PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC.
LEASE NO.:	NMNM014164
WELL NAME & NO.:	604H-FASCINATOR FEDERAL COM
SURFACE HOLE FOOTAGE:	210'/N & 360'/W
BOTTOM HOLE FOOTAGE	200'/S & 450'/W
LOCATION:	Section. 30.,T24S., R.35E., NMP
COUNTY:	LEA County, New Mexico

Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	
Other	☐4 String Area	☐Capitan Reef	☐WIPP

A. Hydrogen Sulfide

1. 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 **13 3/8** inch surface casing shall be set at approximately **1190** feet (a minimum of 25 feet 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 **9 5/8** inch intermediate casing is:

Operator has proposed a DV tool at a depth of **5480'**, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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 **5000 (5M)** psi

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9 5/8** inch intermediate casing shoe shall be **10,000 (10M)** psi. **Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)**

D. SPECIAL REQUIREMENT(S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

MHH 07222018

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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after

installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

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COUNTY:	LEA County, New Mexico

TABLE OF CONTENTS

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

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Hydrology

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling. A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

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

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

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

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

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

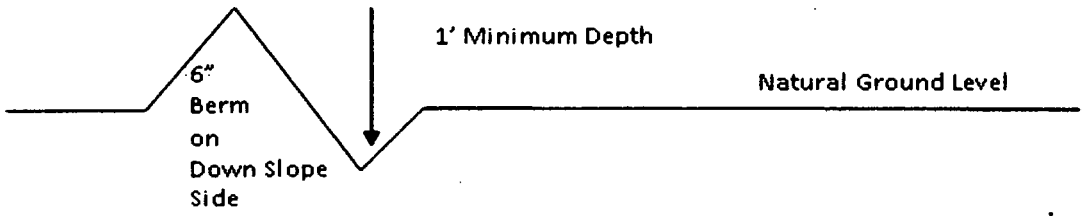
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

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

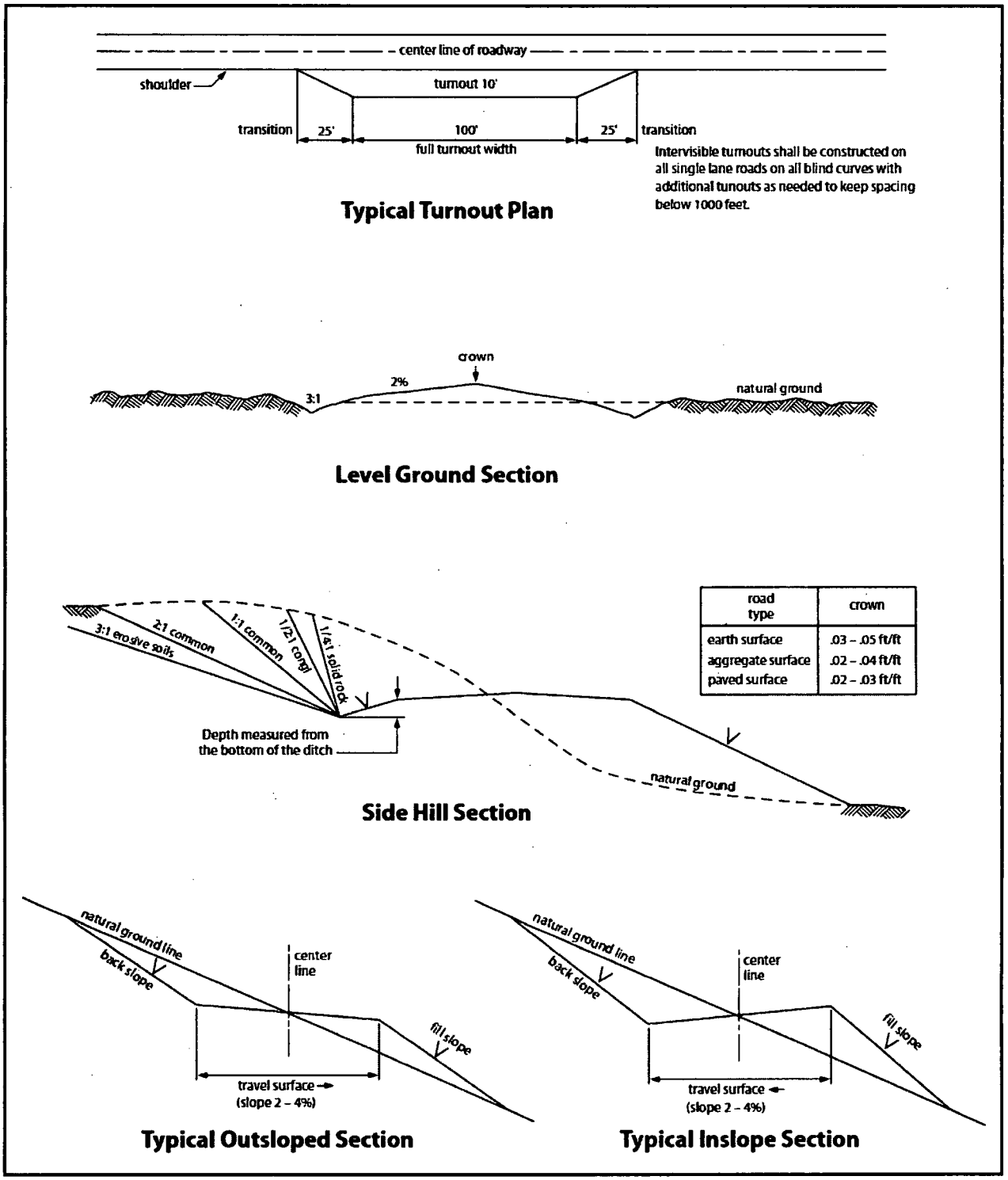


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture 3, for Shallow Sites

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

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

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

Species	lb/acre
Plains Bristlegrass (*Setaria macrostachya*)	1.0
Green Sprangletop (*Leptochloa dubia*)	2.0
Sideoats Grama (*Bouteloua curtipendula*)	5.0

*Pounds of pure live seed:

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

AFMSS

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

Operator Certification Data Report

08/03/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Mayte Reyes **Signed on:** 03/23/2018

Title: Regulatory Analyst

Street Address: 2208 W Main Street

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)748-6945

Email address: Mreyes1@concho.com

Field Representative

Representative Name: Rand French

Street Address: 2208 West Main Street

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)748-6940

Email address: rfrench@concho.com

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.

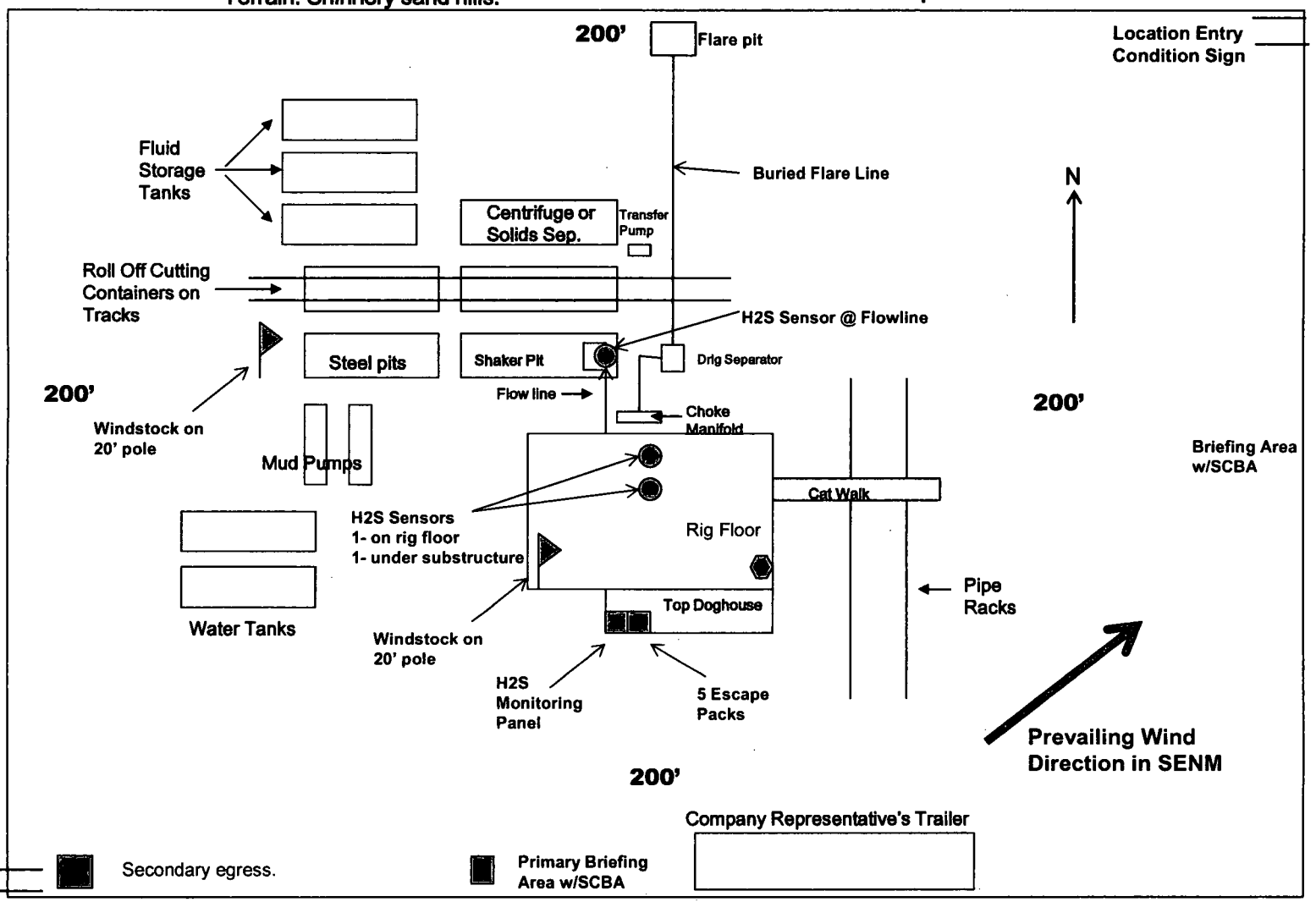
2. H_2S SAFETY EQUIPMENT AND SYSTEMS

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.

COG Operating LLC
H_2S Equipment Schematic
Terrain: Shinnery sand hills.

Well pad will be 400' x 400' with cellar in center of pad



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	MOBILE
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

	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

CONCHO

COG Operating L L C

Lea County, NM (NAD27 NME)
Sec. 30, T 24 S. , R 35 E
Fascinator Fed Com 604H

Wellbore #1
Plan #1

Anticollision Report

01 March, 2018

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 20,000.00 ft	**Error Surface:**	Circular Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/1/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	5,000.00	Plan #1 (Wellbore #1)	Keeper	Standard Wireline Keeper ver 1.0.2
5,000.00	22,476.28	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Sec. 30, T 24 S. , R 35 E						
Fascinator Fed Com 706H - Wellbore #1 - Plan #1	6,500.00	6,500.00	30.11	15.45	2.054	CC
Fascinator Fed Com 706H - Wellbore #1 - Plan #1	22,476.28	22,723.30	277.52	-94.06	0.747	Level 1, ES, SF

