.6	0.00	0.00	0.00
9,300.0	90.00	89.30	7,567.3	23.6	1,937.5	1,937.6	0.00	0.00	0.00
9,400.0	90.00	89.30	7,567.3	24.8	2,037.5	2,037.6	0.00	0.00	0.00
9,500.0	90.00	89.30	7,567.3	26.0	2,137.5	2,137.6	0.00	0.00	0.00
9,600.0	90.00	89.30	7,567.3	27.2	2,237.5	2,237.6	0.00	0.00	0.00
9,700.0	90.00	89.30	7,567.3	28.5	2,337.5	2,337.6	0.00	0.00	0.00
9,800.0	90.00	89.30	7,567.3	29.7	2,437.4	2,437.6	0.00	0.00	0.00
9,900.0	90.00	89.30	7,567.3	30.9	2,537.4	2,537.6	0.00	0.00	0.00
10,000.0	90.00	89.30	7,567.3	32.1	2,637.4	2,637.6	0.00	0.00	0.00
10,100.0	90.00	89.30	7,567.3	33.3	2,737.4	2,737.6	0.00	0.00	0.00
10,200.0	90.00	89.30	7,567.3	34.6	2,837.4	2,837.6	0.00	0.00	0.00
10,300.0	90.00	89.30	7,567.3	35.8	2,937.4	2,937.6	0.00	0.00	0.00
10,400.0	90.00	89.30	7,567.3	37.0	3,037.4	3,037.6	0.00	0.00	0.00
10,500.0	90.00	89.30	7,567.3	38.2	3,137.4	3,137.6	0.00	0.00	0.00
10,600.0	90.00	89.30	7,567.3	39.4	3,237.4	3,237.6	0.00	0.00	0.00
10,700.0	90.00	89.30	7,567.3	40.6	3,337.4	3,337.6	0.00	0.00	0.00
10,800.0	90.00	89.30	7,567.3	41.9	3,437.4	3,437.6	0.00	0.00	0.00
10,900.0	90.00	89.30	7,567.3	43.1	3,537.4	3,537.6	0.00	0.00	0.00
11,000.0	90.00	89.30	7,567.3	44.3	3,637.4	3,637.6	0.00	0.00	0.00
11,100.0	90.00	89.30	7,567.3	45.5	3,737.4	3,737.6	0.00	0.00	0.00
11,200.0	90.00	89.30	7,567.3	46.7	3,837.3	3,837.6	0.00	0.00	0.00
11,300.0	90.00	89.30	7,567.3	47.9	3,937.3	3,937.6	0.00	0.00	0.00
11,400.0	90.00	89.30	7,567.3	49.2	4,037.3	4,037.6	0.00	0.00	0.00
11,500.0	90.00	89.30	7,567.3	50.4	4,137.3	4,137.6	0.00	0.00	0.00
11,600.0	90.00	89.30	7,567.3	51.6	4,237.3	4,237.6	0.00	0.00	0.00
11,700.0	90.00	89.30	7,567.3	52.8	4,337.3	4,337.6	0.00	0.00	0.00
11,800.0	90.00	89.30	7,567.3	54.0	4,437.3	4,437.6	0.00	0.00	0.00
11,900.0	90.00	89.30	7,567.3	55.2	4,537.3	4,537.6	0.00	0.00	0.00
12,000.0	90.00	89.30	7,567.3	56.5	4,637.3	4,637.6	0.00	0.00	0.00
12,100.0	90.00	89.30	7,567.3	57.7	4,737.3	4,737.6	0.00	0.00	0.00
12,200.0	90.00	89.30	7,567.3	58.9	4,837.3	4,837.6	0.00	0.00	0.00
12,300.0	90.00	89.30	7,567.3	60.1	4,937.3	4,937.6	0.00	0.00	0.00
12,400.0	90.00	89.30	7,567.3	61.3	5,037.3	5,037.6	0.00	0.00	0.00
12,454.4	90.00	89.30	7,567.3	62.0	5,091.7	5,092.1	0.00	0.00	0.00
Start 50.0 hold at 12454.4 MD									
12,504.5	90.00	89.30	7,567.3	62.6	5,141.7	5,142.1	0.00	0.00	0.00
TD at 12504.5									

