PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**MARATHON OIL PERMIAN LLC.**
LEASE NO.:	**NMNM084728**
WELL NAME & NO.:	**12H-BALLISTA FEDERAL23 32 13 WXY**
SURFACE HOLE FOOTAGE:	**230'/S & 1614'/W**
BOTTOM HOLE FOOTAGE	**330'/N & 2316'/W**
LOCATION:	**Section. 13.,T23S., R.32E., NMP**
COUNTY:	**LEA County, New Mexico**

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 **1250** 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 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.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

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.

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
   - Cement should tie-back 100' into the previous casing. 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 **10,000 (10M)** psi.

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 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. **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. **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 (one log per well pad is acceptable) 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.

ZS 091018

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

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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.

Approval Date: 09/11/2018

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.

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 valves and lines so they can be visually inspected periodically or

installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

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

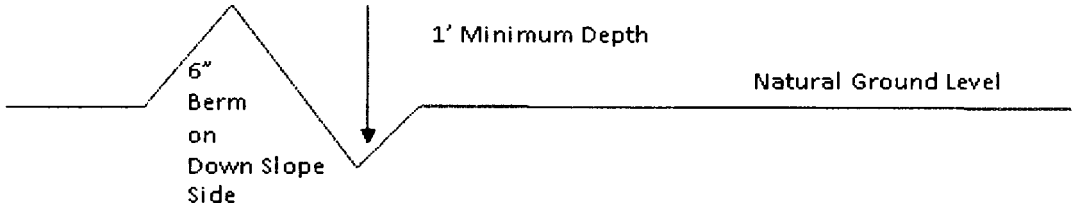
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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:

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

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

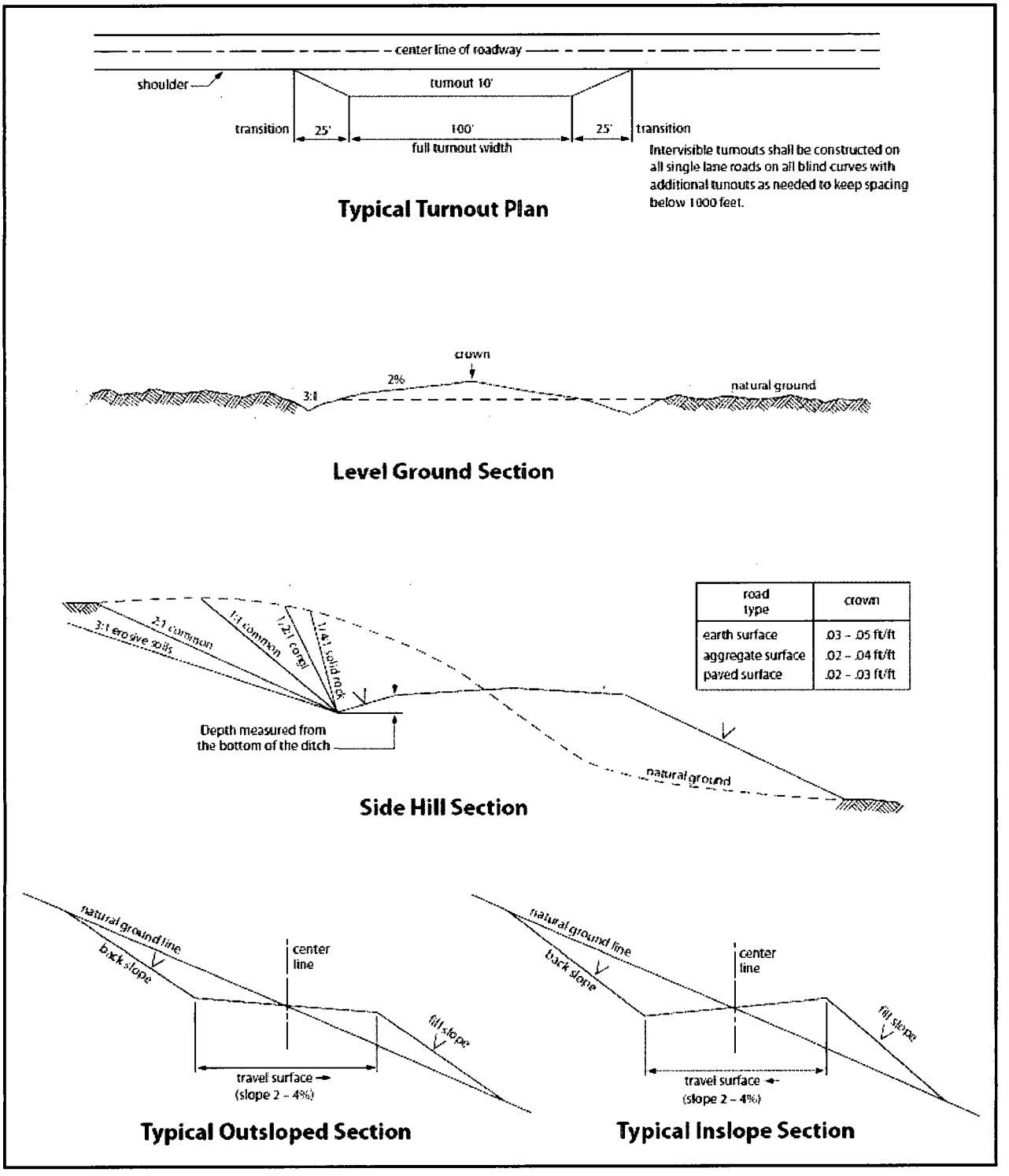


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VI. 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).

VII. 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).

VIII. 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

Approval Date: 09/11/2018

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: Jennifer Van Curen Signed on: 02/08/2018

Title: Sr. Regulatory Compliance Rep

Street Address: 5555 San Felipe St.

City: Houston State: TX Zip: 77056

Phone: (713)296-2500

Email address: jvancuren@marathonoil.com

Field Representative

Representative Name:

Street Address:

City: State: Zip:

Phone:

Email address:

MARATHON OIL COMPANY
3122 NATIONAL PARKS HIGHWAY
CALRSBAD, NM 88220

BALLISTA FEDERAL 23-32-13
WXY Well # 3H
WA Well # 6H
TB Well # 7H
WXY Well # 12H

LEA COUNTY, NM

Directions:
FROM THE INTERSECTION OF NEW MEXICO HIGHWAY 31 & NEW MEXICO 128, HEAD SOUTH ION NEW MEXICO HIGHWAY 128 FOR 19 MILES TO AN EXISING LEASE ROAD. TURN LEFT ON THE EXISTING LEASE ROAD HEADING NORTH FOR 6.8 MILES. THE BALLISTA FEDERAL WELL WILL BE TO THE RIGHT ON THE EAST SIDE OF THE ROAD.

GPS Coordinates: 32.29812863, -103.63196671
LEA COUNTY, NEW MEXICO

PURPOSE OF PLAN: The purpose of this plan is to safeguard the lives of the public, contract personnel and company personnel in the event of equipment failure or disasters during drilling or completion operations in formations that may contain Hydrogen Sulfide Gas, H2S.

As a precautionary measure, this Drilling Plan has been prepared to assure the safety of all concerned, should a disaster occur. However, the Oil Company Representative may have specified materials and practices for the drilling or completion of this well, which supercede the minimum requirements as outlined in this plan.

INTRODUCTION

H2S DRILLING OPERATIONS PLAN
This Drilling Operations Plan was written specifically for:

MARATHON OIL COMPANY
3122 NATIONAL PARKS HIGHWAY
CALRSBAD, NM 88220

Action Plan for Accidental Release of H2S

BALLISTA FEDERAL 23-32-13
WXY Well # 3H
WA Well # 6H
TB Well # 7H
WXY Well # 12H

LEA COUNTY, NM

Information, provisions and practices, as set forth in this plan, may be subject to revision and/or updating.

02-2-2018

VII. LIST OF APPENDICES
- A. Emergency and Medical Facilities
- B. Law Enforcement Agencies and Fire Fighting Facilities
- C. Well Control Specialists
- D. Governmental Agencies

VIII. RESIDENTS AND LANDOWNERS
- A. Radius of Exposure Map with Residences Shown
- B. Residents Within Radius of Exposure and Telephone Numbers

IX. ADDITIONAL INFORMATION
- A. Hydrogen Sulfide Essay
- B. Hydrogen Sulfide Hazards
- C. Toxicity Table
- D. Treatment
- E. Characteristics of H2S
- F. Safe Practices

H2S DRILLING OPERATIONS PLAN INDEX

THIS H2S DRILLING OPERATIONS PLAN WAS
PREPARED BY: Sean Chamblee
Strategic Account Manager
Cell: 713-703-6295

TOTAL SAFETY INC

1420 East Greene St
Carlsbad, NM 88220
Phone: 432-561-5049

EMERGENCY MEDICAL PROCEDURES
DO NOT PANIC
REMAIN CALM-THINK

1. HOLD YOUR BREATH. (DO NOT INHALE, STOP BREATHING)

2. PUT ON BREATHING APPARATUS. (NOTE: DO NOT ATTEMPT RESCUE UNTIL YOU HAVE PUT ON BREATHING APPARATUS.)

3. REMOVE VICTIM (S) TO FRESH AIR AS QUICKLY AS POSSIBLE.

4. BE SURE YOU HAVE MOVED VICTIM OUT OF CONTAMINATED AREA BEFORE REMOVING YOUR RESPIRATOR.

5. APPLY MOUTH-TO-MOUTH ARTIFICIAL RESPIRATION, WHICH IS MORE EFFECTIVE, WHILE SOMEONE ELSE GETS THE OXYGEN RESUSCITATOR. RENDER OXYGEN RESUSCITATION ONLY IF PORPERLY TRAINED IN ITS USE.

6. PROVIDE FOR PROMPT TRANSPORTATION TO HOSPITAL AND CONTUNUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.

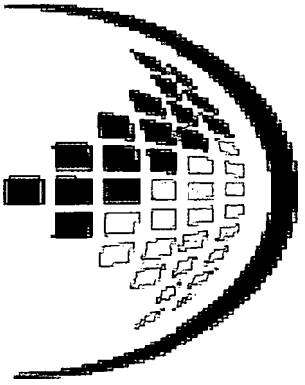
7. HOSPITAL (S) OR MEDICAL FACILITIES NEED TO BE INFORMED BEFOREHAND, OF THE POSSIBILITY OF H2S GAS POISONING, NO MATTER HOW REMOTE THE POSSIBLITY IS.

Lea Regional Medical Center	(575)492-5000
5419 N Lovington Hwy, Hobbs, NM 88240	
AMBULANCE	911
FIRE DEPARTMENT- HOBBS, NM	(575) 397-9308
POLICE - HOBBS, NM	(575) 397-9265

8. NOTIFY EMERGENCY-ROOM PERSONEL THAT THE VICTIM (S) HAVE POSSIBLY BEEN EXPOSED TO H2S GAS POISONING.

****
****

TOTAL SAFETY INC
1420 East Greene St.
Carlsbad, NM 88220



TOTAL SAFETY

MARATHON OIL COMPANY

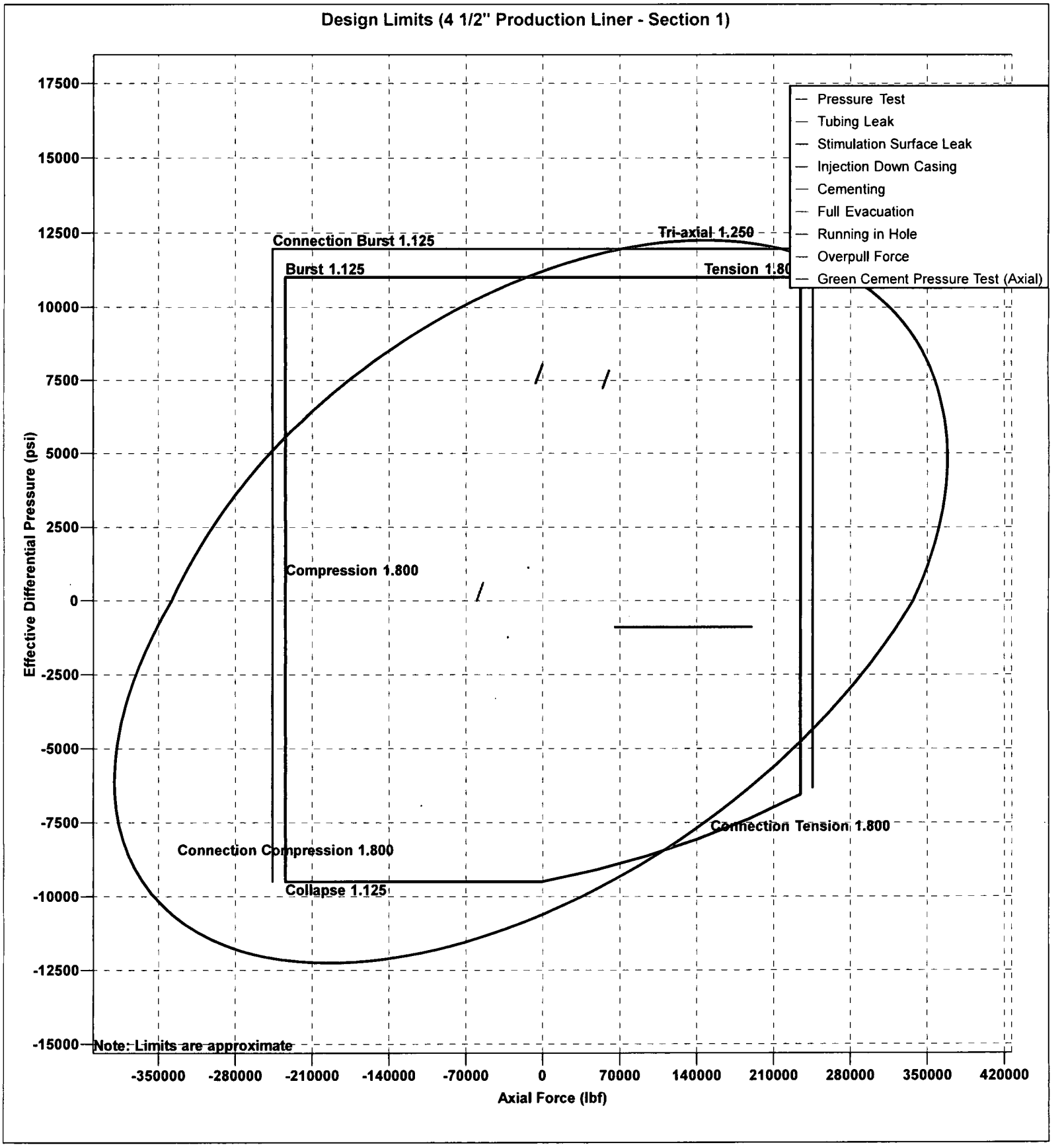
BALLISTA FEDERAL 23-32-13
WXY Well # 3H
WA Well # 6H
TB Well # 7H
WXY Well # 12H

SHL: 231' FSL & 1524' FWL of Unit Letter 'N', Section 13, T-23S, R-32E
BHL: 330' FNL & 330' FWL of Unit Letter 'D', Section 13, T-23S, R-32E

LEA County, New Mexico

Rig: H&P 441

2/2/2018


Design Limits (4 1/2" Production Liner - Section 1)
Pressure Test
Tubing Leak
Stimulation Surface Leak
Injection Down Casing
Cementing
Full Evacuation
Running in Hole
Overpull Force
Green Cement Pressure Test (Axial)
Connection Burst 1.125
Burst 1.125
Tri-axial 1.250
Tension 1.80
Compression 1.800
Connection Tension 1.800
Connection Compression 1.800
Collapse 1.125
Note: Limits are approximate
Effective Differential Pressure (psi)
17500
15000
12500
10000
7500
5000
2500
0
-2500
-5000
-7500
-10000
-12500
-15000
-350000
-280000
-210000
-140000
-70000
0
70000
140000
210000
280000
350000
420000
Axial Force (lbf)

- Notify toolpusher/company representative
- Gather all relevant data required:
    - Shut-In Pressure
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- <u>No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC</u>.
- Recheck all pressures and fluid volume on accumulator unit.

2.5 PROCEDURE WHILE PULLING BHA THRU STACK

- PRIOR to pulling last joint of drill pipe thru the stack.
- Perform flow check, if flowing.
- Sound alarm (alert crew).
- Stab full opening safety valve and close
- Space out drill string with tool joint just beneath the upper pipe ram.
- Shut-in using upper pipe ram. (HCR and choke will already be in the closed position).
- Confirm shut-in.
- Notify toolpusher/company representative
- Read and record the following:
    - SIDPP and SICP
    - Pit gain
    - Time
- Regroup and identify forward plan

- **With BHA in the stack and compatible ram preventer and pipe combo immediately available.**
    - Sound alarm (alert crew)
    - Stab crossover and full opening safety valve and close
    - Space out drill string with upset just beneath the compatible pipe ram.
    - Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
    - Confirm shut-in
    - Notify toolpusher/company representative
    - Read and record the following:
        - SIDPP and SICP
        - Pit gain

Procedures While Pulling BHA thru Stack (Continued)

        - Time
    - Regroup and identify forward plan

- MW in, MW out
- SPR's (Slow Pump Rate's)

- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- <u>No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC</u>.
- Recheck all pressures and fluid volume on accumulator unit
- **If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.**

2.3 PROCEDURE WHILE RUNNING CASING

- Sound alarm (alert crew)
- Stab crossover and full opening safety valve and close
- Space out casing (ensure no coupling is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - Pipe depth
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- <u>No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC</u>.
- Recheck all pressures and fluid volume on accumulator unit
- **If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.**

2.4 PROCEDURE WITH NO PIPE IN HOLE (OPEN HOLE)

- Sound alarm (alert crew)
- Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
- Confirm shut-in

- Space out drill string – Stop rotating, pick the drill string up off bottom, and space out to ensure no tool joint is located in the BOP element selected for initial closure.
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify toolpusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain
    - Time
    - Kick Volume
    - Pipe depth
    - MW in, MW out
    - SPR's (Slow Pump Rate's)
- Regroup and identify forward plan (let well stabilize, update kill sheet, inventory mud additives and mud volumes on location)
- Company Representative, Drilling Superintendent, Drilling Engineer and Drilling Manager will discuss well control kill method to be utilized. A verbal Risk Assessment and preferred kill method will be finalized. Initial Risk Assessment will be finalized within 1 hour of initial shut in.
- **No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Contractor PIC.**
- Recheck all pressures and fluid volume on accumulator unit
- **If pressure has built or is anticipated during the kill to reach 1,000 psi or greater, the annular preventer will not be used as the primary pressure control device and operations will swap to the upper BOP pipe ram.**

2.2 PROCEDURE WHILE TRIPPING

- Sound alarm (alert crew)
- Stab full opening safety valve in the drill string and close.
- Space out drill string (ensure no tool joint is located in the BOP element selected for initial closure).
- Shut down pumps (stop pumps and observe well.)
- Shut-in Well - If flow is suspected or confirmed, close uppermost applicable BOP element. (HCR and choke will already be in the closed position.)
    - **Note:** Either the uppermost pipe ram or annular preventer can be used.
- Confirm shut-in
- Notify tool pusher/company representative
- Gather all relevant data required:
    - SIDPP and SICP
    - Hole Depth and Hole TVD
    - Pit gain

Procedure While Tripping (Continued)

    - Time
    - Kick Volume
    - Pipe depth

- After a well kill operation.
- When the mud density is reduced in the well.

- Flow checks may be made at any time at the sole discretion of the driller or his designate. The Onsite Supervisor ensures that personnel are aware of this authority and the authority to close the well in immediately without further consultation.
- Record slow circulating rates (SCR) after each crew change, bit trip, and 500' of new hole drilled and after any variance greater than 0.2 ppg in MW. Slow pump rate recordings should include return flow percent, TVD, MD & pressure. SCR's will be done on all pumps at 30, 40 & 50 SPM. Pressures will be recorded at the choke panel. SCR will be recorded in the IADC daily report and ORB Wellview daily report
- Drilling blind (i.e. without returns) is permissible only in known lithology where the absence of hydrocarbons has been predetermined and written approval of the Drilling Manager.
- All open hole logs to be run with pack-off or lubricator.
- The Drilling Contractor has a fully working pit level totalizer / monitoring system with read out for the driller and an audible alarm set to 10 BBL gain / loss volume. Systems are selectable to enable monitoring of all pits in use. Pit volumes are monitored at all times, especially when transferring fluids. Both systems data is recorded on a calibrated chart recorder or electronically.
- The Drilling Contractor has a fully working return mud flow indicator with drillers display and an audible alarm, and is adjustable to record any variance in return volumes.

1.6 WELL CONTROL – SHUT IN

- The "hard shut in" method (i.e. against a closed choke using either an annular or ram type preventer) is the Company standard.
- The HCR(s) or failsafe valves are left closed during drilling to prevent any erosion and buildup of solids. The adjustable choke should also be left closed.
- The rig specific shut in procedure, the BOP configuration along with space-out position for the tool joints is posted in the Driller's control cabin or doghouse.
- No well kill operation commences until there is a plan agreed by the Superintendent, On-Site Supervisor and the Drilling Manager.
- During a well kill by circulation, constant bottom hole pressure is maintained throughout.
- Kill sheets are maintained by the Driller and posted in the Driller's control cabin or doghouse. The sheet is updated at a minimum every 500 feet.

2. SHUT-IN PROCEDURES:

2.1 PROCEDURE WHILE DRILLING

- Sound alarm (alert crew)

pressure including a 10 minute low pressure test. Pressure shall be maintained at least 10 minutes.

1.4 WELL CONTROL - DRILLS

The following drills are conducted and recorded in the Daily Drilling Report and the Contractor's reporting system while engaged in drilling operations:

Type	Frequency	Objective	Comments
Shallow gas kick drill - drilling	Once per well with crew on tour	Response training to a shallow gas influx	To be done prior to drilling surface hole if shallow gas is noted
Kick drill - drilling	Once per week per crew	Response training to an influx while drilling (bit on bottom)	Only one kick drill per week per crew is required, alternating between drilling and tripping.
Kick drill - tripping	Once per week per crew	Response training to an influx while tripping (bit off bottom). Practice stabbing TIW valve	

1.5 WELL CONTROL – MONITORING

- Drilling operations which utilize static fluid levels in the wellbore as the active barrier element, a means of accurately monitoring fill-up and displacement volumes during trips are available to the driller and operator. A recirculating trip tank is installed and equipped with a volume indicator easily read from the driller's / operator's position. This data is recorded on a calibrated chart recorder or digitally. The actual volumes are compared to the calculated volumes.
- The On-Site Supervisor ensures hole-filling and pit monitoring procedures are established and documented for every rig operation.
- The well is kept full of fluid with a known density and monitored at all times even when out of the hole.
- Flow checks are a minimum of 15 minutes.
- A flow check is made:
  - In the event of a drilling break.
  - After indications of down hole gains or losses.
  - Prior to all trips out of the hole.
  - After pulling into the casing shoe.
  - Before the BHA enters the BOP stack.
  - If trip displacement is incorrect.

Well Control-Monitoring (Continued)

  - Prior to dropping a survey instrument.
  - Prior to dropping a core ball.

(Well Control-Positions/Roles Continued)

- **Derrick Hand, Assistant Driller Introductory Level**
  - Role is to assist Driller with kick detection by physically monitoring the well at the mixing pits/tanks
  - Regularly record mud weights/viscosity for analysis by the Supervisor level and mud engineer so pre-influx signs can be detected
  - Mix required kill fluids as directed by Supervisor or Driller
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes, either via mud samples or visual signs on the pits/tanks

- **Motorman, Floor Hand Introductory Level**
  - Role is to assist the Supervisor, Driller, or Derrick Hand with detecting influxes
  - Be certain all valves are aligned for proper well control as directed by Supervisor
  - Perform Supervisor or Driller assigned tasks during a well control event
  - Due to role on the rig, training and certification is targeted more toward monitoring for influxes

1.2 WELL CONTROL-COMPONENT AND PREVENTER COMPATIBILITY CHECKLIST

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

- Example 6-1/8" Production hole section, 10M requirement

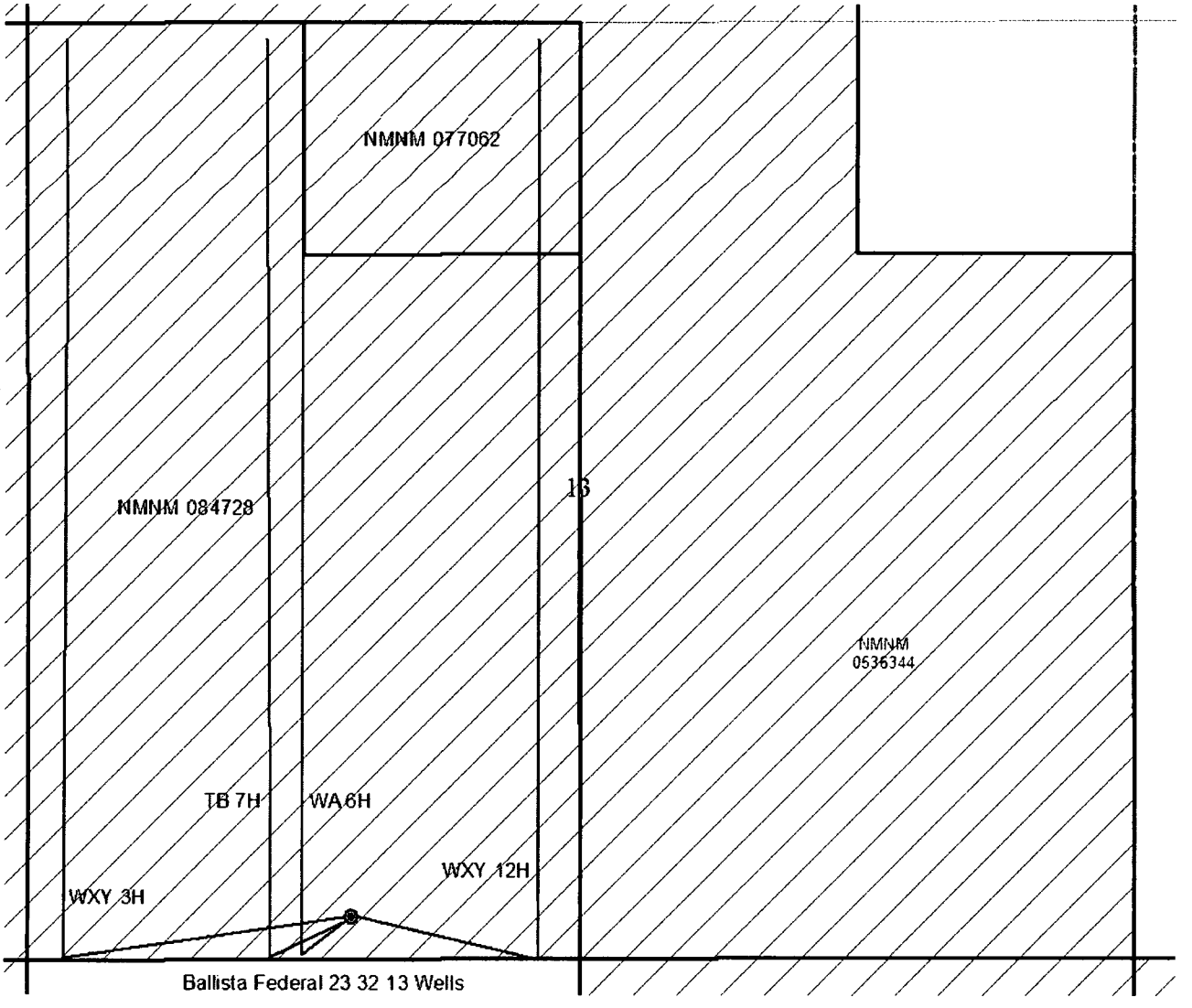
Component	OD	Preventer	RWP
Drill pipe	4"	Upper and Lower 3.5-5.5" VBRs	10M
HWDP	4"	Upper and Lower 3.5-5.5" VBRs	10M
Drill collars and MWD tools	4.75-5"	Upper and Lower 3.5-5.5" VBRs	10M
Mud Motor	4.75-5.25"	Upper and Lower 3.5-5.5" VBRs	10M
Production casing	4.5"	Upper and Lower 3.5-5.5" VBRs	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

- VBR = Variable Bore Ram. Compatible range listed in chart.