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 706H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.72	-0.38	-30.11	30.11				
100.00	100.00	100.00	100.00	0.06	0.06	-90.72	-0.38	-30.11	30.11	29.99	0.13	240.463	
200.00	200.00	200.00	200.00	0.19	0.19	-90.72	-0.38	-30.11	30.11	29.73	0.38	78.399	
300.00	300.00	300.00	300.00	0.32	0.32	-90.72	-0.38	-30.11	30.11	29.47	0.65	46.552	
400.00	400.00	400.00	400.00	0.46	0.46	-90.72	-0.38	-30.11	30.11	29.20	0.91	33.085	
500.00	500.00	500.00	500.00	0.59	0.59	-90.72	-0.38	-30.11	30.11	28.94	1.17	25.658	
600.00	600.00	600.00	600.00	0.72	0.72	-90.72	-0.38	-30.11	30.11	28.68	1.44	20.953	
700.00	700.00	700.00	700.00	0.85	0.85	-90.72	-0.38	-30.11	30.11	28.41	1.70	17.705	
800.00	800.00	800.00	800.00	0.98	0.98	-90.72	-0.38	-30.11	30.11	28.15	1.96	15.329	
900.00	900.00	900.00	900.00	1.11	1.11	-90.72	-0.38	-30.11	30.11	27.88	2.23	13.515	
1,000.00	1,000.00	1,000.00	1,000.00	1.25	1.25	-90.72	-0.38	-30.11	30.11	27.62	2.49	12.085	
1,100.00	1,100.00	1,100.00	1,100.00	1.38	1.38	-90.72	-0.38	-30.11	30.11	27.36	2.76	10.929	
1,200.00	1,200.00	1,200.00	1,200.00	1.51	1.51	-90.72	-0.38	-30.11	30.11	27.09	3.02	9.974	
1,300.00	1,300.00	1,300.00	1,300.00	1.64	1.64	-90.72	-0.38	-30.11	30.11	26.83	3.28	9.173	
1,400.00	1,400.00	1,400.00	1,400.00	1.77	1.77	-90.72	-0.38	-30.11	30.11	26.57	3.55	8.491	
1,500.00	1,500.00	1,500.00	1,500.00	1.90	1.90	-90.72	-0.38	-30.11	30.11	26.30	3.81	7.904	
1,600.00	1,600.00	1,600.00	1,600.00	2.04	2.04	-90.72	-0.38	-30.11	30.11	26.04	4.07	7.392	
1,700.00	1,700.00	1,700.00	1,700.00	2.17	2.17	-90.72	-0.38	-30.11	30.11	25.78	4.34	6.943	
1,800.00	1,800.00	1,800.00	1,800.00	2.30	2.30	-90.72	-0.38	-30.11	30.11	25.51	4.60	6.545	
1,900.00	1,900.00	1,900.00	1,900.00	2.43	2.43	-90.72	-0.38	-30.11	30.11	25.25	4.86	6.190	
2,000.00	2,000.00	2,000.00	2,000.00	2.56	2.56	-90.72	-0.38	-30.11	30.11	24.98	5.13	5.872	
2,100.00	2,100.00	2,100.00	2,100.00	2.70	2.70	-90.72	-0.38	-30.11	30.11	24.72	5.39	5.585	
2,200.00	2,200.00	2,200.00	2,200.00	2.83	2.83	-90.72	-0.38	-30.11	30.11	24.46	5.66	5.324	
2,300.00	2,300.00	2,300.00	2,300.00	2.96	2.96	-90.72	-0.38	-30.11	30.11	24.19	5.92	5.087	

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

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 706H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,400.00	2,400.00	2,400.00	2,400.00	3.09	3.09	-90.72	-0.38	-30.11	30.11	23.93	6.18	4.870	
2,500.00	2,500.00	2,500.00	2,500.00	3.22	3.22	-90.72	-0.38	-30.11	30.11	23.67	6.45	4.671	
2,600.00	2,600.00	2,600.00	2,600.00	3.36	3.36	-90.72	-0.38	-30.11	30.11	23.40	6.71	4.487	
2,700.00	2,700.00	2,700.00	2,700.00	3.49	3.49	-90.72	-0.38	-30.11	30.11	23.14	6.97	4.318	
2,800.00	2,800.00	2,800.00	2,800.00	3.62	3.62	-90.72	-0.38	-30.11	30.11	22.87	7.24	4.161	
2,900.00	2,900.00	2,900.00	2,900.00	3.75	3.75	-90.72	-0.38	-30.11	30.11	22.61	7.50	4.014	
3,000.00	3,000.00	3,000.00	3,000.00	3.88	3.88	-90.72	-0.38	-30.11	30.11	22.35	7.77	3.878	
3,100.00	3,100.00	3,100.00	3,100.00	4.01	4.01	-90.72	-0.38	-30.11	30.11	22.08	8.03	3.751	
3,200.00	3,200.00	3,200.00	3,200.00	4.15	4.15	-90.72	-0.38	-30.11	30.11	21.82	8.29	3.631	
3,300.00	3,300.00	3,300.00	3,300.00	4.28	4.28	-90.72	-0.38	-30.11	30.11	21.56	8.56	3.519	
3,400.00	3,400.00	3,400.00	3,400.00	4.41	4.41	-90.72	-0.38	-30.11	30.11	21.29	8.82	3.414	
3,500.00	3,500.00	3,500.00	3,500.00	4.54	4.54	-90.72	-0.38	-30.11	30.11	21.03	9.08	3.315	
3,600.00	3,600.00	3,600.00	3,600.00	4.67	4.67	-90.72	-0.38	-30.11	30.11	20.77	9.35	3.222	
3,700.00	3,700.00	3,700.00	3,700.00	4.81	4.81	-90.72	-0.38	-30.11	30.11	20.50	9.61	3.133	
3,800.00	3,800.00	3,800.00	3,800.00	4.94	4.94	-90.72	-0.38	-30.11	30.11	20.24	9.87	3.050	
3,900.00	3,900.00	3,900.00	3,900.00	5.07	5.07	-90.72	-0.38	-30.11	30.11	19.97	10.14	2.970	
4,000.00	4,000.00	4,000.00	4,000.00	5.20	5.20	-90.72	-0.38	-30.11	30.11	19.71	10.40	2.895	
4,100.00	4,100.00	4,100.00	4,100.00	5.33	5.33	-90.72	-0.38	-30.11	30.11	19.45	10.67	2.823	
4,200.00	4,200.00	4,200.00	4,200.00	5.46	5.46	-90.72	-0.38	-30.11	30.11	19.18	10.93	2.755	
4,300.00	4,300.00	4,300.00	4,300.00	5.60	5.60	-90.72	-0.38	-30.11	30.11	18.92	11.19	2.690	
4,400.00	4,400.00	4,400.00	4,400.00	5.73	5.73	-90.72	-0.38	-30.11	30.11	18.66	11.46	2.628	
4,500.00	4,500.00	4,500.00	4,500.00	5.86	5.86	-90.72	-0.38	-30.11	30.11	18.39	11.72	2.569	
4,600.00	4,600.00	4,600.00	4,600.00	5.99	5.99	-90.72	-0.38	-30.11	30.11	18.13	11.98	2.513	
4,700.00	4,700.00	4,700.00	4,700.00	6.12	6.12	-90.72	-0.38	-30.11	30.11	17.86	12.25	2.459	
4,800.00	4,800.00	4,800.00	4,800.00	6.26	6.26	-90.72	-0.38	-30.11	30.11	17.60	12.51	2.407	
4,900.00	4,900.00	4,900.00	4,900.00	6.39	6.39	-90.72	-0.38	-30.11	30.11	17.34	12.77	2.357	
5,000.00	5,000.00	5,000.00	5,000.00	6.52	6.52	-90.72	-0.38	-30.11	30.11	17.07	13.04	2.309	
5,100.00	5,100.00	5,100.00	5,100.00	6.57	6.57	-90.72	-0.38	-30.11	30.11	16.98	13.14	2.292	
5,200.00	5,200.00	5,200.00	5,200.00	6.58	6.58	-90.72	-0.38	-30.11	30.11	16.96	13.15	2.290	
5,300.00	5,300.00	5,300.00	5,300.00	6.59	6.59	-90.72	-0.38	-30.11	30.11	16.93	13.18	2.284	
5,400.00	5,400.00	5,400.00	5,400.00	6.61	6.61	-90.72	-0.38	-30.11	30.11	16.89	13.23	2.277	
5,500.00	5,500.00	5,500.00	5,500.00	6.64	6.64	-90.72	-0.38	-30.11	30.11	16.82	13.29	2.266	
5,600.00	5,600.00	5,600.00	5,600.00	6.68	6.68	-90.72	-0.38	-30.11	30.11	16.75	13.36	2.253	
5,700.00	5,700.00	5,700.00	5,700.00	6.73	6.73	-90.72	-0.38	-30.11	30.11	16.66	13.45	2.238	
5,800.00	5,800.00	5,800.00	5,800.00	6.78	6.78	-90.72	-0.38	-30.11	30.11	16.55	13.56	2.221	
5,900.00	5,900.00	5,900.00	5,900.00	6.84	6.84	-90.72	-0.38	-30.11	30.11	16.43	13.68	2.202	
6,000.00	6,000.00	6,000.00	6,000.00	6.91	6.91	-90.72	-0.38	-30.11	30.11	16.30	13.81	2.180	
6,100.00	6,100.00	6,100.00	6,100.00	6.98	6.98	-90.72	-0.38	-30.11	30.11	16.16	13.96	2.158	
6,200.00	6,200.00	6,200.00	6,200.00	7.06	7.06	-90.72	-0.38	-30.11	30.11	16.00	14.11	2.133	
6,300.00	6,300.00	6,300.00	6,300.00	7.14	7.14	-90.72	-0.38	-30.11	30.11	15.83	14.29	2.108	
6,400.00	6,400.00	6,400.00	6,400.00	7.23	7.23	-90.72	-0.38	-30.11	30.11	15.64	14.47	2.081	
6,500.00	6,500.00	6,500.00	6,500.00	7.33	7.33	-90.72	-0.38	-30.11	30.11	15.45	14.66	2.054	CC
6,543.49	6,543.49	6,543.49	6,543.49	7.37	7.38	179.28	-0.38	-30.11	30.44	15.69	14.75	2.064	
6,600.00	6,599.99	6,599.99	6,599.99	7.42	7.43	179.30	-0.38	-30.11	31.30	16.44	14.86	2.107	
6,700.00	6,699.98	6,699.98	6,699.98	7.52	7.54	179.34	-0.38	-30.11	32.82	17.76	15.06	2.179	
6,800.00	6,799.97	6,799.97	6,799.97	7.62	7.65	179.37	-0.38	-30.11	34.34	19.06	15.27	2.248	
6,900.00	6,899.96	6,899.96	6,899.96	7.73	7.77	179.39	-0.38	-30.11	35.85	20.35	15.50	2.313	
7,000.00	6,999.95	6,999.95	6,999.95	7.84	7.89	179.42	-0.38	-30.11	37.37	21.64	15.73	2.375	
7,100.00	7,099.93	7,099.93	7,099.93	7.95	8.02	179.44	-0.38	-30.11	38.89	22.91	15.98	2.434	
7,200.00	7,199.92	7,199.92	7,199.92	8.08	8.15	179.46	-0.38	-30.11	40.41	24.18	16.23	2.490	
7,300.00	7,299.91	7,299.91	7,299.91	8.20	8.29	179.48	-0.38	-30.11	41.93	25.44	16.49	2.543	
7,400.00	7,399.90	7,399.90	7,399.90	8.33	8.43	179.50	-0.38	-30.11	43.44	26.69	16.76	2.592	

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

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Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 706H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,500.00	7,499.89	7,499.89	7,499.89	8.46	8.57	179.52	-0.38	-30.11	44.96	27.93	17.03	2.639	
7,600.00	7,599.88	7,599.88	7,599.88	8.60	8.72	179.53	-0.38	-30.11	46.48	29.16	17.32	2.684	
7,700.00	7,699.87	7,699.87	7,699.87	8.74	8.87	179.55	-0.38	-30.11	48.00	30.39	17.61	2.726	
7,800.00	7,799.85	7,799.85	7,799.85	8.89	9.02	179.56	-0.38	-30.11	49.52	31.61	17.91	2.765	
7,900.00	7,899.84	7,899.84	7,899.84	9.04	9.17	179.57	-0.38	-30.11	51.03	32.82	18.21	2.803	
8,000.00	7,999.83	7,999.83	7,999.83	9.19	9.33	179.59	-0.38	-30.11	52.55	34.03	18.52	2.838	
8,100.00	8,099.82	8,099.82	8,099.82	9.34	9.49	179.60	-0.38	-30.11	54.07	35.23	18.84	2.871	
8,200.00	8,199.81	8,199.81	8,199.81	9.50	9.66	179.61	-0.38	-30.11	55.59	36.43	19.16	2.902	
8,300.00	8,299.80	8,299.80	8,299.80	9.66	9.82	179.62	-0.38	-30.11	57.11	37.62	19.48	2.931	
8,400.00	8,399.78	8,399.78	8,399.78	9.82	9.99	179.63	-0.38	-30.11	58.62	38.81	19.81	2.959	
8,500.00	8,499.77	8,499.77	8,499.77	9.99	10.16	179.64	-0.38	-30.11	60.14	39.99	20.15	2.985	
8,600.00	8,599.76	8,599.76	8,599.76	10.16	10.33	179.65	-0.38	-30.11	61.66	41.17	20.49	3.009	
8,700.00	8,699.75	8,699.75	8,699.75	10.32	10.51	179.66	-0.38	-30.11	63.18	42.34	20.83	3.033	
8,800.00	8,799.74	8,799.74	8,799.74	10.50	10.68	179.66	-0.38	-30.11	64.70	43.51	21.18	3.054	
8,900.00	8,899.73	8,899.73	8,899.73	10.67	10.86	179.67	-0.38	-30.11	66.21	44.68	21.53	3.075	
9,000.00	8,999.72	8,999.72	8,999.72	10.85	11.04	179.68	-0.38	-30.11	67.73	45.84	21.89	3.094	
9,100.00	9,099.70	9,099.70	9,099.70	11.02	11.22	179.69	-0.38	-30.11	69.25	47.00	22.25	3.113	
9,200.00	9,199.69	9,199.69	9,199.69	11.20	11.41	179.69	-0.38	-30.11	70.77	48.16	22.61	3.130	
9,300.00	9,299.68	9,299.68	9,299.68	11.38	11.59	179.70	-0.38	-30.11	72.29	49.31	22.98	3.146	
9,400.00	9,399.67	9,399.67	9,399.67	11.57	11.78	179.70	-0.38	-30.11	73.80	50.46	23.34	3.161	
9,500.00	9,499.66	9,499.66	9,499.66	11.75	11.96	179.71	-0.38	-30.11	75.32	51.60	23.72	3.176	
9,600.00	9,599.65	9,599.65	9,599.65	11.94	12.15	179.72	-0.38	-30.11	76.84	52.75	24.09	3.190	
9,700.00	9,699.63	9,699.63	9,699.63	12.12	12.34	179.72	-0.38	-30.11	78.36	53.89	24.47	3.203	
9,800.00	9,799.62	9,799.62	9,799.62	12.31	12.53	179.73	-0.38	-30.11	79.87	55.03	24.85	3.215	
9,900.00	9,899.61	9,899.61	9,899.61	12.50	12.73	179.73	-0.38	-30.11	81.39	56.16	25.23	3.226	
10,000.00	9,999.60	9,999.60	9,999.60	12.69	12.92	179.74	-0.38	-30.11	82.91	57.30	25.61	3.237	
10,100.00	10,099.59	10,099.59	10,099.59	12.89	13.11	179.74	-0.38	-30.11	84.43	58.43	26.00	3.248	
10,200.00	10,199.58	10,199.58	10,199.58	13.08	13.31	179.75	-0.38	-30.11	85.95	59.56	26.39	3.257	
10,300.00	10,299.57	10,299.57	10,299.57	13.27	13.50	179.75	-0.38	-30.11	87.46	60.69	26.78	3.267	
10,400.00	10,399.55	10,399.55	10,399.55	13.47	13.70	179.76	-0.38	-30.11	88.98	61.81	27.17	3.275	
10,500.00	10,499.54	10,499.54	10,499.54	13.66	13.90	179.76	-0.38	-30.11	90.50	62.94	27.56	3.284	
10,600.00	10,599.53	10,599.53	10,599.53	13.86	14.10	179.76	-0.38	-30.11	92.02	64.06	27.96	3.291	
10,700.00	10,699.52	10,699.52	10,699.52	14.06	14.30	179.77	-0.38	-30.11	93.54	65.18	28.35	3.299	
10,800.00	10,799.51	10,799.51	10,799.51	14.26	14.50	179.77	-0.38	-30.11	95.05	66.30	28.75	3.306	
10,900.00	10,899.50	10,899.50	10,899.50	14.46	14.70	179.77	-0.38	-30.11	96.57	67.42	29.15	3.313	
11,000.00	10,999.49	10,999.49	10,999.49	14.66	14.90	179.78	-0.38	-30.11	98.09	68.54	29.56	3.319	
11,100.00	11,099.47	11,099.47	11,099.47	14.86	15.10	179.78	-0.38	-30.11	99.61	69.65	29.96	3.325	
11,200.00	11,199.46	11,199.46	11,199.46	15.06	15.30	179.78	-0.38	-30.11	101.13	70.76	30.36	3.331	
11,300.00	11,299.45	11,299.45	11,299.45	15.26	15.51	179.79	-0.38	-30.11	102.64	71.88	30.77	3.336	
11,400.00	11,399.44	11,399.44	11,399.44	15.47	15.71	179.79	-0.38	-30.11	104.16	72.99	31.18	3.341	
11,500.00	11,499.43	11,499.43	11,499.43	15.67	15.91	179.79	-0.38	-30.11	105.68	74.10	31.58	3.346	
11,600.00	11,599.42	11,599.42	11,599.42	15.87	16.12	179.80	-0.38	-30.11	107.20	75.21	31.99	3.351	
11,700.00	11,699.40	11,699.40	11,699.40	16.08	16.32	179.80	-0.38	-30.11	108.72	76.31	32.40	3.355	
11,800.00	11,799.39	11,799.39	11,799.39	16.28	16.53	179.80	-0.38	-30.11	110.23	77.42	32.82	3.359	
11,900.00	11,899.38	11,899.38	11,899.38	16.49	16.74	179.81	-0.38	-30.11	111.75	78.52	33.23	3.363	
12,000.00	11,999.37	11,999.37	11,999.37	16.70	16.94	179.81	-0.38	-30.11	113.27	79.63	33.64	3.367	
12,055.34	12,054.70	12,054.70	12,054.70	16.81	17.06	179.81	-0.38	-30.11	114.11	80.24	33.87	3.369	
12,075.00	12,074.36	12,074.36	12,074.36	16.85	17.10	110.73	-0.38	-30.11	114.41	80.46	33.95	3.370	
12,100.00	12,099.29	12,099.29	12,099.29	16.90	17.15	100.57	-0.38	-30.11	114.82	80.77	34.05	3.372	
12,125.00	12,124.11	12,124.11	12,124.11	16.94	17.20	98.71	-0.38	-30.11	115.31	81.17	34.15	3.377	
12,150.00	12,148.73	12,148.73	12,148.73	16.99	17.25	99.16	-0.38	-30.11	115.98	81.74	34.24	3.387	
12,175.00	12,173.10	12,173.10	12,173.10	17.04	17.30	100.77	-0.38	-30.11	116.97	82.63	34.34	3.406	

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

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 706H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,200.00	12,197.14	12,197.14	12,197.14	17.08	17.35	103.15	-0.38	-30.11	118.44	84.00	34.44	3.439	
12,225.00	12,220.79	12,220.79	12,220.79	17.13	17.40	106.05	-0.38	-30.11	120.59	86.05	34.53	3.492	
12,250.00	12,243.99	12,243.99	12,243.99	17.18	17.45	109.28	-0.38	-30.11	123.61	88.99	34.63	3.570	
12,275.00	12,266.66	12,266.66	12,266.66	17.22	17.50	112.70	-0.38	-30.11	127.72	93.00	34.72	3.678	
12,300.00	12,288.76	12,288.76	12,288.76	17.27	17.55	116.14	-0.38	-30.11	133.07	98.25	34.81	3.822	
12,325.00	12,310.21	12,311.27	12,311.27	17.31	17.59	119.68	-0.43	-30.11	139.77	104.87	34.90	4.004	
12,350.00	12,330.97	12,336.96	12,336.93	17.36	17.63	123.52	-1.48	-30.10	147.45	112.45	34.99	4.214	
12,375.00	12,350.96	12,363.57	12,363.42	17.40	17.68	127.06	-4.02	-30.07	155.80	120.72	35.08	4.442	
12,400.00	12,370.15	12,391.19	12,390.71	17.44	17.72	130.31	-8.22	-30.03	164.69	129.52	35.17	4.683	
12,425.00	12,388.46	12,419.91	12,418.79	17.49	17.77	133.30	-14.24	-29.96	173.97	138.72	35.25	4.935	
12,450.00	12,405.87	12,449.86	12,447.63	17.53	17.82	136.03	-22.31	-29.88	183.52	148.17	35.35	5.192	
12,475.00	12,422.31	12,481.14	12,477.14	17.57	17.87	138.53	-32.66	-29.77	193.21	157.77	35.44	5.452	
12,500.00	12,437.74	12,513.88	12,507.24	17.62	17.92	140.81	-45.53	-29.64	202.92	167.38	35.53	5.710	
12,525.00	12,452.13	12,548.21	12,537.77	17.66	17.97	142.88	-61.20	-29.47	212.53	176.89	35.63	5.964	
12,550.00	12,465.42	12,584.24	12,568.52	17.71	18.03	144.78	-79.97	-29.28	221.92	186.19	35.74	6.210	
12,575.00	12,477.59	12,622.10	12,599.21	17.76	18.08	146.49	-102.13	-29.05	230.99	195.14	35.85	6.444	
12,600.00	12,488.60	12,661.89	12,629.46	17.83	18.14	148.03	-127.96	-28.77	239.59	203.63	35.96	6.662	
12,625.00	12,498.41	12,703.68	12,658.80	17.90	18.19	149.40	-157.69	-28.46	247.62	211.53	36.09	6.861	
12,650.00	12,507.02	12,747.49	12,686.64	17.99	18.25	150.60	-191.49	-28.11	254.95	218.71	36.24	7.035	
12,675.00	12,514.38	12,793.29	12,712.31	18.11	18.29	151.64	-229.40	-27.71	261.46	225.06	36.40	7.183	
12,700.00	12,520.48	12,840.97	12,735.05	18.24	18.34	152.50	-271.28	-27.27	267.01	230.44	36.58	7.300	
12,725.00	12,525.31	12,890.34	12,754.06	18.39	18.38	153.18	-316.82	-26.80	271.52	234.75	36.77	7.385	
12,750.00	12,528.84	12,941.10	12,768.61	18.56	18.51	153.69	-365.42	-26.29	274.87	237.80	37.07	7.415	
12,775.00	12,531.08	12,992.88	12,778.05	18.74	18.86	154.00	-416.31	-25.76	276.99	239.39	37.59	7.368	
12,799.34	12,532.00	13,043.85	12,781.91	18.92	19.23	154.13	-467.10	-25.23	277.82	239.67	38.15	7.282	
12,900.00	12,533.25	13,147.02	12,783.22	19.79	20.11	154.13	-570.26	-24.15	277.83	237.92	39.90	6.962	
13,000.00	12,534.49	13,247.02	12,784.46	20.80	21.07	154.13	-670.25	-23.10	277.82	235.95	41.87	6.635	
13,100.00	12,535.73	13,347.02	12,785.70	21.91	22.14	154.13	-770.23	-22.05	277.82	233.76	44.06	6.306	
13,200.00	12,536.97	13,447.02	12,786.94	23.12	23.31	154.13	-870.22	-21.01	277.82	231.38	46.43	5.983	
13,300.00	12,538.21	13,547.02	12,788.18	24.41	24.56	154.14	-970.21	-19.96	277.81	228.85	48.97	5.674	
13,400.00	12,539.45	13,647.02	12,789.42	25.76	25.87	154.14	-1,070.19	-18.91	277.81	226.18	51.63	5.381	
13,500.00	12,540.69	13,747.02	12,790.66	27.17	27.24	154.14	-1,170.18	-17.87	277.81	223.39	54.41	5.105	
13,600.00	12,541.93	13,847.02	12,791.90	28.63	28.67	154.14	-1,270.17	-16.82	277.80	220.51	57.29	4.849	
13,700.00	12,543.17	13,947.02	12,793.14	30.12	30.14	154.14	-1,370.15	-15.78	277.80	217.54	60.26	4.610	
13,800.00	12,544.41	14,047.02	12,794.38	31.65	31.64	154.14	-1,470.14	-14.73	277.80	214.50	63.29	4.389	
13,900.00	12,545.65	14,147.02	12,795.62	33.21	33.18	154.14	-1,570.13	-13.68	277.79	211.40	66.39	4.184	
14,000.00	12,546.89	14,247.02	12,796.86	34.80	34.74	154.15	-1,670.11	-12.64	277.79	208.25	69.54	3.994	
14,100.00	12,548.13	14,347.02	12,798.10	36.41	36.33	154.15	-1,770.10	-11.59	277.79	205.05	72.74	3.819	
14,200.00	12,549.37	14,447.02	12,799.34	38.04	37.94	154.15	-1,870.09	-10.54	277.78	201.80	75.98	3.656	
14,300.00	12,550.61	14,547.02	12,800.58	39.68	39.57	154.15	-1,970.07	-9.50	277.78	198.52	79.26	3.505	
14,400.00	12,551.85	14,647.02	12,801.82	41.34	41.22	154.15	-2,070.06	-8.45	277.78	195.21	82.56	3.364	
14,500.00	12,553.09	14,747.02	12,803.06	43.02	42.88	154.15	-2,170.05	-7.40	277.78	191.88	85.90	3.234	
14,600.00	12,554.33	14,847.02	12,804.30	44.70	44.55	154.15	-2,270.04	-6.36	277.77	188.51	89.26	3.112	
14,700.00	12,555.57	14,947.02	12,805.54	46.40	46.24	154.16	-2,370.02	-5.31	277.77	185.13	92.64	2.998	
14,800.00	12,556.81	15,047.02	12,806.78	48.11	47.93	154.16	-2,470.01	-4.26	277.77	181.72	96.04	2.892	
14,900.00	12,558.05	15,147.02	12,808.02	49.82	49.64	154.16	-2,570.00	-3.22	277.76	178.30	99.46	2.793	
15,000.00	12,559.29	15,247.02	12,809.26	51.54	51.35	154.16	-2,669.98	-2.17	277.76	174.86	102.90	2.699	
15,100.00	12,560.53	15,347.02	12,810.50	53.27	53.07	154.16	-2,769.97	-1.13	277.76	171.41	106.35	2.612	
15,200.00	12,561.77	15,447.02	12,811.74	55.01	54.80	154.16	-2,869.96	-0.08	277.75	167.94	109.81	2.529	
15,300.00	12,563.01	15,547.02	12,812.98	56.75	56.53	154.16	-2,969.94	0.97	277.75	164.47	113.28	2.452	
15,400.00	12,564.25	15,647.02	12,814.22	58.50	58.27	154.16	-3,069.93	2.01	277.75	160.98	116.77	2.379	
15,500.00	12,565.49	15,747.02	12,815.46	60.25	60.02	154.17	-3,169.92	3.06	277.74	157.48	120.26	2.309	

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

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 706H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,600.00	12,566.73	15,847.02	12,816.70	62.00	61.77	154.17	-3,269.90	4.11	277.74	153.97	123.77	2.244	
15,700.00	12,567.97	15,947.02	12,817.94	63.76	63.52	154.17	-3,369.89	5.15	277.74	150.46	127.28	2.182	
15,800.00	12,569.21	16,047.02	12,819.18	65.52	65.28	154.17	-3,469.88	6.20	277.73	146.93	130.80	2.123	
15,900.00	12,570.45	16,147.02	12,820.42	67.29	67.04	154.17	-3,569.86	7.25	277.73	143.40	134.33	2.068	
16,000.00	12,571.69	16,247.02	12,821.66	69.06	68.80	154.17	-3,669.85	8.29	277.73	139.87	137.86	2.015	
16,100.00	12,572.93	16,347.02	12,822.90	70.83	70.57	154.17	-3,769.84	9.34	277.72	136.32	141.40	1.964	
16,200.00	12,574.17	16,447.02	12,824.14	72.61	72.34	154.18	-3,869.82	10.38	277.72	132.78	144.94	1.916	
16,300.00	12,575.41	16,547.02	12,825.38	74.38	74.11	154.18	-3,969.81	11.43	277.72	129.22	148.49	1.870	
16,400.00	12,576.65	16,647.02	12,826.62	76.16	75.89	154.18	-4,069.80	12.48	277.71	125.66	152.05	1.826	
16,500.00	12,577.89	16,747.02	12,827.86	77.94	77.66	154.18	-4,169.78	13.52	277.71	122.10	155.61	1.785	
16,600.00	12,579.13	16,847.02	12,829.10	79.73	79.44	154.18	-4,269.77	14.57	277.71	118.54	159.17	1.745	
16,700.00	12,580.37	16,947.02	12,830.34	81.51	81.23	154.18	-4,369.76	15.62	277.70	114.96	162.74	1.706	
16,800.00	12,581.61	17,047.02	12,831.58	83.30	83.01	154.18	-4,469.75	16.66	277.70	111.39	166.31	1.670	
16,900.00	12,582.85	17,147.02	12,832.82	85.09	84.80	154.19	-4,569.73	17.71	277.70	107.81	169.88	1.635	
17,000.00	12,584.09	17,247.02	12,834.06	86.88	86.58	154.19	-4,669.72	18.76	277.69	104.23	173.46	1.601	
17,100.00	12,585.33	17,347.02	12,835.30	88.67	88.37	154.19	-4,769.71	19.80	277.69	100.65	177.04	1.568	
17,200.00	12,586.57	17,447.02	12,836.54	90.46	90.16	154.19	-4,869.69	20.85	277.69	97.06	180.63	1.537	
17,300.00	12,587.81	17,547.02	12,837.78	92.26	91.95	154.19	-4,969.68	21.90	277.68	93.47	184.21	1.507	
17,400.00	12,589.05	17,647.02	12,839.02	94.05	93.75	154.19	-5,069.67	22.94	277.68	89.88	187.80	1.479	Level 3
17,500.00	12,590.29	17,747.02	12,840.26	95.85	95.54	154.19	-5,169.65	23.99	277.68	86.29	191.39	1.451	Level 3
17,600.00	12,591.53	17,847.02	12,841.50	97.65	97.34	154.19	-5,269.64	25.03	277.67	82.69	194.98	1.424	Level 3
17,700.00	12,592.77	17,947.02	12,842.74	99.45	99.13	154.20	-5,369.63	26.08	277.67	79.09	198.58	1.398	Level 3
17,800.00	12,594.01	18,047.02	12,843.98	101.25	100.93	154.20	-5,469.61	27.13	277.67	75.49	202.18	1.373	Level 3
17,900.00	12,595.25	18,147.02	12,845.22	103.05	102.73	154.20	-5,569.60	28.17	277.66	71.89	205.78	1.349	Level 3
18,000.00	12,596.49	18,247.02	12,846.46	104.85	104.53	154.20	-5,669.59	29.22	277.66	68.28	209.38	1.326	Level 3
18,100.00	12,597.73	18,347.02	12,847.70	106.65	106.33	154.20	-5,769.57	30.27	277.66	64.68	212.98	1.304	Level 3
18,200.00	12,598.97	18,447.02	12,848.94	108.45	108.13	154.20	-5,869.56	31.31	277.65	61.07	216.58	1.282	Level 3
18,300.00	12,600.21	18,547.02	12,850.18	110.26	109.93	154.20	-5,969.55	32.36	277.65	57.46	220.19	1.261	Level 3
18,400.00	12,601.45	18,647.02	12,851.42	112.06	111.74	154.21	-6,069.53	33.41	277.65	53.85	223.80	1.241	Level 2
18,500.00	12,602.69	18,747.02	12,852.66	113.87	113.54	154.21	-6,169.52	34.45	277.65	50.24	227.41	1.221	Level 2
18,600.00	12,603.93	18,847.02	12,853.90	115.67	115.34	154.21	-6,269.51	35.50	277.64	46.63	231.02	1.202	Level 2
18,700.00	12,605.17	18,947.02	12,855.14	117.48	117.15	154.21	-6,369.50	36.54	277.64	43.01	234.63	1.183	Level 2
18,800.00	12,606.41	19,047.02	12,856.38	119.29	118.95	154.21	-6,469.48	37.59	277.64	39.39	238.24	1.165	Level 2
18,900.00	12,607.65	19,147.02	12,857.62	121.10	120.76	154.21	-6,569.47	38.64	277.63	35.78	241.85	1.148	Level 2
19,000.00	12,608.89	19,247.02	12,858.86	122.90	122.57	154.21	-6,669.46	39.68	277.63	32.16	245.47	1.131	Level 2
19,100.00	12,610.13	19,347.02	12,860.10	124.71	124.37	154.22	-6,769.44	40.73	277.63	28.54	249.09	1.115	Level 2
19,200.00	12,611.37	19,447.02	12,861.34	126.52	126.18	154.22	-6,869.43	41.78	277.62	24.92	252.70	1.099	Level 2
19,300.00	12,612.61	19,547.02	12,862.58	128.33	127.99	154.22	-6,969.42	42.82	277.62	21.30	256.32	1.083	Level 2
19,400.00	12,613.85	19,647.02	12,863.82	130.14	129.80	154.22	-7,069.40	43.87	277.62	17.68	259.94	1.068	Level 2
19,500.00	12,615.09	19,747.02	12,865.06	131.95	131.61	154.22	-7,169.39	44.92	277.61	14.05	263.56	1.053	Level 2
19,600.00	12,616.33	19,847.02	12,866.30	133.76	133.42	154.22	-7,269.38	45.96	277.61	10.43	267.18	1.039	Level 2
19,700.00	12,617.57	19,947.02	12,867.54	135.57	135.23	154.22	-7,369.36	47.01	277.61	6.81	270.80	1.025	Level 2
19,800.00	12,618.81	20,047.02	12,868.78	137.38	137.04	154.22	-7,469.35	48.05	277.60	3.18	274.42	1.012	Level 2
19,900.00	12,620.05	20,147.02	12,870.02	139.20	138.85	154.23	-7,569.34	49.10	277.60	-0.45	278.05	0.998	Level 1
20,000.00	12,621.29	20,247.02	12,871.26	141.01	140.66	154.23	-7,669.32	50.15	277.60	-4.07	281.67	0.986	Level 1
20,100.00	12,622.53	20,347.02	12,872.50	142.82	142.47	154.23	-7,769.31	51.19	277.59	-7.70	285.29	0.973	Level 1
20,200.00	12,623.77	20,447.02	12,873.74	144.64	144.28	154.23	-7,869.30	52.24	277.59	-11.33	288.92	0.961	Level 1
20,300.00	12,625.01	20,547.02	12,874.98	146.45	146.10	154.23	-7,969.28	53.29	277.59	-14.96	292.54	0.949	Level 1
20,400.00	12,626.25	20,647.02	12,876.22	148.26	147.91	154.23	-8,069.27	54.33	277.58	-18.59	296.17	0.937	Level 1
20,500.00	12,627.49	20,747.02	12,877.46	150.08	149.72	154.23	-8,169.26	55.38	277.58	-22.22	299.80	0.926	Level 1
20,600.00	12,628.73	20,847.02	12,878.70	151.89	151.53	154.24	-8,269.25	56.43	277.58	-25.85	303.42	0.915	Level 1
20,700.00	12,629.97	20,947.02	12,879.94	153.70	153.35	154.24	-8,369.23	57.47	277.57	-29.48	307.05	0.904	Level 1

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

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 706H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

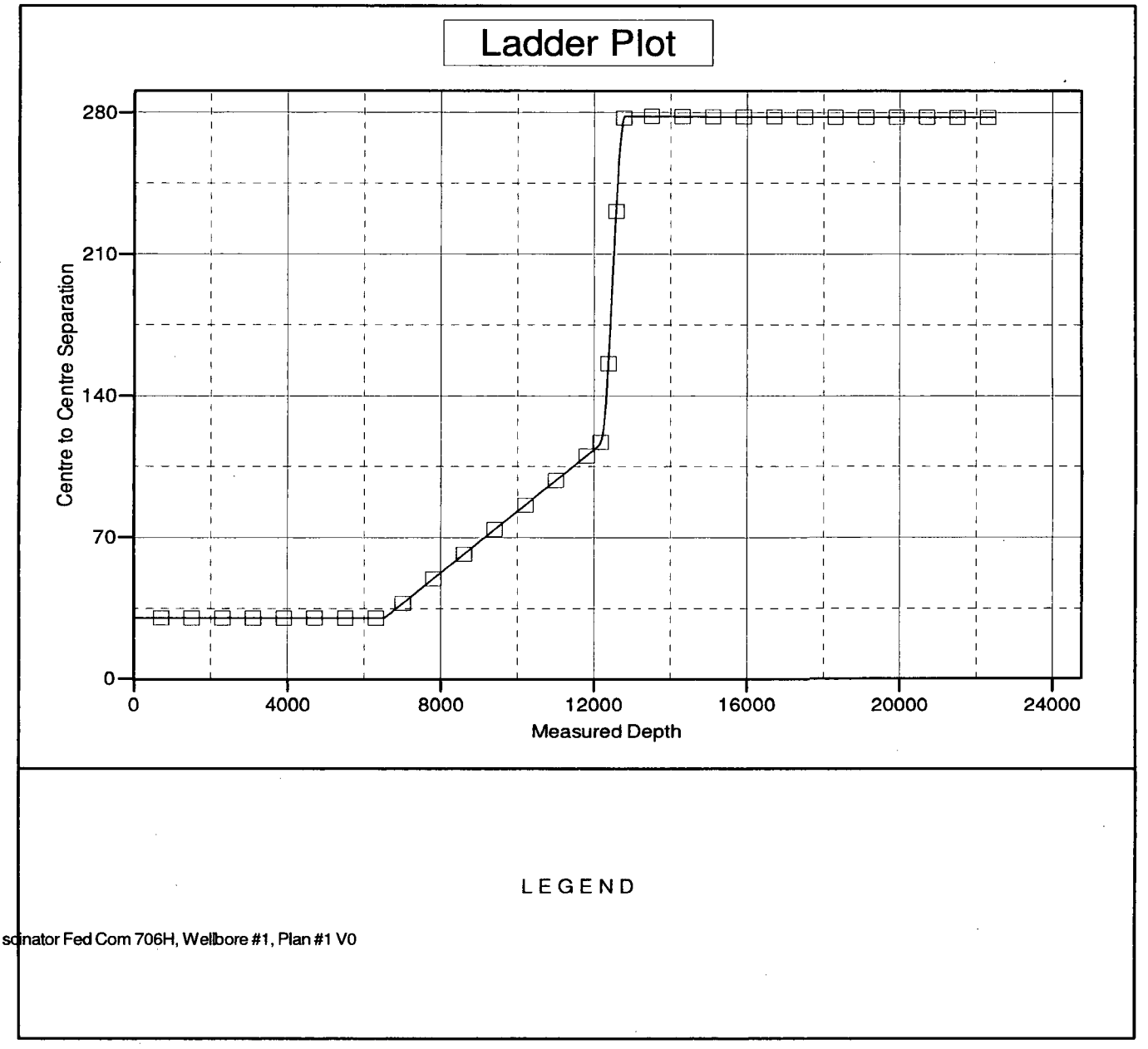
Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
20,800.00	12,631.21	21,047.02	12,881.18	155.52	155.16	154.24	-8,469.22	58.52	277.57	-33.11	310.68	0.893	Level 1
20,900.00	12,632.45	21,147.02	12,882.42	157.33	156.98	154.24	-8,569.21	59.57	277.57	-36.74	314.31	0.883	Level 1
21,000.00	12,633.69	21,247.02	12,883.66	159.15	158.79	154.24	-8,669.19	60.61	277.56	-40.38	317.94	0.873	Level 1
21,100.00	12,634.93	21,347.02	12,884.90	160.97	160.61	154.24	-8,769.18	61.66	277.56	-44.01	321.57	0.863	Level 1
21,200.00	12,636.17	21,447.02	12,886.14	162.78	162.42	154.24	-8,869.17	62.70	277.56	-47.64	325.20	0.853	Level 1
21,300.00	12,637.41	21,547.02	12,887.38	164.60	164.24	154.25	-8,969.15	63.75	277.55	-51.28	328.83	0.844	Level 1
21,400.00	12,638.65	21,647.02	12,888.62	166.41	166.05	154.25	-9,069.14	64.80	277.55	-54.91	332.46	0.835	Level 1
21,500.00	12,639.89	21,747.02	12,889.86	168.23	167.87	154.25	-9,169.13	65.84	277.55	-58.55	336.09	0.826	Level 1
21,600.00	12,641.13	21,847.02	12,891.10	170.05	169.68	154.25	-9,269.11	66.89	277.54	-62.18	339.73	0.817	Level 1
21,700.00	12,642.37	21,947.02	12,892.34	171.86	171.50	154.25	-9,369.10	67.94	277.54	-65.82	343.36	0.808	Level 1
21,800.00	12,643.61	22,047.02	12,893.58	173.68	173.31	154.25	-9,469.09	68.98	277.54	-69.45	346.99	0.800	Level 1
21,900.00	12,644.85	22,147.02	12,894.82	175.50	175.13	154.25	-9,569.07	70.03	277.53	-73.09	350.63	0.792	Level 1
22,000.00	12,646.09	22,247.02	12,896.06	177.31	176.95	154.25	-9,669.06	71.08	277.53	-76.73	354.26	0.783	Level 1
22,100.00	12,647.33	22,347.02	12,897.30	179.13	178.76	154.26	-9,769.05	72.12	277.53	-80.37	357.89	0.775	Level 1
22,200.00	12,648.57	22,447.02	12,898.54	180.95	180.58	154.26	-9,869.03	73.17	277.53	-84.00	361.53	0.768	Level 1
22,300.00	12,649.81	22,547.02	12,899.78	182.77	182.40	154.26	-9,969.02	74.21	277.52	-87.64	365.16	0.760	Level 1
22,400.00	12,651.05	22,647.02	12,901.02	184.58	184.21	154.26	-10,069.01	75.26	277.52	-91.28	368.80	0.752	Level 1
22,476.28	12,652.00	22,723.30	12,901.96	185.97	185.60	154.26	-10,145.28	76.06	277.52	-94.06	371.57	0.747	Level 1, ES, SF

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=30' @ 3402.00ft (N 894)
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Fascinator Fed Com 604H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.49°



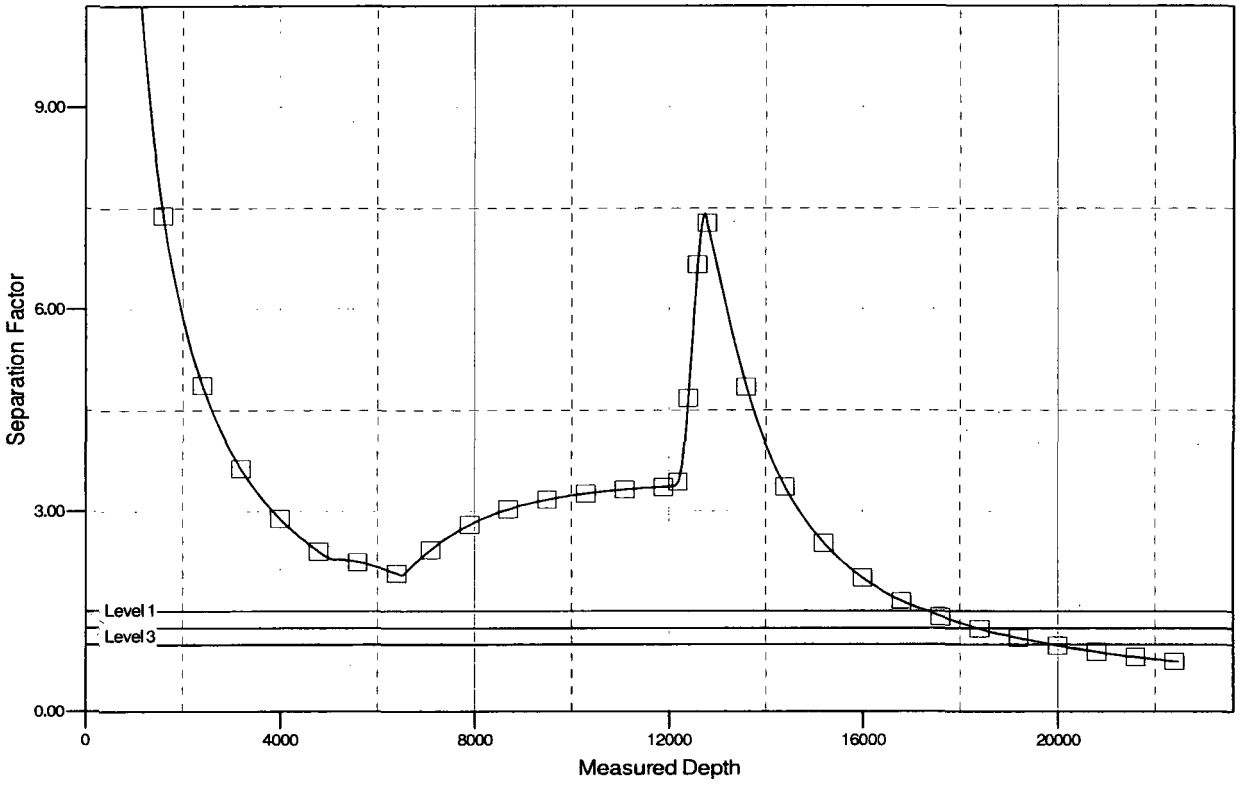
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 604H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=30' @ 3402.00ft (N 894)
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Fascinator Fed Com 604H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.49°

Separation Factor Plot



LEGEND

sc nator Fed Com 706H, Wellbore #1, Plan #1 V0

CONCHO

COG Operating L L C

Lea County, NM (NAD27 NME)
Sec. 30, T 24 S. , R 35 E
Fascinator Fed Com 604H

Wellbore #1

Plan: Plan #1

Standard Survey Report

01 March, 2018

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Project	Lea County, NM (NAD27 NME)		
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	Sec. 30, T 24 S. , R 35 E				
Site Position:		**Northing:**	435,904.80 usft	**Latitude:**	32.195047
From:	Map	**Easting:**	785,685.20 usft	**Longitude:**	-103.409810
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.49 °

Well	Fascinator Fed Com 604H					
Well Position	**+N/-S**	0.00 ft	**Northing:**	435,894.20 usft	**Latitude:**	32.195045
	+E/-W	0.00 ft	**Easting:**	784,535.60 usft	**Longitude:**	-103.413526
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,372.00 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	3/1/2018	6.75	59.90	48,019

Design	Plan #1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	12,652.00	0.00	0.00	178.89	

Survey Tool Program **Date** 3/1/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	5,000.00	Plan #1 (Wellbore #1)	Keeper	Standard Wireline Keeper ver 1.0.2
5,000.00	22,476.28	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,107.00	0.00	0.00	1,107.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,304.00	0.00	0.00	1,304.00	0.00	0.00	0.00	0.00	0.00	0.00
TOS									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,152.00	0.00	0.00	5,152.00	0.00	0.00	0.00	0.00	0.00	0.00
BOS (Fletcher)									
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,478.00	0.00	0.00	5,478.00	0.00	0.00	0.00	0.00	0.00	0.00
LMAR (Top Delaware)									
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,501.00	0.00	0.00	5,501.00	0.00	0.00	0.00	0.00	0.00	0.00
BLCN									
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,476.00	0.00	0.00	6,476.00	0.00	0.00	0.00	0.00	0.00	0.00
CYCN									
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
6,543.49	0.87	90.00	6,543.49	0.00	0.33	0.01	2.00	2.00	0.00
Start 5511.85 hold at 6543.49 MD									
6,600.00	0.87	90.00	6,599.99	0.00	1.19	0.02	0.00	0.00	0.00
6,700.00	0.87	90.00	6,699.98	0.00	2.71	0.05	0.00	0.00	0.00
6,800.00	0.87	90.00	6,799.97	0.00	4.22	0.08	0.00	0.00	0.00
6,900.00	0.87	90.00	6,899.96	0.00	5.74	0.11	0.00	0.00	0.00
7,000.00	0.87	90.00	6,999.95	0.00	7.26	0.14	0.00	0.00	0.00
7,100.00	0.87	90.00	7,099.93	0.00	8.78	0.17	0.00	0.00	0.00
7,200.00	0.87	90.00	7,199.92	0.00	10.30	0.20	0.00	0.00	0.00
7,300.00	0.87	90.00	7,299.91	0.00	11.81	0.23	0.00	0.00	0.00
7,400.00	0.87	90.00	7,399.90	0.00	13.33	0.26	0.00	0.00	0.00
7,500.00	0.87	90.00	7,499.89	0.00	14.85	0.29	0.00	0.00	0.00
7,600.00	0.87	90.00	7,599.88	0.00	16.37	0.32	0.00	0.00	0.00
7,700.00	0.87	90.00	7,699.87	0.00	17.89	0.35	0.00	0.00	0.00
7,800.00	0.87	90.00	7,799.85	0.00	19.40	0.38	0.00	0.00	0.00
7,900.00	0.87	90.00	7,899.84	0.00	20.92	0.41	0.00	0.00	0.00
8,000.00	0.87	90.00	7,999.83	0.00	22.44	0.43	0.00	0.00	0.00
8,084.18	0.87	90.00	8,084.00	0.00	23.72	0.46	0.00	0.00	0.00
BYCN									

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,100.00	0.87	90.00	8,099.82	0.00	23.96	0.46	0.00	0.00	0.00
8,200.00	0.87	90.00	8,199.81	0.00	25.48	0.49	0.00	0.00	0.00
8,300.00	0.87	90.00	8,299.80	0.00	26.99	0.52	0.00	0.00	0.00
8,400.00	0.87	90.00	8,399.78	0.00	28.51	0.55	0.00	0.00	0.00
8,500.00	0.87	90.00	8,499.77	0.00	30.03	0.58	0.00	0.00	0.00
8,600.00	0.87	90.00	8,599.76	0.00	31.55	0.61	0.00	0.00	0.00
8,700.00	0.87	90.00	8,699.75	0.00	33.07	0.64	0.00	0.00	0.00
8,800.00	0.87	90.00	8,799.74	0.00	34.58	0.67	0.00	0.00	0.00
8,900.00	0.87	90.00	8,899.73	0.00	36.10	0.70	0.00	0.00	0.00
9,000.00	0.87	90.00	8,999.72	0.00	37.62	0.73	0.00	0.00	0.00
9,100.00	0.87	90.00	9,099.70	0.00	39.14	0.76	0.00	0.00	0.00
9,200.00	0.87	90.00	9,199.69	0.00	40.66	0.79	0.00	0.00	0.00
9,300.00	0.87	90.00	9,299.68	0.00	42.17	0.82	0.00	0.00	0.00
9,327.32	0.87	90.00	9,327.00	0.00	42.59	0.83	0.00	0.00	0.00
Bone Sprg (BSGL)									
9,400.00	0.87	90.00	9,399.67	0.00	43.69	0.85	0.00	0.00	0.00
9,500.00	0.87	90.00	9,499.66	0.00	45.21	0.88	0.00	0.00	0.00
9,600.00	0.87	90.00	9,599.65	0.00	46.73	0.91	0.00	0.00	0.00
9,677.36	0.87	90.00	9,677.00	0.00	47.90	0.93	0.00	0.00	0.00
U Avalon Sh									
9,700.00	0.87	90.00	9,699.63	0.00	48.25	0.93	0.00	0.00	0.00
9,800.00	0.87	90.00	9,799.62	0.00	49.76	0.96	0.00	0.00	0.00
9,900.00	0.87	90.00	9,899.61	0.00	51.28	0.99	0.00	0.00	0.00
9,918.39	0.87	90.00	9,918.00	0.00	51.56	1.00	0.00	0.00	0.00
L Avalon Sh									
10,000.00	0.87	90.00	9,999.60	0.00	52.80	1.02	0.00	0.00	0.00
10,100.00	0.87	90.00	10,099.59	0.00	54.32	1.05	0.00	0.00	0.00
10,128.41	0.87	90.00	10,128.00	0.00	54.75	1.06	0.00	0.00	0.00
Basal Avalon									
10,200.00	0.87	90.00	10,199.58	0.00	55.84	1.08	0.00	0.00	0.00
10,300.00	0.87	90.00	10,299.57	0.00	57.35	1.11	0.00	0.00	0.00
10,400.00	0.87	90.00	10,399.55	0.00	58.87	1.14	0.00	0.00	0.00
10,486.46	0.87	90.00	10,486.00	0.00	60.18	1.17	0.00	0.00	0.00
FBSG_sand									
10,500.00	0.87	90.00	10,499.54	0.00	60.39	1.17	0.00	0.00	0.00
10,600.00	0.87	90.00	10,599.53	0.00	61.91	1.20	0.00	0.00	0.00
10,700.00	0.87	90.00	10,699.52	0.00	63.43	1.23	0.00	0.00	0.00
10,800.00	0.87	90.00	10,799.51	0.00	64.94	1.26	0.00	0.00	0.00
10,900.00	0.87	90.00	10,899.50	0.00	66.46	1.29	0.00	0.00	0.00
11,000.00	0.87	90.00	10,999.49	0.00	67.98	1.32	0.00	0.00	0.00
11,100.00	0.87	90.00	11,099.47	0.00	69.50	1.35	0.00	0.00	0.00
11,192.54	0.87	90.00	11,192.00	0.00	70.90	1.37	0.00	0.00	0.00
SBSG_sand									
11,200.00	0.87	90.00	11,199.46	0.00	71.02	1.38	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,300.00	0.87	90.00	11,299.45	0.00	72.53	1.41	0.00	0.00	0.00
11,400.00	0.87	90.00	11,399.44	0.00	74.05	1.43	0.00	0.00	0.00
11,500.00	0.87	90.00	11,499.43	0.00	75.57	1.46	0.00	0.00	0.00
11,523.58	0.87	90.00	11,523.00	0.00	75.93	1.47	0.00	0.00	0.00
SBSG_sand base									
11,600.00	0.87	90.00	11,599.42	0.00	77.09	1.49	0.00	0.00	0.00
11,700.00	0.87	90.00	11,699.40	0.00	78.61	1.52	0.00	0.00	0.00
11,800.00	0.87	90.00	11,799.39	0.00	80.12	1.55	0.00	0.00	0.00
11,900.00	0.87	90.00	11,899.38	0.00	81.64	1.58	0.00	0.00	0.00
12,000.00	0.87	90.00	11,999.37	0.00	83.16	1.61	0.00	0.00	0.00
12,055.34	0.87	90.00	12,054.70	0.00	84.00	1.63	0.00	0.00	0.00
Start DLS 12.00 TFO 89.42									
12,100.00	5.44	170.24	12,099.29	-2.09	84.70	3.73	12.00	10.23	179.66
12,143.14	10.58	174.75	12,142.00	-8.05	85.41	9.70	12.00	11.92	10.46
TBSG_sand									
12,200.00	17.39	176.64	12,197.14	-21.75	86.38	23.42	12.00	11.97	3.31
12,300.00	29.38	177.87	12,288.76	-61.32	88.18	63.02	12.00	11.99	1.23
12,400.00	41.38	178.43	12,370.15	-119.08	90.00	120.81	12.00	12.00	0.56
12,500.00	53.37	178.77	12,437.74	-192.51	91.78	194.25	12.00	12.00	0.34
12,600.00	65.37	179.02	12,488.60	-278.38	93.43	280.14	12.00	12.00	0.25
12,700.00	77.37	179.22	12,520.48	-372.96	94.88	374.73	12.00	12.00	0.20
12,799.34	89.29	179.40	12,532.00	-471.45	96.06	473.22	12.00	12.00	0.19
Start 9676.94 hold at 12799.34 MD									
12,800.00	89.29	179.40	12,532.01	-472.10	96.06	473.88	0.00	0.00	0.00
12,900.00	89.29	179.40	12,533.25	-572.09	97.10	573.86	0.00	0.00	0.00
13,000.00	89.29	179.40	12,534.49	-672.08	98.14	673.85	0.00	0.00	0.00
13,100.00	89.29	179.40	12,535.73	-772.06	99.18	773.84	0.00	0.00	0.00
13,200.00	89.29	179.40	12,536.97	-872.05	100.22	873.83	0.00	0.00	0.00
13,300.00	89.29	179.40	12,538.21	-972.04	101.26	973.82	0.00	0.00	0.00
13,400.00	89.29	179.40	12,539.45	-1,072.02	102.30	1,073.81	0.00	0.00	0.00
13,500.00	89.29	179.40	12,540.69	-1,172.01	103.34	1,173.79	0.00	0.00	0.00
13,600.00	89.29	179.40	12,541.93	-1,272.00	104.38	1,273.78	0.00	0.00	0.00
13,700.00	89.29	179.40	12,543.17	-1,371.99	105.41	1,373.77	0.00	0.00	0.00
13,800.00	89.29	179.40	12,544.41	-1,471.97	106.45	1,473.76	0.00	0.00	0.00
13,900.00	89.29	179.40	12,545.65	-1,571.96	107.49	1,573.75	0.00	0.00	0.00
14,000.00	89.29	179.40	12,546.89	-1,671.95	108.53	1,673.73	0.00	0.00	0.00
14,100.00	89.29	179.40	12,548.13	-1,771.93	109.57	1,773.72	0.00	0.00	0.00
14,200.00	89.29	179.40	12,549.37	-1,871.92	110.61	1,873.71	0.00	0.00	0.00
14,300.00	89.29	179.40	12,550.61	-1,971.91	111.65	1,973.70	0.00	0.00	0.00
14,400.00	89.29	179.40	12,551.85	-2,071.89	112.69	2,073.69	0.00	0.00	0.00
14,500.00	89.29	179.40	12,553.09	-2,171.88	113.73	2,173.68	0.00	0.00	0.00
14,600.00	89.29	179.40	12,554.33	-2,271.87	114.77	2,273.66	0.00	0.00	0.00
14,700.00	89.29	179.40	12,555.57	-2,371.85	115.80	2,373.65	0.00	0.00	0.00
14,800.00	89.29	179.40	12,556.81	-2,471.84	116.84	2,473.64	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,900.00	89.29	179.40	12,558.05	-2,571.83	117.88	2,573.63	0.00	0.00	0.00
15,000.00	89.29	179.40	12,559.29	-2,671.82	118.92	2,673.62	0.00	0.00	0.00
15,100.00	89.29	179.40	12,560.53	-2,771.80	119.96	2,773.61	0.00	0.00	0.00
15,200.00	89.29	179.40	12,561.77	-2,871.79	121.00	2,873.59	0.00	0.00	0.00
15,300.00	89.29	179.40	12,563.01	-2,971.78	122.04	2,973.58	0.00	0.00	0.00
15,400.00	89.29	179.40	12,564.25	-3,071.76	123.08	3,073.57	0.00	0.00	0.00
15,500.00	89.29	179.40	12,565.49	-3,171.75	124.12	3,173.56	0.00	0.00	0.00
15,600.00	89.29	179.40	12,566.73	-3,271.74	125.16	3,273.55	0.00	0.00	0.00
15,700.00	89.29	179.40	12,567.97	-3,371.72	126.19	3,373.54	0.00	0.00	0.00
15,800.00	89.29	179.40	12,569.21	-3,471.71	127.23	3,473.52	0.00	0.00	0.00
15,900.00	89.29	179.40	12,570.45	-3,571.70	128.27	3,573.51	0.00	0.00	0.00
16,000.00	89.29	179.40	12,571.69	-3,671.68	129.31	3,673.50	0.00	0.00	0.00
16,024.98	89.29	179.40	12,572.00	-3,696.66	129.57	3,698.48	0.00	0.00	0.00
WFMP									
16,100.00	89.29	179.40	12,572.93	-3,771.67	130.35	3,773.49	0.00	0.00	0.00
16,200.00	89.29	179.40	12,574.17	-3,871.66	131.39	3,873.48	0.00	0.00	0.00
16,300.00	89.29	179.40	12,575.41	-3,971.65	132.43	3,973.47	0.00	0.00	0.00
16,400.00	89.29	179.40	12,576.65	-4,071.63	133.47	4,073.45	0.00	0.00	0.00
16,500.00	89.29	179.40	12,577.89	-4,171.62	134.51	4,173.44	0.00	0.00	0.00
16,600.00	89.29	179.40	12,579.13	-4,271.61	135.55	4,273.43	0.00	0.00	0.00
16,700.00	89.29	179.40	12,580.37	-4,371.59	136.58	4,373.42	0.00	0.00	0.00
16,800.00	89.29	179.40	12,581.61	-4,471.58	137.62	4,473.41	0.00	0.00	0.00
16,900.00	89.29	179.40	12,582.85	-4,571.57	138.66	4,573.39	0.00	0.00	0.00
17,000.00	89.29	179.40	12,584.09	-4,671.55	139.70	4,673.38	0.00	0.00	0.00
17,100.00	89.29	179.40	12,585.33	-4,771.54	140.74	4,773.37	0.00	0.00	0.00
17,200.00	89.29	179.40	12,586.57	-4,871.53	141.78	4,873.36	0.00	0.00	0.00
17,300.00	89.29	179.40	12,587.81	-4,971.51	142.82	4,973.35	0.00	0.00	0.00
17,400.00	89.29	179.40	12,589.05	-5,071.50	143.86	5,073.34	0.00	0.00	0.00
17,500.00	89.29	179.40	12,590.29	-5,171.49	144.90	5,173.32	0.00	0.00	0.00
17,600.00	89.29	179.40	12,591.53	-5,271.47	145.94	5,273.31	0.00	0.00	0.00
17,700.00	89.29	179.40	12,592.77	-5,371.46	146.97	5,373.30	0.00	0.00	0.00
17,800.00	89.29	179.40	12,594.01	-5,471.45	148.01	5,473.29	0.00	0.00	0.00
17,900.00	89.29	179.40	12,595.25	-5,571.44	149.05	5,573.28	0.00	0.00	0.00
18,000.00	89.29	179.40	12,596.49	-5,671.42	150.09	5,673.27	0.00	0.00	0.00
18,100.00	89.29	179.40	12,597.73	-5,771.41	151.13	5,773.25	0.00	0.00	0.00
18,200.00	89.29	179.40	12,598.97	-5,871.40	152.17	5,873.24	0.00	0.00	0.00
18,300.00	89.29	179.40	12,600.21	-5,971.38	153.21	5,973.23	0.00	0.00	0.00
18,400.00	89.29	179.40	12,601.45	-6,071.37	154.25	6,073.22	0.00	0.00	0.00
18,500.00	89.29	179.40	12,602.69	-6,171.36	155.29	6,173.21	0.00	0.00	0.00
18,600.00	89.29	179.40	12,603.93	-6,271.34	156.33	6,273.20	0.00	0.00	0.00
18,700.00	89.29	179.40	12,605.17	-6,371.33	157.36	6,373.18	0.00	0.00	0.00
18,800.00	89.29	179.40	12,606.41	-6,471.32	158.40	6,473.17	0.00	0.00	0.00
18,900.00	89.29	179.40	12,607.65	-6,571.30	159.44	6,573.16	0.00	0.00	0.00
19,000.00	89.29	179.40	12,608.89	-6,671.29	160.48	6,673.15	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,100.00	89.29	179.40	12,610.13	-6,771.28	161.52	6,773.14	0.00	0.00	0.00
19,200.00	89.29	179.40	12,611.37	-6,871.27	162.56	6,873.13	0.00	0.00	0.00
19,300.00	89.29	179.40	12,612.61	-6,971.25	163.60	6,973.11	0.00	0.00	0.00
19,400.00	89.29	179.40	12,613.85	-7,071.24	164.64	7,073.10	0.00	0.00	0.00
19,500.00	89.29	179.40	12,615.09	-7,171.23	165.68	7,173.09	0.00	0.00	0.00
19,600.00	89.29	179.40	12,616.33	-7,271.21	166.72	7,273.08	0.00	0.00	0.00
19,700.00	89.29	179.40	12,617.57	-7,371.20	167.75	7,373.07	0.00	0.00	0.00
19,800.00	89.29	179.40	12,618.81	-7,471.19	168.79	7,473.05	0.00	0.00	0.00
19,900.00	89.29	179.40	12,620.05	-7,571.17	169.83	7,573.04	0.00	0.00	0.00
20,000.00	89.29	179.40	12,621.29	-7,671.16	170.87	7,673.03	0.00	0.00	0.00
20,100.00	89.29	179.40	12,622.53	-7,771.15	171.91	7,773.02	0.00	0.00	0.00
20,200.00	89.29	179.40	12,623.77	-7,871.13	172.95	7,873.01	0.00	0.00	0.00
20,300.00	89.29	179.40	12,625.01	-7,971.12	173.99	7,973.00	0.00	0.00	0.00
20,400.00	89.29	179.40	12,626.25	-8,071.11	175.03	8,072.98	0.00	0.00	0.00
20,500.00	89.29	179.40	12,627.49	-8,171.10	176.07	8,172.97	0.00	0.00	0.00
20,600.00	89.29	179.40	12,628.73	-8,271.08	177.11	8,272.96	0.00	0.00	0.00
20,700.00	89.29	179.40	12,629.97	-8,371.07	178.14	8,372.95	0.00	0.00	0.00
20,800.00	89.29	179.40	12,631.21	-8,471.06	179.18	8,472.94	0.00	0.00	0.00
20,900.00	89.29	179.40	12,632.45	-8,571.04	180.22	8,572.93	0.00	0.00	0.00
21,000.00	89.29	179.40	12,633.69	-8,671.03	181.26	8,672.91	0.00	0.00	0.00
21,100.00	89.29	179.40	12,634.93	-8,771.02	182.30	8,772.90	0.00	0.00	0.00
21,200.00	89.29	179.40	12,636.17	-8,871.00	183.34	8,872.89	0.00	0.00	0.00
21,300.00	89.29	179.40	12,637.41	-8,970.99	184.38	8,972.88	0.00	0.00	0.00
21,400.00	89.29	179.40	12,638.65	-9,070.98	185.42	9,072.87	0.00	0.00	0.00
21,500.00	89.29	179.40	12,639.89	-9,170.96	186.46	9,172.86	0.00	0.00	0.00
21,600.00	89.29	179.40	12,641.13	-9,270.95	187.50	9,272.84	0.00	0.00	0.00
21,700.00	89.29	179.40	12,642.37	-9,370.94	188.53	9,372.83	0.00	0.00	0.00
21,800.00	89.29	179.40	12,643.61	-9,470.93	189.57	9,472.82	0.00	0.00	0.00
21,900.00	89.29	179.40	12,644.85	-9,570.91	190.61	9,572.81	0.00	0.00	0.00
22,000.00	89.29	179.40	12,646.09	-9,670.90	191.65	9,672.80	0.00	0.00	0.00
22,100.00	89.29	179.40	12,647.33	-9,770.89	192.69	9,772.79	0.00	0.00	0.00
22,200.00	89.29	179.40	12,648.57	-9,870.87	193.73	9,872.77	0.00	0.00	0.00
22,300.00	89.29	179.40	12,649.81	-9,970.86	194.77	9,972.76	0.00	0.00	0.00
22,400.00	89.29	179.40	12,651.05	-10,070.85	195.81	10,072.75	0.00	0.00	0.00
22,476.28	89.29	179.40	12,652.00	-10,147.12	196.60	10,149.02	0.00	0.00	0.00
TD at 22476.28									

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 604H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=30' @ 3402.00ft (N 894)
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=30' @ 3402.00ft (N 894)
Well:	Fascinator Fed Com 604H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Fascinator 604H FTP	0.00	0.00	12,370.16	-119.10	90.80	435,775.10	784,626.40	32.194715	-103.413236
- plan misses target center by 0.80ft at 12400.04ft MD (12370.17 TVD, -119.11 N, 90.00 E)									
- Point									
Fascinator 604H LTP	0.00	0.00	12,650.39	-10,017.12	194.70	425,877.10	784,730.30	32.167507	-103.413174
- plan misses target center by 0.55ft at 22346.26ft MD (12650.39 TVD, -10017.11 N, 195.25 E)									
- Point									
Fascinator 604H BHL	0.00	0.00	12,652.00	-10,147.12	196.60	425,747.10	784,732.20	32.167149	-103.413171
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,107.00	1,107.00	Rustler		0.00	
1,304.00	1,304.00	TOS		0.00	
5,152.00	5,152.00	BOS (Fletcher)			
5,478.00	5,478.00	LMAR (Top Delaware)			
5,501.00	5,501.00	BLCN			
6,476.00	6,476.00	CYCN			
8,084.18	8,084.00	BYCN			
9,327.32	9,327.00	Bone Sprg (BSGL)			
9,677.36	9,677.00	U Avalon Sh			
9,918.39	9,918.00	L Avalon Sh			
10,128.41	10,128.00	Basal Avalon			
10,486.46	10,486.00	FBSG_sand			
11,192.54	11,192.00	SBSG_sand			
11,523.58	11,523.00	SBSG_sand base			
12,143.14	12,142.00	TBSG_sand			
16,024.98	12,572.00	WFMP			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6500	6500	0	0	Start Build 2.00
6543	6543	0	0	Start 5511.85 hold at 6543.49 MD
12,055	12,055	0	84	Start DLS 12.00 TFO 89.42
12,799	12,532	-471	96	Start 9676.94 hold at 12799.34 MD
22,476	12,652	-10,147	197	TD at 22476.28

Checked By: _____ Approved By: _____ Date: _____

CONCHO

INTEGRITY DIRECTIONAL

COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 30, T 24 S. , R 35 E
Well: Fascinator Fed Com 604H
Wellbore: Wellbore #1
Plan: Plan #1 (Fascinator Fed Com 604H/Wellbore #1)
N 894

WELL DETAILS: Fascinator Fed Com 604H

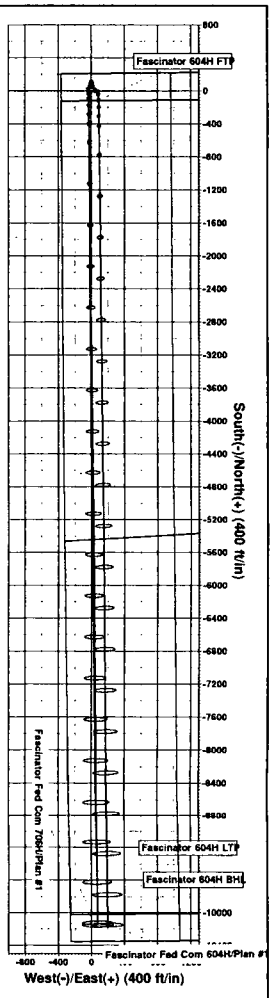
Ground Elevation:: 3372.00
RKB Elevation: KB=30' @ 3402.00ft (N 894)
Rig Name: N 894

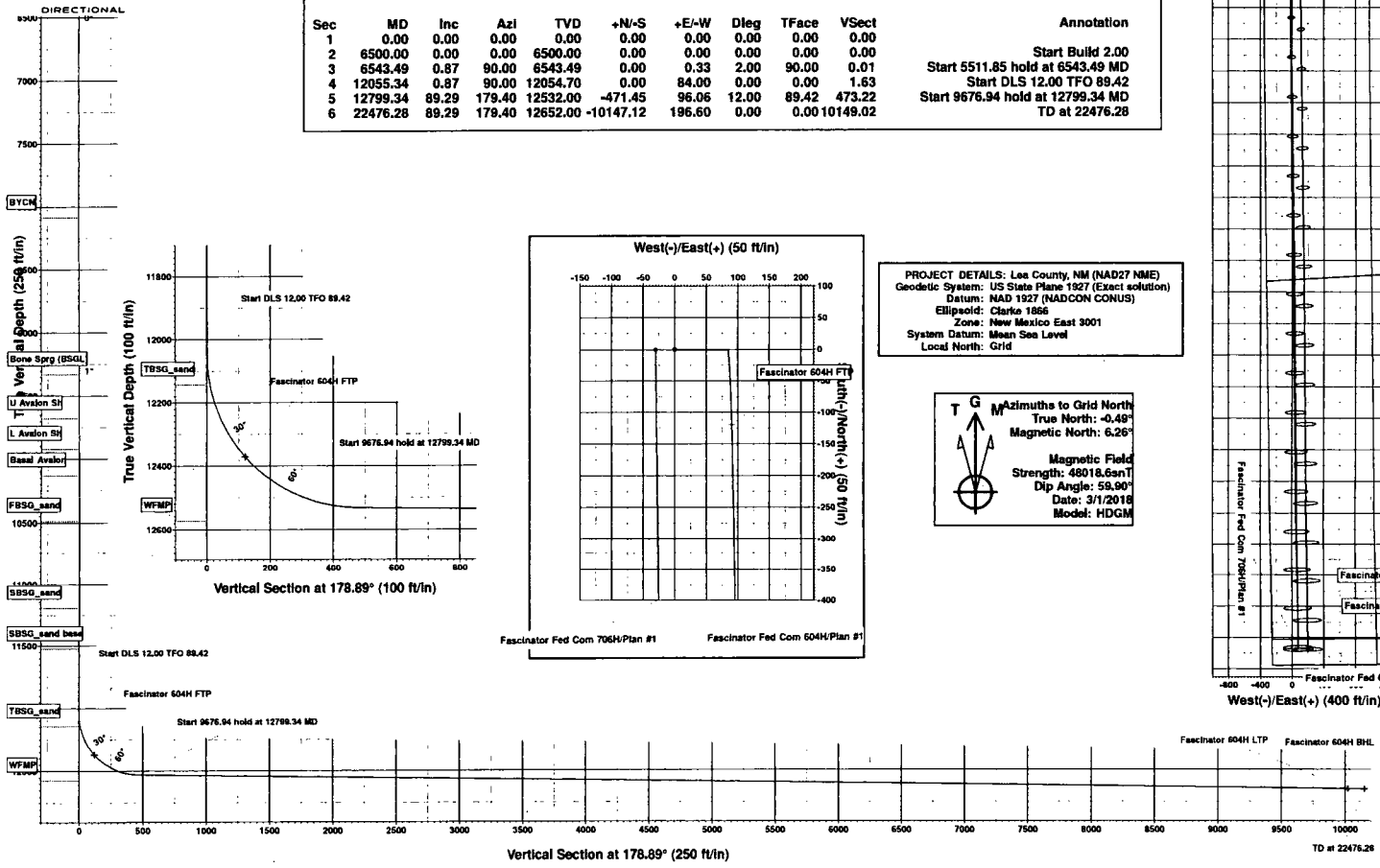
Northing	Easting	Latitude	Longitude
435894.20	784535.60	32.195045	-103.413526

Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
3	6543.49	0.87	90.00	6543.49	0.00	0.33	2.00	90.00	0.01	Start 5511.85 hold at 6543.49 MD
4	12055.34	0.87	90.00	12054.70	0.00	84.00	0.00	0.00	1.63	Start DLS 12.00 TFO 89.42
5	12799.34	89.29	179.40	12532.00	-471.45	96.06	12.00	89.42	473.22	Start 9676.94 hold at 12799.34 MD
6	22476.28	89.29	179.40	12652.00	-10147.12	196.60	0.00	0.00	10149.02	TD at 22476.28

PROJECT DETAILS: Lea County, NM (NAD27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid





1. Component and Preventer Compatibility Table

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

Component	OD	Preventer	RWP
Drill pipe	5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
HWDP	5"		
Jars	5"		
Drill collars and MWD tools	6.25-6.75"		
Mud Motor	6.75"		
Production casing	5.5"		
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

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

2. Well Control and Shut-In Procedures

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

Drilling:

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

Tripping:

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

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: **1/12/2018**

☒ 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, recomplete to new zone, re-frac) activity.

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Fascinator Fed. Com #604H	**30-025-**	**D-30-24S-35E**	**210' FNL & 360' FWL**	**2,337 MCF**		**Gas will connect to CTB TBD.**

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 **Versado**, and will be connected to **Eunice** low/high pressure gathering system located in **Lea** County, New Mexico. It will require **0' to an undetermined amount of feet** of pipeline to connect the facility to low/high pressure gathering system. **COG Operating LLC** provides (periodically) to **Versado** 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 **Versado** have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at **Eunice** Processing Plant located in **Sec 3, Twn 22S, Rng 37E, Lea** County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

APD ID: 10400028755 **Submission Date:** 03/27/2018

Operator Name: COG OPERATING LLC

Well Name: FASCINATOR FEDERAL COM **Well Number:** 604H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

COG_Fascinator_604H_Exist_Rd_20180323075658.pdf

Existing Road Purpose: ACCESS **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

COG_Fascinator_604H_MapsPlats_20180323075712.pdf

New road type: TWO-TRACK

Length: 160 Feet **Width (ft.):** 30

Max slope (%): 33 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

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

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

Choke

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

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

3. Well Control Drills

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

Drilling/Pit:

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

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

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

Running Casing

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

No Pipe in Hole (Open Hole)

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

Pulling BHA through BOP Stack

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

Operator Name: COG OPERATING LLC

Well Name: FASCINATOR FEDERAL COM **Well Number:** 604H

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations

Amount of waste: 125 pounds

Waste disposal frequency : Weekly

Safe containment description: Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Roll off cuttings containers on tracks

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be obtained from Bert Madera caliche pit located in Section 6. T25S. R35E. Phone 575-631-4444.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and produced oil and water during drilling and completion operations

Amount of waste: 6000 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling waste will be stored safely and disposed of properly

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: SEWAGE

Waste content description: Human waste and gray water

Amount of waste: 250 gallons

Waste disposal frequency : Weekly

Safe containment description: Waste will be properly contained and disposed of properly at a state approved disposal facility
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Operator Name: COG OPERATING LLC

Well Name: FASCINATOR FEDERAL COM **Well Number:** 604H

Water source use type: INTERMEDIATE/PRODUCTION CASING **Water source type:** OTHER

Describe type: Brine

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: COMMERCIAL

Water source transport method: TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 30000 **Source volume (acre-feet):** 3.866793

Source volume (gal): 1260000

Water source use type: STIMULATION, SURFACE CASING **Water source type:** OTHER

Describe type: Fresh Water

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 450000 **Source volume (acre-feet):** 58.001892

Source volume (gal): 18900000

Water source and transportation map:

COG_Fascinator_604H_BrineH2O_20180323075902.pdf

COG_Fascinator_604H_FreshH2O_20180323075914.pdf

Water source comments: Fresh water will be obtained from C-01414 RRR Cattle Company water well located in Section 10, T24S, R36E. Brine water will be obtained from the Malaga II Brine station located in Section 12. T23S. R28E.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

Access surfacing type: OTHER

Access *topsoil source*: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Blading

Access other construction information: No turnouts are planned. Re-routing access road around proposed well location.

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: None necessary.

Road Drainage Control Structures (DCS) description: None needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

COG_Fascinator_604H_1Mile_Data_20180323075836.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: A Central Tank Battery and facilities will be permitted and constructed at a later date (Once an onsite is completed). The battery and facilities will be installed according to API specifications.

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: COG OPERATING LLC

Well Name: FASCINATOR FEDERAL COM **Well Number:** 604H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: YES

Ancillary Facilities attachment:

COG_Fascinator_604H_GCP_20180323075942.pdf

Comments: GCP Attached.

Section 9 - Well Site Layout

Well Site Layout Diagram:

COG_Fascinator_604H_Prod_Facility_20180323075954.pdf

Comments: A Central Tank Battery and facilities will be permitted and constructed at a later date (Once an onsite is completed). The battery and facilities will be installed according to API specifications.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: FASCINATOR FEDERAL COM

Multiple Well Pad Number: 604H AND 706H

Recontouring attachment:

Drainage/Erosion control construction: If needed, immediately following pad construction approximately 400' of straw waddles will be placed on the south side and 400' on the west side of the location to reduce sediment impacts to fragile/sensitive soils.

Drainage/Erosion control reclamation: South 80' West 80'

Well pad proposed disturbance (acres): 3.67

Well pad interim reclamation (acres): 0.15

Well pad long term disturbance (acres): 3.35

Road proposed disturbance (acres): 0.06

Road interim reclamation (acres): 0.06

Road long term disturbance (acres): 0.06

Powerline proposed disturbance (acres): 0

Powerline interim reclamation (acres): 0

Powerline long term disturbance (acres): 0

Pipeline proposed disturbance (acres): 0

Pipeline interim reclamation (acres): 0

Pipeline long term disturbance (acres): 0

Other proposed disturbance (acres): 0

Other interim reclamation (acres): 0

Other long term disturbance (acres): 0

Total proposed disturbance: 3.73

Total interim reclamation: 0.21

Total long term disturbance: 3.41

Disturbance Comments:

Reconstruction method: New construction of pad.

Topsoil redistribution: South 80' West 80'

Soil treatment: None

Existing Vegetation at the well pad: Shinnery Oak/Mesquite grassland

Existing Vegetation at the well pad attachment:

Operator Name: COG OPERATING LLC

Well Name: FASCINATOR FEDERAL COM **Well Number:** 604H

Existing Vegetation Community at the road: Shinnery Oak/Mesquite grassland

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery Oak/Mesquite grassland

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Rand **Last Name:** French

Phone: (432)254-5556 **Email:** rfrench@concho.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: N/A

Weed treatment plan attachment:

Monitoring plan description: N/A

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

COG_Fascinator_604H_ClosedLoop_20180323080108.pdf

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: STATE OF NEW MEXICO

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: COG OPERATING LLC

Well Name: FASCINATOR FEDERAL COM **Well Number:** 604H

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Onsite completed on 11/9/2017 by Gerald Herrera (COG) and Jeff Robertson (BLM).

Other SUPO Attachment

COG_Fascinator_604H_Certification_20180323080208.pdf

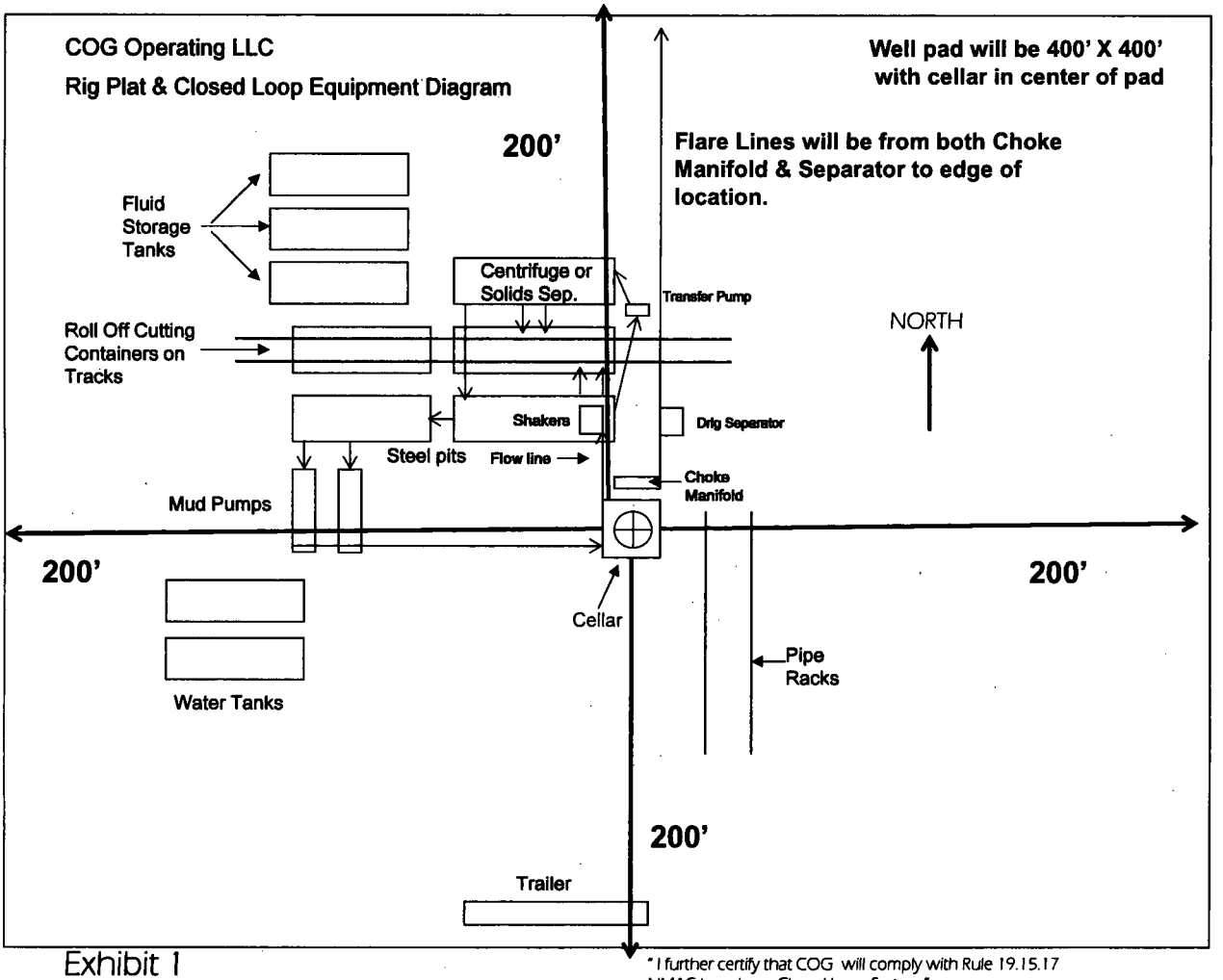


Exhibit 1

"I further certify that COG will comply with Rule 19.15.17 NMAC by using a Closed Loop System."

OPERATOR CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 12th day of January, 2018.

Signed: Mayte Reyes

Printed Name: Mayte Reyes
Position: Regulatory Analyst
Address: 2208 W. Main Street, Artesia, NM 88210
Telephone: (575) 748-6945
E-mail: mreyes1@concho.com
Field Representative (if not above signatory): Rand French
Telephone: (575) 748-6940. E-mail: rfrench@concho.com

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

08/03/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000215

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: