

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. NMNM012559	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No. TATER SALAD FEDERAL COM 903H	
9. API Well No. 30 015 47750	
1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	10. Field and Pool, or Exploratory PURPLE SAGE/Wolfcamp
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other	11. Sec., T. R. M. or Blk. and Survey or Area SEC 24/T26S/R28E/NMP
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone	12. County or Parish EDDY
2. Name of Operator COG OPERATING LLC	13. State NM
3a. Address 600 West Illinois Ave, Midland, TX 79701	14. Distance in miles and direction from nearest town or post office* 15 miles
3b. Phone No. (include area code) (432) 683-7443	15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 200 feet
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENE / 225 FNL / 1120 FEL / LAT 32.034748 / LONG -104.035814 At proposed prod. zone NWNE / 200 FNL / 2190 FEL / LAT 32.052796 / LONG -104.039216	16. No of acres in lease 1400
14. Distance in miles and direction from nearest town or post office* 15 miles	17. Spacing Unit dedicated to this well 640.0
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 200 feet	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet
16. No of acres in lease 1400	19. Proposed Depth 10615 feet / 20777 feet
17. Spacing Unit dedicated to this well 640.0	20. BLM/BIA Bond No. in file FED: NMB000215
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet	21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2913 feet
19. Proposed Depth 10615 feet / 20777 feet	22. Approximate date work will start* 12/01/2020
20. BLM/BIA Bond No. in file FED: NMB000215	23. Estimated duration 30 days
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2913 feet	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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) MAYTE REYES / Ph: (432) 683-7443	Date 06/08/2020
Title Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 10/21/2020
Title Assistant Field Manager Lands & Minerals Carlsbad Field 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.

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.

- Will require a directional survey with the C-104 SL



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

KP 12/1/2020 GEO Review

*(Instructions on page 2)

(Continued on page 2)

Approval Date: 10/21/2020

Entered - KMS NMOCD

DISTRICT I
1025 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) 748-1263 Fax: (575) 748-9720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015 47750	Pool Code 98220	Pool Name Purple Sage; Wolfcamp, Gas
Property Code 329866	Property Name TATER SALAD FEDERAL COM	
Well Number 903H	Elevation 2913.1'	
OGRID No. 229137	Operator Name COG OPERATING, LLC	

Surface Location

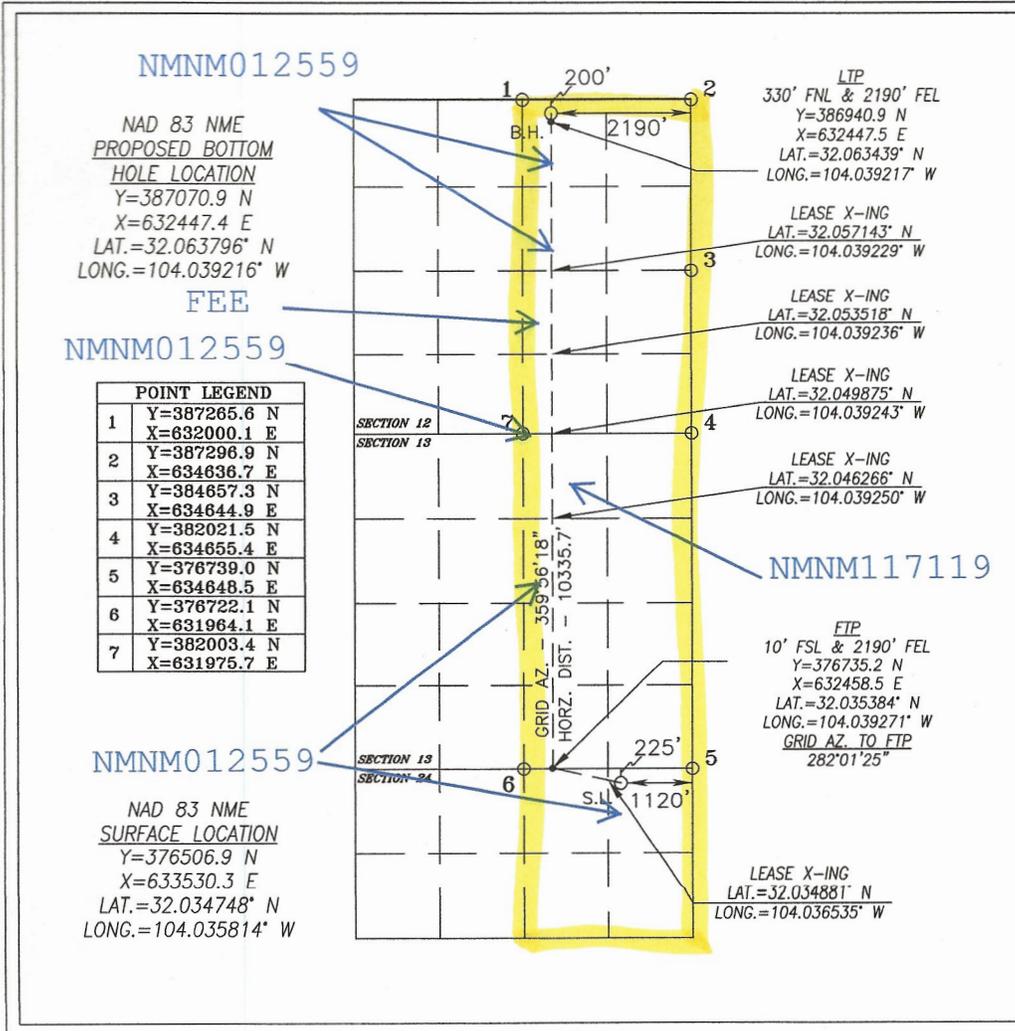
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	24	26-S	28-E		225	NORTH	1120	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	12	26-S	28-E		200	NORTH	2190	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
640			

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



OPERATOR CERTIFICATION

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

Mayte Reyes
Signature Date
Mayte Reyes

Printed Name
mreyes1@concho.com

E-mail Address

SURVEYOR CERTIFICATION

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

APRIL 13, 2020
Date of Survey

Signature & Seal of Professional Surveyor

Chad Harcrow 4/21/20

Certificate No. **CHAD HARCROW 17777**
W.O. # 20-585 DRAWN BY: DS

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OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 2913.1'

