PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy Co**
LEASE NO.:	**NM129267**
WELL NAME & NO.:	**5H – West Grama Ridge 8-5 Fed**
SURFACE HOLE FOOTAGE:	**457'/S & 630'/W**
BOTTOM HOLE FOOTAGE	**330'/N & 660'/W, sec. 5**
LOCATION:	**Sec. 8, T. 22 S, R. 34 E**
COUNTY:	**Lea County, New Mexico**

HOBBS OCD
MAY 23 2018
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COA

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☑ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1630** 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.

Operator shall filled 1/3rd casing with fluid while running intermediate and production casing to maintain collapse safety factor.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The minimum required fill of cement behind the **7** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.**Additional cement maybe required. Excess calculates to 15%.**

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 **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7** intermediate casing shoe shall be **5000 (5M)** psi.

GENERAL REQUIREMENTS

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

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

☒ 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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

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

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

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

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

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

B. PRESSURE CONTROL

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

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

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

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. 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.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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

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

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

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

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

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

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

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.

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PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

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SURFACE HOLE FOOTAGE:	457'/S & 630'/W
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COUNTY:	Lea County, New Mexico

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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)

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

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

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

Watershed:

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.

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.

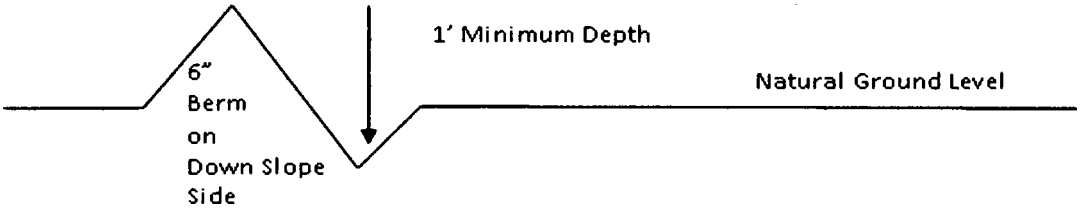
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

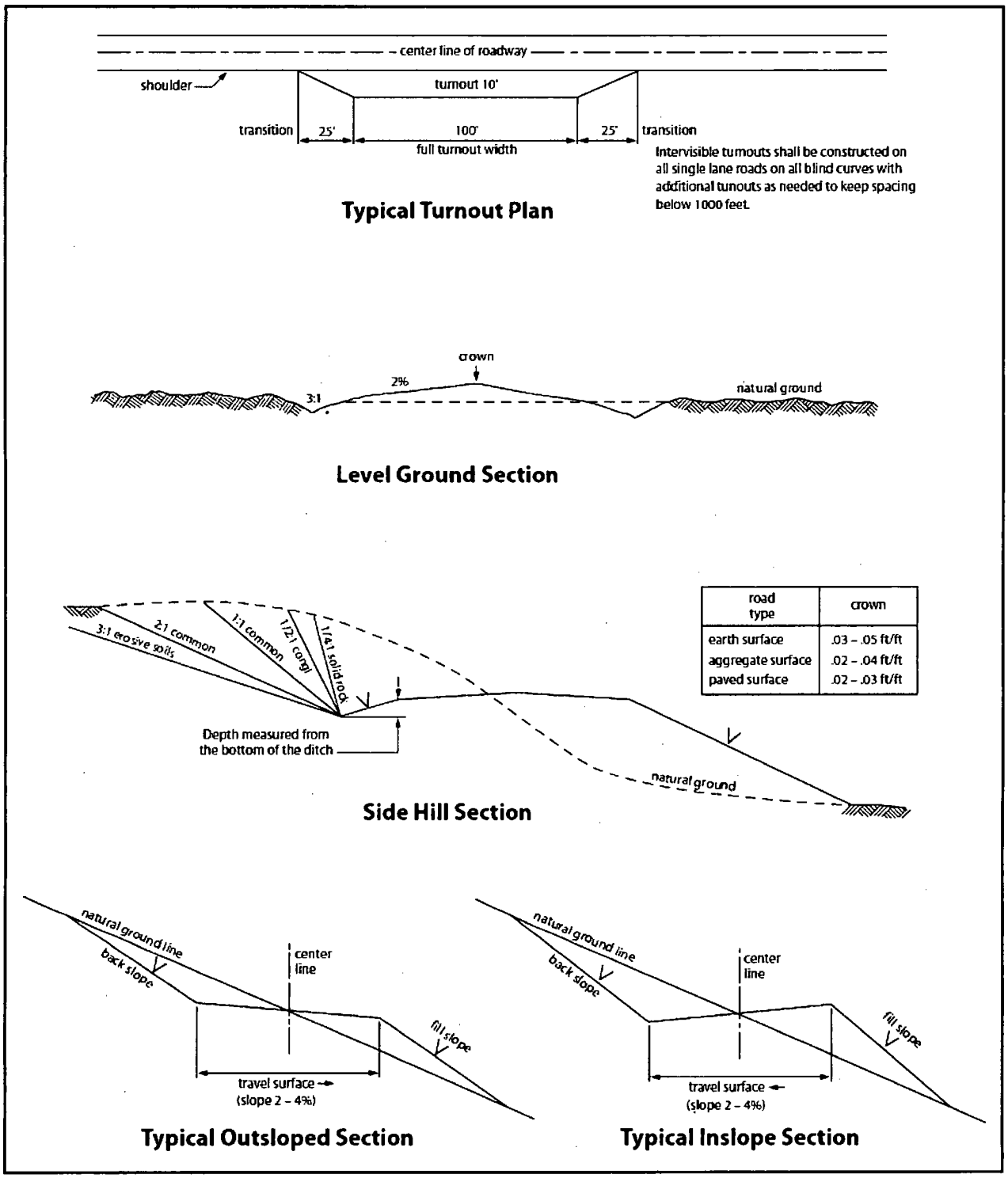


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

B. PIPELINES

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture for LPC Sand/Shinnery Sites

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 shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall 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). 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. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may 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	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

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

Hydrogen Sulfide Drilling Operations Plan
West Grama Ridge 8-5 Federal Com 5H
Cimarex Energy Co.
UL: M, Sec. 8, 22S, 34E
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H_2S
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H_2S Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.

B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

A. Windsock at mudpit area should be high enough to be visible.
B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit "E-1"

6 Communication:

A. While working under masks chalkboards will be used for communication.
B. Hand signals will be used where chalk board is inappropriate.
C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

West Grama Ridge 8-5 Federal Com 5H

Casing Assumptions

Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1630	13-3/8"	54.50	J-55	ST&C	1.52	3.67	5.79
12 1/4	0	5190	9-5/8"	40.00	J-55	LT&C	1.26	1.43	2.50
8 3/4	0	11078	5-1/2"	17.00	L-80	LT&C	1.21	1.49	1.72
8 3/4	11078	21542	5-1/2"	17.00	L-80	BT&C	1.16	1.43	50.55
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

H_2S Contingency Plan
West Grama Ridge 8-5 Federal Com 5H
Cimarex Energy Co.
UL: M, Sec. 8, 22S, 34E
Lea Co., NM

Emergency Procedures

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

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with H_2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the 432-620-1975
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the:
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas Source

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

Characteristics of H_2S and SO_2

Please see attached International Chemical Safety Cards.

Contacting Authorities

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

H_2S Contingency Plan Emergency Contacts
West Grama Ridge 8-5 Federal Com 5H
Cimarex Energy Co.
UL: M, Sec. 8, 22S, 34E
Lea Co., NM

Company Office			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			

Key Personnel

Name	**Title**	**Office**	**Mobile**
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136

Artesia		
Ambulance	911	
State Police	575-746-2703	
City Police	575-746-2703	
Sheriff's Office	575-746-9888	
Fire Department	**575-746-2701**	
Local Emergency Planning Committee	575-746-2122	
New Mexico Oil Conservation Division	575-748-1283	

Carlsbad		
Ambulance	911	
State Police	575-885-3137	
City Police	575-885-2111	
Sheriff's Office	575-887-7551	
Fire Department	**575-887-3798**	
Local Emergency Planning Committee	575-887-6544	
US Bureau of Land Management	575-887-6544	

Santa Fe		
New Mexico Emergency Response Commission (Santa Fe)	505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126	
New Mexico State Emergency Operations Center	505-476-9635	

National		
National Emergency Response Center (Washington, D.C.)	800-424-8802	

Medical		
Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949	

Other		
Boots & Coots IWC	800-256-9688	or 281-931-8884
Cudd Pressure Control	432-699-0139	or 432-563-3356
Halliburton	575-746-2757	
B.J. Services	575-746-3569	