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Planning Report

Database:	EDT 17 Central Planning Prod	**Local Co-ordinate Reference:**	Well TANGO STATE #501H
Company:	DELAWARE BASIN WEST	**TVD Reference:**	GL @ 3169.3usft
Project:	TOMAHAWK PROSPECT (NM-E)	**MD Reference:**	GL @ 3169.3usft
Site:	TANGO STATE PROJECT	**North Reference:**	Grid
Well:	TANGO STATE #501H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (TANGO STATE #	0.00	89.30	7,567.3	62.6	5,141.7	446,212.32	555,903.91	32° 13' 35.852 N	104° 9' 9.177 W
- plan hits target center									
- Rectangle (sides W100.0 H5,142.2 D20.0)									
FTP (TANGO STATE #5	0.00	0.00	7,567.3	1.4	120.0	446,151.16	550,882.21	32° 13' 35.326 N	104° 10' 7.639 W
- plan misses target center by 119.0usft at 7531.9usft MD (7471.4 TVD, 2.3 N, 190.4 E)									
- Circle (radius 50.0)									
LTP (TANGO STATE #5(	0.00	0.00	7,567.3	62.0	5,091.7	446,211.71	555,853.91	32° 13' 35.846 N	104° 9' 9.759 W
- plan hits target center									
- Circle (radius 50.0)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
12,504.5	7,567.3	5-1/2" Production Casing	5-1/2	6-3/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000.0	2,000.0	0.0	0.0	Start 5089.8 hold at 2000.0 MD
7,089.8	7,089.8	0.0	0.0	Start Build 12.00
7,839.8	7,567.3	5.8	477.4	Start 4614.6 hold at 7839.8 MD
12,454.4	7,567.3	62.0	5,091.7	Start 50.0 hold at 12454.4 MD
12,504.5	7,567.3	62.6	5,141.7	TD at 12504.5

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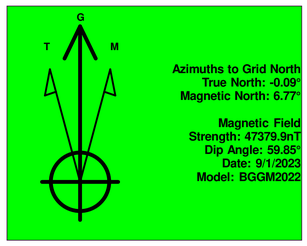
Project:	TOMAHAWK PROSPECT (NM-E)
Site:	TANGO STATE PROJECT
Well:	TANGO STATE #501H
Wellbore:	OWB
Design:	PWP0
GL:	3169.3
GL @ 3169.3usft	



Azimuths to Grid North
True North: -0.09°
Magnetic North: 6.77°

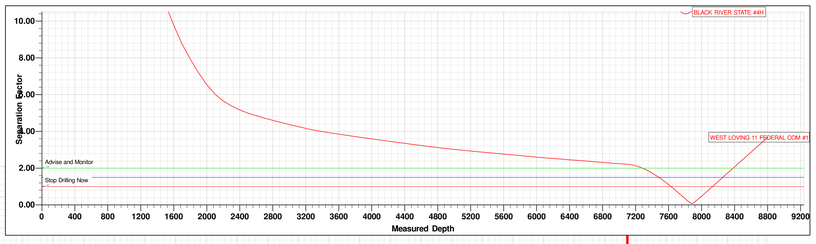
Magnetic Field
Strength: 47379.9nT
Dip Angle: 59.85°
Date: 9/1/2023
Model: BGGM2022

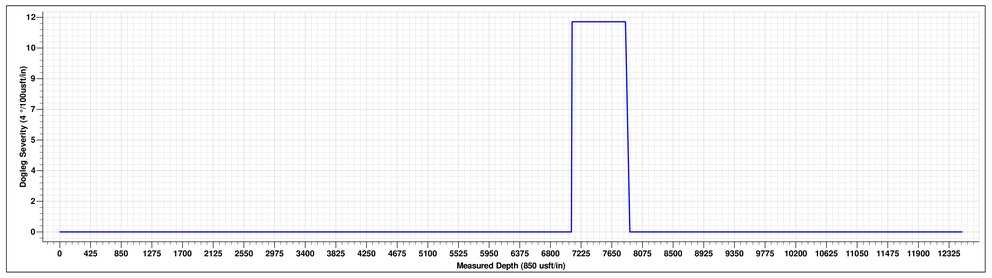
WELL DETAILS: TANGO STATE #501H

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	446149.71	550762.21	32° 13' 35.314 N	104° 10' 9.036 W

DESIGN TARGET DETAILS

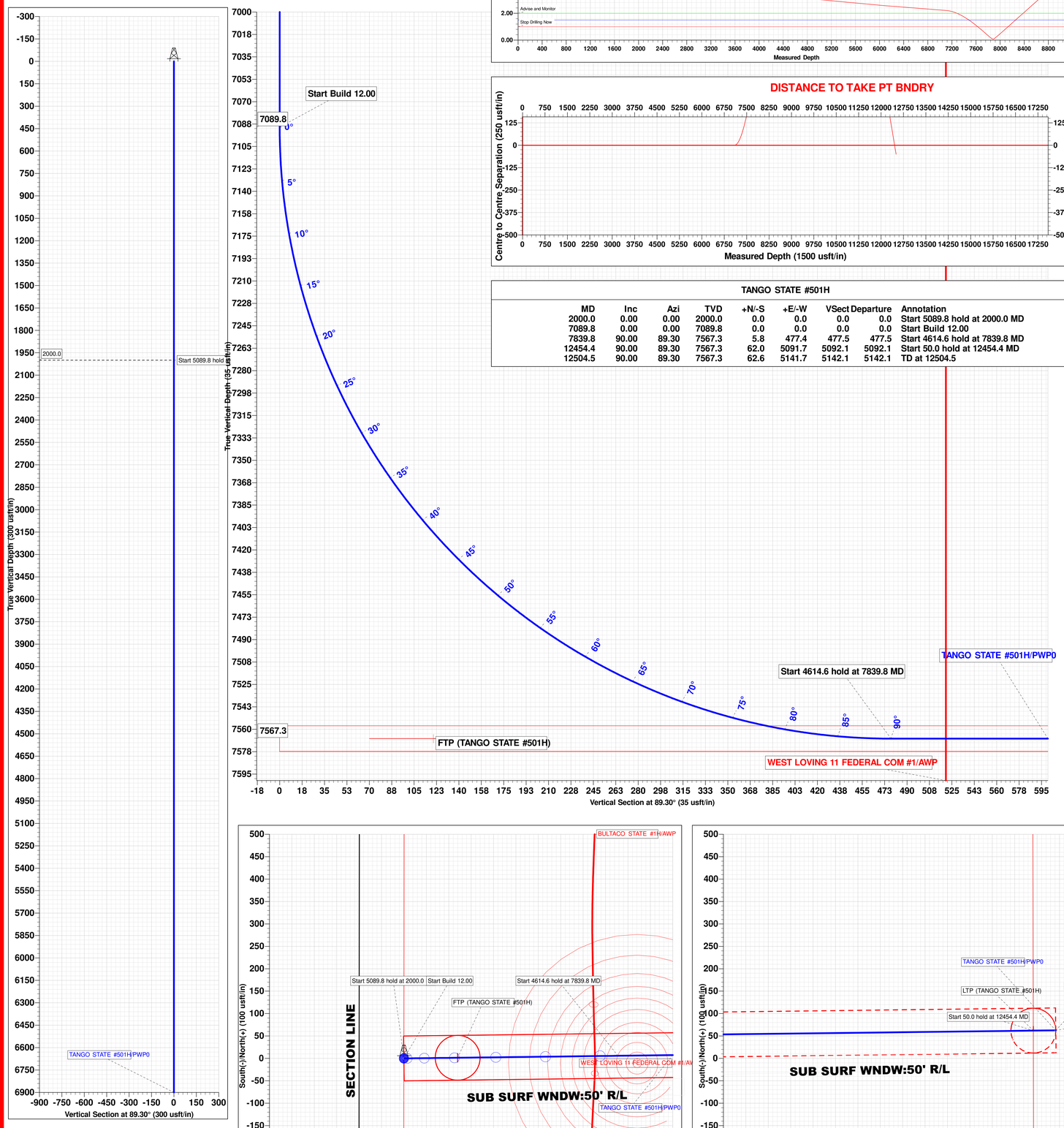
Name	TVD	+N/-S	+E/-W	Northing	Easting
FTP (TANGO STATE #501H)	7567.3	1.4	120.0	446151.16	550882.21
LTP (TANGO STATE #501H)	7567.3	62.0	5091.7	446211.71	555853.91
PBHL (TANGO STATE #501H)	7567.3	62.6	5141.7	446212.32	555903.91

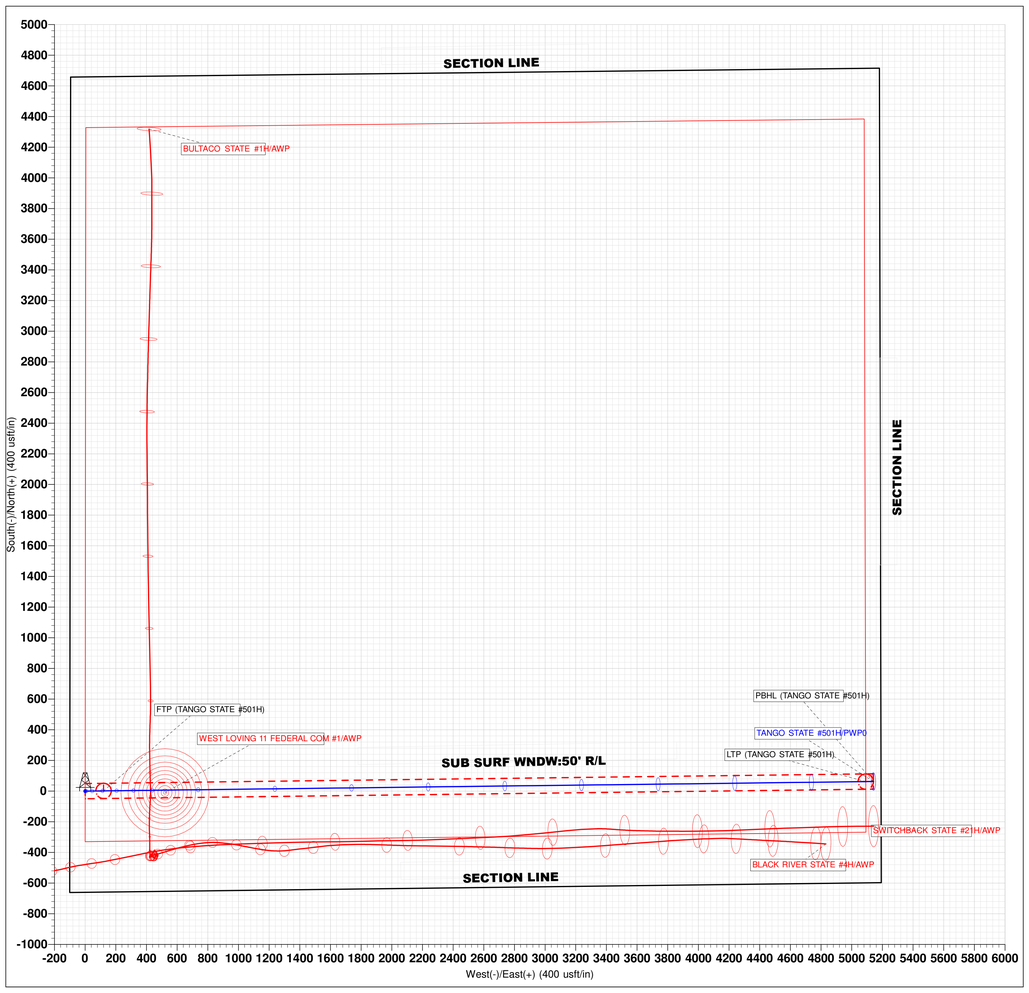


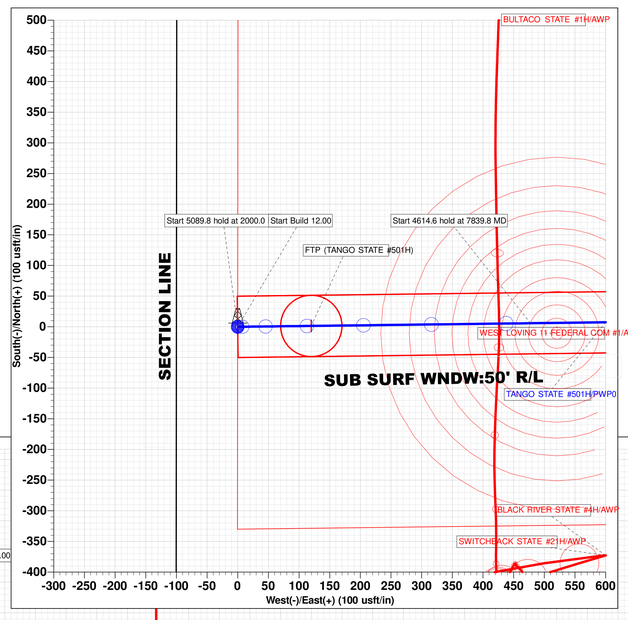


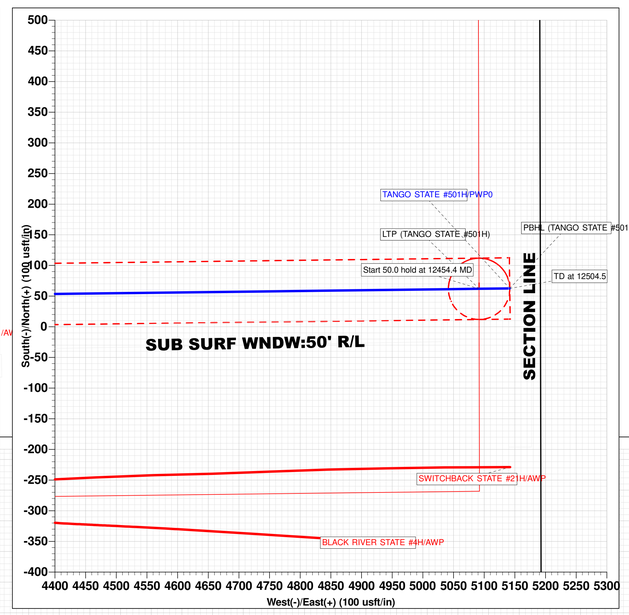
TANGO STATE #501H

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
2000.0	0.00	0.00	2000.0	0.0	0.0	0.0	0.0	Start 5089.8 hold at 2000.0 MD
7089.8	0.00	0.00	7089.8	0.0	0.0	0.0	0.0	Start Build 12.00
7839.8	90.00	89.30	7567.3	5.8	477.4	477.5	477.5	Start 4614.6 hold at 7839.8 MD
12454.4	90.00	89.30	7567.3	62.0	5091.7	5092.1	5092.1	Start 50.0 hold at 12454.4 MD
12504.5	90.00	89.30	7567.3	62.6	5141.7	5142.1	5142.1	TD at 12504.5

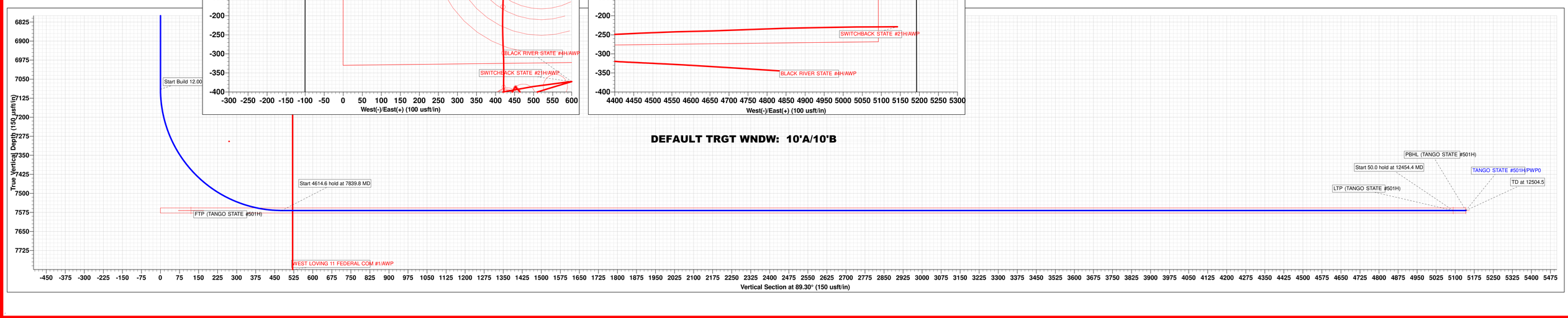








DEFAULT TRGT WNDW: 10'A/10'B



COG Operating, LLC - Tango State #501H

1. Geologic Formations

TVD of target	7,567' EOL	Pilot hole depth	NA
MD at TD:	12,505'	Deepest expected fresh water:	70'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	0	Water	
Top of Salt	766	Salt	
Base of Salt	2055	Salt	
Lamar	2267	Salt Water	
Bell Canyon	2329	Salt Water	
Cherry Canyon	3067	Oil/Gas	
Brushy Canyon	4196	Oil/Gas	
Bone Spring Lime	5701	Oil/Gas	
1st Bone Spring Sand	6751	Oil/Gas	
2nd Bone Spring Sand	7384	Oil/Gas	
3rd Bone Spring Carb	7604	Oil/Gas	
3rd Bone Spring Sand	0	Oil/Gas	
0	0	Oil/Gas	
0	0	Oil/Gas	

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14.75	0	655	10.75	45.5	J55	STC	7.14	14.06	16.54
9.875	0	2380	7.625	29.7	HCL80	BTC	7.45	5.52	10.20
6.75	0	12,505	5.5”	23	P110	SF Torq	3.08	3.66	3.77
				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. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

COG Operating, LLC - Tango State #501H

	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?	

COG Operating, LLC - Tango State #501H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	200	13.5	1.75	9	12	Lead: Class C + 4% Gel
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl2
Inter.	1400	11	2.8	19	48	Lead: NeoCem
	300	16.4	1.1	5	8	Tail: Class H
5.5 Prod	750	12.7	2	10.6	16	Lead: 35:65:6 H Blend
	1200	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	1,880'	35%

COG Operating, LLC - Tango State #501H

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:
12-1/4"	13-5/8"	3M	Annular	x	2500 psi
			Blind Ram		3M
			Pipe Ram	x	
			Double Ram	x	
			Other*		
8 1/2"	13-5/8"	5M	5M Annular	x	2500 psi
			Blind Ram		5M
			Pipe Ram	x	
			Double Ram	x	
			Other*		

BOP and BOPE will be installed per Onshore Order #2 requirements prior to drilling below the surface casing and will be rated to the above pressure rating or greater, see attached diagrams. Required safety valves, with appropriate wrenches and subs for the drill string being utilized, will be in the open position and accessible on the rig floor. 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 valves (inside BOP and full-opening valve) with appropriate wrenches 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?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

COG Operating, LLC - Tango State #501H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.4 - 8.6	28-29	N/C
Surf csg	Int shoe	Diesel Brine Emul	8.6 - 9.4	30-40	N/C
Int shoe	Lateral TD	OBM	10.5 - 12	30-40	20

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

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

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
N	Are 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	

COG Operating, LLC - Tango State #501H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4725 psi at 7567' TVD
Abnormal Temperature	NO 135 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?
Y	Is casing pre-set?

x	H2S Plan.
x	BOP & Choke Schematics.
x	Directional Plan
x	5M Annular Variance