Surface Location

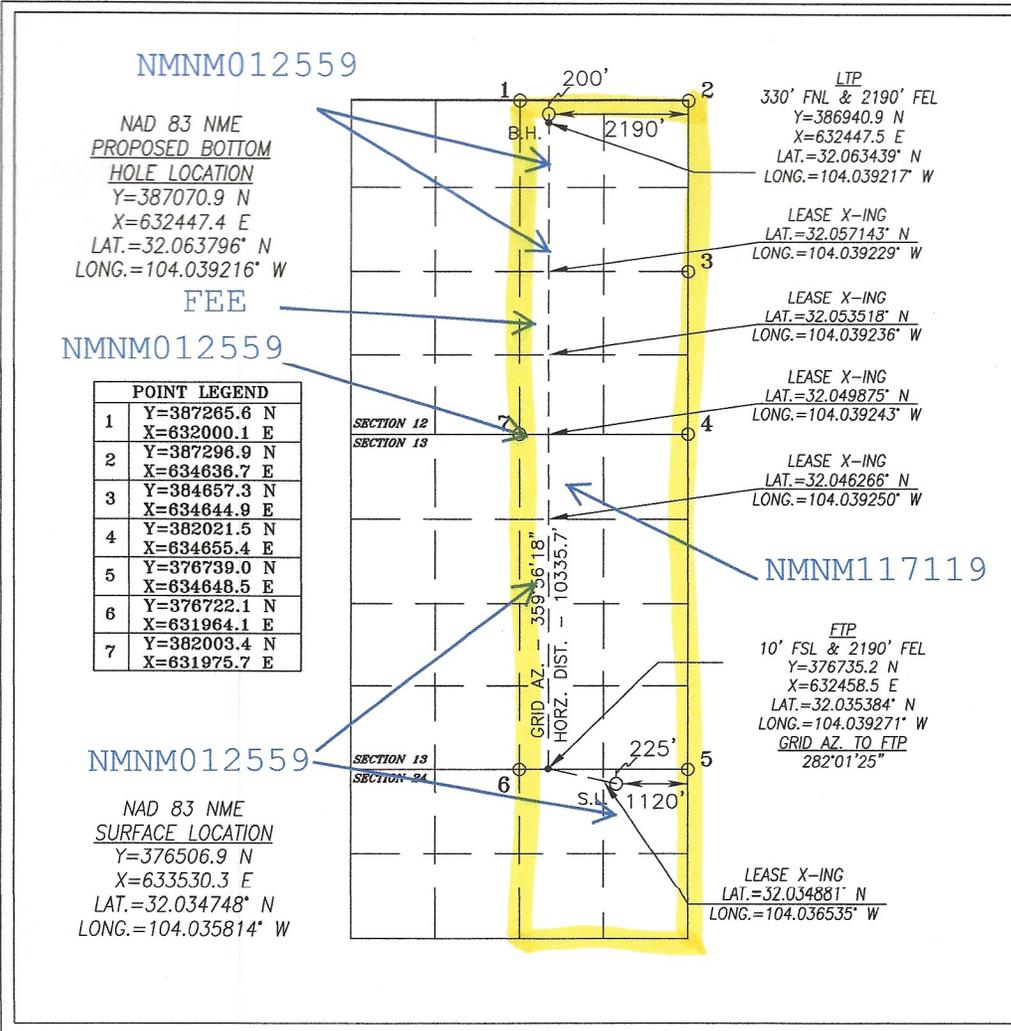
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Dedicated Acres 640	Joint or Infill	Consolidation Code	Order No.
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Mayte Reyes
Signature Date

Printed Name
Mayte Reyes
mreyes1@concho.com

E-mail Address

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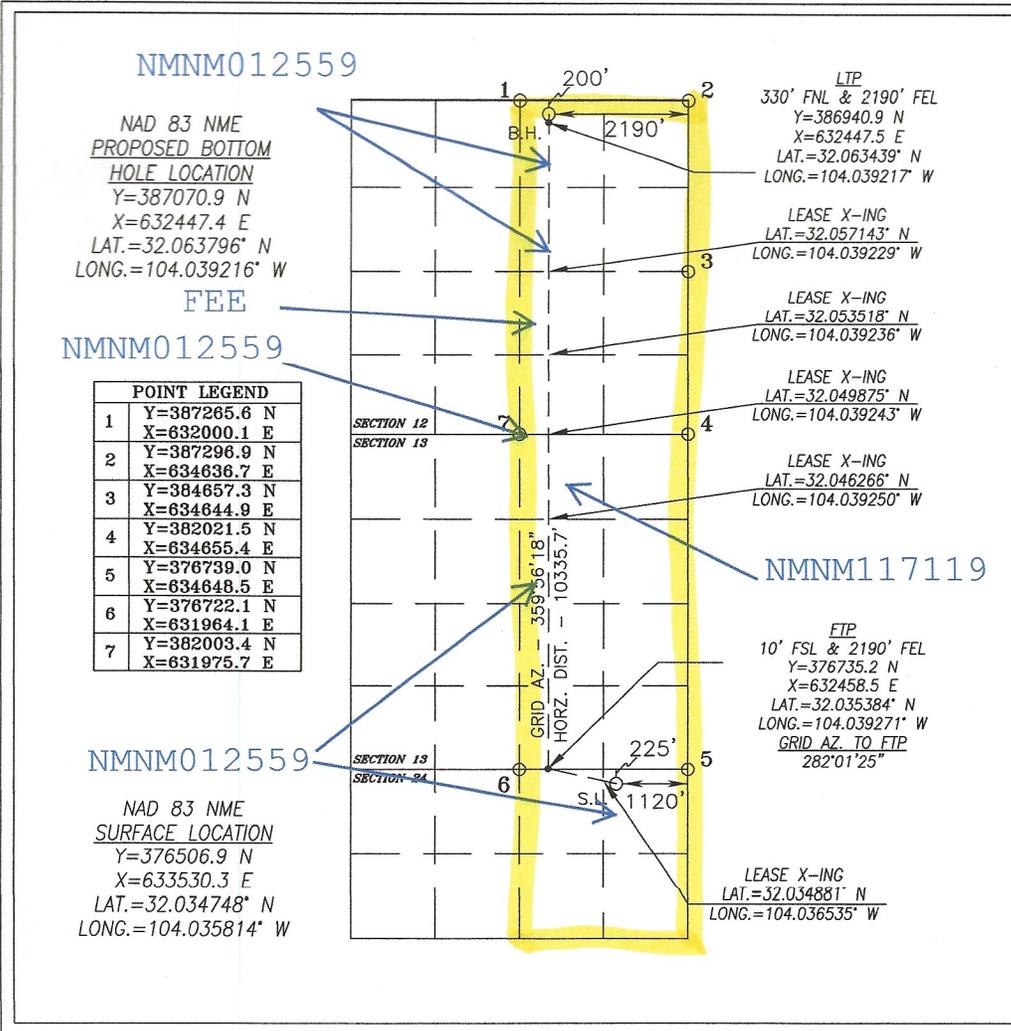
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Chad Harcrow
Signature 4/21/20

Certificate No. CHAD HARCROW 17777
W.O. # 20-585 DRAWN BY: DS

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating, LLC
LEASE NO.:	NMNM-012559
WELL NAME & NO.:	Tater Salad Federal Com 903H
SURFACE HOLE FOOTAGE:	0225' FNL & 1120' FEL
BOTTOM HOLE FOOTAGE:	0200' FNL & 2190' FEL Sec. 12, T.26 S., R.28 E.
LOCATION:	Section 24, T.26 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

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

Medium Cave/Karst

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Rustler, Salado, and Delaware.

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 **250** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**
 - ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

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

GENERAL REQUIREMENTS

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

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

Eddy County

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

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 Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. 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.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
5. 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.
6. 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.

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.
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. 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).

- c. 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.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. 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.
- f. 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.
- g. 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.

JAM 10152020

APD ID: 10400057771

Submission Date: 06/08/2020

Highlighted data reflects the most recent changes

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400057771

Tie to previous NOS? N

Submission Date: 06/08/2020

BLM Office: CARLSBAD

User: MAYTE REYES

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM012559

Lease Acres: 1400

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: COG OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: COG OPERATING LLC

Operator Address: 600 West Illinois Ave

Zip: 79701

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)683-7443

Operator Internet Address: RODOM@CONCHO.COM

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: PURPLE SAGE

Pool Name: Wolfcamp

Is the proposed well in an area containing other mineral resources? POTASH

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Is the proposed well in an area containing other mineral resources? POTASH

Is the proposed well in a Helium production area? N Use Existing Well Pad? N New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: TATER SALAD FEDERAL COM

Number: 901H, 902H and 903H

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 15 Miles

Distance to nearest well: 30 FT

Distance to lease line: 200 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: COG_Tater_Salad_903H_C102_20200608071105.pdf

Well work start Date: 12/01/2020

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum: GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	225	FNL	1120	FEL	26S	28E	24	Aliquot NENE	32.034748	-104.035814	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 012559	2913	0	0	Y
KOP Leg #1	225	FNL	1120	FEL	26S	28E	24	Aliquot NENE	32.034748	-104.035814	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 012559	2913	0	0	Y
PPP Leg #1-1	10	FSL	2190	FEL	26S	28E	13	Aliquot SWSE	32.035384	-104.039271	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 012559	-7557	10601	10470	Y

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-2	2639	FNL	2190	FEL	26S	28E	13	Aliquot SWNE	32.046266	-104.03925	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 117119	-7643	13100	10556	Y
PPP Leg #1-3	1	FSL	2190	FEL	26S	28E	12	Aliquot SWSE	32.049875	-104.039243	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 117119	-7664	15750	10577	Y
EXIT Leg #1	330	FNL	2190	FEL	26S	28E	12	Aliquot NWNE	32.063439	-104.039217	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 012559	-7701	20646	10614	Y
BHL Leg #1	200	FNL	2190	FEL	26S	28E	12	Aliquot NWNE	32.052796	-104.039216	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 012559	-7702	20777	10615	Y

APD ID: 10400057771

Submission Date: 06/08/2020

Highlighted data reflects the most recent changes

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
753433	---	2913	0	0	ALLUVIUM	NONE	N
753437	RUSTLER	2453	460	460	ALLUVIUM	NONE	N
753438	TOP SALT	2323	590	590	SALT	NONE	N
753439	BASE OF SALT	448	2465	2465	ANHYDRITE	NONE	N
753444	LAMAR	248	2665	2665	LIMESTONE	NONE	N
753445	BELL CANYON	213	2700	2700	LIMESTONE	NONE	N
753440	CHERRY CANYON	-627	3540	3540	SANDSTONE	NATURAL GAS, OIL	N
753446	BRUSHY CANYON	-1877	4790	4790	SANDSTONE	NATURAL GAS, OIL	N
753441	BONE SPRING LIME	-3452	6365	6365	SHALE	NATURAL GAS, OIL	N
753442	BONE SPRING 1ST	-4377	7290	7290	SANDSTONE	NATURAL GAS, OIL	N
753436	BONE SPRING 3RD	-6202	9115	9115	SANDSTONE	NATURAL GAS, OIL	N
753447	WOLFCAMP	-6452	9365	9365	SILTSTONE	NATURAL GAS, OIL	N
753448	WOLFCAMP	-6952	9865	9865	SILTSTONE	NATURAL GAS, OIL	N
753450	WOLFCAMP	-7277	10190	10190	SILTSTONE	NATURAL GAS, OIL	N
753451	WOLFCAMP	-7577	10490	10490	SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Pressure Rating (PSI): 3M

Rating Depth: 9900

Equipment: Annular. The BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? NO

Variance request: 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.

Testing Procedure: 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 of the components installed will be functional and tested.

Choke Diagram Attachment:

COG_Tater_Salad_903H_3M_Choke_20200608072653.pdf

BOP Diagram Attachment:

COG_Tater_Salad_903H_3M_BOP_20200608072700.pdf

COG_Tater_Salad_903H_Flex_Hose_20200608072710.pdf

Pressure Rating (PSI): 5M

Rating Depth: 10615

Equipment: Annular. The BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? YES

Variance request: 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.

Testing Procedure: 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 of the components installed will be functional and tested.

Choke Diagram Attachment:

COG_Tater_Salad_903H_5M_Choke_20200608072604.pdf

BOP Diagram Attachment:

COG_Tater_Salad_903H_5M_BOP_20200608072611.pdf

COG_Tater_Salad_903H_Flex_Hose_20200608072618.pdf

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	575	0	575	2913	2338	575	J-55	45.5	ST&C	8.131	16.01	DRY	18.84	DRY	18.84
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	9900	0	9700	-6907	-6787	9900	HCL-80	29.7	OTHER - BTC	1.79	1.33	DRY	2.45	DRY	2.45
3	PRODUCTION	6.75	5.5	NEW	API	Y	0	20777	0	10615	-6907	-7702	20777	P-110	23	OTHER - SF	2.2	2.61	DRY	2.91	DRY	2.91

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Tater_Salad_903H_Casing_Prog_20200608072929.pdf

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Tater_Salad_903H_Casing_Prog_20200608073032.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

COG_Tater_Salad_903H_Casing_Prog_20200608073108.pdf

Casing Design Assumptions and Worksheet(s):

COG_Tater_Salad_903H_Casing_Prog_20200608073136.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead	1	0	575	160	1.75	13.5	280	50	Class C	4% Gel
SURFACE	Tail		0	575	250	1.34	14.8	335	50	C	2% CaCl2
INTERMEDIATE	Lead	1	0	9900	1400	2.8	11	3920	50	NeoCem	No additives
INTERMEDIATE	Tail		0	9900	300	1.1	16.4	330	50	Class H	No additives
PRODUCTION	Lead	1	9400	2077 7	750	2	12.7	1500	35	Lead: 35:65:6 H Blend	No additives

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		9400	2077 7	1200	1.24	14.4	1488	35	Tail: 50:50:2 Class H Blend	No additives

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
575	9900	OTHER : Brine Diesel Emulsion	8.6	9.4							Brine Diesel Emulsion
9900	2077 7	OIL-BASED MUD	10.5	12							OBM
0	575	OTHER : Fresh water gel	8.4	8.6							

Operator Name: COG OPERATING LLC

Well Name: TATER SALAD FEDERAL COM

Well Number: 903H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

None planned

List of open and cased hole logs run in the well:

COMPENSATED NEUTRON LOG,GAMMA RAY LOG,

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6625

Anticipated Surface Pressure: 4289

Anticipated Bottom Hole Temperature(F): 165

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

COG_Tater_Salad_903H_H2S_Schem_20200608073437.pdf

COG_Tater_Salad_903H_H2S_SUP_20200608073444.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG_Tater_Salad_903H_AC_RPT_20200608073506.pdf

COG_Tater_Salad_903H_Directionl_Plan_20200608073513.pdf

Other proposed operations facets description:

Drilling Program.

Cement Program.

GCP.

Other proposed operations facets attachment:

COG_Tater_Salad_903H_Cement_Prog_20200608073529.pdf

COG_Tater_Salad_903H_Drilling_Prog_20200608073538.pdf

COG_Tater_Salad_903H_GCP_20200608073544.pdf

5.500_23.00__0.415__P110_RY_USS_TALON_HTQ_RD5.900_Data_Sheet_07_21_2020_20200930140549.pdf

Other Variance attachment:

EMERGENCY CALL LIST

	<u>OFFICE</u>	<u>MOBILE</u>
COG OPERATING LLC OFFICE	575-748-6940	
SETH WILD	432-683-7443	432-528-3633
WALTER ROYE	575-748-6940	432-934-1886

EMERGENCY RESPONSE NUMBERS

	<u>OFFICE</u>
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

DELAWARE BASIN WEST

ATLAS PROSPECT (NM-E)

TATER SALAD & MOMBA FED (ATLAS 2628)

TATER SALAD FED COM 903H

OWB

Plan: PWP1

Standard Survey Report

20 May, 2020

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Project	ATLAS 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		

Well	TATER SALAD FED COM 903H					
Well Position	+N/-S	0.0 usft	Northing:	376,449.50 usft	Latitude:	32° 2' 4.647 N
	+E/-W	0.0 usft	Easting:	592,345.00 usft	Longitude:	104° 2' 7.187 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	2,913.1 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/24/2020	6.85	59.78	47,496.77681472

Design	PWP1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	10,615.0	0.0	0.0	354.15	

Survey Tool Program	Date 5/20/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	10,020.0	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
10,020.0	20,775.9	PWP1 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

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	

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

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)
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	293.00	2,600.0	0.7	-1.6	0.8	2.00	2.00	0.00
2,700.0	4.00	293.00	2,699.8	2.7	-6.4	3.4	2.00	2.00	0.00
2,715.0	4.30	293.00	2,714.8	3.2	-7.4	3.9	2.00	2.00	0.00
Start 7305.9 hold at 2715.0 MD									
2,800.0	4.30	293.00	2,799.6	5.6	-13.3	7.0	0.00	0.00	0.00
2,900.0	4.30	293.00	2,899.3	8.6	-20.2	10.6	0.00	0.00	0.00
3,000.0	4.30	293.00	2,999.0	11.5	-27.1	14.2	0.00	0.00	0.00
3,100.0	4.30	293.00	3,098.7	14.4	-34.0	17.8	0.00	0.00	0.00
3,200.0	4.30	293.00	3,198.4	17.4	-40.9	21.4	0.00	0.00	0.00
3,300.0	4.30	293.00	3,298.2	20.3	-47.8	25.1	0.00	0.00	0.00
3,400.0	4.30	293.00	3,397.9	23.2	-54.7	28.7	0.00	0.00	0.00
3,500.0	4.30	293.00	3,497.6	26.1	-61.6	32.3	0.00	0.00	0.00
3,600.0	4.30	293.00	3,597.3	29.1	-68.5	35.9	0.00	0.00	0.00
3,700.0	4.30	293.00	3,697.0	32.0	-75.4	39.5	0.00	0.00	0.00
3,800.0	4.30	293.00	3,796.7	34.9	-82.3	43.1	0.00	0.00	0.00
3,900.0	4.30	293.00	3,896.5	37.9	-89.2	46.8	0.00	0.00	0.00
4,000.0	4.30	293.00	3,996.2	40.8	-96.1	50.4	0.00	0.00	0.00
4,100.0	4.30	293.00	4,095.9	43.7	-103.0	54.0	0.00	0.00	0.00
4,200.0	4.30	293.00	4,195.6	46.7	-109.9	57.6	0.00	0.00	0.00
4,300.0	4.30	293.00	4,295.3	49.6	-116.8	61.2	0.00	0.00	0.00
4,400.0	4.30	293.00	4,395.1	52.5	-123.7	64.9	0.00	0.00	0.00
4,500.0	4.30	293.00	4,494.8	55.4	-130.6	68.5	0.00	0.00	0.00
4,600.0	4.30	293.00	4,594.5	58.4	-137.5	72.1	0.00	0.00	0.00
4,700.0	4.30	293.00	4,694.2	61.3	-144.4	75.7	0.00	0.00	0.00
4,800.0	4.30	293.00	4,793.9	64.2	-151.3	79.3	0.00	0.00	0.00
4,900.0	4.30	293.00	4,893.6	67.2	-158.2	82.9	0.00	0.00	0.00
5,000.0	4.30	293.00	4,993.4	70.1	-165.1	86.6	0.00	0.00	0.00
5,100.0	4.30	293.00	5,093.1	73.0	-172.0	90.2	0.00	0.00	0.00
5,200.0	4.30	293.00	5,192.8	76.0	-178.9	93.8	0.00	0.00	0.00
5,300.0	4.30	293.00	5,292.5	78.9	-185.8	97.4	0.00	0.00	0.00
5,400.0	4.30	293.00	5,392.2	81.8	-192.7	101.0	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

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)	
5,500.0	4.30	293.00	5,492.0	84.7	-199.6	104.7	0.00	0.00	0.00	
5,600.0	4.30	293.00	5,591.7	87.7	-206.5	108.3	0.00	0.00	0.00	
5,700.0	4.30	293.00	5,691.4	90.6	-213.4	111.9	0.00	0.00	0.00	
5,800.0	4.30	293.00	5,791.1	93.5	-220.3	115.5	0.00	0.00	0.00	
5,900.0	4.30	293.00	5,890.8	96.5	-227.2	119.1	0.00	0.00	0.00	
6,000.0	4.30	293.00	5,990.6	99.4	-234.1	122.7	0.00	0.00	0.00	
6,100.0	4.30	293.00	6,090.3	102.3	-241.0	126.4	0.00	0.00	0.00	
6,200.0	4.30	293.00	6,190.0	105.2	-248.0	130.0	0.00	0.00	0.00	
6,300.0	4.30	293.00	6,289.7	108.2	-254.9	133.6	0.00	0.00	0.00	
6,400.0	4.30	293.00	6,389.4	111.1	-261.8	137.2	0.00	0.00	0.00	
6,500.0	4.30	293.00	6,489.1	114.0	-268.7	140.8	0.00	0.00	0.00	
6,600.0	4.30	293.00	6,588.9	117.0	-275.6	144.5	0.00	0.00	0.00	
6,700.0	4.30	293.00	6,688.6	119.9	-282.5	148.1	0.00	0.00	0.00	
6,800.0	4.30	293.00	6,788.3	122.8	-289.4	151.7	0.00	0.00	0.00	
6,900.0	4.30	293.00	6,888.0	125.8	-296.3	155.3	0.00	0.00	0.00	
7,000.0	4.30	293.00	6,987.7	128.7	-303.2	158.9	0.00	0.00	0.00	
7,100.0	4.30	293.00	7,087.5	131.6	-310.1	162.5	0.00	0.00	0.00	
7,200.0	4.30	293.00	7,187.2	134.5	-317.0	166.2	0.00	0.00	0.00	
7,300.0	4.30	293.00	7,286.9	137.5	-323.9	169.8	0.00	0.00	0.00	
7,400.0	4.30	293.00	7,386.6	140.4	-330.8	173.4	0.00	0.00	0.00	
7,500.0	4.30	293.00	7,486.3	143.3	-337.7	177.0	0.00	0.00	0.00	
7,600.0	4.30	293.00	7,586.0	146.3	-344.6	180.6	0.00	0.00	0.00	
7,700.0	4.30	293.00	7,685.8	149.2	-351.5	184.2	0.00	0.00	0.00	
7,800.0	4.30	293.00	7,785.5	152.1	-358.4	187.9	0.00	0.00	0.00	
7,900.0	4.30	293.00	7,885.2	155.1	-365.3	191.5	0.00	0.00	0.00	
8,000.0	4.30	293.00	7,984.9	158.0	-372.2	195.1	0.00	0.00	0.00	
8,100.0	4.30	293.00	8,084.6	160.9	-379.1	198.7	0.00	0.00	0.00	
8,200.0	4.30	293.00	8,184.4	163.8	-386.0	202.3	0.00	0.00	0.00	
8,300.0	4.30	293.00	8,284.1	166.8	-392.9	206.0	0.00	0.00	0.00	
8,400.0	4.30	293.00	8,383.8	169.7	-399.8	209.6	0.00	0.00	0.00	
8,500.0	4.30	293.00	8,483.5	172.6	-406.7	213.2	0.00	0.00	0.00	
8,600.0	4.30	293.00	8,583.2	175.6	-413.6	216.8	0.00	0.00	0.00	
8,700.0	4.30	293.00	8,683.0	178.5	-420.5	220.4	0.00	0.00	0.00	
8,800.0	4.30	293.00	8,782.7	181.4	-427.4	224.0	0.00	0.00	0.00	
8,900.0	4.30	293.00	8,882.4	184.3	-434.3	227.7	0.00	0.00	0.00	
9,000.0	4.30	293.00	8,982.1	187.3	-441.2	231.3	0.00	0.00	0.00	
9,100.0	4.30	293.00	9,081.8	190.2	-448.1	234.9	0.00	0.00	0.00	
9,200.0	4.30	293.00	9,181.5	193.1	-455.0	238.5	0.00	0.00	0.00	
9,300.0	4.30	293.00	9,281.3	196.1	-461.9	242.1	0.00	0.00	0.00	
9,400.0	4.30	293.00	9,381.0	199.0	-468.8	245.8	0.00	0.00	0.00	
9,500.0	4.30	293.00	9,480.7	201.9	-475.7	249.4	0.00	0.00	0.00	
9,600.0	4.30	293.00	9,580.4	204.9	-482.6	253.0	0.00	0.00	0.00	
9,700.0	4.30	293.00	9,680.1	207.8	-489.5	256.6	0.00	0.00	0.00	
9,800.0	4.30	293.00	9,779.9	210.7	-496.4	260.2	0.00	0.00	0.00	