Schlumberger

Cimarex West Grama Ridge 8-5 Federal Com 5H Rev0 RM 11Dec17
Proposal Geodetic Report
(Non-Def Plan)

CIMAREX

Report Date:	December 12, 2017 - 04:37 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	359.660 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex West Grama Ridge 8-5 Federal Com 5H / Cimarex West Grama Ridge 8-5 Federal Com 5H	**TVD Reference Datum:**	RKB
Well:	Cimarex West Grama Ridge 8-5 Federal Com 5H	**TVD Reference Elevation:**	3547.600 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3523.600 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.797 °
Survey Name:	Cimarex West Grama Ridge 8-5 Federal Com 5H Rev0 RM 11Dec17	**Total Gravity Field Strength:**	998.4757mgn (9.80665 Based)
Survey Date:	December 11, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	99.200 ° / 10593.401 ft / 6.293 / 0.918	**Total Magnetic Field Strength:**	48194.884 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.264 °
Location Lat / Long:	N 32° 24' 0.81933", W 103° 29' 54.78054"	**Declination Date:**	December 11, 2017
Location Grid N/E Y/X:	N 510339.910 ftUS, E 798983.860 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.4473 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99998512	**Grid Convergence Used:**	0.4473 °
Version / Patch:	2.10.565.0	**Total Corr Mag North->Grid North:**	6.3501 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [457' FSL, 630' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	100.00	0.00	175.30	100.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	200.00	0.00	175.30	200.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	300.00	0.00	175.30	300.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	400.00	0.00	175.30	400.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	500.00	0.00	175.30	500.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	600.00	0.00	175.30	600.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	700.00	0.00	175.30	700.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	800.00	0.00	175.30	800.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	900.00	0.00	175.30	900.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	1000.00	0.00	175.30	1000.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	1100.00	0.00	175.30	1100.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	1200.00	0.00	175.30	1200.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	1300.00	0.00	175.30	1300.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
	1400.00	0.00	175.30	1400.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
Nudge 2°/100' DLS	1500.00	0.00	175.30	1500.00	0.00	0.00	0.00	0.00	510339.91	798983.86	N 32 24 0.82	W 103 29 54.78
Rustler	*1580.01*	*1.60*	*175.30*	*1580.00*	*-1.11*	*-1.11*	*0.09*	*2.00*	*510338.80*	*798983.95*	*N 32 24 0.81*	*W 103 29 54.78*
	1600.00	2.00	175.30	1599.98	-1.74	-1.74	0.14	2.00	510338.17	798984.00	N 32 24 0.80	W 103 29 54.78
	1700.00	4.00	175.30	1699.84	-6.96	-6.96	0.57	2.00	510332.96	798984.43	N 32 24 0.75	W 103 29 54.77
Hold Nudge	1730.00	4.60	175.30	1729.75	-9.20	-9.20	0.76	2.00	510330.71	798984.62	N 32 24 0.73	W 103 29 54.77
Top of Salt	*1730.25*	*4.60*	*175.30*	*1730.00*	*-9.22*	*-9.22*	*0.76*	*0.00*	*510330.69*	*798984.62*	*N 32 24 0.73*	*W 103 29 54.77*
	1800.00	4.60	175.30	1799.53	-14.80	-14.79	1.22	0.00	510325.12	798985.08	N 32 24 0.67	W 103 29 54.77
	1900.00	4.60	175.30	1899.21	-22.80	-22.78	1.87	0.00	510317.13	798985.73	N 32 24 0.59	W 103 29 54.76
	2000.00	4.60	175.30	1998.88	-30.79	-30.78	2.53	0.00	510309.13	798986.39	N 32 24 0.51	W 103 29 54.75