1.3 WELL CONTROL-BOP TESTING

BOP Test will be completed per Onshore Oil and Gas Order #2 Well Control requirements. The 5M Annular Preventer on a required 10M BOP stack will be tested to 70 % of rated working

Federal Minerals Map
Ballista Federal 23 32 13 Wells
Federal Mineral Plat
Sec. 13, T23S, R32E
Lea County, NM



Marathon Oil Corporation

LEA COUNTY, NM (NAD27)
BALLISTA FEDERAL 23-12-13
WXY #12H
OH
PLAN #1
H&P 441

WELL DETAILS

GROUND LEVEL: [illegible]

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	[illegible]	[illegible]	[illegible]	[illegible]

SECTION DETAILS

MD	Inc	Az	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	
[illegible]	[illegible]	100.0[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	100.00	[illegible]	118.91	[illegible]	[illegible]	[illegible]	[illegible]	
8020.00	0.00	0.00	[illegible]	[illegible]	701.53	[illegible]	180.00	[illegible]	
[illegible]	0.00	0.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	91.00	359.62	[illegible]	[illegible]	[illegible]	[illegible]	359.62	[illegible]	
[illegible]	91.00	359.62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	BHL[BF\WXY#12H]

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
BHL[BF\WXY#12H]	12319.00	4726.41	668.21	477569.19	717623.53
FTP[BF\WXY#12H]	12394.00	106.68	700.24	472947.63	717655.55

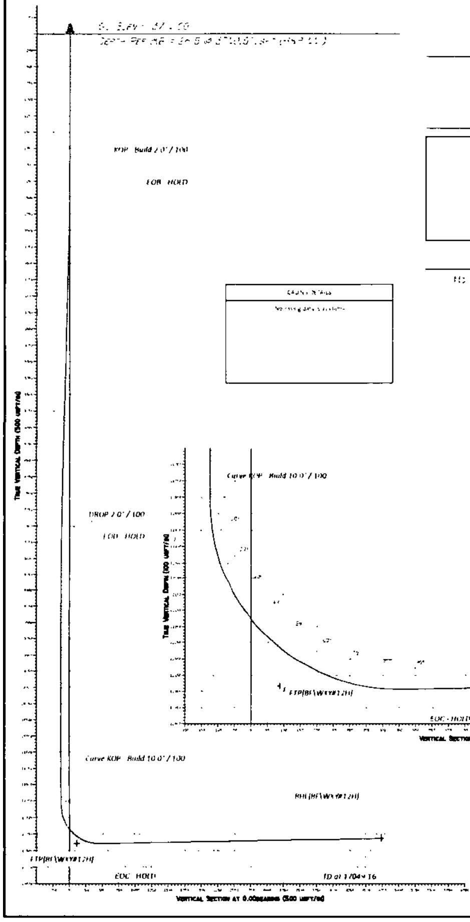
DRILLING TARGET: 12402' TVD @ 0VS // 91.0° INC.

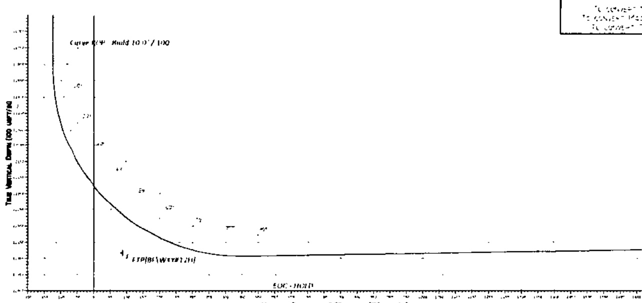
WINDOW: 15' UP // 15' DOWN
WINDOW: 33' LEFT // 33' RIGHT

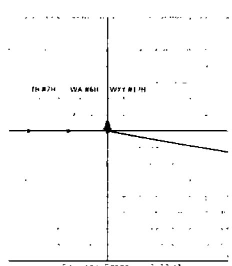
SITE DETAILS: BALLISTA FEDERAL 23-12-13

FORMATION TOP DETAILS

NO FORMATION DATA IS AVAILABLE





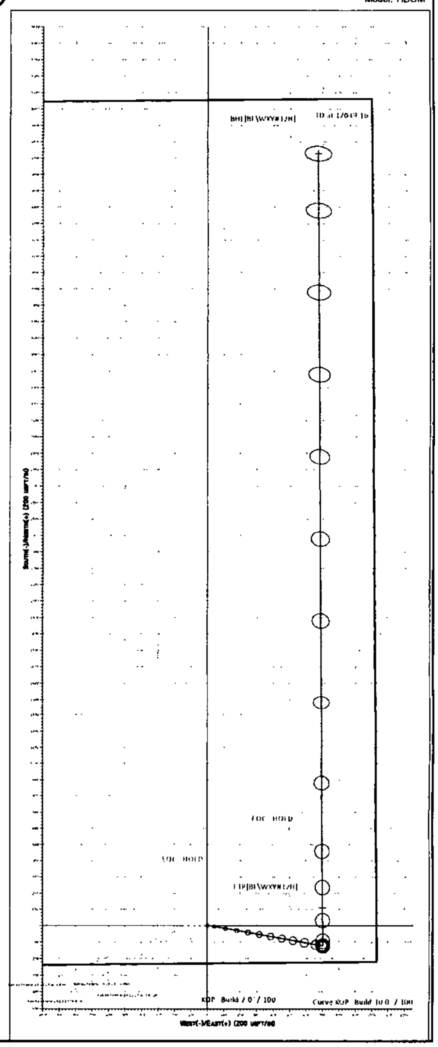


Scientific Drilling

Azimuths to Grid North
True North: -0.37°
Magnetic North: 6.47°

Magnetic Field
Strength: 48119.1snT
Dip Angle: 60.07°
Date: 1/29/2018
Model: HDGM

To convert Magnetic North to Grid, Add 6.47°
To convert True North to Grid, Subtract 0.38°



Marathon Oil Permian, LLC

Lea County, NM (NAD27)
Ballista Federal 23-12-13
WXY #12H

OH

Plan: Plan #1

Standard Planning Report

29 January, 2018

Scientific Drilling

www.scientificdrilling.com

Database:	Midland District	**Local Co-ordinate Reference:**	Well WXY #12H
Company:	Marathon Oil Permian, LLC	**TVD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Project:	Lea County, NM (NAD27)	**MD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Site:	Ballista Federal 23-12-13	**North Reference:**	Grid
Well:	WXY #12H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, NM (NAD27)		
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		Using geodetic scale factor

Site	Ballista Federal 23-12-13				
Site Position:		**Northing:**	472,840.95 usft	**Latitude:**	32° 17' 52.819 N
From:	Map	**Easting:**	716,865.34 usft	**Longitude:**	103° 37' 53.342 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.38 °

Well	WXY #12H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	472,840.95 usft	**Latitude:**	32° 17' 52.813 N
	+E/-W	90.00 usft	**Easting:**	716,955.34 usft	**Longitude:**	103° 37' 52.293 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,714.00 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	1/29/2018	6.85	60.07	48,119

Design	Plan #1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (bearing)**	
	0.00	0.00	0.00	0.00	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,900.00	8.00	100.00	2,898.70	-4.84	27.46	2.00	2.00	0.00	100.00	
7,620.00	8.00	100.00	7,572.77	-118.91	674.37	0.00	0.00	0.00	0.00	
8,020.00	0.00	0.00	7,971.47	-123.75	701.83	2.00	-2.00	0.00	180.00	
11,869.18	0.00	0.00	11,820.65	-123.75	701.83	0.00	0.00	0.00	0.00	
12,779.18	91.00	359.60	12,393.52	459.19	697.79	10.00	10.00	0.00	359.60	
17,049.16	91.00	359.60	12,319.00	4,728.42	668.21	0.00	0.00	0.00	0.00	BHL[BF\WXY#12H]

Database:	Midland District	**Local Co-ordinate Reference:**	Well WXY #12H
Company:	Marathon Oil Permian, LLC	**TVD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Project:	Lea County, NM (NAD27)	**MD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Site:	Ballista Federal 23-12-13	**North Reference:**	Grid
Well:	WXY #12H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
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
1,200.00	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
1,400.00	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
KOP - Build 2.0° / 100									
2,600.00	2.00	100.00	2,599.98	-0.30	1.72	-0.30	2.00	2.00	0.00
2,700.00	4.00	100.00	2,699.84	-1.21	6.87	-1.21	2.00	2.00	0.00
2,800.00	6.00	100.00	2,799.45	-2.73	15.46	-2.73	2.00	2.00	0.00
2,900.00	8.00	100.00	2,898.70	-4.84	27.46	-4.84	2.00	2.00	0.00
EOB - HOLD									
3,000.00	8.00	100.00	2,997.73	-7.26	41.16	-7.26	0.00	0.00	0.00
3,100.00	8.00	100.00	3,096.76	-9.67	54.87	-9.67	0.00	0.00	0.00
3,200.00	8.00	100.00	3,195.78	-12.09	68.57	-12.09	0.00	0.00	0.00
3,300.00	8.00	100.00	3,294.81	-14.51	82.28	-14.51	0.00	0.00	0.00
3,400.00	8.00	100.00	3,393.84	-16.92	95.99	-16.92	0.00	0.00	0.00
3,500.00	8.00	100.00	3,492.86	-19.34	109.69	-19.34	0.00	0.00	0.00
3,600.00	8.00	100.00	3,591.89	-21.76	123.40	-21.76	0.00	0.00	0.00
3,700.00	8.00	100.00	3,690.92	-24.18	137.10	-24.18	0.00	0.00	0.00
3,800.00	8.00	100.00	3,789.94	-26.59	150.81	-26.59	0.00	0.00	0.00
3,900.00	8.00	100.00	3,888.97	-29.01	164.52	-29.01	0.00	0.00	0.00
4,000.00	8.00	100.00	3,988.00	-31.43	178.22	-31.43	0.00	0.00	0.00
4,100.00	8.00	100.00	4,087.02	-33.84	191.93	-33.84	0.00	0.00	0.00
4,200.00	8.00	100.00	4,186.05	-36.26	205.63	-36.26	0.00	0.00	0.00
4,300.00	8.00	100.00	4,285.08	-38.68	219.34	-38.68	0.00	0.00	0.00
4,400.00	8.00	100.00	4,384.10	-41.09	233.04	-41.09	0.00	0.00	0.00
4,500.00	8.00	100.00	4,483.13	-43.51	246.75	-43.51	0.00	0.00	0.00
4,600.00	8.00	100.00	4,582.16	-45.93	260.46	-45.93	0.00	0.00	0.00
4,700.00	8.00	100.00	4,681.18	-48.34	274.16	-48.34	0.00	0.00	0.00
4,800.00	8.00	100.00	4,780.21	-50.76	287.87	-50.76	0.00	0.00	0.00
4,900.00	8.00	100.00	4,879.24	-53.18	301.57	-53.18	0.00	0.00	0.00
5,000.00	8.00	100.00	4,978.26	-55.59	315.28	-55.59	0.00	0.00	0.00
5,100.00	8.00	100.00	5,077.29	-58.01	328.99	-58.01	0.00	0.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well WXY #12H
Company:	Marathon Oil Permian, LLC	**TVD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Project:	Lea County, NM (NAD27)	**MD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Site:	Ballista Federal 23-12-13	**North Reference:**	Grid
Well:	WXY #12H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.00	8.00	100.00	5,176.32	-60.43	342.69	-60.43	0.00	0.00	0.00
5,300.00	8.00	100.00	5,275.35	-62.84	356.40	-62.84	0.00	0.00	0.00
5,400.00	8.00	100.00	5,374.37	-65.26	370.10	-65.26	0.00	0.00	0.00
5,500.00	8.00	100.00	5,473.40	-67.68	383.81	-67.68	0.00	0.00	0.00
5,600.00	8.00	100.00	5,572.43	-70.09	397.52	-70.09	0.00	0.00	0.00
5,700.00	8.00	100.00	5,671.45	-72.51	411.22	-72.51	0.00	0.00	0.00
5,800.00	8.00	100.00	5,770.48	-74.93	424.93	-74.93	0.00	0.00	0.00
5,900.00	8.00	100.00	5,869.51	-77.34	438.63	-77.34	0.00	0.00	0.00
6,000.00	8.00	100.00	5,968.53	-79.76	452.34	-79.76	0.00	0.00	0.00
6,100.00	8.00	100.00	6,067.56	-82.18	466.04	-82.18	0.00	0.00	0.00
6,200.00	8.00	100.00	6,166.59	-84.59	479.75	-84.59	0.00	0.00	0.00
6,300.00	8.00	100.00	6,265.61	-87.01	493.46	-87.01	0.00	0.00	0.00
6,400.00	8.00	100.00	6,364.64	-89.43	507.16	-89.43	0.00	0.00	0.00
6,500.00	8.00	100.00	6,463.67	-91.84	520.87	-91.84	0.00	0.00	0.00
6,600.00	8.00	100.00	6,562.69	-94.26	534.57	-94.26	0.00	0.00	0.00
6,700.00	8.00	100.00	6,661.72	-96.68	548.28	-96.68	0.00	0.00	0.00
6,800.00	8.00	100.00	6,760.75	-99.09	561.99	-99.09	0.00	0.00	0.00
6,900.00	8.00	100.00	6,859.77	-101.51	575.69	-101.51	0.00	0.00	0.00
7,000.00	8.00	100.00	6,958.80	-103.93	589.40	-103.93	0.00	0.00	0.00
7,100.00	8.00	100.00	7,057.83	-106.34	603.10	-106.34	0.00	0.00	0.00
7,200.00	8.00	100.00	7,156.85	-108.76	616.81	-108.76	0.00	0.00	0.00
7,300.00	8.00	100.00	7,255.88	-111.18	630.51	-111.18	0.00	0.00	0.00
7,400.00	8.00	100.00	7,354.91	-113.59	644.22	-113.59	0.00	0.00	0.00
7,500.00	8.00	100.00	7,453.93	-116.01	657.93	-116.01	0.00	0.00	0.00
7,600.00	8.00	100.00	7,552.96	-118.43	671.63	-118.43	0.00	0.00	0.00
7,620.00	8.00	100.00	7,572.77	-118.91	674.37	-118.91	0.00	0.00	0.00
DROP 2.0° / 100									
7,700.00	6.40	100.00	7,652.13	-120.65	684.25	-120.65	2.00	-2.00	0.00
7,800.00	4.40	100.00	7,751.68	-122.29	693.52	-122.29	2.00	-2.00	0.00
7,900.00	2.40	100.00	7,851.50	-123.32	699.36	-123.32	2.00	-2.00	0.00
8,000.00	0.40	100.00	7,951.47	-123.74	701.76	-123.74	2.00	-2.00	0.00
8,020.00	0.00	0.00	7,971.47	-123.75	701.83	-123.75	2.00	-2.00	0.00
EOD - HOLD									
8,100.00	0.00	0.00	8,051.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,200.00	0.00	0.00	8,151.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,300.00	0.00	0.00	8,251.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,400.00	0.00	0.00	8,351.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,500.00	0.00	0.00	8,451.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,600.00	0.00	0.00	8,551.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,700.00	0.00	0.00	8,651.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,800.00	0.00	0.00	8,751.47	-123.75	701.83	-123.75	0.00	0.00	0.00
8,900.00	0.00	0.00	8,851.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,000.00	0.00	0.00	8,951.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,100.00	0.00	0.00	9,051.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,200.00	0.00	0.00	9,151.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,300.00	0.00	0.00	9,251.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,400.00	0.00	0.00	9,351.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,500.00	0.00	0.00	9,451.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,600.00	0.00	0.00	9,551.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,700.00	0.00	0.00	9,651.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,800.00	0.00	0.00	9,751.47	-123.75	701.83	-123.75	0.00	0.00	0.00
9,900.00	0.00	0.00	9,851.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,000.00	0.00	0.00	9,951.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,100.00	0.00	0.00	10,051.47	-123.75	701.83	-123.75	0.00	0.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well WXY #12H
Company:	Marathon Oil Permian, LLC	**TVD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Project:	Lea County, NM (NAD27)	**MD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Site:	Ballista Federal 23-12-13	**North Reference:**	Grid
Well:	WXY #12H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,200.00	0.00	0.00	10,151.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,300.00	0.00	0.00	10,251.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,400.00	0.00	0.00	10,351.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,500.00	0.00	0.00	10,451.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,600.00	0.00	0.00	10,551.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,700.00	0.00	0.00	10,651.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,800.00	0.00	0.00	10,751.47	-123.75	701.83	-123.75	0.00	0.00	0.00
10,900.00	0.00	0.00	10,851.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,000.00	0.00	0.00	10,951.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,100.00	0.00	0.00	11,051.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,200.00	0.00	0.00	11,151.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,300.00	0.00	0.00	11,251.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,400.00	0.00	0.00	11,351.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,500.00	0.00	0.00	11,451.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,600.00	0.00	0.00	11,551.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,700.00	0.00	0.00	11,651.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,800.00	0.00	0.00	11,751.47	-123.75	701.83	-123.75	0.00	0.00	0.00
11,869.18	0.00	0.00	11,820.65	-123.75	701.83	-123.75	0.00	0.00	0.00
Curve KOP - Build 10.0° / 100									
11,900.00	3.08	359.60	11,851.45	-122.92	701.82	-122.92	10.00	10.00	0.00
11,950.00	8.08	359.60	11,901.20	-118.06	701.79	-118.06	10.00	10.00	0.00
12,000.00	13.08	359.60	11,950.34	-108.88	701.73	-108.88	10.00	10.00	0.00
12,050.00	18.08	359.60	11,998.48	-95.46	701.63	-95.46	10.00	10.00	0.00
12,100.00	23.08	359.60	12,045.28	-77.89	701.51	-77.89	10.00	10.00	0.00
12,150.00	28.08	359.60	12,090.36	-56.30	701.36	-56.30	10.00	10.00	0.00
12,200.00	33.08	359.60	12,133.39	-30.87	701.19	-30.87	10.00	10.00	0.00
12,250.00	38.08	359.60	12,174.04	-1.79	700.99	-1.79	10.00	10.00	0.00
12,300.00	43.08	359.60	12,212.00	30.73	700.76	30.73	10.00	10.00	0.00
12,350.00	48.08	359.60	12,246.99	66.43	700.51	66.43	10.00	10.00	0.00
12,400.00	53.08	359.60	12,278.73	105.04	700.25	105.04	10.00	10.00	0.00
12,450.00	58.08	359.60	12,306.98	146.27	699.96	146.27	10.00	10.00	0.00
FTP[BF\WXY#3H]									
12,458.26	58.91	359.60	12,311.30	153.32	699.91	153.32	10.00	10.00	0.00
FTP[BF\WXY#12H]									
12,500.00	63.08	359.60	12,331.53	189.81	699.66	189.81	10.00	10.00	0.00
12,550.00	68.08	359.60	12,352.19	235.32	699.34	235.32	10.00	10.00	0.00
12,600.00	73.08	359.60	12,368.81	282.46	699.02	282.46	10.00	10.00	0.00
12,650.00	78.08	359.60	12,381.26	330.87	698.68	330.87	10.00	10.00	0.00
12,700.00	83.08	359.60	12,389.44	380.18	698.34	380.18	10.00	10.00	0.00
12,750.00	88.08	359.60	12,393.29	430.01	697.99	430.01	10.00	10.00	0.00
12,779.18	91.00	359.60	12,393.52	459.19	697.79	459.19	10.00	10.00	0.00
EOC - HOLD									
12,800.00	91.00	359.60	12,393.16	480.01	697.65	480.01	0.00	0.00	0.00
12,900.00	91.00	359.60	12,391.41	579.99	696.95	579.99	0.00	0.00	0.00
13,000.00	91.00	359.60	12,389.67	679.97	696.26	679.97	0.00	0.00	0.00
13,100.00	91.00	359.60	12,387.92	779.95	695.57	779.95	0.00	0.00	0.00
13,200.00	91.00	359.60	12,386.18	879.94	694.88	879.94	0.00	0.00	0.00
13,300.00	91.00	359.60	12,384.43	979.92	694.18	979.92	0.00	0.00	0.00
13,400.00	91.00	359.60	12,382.69	1,079.90	693.49	1,079.90	0.00	0.00	0.00
13,500.00	91.00	359.60	12,380.94	1,179.88	692.80	1,179.88	0.00	0.00	0.00
13,600.00	91.00	359.60	12,379.20	1,279.86	692.11	1,279.86	0.00	0.00	0.00
13,700.00	91.00	359.60	12,377.45	1,379.85	691.41	1,379.85	0.00	0.00	0.00
13,800.00	91.00	359.60	12,375.71	1,479.83	690.72	1,479.83	0.00	0.00	0.00

Database:	Midland District	**Local Co-ordinate Reference:**	Well WXY #12H
Company:	Marathon Oil Permian, LLC	**TVD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Project:	Lea County, NM (NAD27)	**MD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Site:	Ballista Federal 23-12-13	**North Reference:**	Grid
Well:	WXY #12H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,900.00	91.00	359.60	12,373.96	1,579.81	690.03	1,579.81	0.00	0.00	0.00
14,000.00	91.00	359.60	12,372.22	1,679.79	689.34	1,679.79	0.00	0.00	0.00
14,100.00	91.00	359.60	12,370.47	1,779.78	688.64	1,779.78	0.00	0.00	0.00
14,200.00	91.00	359.60	12,368.72	1,879.76	687.95	1,879.76	0.00	0.00	0.00
14,300.00	91.00	359.60	12,366.98	1,979.74	687.26	1,979.74	0.00	0.00	0.00
14,400.00	91.00	359.60	12,365.23	2,079.72	686.56	2,079.72	0.00	0.00	0.00
14,500.00	91.00	359.60	12,363.49	2,179.71	685.87	2,179.71	0.00	0.00	0.00
14,600.00	91.00	359.60	12,361.74	2,279.69	685.18	2,279.69	0.00	0.00	0.00
14,700.00	91.00	359.60	12,360.00	2,379.67	684.49	2,379.67	0.00	0.00	0.00
14,800.00	91.00	359.60	12,358.25	2,479.65	683.79	2,479.65	0.00	0.00	0.00
14,900.00	91.00	359.60	12,356.51	2,579.64	683.10	2,579.64	0.00	0.00	0.00
15,000.00	91.00	359.60	12,354.76	2,679.62	682.41	2,679.62	0.00	0.00	0.00
15,100.00	91.00	359.60	12,353.02	2,779.60	681.72	2,779.60	0.00	0.00	0.00
15,200.00	91.00	359.60	12,351.27	2,879.58	681.02	2,879.58	0.00	0.00	0.00
15,300.00	91.00	359.60	12,349.53	2,979.56	680.33	2,979.56	0.00	0.00	0.00
15,400.00	91.00	359.60	12,347.78	3,079.55	679.64	3,079.55	0.00	0.00	0.00
15,500.00	91.00	359.60	12,346.04	3,179.53	678.95	3,179.53	0.00	0.00	0.00
15,600.00	91.00	359.60	12,344.29	3,279.51	678.25	3,279.51	0.00	0.00	0.00
15,700.00	91.00	359.60	12,342.55	3,379.49	677.56	3,379.49	0.00	0.00	0.00
15,800.00	91.00	359.60	12,340.80	3,479.48	676.87	3,479.48	0.00	0.00	0.00
15,900.00	91.00	359.60	12,339.06	3,579.46	676.17	3,579.46	0.00	0.00	0.00
16,000.00	91.00	359.60	12,337.31	3,679.44	675.48	3,679.44	0.00	0.00	0.00
16,100.00	91.00	359.60	12,335.57	3,779.42	674.79	3,779.42	0.00	0.00	0.00
16,200.00	91.00	359.60	12,333.82	3,879.41	674.10	3,879.41	0.00	0.00	0.00
16,300.00	91.00	359.60	12,332.07	3,979.39	673.40	3,979.39	0.00	0.00	0.00
16,400.00	91.00	359.60	12,330.33	4,079.37	672.71	4,079.37	0.00	0.00	0.00
16,500.00	91.00	359.60	12,328.58	4,179.35	672.02	4,179.35	0.00	0.00	0.00
16,600.00	91.00	359.60	12,326.84	4,279.34	671.33	4,279.34	0.00	0.00	0.00
16,700.00	91.00	359.60	12,325.09	4,379.32	670.63	4,379.32	0.00	0.00	0.00
16,800.00	91.00	359.60	12,323.35	4,479.30	669.94	4,479.30	0.00	0.00	0.00
16,900.00	91.00	359.60	12,321.60	4,579.28	669.25	4,579.28	0.00	0.00	0.00
17,000.00	91.00	359.60	12,319.86	4,679.27	668.56	4,679.27	0.00	0.00	0.00
17,045.48	91.00	359.60	12,319.06	4,724.74	668.24	4,724.74	0.00	0.00	0.00
BHL[BF\WXY#3H]									
17,049.16	91.00	359.60	12,319.00	4,728.42	668.21	4,728.42	0.00	0.00	0.00
TD at 17049.16 - BHL[BF\WXY#12H]									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL[BF\WXY#12H]	0.00	0.00	12,319.00	4,728.42	668.21	477,569.19	717,623.53	32° 18' 39.558 N	103° 37' 44.147 W
- plan hits target center									
- Point									
FTP[BF\WXY#12H]	0.00	0.00	12,394.00	106.68	700.24	472,947.63	717,655.55	32° 17' 53.823 N	103° 37' 44.128 W
- plan misses target center by 94.94usft at 12458.26usft MD (12311.30 TVD, 153.32 N, 699.91 E)									
- Point									

Database:	Midland District	**Local Co-ordinate Reference:**	Well WXY #12H
Company:	Marathon Oil Permian, LLC	**TVD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Project:	Lea County, NM (NAD27)	**MD Reference:**	KB = 26.5 @ 3740.50usft (H&P 441)
Site:	Ballista Federal 23-12-13	**North Reference:**	Grid
Well:	WXY #12H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,500.00	2,500.00	0.00	0.00	KOP - Build 2.0° / 100
2,900.00	2,898.70	-4.84	27.46	EOB - HOLD
7,620.00	7,572.77	-118.91	674.37	DROP 2.0° / 100
8,020.00	7,971.47	-123.75	701.83	EOD - HOLD
11,869.18	11,820.65	-123.75	701.83	Curve KOP - Build 10.0° / 100
12,779.18	12,393.52	459.19	697.79	EOC - HOLD
17,049.16	12,319.00	4,728.42	668.21	TD at 17049.16

Batch Drilling Plan

- Marathon Oil Permian LLC. respectfully requests the option to "batch" drill sections of a well with intentions of returning to the well for later completion.
- When it is determined that the use of a "batch" drilling process to increase overall efficiency and reduce rig time on location, the following steps will be utilized to ensure compliant well control before releasing drilling rig during the batch process.
- Succeeding a successful cement job, fluid levels will be monitored in both the annulus and casing string to be verified static.
- A mandrel hanger packoff will be ran and installed in the multi-bowl wellhead isolating and creating a barrier on the annulus. This packoff will be tested to 5,000 PSI validating the seals.
- At this point the well is secure and the drilling adapter will be removed from the wellhead.
- A 13-5/8" 5M temporary abandonment cap will be installed on the wellhead by stud and nut flange. The seals of the TA cap will then be pressure tested to 5,000 PSI.
- The drilling rig will skid to the next well on the pad to continue the batch drilling process.
- When returning to the well with the TA cap, the TA cap will be removed and the BOP will be nippled up on the wellhead.
- A BOP test will then be conducted according to Onshore Order #2 and drilling operations will resume on the subject well.

Request for Surface Rig

- Marathon Oil Permian LLC. Requests the option to contract a surface rig to drill, set surface casing and cement on the subject well. If the timing between rigs is such that Marathon Oil Permian LLC. would not be able to preset the surface section, the primary drilling rig will drill the well in its entirety per the APD.