PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**DEVON ENERGY**
LEASE NO.:	**NMNM114991**
WELL NAME & NO.:	**GREEN WAVE 20-32 FED STATE 2H**
SURFACE HOLE FOOTAGE:	**2456'/S & 271'/W**
BOTTOM HOLE FOOTAGE	**2180'/S & 380'/W**
LOCATION:	**SECTION 20, T26S, R34E, NMPM**
COUNTY:	**LEA, 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

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **820** 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).

Approval Date: 02/28/2018

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 of casing with fluid while running intermeditate casing to maintain collapse safety factor.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.**Additional cement maybe required. Excess calculates to 11%.**

In case of lost circulation, operator has proposed to pump down the 7 5/8" x 9 7/8" annulus. Operator must notify BLM before running a CBL from TD of the 7 5/8" casing to surface. Submit results to the BLM.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.**Additional cement maybe required. Excess calculates to -4%.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

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

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8** intermediate casing shoe shall be **10,000 (10M)** 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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COUNTY:	LEA

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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)

Temporary Fence Crossing Requirement

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. Devon shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Cattle Guard Requirement

Where entry is granted across a fence line for an access road, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. Devon shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations. Once the road is abandoned, the fence would be restored to its prior condition, or better. Devon shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

During construction, Devon shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. Devon is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Devon would adhere to the following stipulations:

- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.
- Devon would need to construct and maintain escape ramps according to the following criteria:
    - Earthen escape ramps would be required to be constructed to sufficiently support livestock at no more than a 30-degree slope and spaced no more than 500 feet apart.
    - If trench is left open under an 8-hour time period, it would not be required to have an escape ramp; however, before the trench is backfilled, Lucid would inspect the trench for wildlife and remove any species that are trapped at a distance of at least 100 yards away from the trench.

- Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

- A BLM Wildlife Biologist must be contacted by Devon prior to construction activities to determine if the raptor nest is active. Raptors nest on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.

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.

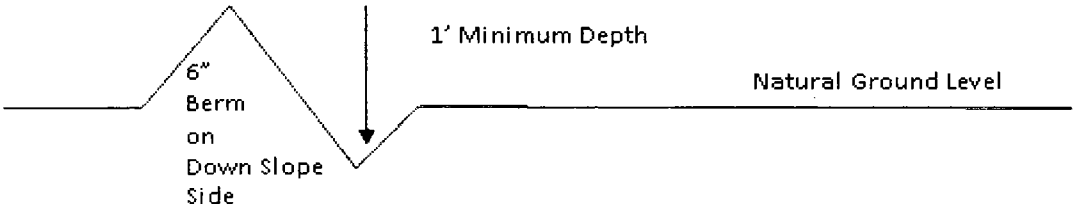
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

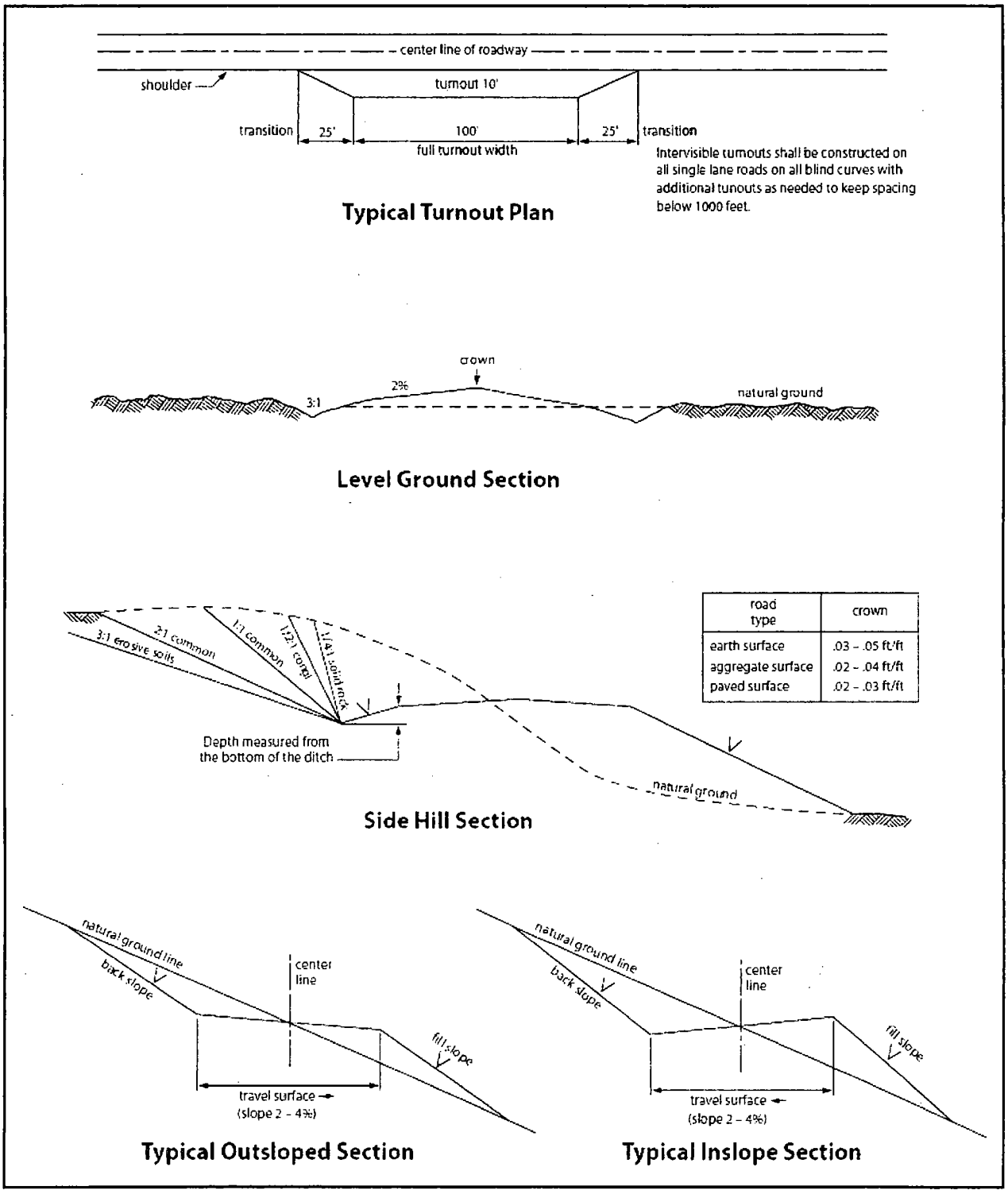


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the

Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly.
    - Fill in any holes from the poles removed.

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 2, for Sandy Sites

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

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

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

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

Approval Date: 02/28/2018

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY
LEASE NO.:	NMNM114991
WELL NAME & NO.:	GREEN WAVE 20-32 FED STATE 2H
SURFACE HOLE FOOTAGE:	2456'/S & 271'/W
BOTTOM HOLE FOOTAGE	2180'/S & 380'/W
LOCATION:	SECTION 20, T26S, R34E, NMPM
COUNTY:	LEA

TABLE OF CONTENTS

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

Approval Date: 02/28/2018

devon

Devon Energy Corporation

Lea Co., NM
Green Wave
20-32 Fed State Com #2H

OH

Plan: PN1

Standard Planning Report

19 September, 2017

NABORS

Database:	RyanUSA_Compass	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Company:	Devon Energy Corporation	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Project:	Lea Co., NM	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

Project Lea Co., NM

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Green Wave

Site Position:		**Northing:**	375,511.440 usft	**Latitude:**	32° 1' 46.63147 N
From:	Map	**Easting:**	799,720.410 usft	**Longitude:**	103° 29' 58.39010 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.44 °

Well 20-32 Fed State Com #2H

Well Position	**+N/-S**	-433.50 ft	**Northing:**	375,077.940 usft	**Latitude:**	32° 1' 42.34141 N
	+E/-W	5.74 ft	**Easting:**	799,726.150 usft	**Longitude:**	103° 29' 58.36229 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	3,354.90 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/19/2017	6.78	59.75	47,872.10000000

Design PN1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	178.87

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,600.00	6.00	90.00	5,598.90	0.00	31.39	1.00	1.00	0.00	90.00	
6,880.00	6.00	90.00	6,871.89	0.00	165.18	0.00	0.00	0.00	0.00	
7,480.00	0.00	0.00	7,470.80	0.00	196.57	1.00	-1.00	0.00	180.00	
12,286.24	0.00	0.00	12,277.04	0.00	196.57	0.00	0.00	0.00	0.00	
13,186.24	90.00	180.00	12,850.00	-572.96	196.55	10.00	10.00	-20.00	180.00	
22,523.75	90.00	180.00	12,850.00	-9,910.46	196.16	0.00	0.00	0.00	0.00	20-32 2H_BHL

Database:	RyanUSA_Compass	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
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Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	1.00	90.00	5,100.00	0.00	0.87	0.02	1.00	1.00	0.00

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Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.00	2.00	90.00	5,199.96	0.00	3.49	0.07	1.00	1.00	0.00
5,300.00	3.00	90.00	5,299.86	0.00	7.85	0.16	1.00	1.00	0.00
5,400.00	4.00	90.00	5,399.68	0.00	13.96	0.28	1.00	1.00	0.00
5,500.00	5.00	90.00	5,499.37	0.00	21.80	0.43	1.00	1.00	0.00
5,600.00	6.00	90.00	5,598.90	0.00	31.39	0.62	1.00	1.00	0.00
5,700.00	6.00	90.00	5,698.36	0.00	41.84	0.83	0.00	0.00	0.00
5,800.00	6.00	90.00	5,797.81	0.00	52.29	1.03	0.00	0.00	0.00
5,900.00	6.00	90.00	5,897.26	0.00	62.75	1.24	0.00	0.00	0.00
6,000.00	6.00	90.00	5,996.71	0.00	73.20	1.45	0.00	0.00	0.00
6,100.00	6.00	90.00	6,096.17	0.00	83.65	1.66	0.00	0.00	0.00
6,200.00	6.00	90.00	6,195.62	0.00	94.10	1.86	0.00	0.00	0.00
6,300.00	6.00	90.00	6,295.07	0.00	104.56	2.07	0.00	0.00	0.00
6,400.00	6.00	90.00	6,394.52	0.00	115.01	2.28	0.00	0.00	0.00
6,500.00	6.00	90.00	6,493.97	0.00	125.46	2.48	0.00	0.00	0.00
6,600.00	6.00	90.00	6,593.43	0.00	135.92	2.69	0.00	0.00	0.00
6,700.00	6.00	90.00	6,692.88	0.00	146.37	2.90	0.00	0.00	0.00
6,800.00	6.00	90.00	6,792.33	0.00	156.82	3.10	0.00	0.00	0.00
6,880.00	6.00	90.00	6,871.89	0.00	165.18	3.27	0.00	0.00	0.00
6,900.00	5.80	90.00	6,891.79	0.00	167.24	3.31	1.00	-1.00	0.00
7,000.00	4.80	90.00	6,991.36	0.00	176.48	3.49	1.00	-1.00	0.00
7,100.00	3.80	90.00	7,091.07	0.00	183.97	3.64	1.00	-1.00	0.00
7,200.00	2.80	90.00	7,190.91	0.00	189.73	3.75	1.00	-1.00	0.00
7,300.00	1.80	90.00	7,290.83	0.00	193.74	3.83	1.00	-1.00	0.00
7,400.00	0.80	90.00	7,390.80	0.00	196.01	3.88	1.00	-1.00	0.00
7,480.00	0.00	0.00	7,470.80	0.00	196.57	3.89	1.00	-1.00	0.00
7,500.00	0.00	0.00	7,490.80	0.00	196.57	3.89	0.00	0.00	0.00
7,600.00	0.00	0.00	7,590.80	0.00	196.57	3.89	0.00	0.00	0.00
7,700.00	0.00	0.00	7,690.80	0.00	196.57	3.89	0.00	0.00	0.00
7,800.00	0.00	0.00	7,790.80	0.00	196.57	3.89	0.00	0.00	0.00
7,900.00	0.00	0.00	7,890.80	0.00	196.57	3.89	0.00	0.00	0.00
8,000.00	0.00	0.00	7,990.80	0.00	196.57	3.89	0.00	0.00	0.00
8,100.00	0.00	0.00	8,090.80	0.00	196.57	3.89	0.00	0.00	0.00
8,200.00	0.00	0.00	8,190.80	0.00	196.57	3.89	0.00	0.00	0.00
8,300.00	0.00	0.00	8,290.80	0.00	196.57	3.89	0.00	0.00	0.00
8,400.00	0.00	0.00	8,390.80	0.00	196.57	3.89	0.00	0.00	0.00
8,500.00	0.00	0.00	8,490.80	0.00	196.57	3.89	0.00	0.00	0.00
8,600.00	0.00	0.00	8,590.80	0.00	196.57	3.89	0.00	0.00	0.00
8,700.00	0.00	0.00	8,690.80	0.00	196.57	3.89	0.00	0.00	0.00
8,800.00	0.00	0.00	8,790.80	0.00	196.57	3.89	0.00	0.00	0.00
8,900.00	0.00	0.00	8,890.80	0.00	196.57	3.89	0.00	0.00	0.00
9,000.00	0.00	0.00	8,990.80	0.00	196.57	3.89	0.00	0.00	0.00
9,100.00	0.00	0.00	9,090.80	0.00	196.57	3.89	0.00	0.00	0.00
9,200.00	0.00	0.00	9,190.80	0.00	196.57	3.89	0.00	0.00	0.00
9,300.00	0.00	0.00	9,290.80	0.00	196.57	3.89	0.00	0.00	0.00
9,400.00	0.00	0.00	9,390.80	0.00	196.57	3.89	0.00	0.00	0.00
9,500.00	0.00	0.00	9,490.80	0.00	196.57	3.89	0.00	0.00	0.00
9,600.00	0.00	0.00	9,590.80	0.00	196.57	3.89	0.00	0.00	0.00
9,700.00	0.00	0.00	9,690.80	0.00	196.57	3.89	0.00	0.00	0.00
9,800.00	0.00	0.00	9,790.80	0.00	196.57	3.89	0.00	0.00	0.00
9,900.00	0.00	0.00	9,890.80	0.00	196.57	3.89	0.00	0.00	0.00
10,000.00	0.00	0.00	9,990.80	0.00	196.57	3.89	0.00	0.00	0.00
10,100.00	0.00	0.00	10,090.80	0.00	196.57	3.89	0.00	0.00	0.00

Database:	RyanUSA_Compass	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Company:	Devon Energy Corporation	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Project:	Lea Co., NM	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,200.00	0.00	0.00	10,190.80	0.00	196.57	3.89	0.00	0.00	0.00
10,300.00	0.00	0.00	10,290.80	0.00	196.57	3.89	0.00	0.00	0.00
10,400.00	0.00	0.00	10,390.80	0.00	196.57	3.89	0.00	0.00	0.00
10,500.00	0.00	0.00	10,490.80	0.00	196.57	3.89	0.00	0.00	0.00
10,600.00	0.00	0.00	10,590.80	0.00	196.57	3.89	0.00	0.00	0.00
10,700.00	0.00	0.00	10,690.80	0.00	196.57	3.89	0.00	0.00	0.00
10,800.00	0.00	0.00	10,790.80	0.00	196.57	3.89	0.00	0.00	0.00
10,900.00	0.00	0.00	10,890.80	0.00	196.57	3.89	0.00	0.00	0.00
11,000.00	0.00	0.00	10,990.80	0.00	196.57	3.89	0.00	0.00	0.00
11,100.00	0.00	0.00	11,090.80	0.00	196.57	3.89	0.00	0.00	0.00
11,200.00	0.00	0.00	11,190.80	0.00	196.57	3.89	0.00	0.00	0.00
11,300.00	0.00	0.00	11,290.80	0.00	196.57	3.89	0.00	0.00	0.00
11,400.00	0.00	0.00	11,390.80	0.00	196.57	3.89	0.00	0.00	0.00
11,500.00	0.00	0.00	11,490.80	0.00	196.57	3.89	0.00	0.00	0.00
11,600.00	0.00	0.00	11,590.80	0.00	196.57	3.89	0.00	0.00	0.00
11,700.00	0.00	0.00	11,690.80	0.00	196.57	3.89	0.00	0.00	0.00
11,800.00	0.00	0.00	11,790.80	0.00	196.57	3.89	0.00	0.00	0.00
11,900.00	0.00	0.00	11,890.80	0.00	196.57	3.89	0.00	0.00	0.00
12,000.00	0.00	0.00	11,990.80	0.00	196.57	3.89	0.00	0.00	0.00
12,100.00	0.00	0.00	12,090.80	0.00	196.57	3.89	0.00	0.00	0.00
12,200.00	0.00	0.00	12,190.80	0.00	196.57	3.89	0.00	0.00	0.00
12,286.24	0.00	0.00	12,277.04	0.00	196.57	3.89	0.00	0.00	0.00
20-32 2H_KOP									
12,300.00	1.38	180.00	12,290.79	-0.17	196.57	4.06	10.00	10.00	0.00
12,350.00	6.38	180.00	12,340.66	-3.54	196.57	7.43	10.00	10.00	0.00
12,400.00	11.38	180.00	12,390.05	-11.26	196.57	15.14	10.00	10.00	0.00
12,450.00	16.38	180.00	12,438.58	-23.24	196.57	27.13	10.00	10.00	0.00
12,500.00	21.38	180.00	12,485.87	-39.41	196.57	43.30	10.00	10.00	0.00
12,550.00	26.38	180.00	12,531.58	-59.64	196.57	63.52	10.00	10.00	0.00
12,600.00	31.38	180.00	12,575.35	-83.78	196.57	87.66	10.00	10.00	0.00
12,650.00	36.38	180.00	12,616.85	-111.64	196.57	115.51	10.00	10.00	0.00
12,700.00	41.38	180.00	12,655.76	-143.01	196.56	146.88	10.00	10.00	0.00
12,750.00	46.38	180.00	12,691.79	-177.66	196.56	181.51	10.00	10.00	0.00
12,800.00	51.38	180.00	12,724.67	-215.31	196.56	219.16	10.00	10.00	0.00
12,850.00	56.38	180.00	12,754.13	-255.68	196.56	259.52	10.00	10.00	0.00
12,900.00	61.38	180.00	12,779.97	-298.47	196.56	302.30	10.00	10.00	0.00
12,950.00	66.38	180.00	12,801.98	-343.35	196.56	347.17	10.00	10.00	0.00
13,000.00	71.38	180.00	12,819.99	-389.98	196.55	393.79	10.00	10.00	0.00
13,050.00	76.38	180.00	12,833.88	-437.99	196.55	441.80	10.00	10.00	0.00
13,100.00	81.38	180.00	12,843.52	-487.04	196.55	490.83	10.00	10.00	0.00
13,150.00	86.38	180.00	12,848.85	-536.74	196.55	540.52	10.00	10.00	0.00
13,186.24	90.00	180.00	12,850.00	-572.96	196.55	576.74	10.00	10.00	0.00
20-32 2H_EOC									
13,200.00	90.00	180.00	12,850.00	-586.71	196.55	590.49	0.00	0.00	0.00
13,300.00	90.00	180.00	12,850.00	-686.71	196.54	690.47	0.00	0.00	0.00
13,400.00	90.00	180.00	12,850.00	-786.71	196.54	790.45	0.00	0.00	0.00
13,500.00	90.00	180.00	12,850.00	-886.71	196.53	890.43	0.00	0.00	0.00
13,600.00	90.00	180.00	12,850.00	-986.71	196.53	990.41	0.00	0.00	0.00
13,700.00	90.00	180.00	12,850.00	-1,086.71	196.53	1,090.39	0.00	0.00	0.00
13,800.00	90.00	180.00	12,850.00	-1,186.71	196.52	1,190.37	0.00	0.00	0.00
13,900.00	90.00	180.00	12,850.00	-1,286.71	196.52	1,290.35	0.00	0.00	0.00
14,000.00	90.00	180.00	12,850.00	-1,386.71	196.51	1,390.33	0.00	0.00	0.00

Database:	RyanUSA_Compass	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Company:	Devon Energy Corporation	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Project:	Lea Co., NM	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,100.00	90.00	180.00	12,850.00	-1,486.71	196.51	1,490.31	0.00	0.00	0.00
14,200.00	90.00	180.00	12,850.00	-1,586.71	196.51	1,590.29	0.00	0.00	0.00
14,300.00	90.00	180.00	12,850.00	-1,686.71	196.50	1,690.27	0.00	0.00	0.00
14,400.00	90.00	180.00	12,850.00	-1,786.71	196.50	1,790.25	0.00	0.00	0.00
14,500.00	90.00	180.00	12,850.00	-1,886.71	196.49	1,890.23	0.00	0.00	0.00
14,600.00	90.00	180.00	12,850.00	-1,986.71	196.49	1,990.21	0.00	0.00	0.00
14,700.00	90.00	180.00	12,850.00	-2,086.71	196.48	2,090.19	0.00	0.00	0.00
14,800.00	90.00	180.00	12,850.00	-2,186.71	196.48	2,190.17	0.00	0.00	0.00
14,900.00	90.00	180.00	12,850.00	-2,286.71	196.48	2,290.15	0.00	0.00	0.00
15,000.00	90.00	180.00	12,850.00	-2,386.71	196.47	2,390.13	0.00	0.00	0.00
15,100.00	90.00	180.00	12,850.00	-2,486.71	196.47	2,490.11	0.00	0.00	0.00
15,200.00	90.00	180.00	12,850.00	-2,586.71	196.46	2,590.10	0.00	0.00	0.00
15,300.00	90.00	180.00	12,850.00	-2,686.71	196.46	2,690.08	0.00	0.00	0.00
15,400.00	90.00	180.00	12,850.00	-2,786.71	196.46	2,790.06	0.00	0.00	0.00
15,500.00	90.00	180.00	12,850.00	-2,886.71	196.45	2,890.04	0.00	0.00	0.00
15,600.00	90.00	180.00	12,850.00	-2,986.71	196.45	2,990.02	0.00	0.00	0.00
15,700.00	90.00	180.00	12,850.00	-3,086.71	196.44	3,090.00	0.00	0.00	0.00
15,800.00	90.00	180.00	12,850.00	-3,186.71	196.44	3,189.98	0.00	0.00	0.00
15,900.00	90.00	180.00	12,850.00	-3,286.71	196.43	3,289.96	0.00	0.00	0.00
16,000.00	90.00	180.00	12,850.00	-3,386.71	196.43	3,389.94	0.00	0.00	0.00
16,100.00	90.00	180.00	12,850.00	-3,486.71	196.43	3,489.92	0.00	0.00	0.00
16,200.00	90.00	180.00	12,850.00	-3,586.71	196.42	3,589.90	0.00	0.00	0.00
16,300.00	90.00	180.00	12,850.00	-3,686.71	196.42	3,689.88	0.00	0.00	0.00
16,400.00	90.00	180.00	12,850.00	-3,786.71	196.41	3,789.86	0.00	0.00	0.00
16,500.00	90.00	180.00	12,850.00	-3,886.71	196.41	3,889.84	0.00	0.00	0.00
16,600.00	90.00	180.00	12,850.00	-3,986.71	196.41	3,989.82	0.00	0.00	0.00
16,700.00	90.00	180.00	12,850.00	-4,086.71	196.40	4,089.80	0.00	0.00	0.00
16,800.00	90.00	180.00	12,850.00	-4,186.71	196.40	4,189.78	0.00	0.00	0.00
16,900.00	90.00	180.00	12,850.00	-4,286.71	196.39	4,289.76	0.00	0.00	0.00
17,000.00	90.00	180.00	12,850.00	-4,386.71	196.39	4,389.74	0.00	0.00	0.00
17,100.00	90.00	180.00	12,850.00	-4,486.71	196.39	4,489.72	0.00	0.00	0.00
17,200.00	90.00	180.00	12,850.00	-4,586.71	196.38	4,589.70	0.00	0.00	0.00
17,300.00	90.00	180.00	12,850.00	-4,686.71	196.38	4,689.68	0.00	0.00	0.00
17,400.00	90.00	180.00	12,850.00	-4,786.71	196.37	4,789.66	0.00	0.00	0.00
17,500.00	90.00	180.00	12,850.00	-4,886.71	196.37	4,889.64	0.00	0.00	0.00
17,600.00	90.00	180.00	12,850.00	-4,986.71	196.36	4,989.62	0.00	0.00	0.00
17,700.00	90.00	180.00	12,850.00	-5,086.71	196.36	5,089.60	0.00	0.00	0.00
17,800.00	90.00	180.00	12,850.00	-5,186.71	196.36	5,189.58	0.00	0.00	0.00
17,900.00	90.00	180.00	12,850.00	-5,286.71	196.35	5,289.56	0.00	0.00	0.00
18,000.00	90.00	180.00	12,850.00	-5,386.71	196.35	5,389.54	0.00	0.00	0.00
18,100.00	90.00	180.00	12,850.00	-5,486.71	196.34	5,489.52	0.00	0.00	0.00
18,200.00	90.00	180.00	12,850.00	-5,586.71	196.34	5,589.51	0.00	0.00	0.00
18,300.00	90.00	180.00	12,850.00	-5,686.71	196.34	5,689.49	0.00	0.00	0.00
18,400.00	90.00	180.00	12,850.00	-5,786.71	196.33	5,789.47	0.00	0.00	0.00
18,500.00	90.00	180.00	12,850.00	-5,886.71	196.33	5,889.45	0.00	0.00	0.00
18,600.00	90.00	180.00	12,850.00	-5,986.71	196.32	5,989.43	0.00	0.00	0.00
18,700.00	90.00	180.00	12,850.00	-6,086.71	196.32	6,089.41	0.00	0.00	0.00
18,800.00	90.00	180.00	12,850.00	-6,186.71	196.31	6,189.39	0.00	0.00	0.00
18,900.00	90.00	180.00	12,850.00	-6,286.71	196.31	6,289.37	0.00	0.00	0.00
19,000.00	90.00	180.00	12,850.00	-6,386.71	196.31	6,389.35	0.00	0.00	0.00
19,100.00	90.00	180.00	12,850.00	-6,486.71	196.30	6,489.33	0.00	0.00	0.00
19,200.00	90.00	180.00	12,850.00	-6,586.71	196.30	6,589.31	0.00	0.00	0.00

Database:	RyanUSA_Compass	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Company:	Devon Energy Corporation	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Project:	Lea Co., NM	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
19,300.00	90.00	180.00	12,850.00	-6,686.71	196.29	6,689.29	0.00	0.00	0.00
19,400.00	90.00	180.00	12,850.00	-6,786.71	196.29	6,789.27	0.00	0.00	0.00
19,500.00	90.00	180.00	12,850.00	-6,886.71	196.29	6,889.25	0.00	0.00	0.00
19,600.00	90.00	180.00	12,850.00	-6,986.71	196.28	6,989.23	0.00	0.00	0.00
19,700.00	90.00	180.00	12,850.00	-7,086.71	196.28	7,089.21	0.00	0.00	0.00
19,800.00	90.00	180.00	12,850.00	-7,186.71	196.27	7,189.19	0.00	0.00	0.00
19,900.00	90.00	180.00	12,850.00	-7,286.71	196.27	7,289.17	0.00	0.00	0.00
20,000.00	90.00	180.00	12,850.00	-7,386.71	196.26	7,389.15	0.00	0.00	0.00
20,100.00	90.00	180.00	12,850.00	-7,486.71	196.26	7,489.13	0.00	0.00	0.00
20,200.00	90.00	180.00	12,850.00	-7,586.71	196.26	7,589.11	0.00	0.00	0.00
20,300.00	90.00	180.00	12,850.00	-7,686.71	196.25	7,689.09	0.00	0.00	0.00
20,400.00	90.00	180.00	12,850.00	-7,786.71	196.25	7,789.07	0.00	0.00	0.00
20,500.00	90.00	180.00	12,850.00	-7,886.71	196.24	7,889.05	0.00	0.00	0.00
20,600.00	90.00	180.00	12,850.00	-7,986.71	196.24	7,989.03	0.00	0.00	0.00
20,700.00	90.00	180.00	12,850.00	-8,086.71	196.24	8,089.01	0.00	0.00	0.00
20,800.00	90.00	180.00	12,850.00	-8,186.71	196.23	8,188.99	0.00	0.00	0.00
20,900.00	90.00	180.00	12,850.00	-8,286.71	196.23	8,288.97	0.00	0.00	0.00
21,000.00	90.00	180.00	12,850.00	-8,386.71	196.22	8,388.95	0.00	0.00	0.00
21,100.00	90.00	180.00	12,850.00	-8,486.71	196.22	8,488.94	0.00	0.00	0.00
21,200.00	90.00	180.00	12,850.00	-8,586.71	196.22	8,588.92	0.00	0.00	0.00
21,300.00	90.00	180.00	12,850.00	-8,686.71	196.21	8,688.90	0.00	0.00	0.00
21,400.00	90.00	180.00	12,850.00	-8,786.71	196.21	8,788.88	0.00	0.00	0.00
21,500.00	90.00	180.00	12,850.00	-8,886.71	196.20	8,888.86	0.00	0.00	0.00
21,600.00	90.00	180.00	12,850.00	-8,986.71	196.20	8,988.84	0.00	0.00	0.00
21,700.00	90.00	180.00	12,850.00	-9,086.71	196.19	9,088.82	0.00	0.00	0.00
21,800.00	90.00	180.00	12,850.00	-9,186.71	196.19	9,188.80	0.00	0.00	0.00
21,900.00	90.00	180.00	12,850.00	-9,286.71	196.19	9,288.78	0.00	0.00	0.00
22,000.00	90.00	180.00	12,850.00	-9,386.71	196.18	9,388.76	0.00	0.00	0.00
22,100.00	90.00	180.00	12,850.00	-9,486.71	196.18	9,488.74	0.00	0.00	0.00
22,200.00	90.00	180.00	12,850.00	-9,586.71	196.17	9,588.72	0.00	0.00	0.00
22,300.00	90.00	180.00	12,850.00	-9,686.71	196.17	9,688.70	0.00	0.00	0.00
22,400.00	90.00	180.00	12,850.00	-9,786.71	196.17	9,788.68	0.00	0.00	0.00
22,500.00	90.00	180.00	12,850.00	-9,886.71	196.16	9,888.66	0.00	0.00	0.00
22,523.75	90.00	180.00	12,850.00	-9,910.46	196.16	9,912.40	0.00	0.00	0.00
20-32 2H_BHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
20-32 2H_KOP - plan hits target center - Point	0.00	0.00	12,277.04	0.00	196.57	375,077.940	799,922.721	32° 1' 42.32639 N	103° 29' 56.07899 W
20-32 2H_EOC - plan hits target center - Point	0.00	0.00	12,850.00	-572.96	196.55	374,504.984	799,922.697	32° 1' 36.65680 N	103° 29' 56.13067 W
20-32 2H_BHL - plan hits target center - Point	0.00	0.01	12,850.00	-9,910.46	196.16	365,167.500	799,922.310	32° 0' 4.25925 N	103° 29' 56.97233 W

Database:	RyanUSA_Compass	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Company:	Devon Energy Corporation	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Project:	Lea Co., NM	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site:	Green Wave	**North Reference:**	Grid
Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PN1		

devon

Devon Energy Corporation

Lea Co., NM
Green Wave
20-32 Fed State Com #2H

OH
PN1

Anticollision Report

19 September, 2017

NABORS

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at:**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Reference PN1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 9/19/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	22,523.75	PN1 (OH)	MWD+HRGM	OWSG MWD + HRGM

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Green Wave						
20-17 Fed #1H - OH - PN1	5,306.37	5,307.68	433.54	396.05	11.564	CC
20-17 Fed #1H - OH - PN1	12,286.24	12,279.15	460.27	373.13	5.282	ES
20-17 Fed #1H - OH - PN1	12,300.00	12,286.55	460.53	373.32	5.281	SF
20-17 Fed #2H - OH - PN1	9,300.62	9,291.08	1,054.39	988.78	16.070	CC, ES
20-17 Fed #2H - OH - PN1	9,500.00	9,400.00	1,060.50	993.92	15.928	SF

Offset Design Green Wave - 20-17 Fed #1H - OH - PN1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HRGM — Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	-0.76	433.50	-5.74	433.54				
100.00	100.00	101.00	101.00	0.12	0.13	-0.76	433.50	-5.74	433.54	433.29	0.25	1,752.765	
200.00	200.00	201.00	201.00	0.48	0.48	-0.76	433.50	-5.74	433.54	432.57	0.96	449.594	
300.00	300.00	301.00	301.00	0.84	0.84	-0.76	433.50	-5.74	433.54	431.86	1.68	257.870	
400.00	400.00	401.00	401.00	1.20	1.20	-0.76	433.50	-5.74	433.54	431.14	2.40	180.779	
500.00	500.00	501.00	501.00	1.56	1.56	-0.76	433.50	-5.74	433.54	430.42	3.12	139.173	
600.00	600.00	601.00	601.00	1.91	1.92	-0.76	433.50	-5.74	433.54	429.71	3.83	113.135	
700.00	700.00	701.00	701.00	2.27	2.28	-0.76	433.50	-5.74	433.54	428.99	4.55	95.304	
800.00	800.00	801.00	801.00	2.63	2.63	-0.76	433.50	-5.74	433.54	428.27	5.27	82.329	
900.00	900.00	901.00	901.00	2.99	2.99	-0.76	433.50	-5.74	433.54	427.56	5.98	72.463	
1,000.00	1,000.00	1,001.00	1,001.00	3.35	3.35	-0.76	433.50	-5.74	433.54	426.84	6.70	64.709	
1,100.00	1,100.00	1,101.00	1,101.00	3.71	3.71	-0.76	433.50	-5.74	433.54	426.12	7.42	58.454	
1,200.00	1,200.00	1,201.00	1,201.00	4.07	4.07	-0.76	433.50	-5.74	433.54	425.41	8.13	53.301	
1,300.00	1,300.00	1,301.00	1,301.00	4.42	4.43	-0.76	433.50	-5.74	433.54	424.69	8.85	48.984	
1,400.00	1,400.00	1,401.00	1,401.00	4.78	4.79	-0.76	433.50	-5.74	433.54	423.97	9.57	45.313	
1,500.00	1,500.00	1,501.00	1,501.00	5.14	5.14	-0.76	433.50	-5.74	433.54	423.25	10.28	42.154	
1,600.00	1,600.00	1,601.00	1,601.00	5.50	5.50	-0.76	433.50	-5.74	433.54	422.54	11.00	39.407	
1,700.00	1,700.00	1,701.00	1,701.00	5.86	5.86	-0.76	433.50	-5.74	433.54	421.82	11.72	36.996	
1,800.00	1,800.00	1,801.00	1,801.00	6.22	6.22	-0.76	433.50	-5.74	433.54	421.10	12.44	34.863	
1,900.00	1,900.00	1,901.00	1,901.00	6.57	6.58	-0.76	433.50	-5.74	433.54	420.39	13.15	32.963	
2,000.00	2,000.00	2,001.00	2,001.00	6.93	6.94	-0.76	433.50	-5.74	433.54	419.67	13.87	31.259	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #1H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,100.00	2,100.00	2,101.00	2,101.00	7.29	7.29	-0.76	433.50	-5.74	433.54	418.95	14.59	29.723	
2,200.00	2,200.00	2,201.00	2,201.00	7.65	7.65	-0.76	433.50	-5.74	433.54	418.24	15.30	28.330	
2,300.00	2,300.00	2,301.00	2,301.00	8.01	8.01	-0.76	433.50	-5.74	433.54	417.52	16.02	27.062	
2,400.00	2,400.00	2,401.00	2,401.00	8.37	8.37	-0.76	433.50	-5.74	433.54	416.80	16.74	25.903	
2,500.00	2,500.00	2,501.00	2,501.00	8.73	8.73	-0.76	433.50	-5.74	433.54	416.08	17.45	24.839	
2,600.00	2,600.00	2,601.00	2,601.00	9.08	9.09	-0.76	433.50	-5.74	433.54	415.37	18.17	23.859	
2,700.00	2,700.00	2,701.00	2,701.00	9.44	9.45	-0.76	433.50	-5.74	433.54	414.65	18.89	22.953	
2,800.00	2,800.00	2,801.00	2,801.00	9.80	9.80	-0.76	433.50	-5.74	433.54	413.93	19.60	22.114	
2,900.00	2,900.00	2,901.00	2,901.00	10.16	10.16	-0.76	433.50	-5.74	433.54	413.22	20.32	21.334	
3,000.00	3,000.00	3,001.00	3,001.00	10.52	10.52	-0.76	433.50	-5.74	433.54	412.50	21.04	20.607	
3,100.00	3,100.00	3,101.00	3,101.00	10.88	10.88	-0.76	433.50	-5.74	433.54	411.78	21.76	19.928	
3,200.00	3,200.00	3,201.00	3,201.00	11.23	11.24	-0.76	433.50	-5.74	433.54	411.07	22.47	19.292	
3,300.00	3,300.00	3,301.00	3,301.00	11.59	11.60	-0.76	433.50	-5.74	433.54	410.35	23.19	18.695	
3,400.00	3,400.00	3,401.00	3,401.00	11.95	11.96	-0.76	433.50	-5.74	433.54	409.63	23.91	18.135	
3,500.00	3,500.00	3,501.00	3,501.00	12.31	12.31	-0.76	433.50	-5.74	433.54	408.92	24.62	17.607	
3,600.00	3,600.00	3,601.00	3,601.00	12.67	12.67	-0.76	433.50	-5.74	433.54	408.20	25.34	17.109	
3,700.00	3,700.00	3,701.00	3,701.00	13.03	13.03	-0.76	433.50	-5.74	433.54	407.48	26.06	16.638	
3,800.00	3,800.00	3,801.00	3,801.00	13.39	13.39	-0.76	433.50	-5.74	433.54	406.76	26.77	16.192	
3,900.00	3,900.00	3,901.00	3,901.00	13.74	13.75	-0.76	433.50	-5.74	433.54	406.05	27.49	15.770	
4,000.00	4,000.00	4,001.00	4,001.00	14.10	14.11	-0.76	433.50	-5.74	433.54	405.33	28.21	15.369	
4,100.00	4,100.00	4,101.00	4,101.00	14.46	14.46	-0.76	433.50	-5.74	433.54	404.61	28.93	14.988	
4,200.00	4,200.00	4,201.00	4,201.00	14.82	14.82	-0.76	433.50	-5.74	433.54	403.90	29.64	14.626	
4,300.00	4,300.00	4,301.00	4,301.00	15.18	15.18	-0.76	433.50	-5.74	433.54	403.18	30.36	14.280	
4,400.00	4,400.00	4,401.00	4,401.00	15.54	15.54	-0.76	433.50	-5.74	433.54	402.46	31.08	13.951	
4,500.00	4,500.00	4,501.00	4,501.00	15.89	15.90	-0.76	433.50	-5.74	433.54	401.75	31.79	13.636	
4,600.00	4,600.00	4,601.00	4,601.00	16.25	16.26	-0.76	433.50	-5.74	433.54	401.03	32.51	13.336	
4,700.00	4,700.00	4,701.00	4,701.00	16.61	16.62	-0.76	433.50	-5.74	433.54	400.31	33.23	13.048	
4,800.00	4,800.00	4,801.00	4,801.00	16.97	16.97	-0.76	433.50	-5.74	433.54	399.60	33.94	12.772	
4,900.00	4,900.00	4,901.00	4,901.00	17.33	17.33	-0.76	433.50	-5.74	433.54	398.88	34.66	12.508	
5,000.00	5,000.00	5,001.00	5,001.00	17.69	17.69	-0.76	433.50	-5.74	433.54	398.16	35.38	12.255	
5,100.00	5,100.00	5,101.10	5,101.10	18.04	18.04	-90.76	433.50	-4.85	433.54	397.46	36.08	12.017	
5,200.00	5,199.96	5,201.20	5,201.16	18.38	18.38	-90.75	433.50	-2.21	433.54	396.78	36.76	11.794	
5,300.00	5,299.86	5,301.30	5,301.16	18.72	18.72	-90.75	433.50	2.18	433.54	396.09	37.45	11.578	
5,306.37	5,306.22	5,307.68	5,307.53	18.74	18.75	-90.75	433.50	2.52	433.54	396.05	37.49	11.564	CC
5,400.00	5,399.68	5,401.29	5,401.02	19.06	19.07	-90.87	433.50	7.41	433.55	395.42	38.13	11.370	
5,500.00	5,499.37	5,501.26	5,500.85	19.41	19.41	-91.21	433.50	12.65	433.60	394.78	38.82	11.169	
5,600.00	5,598.90	5,601.16	5,600.61	19.76	19.76	-91.79	433.50	17.87	433.71	394.20	39.51	10.976	
5,700.00	5,698.36	5,701.03	5,700.34	20.10	20.10	-92.48	433.50	23.10	433.91	393.70	40.21	10.792	
5,800.00	5,797.81	5,800.89	5,800.06	20.45	20.45	-93.16	433.50	28.33	434.16	393.26	40.90	10.615	
5,900.00	5,897.26	5,900.75	5,899.79	20.80	20.80	-93.85	433.50	33.55	434.49	392.89	41.60	10.445	
6,000.00	5,996.71	6,000.06	5,999.00	21.16	21.14	-94.63	433.50	38.04	434.93	392.63	42.30	10.283	
6,100.00	6,096.17	6,099.10	6,097.99	21.51	21.48	-95.62	433.50	40.82	435.61	392.62	42.99	10.133	
6,200.00	6,195.62	6,197.84	6,196.73	21.86	21.83	-96.83	433.50	41.88	436.64	392.94	43.69	9.993	
6,300.00	6,295.07	6,302.82	6,296.07	22.22	22.21	-98.18	433.50	41.89	438.01	393.59	44.42	9.860	
6,400.00	6,394.52	6,403.37	6,395.52	22.58	22.57	-99.52	433.50	41.89	439.62	394.49	45.14	9.740	
6,500.00	6,493.97	6,503.92	6,494.97	22.93	22.93	-100.85	433.50	41.89	441.48	395.63	45.85	9.629	
6,600.00	6,593.43	6,604.46	6,594.43	23.29	23.29	-102.17	433.50	41.89	443.58	397.01	46.57	9.526	
6,700.00	6,692.88	6,705.01	6,693.88	23.65	23.65	-103.48	433.50	41.89	445.91	398.63	47.28	9.431	
6,800.00	6,792.33	6,805.56	6,793.33	24.01	24.01	-104.77	433.50	41.89	448.48	400.48	48.00	9.343	
6,880.00	6,871.89	6,874.00	6,872.89	24.30	24.25	-105.79	433.50	41.89	450.69	402.16	48.53	9.287	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #1H - OH - PN1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HRGM — Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,900.00	6,891.79	6,906.10	6,892.79	24.37	24.37	-106.05	433.50	41.89	451.26	402.54	48.72	9.263	
7,000.00	6,991.36	7,006.53	6,992.36	24.73	24.72	-107.19	433.50	41.89	453.91	404.48	49.43	9.182	
7,100.00	7,091.07	7,106.82	7,092.07	25.09	25.08	-108.11	433.50	41.89	456.19	406.05	50.15	9.097	
7,200.00	7,190.91	7,206.98	7,191.91	25.44	25.44	-108.81	433.50	41.89	458.02	407.16	50.86	9.006	
7,300.00	7,290.83	7,307.06	7,291.83	25.80	25.80	-109.30	433.50	41.89	459.33	407.76	51.57	8.907	
7,400.00	7,390.80	7,407.09	7,391.80	26.15	26.16	-109.57	433.50	41.89	460.08	407.81	52.28	8.801	
7,480.00	7,470.80	7,472.91	7,471.80	26.43	26.39	-19.64	433.50	41.89	460.27	407.48	52.79	8.718	
7,500.00	7,490.80	7,507.09	7,491.80	26.50	26.52	-19.64	433.50	41.89	460.27	407.28	52.99	8.687	
7,600.00	7,590.80	7,607.09	7,591.80	26.86	26.87	-19.64	433.50	41.89	460.27	406.57	53.70	8.571	
7,700.00	7,690.80	7,707.09	7,691.80	27.21	27.23	-19.64	433.50	41.89	460.27	405.86	54.41	8.459	
7,800.00	7,790.80	7,807.09	7,791.80	27.57	27.59	-19.64	433.50	41.89	460.27	405.14	55.13	8.349	
7,900.00	7,890.80	7,907.09	7,891.80	27.92	27.95	-19.64	433.50	41.89	460.27	404.43	55.84	8.243	
8,000.00	7,990.80	8,007.09	7,991.80	28.28	28.31	-19.64	433.50	41.89	460.27	403.72	56.55	8.139	
8,100.00	8,090.80	8,107.09	8,091.80	28.63	28.66	-19.64	433.50	41.89	460.27	403.00	57.27	8.037	
8,200.00	8,190.80	8,207.09	8,191.80	28.99	29.02	-19.64	433.50	41.89	460.27	402.29	57.98	7.938	
8,300.00	8,290.80	8,307.09	8,291.80	29.34	29.38	-19.64	433.50	41.89	460.27	401.58	58.69	7.842	
8,400.00	8,390.80	8,407.09	8,391.80	29.70	29.74	-19.64	433.50	41.89	460.27	400.86	59.41	7.748	
8,500.00	8,490.80	8,507.09	8,491.80	30.05	30.10	-19.64	433.50	41.89	460.27	400.15	60.12	7.656	
8,600.00	8,590.80	8,607.09	8,591.80	30.41	30.45	-19.64	433.50	41.89	460.27	399.44	60.84	7.566	
8,700.00	8,690.80	8,707.09	8,691.80	30.77	30.81	-19.64	433.50	41.89	460.27	398.72	61.55	7.478	
8,800.00	8,790.80	8,807.09	8,791.80	31.12	31.17	-19.64	433.50	41.89	460.27	398.01	62.26	7.392	
8,900.00	8,890.80	8,907.09	8,891.80	31.48	31.53	-19.64	433.50	41.89	460.27	397.29	62.98	7.308	
9,000.00	8,990.80	9,007.09	8,991.80	31.83	31.89	-19.64	433.50	41.89	460.27	396.58	63.69	7.226	
9,100.00	9,090.80	9,107.09	9,091.80	32.19	32.25	-19.64	433.50	41.89	460.27	395.86	64.41	7.146	
9,200.00	9,190.80	9,207.09	9,191.80	32.55	32.60	-19.64	433.50	41.89	460.27	395.15	65.12	7.068	
9,300.00	9,290.80	9,307.09	9,291.80	32.90	32.96	-19.64	433.50	41.89	460.27	394.44	65.84	6.991	
9,400.00	9,390.80	9,407.09	9,391.80	33.26	33.32	-19.64	433.50	41.89	460.27	393.72	66.55	6.916	
9,500.00	9,490.80	9,507.09	9,491.80	33.61	33.68	-19.64	433.50	41.89	460.27	393.01	67.26	6.843	
9,600.00	9,590.80	9,607.09	9,591.80	33.97	34.04	-19.64	433.50	41.89	460.27	392.29	67.98	6.771	
9,700.00	9,690.80	9,707.09	9,691.80	34.33	34.39	-19.64	433.50	41.89	460.27	391.58	68.69	6.700	
9,800.00	9,790.80	9,807.09	9,791.80	34.68	34.75	-19.64	433.50	41.89	460.27	390.86	69.41	6.631	
9,900.00	9,890.80	9,907.09	9,891.80	35.04	35.11	-19.64	433.50	41.89	460.27	390.15	70.12	6.564	
10,000.00	9,990.80	10,007.09	9,991.80	35.40	35.47	-19.64	433.50	41.89	460.27	389.43	70.84	6.498	
10,100.00	10,090.80	10,107.09	10,091.80	35.75	35.83	-19.64	433.50	41.89	460.27	388.72	71.55	6.433	
10,200.00	10,190.80	10,207.09	10,191.80	36.11	36.19	-19.64	433.50	41.89	460.27	388.00	72.27	6.369	
10,300.00	10,290.80	10,307.09	10,291.80	36.47	36.54	-19.64	433.50	41.89	460.27	387.29	72.98	6.307	
10,400.00	10,390.80	10,407.09	10,391.80	36.82	36.90	-19.64	433.50	41.89	460.27	386.57	73.70	6.245	
10,500.00	10,490.80	10,507.09	10,491.80	37.18	37.26	-19.64	433.50	41.89	460.27	385.86	74.41	6.185	
10,600.00	10,590.80	10,607.09	10,591.80	37.54	37.62	-19.64	433.50	41.89	460.27	385.14	75.13	6.127	
10,700.00	10,690.80	10,707.09	10,691.80	37.89	37.98	-19.64	433.50	41.89	460.27	384.43	75.84	6.069	
10,800.00	10,790.80	10,807.09	10,791.80	38.25	38.33	-19.64	433.50	41.89	460.27	383.71	76.56	6.012	
10,900.00	10,890.80	10,907.09	10,891.80	38.61	38.69	-19.64	433.50	41.89	460.27	383.00	77.27	5.956	
11,000.00	10,990.80	11,007.09	10,991.80	38.96	39.05	-19.64	433.50	41.89	460.27	382.28	77.99	5.902	
11,100.00	11,090.80	11,107.09	11,091.80	39.32	39.41	-19.64	433.50	41.89	460.27	381.57	78.70	5.848	
11,200.00	11,190.80	11,207.09	11,191.80	39.68	39.77	-19.64	433.50	41.89	460.27	380.85	79.42	5.796	
11,300.00	11,290.80	11,307.09	11,291.80	40.03	40.13	-19.64	433.50	41.89	460.27	380.14	80.13	5.744	
11,400.00	11,390.80	11,407.09	11,391.80	40.39	40.48	-19.64	433.50	41.89	460.27	379.42	80.85	5.693	
11,500.00	11,490.80	11,507.09	11,491.80	40.75	40.84	-19.64	433.50	41.89	460.27	378.71	81.56	5.643	
11,600.00	11,590.80	11,607.09	11,591.80	41.10	41.20	-19.64	433.50	41.89	460.27	377.99	82.28	5.594	
11,700.00	11,690.80	11,707.09	11,691.80	41.46	41.56	-19.64	433.50	41.89	460.27	377.28	82.99	5.546	
11,800.00	11,790.80	11,807.09	11,791.80	41.82	41.92	-19.64	433.50	41.89	460.27	376.56	83.71	5.498	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #1H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,900.00	11,890.80	11,907.09	11,891.80	42.17	42.28	-19.64	433.50	41.89	460.27	375.85	84.43	5.452	
12,000.00	11,990.80	12,007.09	11,991.80	42.53	42.63	-19.64	433.50	41.89	460.27	375.13	85.14	5.406	
12,100.00	12,090.80	12,107.09	12,091.80	42.89	42.99	-19.64	433.50	41.89	460.27	374.41	85.86	5.361	
12,200.00	12,190.80	12,207.09	12,191.80	43.25	43.35	-19.64	433.50	41.89	460.27	373.70	86.57	5.317	
12,286.24	12,277.04	12,279.15	12,278.04	43.55	43.61	-19.64	433.50	41.89	460.27	373.13	87.14	5.282 ES	
12,300.00	12,290.79	12,286.55	12,285.44	43.60	43.64	160.36	433.56	41.89	460.53	373.32	87.20	5.281 SF	
12,350.00	12,340.66	12,314.76	12,313.63	43.76	43.74	160.31	434.67	41.89	465.56	378.19	87.37	5.329	
12,400.00	12,390.05	12,350.00	12,348.70	43.92	43.86	160.30	438.00	41.89	477.02	389.49	87.54	5.449	
12,450.00	12,438.58	12,367.85	12,366.37	44.08	43.92	159.97	440.51	41.89	494.32	406.95	87.37	5.658	
12,500.00	12,485.87	12,400.00	12,397.97	44.23	44.04	159.78	446.41	41.89	517.54	430.12	87.42	5.920	
12,550.00	12,531.58	12,412.94	12,410.59	44.38	44.08	158.94	449.28	41.89	545.72	458.68	87.04	6.270	
12,600.00	12,575.35	12,431.66	12,428.72	44.51	44.15	157.97	453.94	41.89	578.68	491.86	86.82	6.665	
12,650.00	12,616.85	12,450.00	12,446.33	44.64	44.21	156.62	459.08	41.89	615.69	529.03	86.65	7.105	
12,700.00	12,655.76	12,460.95	12,456.76	44.76	44.24	154.35	462.42	41.89	656.10	569.73	86.37	7.596	
12,750.00	12,691.79	12,471.61	12,466.85	44.87	44.28	151.11	465.85	41.89	699.34	613.17	86.18	8.115	
12,800.00	12,724.67	12,479.78	12,474.53	44.99	44.30	146.16	468.61	41.89	744.81	658.78	86.03	8.658	
12,850.00	12,754.13	12,485.61	12,480.00	45.12	44.32	138.21	470.65	41.89	791.95	706.03	85.92	9.217	
12,900.00	12,779.97	12,500.00	12,493.39	45.24	44.37	127.46	475.92	41.89	840.42	754.29	86.13	9.758	
12,950.00	12,801.98	12,500.00	12,493.39	45.37	44.37	106.10	475.92	41.89	889.37	803.30	86.06	10.334	
13,000.00	12,819.99	12,500.00	12,493.39	45.49	44.37	77.63	475.92	41.89	938.63	852.54	86.08	10.904	
13,050.00	12,833.88	12,500.00	12,493.39	45.62	44.37	52.99	475.92	41.89	987.81	901.63	86.18	11.462	
13,100.00	12,843.52	12,500.00	12,493.39	45.74	44.37	37.34	475.92	41.89	1,036.58	950.24	86.34	12.006	
13,150.00	12,848.85	12,481.79	12,476.42	45.87	44.31	26.59	469.31	41.89	1,084.21	998.02	86.19	12.579	
13,186.24	12,850.00	12,477.86	12,472.73	45.95	44.30	22.24	467.96	41.89	1,118.26	1,031.95	86.31	12.956	
13,200.00	12,850.00	12,476.27	12,471.24	45.99	44.29	22.16	467.41	41.89	1,131.07	1,044.72	86.36	13.098	
13,300.00	12,850.00	12,465.41	12,460.98	46.25	44.26	21.64	463.83	41.89	1,224.66	1,137.97	86.68	14.128	
13,400.00	12,850.00	12,450.00	12,446.33	46.56	44.21	20.92	459.08	41.89	1,318.97	1,232.09	86.88	15.182	
13,500.00	12,850.00	12,450.00	12,446.33	46.91	44.21	20.92	459.08	41.89	1,413.80	1,326.54	87.26	16.203	
13,600.00	12,850.00	12,450.00	12,446.33	47.30	44.21	20.92	459.08	41.89	1,509.30	1,421.73	87.57	17.235	
13,700.00	12,850.00	12,431.49	12,428.55	47.73	44.14	20.11	453.90	41.89	1,604.95	1,517.32	87.63	18.316	
13,800.00	12,850.00	12,424.81	12,422.10	48.20	44.12	19.83	452.17	41.89	1,701.12	1,613.32	87.80	19.375	
13,900.00	12,850.00	12,418.67	12,416.15	48.70	44.10	19.58	450.65	41.89	1,797.61	1,709.66	87.96	20.437	
14,000.00	12,850.00	12,400.00	12,397.97	49.25	44.04	18.85	446.41	41.89	1,894.59	1,806.61	87.98	21.535	
14,100.00	12,850.00	12,400.00	12,397.97	49.82	44.04	18.85	446.41	41.89	1,991.51	1,903.35	88.16	22.589	
14,200.00	12,850.00	12,400.00	12,397.97	50.43	44.04	18.85	446.41	41.89	2,088.71	2,000.39	88.33	23.648	
14,300.00	12,850.00	12,400.00	12,397.97	51.08	44.04	18.85	446.41	41.89	2,186.17	2,097.70	88.47	24.710	
14,400.00	12,850.00	12,400.00	12,397.97	51.76	44.04	18.85	446.41	41.89	2,283.85	2,195.25	88.60	25.776	
14,500.00	12,850.00	12,400.00	12,397.97	52.46	44.04	18.85	446.41	41.89	2,381.72	2,293.00	88.73	26.844	
14,600.00	12,850.00	12,400.00	12,397.97	53.20	44.04	18.85	446.41	41.89	2,479.76	2,390.92	88.84	27.914	
14,700.00	12,850.00	12,400.00	12,397.97	53.96	44.04	18.85	446.41	41.89	2,577.95	2,489.01	88.94	28.985	
14,800.00	12,850.00	12,380.05	12,378.40	54.75	43.97	18.13	442.54	41.89	2,675.86	2,586.94	88.92	30.094	
14,900.00	12,850.00	12,377.02	12,375.42	55.57	43.96	18.02	442.01	41.89	2,774.17	2,685.17	88.99	31.173	
15,000.00	12,850.00	12,374.16	12,372.60	56.41	43.95	17.92	441.53	41.89	2,872.58	2,783.51	89.07	32.251	
15,100.00	12,850.00	12,371.46	12,369.94	57.27	43.94	17.83	441.08	41.89	2,971.08	2,881.94	89.14	33.330	
15,200.00	12,850.00	12,350.00	12,348.70	58.16	43.86	17.12	438.00	41.89	3,070.03	2,980.92	89.11	34.452	
15,300.00	12,850.00	12,350.00	12,348.70	59.07	43.86	17.12	438.00	41.89	3,168.60	3,079.41	89.19	35.525	
15,400.00	12,850.00	12,350.00	12,348.70	60.00	43.86	17.12	438.00	41.89	3,267.26	3,177.98	89.27	36.598	
15,500.00	12,850.00	12,350.00	12,348.70	60.95	43.86	17.12	438.00	41.89	3,365.99	3,276.64	89.35	37.671	
15,600.00	12,850.00	12,350.00	12,348.70	61.91	43.86	17.12	438.00	41.89	3,464.80	3,375.38	89.43	38.745	
15,700.00	12,850.00	12,350.00	12,348.70	62.90	43.86	17.12	438.00	41.89	3,563.68	3,474.18	89.50	39.818	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #1H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,800.00	12,850.00	12,350.00	12,348.70	63.90	43.86	17.12	438.00	41.89	3,662.61	3,573.04	89.57	40.891	
15,900.00	12,850.00	12,350.00	12,348.70	64.92	43.86	17.12	438.00	41.89	3,761.61	3,671.97	89.64	41.963	
16,000.00	12,850.00	12,350.00	12,348.70	65.95	43.86	17.12	438.00	41.89	3,860.65	3,770.94	89.71	43.036	
16,100.00	12,850.00	12,350.00	12,348.70	67.00	43.86	17.12	438.00	41.89	3,959.74	3,869.97	89.78	44.107	
16,200.00	12,850.00	12,350.00	12,348.70	68.06	43.86	17.12	438.00	41.89	4,058.88	3,969.04	89.84	45.178	
16,300.00	12,850.00	12,350.00	12,348.70	69.14	43.86	17.12	438.00	41.89	4,158.06	4,068.15	89.91	46.248	
16,400.00	12,850.00	12,350.00	12,348.70	70.23	43.86	17.12	438.00	41.89	4,257.27	4,167.30	89.97	47.317	
16,500.00	12,850.00	12,350.00	12,348.70	71.33	43.86	17.12	438.00	41.89	4,356.53	4,266.49	90.04	48.385	
16,600.00	12,850.00	12,350.00	12,348.70	72.44	43.86	17.12	438.00	41.89	4,455.81	4,365.71	90.10	49.452	
16,700.00	12,850.00	12,350.00	12,348.70	73.56	43.86	17.12	438.00	41.89	4,555.13	4,464.96	90.17	50.518	
16,800.00	12,850.00	12,350.00	12,348.70	74.70	43.86	17.12	438.00	41.89	4,654.48	4,564.24	90.23	51.583	
16,900.00	12,850.00	12,350.00	12,348.70	75.84	43.86	17.12	438.00	41.89	4,753.85	4,663.55	90.30	52.646	
17,000.00	12,850.00	12,350.00	12,348.70	77.00	43.86	17.12	438.00	41.89	4,853.25	4,762.89	90.36	53.708	
17,100.00	12,850.00	12,350.00	12,348.70	78.16	43.86	17.12	438.00	41.89	4,952.67	4,862.25	90.43	54.769	
17,200.00	12,850.00	12,350.00	12,348.70	79.33	43.86	17.12	438.00	41.89	5,052.12	4,961.63	90.49	55.829	
17,300.00	12,850.00	12,350.00	12,348.70	80.51	43.86	17.12	438.00	41.89	5,151.59	5,061.03	90.56	56.887	
17,400.00	12,850.00	12,350.00	12,348.70	81.70	43.86	17.12	438.00	41.89	5,251.08	5,160.45	90.62	57.943	
17,500.00	12,850.00	12,350.00	12,348.70	82.90	43.86	17.12	438.00	41.89	5,350.58	5,259.89	90.69	58.998	
17,600.00	12,850.00	12,350.00	12,348.70	84.10	43.86	17.12	438.00	41.89	5,450.11	5,359.35	90.76	60.051	
17,700.00	12,850.00	12,350.00	12,348.70	85.31	43.86	17.12	438.00	41.89	5,549.65	5,458.83	90.82	61.103	
17,800.00	12,850.00	12,350.00	12,348.70	86.53	43.86	17.12	438.00	41.89	5,649.21	5,558.32	90.89	62.153	
17,900.00	12,850.00	12,350.00	12,348.70	87.75	43.86	17.12	438.00	41.89	5,748.78	5,657.82	90.96	63.201	
18,000.00	12,850.00	12,350.00	12,348.70	88.98	43.86	17.12	438.00	41.89	5,848.37	5,757.34	91.03	64.247	
18,100.00	12,850.00	12,350.00	12,348.70	90.22	43.86	17.12	438.00	41.89	5,947.97	5,856.88	91.10	65.292	
18,200.00	12,850.00	12,350.00	12,348.70	91.46	43.86	17.12	438.00	41.89	6,047.59	5,956.42	91.17	66.335	
18,300.00	12,850.00	12,327.16	12,325.99	92.71	43.78	16.42	435.60	41.89	6,146.72	6,055.55	91.17	67.420	
18,400.00	12,850.00	12,326.45	12,325.28	93.96	43.78	16.40	435.54	41.89	6,246.33	6,155.09	91.24	68.460	
18,500.00	12,850.00	12,325.75	12,324.58	95.22	43.78	16.38	435.48	41.89	6,345.95	6,254.64	91.31	69.498	
18,600.00	12,850.00	12,325.07	12,323.91	96.48	43.77	16.36	435.42	41.89	6,445.58	6,354.20	91.38	70.535	
18,700.00	12,850.00	12,324.41	12,323.25	97.75	43.77	16.34	435.37	41.89	6,545.22	6,453.77	91.45	71.569	
18,800.00	12,850.00	12,323.77	12,322.61	99.02	43.77	16.32	435.32	41.89	6,644.87	6,553.35	91.53	72.601	
18,900.00	12,850.00	12,323.15	12,321.99	100.30	43.77	16.30	435.27	41.89	6,744.53	6,652.93	91.60	73.631	
19,000.00	12,850.00	12,300.00	12,298.88	101.58	43.68	15.65	433.92	41.89	6,844.68	6,753.07	91.61	74.715	
19,100.00	12,850.00	12,300.00	12,298.88	102.86	43.68	15.65	433.92	41.89	6,944.34	6,852.65	91.69	75.740	
19,200.00	12,850.00	12,300.00	12,298.88	104.15	43.68	15.65	433.92	41.89	7,044.00	6,952.24	91.76	76.762	
19,300.00	12,850.00	12,300.00	12,298.88	105.44	43.68	15.65	433.92	41.89	7,143.67	7,051.83	91.84	77.781	
19,400.00	12,850.00	12,300.00	12,298.88	106.74	43.68	15.65	433.92	41.89	7,243.35	7,151.43	91.92	78.799	
19,500.00	12,850.00	12,300.00	12,298.88	108.04	43.68	15.65	433.92	41.89	7,343.05	7,251.04	92.00	79.814	
19,600.00	12,850.00	12,300.00	12,298.88	109.34	43.68	15.65	433.92	41.89	7,442.74	7,350.66	92.08	80.827	
19,700.00	12,850.00	12,300.00	12,298.88	110.65	43.68	15.65	433.92	41.89	7,542.45	7,450.29	92.16	81.838	
19,800.00	12,850.00	12,300.00	12,298.88	111.96	43.68	15.65	433.92	41.89	7,642.17	7,549.92	92.25	82.846	
19,900.00	12,850.00	12,300.00	12,298.88	113.27	43.68	15.65	433.92	41.89	7,741.89	7,649.56	92.33	83.852	
20,000.00	12,850.00	12,300.00	12,298.88	114.58	43.68	15.65	433.92	41.89	7,841.62	7,749.20	92.41	84.856	
20,100.00	12,850.00	12,300.00	12,298.88	115.90	43.68	15.65	433.92	41.89	7,941.35	7,848.86	92.50	85.857	
20,200.00	12,850.00	12,300.00	12,298.88	117.22	43.68	15.65	433.92	41.89	8,041.09	7,948.51	92.58	86.855	
20,300.00	12,850.00	12,300.00	12,298.88	118.55	43.68	15.65	433.92	41.89	8,140.84	8,048.18	92.67	87.852	
20,400.00	12,850.00	12,300.00	12,298.88	119.87	43.68	15.65	433.92	41.89	8,240.60	8,147.84	92.75	88.845	
20,500.00	12,850.00	12,300.00	12,298.88	121.20	43.68	15.65	433.92	41.89	8,340.36	8,247.52	92.84	89.836	
20,600.00	12,850.00	12,300.00	12,298.88	122.53	43.68	15.65	433.92	41.89	8,440.12	8,347.20	92.93	90.825	
20,700.00	12,850.00	12,300.00	12,298.88	123.86	43.68	15.65	433.92	41.89	8,539.90	8,446.88	93.02	91.811	
20,800.00	12,850.00	12,300.00	12,298.88	125.20	43.68	15.65	433.92	41.89	8,639.67	8,546.57	93.11	92.794	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #1H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
20,900.00	12,850.00	12,300.00	12,298.88	126.53	43.68	15.65	433.92	41.89	8,739.45	8,646.26	93.20	93.775	
21,000.00	12,850.00	12,300.00	12,298.88	127.87	43.68	15.65	433.92	41.89	8,839.24	8,745.95	93.29	94.754	
21,100.00	12,850.00	12,300.00	12,298.88	129.22	43.68	15.65	433.92	41.89	8,939.03	8,845.65	93.38	95.729	
21,200.00	12,850.00	12,300.00	12,298.88	130.56	43.68	15.65	433.92	41.89	9,038.83	8,945.36	93.47	96.702	
21,300.00	12,850.00	12,300.00	12,298.88	131.90	43.68	15.65	433.92	41.89	9,138.63	9,045.07	93.56	97.672	
21,400.00	12,850.00	12,300.00	12,298.88	133.25	43.68	15.65	433.92	41.89	9,238.44	9,144.78	93.66	98.640	
21,500.00	12,850.00	12,300.00	12,298.88	134.60	43.68	15.65	433.92	41.89	9,338.24	9,244.49	93.75	99.605	
21,600.00	12,850.00	12,300.00	12,298.88	135.95	43.68	15.65	433.92	41.89	9,438.06	9,344.21	93.85	100.567	
21,700.00	12,850.00	12,300.00	12,298.88	137.30	43.68	15.65	433.92	41.89	9,537.88	9,443.93	93.94	101.526	
21,800.00	12,850.00	12,300.00	12,298.88	138.66	43.68	15.65	433.92	41.89	9,637.70	9,543.65	94.04	102.483	
21,900.00	12,850.00	12,300.00	12,298.88	140.01	43.68	15.65	433.92	41.89	9,737.52	9,643.38	94.14	103.437	
22,000.00	12,850.00	12,300.00	12,298.88	141.37	43.68	15.65	433.92	41.89	9,837.35	9,743.11	94.24	104.388	
22,100.00	12,850.00	12,300.00	12,298.88	142.73	43.68	15.65	433.92	41.89	9,937.18	9,842.84	94.34	105.337	

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #2H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	3.00	-3.00	0.00	0.00	48.47	742.47	838.45	1,119.94				
100.00	100.00	103.00	97.00	0.12	0.13	48.47	742.47	838.45	1,119.94	1,119.69	0.25	4,400.287	
200.00	200.00	203.00	197.00	0.48	0.49	48.47	742.47	838.45	1,119.94	1,118.97	0.97	1,152.844	
300.00	300.00	303.00	297.00	0.84	0.85	48.47	742.47	838.45	1,119.94	1,118.25	1.69	663.314	
400.00	400.00	403.00	397.00	1.20	1.21	48.47	742.47	838.45	1,119.94	1,117.53	2.41	465.605	
500.00	500.00	503.00	497.00	1.56	1.57	48.47	742.47	838.45	1,119.94	1,116.82	3.12	358.692	
600.00	600.00	603.00	597.00	1.91	1.92	48.47	742.47	838.45	1,119.94	1,116.10	3.84	291.709	
700.00	700.00	703.00	697.00	2.27	2.28	48.47	742.47	838.45	1,119.94	1,115.38	4.56	245.807	
800.00	800.00	803.00	797.00	2.63	2.64	48.47	742.47	838.45	1,119.94	1,114.67	5.27	212.387	
900.00	900.00	903.00	897.00	2.99	3.00	48.47	742.47	838.45	1,119.94	1,113.95	5.99	186.966	
1,000.00	1,000.00	1,003.00	997.00	3.35	3.36	48.47	742.47	838.45	1,119.94	1,113.23	6.71	166.981	
1,100.00	1,100.00	1,103.00	1,097.00	3.71	3.72	48.47	742.47	838.45	1,119.94	1,112.52	7.42	150.855	
1,200.00	1,200.00	1,203.00	1,197.00	4.07	4.08	48.47	742.47	838.45	1,119.94	1,111.80	8.14	137.570	
1,300.00	1,300.00	1,303.00	1,297.00	4.42	4.43	48.47	742.47	838.45	1,119.94	1,111.08	8.86	126.435	
1,400.00	1,400.00	1,403.00	1,397.00	4.78	4.79	48.47	742.47	838.45	1,119.94	1,110.37	9.57	116.968	
1,500.00	1,500.00	1,503.00	1,497.00	5.14	5.15	48.47	742.47	838.45	1,119.94	1,109.65	10.29	108.820	
1,600.00	1,600.00	1,603.00	1,597.00	5.50	5.51	48.47	742.47	838.45	1,119.94	1,108.93	11.01	101.733	
1,700.00	1,700.00	1,703.00	1,697.00	5.86	5.87	48.47	742.47	838.45	1,119.94	1,108.21	11.73	95.512	
1,800.00	1,800.00	1,803.00	1,797.00	6.22	6.23	48.47	742.47	838.45	1,119.94	1,107.50	12.44	90.009	
1,900.00	1,900.00	1,903.00	1,897.00	6.57	6.59	48.47	742.47	838.45	1,119.94	1,106.78	13.16	85.105	
2,000.00	2,000.00	2,003.00	1,997.00	6.93	6.94	48.47	742.47	838.45	1,119.94	1,106.06	13.88	80.708	
2,100.00	2,100.00	2,103.00	2,097.00	7.29	7.30	48.47	742.47	838.45	1,119.94	1,105.35	14.59	76.743	
2,200.00	2,200.00	2,203.00	2,197.00	7.65	7.66	48.47	742.47	838.45	1,119.94	1,104.63	15.31	73.149	
2,300.00	2,300.00	2,303.00	2,297.00	8.01	8.02	48.47	742.47	838.45	1,119.94	1,103.91	16.03	69.877	
2,400.00	2,400.00	2,403.00	2,397.00	8.37	8.38	48.47	742.47	838.45	1,119.94	1,103.20	16.74	66.885	
2,500.00	2,500.00	2,503.00	2,497.00	8.73	8.74	48.47	742.47	838.45	1,119.94	1,102.48	17.46	64.139	
2,600.00	2,600.00	2,603.00	2,597.00	9.08	9.09	48.47	742.47	838.45	1,119.94	1,101.76	18.18	61.609	
2,700.00	2,700.00	2,703.00	2,697.00	9.44	9.45	48.47	742.47	838.45	1,119.94	1,101.04	18.90	59.272	
2,800.00	2,800.00	2,803.00	2,797.00	9.80	9.81	48.47	742.47	838.45	1,119.94	1,100.33	19.61	57.105	
2,900.00	2,900.00	2,903.00	2,897.00	10.16	10.17	48.47	742.47	838.45	1,119.94	1,099.61	20.33	55.091	
3,000.00	3,000.00	3,003.00	2,997.00	10.52	10.53	48.47	742.47	838.45	1,119.94	1,098.89	21.05	53.214	
3,100.00	3,100.00	3,103.00	3,097.00	10.88	10.89	48.47	742.47	838.45	1,119.94	1,098.18	21.76	51.461	
3,200.00	3,200.00	3,203.00	3,197.00	11.23	11.25	48.47	742.47	838.45	1,119.94	1,097.46	22.48	49.820	
3,300.00	3,300.00	3,303.00	3,297.00	11.59	11.60	48.47	742.47	838.45	1,119.94	1,096.74	23.20	48.280	
3,400.00	3,400.00	3,403.00	3,397.00	11.95	11.96	48.47	742.47	838.45	1,119.94	1,096.03	23.91	46.833	
3,500.00	3,500.00	3,503.00	3,497.00	12.31	12.32	48.47	742.47	838.45	1,119.94	1,095.31	24.63	45.469	
3,600.00	3,600.00	3,603.00	3,597.00	12.67	12.68	48.47	742.47	838.45	1,119.94	1,094.59	25.35	44.183	
3,700.00	3,700.00	3,703.00	3,697.00	13.03	13.04	48.47	742.47	838.45	1,119.94	1,093.88	26.06	42.968	
3,800.00	3,800.00	3,803.00	3,797.00	13.39	13.40	48.47	742.47	838.45	1,119.94	1,093.16	26.78	41.818	
3,900.00	3,900.00	3,903.00	3,897.00	13.74	13.75	48.47	742.47	838.45	1,119.94	1,092.44	27.50	40.728	
4,000.00	4,000.00	4,003.00	3,997.00	14.10	14.11	48.47	742.47	838.45	1,119.94	1,091.72	28.22	39.693	
4,100.00	4,100.00	4,103.00	4,097.00	14.46	14.47	48.47	742.47	838.45	1,119.94	1,091.01	28.93	38.709	
4,200.00	4,200.00	4,203.00	4,197.00	14.82	14.83	48.47	742.47	838.45	1,119.94	1,090.29	29.65	37.773	
4,300.00	4,300.00	4,303.00	4,297.00	15.18	15.19	48.47	742.47	838.45	1,119.94	1,089.57	30.37	36.881	
4,400.00	4,400.00	4,403.00	4,397.00	15.54	15.55	48.47	742.47	838.45	1,119.94	1,088.86	31.08	36.031	
4,500.00	4,500.00	4,503.00	4,497.00	15.89	15.91	48.47	742.47	838.45	1,119.94	1,088.14	31.80	35.218	
4,600.00	4,600.00	4,603.00	4,597.00	16.25	16.26	48.47	742.47	838.45	1,119.94	1,087.42	32.52	34.442	
4,700.00	4,700.00	4,703.00	4,697.00	16.61	16.62	48.47	742.47	838.45	1,119.94	1,086.71	33.23	33.699	
4,800.00	4,800.00	4,803.00	4,797.00	16.97	16.98	48.47	742.47	838.45	1,119.94	1,085.99	33.95	32.987	
4,900.00	4,900.00	4,903.00	4,897.00	17.33	17.34	48.47	742.47	838.45	1,119.94	1,085.27	34.67	32.305	
5,000.00	5,000.00	4,997.00	4,997.00	17.69	17.68	48.47	742.47	838.45	1,119.94	1,084.58	35.36	31.670	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #2H - OH - PN1 — Offset Site Error: 0.00 ft

Survey Program: 0-MWD+HRGM — Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	5,100.00	5,084.62	5,084.62	18.04	17.98	-41.53	742.47	839.08	1,119.82	1,083.81	36.02	31.091	
5,200.00	5,199.96	5,171.86	5,171.83	18.38	18.28	-41.54	742.47	841.03	1,119.54	1,082.89	36.65	30.546	
5,300.00	5,299.86	5,259.10	5,259.01	18.72	18.58	-41.57	742.47	844.31	1,119.09	1,081.81	37.28	30.018	
5,400.00	5,399.68	5,353.12	5,352.91	19.06	18.90	-41.60	742.47	849.08	1,118.31	1,080.37	37.94	29.476	
5,500.00	5,499.37	5,453.08	5,452.74	19.41	19.25	-41.71	742.47	854.32	1,116.35	1,077.73	38.63	28.902	
5,600.00	5,598.90	5,552.99	5,552.50	19.76	19.59	-41.88	742.47	859.54	1,113.10	1,073.79	39.31	28.313	
5,700.00	5,698.36	5,652.85	5,652.23	20.10	19.94	-42.06	742.47	864.77	1,109.21	1,069.20	40.00	27.728	
5,800.00	5,797.81	5,752.71	5,751.95	20.45	20.28	-42.24	742.47	870.00	1,105.32	1,064.63	40.69	27.161	
5,900.00	5,897.26	5,852.57	5,851.68	20.80	20.63	-42.42	742.47	875.22	1,101.45	1,060.06	41.39	26.613	
6,000.00	5,996.71	5,952.44	5,951.41	21.16	20.97	-42.61	742.47	880.45	1,097.59	1,055.51	42.08	26.082	
6,100.00	6,096.17	6,052.30	6,051.13	21.51	21.32	-42.79	742.47	885.68	1,093.74	1,050.96	42.78	25.568	
6,200.00	6,195.62	6,152.16	6,150.86	21.86	21.67	-42.98	742.47	890.90	1,089.91	1,046.43	43.48	25.069	
6,300.00	6,295.07	6,252.03	6,250.58	22.22	22.02	-43.17	742.47	896.13	1,086.08	1,041.91	44.18	24.586	
6,400.00	6,394.52	6,351.89	6,350.31	22.58	22.37	-43.36	742.47	901.36	1,082.27	1,037.39	44.88	24.117	
6,500.00	6,493.97	6,451.75	6,450.04	22.93	22.72	-43.55	742.47	906.58	1,078.47	1,032.89	45.58	23.662	
6,600.00	6,593.43	6,551.62	6,549.76	23.29	23.07	-43.74	742.47	911.81	1,074.68	1,028.39	46.28	23.220	
6,700.00	6,692.88	6,651.48	6,649.49	23.65	23.42	-43.93	742.47	917.03	1,070.90	1,023.91	46.99	22.792	
6,800.00	6,792.33	6,751.34	6,749.22	24.01	23.77	-44.13	742.47	922.26	1,067.13	1,019.44	47.69	22.376	
6,880.00	6,871.89	6,831.23	6,829.00	24.30	24.05	-44.28	742.47	926.44	1,064.13	1,015.87	48.26	22.051	
6,900.00	6,891.79	6,851.21	6,848.94	24.37	24.12	-44.32	742.47	927.49	1,063.40	1,015.01	48.40	21.972	
7,000.00	6,991.36	6,951.12	6,948.72	24.73	24.47	-44.45	742.47	932.72	1,060.54	1,011.43	49.11	21.597	
7,100.00	7,091.07	7,052.78	7,050.24	25.09	24.83	-44.52	742.47	938.02	1,058.91	1,009.09	49.82	21.255	
7,200.00	7,190.91	7,167.92	7,165.29	25.44	25.24	-44.59	742.47	942.64	1,057.66	1,007.07	50.59	20.908	
7,300.00	7,290.83	7,283.01	7,280.35	25.80	25.64	-44.67	742.47	944.94	1,056.23	1,004.88	51.34	20.572	
7,400.00	7,390.80	7,409.54	7,387.80	26.15	26.09	-44.74	742.47	945.22	1,054.79	1,002.65	52.14	20.230	
7,480.00	7,470.80	7,470.45	7,467.80	26.43	26.31	45.24	742.47	945.22	1,054.39	1,001.75	52.64	20.031	
7,500.00	7,490.80	7,509.55	7,487.80	26.50	26.45	45.24	742.47	945.22	1,054.39	1,001.54	52.85	19.951	
7,600.00	7,590.80	7,609.55	7,587.80	26.86	26.80	45.24	742.47	945.22	1,054.39	1,000.83	53.56	19.686	
7,700.00	7,690.80	7,709.55	7,687.80	27.21	27.16	45.24	742.47	945.22	1,054.39	1,000.12	54.27	19.428	
7,800.00	7,790.80	7,809.55	7,787.80	27.57	27.51	45.24	742.47	945.22	1,054.39	999.41	54.98	19.176	
7,900.00	7,890.80	7,909.55	7,887.80	27.92	27.87	45.24	742.47	945.22	1,054.39	998.70	55.70	18.931	
8,000.00	7,990.80	8,009.55	7,987.80	28.28	28.23	45.24	742.47	945.22	1,054.39	997.98	56.41	18.692	
8,100.00	8,090.80	8,109.55	8,087.80	28.63	28.58	45.24	742.47	945.22	1,054.39	997.27	57.12	18.459	
8,200.00	8,190.80	8,209.55	8,187.80	28.99	28.94	45.24	742.47	945.22	1,054.39	996.56	57.83	18.232	
8,300.00	8,290.80	8,309.55	8,287.80	29.34	29.30	45.24	742.47	945.22	1,054.39	995.85	58.55	18.010	
8,400.00	8,390.80	8,409.55	8,387.80	29.70	29.65	45.24	742.47	945.22	1,054.39	995.13	59.26	17.793	
8,500.00	8,490.80	8,509.55	8,487.80	30.05	30.01	45.24	742.47	945.22	1,054.39	994.42	59.97	17.582	
8,600.00	8,590.80	8,609.55	8,587.80	30.41	30.37	45.24	742.47	945.22	1,054.39	993.71	60.68	17.375	
8,700.00	8,690.80	8,709.55	8,687.80	30.77	30.72	45.24	742.47	945.22	1,054.39	992.99	61.40	17.173	
8,800.00	8,790.80	8,809.55	8,787.80	31.12	31.08	45.24	742.47	945.22	1,054.39	992.28	62.11	16.976	
8,900.00	8,890.80	8,909.55	8,887.80	31.48	31.44	45.24	742.47	945.22	1,054.39	991.57	62.82	16.784	
9,000.00	8,990.80	9,009.55	8,987.80	31.83	31.80	45.24	742.47	945.22	1,054.39	990.85	63.54	16.595	
9,100.00	9,090.80	9,109.55	9,087.80	32.19	32.15	45.24	742.47	945.22	1,054.39	990.14	64.25	16.411	
9,200.00	9,190.80	9,209.55	9,187.80	32.55	32.51	45.24	742.47	945.22	1,054.39	989.43	64.96	16.231	
9,300.00	9,290.80	9,290.45	9,287.80	32.90	32.80	45.24	742.47	945.22	1,054.39	988.78	65.61	16.071	
9,300.62	9,291.42	9,291.08	9,288.42	32.90	32.80	45.24	742.47	945.22	1,054.39	988.78	65.61	16.070	CC, ES
9,400.00	9,390.80	9,350.00	9,347.34	33.26	33.01	45.23	742.56	945.22	1,055.23	989.07	66.16	15.949	
9,500.00	9,490.80	9,400.00	9,397.23	33.61	33.19	45.12	745.64	945.22	1,060.50	993.92	66.58	15.928	SF
9,600.00	9,590.80	9,450.00	9,446.66	33.97	33.37	44.83	753.06	945.22	1,071.21	1,004.32	66.89	16.015	
9,700.00	9,690.80	9,500.00	9,495.26	34.33	33.54	44.39	764.75	945.22	1,087.38	1,020.28	67.09	16.207	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #2H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,800.00	9,790.80	9,528.85	9,522.77	34.68	33.63	44.07	773.41	945.22	1,108.55	1,041.61	66.93	16.562	
9,900.00	9,890.80	9,566.88	9,558.32	35.04	33.76	43.57	786.93	945.22	1,135.03	1,068.27	66.75	17.004	
10,000.00	9,990.80	9,600.00	9,588.48	35.40	33.86	43.08	800.59	945.22	1,166.57	1,100.18	66.39	17.571	
10,100.00	10,090.80	9,650.00	9,632.39	35.75	34.01	42.24	824.46	945.22	1,203.17	1,136.93	66.23	18.166	
10,200.00	10,190.80	9,668.63	9,648.20	36.11	34.06	41.90	834.32	945.22	1,244.08	1,178.61	65.47	19.002	
10,300.00	10,290.80	9,700.00	9,674.06	36.47	34.14	41.30	852.07	945.22	1,289.64	1,224.75	64.89	19.874	
10,400.00	10,390.80	9,725.87	9,694.63	36.82	34.21	40.79	867.76	945.22	1,339.39	1,275.20	64.19	20.867	
10,500.00	10,490.80	9,750.00	9,713.16	37.18	34.29	40.29	883.21	945.22	1,393.05	1,329.61	63.45	21.956	
10,600.00	10,590.80	9,775.26	9,731.85	37.54	34.36	39.75	900.21	945.22	1,450.35	1,387.60	62.74	23.115	
10,700.00	10,690.80	9,800.00	9,749.40	37.89	34.44	39.21	917.64	945.22	1,511.00	1,448.93	62.06	24.346	
10,800.00	10,790.80	9,817.71	9,761.50	38.25	34.49	38.82	930.57	945.22	1,574.71	1,513.43	61.29	25.694	
10,900.00	10,890.80	9,850.00	9,782.50	38.61	34.59	38.09	955.09	945.22	1,641.45	1,580.61	60.84	26.980	
11,000.00	10,990.80	9,850.00	9,782.50	38.96	34.59	38.09	955.09	945.22	1,710.38	1,650.54	59.84	28.581	
11,100.00	11,090.80	9,870.51	9,795.11	39.32	34.65	37.63	971.26	945.22	1,781.81	1,722.53	59.29	30.053	
11,200.00	11,190.80	9,900.00	9,812.21	39.68	34.74	36.95	995.29	945.22	1,855.61	1,796.67	58.95	31.479	
11,300.00	11,290.80	9,900.00	9,812.21	40.03	34.74	36.95	995.29	945.22	1,930.91	1,872.75	58.16	33.199	
11,400.00	11,390.80	9,900.00	9,812.21	40.39	34.74	36.95	995.29	945.22	2,008.37	1,950.91	57.45	34.957	
11,500.00	11,490.80	9,925.19	9,825.83	40.75	34.81	36.37	1,016.48	945.22	2,087.07	2,029.86	57.21	36.480	
11,600.00	11,590.80	9,950.00	9,838.31	41.10	34.89	35.80	1,037.92	945.22	2,167.59	2,110.58	57.01	38.021	
11,700.00	11,690.80	9,950.00	9,838.31	41.46	34.89	35.80	1,037.92	945.22	2,249.08	2,192.59	56.49	39.812	
11,800.00	11,790.80	9,950.00	9,838.31	41.82	34.89	35.80	1,037.92	945.22	2,332.01	2,275.97	56.04	41.615	
11,900.00	11,890.80	9,950.00	9,838.31	42.17	34.89	35.80	1,037.92	945.22	2,416.23	2,360.58	55.65	43.422	
12,000.00	11,990.80	9,975.77	9,850.28	42.53	34.97	35.21	1,060.74	945.22	2,500.93	2,445.28	55.64	44.945	
12,100.00	12,090.80	10,000.00	9,860.59	42.89	35.04	34.66	1,082.66	945.22	2,587.10	2,531.45	55.65	46.485	
12,200.00	12,190.80	10,000.00	9,860.59	43.25	35.04	34.66	1,082.66	945.22	2,673.68	2,618.28	55.40	48.261	
12,286.24	12,277.04	10,000.00	9,860.59	43.55	35.04	34.66	1,082.66	945.22	2,749.07	2,693.85	55.22	49.784	
12,300.00	12,290.79	10,000.00	9,860.59	43.60	35.04	-143.84	1,082.66	945.22	2,761.22	2,706.02	55.20	50.026	
12,350.00	12,340.66	10,000.00	9,860.59	43.76	35.04	-137.06	1,082.66	945.22	2,806.46	2,751.33	55.13	50.903	
12,400.00	12,390.05	10,000.00	9,860.59	43.92	35.04	-127.49	1,082.66	945.22	2,853.10	2,797.98	55.11	51.767	
12,450.00	12,438.58	10,000.00	9,860.59	44.08	35.04	-114.11	1,082.66	945.22	2,900.70	2,845.57	55.13	52.612	
12,500.00	12,485.87	10,000.00	9,860.59	44.23	35.04	-96.79	1,082.66	945.22	2,948.88	2,893.69	55.19	53.431	
12,550.00	12,531.58	10,000.00	9,860.59	44.38	35.04	-77.80	1,082.66	945.22	2,997.25	2,941.97	55.28	54.218	
12,600.00	12,575.35	10,000.00	9,860.59	44.51	35.04	-60.94	1,082.66	945.22	3,045.44	2,990.04	55.40	54.969	
12,650.00	12,616.85	10,000.00	9,860.59	44.64	35.04	-48.12	1,082.66	945.22	3,093.11	3,037.55	55.55	55.677	
12,700.00	12,655.76	10,000.00	9,860.59	44.76	35.04	-38.96	1,082.66	945.22	3,139.91	3,084.17	55.73	56.337	
12,750.00	12,691.79	10,000.00	9,860.59	44.87	35.04	-32.44	1,082.66	945.22	3,185.54	3,129.60	55.94	56.946	
12,800.00	12,724.67	10,000.00	9,860.59	44.99	35.04	-27.71	1,082.66	945.22	3,229.71	3,173.54	56.17	57.499	
12,850.00	12,754.13	10,000.00	9,860.59	45.12	35.04	-24.20	1,082.66	945.22	3,272.14	3,215.72	56.42	57.992	
12,900.00	12,779.97	10,000.00	9,860.59	45.24	35.04	-21.52	1,082.66	945.22	3,312.60	3,255.90	56.70	58.421	
12,950.00	12,801.98	10,000.00	9,860.59	45.37	35.04	-19.44	1,082.66	945.22	3,350.85	3,293.84	57.00	58.784	
13,000.00	12,819.99	9,978.62	9,851.54	45.49	34.97	-17.70	1,063.29	945.22	3,386.21	3,329.10	57.11	59.295	
13,050.00	12,833.88	9,973.20	9,849.13	45.62	34.96	-16.39	1,058.43	945.22	3,419.15	3,361.76	57.40	59.569	
13,100.00	12,843.52	9,950.00	9,838.31	45.74	34.89	-15.28	1,037.92	945.22	3,449.53	3,392.00	57.53	59.960	
13,150.00	12,848.85	9,950.00	9,838.31	45.87	34.89	-14.46	1,037.92	945.22	3,476.40	3,418.48	57.92	60.020	
13,186.24	12,850.00	9,950.00	9,838.31	45.95	34.89	-13.97	1,037.92	945.22	3,493.95	3,435.73	58.22	60.016	
13,200.00	12,850.00	9,950.00	9,838.31	45.99	34.89	-13.97	1,037.92	945.22	3,500.31	3,441.98	58.33	60.008	
13,300.00	12,850.00	9,950.00	9,838.31	46.25	34.89	-13.97	1,037.92	945.22	3,547.83	3,488.65	59.18	59.949	
13,400.00	12,850.00	9,950.00	9,838.31	46.56	34.89	-13.97	1,037.92	945.22	3,597.50	3,537.47	60.03	59.924	
13,500.00	12,850.00	9,900.00	9,812.21	46.91	34.74	-13.86	995.29	945.22	3,648.61	3,588.24	60.37	60.435	
13,600.00	12,850.00	9,900.00	9,812.21	47.30	34.74	-13.86	995.29	945.22	3,701.19	3,639.96	61.22	60.452	
13,700.00	12,850.00	9,900.00	9,812.21	47.73	34.74	-13.86	995.29	945.22	3,755.69	3,693.62	62.07	60.508	

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

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #2H - OH - PN1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,800.00	12,850.00	9,900.00	9,812.21	48.20	34.74	-13.86	995.29	945.22	3,812.03	3,749.13	62.90	60.602	
13,900.00	12,850.00	9,874.18	9,797.31	48.70	34.66	-13.79	974.20	945.22	3,869.49	3,806.02	63.47	60.970	
14,000.00	12,850.00	9,850.00	9,782.50	49.25	34.59	-13.73	955.09	945.22	3,928.84	3,864.80	64.04	61.352	
14,100.00	12,850.00	9,850.00	9,782.50	49.82	34.59	-13.73	955.09	945.22	3,989.25	3,924.41	64.84	61.529	
14,200.00	12,850.00	9,850.00	9,782.50	50.43	34.59	-13.73	955.09	945.22	4,051.23	3,985.62	65.61	61.744	
14,300.00	12,850.00	9,850.00	9,782.50	51.08	34.59	-13.73	955.09	945.22	4,114.71	4,048.34	66.37	61.993	
14,400.00	12,850.00	9,824.99	9,766.35	51.76	34.51	-13.66	936.00	945.22	4,179.01	4,112.12	66.88	62.483	
14,500.00	12,850.00	9,800.00	9,749.40	52.46	34.44	-13.59	917.64	945.22	4,245.01	4,177.62	67.38	62.999	
14,600.00	12,850.00	9,800.00	9,749.40	53.20	34.44	-13.59	917.64	945.22	4,311.72	4,243.63	68.09	63.323	
14,700.00	12,850.00	9,800.00	9,749.40	53.96	34.44	-13.59	917.64	945.22	4,379.71	4,310.93	68.78	63.677	
14,800.00	12,850.00	9,800.00	9,749.40	54.75	34.44	-13.59	917.64	945.22	4,448.90	4,379.45	69.45	64.062	
14,900.00	12,850.00	9,800.00	9,749.40	55.57	34.44	-13.59	917.64	945.22	4,519.25	4,449.15	70.09	64.474	
15,000.00	12,850.00	9,774.43	9,731.25	56.41	34.36	-13.51	899.64	945.22	4,590.06	4,519.55	70.51	65.096	
15,100.00	12,850.00	9,750.00	9,713.16	57.27	34.29	-13.44	883.21	945.22	4,662.40	4,591.47	70.93	65.731	
15,200.00	12,850.00	9,750.00	9,713.16	58.16	34.29	-13.44	883.21	945.22	4,735.18	4,663.65	71.53	66.200	
15,300.00	12,850.00	9,750.00	9,713.16	59.07	34.29	-13.44	883.21	945.22	4,808.94	4,736.84	72.11	66.693	
15,400.00	12,850.00	9,750.00	9,713.16	60.00	34.29	-13.44	883.21	945.22	4,883.64	4,810.97	72.66	67.208	
15,500.00	12,850.00	9,750.00	9,713.16	60.95	34.29	-13.44	883.21	945.22	4,959.23	4,886.02	73.20	67.745	
15,600.00	12,850.00	9,750.00	9,713.16	61.91	34.29	-13.44	883.21	945.22	5,035.66	4,961.94	73.73	68.302	
15,700.00	12,850.00	9,725.36	9,694.23	62.90	34.21	-13.36	867.44	945.22	5,112.33	5,038.27	74.06	69.027	
15,800.00	12,850.00	9,700.00	9,674.06	63.90	34.14	-13.28	852.07	945.22	5,190.38	5,115.99	74.39	69.776	
15,900.00	12,850.00	9,700.00	9,674.06	64.92	34.14	-13.28	852.07	945.22	5,268.57	5,193.70	74.87	70.371	
16,000.00	12,850.00	9,700.00	9,674.06	65.95	34.14	-13.28	852.07	945.22	5,347.48	5,272.15	75.33	70.983	
16,100.00	12,850.00	9,700.00	9,674.06	67.00	34.14	-13.28	852.07	945.22	5,427.09	5,351.31	75.79	71.611	
16,200.00	12,850.00	9,700.00	9,674.06	68.06	34.14	-13.28	852.07	945.22	5,507.37	5,431.14	76.22	72.255	
16,300.00	12,850.00	9,700.00	9,674.06	69.14	34.14	-13.28	852.07	945.22	5,588.28	5,511.63	76.64	72.912	
16,400.00	12,850.00	9,700.00	9,674.06	70.23	34.14	-13.28	852.07	945.22	5,669.80	5,592.74	77.05	73.583	
16,500.00	12,850.00	9,700.00	9,674.06	71.33	34.14	-13.28	852.07	945.22	5,751.90	5,674.45	77.45	74.267	
16,600.00	12,850.00	9,674.74	9,653.31	72.44	34.07	-13.19	837.67	945.22	5,833.96	5,756.26	77.69	75.088	
16,700.00	12,850.00	9,650.00	9,632.39	73.56	34.01	-13.11	824.46	945.22	5,917.27	5,839.33	77.94	75.922	
16,800.00	12,850.00	9,650.00	9,632.39	74.70	34.01	-13.11	824.46	945.22	6,000.53	5,922.22	78.31	76.628	
16,900.00	12,850.00	9,650.00	9,632.39	75.84	34.01	-13.11	824.46	945.22	6,084.29	6,005.62	78.66	77.344	
17,000.00	12,850.00	9,650.00	9,632.39	77.00	34.01	-13.11	824.46	945.22	6,168.53	6,089.52	79.01	78.071	
17,100.00	12,850.00	9,650.00	9,632.39	78.16	34.01	-13.11	824.46	945.22	6,253.24	6,173.89	79.35	78.807	
17,200.00	12,850.00	9,650.00	9,632.39	79.33	34.01	-13.11	824.46	945.22	6,338.40	6,258.72	79.68	79.552	
17,300.00	12,850.00	9,650.00	9,632.39	80.51	34.01	-13.11	824.46	945.22	6,423.98	6,343.99	79.99	80.306	
17,400.00	12,850.00	9,650.00	9,632.39	81.70	34.01	-13.11	824.46	945.22	6,509.98	6,429.67	80.30	81.068	
17,500.00	12,850.00	9,650.00	9,632.39	82.90	34.01	-13.11	824.46	945.22	6,596.36	6,515.76	80.60	81.837	
17,600.00	12,850.00	9,650.00	9,632.39	84.10	34.01	-13.11	824.46	945.22	6,683.13	6,602.24	80.90	82.613	
17,700.00	12,850.00	9,627.04	9,612.48	85.31	33.94	-13.03	813.02	945.22	6,769.77	6,688.68	81.09	83.489	
17,800.00	12,850.00	9,623.31	9,609.21	86.53	33.93	-13.02	811.24	945.22	6,857.08	6,775.73	81.35	84.289	
17,900.00	12,850.00	9,600.00	9,588.48	87.75	33.86	-12.94	800.59	945.22	6,945.07	6,863.54	81.53	85.181	
18,000.00	12,850.00	9,600.00	9,588.48	88.98	33.86	-12.94	800.59	945.22	7,032.89	6,951.08	81.80	85.973	
18,100.00	12,850.00	9,600.00	9,588.48	90.22	33.86	-12.94	800.59	945.22	7,121.02	7,038.96	82.07	86.772	
18,200.00	12,850.00	9,600.00	9,588.48	91.46	33.86	-12.94	800.59	945.22	7,209.47	7,127.14	82.32	87.575	
18,300.00	12,850.00	9,600.00	9,588.48	92.71	33.86	-12.94	800.59	945.22	7,298.21	7,215.64	82.57	88.383	
18,400.00	12,850.00	9,600.00	9,588.48	93.96	33.86	-12.94	800.59	945.22	7,387.24	7,304.42	82.82	89.196	
18,500.00	12,850.00	9,600.00	9,588.48	95.22	33.86	-12.94	800.59	945.22	7,476.55	7,393.49	83.06	90.014	
18,600.00	12,850.00	9,600.00	9,588.48	96.48	33.86	-12.94	800.59	945.22	7,566.13	7,482.83	83.30	90.835	
18,700.00	12,850.00	9,600.00	9,588.48	97.75	33.86	-12.94	800.59	945.22	7,655.96	7,572.44	83.53	91.661	

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Offset Design Green Wave - 20-17 Fed #2H - OH - PN1 — Offset Site Error: 0.00 ft

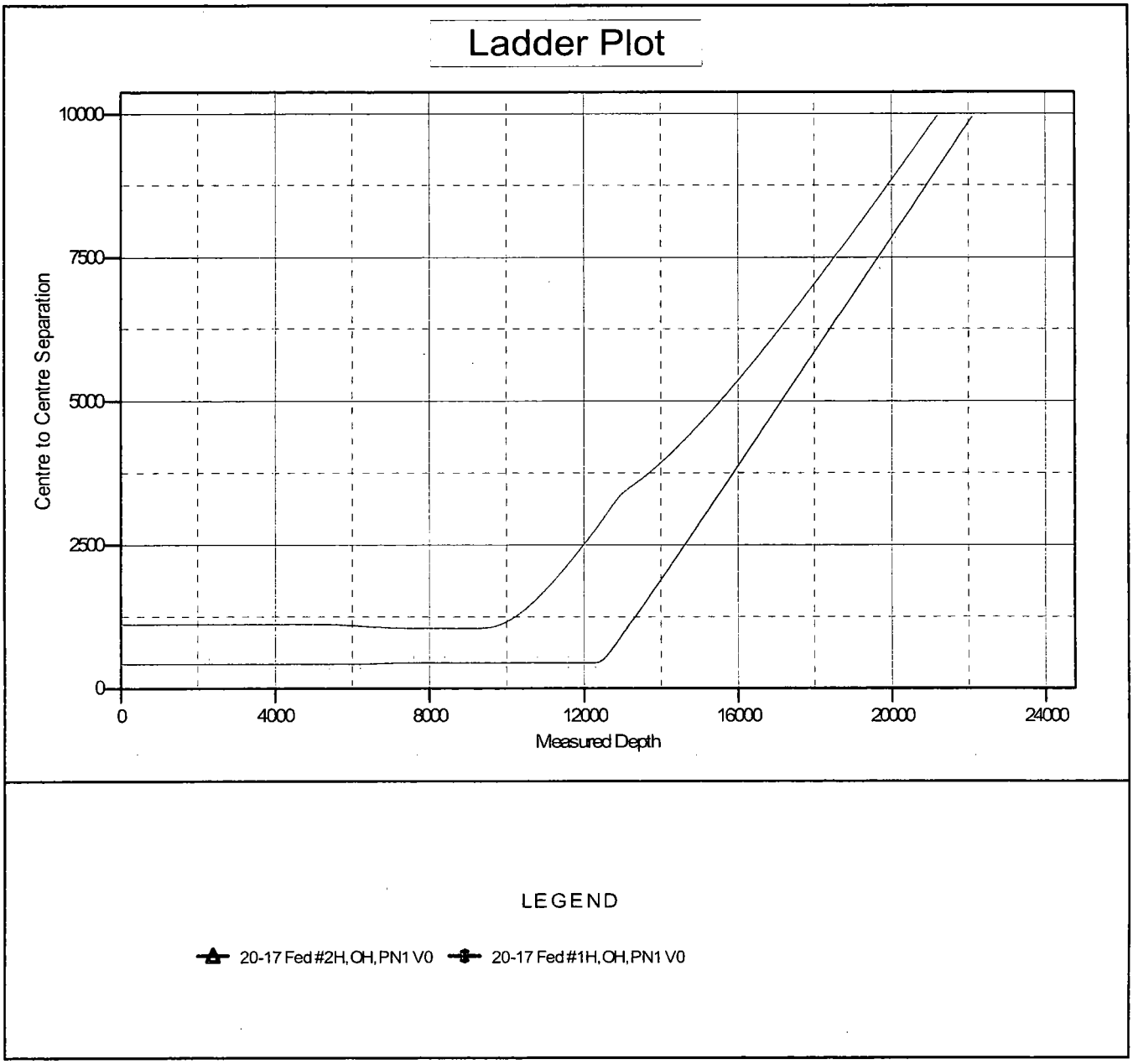
Survey Program: 0-MWD+HRGM — Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
18,800.00	12,850.00	9,600.00	9,588.48	99.02	33.86	-12.94	800.59	945.22	7,746.05	7,662.30	83.75	92.490	
18,900.00	12,850.00	9,600.00	9,588.48	100.30	33.86	-12.94	800.59	945.22	7,836.37	7,752.40	83.97	93.322	
19,000.00	12,850.00	9,600.00	9,588.48	101.58	33.86	-12.94	800.59	945.22	7,926.93	7,842.74	84.19	94.157	
19,100.00	12,850.00	9,600.00	9,588.48	102.86	33.86	-12.94	800.59	945.22	8,017.71	7,933.31	84.40	94.996	
19,200.00	12,850.00	9,600.00	9,588.48	104.15	33.86	-12.94	800.59	945.22	8,108.71	8,024.10	84.61	95.837	
19,300.00	12,850.00	9,576.53	9,567.19	105.44	33.79	-12.86	790.73	945.22	8,199.40	8,114.65	84.75	96.752	
19,400.00	12,850.00	9,573.93	9,564.80	106.74	33.78	-12.85	789.69	945.22	8,290.69	8,205.75	84.94	97.604	
19,500.00	12,850.00	9,550.00	9,542.65	108.04	33.70	-12.77	780.64	945.22	8,382.59	8,297.52	85.08	98.531	
19,600.00	12,850.00	9,550.00	9,542.65	109.34	33.70	-12.77	780.64	945.22	8,474.16	8,388.88	85.27	99.375	
19,700.00	12,850.00	9,550.00	9,542.65	110.65	33.70	-12.77	780.64	945.22	8,565.91	8,480.44	85.47	100.222	
19,800.00	12,850.00	9,550.00	9,542.65	111.96	33.70	-12.77	780.64	945.22	8,657.85	8,572.18	85.66	101.071	
19,900.00	12,850.00	9,550.00	9,542.65	113.27	33.70	-12.77	780.64	945.22	8,749.96	8,664.11	85.85	101.921	
20,000.00	12,850.00	9,550.00	9,542.65	114.58	33.70	-12.77	780.64	945.22	8,842.24	8,756.21	86.04	102.773	
20,100.00	12,850.00	9,550.00	9,542.65	115.90	33.70	-12.77	780.64	945.22	8,934.69	8,848.47	86.22	103.626	
20,200.00	12,850.00	9,550.00	9,542.65	117.22	33.70	-12.77	780.64	945.22	9,027.30	8,940.90	86.40	104.481	
20,300.00	12,850.00	9,550.00	9,542.65	118.55	33.70	-12.77	780.64	945.22	9,120.07	9,033.49	86.58	105.336	
20,400.00	12,850.00	9,550.00	9,542.65	119.87	33.70	-12.77	780.64	945.22	9,212.99	9,126.23	86.76	106.193	
20,500.00	12,850.00	9,550.00	9,542.65	121.20	33.70	-12.77	780.64	945.22	9,306.05	9,219.12	86.93	107.050	
20,600.00	12,850.00	9,550.00	9,542.65	122.53	33.70	-12.77	780.64	945.22	9,399.26	9,312.16	87.10	107.908	
20,700.00	12,850.00	9,550.00	9,542.65	123.86	33.70	-12.77	780.64	945.22	9,492.61	9,405.33	87.27	108.767	
20,800.00	12,850.00	9,550.00	9,542.65	125.20	33.70	-12.77	780.64	945.22	9,586.09	9,498.64	87.44	109.626	
20,900.00	12,850.00	9,550.00	9,542.65	126.53	33.70	-12.77	780.64	945.22	9,679.70	9,592.09	87.61	110.486	
21,000.00	12,850.00	9,550.00	9,542.65	127.87	33.70	-12.77	780.64	945.22	9,773.43	9,685.66	87.78	111.346	
21,100.00	12,850.00	9,550.00	9,542.65	129.22	33.70	-12.77	780.64	945.22	9,867.29	9,779.36	87.94	112.207	
21,200.00	12,850.00	9,550.00	9,542.65	130.56	33.70	-12.77	780.64	945.22	9,961.27	9,873.17	88.10	113.067	

Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=32' (Nabors X04) @ 3386.90ft (Na
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

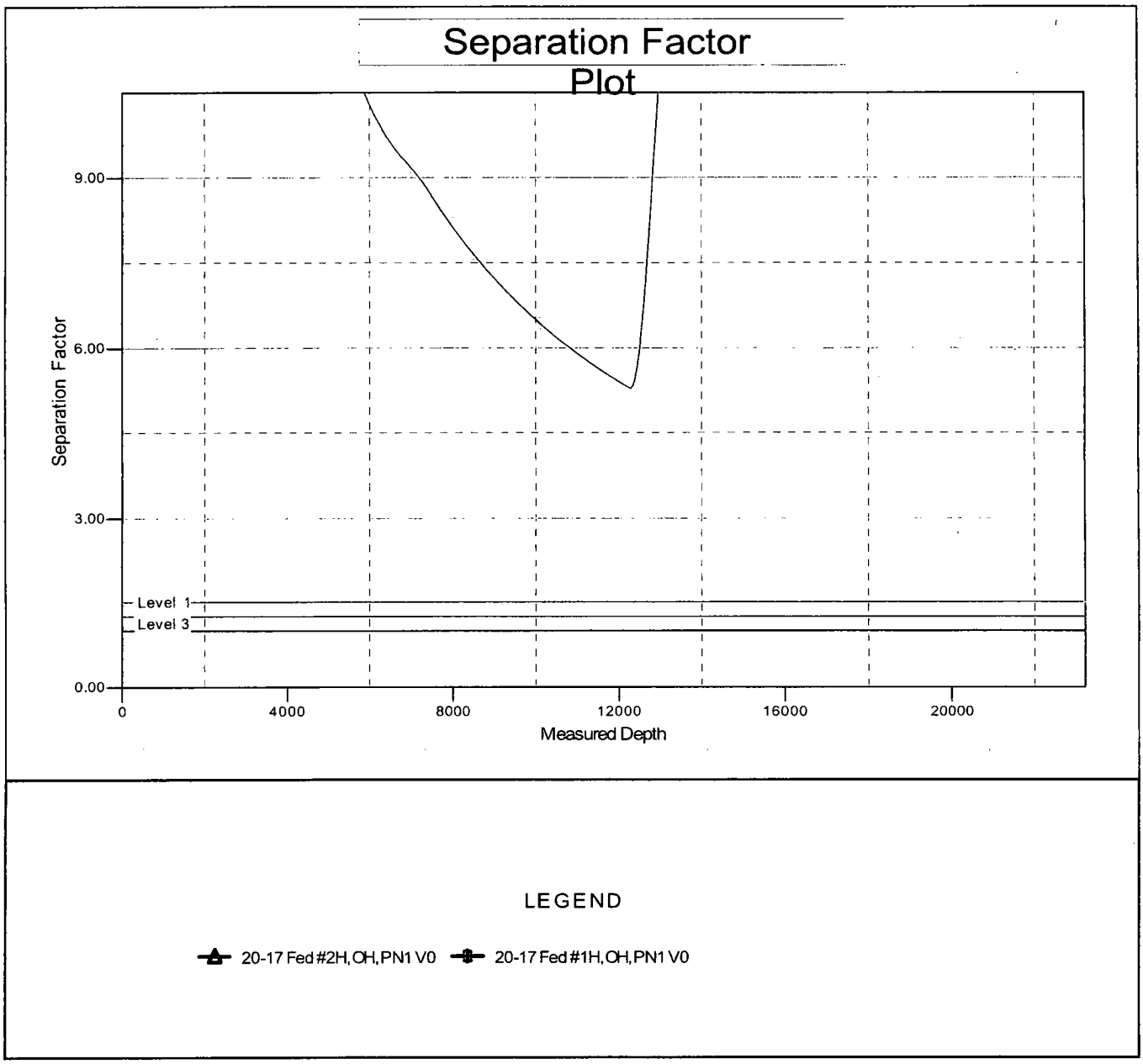
Coordinates are relative to: 20-32 Fed State Com #2H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.44°



Company:	Devon Energy Corporation	**Local Co-ordinate Reference:**	Well 20-32 Fed State Com #2H
Project:	Lea Co., NM	**TVD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Reference Site:	Green Wave	**MD Reference:**	KB=32' (Nabors X04) @ 3386.90ft (Nabors X04)
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	20-32 Fed State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	RyanUSA_Compass
Reference Design:	PN1	**Offset TVD Reference:**	Offset Datum

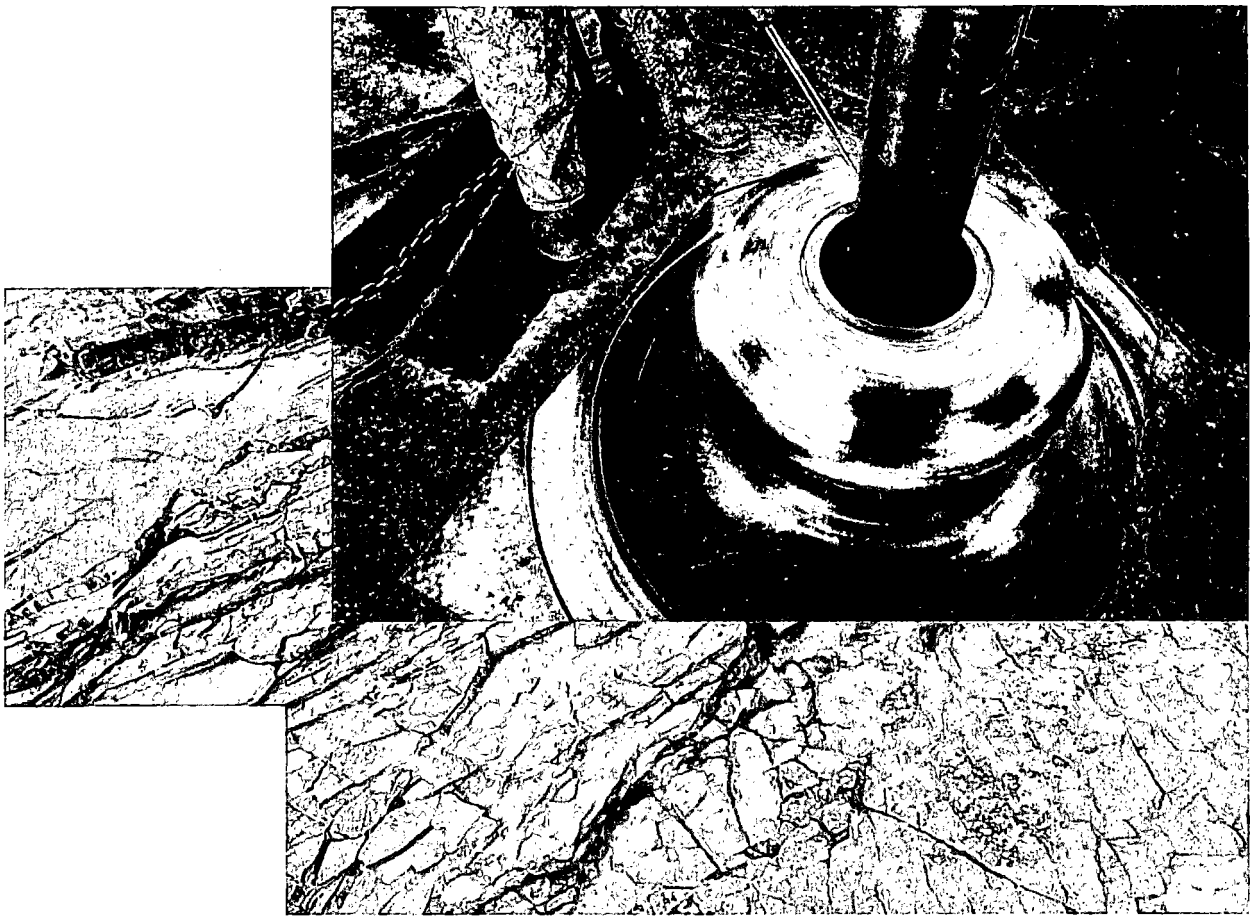
Reference Depths are relative to KB=32' (Nabors X04) @ 3386.90ft (Na
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: 20-32 Fed State Com #2H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.44°



devon

Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

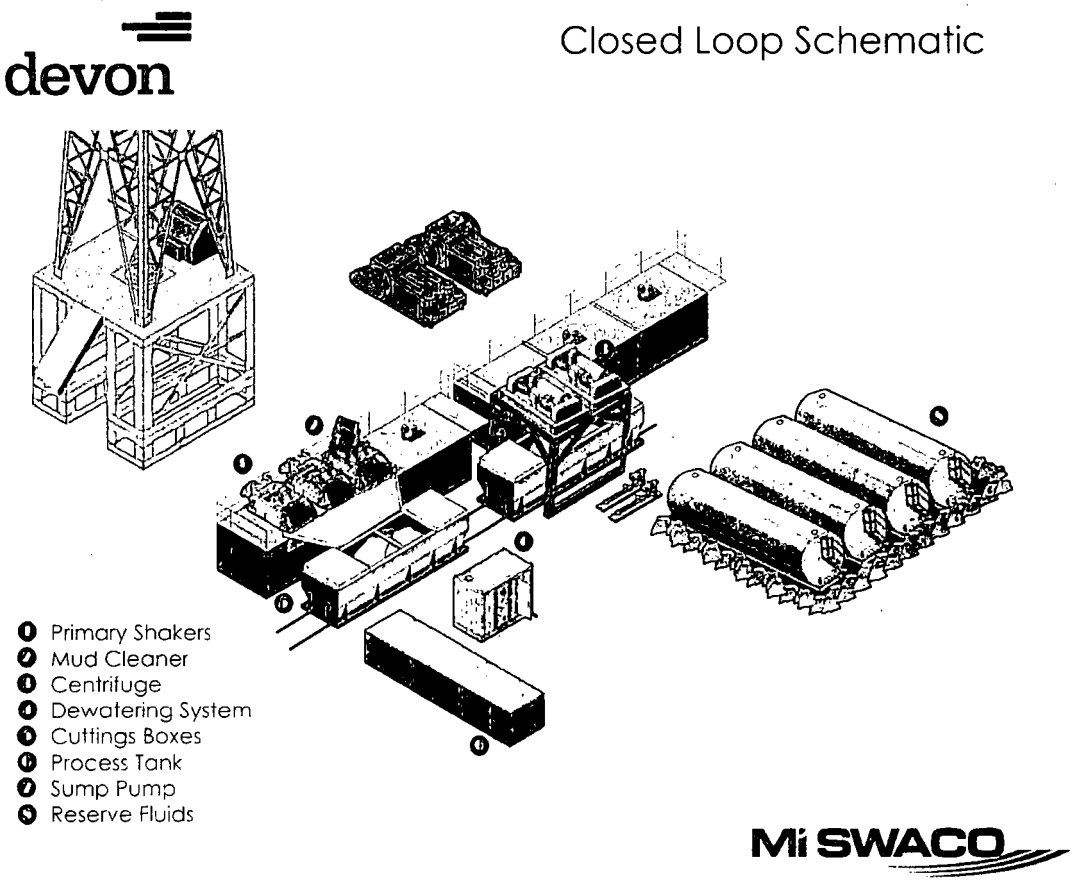
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

Contingency Intermediate Cement

Additional Info for String: 3

Additional String Description: Intermediate squeeze cement

Stage Tool Depth:

Lead

Top MD of Segment	0	Btm MD of Segment	7000	Cement Type	Class C
Additives	0.125 lbs/sack Poly-E-Flake	Quanity (sks)	1155	Yield (cu.ft./sk)	1.3
Density (lbs/gal)	14.5	Volume (cu.ft.)	1502	Percent Excess	0

Tail

Top MD of Segment		Top MD of Segment		Cement Type	
Additives		Quanity (sks)		Yield (cu.ft./sk)	
Density (lbs/gal)		Volume (cu.ft.)		Percent Excess	

Contingency Production Cement

Additional Info for String:

Additional String Description:

Stage Tool Depth:

Lead

Top MD of Segment		Btm MD of Segment		Cement Type	
Additives		Quanity (sks)		Yield (cu.ft./sk)	
Density (lbs/gal)		Volume (cu.ft.)		Percent Excess	

Tail

Top MD of Segment		Top MD of Segment		Cement Type	
Additives		Quanity (sks)		Yield (cu.ft./sk)	
Density (lbs/gal)		Volume (cu.ft.)		Percent Excess	

devon

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

Green Wave 20-32 Fed State Com 2H

Sec-20 T-26S R-34E
2456' FSL & 271 FEL
LAT. = 32.0284282' N (NAD83)
LONG = 103.4995451 W

Lea County NM

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

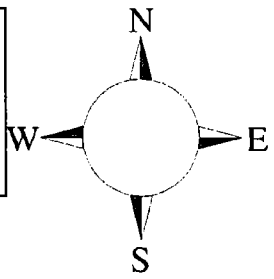
Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

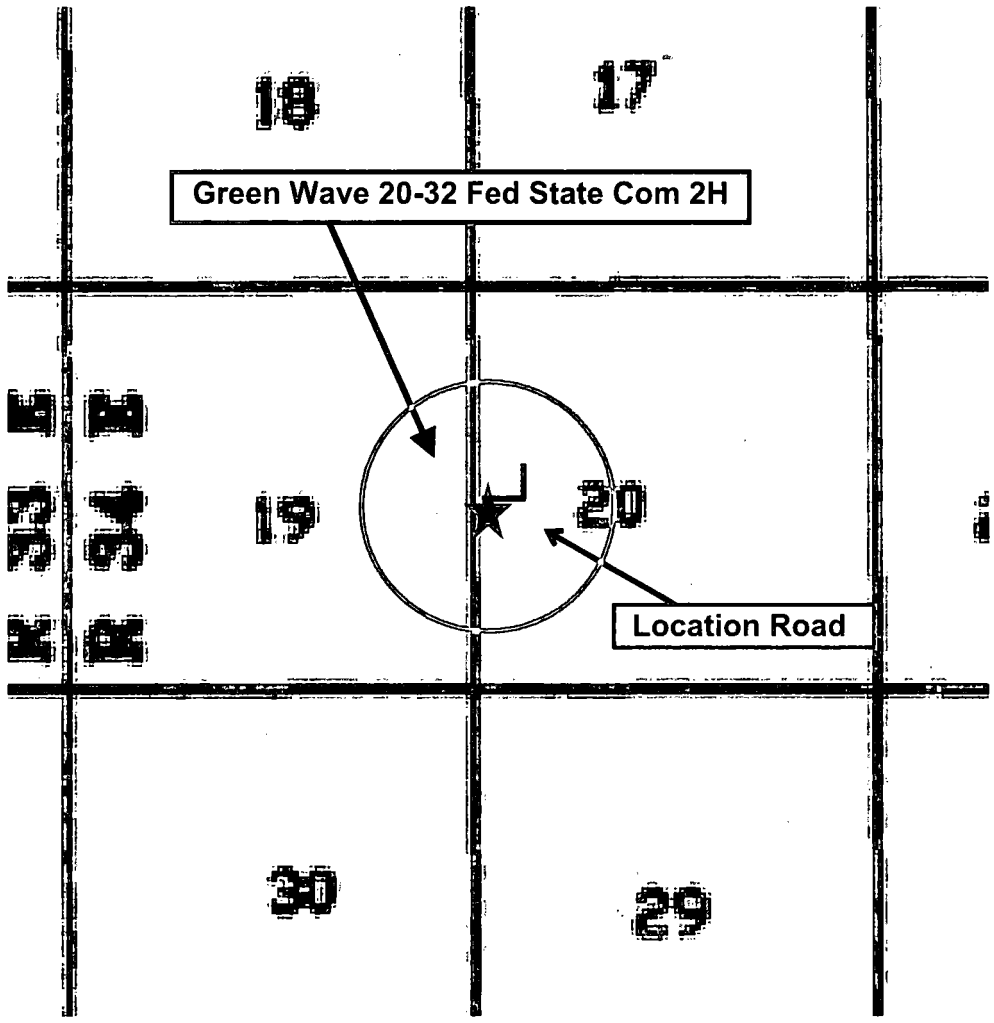
Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Green Wave 20-32 Fed State Com 2H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

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 response**
- **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

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison 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. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

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

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

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

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with one escape unit available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 10 ppm. Sensor locations:

   - Bell nipple
   - Shale shaker
   - Trip tank
   - Suction pit
   - Rig floor
   - Cellar
   - Choke manifold
   - Living Quarters (usually the company man's trailer stairs.)

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

   A. There will be no drill stem testing.

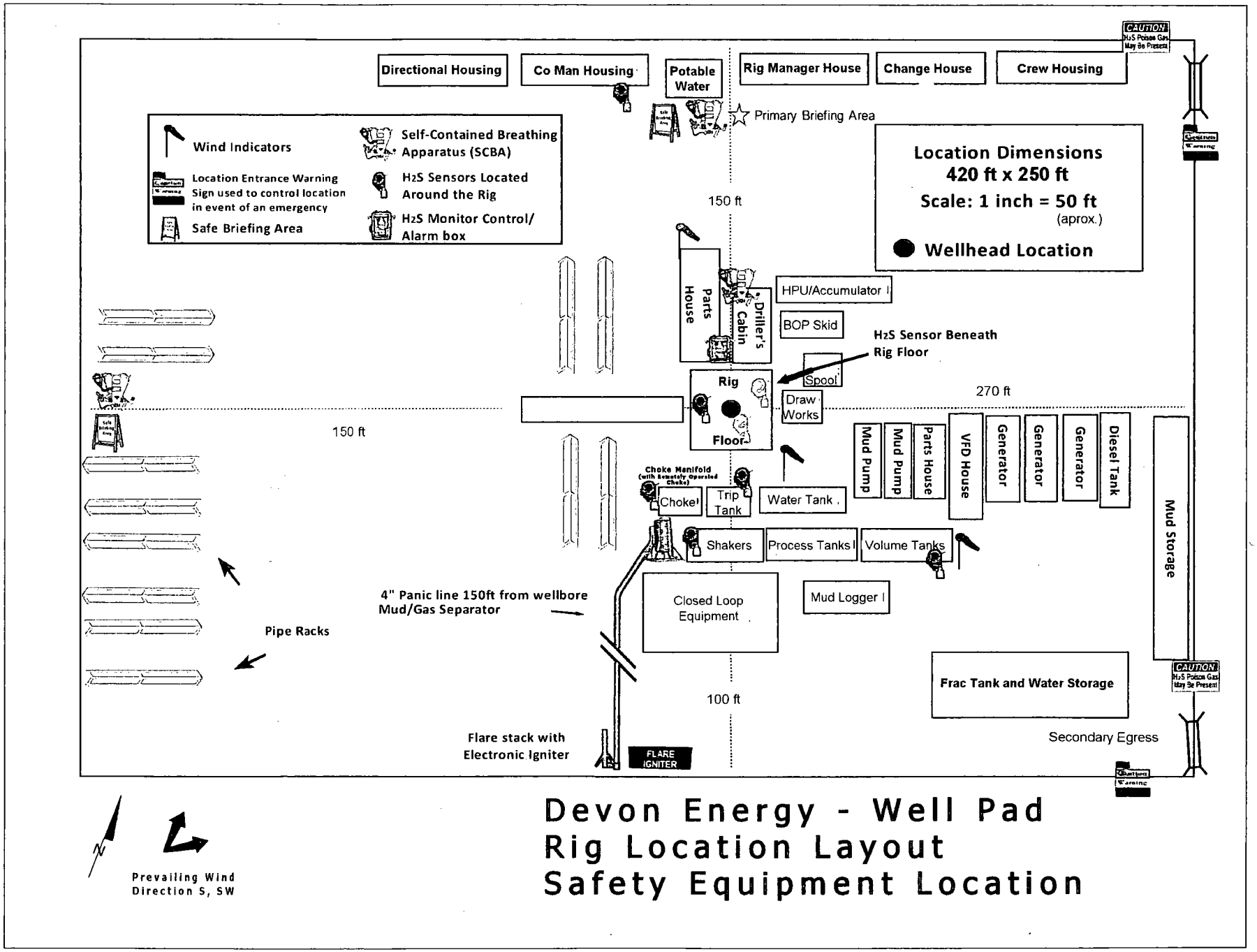
Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
Jerry Matthews – Day: 575-748-0161 Cell: 575-748-5234		
EHS Professional – Jason Robison		405-541-2841

Agency Call List

Lea County (575)	**Hobbs**		
	Lea County Communication Authority		393-3981
	State Police		392-5588
	City Police		397-9265
	Sheriff's Office		393-2515
	Ambulance		**911**
	Fire Department		397-9308
	LEPC (Local Emergency Planning Committee)		393-2870
	NMOCD		393-6161
	US Bureau of Land Management		393-3612
Eddy County (575)	**Carlsbad**		
	State Police		885-3137
	City Police		885-2111
	Sheriff's Office		887-7551
	Ambulance		**911**
	Fire Department		885-3125
	LEPC (Local Emergency Planning Committee)		887-3798
	US Bureau of Land Management		887-6544
	NM Emergency Response Commission (Santa Fe)		(505) 476-9600
	24 HR		(505) 827-9126
	National Emergency Response Center		(800) 424-8802
	National Pollution Control Center: Direct		(703) 872-6000
	For Oil Spills		(800) 280-7118
	Emergency Services		
	Wild Well Control		(281) 784-4700
	Cudd Pressure Control	(915) 699-0139	(915) 563-3356
	Halliburton		(575) 746-2757
	B. J. Services		(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs		(575) 392-6429
	Flight For Life - Lubbock, TX		(806) 743-9911
	Aerocare - Lubbock, TX		(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM		(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM		(800) 222-1222
	Poison Control (24/7)		(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service		(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov		

Prepared in conjunction with
Dave Small

SHARP COMMUNICATIONS & CONSULTING, LLC


Directional Housing
Co Man Housing
Potable Water
Rig Manager House
Change House
Crew Housing
CAUTION H2S Poison Gas May Be Present
Primary Briefing Area
Wind Indicators
Self-Contained Breathing Apparatus (SCBA)
Location Entrance Warning Sign used to control location in event of an emergency
H2S Sensors Located Around the Rig
Safe Briefing Area
H2S Monitor Control/ Alarm box
Location Dimensions
420 ft x 250 ft
Scale: 1 inch = 50 ft
(aprox.)
Wellhead Location
150 ft
Parts House
Driller's Cabin
HPU/Accumulator
BOP Skid
H2S Sensor Beneath Rig Floor
Spool
Rig Floor
Draw Works
270 ft
150 ft
Mud Pump
Mud Pump
Parts House
VFD House
Generator
Generator
Generator
Diesel Tank
Mud Storage
Choke Manifold (with Remotely Operated Choke)
Choke
Trip Tank
Water Tank
Shakers
Process Tanks
Volume Tanks
4" Panic line 150ft from wellbore Mud/Gas Separator
Closed Loop Equipment
Mud Logger
Pipe Racks
Frac Tank and Water Storage
100 ft
Flare stack with Electronic Igniter
FLARE IGNITER
Secondary Egress
CAUTION H2S Poison Gas May Be Present
Prevailing Wind Direction S, SW
Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location