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2100.00	4.60	175.30	2098.56	-38.79	-38.77	3.19	0.00	510301.14	798987.05	N 32 24 0.44	W 103 29 54.75
	2200.00	4.60	175.30	2198.24	-46.79	-46.76	3.84	0.00	510293.15	798987.70	N 32 24 0.36	W 103 29 54.74
	2300.00	4.60	175.30	2297.92	-54.78	-54.76	4.50	0.00	510285.15	798988.36	N 32 24 0.28	W 103 29 54.73
	2400.00	4.60	175.30	2397.59	-62.78	-62.75	5.16	0.00	510277.16	798989.02	N 32 24 0.20	W 103 29 54.73
	2500.00	4.60	175.30	2497.27	-70.78	-70.74	5.82	0.00	510269.17	798989.68	N 32 24 0.12	W 103 29 54.72
	2600.00	4.60	175.30	2596.95	-78.77	-78.74	6.47	0.00	510261.18	798990.33	N 32 24 0.04	W 103 29 54.71
	2700.00	4.60	175.30	2696.63	-86.77	-86.73	7.13	0.00	510253.18	798990.99	N 32 23 59.96	W 103 29 54.71
	2800.00	4.60	175.30	2796.31	-94.77	-94.72	7.79	0.00	510245.19	798991.65	N 32 23 59.88	W 103 29 54.70
	2900.00	4.60	175.30	2895.98	-102.76	-102.71	8.44	0.00	510237.20	798992.30	N 32 23 59.80	W 103 29 54.69
	3000.00	4.60	175.30	2995.66	-110.76	-110.71	9.10	0.00	510229.20	798992.96	N 32 23 59.72	W 103 29 54.68
	3100.00	4.60	175.30	3095.34	-118.76	-118.70	9.76	0.00	510221.21	798993.62	N 32 23 59.64	W 103 29 54.68
	3200.00	4.60	175.30	3195.02	-126.75	-126.69	10.42	0.00	510213.22	798994.28	N 32 23 59.56	W 103 29 54.67
	3300.00	4.60	175.30	3294.70	-134.75	-134.69	11.07	0.00	510205.23	798994.93	N 32 23 59.49	W 103 29 54.66
	3400.00	4.60	175.30	3394.37	-142.75	-142.68	11.73	0.00	510197.23	798995.59	N 32 23 59.41	W 103 29 54.66
	3500.00	4.60	175.30	3494.05	-150.74	-150.67	12.39	0.00	510189.24	798996.25	N 32 23 59.33	W 103 29 54.65
	3600.00	4.60	175.30	3593.73	-158.74	-158.66	13.04	0.00	510181.25	798996.90	N 32 23 59.25	W 103 29 54.64
	3700.00	4.60	175.30	3693.41	-166.74	-166.66	13.70	0.00	510173.26	798997.56	N 32 23 59.17	W 103 29 54.64
Base of Salt	*3796.90*	*4.60*	*175.30*	*3790.00*	*-174.48*	*-174.40*	*14.34*	*0.00*	*510165.51*	*798998.20*	*N 32 23 59.09*	*W 103 29 54.63*
	3800.00	4.60	175.30	3793.09	-174.73	-174.65	14.36	0.00	510165.26	798998.22	N 32 23 59.09	W 103 29 54.63
	3900.00	4.60	175.30	3892.76	-182.73	-182.64	15.02	0.00	510157.27	798998.88	N 32 23 59.01	W 103 29 54.62
	4000.00	4.60	175.30	3992.44	-190.73	-190.64	15.67	0.00	510149.28	798999.53	N 32 23 58.93	W 103 29 54.62
	4100.00	4.60	175.30	4092.12	-198.72	-198.63	16.33	0.00	510141.28	799000.19	N 32 23 58.85	W 103 29 54.61
	4200.00	4.60	175.30	4191.80	-206.72	-206.62	16.99	0.00	510133.29	799000.85	N 32 23 58.77	W 103 29 54.60
Capitan Reef	*4298.52*	*4.60*	*175.30*	*4290.00*	*-214.60*	*-214.50*	*17.63*	*0.00*	*510125.42*	*799001.49*	*N 32 23 58.70*	*W 103 29 54.59*
	4300.00	4.60	175.30	4291.47	-214.72	-214.61	17.64	0.00	510125.30	799001.50	N 32 23 58.69	W 103 29 54.59
	4400.00	4.60	175.30	4391.15	-222.71	-222.61	18.30	0.00	510117.31	799002.16	N 32 23 58.62	W 103 29 54.59
	4500.00	4.60	175.30	4490.83	-230.71	-230.60	18.96	0.00	510109.31	799002.82	N 32 23 58.54	W 103 29 54.58
	4600.00	4.60	175.30	4590.51	-238.71	-238.59	19.62	0.00	510101.32	799003.48	N 32 23 58.46	W 103 29 54.57
	4700.00	4.60	175.30	4690.19	-246.70	-246.59	20.27	0.00	510093.33	799004.13	N 32 23 58.38	W 103 29 54.57
	4800.00	4.60	175.30	4789.86	-254.70	-254.58	20.93	0.00	510085.33	799004.79	N 32 23 58.30	W 103 29 54.56
	4900.00	4.60	175.30	4889.54	-262.70	-262.57	21.59	0.00	510077.34	799005.45	N 32 23 58.22	W 103 29 54.55
	5000.00	4.60	175.30	4989.22	-270.69	-270.57	22.24	0.00	510069.35	799006.10	N 32 23 58.14	W 103 29 54.55
	5100.00	4.60	175.30	5088.90	-278.69	-278.56	22.90	0.00	510061.36	799006.76	N 32 23 58.06	W 103 29 54.54
	5200.00	4.60	175.30	5188.58	-286.69	-286.55	23.56	0.00	510053.36	799007.42	N 32 23 57.98	W 103 29 54.53
Delaware Sands	*5221.49*	*4.60*	*175.30*	*5210.00*	*-288.40*	*-288.27*	*23.70*	*0.00*	*510051.65*	*799007.56*	*N 32 23 57.97*	*W 103 29 54.53*
	5300.00	4.60	175.30	5288.25	-294.68	-294.54	24.22	0.00	510045.37	799008.08	N 32 23 57.90	W 103 29 54.52
	5400.00	4.60	175.30	5387.93	-302.68	-302.54	24.87	0.00	510037.38	799008.73	N 32 23 57.82	W 103 29 54.52
	5500.00	4.60	175.30	5487.61	-310.68	-310.53	25.53	0.00	510029.39	799009.39	N 32 23 57.74	W 103 29 54.51
	5600.00	4.60	175.30	5587.29	-318.67	-318.52	26.19	0.00	510021.39	799010.05	N 32 23 57.67	W 103 29 54.50
	5700.00	4.60	175.30	5686.97	-326.67	-326.52	26.84	0.00	510013.40	799010.70	N 32 23 57.59	W 103 29 54.50
	5800.00	4.60	175.30	5786.64	-334.67	-334.51	27.50	0.00	510005.41	799011.36	N 32 23 57.51	W 103 29 54.49
	5900.00	4.60	175.30	5886.32	-342.66	-342.50	28.16	0.00	509997.41	799012.02	N 32 23 57.43	W 103 29 54.48
	6000.00	4.60	175.30	5986.00	-350.66	-350.49	28.82	0.00	509989.42	799012.68	N 32 23 57.35	W 103 29 54.48
	6100.00	4.60	175.30	6085.68	-358.66	-358.49	29.47	0.00	509981.43	799013.33	N 32 23 57.27	W 103 29 54.47
	6200.00	4.60	175.30	6185.35	-366.65	-366.48	30.13	0.00	509973.44	799013.99	N 32 23 57.19	W 103 29 54.46
	6300.00	4.60	175.30	6285.03	-374.65	-374.47	30.79	0.00	509965.44	799014.65	N 32 23 57.11	W 103 29 54.46
	6400.00	4.60	175.30	6384.71	-382.65	-382.47	31.44	0.00	509957.45	799015.30	N 32 23 57.03	W 103 29 54.45
	6500.00	4.60	175.30	6484.39	-390.64	-390.46	32.10	0.00	509949.46	799015.96	N 32 23 56.95	W 103 29 54.44
Drop to Vertical	6515.66	4.60	175.30	6500.00	-391.90	-391.71	32.20	0.00	509948.21	799016.06	N 32 23 56.94	W 103 29 54.44
	6600.00	2.91	175.30	6584.15	-397.40	-397.22	32.66	2.00	509942.70	799016.52	N 32 23 56.89	W 103 29 54.44
	6700.00	0.91	175.30	6684.09	-400.73	-400.55	32.93	2.00	509939.37	799016.79	N 32 23 56.85	W 103 29 54.43
Hold	6745.66	0.00	175.30	6729.75	-401.10	-400.91	32.96	2.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	6800.00	0.00	175.30	6784.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	6900.00	0.00	175.30	6884.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7000.00	0.00	175.30	6984.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7100.00	0.00	175.30	7084.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7200.00	0.00	175.30	7184.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7300.00	0.00	175.30	7284.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7400.00	0.00	175.30	7384.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7500.00	0.00	175.30	7484.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7600.00	0.00	175.30	7584.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7700.00	0.00	175.30	7684.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7800.00	0.00	175.30	7784.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	7900.00	0.00	175.30	7884.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8000.00	0.00	175.30	7984.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8100.00	0.00	175.30	8084.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8200.00	0.00	175.30	8184.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8300.00	0.00	175.30	8284.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8400.00	0.00	175.30	8384.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8500.00	0.00	175.30	8484.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8600.00	0.00	175.30	8584.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
Bone Spring	*8695.91*	*0.00*	*175.30*	*8680.00*	*-401.10*	*-400.91*	*32.96*	*0.00*	*509939.01*	*799016.82*	*N 32 23 56.85*	*W 103 29 54.43*
	8700.00	0.00	175.30	8684.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8800.00	0.00	175.30	8784.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	8900.00	0.00	175.30	8884.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9000.00	0.00	175.30	8984.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9100.00	0.00	175.30	9084.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9200.00	0.00	175.30	9184.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9300.00	0.00	175.30	9284.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9400.00	0.00	175.30	9384.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9500.00	0.00	175.30	9484.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9600.00	0.00	175.30	9584.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9700.00	0.00	175.30	9684.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
1st Bone Spring Sand	*9785.91*	*0.00*	*175.30*	*9770.00*	*-401.10*	*-400.91*	*32.96*	*0.00*	*509939.01*	*799016.82*	*N 32 23 56.85*	*W 103 29 54.43*
	9800.00	0.00	175.30	9784.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	9900.00	0.00	175.30	9884.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10000.00	0.00	175.30	9984.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
2nd Bone Spring Carb	*10005.91*	*0.00*	*175.30*	*9990.00*	*-401.10*	*-400.91*	*32.96*	*0.00*	*509939.01*	*799016.82*	*N 32 23 56.85*	*W 103 29 54.43*
	10100.00	0.00	175.30	10084.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10200.00	0.00	175.30	10184.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
2nd Bone Spring Sand	*10295.91*	*0.00*	*175.30*	*10280.00*	*-401.10*	*-400.91*	*32.96*	*0.00*	*509939.01*	*799016.82*	*N 32 23 56.85*	*W 103 29 54.43*
	10300.00	0.00	175.30	10284.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10400.00	0.00	175.30	10384.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10500.00	0.00	175.30	10484.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10600.00	0.00	175.30	10584.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10700.00	0.00	175.30	10684.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
3rd Bone Spring Carb	*10735.91*	*0.00*	*175.30*	*10720.00*	*-401.10*	*-400.91*	*32.96*	*0.00*	*509939.01*	*799016.82*	*N 32 23 56.85*	*W 103 29 54.43*
	10800.00	0.00	175.30	10784.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	10900.00	0.00	175.30	10884.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	11000.00	0.00	175.30	10984.09	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
KOP - Build 12°/100' DLs	11078.44	0.00	175.30	11062.54	-401.10	-400.91	32.96	0.00	509939.01	799016.82	N 32 23 56.85	W 103 29 54.43
	11100.00	2.59	359.66	11084.08	-400.61	-400.42	32.96	12.00	509939.50	799016.82	N 32 23 56.85	W 103 29 54.43
	11200.00	14.59	359.66	11182.78	-385.71	-385.52	32.87	12.00	509954.40	799016.73	N 32 23 57.00	W 103 29 54.43
3rd Bone Spring Sand	*11260.27*	*21.82*	*359.66*	*11240.00*	*-366.89*	*-366.70*	*32.76*	*12.00*	*509973.21*	*799016.62*	*N 32 23 57.19*	*W 103 29 54.43*
	11300.00	26.59	359.66	11276.23	-350.61	-350.42	32.66	12.00	509989.49	799016.52	N 32 23 57.35	W 103 29 54.43
	11400.00	38.59	359.66	11360.33	-296.85	-296.66	32.35	12.00	510043.25	799016.20	N 32 23 57.88	W 103 29 54.43
	11500.00	50.59	359.66	11431.42	-226.78	-226.59	31.93	12.00	510113.32	799015.79	N 32 23 58.57	W 103 29 54.43
	11600.00	62.59	359.66	11486.38	-143.46	-143.28	31.44	12.00	510196.64	799015.30	N 32 23 59.40	W 103 29 54.43
	11700.00	74.59	359.66	11522.83	-50.53	-50.35	30.89	12.00	510289.56	799014.75	N 32 24 0.32	W 103 29 54.42
	11800.00	86.59	359.66	11539.15	47.94	48.12	30.31	12.00	510388.03	799014.17	N 32 24 1.29	W 103 29 54.42
Landing Point	11828.44	90.00	359.66	11540.00	76.37	76.55	30.14	12.00	510416.46	799014.00	N 32 24 1.57	W 103 29 54.42