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

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)
9,900.0	4.30	293.00	9,879.6	213.6	-503.3	263.8	0.00	0.00	0.00
10,000.0	4.30	293.00	9,979.3	216.6	-510.2	267.5	0.00	0.00	0.00
10,020.9	4.30	293.00	10,000.1	217.2	-511.7	268.2	0.00	0.00	0.00
Start DLS 10.00 TFO 41.10									
10,100.0	11.50	319.99	10,078.5	224.4	-519.5	276.2	10.00	9.10	34.11
10,200.0	21.34	326.76	10,174.3	247.3	-535.9	300.7	10.00	9.83	6.77
10,300.0	31.27	329.36	10,263.8	285.0	-559.2	340.5	10.00	9.94	2.60
10,400.0	41.24	330.79	10,344.3	336.2	-588.5	394.4	10.00	9.96	1.43
10,500.0	51.21	331.75	10,413.4	399.4	-623.2	460.9	10.00	9.98	0.95
10,600.0	61.19	332.47	10,469.0	472.8	-662.0	537.8	10.00	9.98	0.72
10,700.0	71.18	333.06	10,509.3	554.1	-703.8	622.9	10.00	9.99	0.59
10,800.0	81.17	333.58	10,533.2	640.7	-747.3	713.6	10.00	9.99	0.52
10,884.1	89.57	334.00	10,540.0	715.9	-784.3	792.1	10.00	9.99	0.50
Start DLS 2.00 TFO 90.11									
10,900.0	89.57	334.32	10,540.1	730.2	-791.2	807.0	2.00	0.00	2.00
11,000.0	89.57	336.32	10,540.8	821.0	-833.0	901.7	2.00	0.00	2.00
11,100.0	89.56	338.32	10,541.6	913.3	-871.5	997.4	2.00	0.00	2.00
11,200.0	89.56	340.32	10,542.4	1,006.8	-906.8	1,094.0	2.00	0.00	2.00
11,300.0	89.56	342.32	10,543.1	1,101.6	-938.9	1,191.5	2.00	0.00	2.00
11,400.0	89.56	344.32	10,543.9	1,197.3	-967.6	1,289.7	2.00	0.00	2.00
11,500.0	89.56	346.32	10,544.7	1,294.1	-992.9	1,388.5	2.00	0.00	2.00
11,600.0	89.56	348.32	10,545.5	1,391.6	-1,014.9	1,487.8	2.00	0.00	2.00
11,700.0	89.56	350.32	10,546.2	1,489.9	-1,033.4	1,587.5	2.00	0.00	2.00
11,800.0	89.56	352.32	10,547.0	1,588.7	-1,048.5	1,687.3	2.00	0.00	2.00
11,900.0	89.56	354.32	10,547.8	1,688.0	-1,060.1	1,787.3	2.00	0.00	2.00
12,000.0	89.56	356.32	10,548.5	1,787.7	-1,068.3	1,887.3	2.00	0.00	2.00
12,100.0	89.56	358.32	10,549.3	1,887.6	-1,073.0	1,987.1	2.00	0.00	2.00
12,181.3	89.57	359.94	10,549.9	1,968.9	-1,074.2	2,068.1	2.00	0.00	2.00
Start 8595.2 hold at 12181.3 MD									
12,200.0	89.57	359.94	10,550.1	1,987.6	-1,074.2	2,086.7	0.00	0.00	0.00
12,300.0	89.57	359.94	10,550.8	2,087.6	-1,074.3	2,186.2	0.00	0.00	0.00
12,400.0	89.57	359.94	10,551.6	2,187.6	-1,074.4	2,285.7	0.00	0.00	0.00
12,500.0	89.57	359.94	10,552.3	2,287.5	-1,074.5	2,385.2	0.00	0.00	0.00
12,600.0	89.57	359.94	10,553.1	2,387.5	-1,074.6	2,484.7	0.00	0.00	0.00
12,700.0	89.57	359.94	10,553.8	2,487.5	-1,074.7	2,584.1	0.00	0.00	0.00
12,800.0	89.57	359.94	10,554.6	2,587.5	-1,074.8	2,683.6	0.00	0.00	0.00
12,900.0	89.57	359.94	10,555.4	2,687.5	-1,074.9	2,783.1	0.00	0.00	0.00
13,000.0	89.57	359.94	10,556.1	2,787.5	-1,075.0	2,882.6	0.00	0.00	0.00
13,100.0	89.57	359.94	10,556.9	2,887.5	-1,075.1	2,982.1	0.00	0.00	0.00
13,200.0	89.57	359.94	10,557.6	2,987.5	-1,075.2	3,081.6	0.00	0.00	0.00
13,300.0	89.57	359.94	10,558.4	3,087.5	-1,075.3	3,181.1	0.00	0.00	0.00
13,400.0	89.57	359.94	10,559.1	3,187.5	-1,075.4	3,280.6	0.00	0.00	0.00
13,500.0	89.57	359.94	10,559.9	3,287.5	-1,075.5	3,380.0	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,600.0	89.57	359.94	10,560.7	3,387.5	-1,075.6	3,479.5	0.00	0.00	0.00	
13,700.0	89.57	359.94	10,561.4	3,487.5	-1,075.7	3,579.0	0.00	0.00	0.00	
13,800.0	89.57	359.94	10,562.2	3,587.5	-1,075.8	3,678.5	0.00	0.00	0.00	
13,900.0	89.57	359.94	10,562.9	3,687.5	-1,075.9	3,778.0	0.00	0.00	0.00	
14,000.0	89.57	359.94	10,563.7	3,787.5	-1,076.0	3,877.5	0.00	0.00	0.00	
14,100.0	89.57	359.94	10,564.4	3,887.5	-1,076.1	3,977.0	0.00	0.00	0.00	
14,200.0	89.57	359.94	10,565.2	3,987.5	-1,076.2	4,076.4	0.00	0.00	0.00	
14,300.0	89.57	359.94	10,566.0	4,087.5	-1,076.3	4,175.9	0.00	0.00	0.00	
14,400.0	89.57	359.94	10,566.7	4,187.5	-1,076.4	4,275.4	0.00	0.00	0.00	
14,500.0	89.57	359.94	10,567.5	4,287.5	-1,076.5	4,374.9	0.00	0.00	0.00	
14,600.0	89.57	359.94	10,568.2	4,387.5	-1,076.6	4,474.4	0.00	0.00	0.00	
14,700.0	89.57	359.94	10,569.0	4,487.5	-1,076.7	4,573.9	0.00	0.00	0.00	
14,800.0	89.57	359.94	10,569.7	4,587.5	-1,076.8	4,673.4	0.00	0.00	0.00	
14,900.0	89.57	359.94	10,570.5	4,687.5	-1,076.9	4,772.8	0.00	0.00	0.00	
15,000.0	89.57	359.94	10,571.3	4,787.5	-1,077.0	4,872.3	0.00	0.00	0.00	
15,100.0	89.57	359.94	10,572.0	4,887.5	-1,077.1	4,971.8	0.00	0.00	0.00	
15,200.0	89.57	359.94	10,572.8	4,987.5	-1,077.2	5,071.3	0.00	0.00	0.00	
15,300.0	89.57	359.94	10,573.5	5,087.5	-1,077.3	5,170.8	0.00	0.00	0.00	
15,400.0	89.57	359.94	10,574.3	5,187.5	-1,077.4	5,270.3	0.00	0.00	0.00	
15,500.0	89.57	359.94	10,575.0	5,287.5	-1,077.5	5,369.8	0.00	0.00	0.00	
15,600.0	89.57	359.94	10,575.8	5,387.5	-1,077.6	5,469.2	0.00	0.00	0.00	
15,700.0	89.57	359.94	10,576.6	5,487.5	-1,077.6	5,568.7	0.00	0.00	0.00	
15,800.0	89.57	359.94	10,577.3	5,587.5	-1,077.7	5,668.2	0.00	0.00	0.00	
15,900.0	89.57	359.94	10,578.1	5,687.4	-1,077.8	5,767.7	0.00	0.00	0.00	
16,000.0	89.57	359.94	10,578.8	5,787.4	-1,077.9	5,867.2	0.00	0.00	0.00	
16,100.0	89.57	359.94	10,579.6	5,887.4	-1,078.0	5,966.7	0.00	0.00	0.00	
16,200.0	89.57	359.94	10,580.3	5,987.4	-1,078.1	6,066.2	0.00	0.00	0.00	
16,300.0	89.57	359.94	10,581.1	6,087.4	-1,078.2	6,165.6	0.00	0.00	0.00	
16,400.0	89.57	359.94	10,581.9	6,187.4	-1,078.3	6,265.1	0.00	0.00	0.00	
16,500.0	89.57	359.94	10,582.6	6,287.4	-1,078.4	6,364.6	0.00	0.00	0.00	
16,600.0	89.57	359.94	10,583.4	6,387.4	-1,078.5	6,464.1	0.00	0.00	0.00	
16,700.0	89.57	359.94	10,584.1	6,487.4	-1,078.6	6,563.6	0.00	0.00	0.00	
16,800.0	89.57	359.94	10,584.9	6,587.4	-1,078.7	6,663.1	0.00	0.00	0.00	
16,900.0	89.57	359.94	10,585.6	6,687.4	-1,078.8	6,762.6	0.00	0.00	0.00	
17,000.0	89.57	359.94	10,586.4	6,787.4	-1,078.9	6,862.0	0.00	0.00	0.00	
17,100.0	89.57	359.94	10,587.2	6,887.4	-1,079.0	6,961.5	0.00	0.00	0.00	
17,200.0	89.57	359.94	10,587.9	6,987.4	-1,079.1	7,061.0	0.00	0.00	0.00	
17,300.0	89.57	359.94	10,588.7	7,087.4	-1,079.2	7,160.5	0.00	0.00	0.00	
17,400.0	89.57	359.94	10,589.4	7,187.4	-1,079.3	7,260.0	0.00	0.00	0.00	
17,500.0	89.57	359.94	10,590.2	7,287.4	-1,079.4	7,359.5	0.00	0.00	0.00	
17,600.0	89.57	359.94	10,590.9	7,387.4	-1,079.5	7,459.0	0.00	0.00	0.00	
17,700.0	89.57	359.94	10,591.7	7,487.4	-1,079.6	7,558.4	0.00	0.00	0.00	
17,800.0	89.57	359.94	10,592.5	7,587.4	-1,079.7	7,657.9	0.00	0.00	0.00	
17,900.0	89.57	359.94	10,593.2	7,687.4	-1,079.8	7,757.4	0.00	0.00	0.00	

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
18,000.0	89.57	359.94	10,594.0	7,787.4	-1,079.9	7,856.9	0.00	0.00	0.00	
18,100.0	89.57	359.94	10,594.7	7,887.4	-1,080.0	7,956.4	0.00	0.00	0.00	
18,200.0	89.57	359.94	10,595.5	7,987.4	-1,080.1	8,055.9	0.00	0.00	0.00	
18,300.0	89.57	359.94	10,596.2	8,087.4	-1,080.2	8,155.4	0.00	0.00	0.00	
18,400.0	89.57	359.94	10,597.0	8,187.4	-1,080.3	8,254.9	0.00	0.00	0.00	
18,500.0	89.57	359.94	10,597.8	8,287.4	-1,080.4	8,354.3	0.00	0.00	0.00	
18,600.0	89.57	359.94	10,598.5	8,387.4	-1,080.5	8,453.8	0.00	0.00	0.00	
18,700.0	89.57	359.94	10,599.3	8,487.4	-1,080.6	8,553.3	0.00	0.00	0.00	
18,800.0	89.57	359.94	10,600.0	8,587.4	-1,080.7	8,652.8	0.00	0.00	0.00	
18,900.0	89.57	359.94	10,600.8	8,687.4	-1,080.8	8,752.3	0.00	0.00	0.00	
19,000.0	89.57	359.94	10,601.5	8,787.4	-1,080.9	8,851.8	0.00	0.00	0.00	
19,100.0	89.57	359.94	10,602.3	8,887.4	-1,081.0	8,951.3	0.00	0.00	0.00	
19,200.0	89.57	359.94	10,603.1	8,987.4	-1,081.1	9,050.7	0.00	0.00	0.00	
19,300.0	89.57	359.94	10,603.8	9,087.4	-1,081.2	9,150.2	0.00	0.00	0.00	
19,400.0	89.57	359.94	10,604.6	9,187.3	-1,081.3	9,249.7	0.00	0.00	0.00	
19,500.0	89.57	359.94	10,605.3	9,287.3	-1,081.4	9,349.2	0.00	0.00	0.00	
19,600.0	89.57	359.94	10,606.1	9,387.3	-1,081.5	9,448.7	0.00	0.00	0.00	
19,700.0	89.57	359.94	10,606.8	9,487.3	-1,081.6	9,548.2	0.00	0.00	0.00	
19,800.0	89.57	359.94	10,607.6	9,587.3	-1,081.6	9,647.7	0.00	0.00	0.00	
19,900.0	89.57	359.94	10,608.4	9,687.3	-1,081.7	9,747.1	0.00	0.00	0.00	
20,000.0	89.57	359.94	10,609.1	9,787.3	-1,081.8	9,846.6	0.00	0.00	0.00	
20,100.0	89.57	359.94	10,609.9	9,887.3	-1,081.9	9,946.1	0.00	0.00	0.00	
20,200.0	89.57	359.94	10,610.6	9,987.3	-1,082.0	10,045.6	0.00	0.00	0.00	
20,300.0	89.57	359.94	10,611.4	10,087.3	-1,082.1	10,145.1	0.00	0.00	0.00	
20,400.0	89.57	359.94	10,612.1	10,187.3	-1,082.2	10,244.6	0.00	0.00	0.00	
20,500.0	89.57	359.94	10,612.9	10,287.3	-1,082.3	10,344.1	0.00	0.00	0.00	
20,600.0	89.57	359.94	10,613.7	10,387.3	-1,082.4	10,443.5	0.00	0.00	0.00	
20,700.0	89.57	359.94	10,614.4	10,487.3	-1,082.5	10,543.0	0.00	0.00	0.00	
20,776.5	89.57	359.94	10,615.0	10,563.8	-1,082.6	10,619.1	0.00	0.00	0.00	
TD at 20776.5										

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well TATER SALAD FED COM 903H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Site:	TATER SALAD & MOMBA FED (ATLAS 2628)	MD Reference:	KB=27' @ 2940.1usft (Nabors 893)
Well:	TATER SALAD FED COM 903H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
FTP (TATER SALAD F - plan misses target center by 482.4usft at 10601.3usft MD (10469.6 TVD, 473.8 N, -662.5 E) - Circle (radius 50.0)	0.00	0.00	10,540.0	228.3	-1,071.7	376,677.80	591,273.30	32° 2' 6.935 N	104° 2' 19.630 W
LTP (TATER SALAD F - plan misses target center by 1.0usft at 20646.5usft MD (10614.0 TVD, 10433.8 N, -1082.5 E) - Point	0.00	0.00	10,615.0	10,433.8	-1,082.5	386,883.30	591,262.50	32° 3' 47.934 N	104° 2' 19.432 W
PBHL (TATER SALAD - plan hits target center - Rectangle (sides W100.0 H10,335.5 D20.0)	-0.43	179.94	10,615.0	10,563.8	-1,082.6	387,013.30	591,262.40	32° 3' 49.221 N	104° 2' 19.429 W

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2500	2500	0	0	Start Build 2.00	
2715	2715	3	-7	Start 7305.9 hold at 2715.0 MD	
10,021	10,000	217	-512	Start DLS 10.00 TFO 41.10	
10,884	10,540	716	-784	Start DLS 2.00 TFO 90.11	
12,181	10,550	1969	-1074	Start 8595.2 hold at 12181.3 MD	
20,776	10,615	10,564	-1083	TD at 20776.5	

Checked By: _____	Approved By: _____	Date: _____
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Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	160	13.5	1.75	9	12	Lead: Class C + 4% Gel
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
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%
1 st Intermediate	0'	50%
Production	9,400'	35%

COG Operating, LLC - Tater Salad Federal Com 903H

1. Geologic Formations

TVD of target	10,615' EOL	Pilot hole depth	NA
MD at TD:	20,777'	Deepest expected fresh water:	175'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	460	Water	
Top of Salt	590	Salt	
Base of Salt	2465	Salt	
Lamar	2665	Salt Water	
Bell Canyon	2700	Salt Water	
Cherry Canyon	3540	Oil/Gas	
Brushy Canyon	4790	Oil/Gas	
Bone Spring Lime	6365	Oil/Gas	
1st Bone Spring Sand	7290	Oil/Gas	
3rd Bone Spring Sand	9115	Oil/Gas	
Wolfcamp	9365	Oil/Gas	
Wolfcamp B	9865	Oil/Gas	
Wolfcamp C	10190	Oil/Gas	
Wolfcamp D	10490	Target Oil/Gas	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
14.75	0	575	10.75	45.5	J55	STC	8.13	16.01	18.84
9.875	0	9900	7.625	29.7	HCL80	BTC	1.79	1.33	2.45
6.75	0	9700	5.5"	23	P110	BTC	2.31	2.61	2.99
6.75	9700	20,777	5.5"	23	P110	SF	2.20	2.61	2.91
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

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

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	160	13.5	1.75	9	12	Lead: Class C + 4% Gel
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Inter.	1400	11	2.8	19	48	Lead: NeoCem
	300	16.4	1.1	5	8	Tail: Class H
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	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%
1 st Intermediate	0'	50%
Production	9,400'	35%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
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.

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	

7. Drilling Conditions

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Condition	Specify what type and where?
BH Pressure at deepest TVD	6625 psi at 10615' TVD
Abnormal Temperature	NO 165 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?
Y	Multi-Bowl Wellhead

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

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: 5/28/2020

Original Operator & OGRID No.: COG Operating LLC, OGRID 229137
 Amended - Reason for Amendment: _____

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Tater Salad Federal Com 903H	30-015-	A-24-26S-28E	225' FNL & 1120' FEL	7,995 MCFD		Gas will connect on well pad.

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to ETC and will be connected to Red Bluff low/high pressure gathering system located in Culberson County, Texas. It will require approximately 0' of pipeline on lease to connect the facility to low/high pressure gathering system. COG Operating LLC provides (periodically) to ETC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COG Operating LLC and ETC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Red Bluff Processing Plant located in Sec 35-Blk 57-T2 Culberson, Texas. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

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