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	11900.00	90.00	359.66	11540.00	147.92	148.10	29.72	0.00	510488.01	799013.58	N 32 24 2.28	W 103 29 54.42
	12000.00	90.00	359.66	11540.00	247.92	248.10	29.13	0.00	510588.01	799012.99	N 32 24 3.27	W 103 29 54.42
	12100.00	90.00	359.66	11540.00	347.92	348.10	28.54	0.00	510688.00	799012.40	N 32 24 4.26	W 103 29 54.42
	12200.00	90.00	359.66	11540.00	447.92	448.10	27.95	0.00	510788.00	799011.81	N 32 24 5.25	W 103 29 54.41
	12300.00	90.00	359.66	11540.00	547.92	548.10	27.36	0.00	510888.00	799011.22	N 32 24 6.24	W 103 29 54.41
	12400.00	90.00	359.66	11540.00	647.92	648.09	26.77	0.00	510987.99	799010.63	N 32 24 7.23	W 103 29 54.41
	12500.00	90.00	359.66	11540.00	747.92	748.09	26.18	0.00	511087.99	799010.04	N 32 24 8.22	W 103 29 54.41
	12600.00	90.00	359.66	11540.00	847.92	848.09	25.59	0.00	511187.99	799009.45	N 32 24 9.21	W 103 29 54.40
	12700.00	90.00	359.66	11540.00	947.92	948.09	25.00	0.00	511287.98	799008.86	N 32 24 10.20	W 103 29 54.40
	12800.00	90.00	359.66	11540.00	1047.92	1048.09	24.41	0.00	511387.98	799008.27	N 32 24 11.19	W 103 29 54.40
	12900.00	90.00	359.66	11540.00	1147.92	1148.09	23.82	0.00	511487.98	799007.68	N 32 24 12.18	W 103 29 54.40
	13000.00	90.00	359.66	11540.00	1247.92	1248.08	23.23	0.00	511587.97	799007.09	N 32 24 13.17	W 103 29 54.40
	13100.00	90.00	359.66	11540.00	1347.92	1348.08	22.64	0.00	511687.97	799006.50	N 32 24 14.16	W 103 29 54.39
	13200.00	90.00	359.66	11540.00	1447.92	1448.08	22.05	0.00	511787.97	799005.91	N 32 24 15.15	W 103 29 54.39
	13300.00	90.00	359.66	11540.00	1547.92	1548.08	21.46	0.00	511887.96	799005.32	N 32 24 16.14	W 103 29 54.39
	13400.00	90.00	359.66	11540.00	1647.92	1648.08	20.87	0.00	511987.96	799004.73	N 32 24 17.12	W 103 29 54.39
	13500.00	90.00	359.66	11540.00	1747.92	1748.08	20.28	0.00	512087.96	799004.14	N 32 24 18.11	W 103 29 54.38
	13600.00	90.00	359.66	11540.00	1847.92	1848.07	19.69	0.00	512187.95	799003.55	N 32 24 19.10	W 103 29 54.38
	13700.00	90.00	359.66	11540.00	1947.92	1948.07	19.10	0.00	512287.95	799002.96	N 32 24 20.09	W 103 29 54.38
	13800.00	90.00	359.66	11540.00	2047.92	2048.07	18.51	0.00	512387.95	799002.37	N 32 24 21.08	W 103 29 54.38
	13900.00	90.00	359.66	11540.00	2147.92	2148.07	17.92	0.00	512487.94	799001.78	N 32 24 22.07	W 103 29 54.38
	14000.00	90.00	359.66	11540.00	2247.92	2248.07	17.33	0.00	512587.94	799001.19	N 32 24 23.06	W 103 29 54.37
	14100.00	90.00	359.66	11540.00	2347.92	2348.06	16.74	0.00	512687.93	799000.59	N 32 24 24.05	W 103 29 54.37
	14200.00	90.00	359.66	11540.00	2447.92	2448.06	16.14	0.00	512787.93	799000.00	N 32 24 25.04	W 103 29 54.37
	14300.00	90.00	359.66	11540.00	2547.92	2548.06	15.55	0.00	512887.93	798999.41	N 32 24 26.03	W 103 29 54.37
	14400.00	90.00	359.66	11540.00	2647.92	2648.06	14.96	0.00	512987.92	798998.82	N 32 24 27.02	W 103 29 54.36
	14500.00	90.00	359.66	11540.00	2747.92	2748.06	14.37	0.00	513087.92	798998.23	N 32 24 28.01	W 103 29 54.36
	14600.00	90.00	359.66	11540.00	2847.92	2848.06	13.78	0.00	513187.92	798997.64	N 32 24 29.00	W 103 29 54.36
	14700.00	90.00	359.66	11540.00	2947.92	2948.05	13.19	0.00	513287.91	798997.05	N 32 24 29.99	W 103 29 54.36
	14800.00	90.00	359.66	11540.00	3047.92	3048.05	12.60	0.00	513387.91	798996.46	N 32 24 30.98	W 103 29 54.36
	14900.00	90.00	359.66	11540.00	3147.92	3148.05	12.01	0.00	513487.91	798995.87	N 32 24 31.97	W 103 29 54.35
	15000.00	90.00	359.66	11540.00	3247.92	3248.05	11.42	0.00	513587.90	798995.28	N 32 24 32.96	W 103 29 54.35
	15100.00	90.00	359.66	11540.00	3347.92	3348.05	10.83	0.00	513687.90	798994.69	N 32 24 33.95	W 103 29 54.35
	15200.00	90.00	359.66	11540.00	3447.92	3448.05	10.24	0.00	513787.90	798994.10	N 32 24 34.94	W 103 29 54.35
	15300.00	90.00	359.66	11540.00	3547.92	3548.04	9.65	0.00	513887.89	798993.51	N 32 24 35.92	W 103 29 54.34
	15400.00	90.00	359.66	11540.00	3647.92	3648.04	9.06	0.00	513987.89	798992.92	N 32 24 36.91	W 103 29 54.34
	15500.00	90.00	359.66	11540.00	3747.92	3748.04	8.47	0.00	514087.89	798992.33	N 32 24 37.90	W 103 29 54.34
	15600.00	90.00	359.66	11540.00	3847.92	3848.04	7.88	0.00	514187.88	798991.74	N 32 24 38.89	W 103 29 54.34
	15700.00	90.00	359.66	11540.00	3947.92	3948.04	7.29	0.00	514287.88	798991.15	N 32 24 39.88	W 103 29 54.34
	15800.00	90.00	359.66	11540.00	4047.92	4048.03	6.70	0.00	514387.88	798990.56	N 32 24 40.87	W 103 29 54.33
	15900.00	90.00	359.66	11540.00	4147.92	4148.03	6.11	0.00	514487.87	798989.97	N 32 24 41.86	W 103 29 54.33
	16000.00	90.00	359.66	11540.00	4247.92	4248.03	5.52	0.00	514587.87	798989.38	N 32 24 42.85	W 103 29 54.33
	16100.00	90.00	359.66	11540.00	4347.92	4348.03	4.93	0.00	514687.87	798988.79	N 32 24 43.84	W 103 29 54.33
	16200.00	90.00	359.66	11540.00	4447.92	4448.03	4.34	0.00	514787.86	798988.20	N 32 24 44.83	W 103 29 54.32
	16300.00	90.00	359.66	11540.00	4547.92	4548.03	3.75	0.00	514887.86	798987.61	N 32 24 45.82	W 103 29 54.32
	16400.00	90.00	359.66	11540.00	4647.92	4648.02	3.16	0.00	514987.86	798987.02	N 32 24 46.81	W 103 29 54.32
	16500.00	90.00	359.66	11540.00	4747.92	4748.02	2.57	0.00	515087.85	798986.43	N 32 24 47.80	W 103 29 54.32
	16600.00	90.00	359.66	11540.00	4847.92	4848.02	1.98	0.00	515187.85	798985.84	N 32 24 48.79	W 103 29 54.32
	16700.00	90.00	359.66	11540.00	4947.92	4948.02	1.39	0.00	515287.85	798985.25	N 32 24 49.78	W 103 29 54.31
	16800.00	90.00	359.66	11540.00	5047.92	5048.02	0.80	0.00	515387.84	798984.66	N 32 24 50.77	W 103 29 54.31
	16900.00	90.00	359.66	11540.00	5147.92	5148.02	0.21	0.00	515487.84	798984.07	N 32 24 51.76	W 103 29 54.31
	17000.00	90.00	359.66	11540.00	5247.92	5248.01	-0.38	0.00	515587.84	798983.48	N 32 24 52.75	W 103 29 54.31
	17100.00	90.00	359.66	11540.00	5347.92	5348.01	-0.97	0.00	515687.83	798982.89	N 32 24 53.74	W 103 29 54.30
	17200.00	90.00	359.66	11540.00	5447.92	5448.01	-1.56	0.00	515787.83	798982.30	N 32 24 54.73	W 103 29 54.30
	17300.00	90.00	359.66	11540.00	5547.92	5548.01	-2.15	0.00	515887.83	798981.71	N 32 24 55.71	W 103 29 54.30
	17400.00	90.00	359.66	11540.00	5647.92	5648.01	-2.74	0.00	515987.82	798981.12	N 32 24 56.70	W 103 29 54.30
	17500.00	90.00	359.66	11540.00	5747.92	5748.01	-3.33	0.00	516087.82	798980.53	N 32 24 57.69	W 103 29 54.30
	17600.00	90.00	359.66	11540.00	5847.92	5848.00	-3.92	0.00	516187.81	798979.94	N 32 24 58.68	W 103 29 54.29
	17700.00	90.00	359.66	11540.00	5947.92	5948.00	-4.51	0.00	516287.81	798979.35	N 32 24 59.67	W 103 29 54.29

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	17800.00	90.00	359.66	11540.00	6047.92	6048.00	-5.10	0.00	516387.81	798978.76	N 32 25 0.66	W 103 29 54.29
	17900.00	90.00	359.66	11540.00	6147.92	6148.00	-5.69	0.00	516487.80	798978.17	N 32 25 1.65	W 103 29 54.29
	18000.00	90.00	359.66	11540.00	6247.92	6248.00	-6.28	0.00	516587.80	798977.58	N 32 25 2.64	W 103 29 54.28
	18100.00	90.00	359.66	11540.00	6347.92	6347.99	-6.87	0.00	516687.80	798976.99	N 32 25 3.63	W 103 29 54.28
	18200.00	90.00	359.66	11540.00	6447.92	6447.99	-7.46	0.00	516787.79	798976.40	N 32 25 4.62	W 103 29 54.28
	18300.00	90.00	359.66	11540.00	6547.92	6547.99	-8.05	0.00	516887.79	798975.81	N 32 25 5.61	W 103 29 54.28
	18400.00	90.00	359.66	11540.00	6647.92	6647.99	-8.64	0.00	516987.79	798975.22	N 32 25 6.60	W 103 29 54.28
	18500.00	90.00	359.66	11540.00	6747.92	6747.99	-9.23	0.00	517087.78	798974.63	N 32 25 7.59	W 103 29 54.27
	18600.00	90.00	359.66	11540.00	6847.92	6847.99	-9.83	0.00	517187.78	798974.03	N 32 25 8.58	W 103 29 54.27
	18700.00	90.00	359.66	11540.00	6947.92	6947.98	-10.42	0.00	517287.78	798973.44	N 32 25 9.57	W 103 29 54.27
	18800.00	90.00	359.66	11540.00	7047.92	7047.98	-11.01	0.00	517387.77	798972.85	N 32 25 10.56	W 103 29 54.27
	18900.00	90.00	359.66	11540.00	7147.92	7147.98	-11.60	0.00	517487.77	798972.26	N 32 25 11.55	W 103 29 54.26
	19000.00	90.00	359.66	11540.00	7247.92	7247.98	-12.19	0.00	517587.77	798971.67	N 32 25 12.54	W 103 29 54.26
	19100.00	90.00	359.66	11540.00	7347.92	7347.98	-12.78	0.00	517687.76	798971.08	N 32 25 13.53	W 103 29 54.26
	19200.00	90.00	359.66	11540.00	7447.92	7447.98	-13.37	0.00	517787.76	798970.49	N 32 25 14.51	W 103 29 54.26
	19300.00	90.00	359.66	11540.00	7547.92	7547.97	-13.96	0.00	517887.76	798969.90	N 32 25 15.50	W 103 29 54.26
	19400.00	90.00	359.66	11540.00	7647.92	7647.97	-14.55	0.00	517987.75	798969.31	N 32 25 16.49	W 103 29 54.25
	19500.00	90.00	359.66	11540.00	7747.92	7747.97	-15.14	0.00	518087.75	798968.72	N 32 25 17.48	W 103 29 54.25
	19600.00	90.00	359.66	11540.00	7847.92	7847.97	-15.73	0.00	518187.75	798968.13	N 32 25 18.47	W 103 29 54.25
	19700.00	90.00	359.66	11540.00	7947.92	7947.97	-16.32	0.00	518287.74	798967.54	N 32 25 19.46	W 103 29 54.25
	19800.00	90.00	359.66	11540.00	8047.92	8047.97	-16.91	0.00	518387.74	798966.95	N 32 25 20.45	W 103 29 54.24
	19900.00	90.00	359.66	11540.00	8147.92	8147.96	-17.50	0.00	518487.74	798966.36	N 32 25 21.44	W 103 29 54.24
	20000.00	90.00	359.66	11540.00	8247.92	8247.96	-18.09	0.00	518587.73	798965.77	N 32 25 22.43	W 103 29 54.24
	20100.00	90.00	359.66	11540.00	8347.92	8347.96	-18.68	0.00	518687.73	798965.18	N 32 25 23.42	W 103 29 54.24
	20200.00	90.00	359.66	11540.00	8447.92	8447.96	-19.27	0.00	518787.73	798964.59	N 32 25 24.41	W 103 29 54.24
	20300.00	90.00	359.66	11540.00	8547.92	8547.96	-19.86	0.00	518887.72	798964.00	N 32 25 25.40	W 103 29 54.23
	20400.00	90.00	359.66	11540.00	8647.92	8647.95	-20.45	0.00	518987.72	798963.41	N 32 25 26.39	W 103 29 54.23
	20500.00	90.00	359.66	11540.00	8747.92	8747.95	-21.04	0.00	519087.72	798962.82	N 32 25 27.38	W 103 29 54.23
	20600.00	90.00	359.66	11540.00	8847.92	8847.95	-21.63	0.00	519187.71	798962.23	N 32 25 28.37	W 103 29 54.23
	20700.00	90.00	359.66	11540.00	8947.92	8947.95	-22.22	0.00	519287.71	798961.64	N 32 25 29.36	W 103 29 54.22
	20800.00	90.00	359.66	11540.00	9047.92	9047.95	-22.81	0.00	519387.71	798961.05	N 32 25 30.35	W 103 29 54.22
	20900.00	90.00	359.66	11540.00	9147.92	9147.95	-23.40	0.00	519487.70	798960.46	N 32 25 31.34	W 103 29 54.22
	21000.00	90.00	359.66	11540.00	9247.92	9247.94	-23.99	0.00	519587.70	798959.87	N 32 25 32.33	W 103 29 54.22
	21100.00	90.00	359.66	11540.00	9347.92	9347.94	-24.58	0.00	519687.69	798959.28	N 32 25 33.31	W 103 29 54.22
	21200.00	90.00	359.66	11540.00	9447.92	9447.94	-25.17	0.00	519787.69	798958.69	N 32 25 34.30	W 103 29 54.21
	21300.00	90.00	359.66	11540.00	9547.92	9547.94	-25.76	0.00	519887.69	798958.10	N 32 25 35.29	W 103 29 54.21
	21400.00	90.00	359.66	11540.00	9647.92	9647.94	-26.35	0.00	519987.68	798957.51	N 32 25 36.28	W 103 29 54.21
	21500.00	90.00	359.66	11540.00	9747.92	9747.94	-26.94	0.00	520087.68	798956.92	N 32 25 37.27	W 103 29 54.21
Cimarex West Grama Ridge 8-5 Federal Com 5H - PBHL [330' FNL, 660' FWL]	21542.12	90.00	359.66	11540.00	9790.04	9790.06	-27.19	0.00	520129.80	798956.67	N 32 25 37.69	W 103 29 54.21

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	24.000	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG-Depth Only	Original Borehole / Cimarex West Grama Ridge 8-5 Federal Com 5H Rev0 RM 11Dec17

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
		1	24.000	21542.120	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG		Original Borehole / Cimarex West Grama Ridge 8-5 Federal Com	

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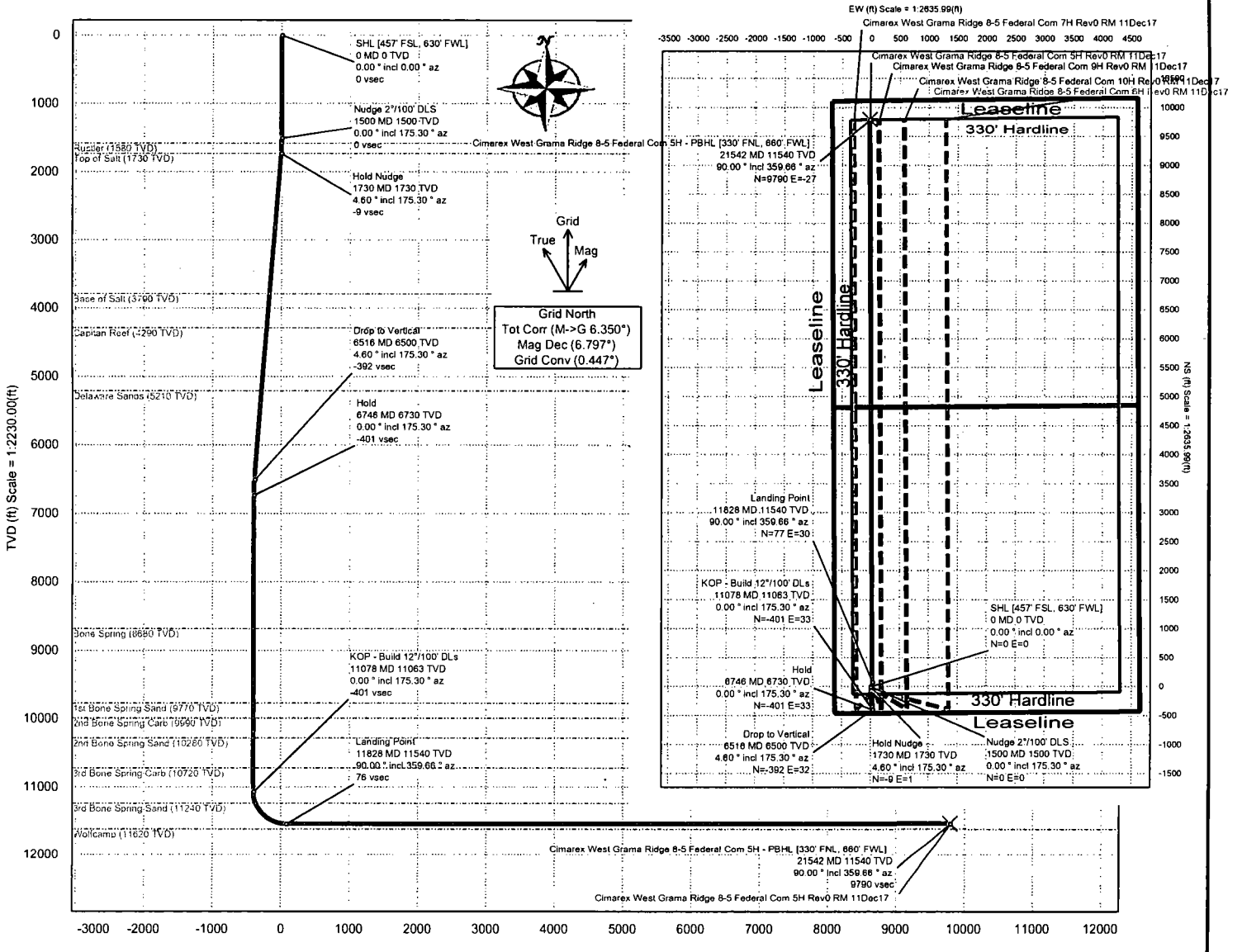
Cimarex Rev 0

CIMAREX

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex West Grama Ridge 8-5 Federal Com 5H	NM Lea County (NAD 83)	Cimarex West Grama Ridge 8-5 Federal Com 5H

Gravity & Magnetic Parameters				Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet			Miscellaneous	
Model: HDGM 2017	Dip: 60.264°	Date: 11-Dec-2017		Lat: N 32 24 0.82	Northing: 510339.91RUS	Grid Conv: 0.4473°		Slot: Cimarex West Grama Ridge 8-5 Federal Com 5H	TVD Ref: RKB(3547.6ft above MSL)
MagDec: 6.797°	FS: 48194.884nT	Gravity FS: 998.478mgn (9.80665 Based)		Lon: W 103 29 54.78	Easting: 798983.66RUS	Scale Fact: 0.99992512		Plan: Cimarex West Grama Ridge 8-5 Federal Com 5H Rev0 RM 11Dec17	



Vertical Section (ft) Azim = 359.66° Scale = 1:2230.00(ft) Origin = 0N/-S, 0E/-W

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [457' FSL, 630' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nudge 2°/100' DLS	1500.00	0.00	175.30	1500.00	0.00	0.00	0.00	0.00
Rustler	1580.01	1.60	175.30	1580.00	-1.11	-1.11	0.09	2.00
Hold Nudge	1730.00	4.60	175.30	1729.75	-9.20	-9.20	0.76	2.00
Top of Salt	1730.25	4.60	175.30	1730.00	-9.22	-9.22	0.76	0.00
Base of Salt	3796.90	4.60	175.30	3790.00	-174.48	-174.40	14.34	0.00
Capitan Reef	4298.52	4.60	175.30	4290.00	-214.60	-214.50	17.63	0.00
Delaware Sands	5221.49	4.60	175.30	5210.00	-288.40	-288.27	23.70	0.00
Drop to Vertical	6515.66	4.60	175.30	6500.00	-391.90	-391.71	32.20	0.00
Hold	6745.66	0.00	175.30	6729.75	-401.10	-400.91	32.96	2.00
Bone Spring	8695.91	0.00	175.30	8680.00	-401.10	-400.91	32.96	0.00
1st Bone Spring Sand	9785.91	0.00	175.30	9770.00	-401.10	-400.91	32.96	0.00
2nd Bone Spring Carb	10005.91	0.00	175.30	9990.00	-401.10	-400.91	32.96	0.00
2nd Bone Spring Sand	10295.91	0.00	175.30	10280.00	-401.10	-400.91	32.96	0.00
3rd Bone Spring Carb	10735.91	0.00	175.30	10720.00	-401.10	-400.91	32.96	0.00
KOP - Build 12°/100' DLs	11078.44	0.00	175.30	11062.54	-401.10	-400.91	32.96	0.00
3rd Bone Spring Sand	11260.27	21.82	359.66	11240.00	-366.89	-366.70	32.76	12.00
Landing Point	11828.44	90.00	359.66	11540.00	76.37	76.55	30.14	12.00
Cimarex West Grama Ridge 8-5 Federal Com 5H - PBHL [330' FNL, 660' FWL]	21542.12	90.00	359.66	11540.00	9790.04	9790.06	-27.19	0.00
Wolfcamp	NaN			11620.00				

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CIMAREX

Cimarex West Grama Ridge 8-5 Federal Com 5H Rev0 RM 11Dec17 Anti-Collision Summary Report

Analysis Date-24hr Time:	December 12, 2017 - 16:37	**Analysis Method:**	3D Least Distance
Client:	Cimarex	**Reference Trajectory:**	Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex West Grama Ridge 8-5 Federal Com 5H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	Cimarex West Grama Ridge 8-5 Federal Com 5H	**Min Pts:**	All local minima indicated.
Well:	Cimarex West Grama Ridge 8-5 Federal Com 5H	**Version / Patch:**	2.10.565.0
Borehole:	Original Borehole	**Database \ Project:**	US1153APP452.dir.slb.com\drilling-NM Lea County 2.10
Scan MD Range:	0.00ft ~ 21542.12ft		

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Results highlighted: Sep-Factor separation <= 1.50 ft													
Cimarex West Grama Ridge 8-5 Federal Com 7H Rev0 RM 11Dec17 (Non-Def Plan)													Fail Minor
	84.85	32.81	82.35	52.04	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	84.85	32.81	82.35	52.04	21802.17	MAS = 10.00 (m)	24.00	24.00				WRP	
	84.85	32.81	73.37	52.04	9.17	MAS = 10.00 (m)	1490.00	1490.00				MinPts	
	83.61	32.81	72.03	50.80	8.94	MAS = 10.00 (m)	1600.00	1599.98				MinPt-O-SF	
	50.09	32.81	41.83	17.28	8.27	MAS = 10.00 (m)	2390.00	2387.63				MinPt-O-SF	
	49.21	32.81	41.05	16.40	8.26	MAS = 10.00 (m)	2430.00	2427.50	CtCt<=15m<15.00			Enter Alert	
	49.01	32.81	40.87	16.20	8.26	MAS = 10.00 (m)	2440.00	2437.47				MinPt-O-SF	
	47.04	32.81	39.25	14.23	8.42	MAS = 10.00 (m)	2630.00	2626.85				MINPT-O-EOU	
	47.03	32.81	39.26	14.22	8.44	MAS = 10.00 (m)	2640.00	2636.82				MinPts	
	49.19	32.81	41.42	16.38	8.86	MAS = 10.00 (m)	2850.00	2846.15	CtCt<=15m>15.00			Exit Alert	
	279.95	37.14	254.36	242.81	12.01	OSF1.50	11120.00	11104.04				MinPts	
	279.96	37.14	254.36	242.81	12.01	OSF1.50	11130.00	11113.99				MinPt-O-SF	
	431.47	131.47	342.98	299.99	4.99	OSF1.50	14480.00	11540.00	OSF<5.00			Enter Alert	
	431.46	431.50	142.96	-0.04	1.50	OSF1.50	21310.00	11540.00		OSF<1.50		Enter Minor	
	431.46	441.65	136.19	-10.19	1.47	OSF1.50	21540.00	11540.00				MinPt-CtCt	
	431.46	441.73	136.14	-10.27	1.46	OSF1.50	21542.12	11540.00				MinPts	
Cimarex West Grama Ridge 8-5 Federal Com 9H Rev0 RM 11Dec17 (Non-Def Plan)													Fail Minor
	99.99	32.81	97.49	67.19	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.99	32.81	97.49	67.19	N/A	MAS = 10.00 (m)	24.00	24.00				WRP	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	92.63	32.81	80.94	59.82	9.81	MAS = 10.00 (m)	1780.00	1779.59				MinPt-O-SF	
	91.47	32.81	80.12	58.66	10.06	MAS = 10.00 (m)	1850.00	1849.37				MINPT-O-EOU	
	91.37	32.81	80.20	58.56	10.25	MAS = 10.00 (m)	1880.00	1879.27				MinPts	
	158.42	40.96	130.28	117.46	6.08	OSF1.50	6520.00	6504.32				MinPt-O-SF	
	160.14	40.42	132.36	119.72	6.24	OSF1.50	6800.00	6784.09				MinPts	
	160.14	32.81	140.19	127.33	9.04	MAS = 10.00 (m)	11078.44	11062.54				MinPt-CtCt	
	160.14	32.81	140.15	127.34	9.01	MAS = 10.00 (m)	11100.00	11084.08				MinPts	
	366.77	111.98	291.29	254.79	4.99	OSF1.50	14400.00	11540.00	OSF<5.00			Enter Alert	
	366.73	366.74	121.40	-0.01	1.50	OSF1.50	21260.00	11540.00		OSF<1.50		Enter Minor	
	366.73	377.27	114.38	-10.54	1.46	OSF1.50	21542.12	11540.00				MinPts	
Cimarex West Grama Ridge 8-5 Federal Com 6H Rev0 RM 11Dec17 (Non-Def Plan)													Warning Alert
	72.15	32.81	69.65	39.34	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	72.15	32.81	69.65	39.34	62698.28	MAS = 10.00 (m)	24.00	24.00				WRP	
	50.47	32.81	38.26	17.66	4.94	MAS = 10.00 (m)	1950.00	1949.04	OSF<5.00			Enter Alert	
	37.63	32.81	24.84	4.83	3.42	MAS = 10.00 (m)	2270.00	2268.01				MinPts	
	51.92	32.81	39.48	19.12	4.97	MAS = 10.00 (m)	2520.00	2517.21	OSF>5.00			Exit Alert	
	659.78	46.36	628.04	613.42	22.48	OSF1.50	6515.66	6500.00				MinPt-O-SF	
	1319.49	65.58	1274.93	1253.91	31.32	OSF1.50	11090.00	11074.09				MinPt-CtCt	
	1319.49	65.58	1274.93	1253.90	31.31	OSF1.50	11100.00	11084.08				MinPts	
	1319.71	397.97	1053.56	921.74	5.00	OSF1.50	18430.00	11540.00	OSF<5.00			Enter Alert	
	1319.81	576.28	934.78	743.52	3.44	OSF1.50	21542.12	11540.00				MinPts	
Cimarex West Grama Ridge 8-5 Federal Com 10H Rev0 RM 11Dec17 (Non-Def Plan)													Warning Alert
	116.60	32.81	114.10	83.79	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.60	32.81	114.10	83.79	32096.37	MAS = 10.00 (m)	24.00	24.00				WRP	
	116.60	32.81	105.12	83.79	12.71	MAS = 10.00 (m)	1490.00	1490.00				MinPts	
	116.60	32.81	105.06	83.79	12.62	MAS = 10.00 (m)	1500.00	1500.00				MINPT-O-EOU	
	116.87	32.81	105.29	84.07	12.60	MAS = 10.00 (m)	1560.00	1560.00				MinPt-O-SF	
	535.68	46.50	503.85	489.19	18.18	OSF1.50	6515.66	6500.00				MinPt-O-SF	
	599.64	44.45	569.18	555.19	21.35	OSF1.50	11150.00	11133.82				MinPts	
	665.73	201.48	530.58	464.25	5.00	OSF1.50	15330.00	11540.00	OSF<5.00			Enter Alert	
	683.90	523.65	333.96	160.25	1.96	OSF1.50	21542.12	11540.00				MinPts	

1. Geological Formations

TVD of target 11,540
MD at TD 21,542

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1580	N/A	
Top of Salt	1730	N/A	
Base of Salt	3790	N/A	
Capitan Reef	4290	N/A	
Delaware Sands	5210	N/A	
Bone Spring	8680	N/A	
1st Bone Spring Sand	9770	N/A	
2nd Bone Spring Carb	9990	N/A	
2nd Bone Spring Sand	10280	N/A	
3rd Bone Spring Carb	10720	N/A	
3rd Bone Spring Sand	11240	N/A	
3rd Bone Spring Target	11540	Hydrocarbons	
Wolfcamp	11620	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1630	13-3/8"	54.50	J-55	ST&C	1.52	3.67	5.79
12 1/4	0	5190	9-5/8"	40.00	J-55	LT&C	1.26	1.43	2.50
8 3/4	0	11078	5-1/2"	17.00	L-80	LT&C	1.21	1.49	1.72
8 3/4	11078	21542	5-1/2"	17.00	L-80	BT&C	1.16	1.43	50.55
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Cimarex West Grama Ridge 8-5 Federal Com 5H
Surface Use Plan

Upon approval of the Application for Permit to Drill (APD) the following surface use plan of operations will be followed and carried out. The surface use plan outlines the proposed surface disturbance. If any other disturbance is needed after the APD is approved, a BLM sundry notice or right of way application will be submitted for approval prior to any additional surface disturbance.

Existing Roads

- Directions to location - Exhibit A.
- Public access route - Exhibit B.
- Existing access road for the proposed project. Please see Exhibit B and C.
- Cimarex Energy will:
    - Improve and/or maintain existing road(s) condition the same as or better than before the operations began.
    - Provide plans for improvement and /or maintenance of existing roads if requested.
    - Repair or replace damaged or deteriorated structures as needed. Including cattle guards and culverts.
    - Prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.
    - Obtain written BLM approval prior to the application of surfactants, binding agents, or other dust suppression chemicals on the roadways.
- The maximum width of the driving surface will be 18'. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.

New or Reconstructed Access Roads

Cimarex Energy plans to construct a new on-lease access road. This route is also proposed in the West Grama Ridge 8-5 Federal 3H,4H, 5H, 6H, 7H, 9H, 10H APD applications.

- Length: 584'.
- Width: 30'.
- Road Plat - Exhibit D.
- Cimarex Energy will complete improvements to the driving surface as needed.
- The maximum width of the driving surface for all roads above will be 18'.
- The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface.
- The ditches will be 1' deep with 3:1 slopes.
- The driving surface will be made of 6" rolled and compacted caliche.
- Cimarex Energy will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.

Well Radius Map

Please see Exhibit E for wells within one mile or proposed well SHL and BHL.

Proposed or Existing Production Facility

An existing battery will be utilized for the project if the well is productive.

- West Grama Ridge 8-5 Federal 2H
    - Battery Pad diagram - Exhibit F
    - Battery will not require an expansion in order to accommodate additional production equipment for the project.

Gas Pipeline Specifications

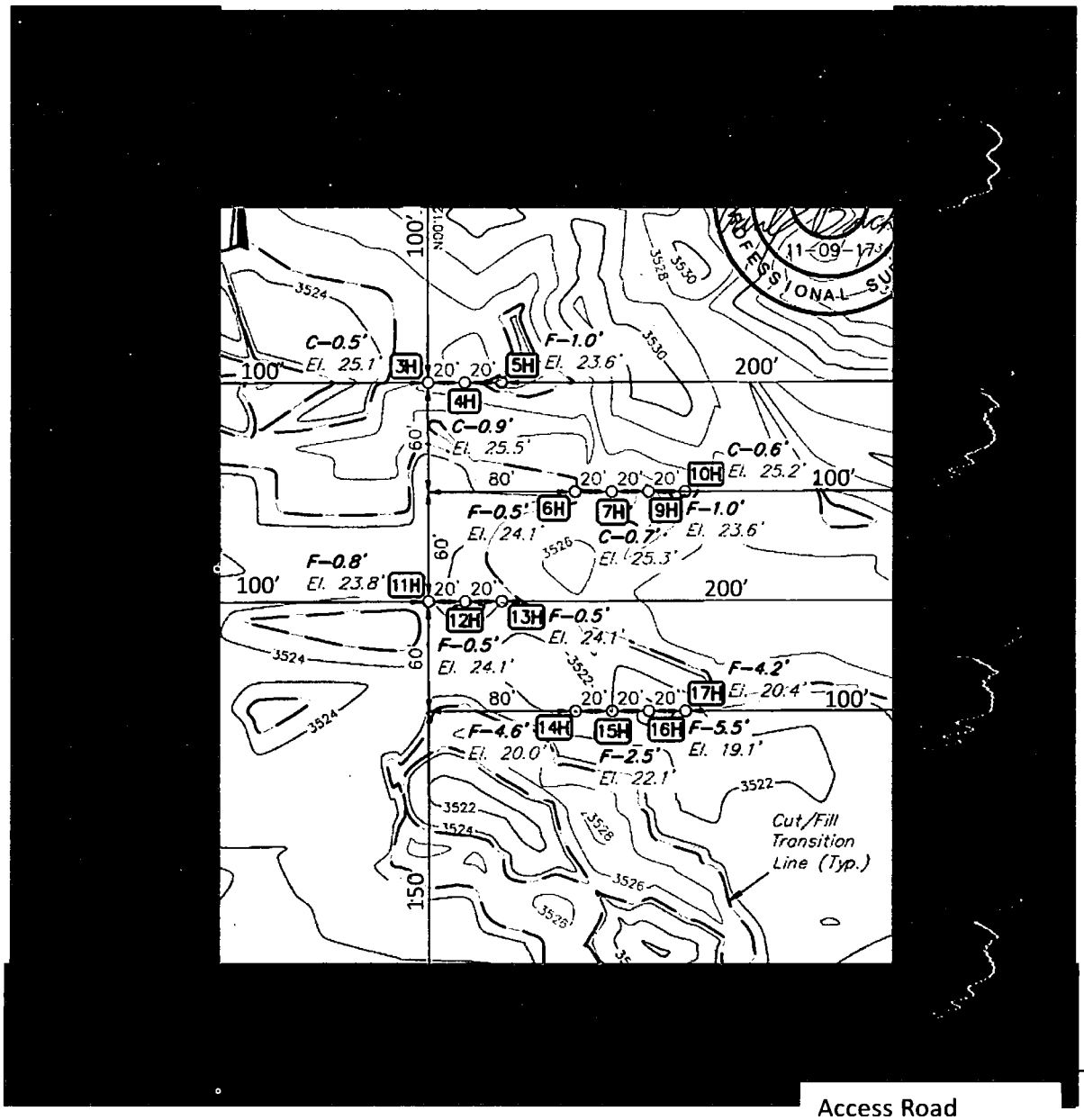
- No new gas pipelines are required for this project.

Salt Water Disposal Specifications

- No new SWD pipelines are required for this project.

Power Lines

- Cimarex plans to construct an on-lease power line to service the West Grama Ridge 8-5 Federal W2W2. This route is also proposed in the West Grama Ridge 8-5 Federal 3H,4H, 5H, 6H, 7H, 9H, 10H APD applications.
- Overhead power line from an existing power source located in the SW/4 of Sec 8-22S-34E.
- Length: 1,005'.
- Poles: 4
- Specifications: 480 volt, 4 wire, 3 phase.
- Please see Exhibit I for proposed route.



Pad will be reclaimed after cessation of drilling operations.
Please see Surface Use Plan for pad reclamation plans.

N

Well locations

Interim Reclamation

Exhibit P
Interim Reclamation Diagram
West Grama Ridge 8-5 W2W2 Pad
Cimarex Energy Co.
Sec 8-22S-34E
Lea Cty, NM

Cimarex West Grama Ridge 8-5 Federal Com 3H
Surface Use Plan

Well Site Location

- Proposed well pad/location layout - Exhibit J.
- Proposed Rig layout - Exhibit K
    - The rig layout, including V-door and flare line may change depending on rig availability. The pad dimensions and orientation will remain the same. No additional disturbance is anticipated if a rig layout change is necessary to accommodate the drilling rig. If additional disturbance is required a sundry notice will be submitted to the BLM for approval.
    - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in the steel containment pits.
    - Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- Archeological boundary - Exhibit L
- Multi well pad: West Grama 8-5 Federal Com 3H thru 17H
- Pad Size: 500x560
- Construction Material
    - If possible, native caliche will be obtained from the excavation of drill site. The primary way of obtaining caliche will be by "turning over" the location. This means caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2,400 cu yds is the max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:
        - The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
        - An approximate 120' x 120' area is used within the proposed well site to remove caliche.
        - Subsoil is removed and piled alongside the 120' x 120' area within the pad site.
        - When caliche is found, material will be stockpiled within the pad site to build the location and road.
        - Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
        - Once well is drilled, the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in Exhibit J - Layout Diagram.
        - In the event that no caliche is found onsite, caliche will be hauled in from BLM-approved caliche pit in Sec. 8-22S-34E or Sec 34-21S-34E.
    - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in steel containment pits.
- Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements. Exhibit P: Interim Reclamation Diagram.
- There are no known dwellings within 1.5 miles of this location.

Flowlines and Gas Lift Pipelines

All proposed pipelines will be constructed in a 60' ROW corridor. This route is also proposed in the West Grama Ridge 8-5 Federal 3H,4H, 5H, 6H, 7H, 9H, 10H APD applications.

- Flowlines
    - Cimarex Energy plans to construct on-lease flowlines to service the well.
    - 6" HP steel for oil, gas, and water production.
    - Length: 1,704'.
    - MAOP: 1,500 psi; Anticipated working pressure: 200-300 psi.
    - Please see Exhibit M for proposed on lease route.
- Gas Lift Pipeline
    - Cimarex Energy plans to construct on-lease gas lift pipelines to service the well.
    - 6" HP steel for gas lift.
    - Length: 1,704'.
    - MAOP: 1,500 psi; Anticipated working pressure: 200-300 psi.
    - Please see Exhibit N for proposed on lease route.

[redacted]rex West Grama Ridge 8-5 Federal [redacted]5H
Surface Use Plan

Water Resources

- A temporary surface fresh water pipeline(s) will be utilized for this project.
- Cimarex plans to lay the fresh water surface pipeline(s) prior to commencement of the stimulation job.
- 10" lay-flat surface pipeline.
- The surface pipeline(s) will follow the road from a frac pit to the well.
- Length: 12,144'.
- Operating pressure: <140 psi.
- Fresh water will be purchased from a 3rd party.
- Please see Exhibit O for proposed route.

Methods of Handling Waste

- Drilling fluids, produced oil, and water from the well during drilling and completion operations will be stored safely and disposed of properly in a NMOCD approved disposal facility.
- 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. All trash on and around well site will be collected for disposal.
- Human waste and grey water will be contained and disposed of properly at a state approved disposal site.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste will be removed and disposed of properly at a state approved disposal site.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Waste Minimization Plan

See Gas Capture Plan.

Ancillary Facilities

No camps or airstrips to be constructed.

Interim and Final Reclamation

- Rehabilitation of the location will start in a timely manner after all proposed drilling wells have been drilled from the pad or if drilling operations have ceased as outlined below:
  - No approved or pending drill permits for wells located on the drill pad
  - No drilling activity for 5 years from the drill pad
- Surfacing materials will be removed and returned to a mineral pit or recycled to repair or build roads and well pads.
- Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.
- Exhibit P illustrates the proposed Surface Reclamation plans after cessation of drilling operations as outlined above.
  - The areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements.
- Operator will amend the surface reclamation plan if well is a dry hole and/or a single well pad.

Surface Ownership

- The wellsite is on surface owned by New Mexico State Land Office.
- A copy of Surface Use Agreement has been given to the surface owner.
- The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

Cultural Resource Survey - Archeology

- Cultural Resources Survey will be conducted for the entire project as proposed in the APD and submitted to the BLM for review and approval.

On Site Notes and Information

Onsite Date: 10/17/2017
BLM Personnel on site: Jeff Robertson
Cimarex Energy personnel on site: Barry Hunt
Pertinent information from onsite: