

NM OIL CONSERVATION
ARTESIA DISTRICT

Form 3160-3
(March 2012)

AUG 01 2017

RECEIVED UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.
NMNM121473

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
HH SO 10 15 FED 002 4H

318939

9. API Well No.

30-015-44353

1a. Type of work: ☒ DRILL

☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

☒ Single Zone ☐ Multiple Zone

2. Name of Operator
CHEVRON USA INCORPORATED

4323

3a. Address
6301 Deauville Blvd. Midland TX 79706

3b. Phone No. (include area code)
(432)687-7866

10. Field and Pool, or Exploratory
PURPLE SAGE / WOLFCAMP, (GAS)

4. Location of Well (Report location clearly and in accordance with any State requirements.)*

At surface SWSW / 264 FSL / 833 FWL / LAT 32.064732 / LONG -104.184267

At proposed prod. zone SWSW / 280 FSL / 1170 FWL / LAT 32.03566 / LONG -104.182726

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 3 / T26S / R27E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)
264 feet

16. No. of acres in lease
1920

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location*
to nearest well, drilling, completed, 4300 feet
applied for, on this lease, ft.

19. Proposed Depth
9000 feet / 18000 feet

20. BLM/BIA Bond No. on file
FED: CA0329

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3272 feet

22. Approximate date work will start*
07/01/2017

23. Estimated duration
120 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).

5. Operator certification

6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature
(Electronic Submission)

Name (Printed/Typed)
Dorian K Fuentes / Ph: (432)687-7631

Date
03/20/2017

Title
Permitting Specialist

Approved by (Signature)
(Electronic Submission)

Name (Printed/Typed)
Bobby Ballard / Ph: (575)234-2235

Date
07/26/2017

Title
Natural Resource Specialist

Office
CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Ruf 8-2-17

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

1. SHL: SWSW / 264 FSL / 833 FWL / TWSP: 26S / RANGE: 27E / SECTION: 3 / LAT: 32.064732 / LONG: -104.184267 (TVD: 0 feet, MD: 0 feet)
PPP: NWNW / 330 FNL / 1170 FWL / TWSP: 26S / RANGE: 27E / SECTION: 10 / LAT: 32.063085 / LONG: -104.183167 (TVD: 9000 feet, MD: 18000 feet)
BHL: SWSW / 280 FSL / 1170 FWL / TWSP: 26S / RANGE: 27E / SECTION: 15 / LAT: 32.03566 / LONG: -104.182726 (TVD: 9000 feet, MD: 18000 feet)

BLM Point of Contact

Name: Priscilla Perez

Title: Legal Instruments Examiner

Phone: 5752345934

Email: pperez@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT DRILLING OPERATIONS CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chevron USA Inc.
LEASE NO.:	NMNM121473
WELL NAME & NO.:	4H-HH SO 10 15 Fed 002
SURFACE HOLE FOOTAGE:	264'/S & 833'/W
BOTTOM HOLE FOOTAGE:	280'/S & 1170'/W
LOCATION:	Section 3, T.26 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

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

A. Hydrogen Sulfide

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 450 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that

string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
 - ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

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

TMAK 07232017

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

- 2. 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.
- 3. 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.
- 4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as

well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

B. PRESSURE CONTROL

3. 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.
4. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
5. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - f. 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.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Chevron USA Inc.
LEASE NO.:	NMNM121473
WELL NAME & NO.:	4H-HH SO 10 15 Fed 002
SURFACE HOLE FOOTAGE:	264'/S & 833'/W
BOTTOM HOLE FOOTAGE:	280'/S & 1170'/W
LOCATION:	Section 3, T.26 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☒ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
 - Watershed
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
- ☒ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

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)

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Watershed

Due to the location of the HH SO 10 15 Fed 002 Pad within the top of an existing drainage, the pad reduction and reclamation will be on the North and West sides of the pad as agreed upon during the onsite performed on January 19, 2017. Reducing the pad

on these two sides will help prevent increase in erosion and sediments deposits within the watershed.

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

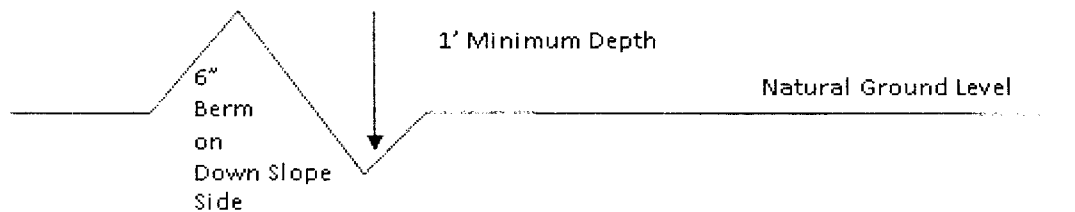
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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:

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

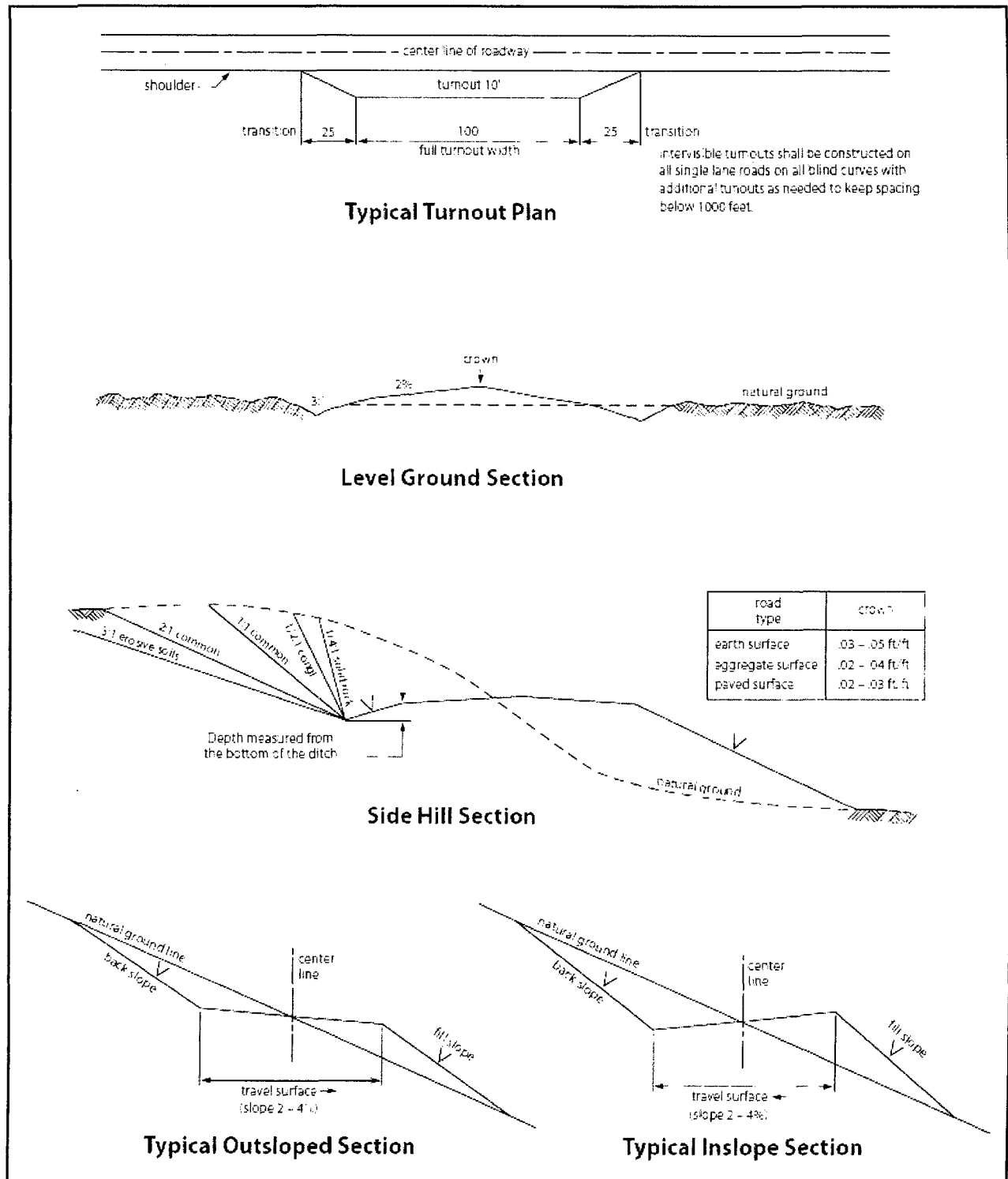


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review 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. 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. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard 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 in particular, 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. 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 activity of 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 provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing
 - (2) Earth-disturbing and earth-moving work
 - (3) Blasting
 - (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, 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, salt water, 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/she 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 Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. 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.

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. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. 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. Signs will be maintained in a legible condition for the life of the pipeline.

14. 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. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. 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 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.

16. 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, powerline 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.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

STANDARD STIPULATIONS FOR 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 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.

☒ (X) seed mixture 1	☐ () seed mixture 3
☐ () 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.

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.

Due to the location of the HH SO 10 15 Fed 002 Pad within the top of an existing drainage, the pad reduction and reclamation will be on the North and West sides of the pad as agreed upon during the onsite performed on January 19, 2017. Reducing the pad on these two sides will help prevent increase in erosion and sediments deposits within the watershed.

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall 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 shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

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

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

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

Operator Certification

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

NAME: Dorian K Fuentes**Signed on:** 03/20/2017**Title:** Permitting Specialist**Street Address:** 6301 Deauville Blvd**City:** Midland**State:** TX**Zip:** 79706**Phone:** (432)687-7631**Email address:** djvo@chevron.com**Field Representative****Representative Name:****Street Address:****City:****State:****Zip:****Phone:****Email address:**

APD ID: 10400012333**Submission Date:** 03/20/2017**Operator Name:** CHEVRON USA INCORPORATED**Well Name:** HH SO 10 15 FED 002**Well Number:** 4H**Well Type:** CONVENTIONAL GAS WELL**Well Work Type:** Drill**Section 1 - General****APD ID:** 10400012333**Tie to previous NOS?****Submission Date:** 03/20/2017**BLM Office:** CARLSBAD**User:** Dorian K Fuentes**Title:** Permitting Specialist**Federal/Indian APD:** FED**Is the first lease penetrated for production Federal or Indian?** FED**Lease number:** NMNM121473**Lease Acres:** 1920**Surface access agreement in place?****Allotted?****Reservation:****Agreement in place?** NO**Federal or Indian agreement:****Agreement number:****Agreement name:****Keep application confidential?** NO**Permitting Agent?** NO**APD Operator:** CHEVRON USA INCORPORATED**Operator letter of designation:****Keep application confidential?** NO**Operator Info****Operator Organization Name:** CHEVRON USA INCORPORATED**Operator Address:** 6301 Deauville Blvd.**Zip:** 79706**Operator PO Box:****Operator City:** Midland**State:** TX**Operator Phone:** (432)687-7866**Operator Internet Address:****Section 2 - Well Information****Well in Master Development Plan?** EXISTING**Master Development Plan name:** HAYHURST DEVELOPMENT AREA**Well in Master SUPO?** NO**Master SUPO name:****Well in Master Drilling Plan?** NO**Master Drilling Plan name:****Well Name:** HH SO 10 15 FED 002**Well Number:** 4H**Well API Number:****Field/Pool or Exploratory?** Field and Pool**Field Name:** PURPLE SAGE**Pool Name:** WOLFCAMP, (GAS)

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? NO New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: HH SO Number: 1H 2H 3H 4H 5H 6H
10 15 FED 002

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town:

Distance to nearest well: 4300 FT

Distance to lease line: 264 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: HH_SO_10_15_FED_002_4H_C_102_05-30-2017.pdf

Well work start Date: 07/01/2017

Duration: 120 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	264	FSL	833	FWL	26S	27E	3	Aliquot SWS W	32.06473 2	- 104.1842 67	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 121473	327 2	0	0
KOP Leg #1	264	FSL	833	FWL	26S	27E	3	Aliquot SWS W	32.06473 2	- 104.1842 67	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 121473	327 2	0	0
PPP Leg #1	330	FNL	117 0	FWL	26S	27E	10	Aliquot NWN W	32.06308 5	- 104.1831 67	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 121473	- 572 8	180 00	900 0

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FSL	117 0	FWL	26S	27E	15	Aliquot SWS W	32.03579 8	- 104.1827 27	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 121473	- 572 8	180 00	900 0
BHL Leg #1	280	FSL	117 0	FWL	26S	27E	15	Aliquot SWS W	32.03566	- 104.1827 26	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 121473	- 572 8	180 00	900 0

District I
 1625 N. French Dr. Santa Fe, NM 87505
 Phone (505) 476-3460 Fax (505) 476-3462
 District II
 511 S. 2nd St. Santa Fe, NM 87501
 Phone (505) 476-3460 Fax (505) 476-3462
 District III
 1400 Ruidoso Dr. Santa Fe, NM 87505
 Phone (505) 476-3460 Fax (505) 476-3462
 District IV
 1220 S. St. Francis Dr. Santa Fe, NM 87505
 Phone (505) 476-3460 Fax (505) 476-3462

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 01 2017
RECEIVED

State of New Mexico
 Energy, Minerals & Natural Resources Department
 OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-44353	Post Code 98220	Well Name PURPLE SAGE WOLF CAMP (GAS)
Property Code 318939	Property Name HH SO 10 15 FED 002	Well Number 4H
OGRIID No. 4323	Operator Name CHEVRON U.S.A. INC.	Elevation 3272'

Surface Location

Section	Township	Range	Lot	Feet from the	North-South line	Feet from the	East-West line	County
3	26 SOUTH	2 EAST, N.M.P.M.	264	264'	SOUTH	833'	WEST	EDDY

Bottom Hole Location If Different From Surface

Section	Township	Range	Lot	Feet from the	North-South line	Feet from the	East-West line	County
15	26 SOUTH	2 EAST, N.M.P.M.	280	280'	SOUTH	1170	WEST	EDDY

Dedicated Acre 4/40	Unit or Infill	Conservation Code	Ord. No.
-------------------------------	----------------	-------------------	----------

No allowable will be assigned to this completion until all interests have been consolidated or a non standard unit has been approved by the division.

FIRST TAKE POINT X= 546 672 NAD 27 Y= 386 653 LAT 32 062903 LONG 104 182674 X= 587 856 NAD83 Y= 386 720 LAT 32 063385 LONG 104 183167 MID POINT X= 546 792 NAD 27 Y= 381 70 LAT 32 045319 LONG 104 182308 X= 587 976 NAD83 Y= 381 75 LAT 32 04344 LONG 104 182803 LAST TAKE POINT X= 546 822 NAD 27 Y= 376 73 LAT 32 035675 LONG 104 182235 X= 588 006 NAD83 Y= 375 794 LAT 32 035798 LONG 104 182727	HH SO 10 15 FED 002 4H WELL X= 546 330 NAD 27 Y= 387 262 LAT 32 064513 LONG 104 183774 X= 587 574 NAD83 Y= 387 319 LAT 32 054732 LONG 104 184267 ELEVATION 3272 NAVD 88 CORNER COORDINATES TABLE (NAD 27) A Y=392447.75 X=545573.63 B Y=367009.20 X=545492.91 C Y=386937.82 X=550774.78 D Y=381711.59 X=545622.05 E Y=381659.95 X=550843.63 F Y=376414.03 X=545553.53 G Y=376383.44 X=550941.70 PROPOSED BOTTOM HOLE LOCATION X= 546 822 NAD 27 Y= 376 687 LAT 32 035538 LONG 104 182234 X= 588 006 NAD83 Y= 376 744 LAT 32 035660 LONG 104 182726	Sec 3 S 29°42'49" E 689.47' Proposed First Take Point 330 FNL, 1170' FWL Sec 10 S 01°23'25" E 4 964.46' Mid Point Sec 15 S 00°20'25" E 5 013.01' Proposed Last Take Point 330 FSL, 1170' FWL	OPERATOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual survey made by me or under my supervision and that the same is true and correct to the best of my belief. <i>[Signature]</i> 5-23-17 Date <i>[Signature]</i> Name <i>[Signature]</i> Title SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual survey made by me or under my supervision and that the same is true and correct to the best of my belief. 1-6-2017 Date of Survey <i>[Signature]</i> Signature and Seal of Professional Surveyor 23006 Certificate Number
--	---	---	--

APD ID: 10400012333

Submission Date: 03/20/2017

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
17358	CASTILE	3626	505	505	LIMESTONE, ANHYDRITE, GYPSUM	NONE	No
17345	BELL CANYON	1316	2310	2310	SANDSTONE	NONE	No
17360	LAMAR LS	1231	2395	2395	LIMESTONE	NONE	No
17339	CHERRY CANYON	418	3208	3208	SANDSTONE	NONE	No
18596	BRUSHY CANYON	-824	4450	4450	SANDSTONE	NONE	No
17316	BONE SPRING	-2673	6299	6299	LIMESTONE	NONE	No
17359	BONE SPRING 1ST	-3262	6888	6888	SANDSTONE	NONE	No
17359	BONE SPRING 1ST	-3288	6914	6914	SHALE, SANDSTONE	NONE	No
17371	2ND BONE SPRING CARB	-3995	7621	7621	SANDSTONE	NONE	No
18598	3RD BONE SPRING CARB	-4991	8617	8617	LIMESTONE	NONE	No
17333	WOLFCAMP	-6172	9798	20173	MUDSTONE	NATURAL GAS, OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 9801

Equipment: Will have a minimum of 5000 PSI rig stack for drill out below surface casing. Stack will be treated as specified in the attached requirements.

Requesting Variance? YES

Variance request: Chevron requests a variance to use a CoFlex hose with a metal protective covering that will be utilized between the BOP and Choke manifold and Chevron would also like to request another variance to use a FMC technologies conventional well head which will be run through the rig floor on surface casing. BOPE will be nipped up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days.

Testing Procedure: Test BOP from 250 PSI to 5000 psi in Ram and 250 PSI to 3500 PSI in Annular

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Choke Diagram Attachment:

HH_SO_10_15_FED_002_4H_BOP_Choke_03-14-2017.pdf

BOP Diagram Attachment:

HH_SO_10_15_FED_002_4H_BOP_Diagram_03-14-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	450	0	450	-5728	-6178	450	K-55	54.5	STC	5.11	1.82	DRY	2.31	DRY	3.97
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	9015	0	9015	-5728	-14743	9015	L-80	43.5	OTHER	1.32	1.45	DRY	1.84	DRY	1.78
3	PRODUCTION	8.5	5.5	NEW	API	N	0	20173	0	20173	-5728	-25994	20173	P-110	20	OTHER	1.5	1.26	DRY	1.84	DRY	2.43

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_10_15_FED_002_4H_9_PT_03-14-2017.pdf

CHOKE MANIFOLD SCHEMATIC

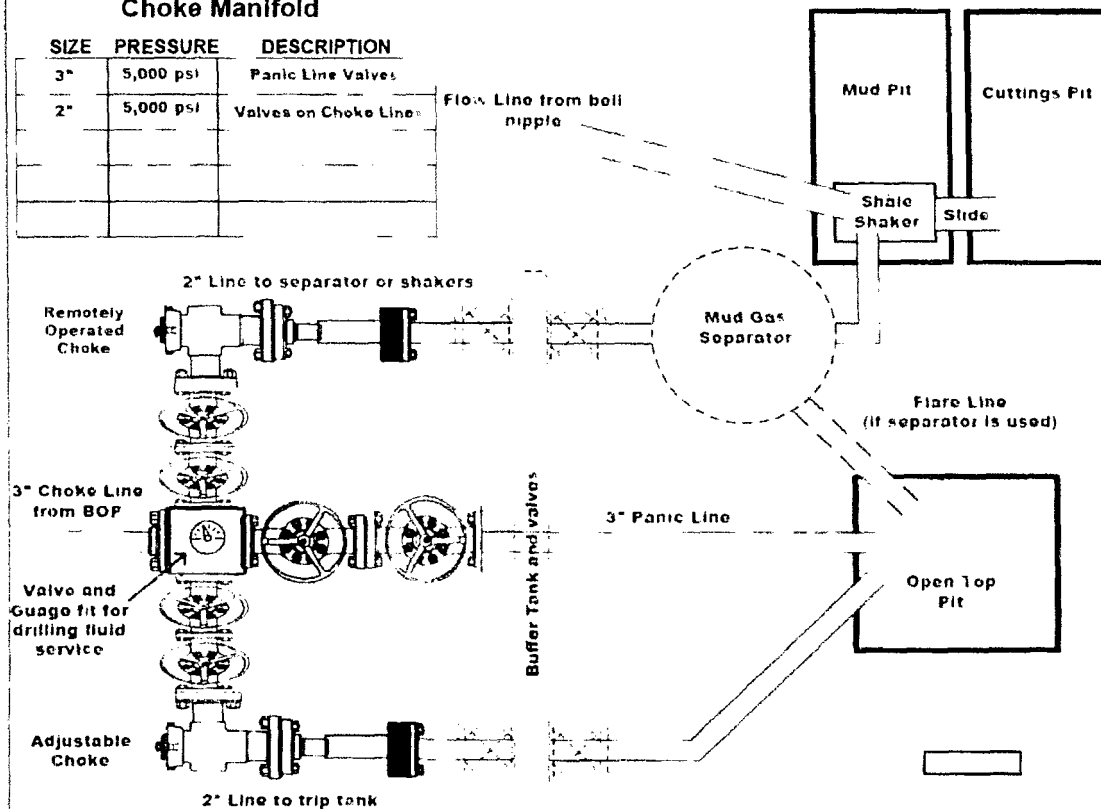
Minimum Requirements

OPERATION : Bone Spring wells/ Intermediate section SWD

Minimum System Pressure Rating : 5,000 psi

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Panic Line Valves
2"	5,000 psi	Valves on Choke Line



Installation Checklist

The following items must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.
- ☐ Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.
- ☐ Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.
- ☐ The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tool, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.
- ☐ All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.
- ☐ All manual valves will have hand wheels installed.
- ☐ If used, flare system will have effective method for ignition
- ☐ All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)
- ☐ If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

Diagram B

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : Bone Spring wells/ Intermediate section SWD

Minimum System Pressure Rating : 5,000 psi

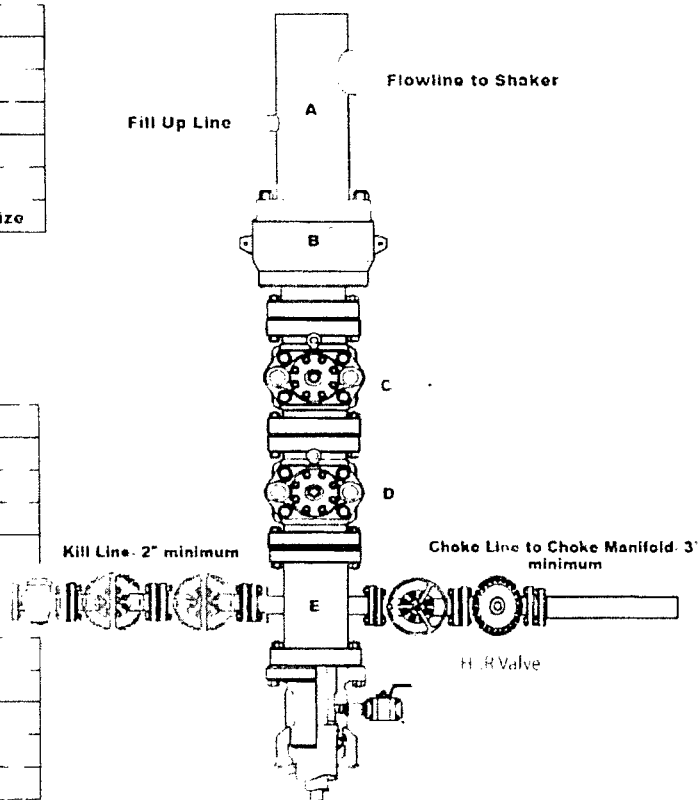
SIZE	PRESSURE	DESCRIPTION
A	N/A	Bell Nipple
B	13 5/8"	5,000 psi Annular
C	13 5/8"	5,000 psi Pipe Ram
D	13 5/8"	5,000 psi Blind Ram
E	13 5/8"	5,000 psi Mud Cross
F		
DSA	As required for each hole size	

Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000 psi	Gate Valve
2"	5,000 psi	Gate Valve
2"	5,000 psi	Check Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Gate Valve
3"	5,000 psi	HCR Valve



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.
- ☐ All valves on the kill line and choke line will be full opening and will allow straight through flow.
- ☐ The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and reduce vibration.
- ☐ Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.
- ☐ A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.
- ☐ Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer:

Wellname: _____

Representative: _____

Date: _____

Diagram A

For the latest performance data, always visit our website: www.tenaris.com

February 08 2017



Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 9.625 in.
Wall: 0.435 in.
Weight: 43.50 lbs/ft
Grade: L80.1
Min. Wall Thickness: 87.5 %

PIPE BODY DATA			
GEOMETRY			
Nominal OD	9.625 in.	Nominal Weight	43.50 lbs/ft
Nominal ID	8.755 in.	Wall Thickness	0.435 in.
Plain End Weight	42.73 lbs/ft	Standard Drift Diameter	8.599 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	1005 x 1000 lbs	Internal Yield	6330 psi
Collapse	3810 psi	SMYS	80000 psi
TENARISXP® BTC CONNECTION DATA			
GEOMETRY			
Connection OD	10.625 in.	Coupling Length	10.825 in.
Critical Section Area	12.559 sq. in.	Threads per in.	5.00
		Connection ID	8.743 in.
		Make-Up Loss	4.891 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	1005 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	1005 x 1000 lbs
External Pressure Capacity	3310 psi	Internal Pressure Capacity ⁽¹⁾	6330 psi
		Structural Bending ⁽²⁾	38 °/100 ft
ESTIMATED MAKE-UP TORQUES ⁽³⁾			
Minimum	20240 ft-lbs	Optimum	22490 ft-lbs
		Maximum	24740 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	ASK	Yield Torque	45900 ft-lbs

BLANKING DIMENSIONS

Blanking Dimensions

- (1)** Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2)** Structural rating, pure bending to yield (i.e no other loads applied)
- (3)** Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed. For additional information, please contact us at contact-tenarishydrii@tenaris.com

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Castille		505	
Lamar		2395	
Bell		2310	
Cherry		3208	
Brushy		4450	
Bone Spring/Avalon		6299	
First Bone Spring Sand		6888	
First Bone Spring Shale		6914	
Second Bone Spring Sand		7621	
Harkey Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9342	
Wolfcamp C		9798	
Lateral TVD Wolfcamp C		9798	20173.34'

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
	Deepest Expected Base of Fresh Water	450
Water	Castille	505
Water	Cherry Canyon	3208
Oil/Gas	Brushy Canyon	4450
Oil/Gas	Bone Spring Limestone	6888
Oil/Gas	First Bone Spring Shale	6914
Oil/Gas	Second Bone Spring Sand	7621
Oil/Gas	Harkey Sand	8123
Oil/Gas	Wolfcamp A	9342
Oil/Gas	Wolfcamp C	9798

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT

PLEASE REFERENCE MDP

4. CASING PROGRAM

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	450'	17-1/2"	13-3/8"	54.5 #	K-55	STC	New
Intermediate	0'	9,015'	12-1/4"	9-5/8"	40.0 #	L-80	TXP	New
Production	0'	20173.34'	8-1/2"	5-1/2"	20.0 #	P-110	TXP	New

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 450'

Intermediate Casing: 9015'

Production Casing: 20173.34' MD/9,798' TVD (10,000' VS @ 90.53 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.82	5.11	3.97	2.31
Intermediate	1.45	1.32	1.78	1.84
Production	1.26	1.5	2.43	1.35

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Cement Top	Cement Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	450'	14.8	1.33	50	356	6.37
Intermediate								
Stage 2 Lead	50:50 Poz: Class C + Antifoam, Extender, Salt, Retarder	0'	1,100'	11.9	2.43	50	213	14.21
Stage 2 Tail	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.33	0	235	6.37
DV TOOL		2,100'						
Stage 1 Lead	50:50 Poz: Class H + Extender, Antifoam, Retarder, Salt, Viscosifier	2,100'	8,015'	11.9	2.43	100	1524	13.76
Stage 1 Tail	Class H + Retarder, Extender, Dispersant	8,015'	9,015'	15.6	1.21	50	389	5.54
Production								
Lead	50:50 Poz: Class H + Extender, Antifoam, Dispersant, , Retarder	7,015'	8,015'	14.5	1.21	100	430	5.54
Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	20173.34'	15.6	1.2	50	3189	5.30

ONSHORE ORDER NO. 1
Chevron
HayHurst SO 10 P2 #23H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 4

6. **MUD PROGRAM**

From	To	Type	Weight	F. Vis	Filtrate
0'	450'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
450'	9015'	OBM	9.0 - 9.5	50 - 70	5.0 - 10
9015'	20173.34'	OBM	10.0 - 13.5	50 - 70	5.0 - 10

7. **TESTING, LOGGING, AND CORING**

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

PLEASE REFERENCE MDP

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
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Brushy		4450	
Bone Spring/Avalon		6299	
First Bone Spring Sand		6888	
First Bone Spring Shale		6914	
Second Bone Spring Sand		7621	
Harkey Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9342	
Wolfcamp C		9798	
Lateral TVD Wolfcamp C		9798	20173.34'

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		450
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Water	Cherry Canyon	3208
Oil/Gas	Brushy Canyon	4450
Oil/Gas	Bone Spring Limestone	6888
Oil/Gas	First Bone Spring Shale	6914
Oil/Gas	Second Bone Spring Sand	7621
Oil/Gas	Harkey Sand	8123
Oil/Gas	Wolfcamp A	9342
Oil/Gas	Wolfcamp C	9798

All shows of fresh water and minerals will be reported and protected.

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4. CASING PROGRAM

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
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Intermediate	0'	9,015'	12-1/4"	9-5/8"	40.0 #	L-80	TXP	New
Production	0'	20173.34'	8-1/2"	5-1/2"	20.0 #	P-110	TXP	New

SF Calculations based on the following "Worst Case" casing design:

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Intermediate Casing: 9015'

Production Casing: 20173.34' MD/9,798' TVD (10,000' VS @ 90.53 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
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Production	1.26	1.5	2.43	1.35

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Cement Top	Cement Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	450'	14.8	1.33	50	356	6.37
Intermediate								
Stage 2 Lead	50:50 Poz: Class C + Antifoam, Extender, Salt, Retarder	0'	1,100'	11.9	2.43	50	213	14.21
Stage 2 Tail	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.33	0	235	6.37
DV TOOL		2,100'						
Stage 1 Lead	50:50 Poz: Class H + Extender, Antifoam, Retarder, Salt, Viscosifier	2,100'	8,015'	11.9	2.43	100	1524	13.76
Stage 1 Tail	Class H + Retarder, Extender, Dispersant	8,015'	9,015'	15.6	1.21	50	389	5.54
Production								
Lead	50:50 Poz: Class H + Extender, Antifoam, Dispersant, , Retarder	7,015'	8,015'	14.5	1.21	100	430	5.54
Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	20173.34'	15.6	1.2	50	3189	5.30

ONSHORE ORDER NO. 1
Chevron
HayHurst SO 10 P2 #23H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 4

6. **MUD PROGRAM**

From	To	Type	Weight	F. Vis	Filtrate
0'	450'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
450'	9015'	OBM	9.0 - 9.5	50 -70	5.0 - 10
9015'	20173.34'	OBM	10.0 - 13.5	50 -70	5.0 - 10

7. **TESTING, LOGGING, AND CORING**

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

PLEASE REFERENCE MDP

For the latest performance data, always visit our website: www.tenaris.com

February 08 2017



Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 9.625 in.
Wall: 0.435 in.
Weight: 43.50 lbs/ft
Grade: L80.1
Min. Wall Thickness: 87.5 %

PIPE BODY DATA			
GEOMETRY			
Nominal OD	9.625 in.	Nominal Weight	43.50 lbs/ft
Nominal ID	8.755 in.	Wall Thickness	0.435 in.
Plain End Weight	42.73 lbs/ft	Standard Drift Diameter	8.599 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	1005 x 1000 lbs	Internal Yield	6330 psi
Collapse	3810 psi	SMYS	80000 psi
TENARISXP® BTC CONNECTION DATA			
GEOMETRY			
Connection OD	10.625 in.	Coupling Length	10.825 in.
Critical Section Area	12.559 sq. in.	Threads per in.	5.00
		Connection ID	8.743 in.
		Make-Up Loss	4.891 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	1005 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	1005 x 1000 lbs
External Pressure Capacity	3810 psi	Internal Pressure Capacity ⁽¹⁾	6330 psi
		Structural Bending ⁽²⁾	38 °/100 ft
ESTIMATED MAKE-UP TORQUES ⁽³⁾			
Minimum	20240 ft-lbs	Optimum	22490 ft-lbs
		Maximum	24740 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	ASK	Yield Torque	45900 ft-lbs

BLANKING DIMENSIONS

Blanking Dimensions

- (1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2) Structural rating, pure bending to yield (i.e no other loads applied)
- (3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed. For additional information, please contact us at contact-tenarishydril@tenaris.com

For the latest performance data, always visit our website: www.tenaris.com

July 07 2015



Connection: TenarisXP™ BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

PIPE BODY DATA					
GEOMETRY					
Nominal OD	5.500 in.	Nominal Weight	20.00 lbs/ft	Standard Drift Diameter	4.653 in.
Nominal ID	4.778 in.	Wall Thickness	0.361 in.	Special Drift Diameter	N/A
Plain End Weight	19.83 lbs/ft				
PERFORMANCE					
Body Yield Strength	641 x 1000 lbs	Internal Yield	12630 psi	SMYS	110000 psi
Collapse	11100 psi				
TENARISXP™ BTC CONNECTION DATA					
GEOMETRY					
Connection OD	6.100 in.	Coupling Length	9.450 in.	Connection ID	4.766 in.
Critical Section Area	5.828 sq. in.	Threads per in.	5.00	Make-Up Loss	4.204 in.
PERFORMANCE					
Tension Efficiency	100 %	Joint Yield Strength	641 x 1000 lbs	Internal Pressure Capacity ⁽¹⁾	12630 psi
Structural Compression Efficiency	100 %	Structural Compression Strength	641 x 1000 lbs	Structural Bending ⁽²⁾	92 °/100 ft
External Pressure Capacity	11100 psi				
ESTIMATED MAKE-UP TORQUES ⁽³⁾					
Minimum	11270 ft-lbs	Optimum	12520 ft-lbs	Maximum	13770 ft-lbs
OPERATIONAL LIMIT TORQUES					
Operating Torque	21500 ft-lbs	Yield Torque	23900 ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

- (1)** Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2)** Structural rating, pure bending to yield (i.e no other loads applied)
- (3)** Torque values calculated for APi Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed. For additional information, please contact us at contact-tenarishydrii@tenaris.com



H₂S Preparedness and Contingency Plan Summary

Hayhurst Eddy County, New Mexico

Training

MCBU Drilling and Completions H₂S training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of H₂S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H₂S, who are not required to perform work in H₂S areas, will be provided with an awareness level of H₂S training prior to entering any H₂S areas. At a minimum, awareness level training will include

1. Physical and chemical properties of H₂S
2. Health hazards of H₂S
3. Personal protective equipment
4. Information regarding potential sources of H₂S
5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training, educational experience and/or work-related background.

Advanced Level H₂S Training

Employees and contractors required to work in areas that may contain H₂S will be provided with Advanced Level H₂S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H₂S training will include:

1. H₂S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H₂S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H₂S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H₂S environments. Note: Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures. Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H₂S training;
6. Proficiency examination covering all course material.

Advanced H₂S training courses will be instructed by personnel who have successfully completed an appropriate H₂S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.

H₂S Preparedness and Contingency Plan Summary



H₂S Training Certification

All employees and visitors will be issued an H₂S training certification card (or certificate) upon successful completion of the appropriate H₂S training course. Personnel working in an H₂S environment will carry a current H₂S training certification card as proof of having received the proper training on their person at all times.

Briefing Area

A minimum of two briefing areas will be established in locations that at least one area will be upwind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H₂S Equipment

Respiratory Protection

- a) Six 30 minute SCBAs – 2 at each briefing area and 2 in the Safety Trailer.
- b) Eight 5 minute EBAs – 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

Visual Warning System

- a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.
- b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

H₂S Detection and Monitoring System

- a) H₂S monitoring system (sensor head, warning light and siren) placed throughout rig.
 - Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
 - Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.

H₂S Preparedness and Contingency Plan Summary



Well Control Equipment

- a) Flare Line 150' from wellhead with igniter.
- b) Choke manifold with a remotely operated choke.
- c) Mud / gas separator

Mud Program

In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

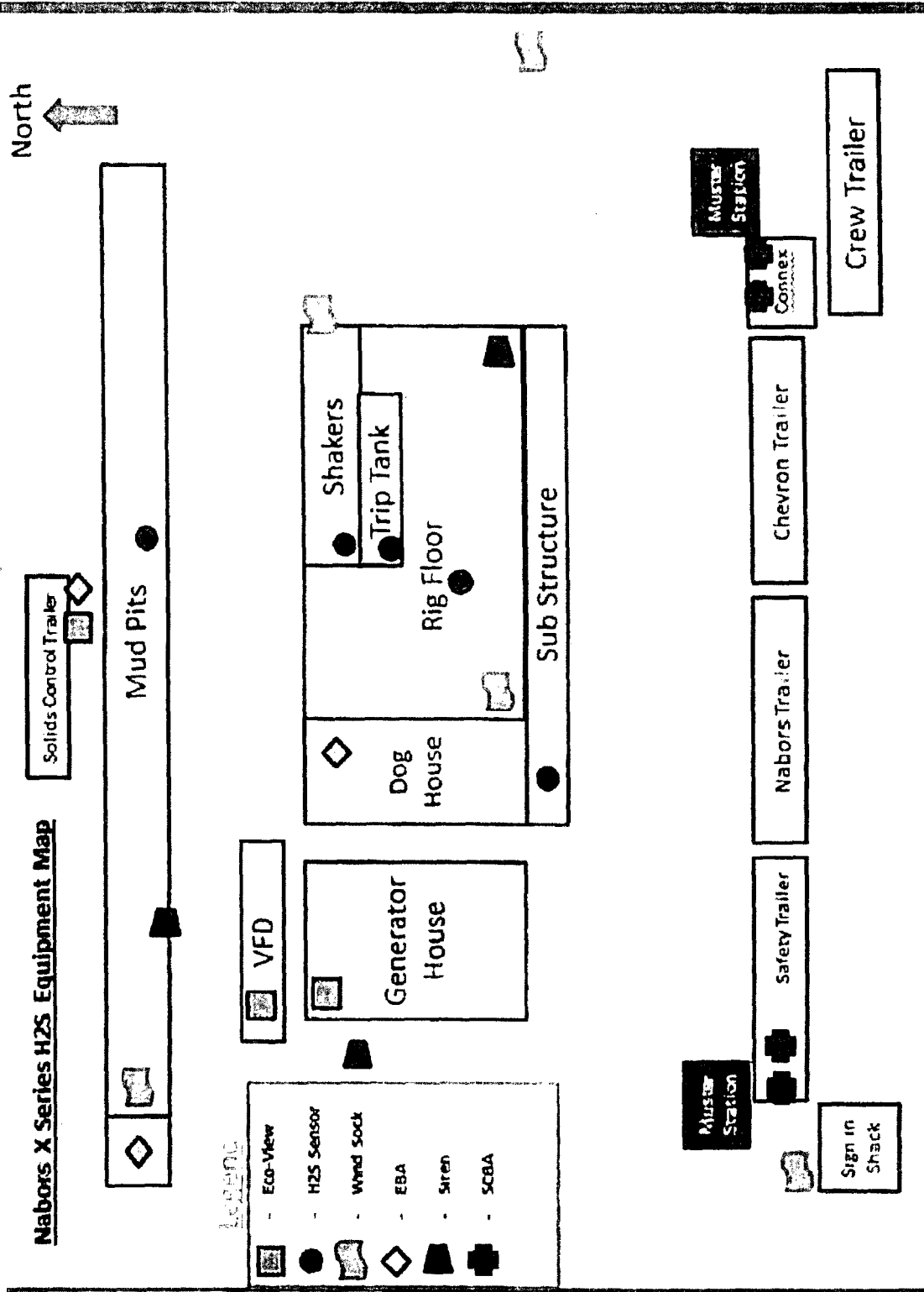
- 1. Use of a degasser
- 2. Use of a zinc based mud treatment
- 3. Increasing mud weight

Public Safety - Emergency Assistance

<u>Agency</u>	<u>Telephone Number</u>
Eddy County Sheriff's Department	575-887-7551
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Carlsbad Medical Center	575-887-4100
Eddy County Emergency Management	575-628-5450
Poison Control Center	800-222-1222



H₂S Preparedness and Contingency Plan Summary





Chevron

**Eddy County, NM (NAD27 NME)
HH SO 10 15 Fed
0024**

**OH
Plan 1 02-01-17**

Anticollision Report

01 February, 2017





Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Reference	Plan 1 02-01-17		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 u	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	3.00 Sigma	Casing Method:	Not applied

Survey Tool Program Date 2/1/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	20,173.34	Plan 1 02-01-17 (OH)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
HH SO 10 15 Fed						
0021 - OH - Plan 1 02-01-17	1,950.43	1,951.54	74.55	54.31	3.683	CC
0021 - OH - Plan 1 02-01-17	2,000.00	2,000.81	74.74	53.98	3.601	ES
0021 - OH - Plan 1 02-01-17	20,173.70	19,557.33	1,048.85	645.75	2.602	SF
0022 - OH - Plan 1 02-01-17	1,800.00	1,800.00	50.00	31.33	2.678	CC
0022 - OH - Plan 1 02-01-17	4,800.00	4,799.42	70.94	20.49	1.406	Level 3, ES
0022 - OH - Plan 1 02-01-17	8,700.00	8,698.99	119.88	27.55	1.298	Level 3, SF
0023 - OH - Plan 1 02-01-17	1,913.76	1,913.86	24.62	4.75	1.239	Level 2, CC, ES, SF
0025 - OH - Plan 1 02-01-17	1,800.00	1,799.00	25.00	6.34	1.340	Level 3, CC
0025 - OH - Plan 1 02-01-17	2,000.00	1,998.90	26.03	5.26	1.253	Level 3, ES, SF
0026 - OH - Plan 1 02-01-17	2,122.49	2,120.76	49.38	27.38	2.244	CC
0026 - OH - Plan 1 02-01-17	2,300.00	2,298.05	50.17	26.32	2.104	ES
0026 - OH - Plan 1 02-01-17	20,173.70	20,492.58	525.62	125.29	1.313	Level 3, SF
HH SO 10 P3						
#15H - OH - Plan 2 11-18-16	2,784.92	2,748.10	1,256.01	1,227.24	43.663	CC
#15H - OH - Plan 2 11-18-16	20,173.70	20,501.65	1,298.08	830.75	2.778	ES, SF
#16H - OH - Plan 2 11-18-16	2,423.39	2,386.28	1,274.90	1,249.92	51.040	CC
#16H - OH - Plan 2 11-18-16	2,500.00	2,442.70	1,275.51	1,249.84	49.701	ES
#16H - OH - Plan 2 11-18-16	20,173.70	20,647.00	2,137.49	1,666.11	4.535	SF
#23H - OH - Plan 2 11-18-16	8,883.66	8,865.98	1,053.27	959.67	11.252	CC
#23H - OH - Plan 2 11-18-16	20,173.70	19,473.15	1,219.73	800.48	2.909	ES, SF
#24H - OH - Plan 2 11-18-16	2,418.08	2,380.68	1,248.38	1,223.46	50.092	CC, ES
#24H - OH - Plan 2 11-18-16	20,173.70	19,579.27	2,001.18	1,534.23	4.286	SF
#7H - OH - Plan 2 11-18-16	20,173.70	20,158.92	840.12	362.49	1.759	CC, ES, SF
#8H - OH - Plan 2 11-18-16	2,437.22	2,400.00	1,260.00	1,234.89	50.168	CC
#8H - OH - Plan 2 11-18-16	20,173.70	20,240.01	1,680.66	1,202.97	3.518	ES, SF

Offset Design HH SO 10 15 Fed - 0021 - OH - Plan 1 02-01-17											
Survey Program: 0-MWD+HDGM											
Reference Offset Semi Major Axis Distance											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)
0.00	0.00	1.00	0.00	0.00	0.00	-179.42	-74.91	-0.75	74.92		
100.00	100.00	101.00	100.00	0.19	0.20	-179.42	-74.91	-0.75	74.92	74.53	0.39 190.860

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0021 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
200.00	200.00	201.00	200.00	0.73	0.74	-179.42	-74.91	-0.75	74.92	73.45	1.47	51.036	
300.00	300.00	301.00	300.00	1.27	1.27	-179.42	-74.91	-0.75	74.92	72.37	2.54	29.456	
400.00	400.00	401.00	400.00	1.81	1.81	-179.42	-74.91	-0.75	74.92	71.30	3.62	20.703	
500.00	500.00	501.00	500.00	2.34	2.35	-179.42	-74.91	-0.75	74.92	70.22	4.69	15.960	
600.00	600.00	601.00	600.00	2.88	2.89	-179.42	-74.91	-0.75	74.92	69.15	5.77	12.985	
700.00	700.00	701.00	700.00	3.42	3.43	-179.42	-74.91	-0.75	74.92	68.07	6.85	10.945	
800.00	800.00	801.00	800.00	3.96	3.96	-179.42	-74.91	-0.75	74.92	67.00	7.92	9.459	
900.00	900.00	901.00	900.00	4.50	4.50	-179.42	-74.91	-0.75	74.92	65.92	9.00	8.328	
1,000.00	1,000.00	1,001.00	1,000.00	5.03	5.04	-179.42	-74.91	-0.75	74.92	64.85	10.07	7.439	
1,100.00	1,100.00	1,101.00	1,100.00	5.57	5.58	-179.42	-74.91	-0.75	74.92	63.77	11.15	6.721	
1,200.00	1,200.00	1,201.00	1,200.00	6.11	6.11	-179.42	-74.91	-0.75	74.92	62.70	12.22	6.130	
1,300.00	1,300.00	1,301.00	1,300.00	6.65	6.65	-179.42	-74.91	-0.75	74.92	61.62	13.30	5.634	
1,400.00	1,400.00	1,401.00	1,400.00	7.18	7.19	-179.42	-74.91	-0.75	74.92	60.54	14.37	5.212	
1,500.00	1,500.00	1,501.00	1,500.00	7.72	7.73	-179.42	-74.91	-0.75	74.92	59.47	15.45	4.850	
1,600.00	1,600.00	1,601.00	1,600.00	8.26	8.26	-179.42	-74.91	-0.75	74.92	58.39	16.52	4.534	
1,700.00	1,700.00	1,701.00	1,700.00	8.80	8.80	-179.42	-74.91	-0.75	74.92	57.32	17.60	4.257	
1,800.00	1,800.00	1,801.00	1,800.00	9.33	9.34	-179.42	-74.91	-0.75	74.92	56.24	18.67	4.012	
1,900.00	1,899.98	1,901.20	1,900.18	9.86	9.87	88.66	-74.68	-2.52	74.66	54.93	19.73	3.785	
1,950.43	1,950.38	1,951.54	1,950.47	10.12	10.13	91.77	-74.38	-4.72	74.55	54.31	20.25	3.683 CC	
2,000.00	1,999.90	2,000.81	1,999.65	10.37	10.38	95.78	-73.98	-7.72	74.74	53.98	20.75	3.601 ES	
2,100.00	2,099.81	2,100.19	2,098.78	10.89	10.90	104.09	-73.04	-14.65	76.30	54.51	21.79	3.502	
2,200.00	2,199.73	2,199.57	2,197.91	11.41	11.43	111.92	-72.11	-21.58	79.41	56.58	22.83	3.479	
2,300.00	2,299.54	2,298.95	2,297.05	11.93	11.95	119.04	-71.18	-28.50	83.89	60.02	23.86	3.515	
2,400.00	2,399.56	2,398.33	2,396.18	12.45	12.48	125.36	-70.25	-35.43	89.53	64.62	24.91	3.595	
2,500.00	2,499.48	2,497.71	2,495.31	12.97	13.01	130.88	-69.32	-42.36	96.13	70.18	25.95	3.705	
2,600.00	2,599.39	2,597.09	2,594.45	13.50	13.54	135.66	-68.39	-49.29	103.51	76.52	26.99	3.835	
2,700.00	2,699.31	2,696.47	2,693.58	14.03	14.07	139.78	-67.46	-56.21	111.51	83.48	28.04	3.977	
2,800.00	2,799.22	2,795.85	2,792.71	14.55	14.61	143.33	-66.52	-63.14	120.01	90.93	29.08	4.127	
2,900.00	2,899.14	2,895.23	2,891.85	15.08	15.15	146.41	-65.59	-70.07	128.91	98.78	30.13	4.279	
3,000.00	2,999.05	2,994.60	2,990.98	15.62	15.68	149.09	-64.66	-76.99	138.13	106.96	31.18	4.430	
3,100.00	3,098.97	3,093.98	3,090.11	16.15	16.22	151.43	-63.73	-83.92	147.62	115.39	32.23	4.580	
3,200.00	3,198.88	3,193.36	3,189.25	16.68	16.76	153.48	-62.80	-90.85	157.32	124.04	33.28	4.727	
3,300.00	3,298.80	3,292.74	3,288.38	17.21	17.30	155.29	-61.87	-97.77	167.20	132.86	34.34	4.869	
3,400.00	3,398.72	3,392.12	3,387.51	17.75	17.84	156.90	-60.93	-104.70	177.22	141.83	35.39	5.007	
3,500.00	3,498.63	3,491.50	3,486.65	18.28	18.38	158.34	-60.00	-111.63	187.37	150.92	36.45	5.141	
3,600.00	3,598.55	3,590.88	3,585.78	18.82	18.93	159.63	-59.07	-118.55	197.62	160.11	37.51	5.269	
3,700.00	3,698.46	3,690.26	3,684.91	19.35	19.47	160.79	-58.14	-125.48	207.96	169.40	38.57	5.393	
3,800.00	3,798.38	3,789.64	3,784.05	19.89	20.01	161.84	-57.21	-132.41	218.38	178.76	39.62	5.511	
3,900.00	3,898.29	3,889.02	3,883.18	20.42	20.56	162.80	-56.28	-139.34	228.87	188.18	40.68	5.625	
4,000.00	3,998.21	3,988.40	3,982.31	20.96	21.10	163.67	-55.34	-146.26	239.41	197.66	41.75	5.735	
4,100.00	4,098.12	4,087.78	4,081.45	21.50	21.65	164.47	-54.41	-153.19	250.00	207.19	42.81	5.840	
4,200.00	4,198.04	4,187.16	4,180.58	22.04	22.19	165.20	-53.48	-160.12	260.64	216.77	43.87	5.941	
4,300.00	4,297.95	4,286.54	4,279.71	22.57	22.74	165.87	-52.55	-167.04	271.32	226.38	44.93	6.038	
4,400.00	4,397.87	4,385.92	4,378.85	23.11	23.28	166.50	-51.62	-173.97	282.03	236.03	46.00	6.131	
4,500.00	4,497.79	4,485.30	4,477.98	23.65	23.83	167.08	-50.69	-180.90	292.77	245.71	47.06	6.221	
4,600.00	4,597.70	4,584.68	4,577.12	24.19	24.38	167.62	-49.76	-187.82	303.54	255.41	48.13	6.307	
4,700.00	4,697.62	4,684.06	4,676.25	24.73	24.92	168.12	-48.82	-194.75	314.33	265.14	49.19	6.390	
4,800.00	4,797.53	4,783.44	4,775.38	25.27	25.47	168.58	-47.89	-201.68	325.14	274.89	50.26	6.469	
4,900.00	4,897.45	4,882.82	4,874.52	25.81	26.02	169.02	-46.96	-208.60	335.98	284.66	51.32	6.546	
5,000.00	4,997.36	4,982.20	4,973.65	26.35	26.57	169.43	-46.03	-215.53	346.83	294.44	52.39	6.620	
5,100.00	5,097.28	5,081.58	5,072.78	26.89	27.12	169.82	-45.10	-222.46	357.70	304.25	53.46	6.691	
5,200.00	5,197.19	5,180.95	5,171.92	27.43	27.66	170.18	-44.17	-229.39	368.59	314.06	54.53	6.760	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0021 - OH - Plan 1 02-01-17														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HOGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,300.00	5,297.11	5,280.33	5,271.05	27.97	28.21	170.52	-43.23	-236.31	379.49	323.89	55.59	6.826			
5,400.00	5,397.03	5,379.71	5,370.18	28.51	28.76	170.84	-42.30	-243.24	390.40	333.74	56.66	6.890			
5,500.00	5,496.94	5,479.09	5,469.32	29.05	29.31	171.15	-41.37	-250.17	401.32	343.59	57.73	6.952			
5,600.00	5,596.86	5,578.47	5,568.45	29.59	29.86	171.44	-40.44	-257.09	412.26	353.46	58.80	7.011			
5,700.00	5,696.77	5,677.85	5,667.58	30.13	30.41	171.71	-39.51	-264.02	423.20	363.33	59.87	7.069			
5,800.00	5,796.69	5,777.23	5,766.72	30.67	30.96	171.97	-38.58	-270.95	434.15	373.21	60.94	7.125			
5,900.00	5,896.60	5,876.61	5,865.85	31.21	31.51	172.22	-37.65	-277.87	445.11	383.11	62.01	7.178			
6,000.00	5,996.52	5,975.99	5,964.98	31.75	32.06	172.45	-36.71	-284.80	456.08	393.00	63.08	7.231			
6,100.00	6,096.43	6,075.37	6,064.12	32.29	32.61	172.68	-35.78	-291.73	467.06	402.91	64.15	7.281			
6,200.00	6,196.35	6,174.75	6,163.25	32.83	33.16	172.89	-34.85	-298.65	478.04	412.82	65.22	7.330			
6,300.00	6,296.27	6,274.13	6,262.38	33.37	33.71	173.10	-33.92	-305.58	489.03	422.74	66.29	7.377			
6,400.00	6,396.18	6,373.51	6,361.52	33.92	34.26	173.29	-32.99	-312.51	500.02	432.67	67.36	7.423			
6,500.00	6,496.10	6,472.89	6,460.65	34.46	34.81	173.48	-32.06	-319.43	511.03	442.60	68.43	7.468			
6,600.00	6,596.01	6,572.27	6,559.78	35.00	35.36	173.66	-31.12	-326.36	522.03	452.53	69.50	7.511			
6,700.00	6,695.93	6,671.65	6,658.92	35.54	35.91	173.83	-30.19	-333.29	533.04	462.47	70.57	7.553			
6,800.00	6,795.84	6,771.03	6,758.05	36.08	36.46	174.00	-29.26	-340.22	544.06	472.41	71.64	7.594			
6,900.00	6,895.76	6,870.41	6,857.19	36.62	37.01	174.15	-28.33	-347.14	555.08	482.36	72.71	7.634			
7,000.00	6,995.67	6,969.79	6,956.32	37.17	37.56	174.31	-27.40	-354.07	566.10	492.31	73.79	7.672			
7,100.00	7,095.59	7,069.17	7,055.45	37.71	38.11	174.45	-26.47	-361.00	577.13	502.27	74.86	7.710			
7,200.00	7,195.51	7,168.55	7,154.59	38.25	38.66	174.59	-25.53	-367.92	588.16	512.23	75.93	7.746			
7,300.00	7,295.42	7,267.93	7,253.72	38.79	39.21	174.73	-24.60	-374.85	599.19	522.19	77.00	7.781			
7,400.00	7,395.34	7,367.31	7,352.85	39.33	39.76	174.86	-23.67	-381.78	610.23	532.15	78.07	7.816			
7,500.00	7,495.25	7,466.68	7,451.99	39.88	40.31	174.99	-22.74	-388.70	621.27	542.12	79.15	7.850			
7,600.00	7,595.17	7,566.06	7,551.12	40.42	40.86	175.11	-21.81	-395.63	632.31	552.09	80.22	7.882			
7,700.00	7,695.08	7,665.44	7,650.25	40.96	41.41	175.22	-20.88	-402.56	643.36	562.07	81.29	7.914			
7,800.00	7,795.00	7,764.82	7,749.39	41.50	41.96	175.34	-19.95	-409.48	654.41	572.04	82.36	7.945			
7,900.00	7,894.91	7,864.20	7,848.52	42.05	42.52	175.45	-19.01	-416.41	665.46	582.02	83.44	7.976			
8,000.00	7,994.83	7,963.58	7,947.65	42.59	43.07	175.55	-18.08	-423.34	676.51	592.00	84.51	8.005			
8,100.00	8,094.75	8,062.96	8,046.79	43.13	43.62	175.66	-17.15	-430.27	687.57	601.98	85.58	8.034			
8,200.00	8,194.66	8,162.34	8,145.92	43.67	44.17	175.76	-16.22	-437.19	698.62	611.97	86.66	8.062			
8,300.00	8,294.58	8,261.72	8,245.05	44.22	44.72	175.85	-15.29	-444.12	709.68	621.95	87.73	8.089			
8,400.00	8,394.49	8,361.10	8,344.19	44.76	45.27	175.95	-14.36	-451.05	720.74	631.94	88.80	8.116			
8,500.00	8,494.41	8,460.48	8,443.32	45.30	45.82	176.04	-13.42	-457.97	731.81	641.93	89.88	8.142			
8,600.00	8,594.32	8,559.86	8,542.45	45.84	46.37	176.12	-12.49	-464.90	742.87	651.92	90.95	8.168			
8,700.00	8,694.24	8,659.24	8,641.59	46.39	46.93	176.21	-11.56	-471.83	753.94	661.92	92.02	8.193			
8,800.00	8,794.15	8,762.96	8,744.67	46.93	47.48	176.26	-10.63	-478.76	764.99	671.92	93.10	8.214			
8,900.00	8,894.07	8,861.42	8,839.81	47.47	47.97	176.34	-9.70	-485.69	775.99	681.92	94.18	8.238			
9,000.00	8,993.99	8,959.00	8,927.79	48.02	48.37	176.41	-8.77	-492.62	786.99	691.92	95.26	8.262			
9,100.00	9,093.90	9,057.22	9,025.03	48.56	48.86	176.48	-7.84	-499.55	797.99	701.92	96.34	8.286			
9,200.00	9,193.82	9,089.83	9,034.94	49.10	48.93	176.50	-6.91	-506.48	808.99	711.92	97.42	8.310			
9,300.00	9,293.73	9,150.00	9,077.45	49.64	49.14	176.54	-5.98	-513.41	819.99	721.92	98.50	8.334			
9,400.00	9,393.64	9,200.00	9,109.24	50.18	49.31	176.58	-5.05	-520.34	830.99	731.92	99.58	8.358			
9,500.00	9,493.55	9,250.00	9,137.56	50.72	49.49	176.61	-4.12	-527.27	841.99	741.92	100.66	8.382			
9,600.00	9,593.46	9,300.00	9,162.20	51.26	49.66	176.64	-3.19	-534.20	852.99	751.92	101.74	8.406			
9,700.00	9,693.37	9,350.00	9,182.97	51.80	49.83	176.67	-2.26	-541.13	863.99	761.92	102.82	8.430			
9,800.00	9,793.28	9,400.00	9,199.70	52.34	50.06	176.70	-1.33	-548.06	874.99	771.92	103.90	8.454			
9,900.00	9,893.19	9,450.00	9,212.28	52.88	50.27	176.73	-0.40	-554.99	885.99	781.92	104.98	8.478			
10,000.00	9,993.10	9,500.00	9,220.61	53.42	50.50	176.76	0.53	-561.92	896.99	791.92	106.06	8.502			
10,100.00	10,093.01	9,550.00	9,224.62	53.96	50.74	176.79	1.60	-568.85	907.99	801.92	107.14	8.526			
10,200.00	10,192.92	9,600.00	9,224.88	54.50	51.03	176.82	2.67	-575.78	918.99	811.92	108.22	8.550			
10,300.00	10,292.83	9,700.00	9,224.52	55.04	51.29	176.85	3.74	-582.71	929.99	821.92	109.30	8.574			
10,400.00	10,392.74	9,800.00	9,224.15	55.58	52.23	176.88	4.81	-589.64	940.99	831.92	110.38	8.598			

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0021 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,500.00	9,859.02	9,907.07	9,223.79	56.12	52.95	52.90	-921.09	-490.46	1,053.13	963.02	90.11	11.687	
10,600.00	9,858.70	10,007.07	9,223.43	56.92	53.75	52.90	-1,021.06	-488.03	1,053.15	961.61	91.54	11.505	
10,700.00	9,858.37	10,107.07	9,223.07	57.79	54.62	52.90	-1,121.03	-485.59	1,053.17	960.07	93.10	11.313	
10,800.00	9,858.05	10,207.07	9,222.70	58.73	55.56	52.90	-1,221.00	-483.16	1,053.18	958.41	94.78	11.112	
10,900.00	9,857.73	10,307.07	9,222.34	59.73	56.56	52.89	-1,320.97	-480.73	1,053.20	956.63	96.57	10.906	
11,000.00	9,857.41	10,407.07	9,221.98	60.79	57.63	52.89	-1,420.94	-478.29	1,053.22	954.75	98.47	10.696	
11,100.00	9,857.09	10,507.07	9,221.62	61.91	58.76	52.89	-1,520.91	-475.86	1,053.24	952.76	100.48	10.482	
11,200.00	9,856.76	10,607.07	9,221.25	63.08	59.94	52.89	-1,620.88	-473.42	1,053.26	950.68	102.58	10.268	
11,300.00	9,856.44	10,707.07	9,220.89	64.30	61.18	52.89	-1,720.85	-470.99	1,053.27	948.50	104.77	10.053	
11,400.00	9,856.12	10,807.07	9,220.53	65.58	62.47	52.88	-1,820.82	-468.56	1,053.29	946.24	107.05	9.839	
11,500.00	9,855.80	10,907.07	9,220.17	66.90	63.81	52.88	-1,920.79	-466.12	1,053.31	943.90	109.41	9.627	
11,600.00	9,855.47	11,007.07	9,219.80	68.26	65.19	52.88	-2,020.76	-463.69	1,053.33	941.49	111.84	9.418	
11,700.00	9,855.15	11,107.07	9,219.44	69.66	66.61	52.88	-2,120.73	-461.25	1,053.35	939.00	114.34	9.212	
11,800.00	9,854.83	11,207.07	9,219.08	71.10	68.07	52.88	-2,220.70	-458.82	1,053.36	936.45	116.91	9.010	
11,900.00	9,854.51	11,307.07	9,218.72	72.58	69.57	52.87	-2,320.67	-456.39	1,053.38	933.84	119.54	8.812	
12,000.00	9,854.18	11,407.07	9,218.36	74.09	71.11	52.87	-2,420.64	-453.95	1,053.40	931.17	122.23	8.618	
12,100.00	9,853.86	11,507.07	9,217.99	75.63	72.67	52.87	-2,520.61	-451.52	1,053.42	928.45	124.97	8.429	
12,200.00	9,853.54	11,607.07	9,217.63	77.21	74.27	52.87	-2,620.58	-449.09	1,053.44	925.67	127.77	8.245	
12,300.00	9,853.22	11,707.07	9,217.27	78.81	75.89	52.87	-2,720.55	-446.65	1,053.45	922.85	130.60	8.066	
12,400.00	9,852.90	11,807.07	9,216.91	80.44	77.54	52.86	-2,820.52	-444.22	1,053.47	919.99	133.49	7.892	
12,500.00	9,852.57	11,907.07	9,216.54	82.09	79.22	52.86	-2,920.49	-441.78	1,053.49	917.08	136.41	7.723	
12,600.00	9,852.25	12,007.07	9,216.18	83.77	80.91	52.86	-3,020.46	-439.35	1,053.51	914.13	139.37	7.559	
12,700.00	9,851.93	12,107.07	9,215.82	85.46	82.64	52.86	-3,120.43	-436.92	1,053.53	911.15	142.37	7.400	
12,800.00	9,851.61	12,207.07	9,215.46	87.18	84.38	52.86	-3,220.40	-434.48	1,053.54	908.14	145.41	7.246	
12,900.00	9,851.28	12,307.07	9,215.09	88.92	86.14	52.85	-3,320.37	-432.05	1,053.56	905.09	148.47	7.096	
13,000.00	9,850.96	12,407.07	9,214.73	90.68	87.92	52.85	-3,420.34	-429.61	1,053.58	902.02	151.56	6.951	
13,100.00	9,850.64	12,507.07	9,214.37	92.45	89.71	52.85	-3,520.31	-427.18	1,053.60	898.91	154.69	6.811	
13,200.00	9,850.32	12,607.07	9,214.01	94.25	91.52	52.85	-3,620.27	-424.75	1,053.62	895.78	157.84	6.675	
13,300.00	9,850.00	12,707.07	9,213.64	96.05	93.35	52.85	-3,720.24	-422.31	1,053.63	892.62	161.01	6.544	
13,400.00	9,849.67	12,807.07	9,213.28	97.87	95.19	52.84	-3,820.21	-419.88	1,053.65	889.45	164.21	6.417	
13,500.00	9,849.35	12,907.07	9,212.92	99.71	97.05	52.84	-3,920.18	-417.44	1,053.67	886.24	167.43	6.293	
13,600.00	9,849.03	13,007.07	9,212.56	101.56	98.91	52.84	-4,020.15	-415.01	1,053.69	883.02	170.67	6.174	
13,700.00	9,848.71	13,107.07	9,212.20	103.42	100.79	52.84	-4,120.12	-412.58	1,053.71	879.78	173.93	6.058	
13,800.00	9,848.38	13,207.07	9,211.83	105.29	102.69	52.84	-4,220.09	-410.14	1,053.72	876.52	177.20	5.946	
13,900.00	9,848.06	13,307.07	9,211.47	107.17	104.59	52.83	-4,320.06	-407.71	1,053.74	873.24	180.50	5.838	
14,000.00	9,847.74	13,407.07	9,211.11	109.07	106.50	52.83	-4,420.03	-405.27	1,053.76	869.95	183.81	5.733	
14,100.00	9,847.42	13,507.07	9,210.75	110.97	108.42	52.83	-4,520.00	-402.84	1,053.78	866.64	187.14	5.631	
14,200.00	9,847.09	13,607.07	9,210.38	112.89	110.35	52.83	-4,619.97	-400.41	1,053.80	863.31	190.48	5.532	
14,300.00	9,846.77	13,707.07	9,210.02	114.81	112.29	52.83	-4,719.94	-397.97	1,053.81	859.97	193.84	5.436	
14,400.00	9,846.45	13,807.07	9,209.66	116.74	114.24	52.82	-4,819.91	-395.54	1,053.83	856.62	197.21	5.344	
14,500.00	9,846.13	13,907.07	9,209.30	118.68	116.19	52.82	-4,919.88	-393.11	1,053.85	853.26	200.60	5.254	
14,600.00	9,845.81	14,007.07	9,208.93	120.63	118.16	52.82	-5,019.85	-390.67	1,053.87	849.88	203.99	5.166	
14,700.00	9,845.48	14,107.07	9,208.57	122.58	120.13	52.82	-5,119.82	-388.24	1,053.89	846.49	207.40	5.081	
14,800.00	9,845.16	14,207.07	9,208.21	124.54	122.10	52.82	-5,219.79	-385.80	1,053.90	843.09	210.81	4.999	
14,900.00	9,844.84	14,307.07	9,207.85	126.51	124.08	52.81	-5,319.76	-383.37	1,053.92	839.68	214.24	4.919	
15,000.00	9,844.52	14,407.07	9,207.49	128.49	126.07	52.81	-5,419.73	-380.94	1,053.94	836.26	217.68	4.842	
15,100.00	9,844.19	14,507.07	9,207.12	130.47	128.07	52.81	-5,519.70	-378.50	1,053.96	832.83	221.13	4.766	
15,200.00	9,843.79	14,594.99	9,206.70	132.45	129.82	52.82	-5,607.60	-376.86	1,054.24	829.85	224.39	4.698	
15,300.00	9,842.88	14,689.13	9,206.01	134.43	131.71	52.83	-5,701.74	-376.31	1,054.16	826.40	227.76	4.628	
15,400.00	9,841.96	14,789.13	9,205.27	136.42	133.71	52.84	-5,801.73	-375.73	1,054.05	822.81	231.24	4.558	
15,500.00	9,841.04	14,889.13	9,204.53	138.42	135.72	52.85	-5,901.73	-375.14	1,053.94	819.22	234.72	4.490	
15,600.00	9,840.12	14,989.13	9,203.79	140.41	137.73	52.85	-6,001.72	-374.56	1,053.83	815.61	238.22	4.424	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design													HH SO 10 15 Fed - 0021 - OH - Plan 1 02-01-17		Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
15,700.00	9,839.19	15,089.13	9,203.05	142.42	139.75	52.86	-6,101.72	-373.97	1,053.72	812.00	241.72	4.359				
15,800.00	9,838.27	15,189.13	9,202.31	144.42	141.77	52.87	-6,201.71	-373.39	1,053.61	808.38	245.23	4.296				
15,900.00	9,837.35	15,289.13	9,201.57	146.43	143.80	52.88	-6,301.71	-372.81	1,053.50	804.75	248.75	4.235				
16,000.00	9,836.43	15,389.13	9,200.83	148.45	145.82	52.89	-6,401.71	-372.22	1,053.39	801.12	252.27	4.176				
16,100.00	9,835.51	15,489.13	9,200.09	150.47	147.86	52.89	-6,501.70	-371.64	1,053.28	797.48	255.80	4.118				
16,200.00	9,834.59	15,589.13	9,199.35	152.49	149.89	52.90	-6,601.70	-371.05	1,053.17	793.83	259.34	4.061				
16,300.00	9,833.67	15,689.13	9,198.61	154.52	151.93	52.91	-6,701.69	-370.47	1,053.06	790.18	262.88	4.006				
16,400.00	9,832.75	15,789.13	9,197.87	156.55	153.98	52.92	-6,801.69	-369.88	1,052.95	786.52	266.43	3.952				
16,500.00	9,831.83	15,889.13	9,197.13	158.58	156.02	52.93	-6,901.68	-369.30	1,052.84	782.86	269.99	3.900				
16,600.00	9,830.91	15,989.13	9,196.39	160.62	158.07	52.93	-7,001.68	-368.72	1,052.73	779.19	273.55	3.848				
16,700.00	9,829.99	16,089.13	9,195.65	162.66	160.12	52.94	-7,101.67	-368.13	1,052.62	775.51	277.11	3.799				
16,800.00	9,829.06	16,189.13	9,194.91	164.70	162.18	52.95	-7,201.67	-367.55	1,052.51	771.83	280.68	3.750				
16,900.00	9,828.14	16,289.13	9,194.17	166.75	164.24	52.96	-7,301.66	-366.96	1,052.41	768.15	284.26	3.702				
17,000.00	9,827.22	16,389.13	9,193.43	168.80	166.30	52.96	-7,401.66	-366.38	1,052.30	764.46	287.83	3.656				
17,100.00	9,826.30	16,489.13	9,192.69	170.85	168.36	52.97	-7,501.65	-365.80	1,052.19	760.77	291.42	3.611				
17,200.00	9,825.38	16,589.13	9,191.95	172.90	170.42	52.98	-7,601.65	-365.21	1,052.08	757.07	295.01	3.566				
17,300.00	9,824.46	16,689.13	9,191.21	174.96	172.49	52.99	-7,701.65	-364.63	1,051.97	753.37	298.60	3.523				
17,400.00	9,823.54	16,789.13	9,190.47	177.02	174.56	53.00	-7,801.64	-364.04	1,051.86	749.66	302.20	3.481				
17,500.00	9,822.62	16,889.13	9,189.73	179.08	176.63	53.00	-7,901.64	-363.46	1,051.75	745.95	305.80	3.439				
17,600.00	9,821.70	16,989.13	9,188.99	181.14	178.71	53.01	-8,001.63	-362.87	1,051.64	742.24	309.40	3.399				
17,700.00	9,820.78	17,089.13	9,188.26	183.21	180.78	53.02	-8,101.63	-362.29	1,051.53	738.52	313.01	3.359				
17,800.00	9,819.86	17,189.13	9,187.52	185.27	182.86	53.03	-8,201.62	-361.71	1,051.42	734.80	316.62	3.321				
17,900.00	9,818.94	17,289.13	9,186.78	187.34	184.94	53.04	-8,301.62	-361.12	1,051.31	731.08	320.24	3.283				
18,000.00	9,818.01	17,389.13	9,186.04	189.42	187.02	53.04	-8,401.61	-360.54	1,051.20	727.35	323.85	3.246				
18,100.00	9,817.09	17,489.13	9,185.30	191.49	189.10	53.05	-8,501.61	-359.95	1,051.09	723.62	327.48	3.210				
18,200.00	9,816.17	17,589.13	9,184.56	193.57	191.19	53.06	-8,601.60	-359.37	1,050.98	719.88	331.10	3.174				
18,300.00	9,815.25	17,689.13	9,183.82	195.64	193.27	53.07	-8,701.60	-358.78	1,050.88	716.15	334.73	3.139				
18,400.00	9,814.33	17,789.13	9,183.08	197.72	195.36	53.07	-8,801.59	-358.20	1,050.77	712.40	338.36	3.105				
18,500.00	9,813.41	17,889.13	9,182.34	199.80	197.45	53.08	-8,901.59	-357.62	1,050.66	708.66	342.00	3.072				
18,600.00	9,812.49	17,989.13	9,181.60	201.89	199.54	53.09	-9,001.59	-357.03	1,050.55	704.92	345.63	3.039				
18,700.00	9,811.57	18,089.12	9,180.86	203.97	201.63	53.10	-9,101.58	-356.45	1,050.44	701.17	349.27	3.007				
18,800.00	9,810.65	18,189.12	9,180.12	206.06	203.73	53.11	-9,201.58	-355.86	1,050.33	697.41	352.92	2.976				
18,900.00	9,809.73	18,289.12	9,179.38	208.14	205.82	53.11	-9,301.57	-355.28	1,050.22	693.66	356.56	2.945				
19,000.00	9,808.81	18,389.12	9,178.64	210.23	207.92	53.12	-9,401.57	-354.69	1,050.11	689.90	360.21	2.915				
19,100.00	9,807.88	18,489.12	9,177.90	212.32	210.01	53.13	-9,501.56	-354.11	1,050.00	686.14	363.86	2.886				
19,200.00	9,806.96	18,589.12	9,177.16	214.41	212.11	53.14	-9,601.56	-353.53	1,049.89	682.38	367.51	2.857				
19,300.00	9,806.04	18,689.12	9,176.42	216.51	214.21	53.15	-9,701.55	-352.94	1,049.79	678.62	371.17	2.828				
19,400.00	9,805.12	18,789.12	9,175.68	218.60	216.31	53.15	-9,801.55	-352.36	1,049.68	674.85	374.83	2.800				
19,500.00	9,804.20	18,889.12	9,174.94	220.69	218.42	53.16	-9,901.54	-351.77	1,049.57	671.08	378.49	2.773				
19,600.00	9,803.28	18,989.12	9,174.20	222.79	220.52	53.17	-10,001.54	-351.19	1,049.46	667.31	382.15	2.746				
19,700.00	9,802.36	19,089.12	9,173.46	224.89	222.62	53.18	-10,101.54	-350.60	1,049.35	663.53	385.82	2.720				
19,800.00	9,801.44	19,189.12	9,172.72	226.99	224.73	53.19	-10,201.53	-350.02	1,049.24	659.76	389.48	2.694				
19,900.00	9,800.52	19,289.12	9,171.98	229.09	226.84	53.19	-10,301.53	-349.44	1,049.13	655.98	393.15	2.669				
20,000.00	9,799.60	19,389.12	9,171.24	231.19	228.94	53.20	-10,401.52	-348.85	1,049.02	652.20	396.82	2.644				
20,100.00	9,798.68	19,489.12	9,170.50	233.29	231.05	53.21	-10,501.52	-348.27	1,048.91	648.42	400.50	2.619				
20,154.60	9,798.17	19,543.72	9,170.10	234.44	232.20	53.21	-10,556.11	-347.95	1,048.86	646.35	402.50	2.606				
20,173.70	9,798.00	19,557.33	9,170.00	234.84	232.49	53.21	-10,569.72	-347.87	1,048.85	645.75	403.10	2.602 SF				

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0022 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-179.15	-49.99	-0.74	50.00				
100.00	100.00	100.00	100.00	0.19	0.19	-179.15	-49.99	-0.74	50.00	49.61	0.39	129.148	
200.00	200.00	200.00	200.00	0.73	0.73	-179.15	-49.99	-0.74	50.00	48.54	1.46	34.186	
300.00	300.00	300.00	300.00	1.27	1.27	-179.15	-49.99	-0.74	50.00	47.46	2.54	19.701	
400.00	400.00	400.00	400.00	1.81	1.81	-179.15	-49.99	-0.74	50.00	46.39	3.61	13.837	
500.00	500.00	500.00	500.00	2.34	2.34	-179.15	-49.99	-0.74	50.00	45.31	4.69	10.664	
600.00	600.00	600.00	600.00	2.88	2.88	-179.15	-49.99	-0.74	50.00	44.24	5.76	8.674	
700.00	700.00	700.00	700.00	3.42	3.42	-179.15	-49.99	-0.74	50.00	43.16	6.84	7.310	
800.00	800.00	800.00	800.00	3.96	3.96	-179.15	-49.99	-0.74	50.00	42.08	7.92	6.317	
900.00	900.00	900.00	900.00	4.50	4.50	-179.15	-49.99	-0.74	50.00	41.01	8.99	5.561	
1,000.00	1,000.00	1,000.00	1,000.00	5.03	5.03	-179.15	-49.99	-0.74	50.00	39.93	10.07	4.967	
1,100.00	1,100.00	1,100.00	1,100.00	5.57	5.57	-179.15	-49.99	-0.74	50.00	38.86	11.14	4.488	
1,200.00	1,200.00	1,200.00	1,200.00	6.11	6.11	-179.15	-49.99	-0.74	50.00	37.78	12.22	4.093	
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	-179.15	-49.99	-0.74	50.00	36.71	13.29	3.762	
1,400.00	1,400.00	1,400.00	1,400.00	7.18	7.18	-179.15	-49.99	-0.74	50.00	35.63	14.37	3.480	
1,500.00	1,500.00	1,500.00	1,500.00	7.72	7.72	-179.15	-49.99	-0.74	50.00	34.56	15.44	3.238	
1,600.00	1,600.00	1,600.00	1,600.00	8.26	8.26	-179.15	-49.99	-0.74	50.00	33.48	16.52	3.027	
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	-179.15	-49.99	-0.74	50.00	32.41	17.59	2.842	
1,800.00	1,800.00	1,800.00	1,800.00	9.33	9.33	-179.15	-49.99	-0.74	50.00	31.33	18.67	2.678 CC	
1,900.00	1,899.98	1,899.84	1,899.82	9.86	9.86	86.24	-50.18	0.99	50.04	30.33	19.72	2.538	
2,000.00	1,999.90	1,999.74	1,999.59	10.37	10.37	85.22	-50.71	5.91	50.24	29.50	20.74	2.422	
2,100.00	2,099.81	2,099.73	2,099.42	10.89	10.89	83.55	-51.30	11.48	50.53	28.76	21.77	2.321	
2,200.00	2,199.73	2,199.71	2,199.25	11.41	11.40	81.90	-51.89	17.04	50.86	28.05	22.81	2.230	
2,300.00	2,299.64	2,299.70	2,299.09	11.93	11.93	80.28	-52.49	22.61	51.23	27.38	23.85	2.148	
2,400.00	2,399.56	2,399.69	2,398.92	12.45	12.45	78.68	-53.08	28.17	51.65	26.75	24.90	2.075	
2,500.00	2,499.48	2,499.68	2,498.75	12.97	12.98	77.10	-53.68	33.74	52.10	26.16	25.95	2.008	
2,600.00	2,599.39	2,599.67	2,598.58	13.50	13.51	75.56	-54.27	39.30	52.59	25.60	27.00	1.948	
2,700.00	2,699.31	2,699.66	2,698.42	14.03	14.04	74.04	-54.87	44.87	53.12	25.07	28.05	1.894	
2,800.00	2,799.22	2,799.65	2,798.25	14.55	14.57	72.56	-55.46	50.43	53.69	24.58	29.11	1.844	
2,900.00	2,899.14	2,899.64	2,898.08	15.08	15.10	71.10	-56.06	56.00	54.29	24.12	30.17	1.800	
3,000.00	2,999.05	2,999.62	2,997.91	15.62	15.63	69.68	-56.65	61.57	54.93	23.70	31.23	1.759	
3,100.00	3,098.97	3,099.61	3,097.74	16.15	16.17	68.30	-57.25	67.13	55.60	23.31	32.29	1.722	
3,200.00	3,198.88	3,199.60	3,197.58	16.68	16.70	66.94	-57.84	72.70	56.30	22.94	33.35	1.688	
3,300.00	3,298.80	3,299.59	3,297.41	17.21	17.24	65.63	-58.44	78.26	57.03	22.61	34.42	1.657	
3,400.00	3,398.72	3,399.58	3,397.24	17.75	17.78	64.34	-59.03	83.83	57.79	22.31	35.48	1.629	
3,500.00	3,498.63	3,499.57	3,497.07	18.28	18.32	63.09	-59.63	89.39	58.58	22.03	36.55	1.603	
3,600.00	3,598.55	3,599.56	3,596.90	18.82	18.86	61.87	-60.22	94.96	59.39	21.78	37.61	1.579	
3,700.00	3,698.46	3,699.55	3,696.74	19.35	19.40	60.69	-60.82	100.52	60.24	21.56	38.68	1.557	
3,800.00	3,798.38	3,799.54	3,796.57	19.89	19.94	59.54	-61.41	106.09	61.10	21.35	39.75	1.537	
3,900.00	3,898.29	3,899.52	3,896.40	20.42	20.48	58.42	-62.01	111.65	62.00	21.18	40.82	1.519	
4,000.00	3,998.21	3,999.51	3,996.23	20.96	21.02	57.33	-62.60	117.22	62.91	21.02	41.89	1.502	
4,100.00	4,098.12	4,099.50	4,096.06	21.50	21.56	56.28	-63.20	122.79	63.85	20.89	42.95	1.486 Level 3	
4,200.00	4,198.04	4,199.49	4,195.90	22.04	22.10	55.26	-63.79	128.35	64.80	20.78	44.02	1.472 Level 3	
4,300.00	4,297.95	4,299.48	4,295.73	22.57	22.64	54.26	-64.39	133.92	65.78	20.69	45.09	1.459 Level 3	
4,400.00	4,397.87	4,399.47	4,395.56	23.11	23.19	53.30	-64.98	139.48	66.78	20.61	46.16	1.447 Level 3	
4,500.00	4,497.79	4,499.46	4,495.39	23.65	23.73	52.36	-65.57	145.05	67.79	20.56	47.23	1.435 Level 3	
4,600.00	4,597.70	4,599.45	4,595.22	24.19	24.27	51.45	-66.17	150.61	68.82	20.52	48.30	1.425 Level 3	
4,700.00	4,697.62	4,699.43	4,695.06	24.73	24.82	50.57	-66.76	156.18	69.87	20.50	49.37	1.415 Level 3	
4,800.00	4,797.53	4,799.42	4,794.89	25.27	25.36	49.72	-67.36	161.74	70.94	20.49	50.45	1.406 Level 3, ES	
4,900.00	4,897.45	4,899.41	4,894.72	25.81	25.90	48.89	-67.95	167.31	72.02	20.50	51.52	1.398 Level 3	
5,000.00	4,997.36	4,999.40	4,994.55	26.35	26.45	48.09	-68.55	172.87	73.11	20.52	52.59	1.390 Level 3	
5,100.00	5,097.28	5,099.39	5,094.38	26.89	26.99	47.30	-69.14	178.44	74.22	20.56	53.66	1.383 Level 3	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0022 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,197.19	5,199.38	5,194.22	27.43	27.54	46.55	-69.74	184.01	75.34	20.61	54.73	1.377 Level 3	
5,300.00	5,297.11	5,299.37	5,294.05	27.97	28.08	45.81	-70.33	189.57	76.48	20.68	55.80	1.371 Level 3	
5,400.00	5,397.03	5,399.36	5,393.88	28.51	28.63	45.10	-70.93	195.14	77.63	20.75	56.88	1.365 Level 3	
5,500.00	5,496.94	5,499.34	5,493.71	29.05	29.17	44.41	-71.52	200.70	78.79	20.84	57.95	1.360 Level 3	
5,600.00	5,596.86	5,599.33	5,593.54	29.59	29.72	43.73	-72.12	206.27	79.96	20.94	59.02	1.355 Level 3	
5,700.00	5,696.77	5,699.32	5,693.38	30.13	30.26	43.08	-72.71	211.83	81.14	21.04	60.09	1.350 Level 3	
5,800.00	5,796.69	5,799.31	5,793.21	30.67	30.81	42.45	-73.31	217.40	82.33	21.16	61.17	1.346 Level 3	
5,900.00	5,896.60	5,899.30	5,893.04	31.21	31.36	41.83	-73.90	222.96	83.53	21.29	62.24	1.342 Level 3	
6,000.00	5,996.52	5,999.29	5,992.87	31.75	31.90	41.23	-74.50	228.53	84.74	21.43	63.31	1.338 Level 3	
6,100.00	6,096.43	6,099.28	6,092.70	32.29	32.45	40.65	-75.09	234.09	85.96	21.57	64.38	1.335 Level 3	
6,200.00	6,196.35	6,199.27	6,192.54	32.83	32.99	40.09	-75.69	239.66	87.19	21.73	65.46	1.332 Level 3	
6,300.00	6,296.27	6,299.26	6,292.37	33.37	33.54	39.54	-76.28	245.23	88.42	21.89	66.53	1.329 Level 3	
6,400.00	6,396.18	6,399.24	6,392.20	33.92	34.09	39.00	-76.88	250.79	89.67	22.06	67.60	1.326 Level 3	
6,500.00	6,496.10	6,499.23	6,492.03	34.46	34.63	38.48	-77.47	256.36	90.92	22.24	68.68	1.324 Level 3	
6,600.00	6,596.01	6,599.22	6,591.86	35.00	35.18	37.98	-78.07	261.92	92.18	22.42	69.75	1.321 Level 3	
6,700.00	6,695.93	6,699.21	6,691.70	35.54	35.73	37.49	-78.66	267.49	93.44	22.62	70.83	1.319 Level 3	
6,800.00	6,795.84	6,799.20	6,791.53	36.08	36.27	37.01	-79.26	273.05	94.71	22.82	71.90	1.317 Level 3	
6,900.00	6,895.76	6,899.19	6,891.36	36.62	36.82	36.54	-79.85	278.62	95.99	23.02	72.97	1.315 Level 3	
7,000.00	6,995.67	6,999.18	6,991.19	37.17	37.37	36.09	-80.44	284.18	97.28	23.23	74.05	1.314 Level 3	
7,100.00	7,095.59	7,099.17	7,091.02	37.71	37.92	35.65	-81.04	289.75	98.57	23.45	75.12	1.312 Level 3	
7,200.00	7,195.51	7,199.15	7,190.86	38.25	38.46	35.22	-81.63	295.31	99.87	23.67	76.20	1.311 Level 3	
7,300.00	7,295.42	7,299.14	7,290.69	38.79	39.01	34.80	-82.23	300.88	101.17	23.90	77.27	1.309 Level 3	
7,400.00	7,395.34	7,399.13	7,390.52	39.33	39.56	34.39	-82.82	306.45	102.48	24.13	78.35	1.308 Level 3	
7,500.00	7,495.25	7,499.12	7,490.35	39.88	40.10	33.99	-83.42	312.01	103.79	24.37	79.42	1.307 Level 3	
7,600.00	7,595.17	7,599.11	7,590.18	40.42	40.65	33.60	-84.01	317.58	105.11	24.61	80.50	1.306 Level 3	
7,700.00	7,695.08	7,699.10	7,690.02	40.96	41.20	33.22	-84.61	323.14	106.43	24.86	81.57	1.305 Level 3	
7,800.00	7,795.00	7,799.09	7,789.85	41.50	41.75	32.85	-85.20	328.71	107.76	25.11	82.65	1.304 Level 3	
7,900.00	7,894.91	7,899.08	7,889.68	42.05	42.29	32.49	-85.80	334.27	109.09	25.37	83.72	1.303 Level 3	
8,000.00	7,994.83	7,999.07	7,989.51	42.59	42.84	32.14	-86.39	339.84	110.42	25.63	84.80	1.302 Level 3	
8,100.00	8,094.75	8,099.05	8,089.35	43.13	43.39	31.80	-86.99	345.40	111.76	25.89	85.87	1.302 Level 3	
8,200.00	8,194.66	8,199.04	8,189.18	43.67	43.94	31.46	-87.58	350.97	113.10	26.16	86.95	1.301 Level 3	
8,300.00	8,294.58	8,299.03	8,289.01	44.22	44.49	31.14	-88.18	356.53	114.45	26.43	88.02	1.300 Level 3	
8,400.00	8,394.49	8,399.02	8,388.84	44.76	45.03	30.82	-88.77	362.10	115.80	26.71	89.10	1.300 Level 3	
8,500.00	8,494.41	8,499.01	8,488.67	45.30	45.58	30.50	-89.37	367.66	117.16	26.98	90.17	1.299 Level 3	
8,600.00	8,594.32	8,599.00	8,588.51	45.84	46.13	30.20	-89.96	373.23	118.51	27.27	91.25	1.299 Level 3	
8,700.00	8,694.24	8,698.99	8,688.34	46.39	46.68	29.90	-90.56	378.80	119.88	27.55	92.32	1.298 Level 3, SF	
8,800.00	8,794.15	8,794.29	8,783.45	46.93	47.20	30.09	-92.35	384.13	122.05	28.67	93.38	1.307 Level 3	
8,900.00	8,894.07	8,881.30	8,869.29	47.47	47.66	34.21	-105.12	389.21	132.19	37.79	94.40	1.400 Level 3	
9,000.00	8,993.99	8,962.81	8,947.07	48.02	48.09	40.87	-128.75	394.11	153.56	58.15	95.41	1.609	
9,100.00	9,093.90	9,036.42	9,013.79	48.56	48.46	47.60	-159.40	398.57	187.52	91.16	96.36	1.946	
9,200.00	9,193.82	9,100.00	9,067.86	49.10	48.77	53.05	-192.58	402.38	233.52	136.29	97.23	2.402	
9,300.00	9,293.73	9,150.00	9,107.58	49.64	49.00	48.14	-222.77	405.33	289.86	191.86	98.01	2.958	
9,400.00	9,393.04	9,209.27	9,151.05	50.18	49.28	-8.47	-262.88	408.72	347.47	249.86	97.61	3.560	
9,500.00	9,489.15	9,261.07	9,185.47	50.69	49.53	-10.79	-301.47	411.58	399.48	304.83	94.65	4.221	
9,600.00	9,579.12	9,312.69	9,216.17	51.18	49.78	-10.45	-342.86	414.29	444.86	355.64	89.22	4.986	
9,700.00	9,660.24	9,364.19	9,242.95	51.64	50.04	-9.82	-386.74	416.85	483.02	401.41	81.61	5.919	
9,800.00	9,730.03	9,415.58	9,265.65	52.11	50.30	-9.28	-432.77	419.23	513.53	441.25	72.28	7.105	
9,900.00	9,786.38	9,466.91	9,284.12	52.59	50.58	-8.90	-480.60	421.43	536.08	474.09	61.99	8.649	
10,000.00	9,827.57	9,518.19	9,298.23	53.09	50.86	-8.68	-529.84	423.41	550.45	498.53	51.92	10.602	
10,100.00	9,852.35	9,569.46	9,307.88	53.62	51.15	-8.62	-580.14	425.17	556.50	512.46	44.05	12.634	
10,200.00	9,859.99	9,620.71	9,313.00	54.15	51.44	-8.73	-631.10	426.70	554.21	513.15	41.06	13.498	
10,300.00	9,859.66	9,689.63	9,313.82	54.73	51.84	-8.75	-699.98	428.42	552.27	510.53	41.74	13.230	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0022 - OH - Plan 1 02-01-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,400.00	9,859.34	9,789.63	9,313.64	55.39	52.49	-8.75	-799.95	430.85	552.13	509.48	42.65	12.945	
10,500.00	9,859.02	9,889.63	9,313.46	56.12	53.22	-8.75	-899.92	433.27	551.99	508.32	43.67	12.639	
10,600.00	9,858.70	9,989.63	9,313.27	56.92	54.02	-8.75	-999.89	435.70	551.85	507.05	44.80	12.317	
10,700.00	9,858.37	10,089.63	9,313.09	57.79	54.89	-8.76	-1,099.86	438.12	551.71	505.68	46.03	11.985	
10,800.00	9,858.05	10,189.63	9,312.91	58.73	55.83	-8.76	-1,199.83	440.55	551.57	504.22	47.35	11.648	
10,900.00	9,857.73	10,289.63	9,312.73	59.73	56.84	-8.76	-1,299.80	442.97	551.43	502.68	48.76	11.309	
11,000.00	9,857.41	10,389.63	9,312.55	60.79	57.91	-8.76	-1,399.77	445.40	551.30	501.05	50.24	10.973	
11,100.00	9,857.09	10,489.63	9,312.37	61.91	59.04	-8.77	-1,499.75	447.82	551.16	499.36	51.80	10.641	
11,200.00	9,856.76	10,589.63	9,312.19	63.08	60.23	-8.77	-1,599.72	450.25	551.02	497.60	53.42	10.316	
11,300.00	9,856.44	10,689.63	9,312.01	64.30	61.47	-8.77	-1,699.69	452.68	550.88	495.78	55.09	9.999	
11,400.00	9,856.12	10,789.63	9,311.82	65.58	62.76	-8.77	-1,799.66	455.10	550.74	493.91	56.82	9.692	
11,500.00	9,855.80	10,889.63	9,311.64	66.90	64.09	-8.77	-1,899.63	457.53	550.60	491.99	58.60	9.395	
11,600.00	9,855.47	10,989.63	9,311.46	68.26	65.47	-8.78	-1,999.60	459.95	550.46	490.03	60.43	9.109	
11,700.00	9,855.15	11,089.63	9,311.28	69.66	66.90	-8.78	-2,099.57	462.38	550.32	488.02	62.29	8.834	
11,800.00	9,854.83	11,189.63	9,311.10	71.10	68.36	-8.78	-2,199.54	464.80	550.18	485.98	64.20	8.570	
11,900.00	9,854.51	11,289.63	9,310.92	72.58	69.86	-8.78	-2,299.51	467.23	550.04	483.91	66.13	8.317	
12,000.00	9,854.18	11,389.63	9,310.74	74.09	71.39	-8.79	-2,399.48	469.65	549.90	481.80	68.10	8.075	
12,100.00	9,853.86	11,489.63	9,310.56	75.63	72.96	-8.79	-2,499.45	472.08	549.76	479.66	70.10	7.843	
12,200.00	9,853.54	11,589.63	9,310.37	77.21	74.55	-8.79	-2,599.42	474.50	549.62	477.50	72.12	7.621	
12,300.00	9,853.22	11,689.63	9,310.19	78.81	76.18	-8.79	-2,699.39	476.93	549.48	475.32	74.17	7.409	
12,400.00	9,852.90	11,789.63	9,310.01	80.44	77.83	-8.79	-2,799.36	479.35	549.34	473.11	76.23	7.206	
12,500.00	9,852.57	11,889.63	9,309.83	82.09	79.50	-8.80	-2,899.33	481.78	549.20	470.88	78.32	7.012	
12,600.00	9,852.25	11,989.63	9,309.65	83.77	81.20	-8.80	-2,999.30	484.21	549.06	468.63	80.43	6.827	
12,700.00	9,851.93	12,089.63	9,309.47	85.46	82.92	-8.80	-3,099.27	486.63	548.92	466.37	82.55	6.649	
12,800.00	9,851.61	12,189.63	9,309.29	87.18	84.66	-8.80	-3,199.24	489.06	548.79	464.09	84.69	6.480	
12,900.00	9,851.28	12,289.63	9,309.10	88.92	86.42	-8.80	-3,299.21	491.48	548.65	461.80	86.85	6.317	
13,000.00	9,850.96	12,389.63	9,308.92	90.68	88.20	-8.81	-3,399.18	493.91	548.51	459.49	89.02	6.162	
13,100.00	9,850.64	12,489.63	9,308.74	92.45	89.99	-8.81	-3,499.15	496.33	548.37	457.17	91.20	6.013	
13,200.00	9,850.32	12,589.63	9,308.56	94.25	91.80	-8.81	-3,599.12	498.76	548.23	454.83	93.39	5.870	
13,300.00	9,850.00	12,689.63	9,308.38	96.05	93.63	-8.81	-3,699.09	501.18	548.09	452.49	95.60	5.733	
13,400.00	9,849.67	12,789.63	9,308.20	97.87	95.47	-8.82	-3,799.06	503.61	547.95	450.14	97.81	5.602	
13,500.00	9,849.35	12,889.63	9,308.02	99.71	97.32	-8.82	-3,899.03	506.03	547.81	447.77	100.04	5.476	
13,600.00	9,849.03	12,989.63	9,307.84	101.56	99.19	-8.82	-3,999.00	508.46	547.67	445.40	102.27	5.355	
13,700.00	9,848.71	13,089.63	9,307.65	103.42	101.07	-8.82	-4,098.97	510.89	547.53	443.02	104.51	5.239	
13,800.00	9,848.38	13,189.63	9,307.47	105.29	102.96	-8.82	-4,198.94	513.31	547.39	440.63	106.76	5.127	
13,900.00	9,848.06	13,289.63	9,307.29	107.17	104.86	-8.83	-4,298.91	515.74	547.25	438.23	109.02	5.020	
14,000.00	9,847.74	13,389.63	9,307.11	109.07	106.77	-8.83	-4,398.88	518.16	547.11	435.83	111.29	4.916	
14,100.00	9,847.42	13,489.63	9,306.93	110.97	108.69	-8.83	-4,498.85	520.59	546.97	433.42	113.56	4.817	
14,200.00	9,847.09	13,589.63	9,306.75	112.89	110.62	-8.83	-4,598.83	523.01	546.83	431.00	115.83	4.721	
14,300.00	9,846.77	13,689.63	9,306.57	114.81	112.56	-8.84	-4,698.80	525.44	546.69	428.58	118.12	4.628	
14,400.00	9,846.45	13,789.63	9,306.39	116.74	114.51	-8.84	-4,798.77	527.86	546.55	426.15	120.41	4.539	
14,500.00	9,846.13	13,889.63	9,306.20	118.68	116.46	-8.84	-4,898.74	530.29	546.41	423.71	122.70	4.453	
14,600.00	9,845.81	13,989.63	9,306.02	120.63	118.43	-8.84	-4,998.71	532.71	546.28	421.28	125.00	4.370	
14,700.00	9,845.48	14,089.63	9,305.84	122.58	120.40	-8.84	-5,098.68	535.14	546.14	418.83	127.30	4.290	
14,800.00	9,845.16	14,189.63	9,305.66	124.54	122.37	-8.85	-5,198.65	537.56	546.00	416.39	129.61	4.213	
14,900.00	9,844.84	14,289.63	9,305.48	126.51	124.35	-8.85	-5,298.62	539.99	545.86	413.94	131.92	4.138	
15,000.00	9,844.52	14,389.63	9,305.30	128.49	126.34	-8.85	-5,398.59	542.42	545.72	411.48	134.24	4.065	
15,100.00	9,844.19	14,489.63	9,305.12	130.47	128.34	-8.85	-5,498.56	544.84	545.58	409.02	136.56	3.995	
15,200.00	9,843.79	14,588.96	9,304.88	132.45	130.32	-8.86	-5,597.86	547.04	545.42	406.53	138.89	3.927	
15,300.00	9,842.88	14,688.59	9,304.24	134.43	132.31	-8.86	-5,697.49	547.68	545.16	403.94	141.22	3.860	
15,400.00	9,841.96	14,788.59	9,303.58	136.42	134.31	-8.87	-5,797.49	548.27	544.90	401.36	143.55	3.796	
15,500.00	9,841.04	14,888.59	9,302.92	138.42	136.31	-8.87	-5,897.48	548.85	544.65	398.76	145.88	3.733	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0022 - OH - Plan 1 02-01-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
15,600.00	9,840.12	14,988.59	9,302.26	140.41	138.32	-8.88	-5,997.48	549.44	544.39	396.17	148.22	3.673		
15,700.00	9,839.19	15,088.59	9,301.59	142.42	140.33	-8.88	-6,097.47	550.02	544.13	393.57	150.56	3.614		
15,800.00	9,838.27	15,188.59	9,300.93	144.42	142.35	-8.88	-6,197.47	550.60	543.88	390.97	152.90	3.557		
15,900.00	9,837.35	15,288.59	9,300.27	146.43	144.37	-8.89	-6,297.46	551.19	543.62	388.37	155.25	3.502		
16,000.00	9,836.43	15,388.59	9,299.61	148.45	146.40	-8.89	-6,397.46	551.77	543.36	385.76	157.60	3.448		
16,100.00	9,835.51	15,488.59	9,298.95	150.47	148.43	-8.90	-6,497.46	552.36	543.11	383.16	159.95	3.396		
16,200.00	9,834.59	15,588.59	9,298.29	152.49	150.46	-8.90	-6,597.45	552.94	542.85	380.55	162.30	3.345		
16,300.00	9,833.67	15,688.59	9,297.63	154.52	152.49	-8.91	-6,697.45	553.52	542.59	377.94	164.66	3.295		
16,400.00	9,832.75	15,788.59	9,296.97	156.55	154.53	-8.91	-6,797.44	554.11	542.34	375.32	167.01	3.247		
16,500.00	9,831.83	15,888.59	9,296.31	158.58	156.58	-8.91	-6,897.44	554.69	542.08	372.70	169.37	3.200		
16,600.00	9,830.91	15,988.59	9,295.65	160.62	158.62	-8.92	-6,997.43	555.28	541.82	370.09	171.74	3.155		
16,700.00	9,829.99	16,088.59	9,294.99	162.66	160.67	-8.92	-7,097.43	555.86	541.56	367.47	174.10	3.111		
16,800.00	9,829.06	16,188.59	9,294.32	164.70	162.72	-8.93	-7,197.43	556.45	541.31	364.84	176.46	3.068		
16,900.00	9,828.14	16,288.59	9,293.66	166.75	164.78	-8.93	-7,297.42	557.03	541.05	362.22	178.83	3.025		
17,000.00	9,827.22	16,388.59	9,293.00	168.80	166.83	-8.94	-7,397.42	557.61	540.79	359.59	181.20	2.985		
17,100.00	9,826.30	16,488.59	9,292.34	170.85	168.89	-8.94	-7,497.41	558.20	540.54	356.97	183.57	2.945		
17,200.00	9,825.38	16,588.59	9,291.68	172.90	170.95	-8.94	-7,597.41	558.78	540.28	354.34	185.94	2.906		
17,300.00	9,824.46	16,688.59	9,291.02	174.96	173.02	-8.95	-7,697.40	559.37	540.02	351.71	188.32	2.868		
17,400.00	9,823.54	16,788.59	9,290.36	177.02	175.09	-8.95	-7,797.40	559.95	539.77	349.08	190.69	2.831		
17,500.00	9,822.62	16,888.59	9,289.70	179.08	177.15	-8.96	-7,897.40	560.54	539.51	346.44	193.07	2.794		
17,600.00	9,821.70	16,988.59	9,289.04	181.14	179.23	-8.96	-7,997.39	561.12	539.25	343.81	195.45	2.759		
17,700.00	9,820.78	17,088.59	9,288.38	183.21	181.30	-8.97	-8,097.39	561.70	539.00	341.17	197.82	2.725		
17,800.00	9,819.86	17,188.59	9,287.72	185.27	183.37	-8.97	-8,197.38	562.29	538.74	338.54	200.20	2.691		
17,900.00	9,818.94	17,288.59	9,287.05	187.34	185.45	-8.97	-8,297.38	562.87	538.48	335.90	202.59	2.658		
18,000.00	9,818.01	17,388.59	9,286.39	189.42	187.53	-8.98	-8,397.38	563.46	538.23	333.26	204.97	2.626		
18,100.00	9,817.09	17,488.59	9,285.73	191.49	189.61	-8.98	-8,497.37	564.04	537.97	330.62	207.35	2.594		
18,200.00	9,816.17	17,588.59	9,285.07	193.57	191.69	-8.99	-8,597.37	564.62	537.71	327.97	209.74	2.564		
18,300.00	9,815.25	17,688.59	9,284.41	195.64	193.77	-8.99	-8,697.36	565.21	537.46	325.33	212.13	2.534		
18,400.00	9,814.33	17,788.59	9,283.75	197.72	195.86	-9.00	-8,797.36	565.79	537.20	322.69	214.51	2.504		
18,500.00	9,813.41	17,888.59	9,283.09	199.80	197.95	-9.00	-8,897.35	566.38	536.94	320.04	216.90	2.476		
18,600.00	9,812.49	17,988.59	9,282.43	201.89	200.04	-9.00	-8,997.35	566.96	536.69	317.40	219.29	2.447		
18,700.00	9,811.57	18,088.59	9,281.77	203.97	202.13	-9.01	-9,097.35	567.55	536.43	314.75	221.68	2.420		
18,800.00	9,810.65	18,188.59	9,281.11	206.06	204.22	-9.01	-9,197.34	568.13	536.17	312.10	224.07	2.393		
18,900.00	9,809.73	18,288.59	9,280.45	208.14	206.31	-9.02	-9,297.34	568.71	535.92	309.45	226.46	2.366		
19,000.00	9,808.81	18,388.59	9,279.78	210.23	208.40	-9.02	-9,397.33	569.30	535.66	306.80	228.86	2.341		
19,100.00	9,807.88	18,488.59	9,279.12	212.32	210.50	-9.03	-9,497.33	569.88	535.40	304.15	231.25	2.315		
19,200.00	9,806.96	18,588.59	9,278.46	214.41	212.60	-9.03	-9,597.32	570.47	535.15	301.50	233.65	2.290		
19,300.00	9,806.04	18,688.59	9,277.80	216.51	214.69	-9.04	-9,697.32	571.05	534.89	298.85	236.04	2.266		
19,400.00	9,805.12	18,788.59	9,277.14	218.60	216.79	-9.04	-9,797.32	571.64	534.63	296.19	238.44	2.242		
19,500.00	9,804.20	18,888.59	9,276.48	220.69	218.89	-9.04	-9,897.31	572.22	534.38	293.54	240.84	2.219		
19,600.00	9,803.28	18,988.59	9,275.82	222.79	220.99	-9.05	-9,997.31	572.80	534.12	290.88	243.24	2.196		
19,700.00	9,802.36	19,088.59	9,275.16	224.89	223.10	-9.05	-10,097.30	573.39	533.86	288.23	245.63	2.173		
19,800.00	9,801.44	19,188.59	9,274.50	226.99	225.20	-9.06	-10,197.30	573.97	533.61	285.57	248.03	2.151		
19,900.00	9,800.52	19,288.59	9,273.84	229.09	227.31	-9.06	-10,297.30	574.56	533.35	282.91	250.44	2.130		
20,000.00	9,799.60	19,388.59	9,273.18	231.19	229.41	-9.07	-10,397.29	575.14	533.09	280.26	252.84	2.108		
20,100.00	9,798.68	19,488.59	9,272.51	233.29	231.52	-9.07	-10,497.29	575.72	532.84	277.60	255.24	2.088		
20,173.70	9,798.00	19,562.27	9,272.03	234.84	233.07	-9.07	-10,570.98	576.16	532.65	275.64	257.01	2.072		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0023 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-179.15	-25.00	-0.37	25.00				
100.00	100.00	100.00	100.00	0.19	0.19	-179.15	-25.00	-0.37	25.00	24.61	0.39	64.572	
200.00	200.00	200.00	200.00	0.73	0.73	-179.15	-25.00	-0.37	25.00	23.54	1.46	17.093	
300.00	300.00	300.00	300.00	1.27	1.27	-179.15	-25.00	-0.37	25.00	22.46	2.54	9.850	
400.00	400.00	400.00	400.00	1.81	1.81	-179.15	-25.00	-0.37	25.00	21.39	3.61	6.918	
500.00	500.00	500.00	500.00	2.34	2.34	-179.15	-25.00	-0.37	25.00	20.31	4.69	5.332	
600.00	600.00	600.00	600.00	2.88	2.88	-179.15	-25.00	-0.37	25.00	19.23	5.76	4.337	
700.00	700.00	700.00	700.00	3.42	3.42	-179.15	-25.00	-0.37	25.00	18.16	6.84	3.655	
800.00	800.00	800.00	800.00	3.96	3.96	-179.15	-25.00	-0.37	25.00	17.08	7.92	3.158	
900.00	900.00	900.00	900.00	4.50	4.50	-179.15	-25.00	-0.37	25.00	16.01	8.99	2.781	
1,000.00	1,000.00	1,000.00	1,000.00	5.03	5.03	-179.15	-25.00	-0.37	25.00	14.93	10.07	2.484	
1,100.00	1,100.00	1,100.00	1,100.00	5.57	5.57	-179.15	-25.00	-0.37	25.00	13.86	11.14	2.244	
1,200.00	1,200.00	1,200.00	1,200.00	6.11	6.11	-179.15	-25.00	-0.37	25.00	12.78	12.22	2.046	
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	-179.15	-25.00	-0.37	25.00	11.71	13.29	1.881	
1,400.00	1,400.00	1,400.00	1,400.00	7.18	7.18	-179.15	-25.00	-0.37	25.00	10.63	14.37	1.740	
1,500.00	1,500.00	1,500.00	1,500.00	7.72	7.72	-179.15	-25.00	-0.37	25.00	9.56	15.44	1.619	
1,600.00	1,600.00	1,600.00	1,600.00	8.26	8.26	-179.15	-25.00	-0.37	25.00	8.48	16.52	1.513	
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	-179.15	-25.00	-0.37	25.00	7.41	17.59	1.421 Level 3	
1,800.00	1,800.00	1,800.00	1,800.00	9.33	9.33	-179.15	-25.00	-0.37	25.00	6.33	18.67	1.339 Level 3	
1,900.00	1,899.98	1,900.12	1,900.10	9.86	9.86	94.22	-24.48	-2.04	24.64	4.91	19.72	1.249 Level 2	
1,913.76	1,913.73	1,913.86	1,913.83	9.93	9.94	96.53	-24.33	-2.54	24.62	4.75	19.86	1.239 Level 2 CC, ES, SF	
2,000.00	1,999.90	1,999.67	1,999.51	10.37	10.38	114.97	-22.96	-7.02	25.88	5.13	20.75	1.247 Level 2	
2,100.00	2,099.81	2,099.08	2,098.69	10.89	10.91	134.47	-20.98	-13.49	30.90	9.12	21.78	1.419 Level 3	
2,200.00	2,199.73	2,198.49	2,197.87	11.41	11.43	147.52	-19.96	-19.96	38.39	15.58	22.81	1.683	
2,300.00	2,299.64	2,297.91	2,297.05	11.93	11.96	156.03	-17.02	-26.43	47.21	23.37	23.84	1.980	
2,400.00	2,399.56	2,397.32	2,396.23	12.45	12.49	161.79	-15.04	-32.90	56.73	31.85	24.88	2.280	
2,500.00	2,499.48	2,496.73	2,495.41	12.97	13.02	165.87	-13.06	-39.37	66.66	40.73	25.92	2.571	
2,600.00	2,599.39	2,596.14	2,594.59	13.50	13.56	168.88	-11.08	-45.84	76.83	49.86	26.97	2.849	
2,700.00	2,699.31	2,695.55	2,693.77	14.03	14.09	171.18	-9.10	-52.31	87.16	59.15	28.01	3.111	
2,800.00	2,799.22	2,794.96	2,792.95	14.55	14.63	173.00	-7.12	-58.78	97.61	68.54	29.06	3.358	
2,900.00	2,899.14	2,894.37	2,892.13	15.08	15.16	174.46	-5.14	-65.24	108.13	78.01	30.11	3.591	
3,000.00	2,999.05	2,993.78	2,991.31	15.62	15.70	175.66	-3.16	-71.71	118.71	87.54	31.17	3.809	
3,100.00	3,098.97	3,093.19	3,090.49	16.15	16.24	176.67	-1.18	-78.18	129.33	97.11	32.22	4.014	
3,200.00	3,198.88	3,192.60	3,189.67	16.68	16.78	177.52	0.80	-84.65	139.98	106.71	33.28	4.207	
3,300.00	3,298.80	3,292.01	3,288.85	17.21	17.32	178.25	2.78	-91.12	150.66	116.33	34.33	4.388	
3,400.00	3,398.72	3,391.42	3,388.04	17.75	17.86	178.89	4.76	-97.59	161.37	125.98	35.39	4.560	
3,500.00	3,498.63	3,490.83	3,487.22	18.28	18.40	179.44	6.74	-104.06	172.09	135.64	36.45	4.721	
3,600.00	3,598.55	3,590.24	3,586.40	18.82	18.95	179.93	8.72	-110.53	182.82	145.31	37.51	4.874	
3,700.00	3,698.46	3,689.66	3,685.58	19.35	19.49	-179.63	10.70	-117.00	193.57	155.00	38.57	5.019	
3,800.00	3,798.38	3,789.07	3,784.76	19.89	20.03	-179.24	12.68	-123.47	204.32	164.69	39.63	5.156	
3,900.00	3,898.29	3,888.48	3,883.94	20.42	20.58	-178.89	14.66	-129.94	215.09	174.39	40.69	5.286	
4,000.00	3,998.21	3,987.89	3,983.12	20.96	21.12	-178.57	16.64	-136.41	225.86	184.10	41.76	5.409	
4,100.00	4,098.12	4,087.30	4,082.30	21.50	21.67	-178.28	18.62	-142.88	236.64	193.82	42.82	5.526	
4,200.00	4,198.04	4,186.71	4,181.48	22.04	22.21	-178.02	20.60	-149.35	247.42	203.54	43.88	5.638	
4,300.00	4,297.95	4,286.12	4,280.66	22.57	22.76	-177.78	22.58	-155.82	258.21	213.26	44.95	5.744	
4,400.00	4,397.87	4,385.53	4,379.84	23.11	23.30	-177.56	24.56	-162.29	269.00	222.99	46.02	5.846	
4,500.00	4,497.79	4,484.94	4,479.02	23.65	23.85	-177.35	26.54	-168.76	279.80	232.72	47.08	5.943	
4,600.00	4,597.70	4,584.35	4,578.20	24.19	24.39	-177.16	28.52	-175.23	290.60	242.45	48.15	6.036	
4,700.00	4,697.62	4,683.76	4,677.38	24.73	24.94	-176.98	30.50	-181.69	301.40	252.18	49.21	6.124	
4,800.00	4,797.53	4,783.17	4,776.56	25.27	25.49	-176.82	32.48	-188.16	312.20	261.92	50.28	6.209	
4,900.00	4,897.45	4,882.58	4,875.74	25.81	26.03	-176.67	34.46	-194.63	323.01	271.66	51.35	6.291	
5,000.00	4,997.36	4,982.00	4,974.92	26.35	26.58	-176.52	36.44	-201.10	333.82	281.40	52.42	6.369	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0023 - OH - Plan 1 02-01-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
5,100.00	5,097.28	5,081.41	5,074.10	26.89	27.13	-176.39	38.42	-207.57	344.63	291.14	53.48	6.444		
5,200.00	5,197.19	5,180.82	5,173.28	27.43	27.68	-176.26	40.40	-214.04	355.44	300.89	54.55	6.516		
5,300.00	5,297.11	5,280.23	5,272.46	27.97	28.22	-176.15	42.38	-220.51	366.26	310.63	55.62	6.585		
5,400.00	5,397.03	5,379.64	5,371.64	28.51	28.77	-176.03	44.36	-226.98	377.07	320.38	56.69	6.651		
5,500.00	5,496.94	5,479.05	5,470.82	29.05	29.32	-175.93	46.34	-233.45	387.89	330.13	57.76	6.716		
5,600.00	5,596.86	5,578.46	5,570.00	29.59	29.87	-175.83	48.32	-239.92	398.71	339.88	58.83	6.777		
5,700.00	5,696.77	5,677.87	5,669.18	30.13	30.41	-175.73	50.30	-246.39	409.53	349.63	59.90	6.837		
5,800.00	5,796.69	5,777.28	5,768.36	30.67	30.96	-175.64	52.28	-252.86	420.35	359.38	60.97	6.894		
5,900.00	5,896.60	5,876.69	5,867.54	31.21	31.51	-175.56	54.26	-259.33	431.17	369.13	62.04	6.950		
6,000.00	5,996.52	5,976.10	5,966.72	31.75	32.06	-175.48	56.24	-265.80	441.99	378.88	63.11	7.003		
6,100.00	6,096.43	6,075.51	6,065.90	32.29	32.61	-175.40	58.22	-272.27	452.82	388.63	64.18	7.055		
6,200.00	6,196.35	6,174.92	6,165.08	32.83	33.16	-175.33	60.20	-278.74	463.64	398.39	65.25	7.105		
6,300.00	6,296.27	6,274.34	6,264.26	33.37	33.71	-175.26	62.18	-285.21	474.46	408.14	66.32	7.154		
6,400.00	6,396.18	6,373.75	6,363.44	33.92	34.26	-175.19	64.16	-291.68	485.29	417.90	67.39	7.201		
6,500.00	6,496.10	6,473.16	6,462.62	34.46	34.80	-175.13	66.14	-298.14	496.12	427.65	68.47	7.246		
6,600.00	6,596.01	6,572.57	6,561.80	35.00	35.35	-175.06	68.12	-304.61	506.94	437.41	69.54	7.290		
6,700.00	6,695.93	6,671.98	6,660.98	35.54	35.90	-175.01	70.10	-311.08	517.77	447.16	70.61	7.333		
6,800.00	6,795.84	6,771.39	6,760.16	36.08	36.45	-174.95	72.08	-317.55	528.60	456.92	71.68	7.374		
6,900.00	6,895.76	6,870.80	6,859.34	36.62	37.00	-174.89	74.06	-324.02	539.43	466.67	72.75	7.415		
7,000.00	6,995.67	6,970.21	6,958.52	37.17	37.55	-174.84	76.04	-330.49	550.26	476.43	73.82	7.454		
7,100.00	7,095.59	7,069.62	7,057.70	37.71	38.10	-174.79	78.02	-336.96	561.08	486.19	74.90	7.491		
7,200.00	7,195.51	7,169.03	7,156.88	38.25	38.65	-174.74	80.00	-343.43	571.91	495.95	75.97	7.528		
7,300.00	7,295.42	7,268.44	7,256.07	38.79	39.20	-174.70	81.98	-349.90	582.74	505.70	77.04	7.564		
7,400.00	7,395.34	7,367.85	7,355.25	39.33	39.75	-174.65	83.96	-356.37	593.57	515.46	78.11	7.599		
7,500.00	7,495.25	7,467.26	7,454.43	39.88	40.30	-174.61	85.94	-362.84	604.40	525.22	79.19	7.633		
7,600.00	7,595.17	7,566.68	7,553.61	40.42	40.85	-174.57	87.92	-369.31	615.24	534.98	80.26	7.666		
7,700.00	7,695.08	7,666.09	7,652.79	40.96	41.40	-174.53	89.90	-375.78	626.07	544.73	81.33	7.698		
7,800.00	7,795.00	7,765.50	7,751.97	41.50	41.95	-174.49	91.88	-382.25	636.90	554.49	82.40	7.729		
7,900.00	7,894.91	7,864.91	7,851.15	42.05	42.50	-174.45	93.86	-388.72	647.73	564.25	83.48	7.759		
8,000.00	7,994.83	7,964.32	7,950.33	42.59	43.05	-174.42	95.84	-395.19	658.56	574.01	84.55	7.789		
8,100.00	8,094.75	8,063.73	8,049.51	43.13	43.60	-174.38	97.82	-401.66	669.39	583.77	85.62	7.818		
8,200.00	8,194.66	8,163.14	8,148.69	43.67	44.15	-174.35	99.80	-408.13	680.23	593.53	86.70	7.846		
8,300.00	8,294.58	8,262.55	8,247.87	44.22	44.70	-174.32	101.78	-414.59	691.06	603.29	87.77	7.873		
8,400.00	8,394.49	8,361.96	8,347.05	44.76	45.25	-174.28	103.76	-421.06	701.89	613.05	88.84	7.900		
8,500.00	8,494.41	8,461.37	8,446.23	45.30	45.80	-174.25	105.74	-427.53	712.73	622.81	89.92	7.926		
8,600.00	8,594.32	8,560.78	8,545.41	45.84	46.35	-174.22	107.72	-434.00	723.56	632.57	90.99	7.952		
8,700.00	8,694.24	8,660.19	8,644.59	46.39	46.90	-174.19	109.70	-440.47	734.39	642.33	92.07	7.977		
8,800.00	8,794.15	8,759.60	8,743.77	46.93	47.45	-174.17	111.68	-446.94	745.23	652.09	93.14	8.001		
8,900.00	8,894.07	8,859.01	8,842.95	47.47	48.00	-174.14	113.66	-453.41	756.06	661.85	94.21	8.025		
9,000.00	8,993.99	8,958.43	8,942.13	48.02	48.55	-174.11	115.64	-459.88	766.90	671.61	95.29	8.048		
9,100.00	9,093.90	9,057.84	9,041.31	48.56	49.10	-174.09	117.62	-466.35	777.73	681.37	96.36	8.071		
9,200.00	9,193.82	9,157.25	9,140.49	49.10	49.65	-174.06	119.60	-472.82	788.56	691.13	97.44	8.093		
9,300.00	9,293.73	9,256.59	9,248.58	49.64	50.25	-174.03	120.91	-479.85	799.28	700.73	98.55	8.110		
9,400.00	9,393.04	9,404.09	9,384.84	50.18	50.94	-174.00	122.90	-486.32	810.11	710.58	99.66	8.127		
9,500.00	9,492.95	9,539.03	9,508.98	50.69	51.52	-173.97	124.88	-492.79	821.00	720.53	100.77	8.144		
9,600.00	9,592.86	9,668.46	9,613.65	51.18	51.97	-173.94	126.86	-499.26	831.89	730.48	101.88	8.161		
9,700.00	9,692.77	9,791.30	9,695.03	51.64	52.31	-173.91	128.84	-505.73	842.78	740.43	102.99	8.178		
9,800.00	9,792.68	9,907.27	9,752.37	52.11	52.63	-173.88	130.82	-512.20	853.67	750.38	104.10	8.195		
9,900.00	9,892.59	10,016.65	9,786.93	52.59	52.99	-173.85	132.80	-518.67	864.56	760.33	105.21	8.212		
10,000.00	9,827.57	10,120.04	9,800.99	53.09	53.40	-173.82	134.78	-525.14	875.45	770.28	106.32	8.229		
10,100.00	9,852.35	10,218.10	9,801.29	53.62	53.83	-173.79	136.76	-531.61	886.34	780.23	107.43	8.246		
10,200.00	9,859.99	10,317.65	9,800.83	54.15	54.34	-173.76	138.74	-538.08	897.23	790.18	108.54	8.263		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0023 - OH - Plan 1 02-01-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
10,300.00	9,859.66	10,417.65	9,800.37	54.73	54.94	85.96	-723.18	-495.28	842.08	733.40	108.68	7.748		
10,400.00	9,859.34	10,517.65	9,799.91	55.39	55.60	85.95	-823.15	-492.85	842.09	732.10	109.99	7.656		
10,500.00	9,859.02	10,617.65	9,799.45	56.12	56.34	85.94	-923.12	-490.41	842.09	730.64	111.45	7.556		
10,600.00	9,858.70	10,717.65	9,798.98	56.92	57.15	85.93	-1,023.09	-487.98	842.09	729.03	113.06	7.448		
10,700.00	9,858.37	10,817.65	9,798.52	57.79	58.03	85.92	-1,123.06	-485.54	842.09	727.29	114.80	7.335		
10,800.00	9,858.05	10,917.65	9,798.06	58.73	58.97	85.91	-1,223.03	-483.11	842.09	725.41	116.69	7.217		
10,900.00	9,857.73	11,017.65	9,797.59	59.73	59.98	85.90	-1,322.99	-480.68	842.10	723.40	118.70	7.095		
11,000.00	9,857.41	11,117.65	9,797.13	60.79	61.05	85.90	-1,422.96	-478.24	842.10	721.27	120.83	6.969		
11,100.00	9,857.09	11,217.65	9,796.67	61.91	62.17	85.89	-1,522.93	-475.81	842.10	719.03	123.07	6.842		
11,200.00	9,856.76	11,317.65	9,796.20	63.08	63.35	85.88	-1,622.90	-473.38	842.10	716.67	125.43	6.714		
11,300.00	9,856.44	11,417.65	9,795.74	64.30	64.57	85.87	-1,722.87	-470.94	842.11	714.22	127.89	6.585		
11,400.00	9,856.12	11,517.65	9,795.28	65.58	65.85	85.86	-1,822.84	-468.51	842.11	711.66	130.44	6.456		
11,500.00	9,855.80	11,617.65	9,794.82	66.90	67.17	85.85	-1,922.81	-466.07	842.11	709.02	133.09	6.327		
11,600.00	9,855.47	11,717.65	9,794.35	68.26	68.53	85.84	-2,022.78	-463.64	842.11	706.29	135.83	6.200		
11,700.00	9,855.15	11,817.65	9,793.89	69.66	69.94	85.83	-2,122.75	-461.21	842.12	703.48	138.64	6.074		
11,800.00	9,854.83	11,917.65	9,793.43	71.10	71.38	85.82	-2,222.72	-458.77	842.12	700.59	141.53	5.950		
11,900.00	9,854.51	12,017.65	9,792.96	72.58	72.86	85.81	-2,322.69	-456.34	842.12	697.63	144.50	5.828		
12,000.00	9,854.18	12,117.65	9,792.50	74.09	74.37	85.80	-2,422.66	-453.90	842.12	694.60	147.53	5.708		
12,100.00	9,853.86	12,217.65	9,792.04	75.63	75.91	85.79	-2,522.63	-451.47	842.13	691.51	150.62	5.591		
12,200.00	9,853.54	12,317.65	9,791.57	77.21	77.49	85.78	-2,622.59	-449.04	842.13	688.36	153.77	5.476		
12,300.00	9,853.22	12,417.65	9,791.11	78.81	79.09	85.77	-2,722.56	-446.60	842.13	685.15	156.98	5.365		
12,400.00	9,852.90	12,517.65	9,790.65	80.44	80.72	85.76	-2,822.53	-444.17	842.13	681.89	160.24	5.255		
12,500.00	9,852.57	12,617.65	9,790.19	82.09	82.37	85.75	-2,922.50	-441.73	842.14	678.58	163.55	5.149		
12,600.00	9,852.25	12,717.65	9,789.72	83.77	84.05	85.74	-3,022.47	-439.30	842.14	675.23	166.91	5.045		
12,700.00	9,851.93	12,817.65	9,789.26	85.46	85.74	85.73	-3,122.44	-436.87	842.14	671.83	170.31	4.945		
12,800.00	9,851.61	12,917.65	9,788.80	87.18	87.46	85.72	-3,222.41	-434.43	842.15	668.39	173.75	4.847		
12,900.00	9,851.28	13,017.65	9,788.33	88.92	89.20	85.71	-3,322.38	-432.00	842.15	664.91	177.23	4.752		
13,000.00	9,850.96	13,117.65	9,787.87	90.68	90.96	85.70	-3,422.35	-429.56	842.15	661.40	180.75	4.659		
13,100.00	9,850.64	13,217.65	9,787.41	92.45	92.73	85.69	-3,522.32	-427.13	842.15	657.85	184.30	4.569		
13,200.00	9,850.32	13,317.65	9,786.94	94.25	94.52	85.68	-3,622.29	-424.70	842.16	654.27	187.89	4.482		
13,300.00	9,850.00	13,417.65	9,786.48	96.05	96.33	85.67	-3,722.26	-422.26	842.16	650.66	191.50	4.398		
13,400.00	9,849.67	13,517.65	9,786.02	97.87	98.15	85.67	-3,822.23	-419.83	842.16	647.02	195.14	4.316		
13,500.00	9,849.35	13,617.65	9,785.56	99.71	99.99	85.66	-3,922.19	-417.40	842.17	643.35	198.82	4.236		
13,600.00	9,849.03	13,717.65	9,785.09	101.56	101.83	85.65	-4,022.16	-414.96	842.17	639.66	202.51	4.159		
13,700.00	9,848.71	13,817.65	9,784.63	103.42	103.69	85.64	-4,122.13	-412.53	842.17	635.94	206.23	4.084		
13,800.00	9,848.38	13,917.65	9,784.17	105.29	105.56	85.63	-4,222.10	-410.09	842.17	632.20	209.98	4.011		
13,900.00	9,848.06	14,017.65	9,783.70	107.17	107.45	85.62	-4,322.07	-407.66	842.18	628.43	213.74	3.940		
14,000.00	9,847.74	14,117.64	9,783.24	109.07	109.34	85.61	-4,422.04	-405.23	842.18	624.65	217.53	3.872		
14,100.00	9,847.42	14,217.64	9,782.78	110.97	111.24	85.60	-4,522.01	-402.79	842.18	620.85	221.34	3.805		
14,200.00	9,847.09	14,317.64	9,782.31	112.89	113.16	85.59	-4,621.98	-400.36	842.19	617.03	225.16	3.740		
14,300.00	9,846.77	14,417.64	9,781.85	114.81	115.08	85.58	-4,721.95	-397.92	842.19	613.19	229.00	3.678		
14,400.00	9,846.45	14,517.64	9,781.39	116.74	117.01	85.57	-4,821.92	-395.49	842.19	609.33	232.86	3.617		
14,500.00	9,846.13	14,617.64	9,780.93	118.68	118.95	85.56	-4,921.89	-393.06	842.20	605.46	236.74	3.558		
14,600.00	9,845.81	14,717.64	9,780.46	120.63	120.90	85.55	-5,021.86	-390.62	842.20	601.57	240.63	3.500		
14,700.00	9,845.48	14,817.64	9,780.00	122.58	122.85	85.54	-5,121.82	-388.19	842.20	597.67	244.53	3.444		
14,800.00	9,845.16	14,917.64	9,779.54	124.54	124.81	85.53	-5,221.79	-385.75	842.21	593.75	248.45	3.390		
14,900.00	9,844.84	15,017.64	9,779.07	126.51	126.78	85.52	-5,321.76	-383.32	842.21	589.82	252.38	3.337		
15,000.00	9,844.52	15,117.64	9,778.61	128.49	128.75	85.51	-5,421.73	-380.89	842.21	585.88	256.33	3.286		
15,100.00	9,844.19	15,217.64	9,778.15	130.47	130.73	85.50	-5,521.70	-378.45	842.22	581.93	260.29	3.236		
15,200.00	9,843.87	15,317.64	9,777.69	132.45	132.71	85.49	-5,621.67	-376.02	842.22	577.98	264.26	3.192		
15,300.00	9,843.54	15,417.64	9,777.23	134.43	134.69	85.49	-5,705.81	-376.28	842.61	574.71	267.90	3.145		
15,400.00	9,841.96	15,501.78	9,775.72	136.42	136.38	85.49	-5,805.81	-375.70	842.61	570.74	271.87	3.099		



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0023 - OH - Plan 1 02-01-17														Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM														Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,500.00	9,841.04	15,601.78	9,774.76	138.42	138.37	85.49	-5,905.80	-375.11	842.62	566.76	275.86	3.055		
15,600.00	9,840.12	15,701.78	9,773.80	140.41	140.37	85.49	-6,005.79	-374.53	842.62	562.77	279.85	3.011		
15,700.00	9,839.19	15,801.78	9,772.84	142.42	142.38	85.48	-6,105.79	-373.94	842.62	558.77	283.85	2.969		
15,800.00	9,838.27	15,901.78	9,771.88	144.42	144.38	85.48	-6,205.78	-373.36	842.63	554.76	287.86	2.927		
15,900.00	9,837.35	16,001.78	9,770.92	146.43	146.40	85.48	-6,305.77	-372.78	842.63	550.74	291.88	2.887		
16,000.00	9,836.43	16,101.78	9,769.96	148.45	148.42	85.48	-6,405.77	-372.19	842.63	546.72	295.91	2.848		
16,100.00	9,835.51	16,201.78	9,769.00	150.47	150.44	85.47	-6,505.76	-371.61	842.63	542.69	299.95	2.809		
16,200.00	9,834.59	16,301.78	9,768.04	152.49	152.46	85.47	-6,605.75	-371.02	842.64	538.65	303.99	2.772		
16,300.00	9,833.67	16,401.78	9,767.08	154.52	154.49	85.47	-6,705.75	-370.44	842.64	534.60	308.04	2.735		
16,400.00	9,832.75	16,501.78	9,766.12	156.55	156.52	85.46	-6,805.74	-369.86	842.64	530.54	312.10	2.700		
16,500.00	9,831.83	16,601.78	9,765.16	158.58	158.56	85.46	-6,905.74	-369.27	842.65	526.48	316.16	2.665		
16,600.00	9,830.91	16,701.78	9,764.20	160.62	160.60	85.46	-7,005.73	-368.69	842.65	522.42	320.23	2.631		
16,700.00	9,829.99	16,801.78	9,763.24	162.66	162.64	85.46	-7,105.72	-368.10	842.65	518.34	324.31	2.598		
16,800.00	9,829.06	16,901.78	9,762.28	164.70	164.68	85.45	-7,205.72	-367.52	842.66	514.27	328.39	2.566		
16,900.00	9,828.14	17,001.78	9,761.32	166.75	166.73	85.45	-7,305.71	-366.94	842.66	510.18	332.48	2.534		
17,000.00	9,827.22	17,101.78	9,760.36	168.80	168.78	85.45	-7,405.70	-366.35	842.66	506.09	336.57	2.504		
17,100.00	9,826.30	17,201.78	9,759.40	170.85	170.84	85.45	-7,505.70	-365.77	842.66	502.00	340.67	2.474		
17,200.00	9,825.38	17,301.78	9,758.44	172.90	172.89	85.44	-7,605.69	-365.18	842.67	497.90	344.77	2.444		
17,300.00	9,824.46	17,401.78	9,757.48	174.96	174.95	85.44	-7,705.69	-364.60	842.67	493.79	348.88	2.415		
17,400.00	9,823.54	17,501.78	9,756.52	177.02	177.01	85.44	-7,805.68	-364.01	842.67	489.68	352.99	2.387		
17,500.00	9,822.62	17,601.78	9,755.56	179.08	179.07	85.44	-7,905.67	-363.43	842.68	485.57	357.11	2.360		
17,600.00	9,821.70	17,701.78	9,754.61	181.14	181.14	85.43	-8,005.67	-362.85	842.68	481.45	361.23	2.333		
17,700.00	9,820.78	17,801.78	9,753.65	183.21	183.20	85.43	-8,105.66	-362.26	842.68	477.33	365.36	2.306		
17,800.00	9,819.86	17,901.78	9,752.69	185.27	185.27	85.43	-8,205.65	-361.68	842.68	473.20	369.49	2.281		
17,900.00	9,818.94	18,001.78	9,751.73	187.34	187.34	85.43	-8,305.65	-361.09	842.69	469.07	373.62	2.255		
18,000.00	9,818.01	18,101.78	9,750.77	189.42	189.42	85.42	-8,405.64	-360.51	842.69	464.93	377.76	2.231		
18,100.00	9,817.09	18,201.78	9,749.81	191.49	191.49	85.42	-8,505.63	-359.93	842.69	460.79	381.90	2.207		
18,200.00	9,816.17	18,301.78	9,748.85	193.57	193.57	85.42	-8,605.63	-359.34	842.70	456.65	386.04	2.183		
18,300.00	9,815.25	18,401.78	9,747.89	195.64	195.65	85.41	-8,705.62	-358.76	842.70	452.51	390.19	2.160		
18,400.00	9,814.33	18,501.78	9,746.93	197.72	197.73	85.41	-8,805.62	-358.17	842.70	448.36	394.34	2.137		
18,500.00	9,813.41	18,601.78	9,745.97	199.80	199.81	85.41	-8,905.61	-357.59	842.71	444.21	398.50	2.115		
18,600.00	9,812.49	18,701.78	9,745.01	201.89	201.89	85.41	-9,005.60	-357.01	842.71	440.05	402.66	2.093		
18,700.00	9,811.57	18,801.78	9,744.05	203.97	203.98	85.40	-9,105.60	-356.42	842.71	435.89	406.82	2.071		
18,800.00	9,810.65	18,901.78	9,743.09	206.06	206.07	85.40	-9,205.59	-355.84	842.71	431.73	410.98	2.050		
18,900.00	9,809.73	19,001.78	9,742.13	208.14	208.15	85.40	-9,305.58	-355.25	842.72	427.57	415.15	2.030		
19,000.00	9,808.81	19,101.78	9,741.17	210.23	210.24	85.40	-9,405.58	-354.67	842.72	423.40	419.32	2.010		
19,100.00	9,807.88	19,201.78	9,740.21	212.32	212.34	85.39	-9,505.57	-354.09	842.72	419.23	423.49	1.990		
19,200.00	9,806.96	19,301.78	9,739.25	214.41	214.43	85.39	-9,605.57	-353.50	842.73	415.06	427.67	1.971		
19,300.00	9,806.04	19,401.78	9,738.29	216.51	216.52	85.39	-9,705.56	-352.92	842.73	410.88	431.85	1.951		
19,400.00	9,805.12	19,501.78	9,737.33	218.60	218.62	85.39	-9,805.55	-352.33	842.73	406.71	436.03	1.933		
19,500.00	9,804.20	19,601.78	9,736.37	220.69	220.71	85.38	-9,905.55	-351.75	842.74	402.53	440.21	1.914		
19,600.00	9,803.28	19,701.78	9,735.41	222.79	222.81	85.38	-10,005.54	-351.16	842.74	398.35	444.39	1.896		
19,700.00	9,802.36	19,801.78	9,734.45	224.89	224.91	85.38	-10,105.53	-350.58	842.74	394.16	448.58	1.879		
19,800.00	9,801.44	19,901.78	9,733.50	226.99	227.01	85.38	-10,205.53	-350.00	842.75	389.97	452.77	1.861		
19,900.00	9,800.52	20,001.78	9,732.54	229.09	229.11	85.37	-10,305.52	-349.41	842.75	385.79	456.96	1.844		
20,000.00	9,799.60	20,101.78	9,731.58	231.19	231.21	85.37	-10,405.51	-348.83	842.75	381.60	461.16	1.827		
20,100.00	9,798.68	20,201.78	9,730.62	233.29	233.31	85.37	-10,505.51	-348.24	842.75	377.40	465.35	1.811		
20,139.83	9,798.31	20,241.60	9,730.23	234.13	234.15	85.37	-10,545.33	-348.01	842.76	375.73	467.02	1.805		
20,173.70	9,798.00	20,266.00	9,730.00	234.84	234.66	85.37	-10,569.72	-347.87	842.81	374.57	468.24	1.800		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0025 - OH - Plan 1 02-01-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	1.00	0.00	0.00	0.85	25.00	0.37	25.02				
100.00	100.00	99.00	100.00	0.19	0.19	0.85	25.00	0.37	25.00	24.62	0.39	64.901	
200.00	200.00	199.00	200.00	0.73	0.73	0.85	25.00	0.37	25.00	23.54	1.46	17.157	
300.00	300.00	299.00	300.00	1.27	1.26	0.85	25.00	0.37	25.00	22.47	2.53	9.872	
400.00	400.00	399.00	400.00	1.81	1.80	0.85	25.00	0.37	25.00	21.39	3.61	6.929	
500.00	500.00	499.00	500.00	2.34	2.34	0.85	25.00	0.37	25.00	20.32	4.68	5.338	
600.00	600.00	599.00	600.00	2.88	2.88	0.85	25.00	0.37	25.00	19.24	5.76	4.341	
700.00	700.00	699.00	700.00	3.42	3.41	0.85	25.00	0.37	25.00	18.17	6.83	3.658	
800.00	800.00	799.00	800.00	3.96	3.95	0.85	25.00	0.37	25.00	17.09	7.91	3.161	
900.00	900.00	899.00	900.00	4.50	4.49	0.85	25.00	0.37	25.00	16.02	8.99	2.782	
1,000.00	1,000.00	999.00	1,000.00	5.03	5.03	0.85	25.00	0.37	25.00	14.94	10.06	2.485	
1,100.00	1,100.00	1,099.00	1,100.00	5.57	5.57	0.85	25.00	0.37	25.00	13.86	11.14	2.245	
1,200.00	1,200.00	1,199.00	1,200.00	6.11	6.10	0.85	25.00	0.37	25.00	12.79	12.21	2.047	
1,300.00	1,300.00	1,299.00	1,300.00	6.65	6.64	0.85	25.00	0.37	25.00	11.71	13.29	1.882	
1,400.00	1,400.00	1,399.00	1,400.00	7.18	7.18	0.85	25.00	0.37	25.00	10.64	14.36	1.741	
1,500.00	1,500.00	1,499.00	1,500.00	7.72	7.72	0.85	25.00	0.37	25.00	9.56	15.44	1.619	
1,600.00	1,600.00	1,599.00	1,600.00	8.26	8.25	0.85	25.00	0.37	25.00	8.49	16.51	1.514	
1,700.00	1,700.00	1,699.00	1,700.00	8.80	8.79	0.85	25.00	0.37	25.00	7.41	17.59	1.421 Level 3	
1,800.00	1,800.00	1,799.00	1,800.00	9.33	9.33	0.85	25.00	0.37	25.00	6.34	18.66	1.340 Level 3, CC	
1,900.00	1,899.98	1,898.98	1,899.98	9.86	9.87	-97.73	25.00	0.37	25.18	5.45	19.73	1.276 Level 3	
2,000.00	1,999.90	1,998.90	1,999.90	10.37	10.40	-106.60	25.00	0.37	26.03	5.26	20.77	1.253 Level 3, ES, SF	
2,100.00	2,099.81	2,098.81	2,099.81	10.89	10.94	-114.83	25.00	0.37	27.49	5.67	21.82	1.260 Level 3	
2,200.00	2,199.73	2,198.73	2,199.73	11.41	11.48	-122.10	25.00	0.37	29.46	6.58	22.88	1.288 Level 3	
2,300.00	2,299.64	2,298.64	2,299.64	11.93	12.02	-128.37	25.00	0.37	31.83	7.90	23.93	1.330 Level 3	
2,400.00	2,399.56	2,398.56	2,399.56	12.45	12.55	-133.72	25.00	0.37	34.53	9.55	24.99	1.382 Level 3	
2,500.00	2,499.48	2,498.48	2,499.48	12.97	13.09	-138.26	25.00	0.37	37.49	11.45	26.04	1.440 Level 3	
2,600.00	2,599.39	2,598.39	2,599.39	13.50	13.63	-142.12	25.00	0.37	40.65	13.55	27.10	1.500	
2,700.00	2,699.31	2,698.31	2,699.31	14.03	14.16	-145.41	25.00	0.37	43.97	15.81	28.16	1.561	
2,800.00	2,799.22	2,798.22	2,799.22	14.55	14.70	-148.23	25.00	0.37	47.41	18.19	29.22	1.622	
2,900.00	2,899.14	2,898.14	2,899.14	15.08	15.24	-150.66	25.00	0.37	50.95	20.67	30.28	1.682	
3,000.00	2,999.05	2,998.05	2,999.05	15.62	15.78	-152.78	25.00	0.37	54.57	23.22	31.34	1.741	
3,100.00	3,098.97	3,097.97	3,098.97	16.15	16.31	-154.63	25.00	0.37	58.25	25.85	32.41	1.798	
3,200.00	3,198.88	3,197.88	3,198.88	16.68	16.85	-156.25	25.00	0.37	61.99	28.52	33.47	1.852	
3,300.00	3,298.80	3,297.80	3,298.80	17.21	17.39	-157.69	25.00	0.37	65.77	31.24	34.54	1.904	
3,400.00	3,398.72	3,397.72	3,398.72	17.75	17.93	-158.98	25.00	0.37	69.59	33.99	35.60	1.955	
3,500.00	3,498.63	3,497.63	3,498.63	18.28	18.46	-160.13	25.00	0.37	73.44	36.77	36.67	2.003	
3,600.00	3,598.55	3,597.55	3,598.55	18.82	19.00	-161.16	25.00	0.37	77.32	39.58	37.74	2.049	
3,700.00	3,698.46	3,697.46	3,698.46	19.35	19.54	-162.10	25.00	0.37	81.22	42.42	38.81	2.093	
3,800.00	3,798.38	3,797.38	3,798.38	19.89	20.07	-162.95	25.00	0.37	85.14	45.27	39.87	2.135	
3,900.00	3,898.29	3,897.29	3,898.29	20.42	20.61	-163.72	25.00	0.37	89.08	48.14	40.94	2.176	
4,000.00	3,998.21	3,997.21	3,998.21	20.96	21.15	-164.43	25.00	0.37	93.03	51.02	42.01	2.214	
4,100.00	4,098.12	4,097.12	4,098.12	21.50	21.69	-165.08	25.00	0.37	97.00	53.92	43.08	2.252	
4,200.00	4,198.04	4,197.04	4,198.04	22.04	22.22	-165.68	25.00	0.37	100.97	56.82	44.15	2.287	
4,300.00	4,297.95	4,296.95	4,297.95	22.57	22.76	-166.24	25.00	0.37	104.96	59.74	45.22	2.321	
4,400.00	4,397.87	4,396.87	4,397.87	23.11	23.30	-166.75	25.00	0.37	108.95	62.66	46.29	2.354	
4,500.00	4,497.79	4,496.79	4,497.79	23.65	23.84	-167.23	25.00	0.37	112.96	65.60	47.36	2.385	
4,600.00	4,597.70	4,596.70	4,597.70	24.19	24.37	-167.68	25.00	0.37	116.97	68.54	48.43	2.415	
4,700.00	4,697.62	4,696.62	4,697.62	24.73	24.91	-168.09	25.00	0.37	120.99	71.48	49.50	2.444	
4,800.00	4,797.53	4,796.53	4,797.53	25.27	25.45	-168.48	25.00	0.37	125.01	74.44	50.57	2.472	
4,900.00	4,897.45	4,896.45	4,897.45	25.81	25.98	-168.84	25.00	0.37	129.04	77.39	51.65	2.499	
5,000.00	4,997.36	4,996.36	4,997.36	26.35	26.52	-169.19	25.00	0.37	133.07	80.36	52.72	2.524	
5,100.00	5,097.28	5,096.28	5,097.28	26.89	27.06	-169.51	25.00	0.37	137.11	83.32	53.79	2.549	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0025 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,197.19	5,196.19	5,197.19	27.43	27.60	-169.81	25.00	0.37	141.15	86.29	54.86	2.573	
5,300.00	5,297.11	5,296.11	5,297.11	27.97	28.13	-170.10	25.00	0.37	145.20	89.27	55.93	2.596	
5,400.00	5,397.03	5,396.03	5,397.03	28.51	28.67	-170.37	25.00	0.37	149.25	92.24	57.01	2.618	
5,500.00	5,496.94	5,495.94	5,496.94	29.05	29.21	-170.63	25.00	0.37	153.30	95.22	58.08	2.640	
5,600.00	5,596.86	5,595.86	5,596.86	29.59	29.75	-170.87	25.00	0.37	157.36	98.21	59.15	2.660	
5,700.00	5,696.77	5,695.77	5,696.77	30.13	30.28	-171.10	25.00	0.37	161.42	101.19	60.22	2.680	
5,800.00	5,796.69	5,795.69	5,796.69	30.67	30.82	-171.32	25.00	0.37	165.48	104.18	61.30	2.700	
5,900.00	5,896.60	5,895.60	5,896.60	31.21	31.36	-171.53	25.00	0.37	169.54	107.17	62.37	2.718	
6,000.00	5,996.52	5,995.52	5,996.52	31.75	31.89	-171.73	25.00	0.37	173.61	110.16	63.44	2.736	
6,100.00	6,096.43	6,095.43	6,096.43	32.29	32.43	-171.92	25.00	0.37	177.67	113.16	64.52	2.754	
6,200.00	6,196.35	6,195.35	6,196.35	32.83	32.97	-172.10	25.00	0.37	181.74	116.15	65.59	2.771	
6,300.00	6,296.27	6,295.27	6,296.27	33.37	33.51	-172.28	25.00	0.37	185.81	119.15	66.66	2.787	
6,400.00	6,396.18	6,395.18	6,396.18	33.92	34.04	-172.44	25.00	0.37	189.89	122.15	67.74	2.803	
6,500.00	6,496.10	6,495.10	6,496.10	34.46	34.58	-172.60	25.00	0.37	193.96	125.15	68.81	2.819	
6,600.00	6,596.01	6,595.01	6,596.01	35.00	35.12	-172.76	25.00	0.37	198.04	128.15	69.89	2.834	
6,700.00	6,695.93	6,694.93	6,695.93	35.54	35.65	-172.90	25.00	0.37	202.11	131.15	70.96	2.848	
6,800.00	6,795.84	6,794.84	6,795.84	36.08	36.19	-173.05	25.00	0.37	206.19	134.16	72.03	2.862	
6,900.00	6,895.76	6,894.76	6,895.76	36.62	36.73	-173.18	25.00	0.37	210.27	137.16	73.11	2.876	
7,000.00	6,995.67	6,994.67	6,995.67	37.17	37.27	-173.31	25.00	0.37	214.35	140.17	74.18	2.890	
7,100.00	7,095.59	7,094.59	7,095.59	37.71	37.80	-173.44	25.00	0.37	218.43	143.18	75.26	2.903	
7,200.00	7,195.51	7,194.51	7,195.51	38.25	38.34	-173.56	25.00	0.37	222.52	146.19	76.33	2.915	
7,300.00	7,295.42	7,294.42	7,295.42	38.79	38.88	-173.67	25.00	0.37	226.60	149.20	77.40	2.927	
7,400.00	7,395.34	7,394.34	7,395.34	39.33	39.42	-173.79	25.00	0.37	230.68	152.21	78.48	2.939	
7,500.00	7,495.25	7,494.25	7,495.25	39.88	39.95	-173.90	25.00	0.37	234.77	155.22	79.55	2.951	
7,600.00	7,595.17	7,594.17	7,595.17	40.42	40.49	-174.00	25.00	0.37	238.86	158.23	80.63	2.962	
7,700.00	7,695.08	7,694.08	7,695.08	40.96	41.03	-174.10	25.00	0.37	242.94	161.24	81.70	2.974	
7,800.00	7,795.00	7,794.00	7,795.00	41.50	41.56	-174.20	25.00	0.37	247.03	164.25	82.78	2.984	
7,900.00	7,894.91	7,893.91	7,894.91	42.05	42.10	-174.29	25.00	0.37	251.12	167.27	83.85	2.995	
8,000.00	7,994.83	7,993.83	7,994.83	42.59	42.64	-174.39	25.00	0.37	255.21	170.28	84.93	3.005	
8,100.00	8,094.75	8,093.75	8,094.75	43.13	43.18	-174.47	25.00	0.37	259.30	173.30	86.00	3.015	
8,200.00	8,194.66	8,193.66	8,194.66	43.67	43.71	-174.56	25.00	0.37	263.39	176.31	87.08	3.025	
8,300.00	8,294.58	8,293.58	8,294.58	44.22	44.25	-174.64	25.00	0.37	267.48	179.33	88.15	3.034	
8,400.00	8,394.49	8,393.49	8,394.49	44.76	44.74	-174.90	24.32	-0.62	272.49	183.31	89.18	3.056	
8,500.00	8,494.41	8,493.41	8,494.41	45.30	45.21	-175.57	21.95	-4.10	279.85	189.67	90.18	3.103	
8,600.00	8,594.32	8,593.32	8,594.32	45.84	45.70	-176.46	18.53	-9.13	288.43	197.22	91.21	3.162	
8,700.00	8,694.24	8,693.24	8,694.24	46.39	46.20	-177.30	15.11	-14.15	297.07	204.83	92.24	3.221	
8,800.00	8,794.15	8,793.15	8,794.15	46.93	46.69	-178.10	11.68	-19.18	305.77	212.50	93.27	3.278	
8,900.00	8,894.07	8,893.07	8,894.07	47.47	47.19	-178.85	8.26	-24.21	314.53	220.22	94.30	3.335	
9,000.00	8,993.99	8,992.99	8,993.99	48.02	47.69	-179.56	4.83	-29.24	323.34	228.00	95.34	3.392	
9,100.00	9,093.90	9,092.90	9,093.90	48.56	48.19	-179.77	1.41	-34.27	332.19	235.82	96.37	3.447	
9,200.00	9,193.82	9,192.82	9,193.82	49.10	48.69	-179.13	-2.02	-39.29	341.09	243.68	97.41	3.502	
9,300.00	9,293.73	9,292.73	9,293.73	49.64	49.19	-169.65	-5.44	-44.32	350.03	251.58	98.44	3.556	
9,400.00	9,393.64	9,392.64	9,393.64	50.18	49.70	-169.96	-8.85	-49.33	359.72	260.29	99.43	3.618	
9,500.00	9,493.55	9,492.55	9,493.55	50.72	50.19	-170.32	-12.18	-54.21	371.49	271.21	100.28	3.704	
9,600.00	9,593.46	9,592.46	9,593.46	51.26	50.65	-170.96	-15.31	-58.81	387.86	287.05	100.81	3.848	
9,700.00	9,693.37	9,692.37	9,693.37	51.80	51.07	-171.84	-18.16	-62.99	412.38	311.63	100.76	4.093	
9,800.00	9,793.28	9,792.28	9,793.28	52.34	51.60	-172.75	-21.19	-68.19	446.08	346.52	99.56	4.480	
9,900.00	9,893.19	9,892.19	9,893.19	52.88	52.27	-173.66	-24.21	-73.95	483.31	386.51	96.80	4.993	
10,000.00	9,993.10	9,992.10	9,993.10	53.42	53.08	-174.57	-27.22	-79.72	518.54	425.98	92.56	5.602	
10,100.00	10,093.01	10,092.01	10,093.01	53.96	54.19	-175.48	-30.24	-85.49	553.67	465.44	88.50	6.140	
10,200.00	10,192.92	10,191.92	10,192.92	54.50	55.37	-176.39	-33.26	-91.26	588.80	504.91	84.23	6.625	
10,300.00	10,292.83	10,291.83	10,292.83	55.04	55.92	-177.30	-36.28	-97.03	624.12	544.38	79.91	7.110	

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Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0025 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,400.00	9,859.34	10,765.21	10,213.56	55.39	56.54	130.14	-813.89	-72.96	549.42	459.11	90.31	6.084		
10,500.00	9,859.02	10,865.21	10,213.35	56.12	57.24	130.15	-913.86	-70.53	549.50	457.95	91.55	6.002		
10,600.00	9,858.70	10,965.21	10,213.15	56.92	58.01	130.16	-1,013.83	-68.10	549.58	456.66	92.91	5.915		
10,700.00	9,858.37	11,065.21	10,212.95	57.79	58.85	130.17	-1,113.80	-65.67	549.65	455.26	94.40	5.823		
10,800.00	9,858.05	11,165.21	10,212.75	58.73	59.76	130.18	-1,213.77	-63.25	549.73	453.73	95.99	5.727		
10,900.00	9,857.73	11,265.21	10,212.55	59.73	60.73	130.19	-1,313.74	-60.82	549.81	452.10	97.70	5.627		
11,000.00	9,857.41	11,365.21	10,212.35	60.79	61.76	130.20	-1,413.71	-58.39	549.88	450.37	99.52	5.526		
11,100.00	9,857.09	11,465.21	10,212.15	61.91	62.84	130.21	-1,513.68	-55.96	549.96	448.53	101.43	5.422		
11,200.00	9,856.76	11,565.21	10,211.94	63.08	63.99	130.22	-1,613.65	-53.53	550.04	446.61	103.43	5.318		
11,300.00	9,856.44	11,665.21	10,211.74	64.30	65.18	130.23	-1,713.62	-51.11	550.11	444.59	105.52	5.213		
11,400.00	9,856.12	11,765.21	10,211.54	65.58	66.43	130.24	-1,813.59	-48.68	550.19	442.50	107.69	5.109		
11,500.00	9,855.80	11,865.21	10,211.34	66.90	67.72	130.25	-1,913.56	-46.25	550.26	440.32	109.94	5.005		
11,600.00	9,855.47	11,965.21	10,211.14	68.26	69.06	130.26	-2,013.53	-43.82	550.34	438.08	112.26	4.902		
11,700.00	9,855.15	12,065.21	10,210.94	69.66	70.43	130.27	-2,113.50	-41.39	550.42	435.77	114.65	4.801		
11,800.00	9,854.83	12,165.21	10,210.74	71.10	71.85	130.28	-2,213.47	-38.96	550.49	433.39	117.11	4.701		
11,900.00	9,854.51	12,265.21	10,210.53	72.58	73.30	130.29	-2,313.44	-36.54	550.57	430.95	119.62	4.603		
12,000.00	9,854.18	12,365.21	10,210.33	74.09	74.79	130.30	-2,413.41	-34.11	550.65	428.46	122.19	4.507		
12,100.00	9,853.86	12,465.21	10,210.13	75.63	76.31	130.31	-2,513.38	-31.68	550.72	425.91	124.81	4.412		
12,200.00	9,853.54	12,565.21	10,209.93	77.21	77.86	130.32	-2,613.36	-29.25	550.80	423.32	127.48	4.321		
12,300.00	9,853.22	12,665.21	10,209.73	78.81	79.44	130.33	-2,713.33	-26.82	550.88	420.68	130.20	4.231		
12,400.00	9,852.90	12,765.20	10,209.53	80.44	81.05	130.34	-2,813.30	-24.39	550.95	417.99	132.96	4.144		
12,500.00	9,852.57	12,865.20	10,209.33	82.09	82.68	130.35	-2,913.27	-21.97	551.03	415.27	135.76	4.059		
12,600.00	9,852.25	12,965.20	10,209.13	83.77	84.34	130.36	-3,013.24	-19.54	551.11	412.50	138.60	3.976		
12,700.00	9,851.93	13,065.20	10,208.92	85.46	86.02	130.37	-3,113.21	-17.11	551.18	409.71	141.48	3.896		
12,800.00	9,851.61	13,165.20	10,208.72	87.18	87.72	130.38	-3,213.18	-14.68	551.26	406.87	144.39	3.818		
12,900.00	9,851.28	13,265.20	10,208.52	88.92	89.44	130.39	-3,313.15	-12.25	551.34	404.01	147.33	3.742		
13,000.00	9,850.96	13,365.20	10,208.32	90.68	91.18	130.40	-3,413.12	-9.82	551.41	401.12	150.30	3.669		
13,100.00	9,850.64	13,465.20	10,208.12	92.45	92.94	130.41	-3,513.09	-7.40	551.49	398.19	153.30	3.598		
13,200.00	9,850.32	13,565.20	10,207.92	94.25	94.71	130.42	-3,613.06	-4.97	551.57	395.25	156.32	3.528		
13,300.00	9,850.00	13,665.20	10,207.72	96.05	96.50	130.43	-3,713.03	-2.54	551.65	392.28	159.37	3.461		
13,400.00	9,849.67	13,765.20	10,207.51	97.87	98.31	130.44	-3,813.00	-0.11	551.72	389.28	162.44	3.396		
13,500.00	9,849.35	13,865.20	10,207.31	99.71	100.13	130.45	-3,912.97	2.32	551.80	386.26	165.54	3.333		
13,600.00	9,849.03	13,965.20	10,207.11	101.56	101.96	130.45	-4,012.94	4.74	551.88	383.22	168.65	3.272		
13,700.00	9,848.71	14,065.20	10,206.91	103.42	103.81	130.46	-4,112.91	7.17	551.95	380.17	171.79	3.213		
13,800.00	9,848.38	14,165.20	10,206.71	105.29	105.67	130.47	-4,212.88	9.60	552.03	377.09	174.94	3.156		
13,900.00	9,848.06	14,265.20	10,206.51	107.17	107.54	130.48	-4,312.85	12.03	552.11	374.00	178.11	3.100		
14,000.00	9,847.74	14,365.20	10,206.31	109.07	109.42	130.49	-4,412.82	14.46	552.18	370.89	181.30	3.046		
14,100.00	9,847.42	14,465.20	10,206.10	110.97	111.32	130.50	-4,512.79	16.89	552.26	367.76	184.50	2.993		
14,200.00	9,847.09	14,565.20	10,205.90	112.89	113.22	130.51	-4,612.76	19.31	552.34	364.62	187.72	2.942		
14,300.00	9,846.77	14,665.20	10,205.70	114.81	115.13	130.52	-4,712.73	21.74	552.41	361.47	190.95	2.893		
14,400.00	9,846.45	14,765.20	10,205.50	116.74	117.05	130.53	-4,812.70	24.17	552.49	358.30	194.19	2.845		
14,500.00	9,846.13	14,865.20	10,205.30	118.68	118.98	130.54	-4,912.67	26.60	552.57	355.12	197.45	2.799		
14,600.00	9,845.81	14,965.20	10,205.10	120.63	120.92	130.55	-5,012.64	29.03	552.65	351.93	200.72	2.753		
14,700.00	9,845.48	15,065.20	10,204.90	122.58	122.86	130.56	-5,112.61	31.46	552.72	348.72	204.00	2.709		
14,800.00	9,845.16	15,165.20	10,204.70	124.54	124.81	130.57	-5,212.58	33.88	552.80	345.51	207.29	2.667		
14,900.00	9,844.84	15,265.20	10,204.49	126.51	126.77	130.58	-5,312.55	36.31	552.88	342.29	210.59	2.625		
15,000.00	9,844.52	15,365.20	10,204.29	128.49	128.74	130.59	-5,412.52	38.74	552.95	339.05	213.90	2.585		
15,100.00	9,844.19	15,465.20	10,204.09	130.47	130.71	130.60	-5,512.49	41.17	553.03	335.81	217.22	2.546		
15,200.00	9,843.79	15,559.06	10,203.84	132.45	132.56	130.60	-5,606.32	43.04	553.27	332.83	220.44	2.510		
15,300.00	9,842.88	15,658.47	10,203.36	134.43	134.53	130.63	-5,705.73	43.62	553.57	329.88	223.70	2.475		
15,400.00	9,841.96	15,758.47	10,202.88	136.42	136.51	130.67	-5,805.73	44.21	553.86	326.88	226.98	2.440		
15,500.00	9,841.04	15,858.47	10,202.40	138.42	138.50	130.70	-5,905.73	44.80	554.14	323.88	230.26	2.407		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0025 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,600.00	9,840.12	15,958.46	10,201.92	140.41	140.49	130.74	-6,005.72	45.38	554.43	320.87	233.56	2.374	
15,700.00	9,839.19	16,058.46	10,201.44	142.42	142.49	130.77	-6,105.72	45.97	554.72	317.86	236.85	2.342	
15,800.00	9,838.27	16,158.46	10,200.96	144.42	144.49	130.81	-6,205.71	46.56	555.00	314.84	240.16	2.311	
15,900.00	9,837.35	16,258.46	10,200.48	146.43	146.49	130.84	-6,305.71	47.14	555.29	311.82	243.47	2.281	
16,000.00	9,836.43	16,358.46	10,200.00	148.45	148.50	130.87	-6,405.71	47.73	555.58	308.80	246.78	2.251	
16,100.00	9,835.51	16,458.46	10,199.52	150.47	150.52	130.91	-6,505.70	48.31	555.86	305.77	250.10	2.223	
16,200.00	9,834.59	16,558.46	10,199.04	152.49	152.54	130.94	-6,605.70	48.90	556.15	302.73	253.42	2.195	
16,300.00	9,833.67	16,658.46	10,198.56	154.52	154.56	130.98	-6,705.70	49.49	556.44	299.69	256.74	2.167	
16,400.00	9,832.75	16,758.46	10,198.08	156.55	156.58	131.01	-6,805.69	50.07	556.72	296.65	260.07	2.141	
16,500.00	9,831.83	16,858.46	10,197.60	158.58	158.61	131.05	-6,905.69	50.66	557.01	293.61	263.40	2.115	
16,600.00	9,830.91	16,958.46	10,197.12	160.62	160.65	131.08	-7,005.68	51.24	557.30	290.56	266.74	2.089	
16,700.00	9,829.99	17,058.45	10,196.64	162.66	162.68	131.12	-7,105.68	51.83	557.59	287.51	270.08	2.065	
16,800.00	9,829.06	17,158.45	10,196.16	164.70	164.72	131.15	-7,205.68	52.42	557.88	284.46	273.42	2.040	
16,900.00	9,828.14	17,258.45	10,195.68	166.75	166.76	131.18	-7,305.67	53.00	558.17	281.40	276.76	2.017	
17,000.00	9,827.22	17,358.45	10,195.20	168.80	168.81	131.22	-7,405.67	53.59	558.45	278.35	280.11	1.994	
17,100.00	9,826.30	17,458.45	10,194.72	170.85	170.86	131.25	-7,505.66	54.18	558.74	275.29	283.45	1.971	
17,200.00	9,825.38	17,558.45	10,194.24	172.90	172.91	131.29	-7,605.66	54.76	559.03	272.23	286.80	1.949	
17,300.00	9,824.46	17,658.45	10,193.76	174.96	174.96	131.32	-7,705.66	55.35	559.32	269.16	290.16	1.928	
17,400.00	9,823.54	17,758.45	10,193.28	177.02	177.01	131.35	-7,805.65	55.93	559.61	266.10	293.51	1.907	
17,500.00	9,822.62	17,858.45	10,192.80	179.08	179.07	131.39	-7,905.65	56.52	559.90	263.03	296.87	1.886	
17,600.00	9,821.70	17,958.45	10,192.32	181.14	181.13	131.42	-8,005.65	57.11	560.19	259.97	300.22	1.866	
17,700.00	9,820.78	18,058.44	10,191.84	183.21	183.19	131.46	-8,105.64	57.69	560.48	256.90	303.58	1.846	
17,800.00	9,819.86	18,158.44	10,191.36	185.27	185.26	131.49	-8,205.64	58.28	560.77	253.83	306.94	1.827	
17,900.00	9,818.94	18,258.44	10,190.88	187.34	187.33	131.52	-8,305.63	58.87	561.06	250.76	310.30	1.808	
18,000.00	9,818.01	18,358.44	10,190.40	189.42	189.40	131.56	-8,405.63	59.45	561.35	247.69	313.66	1.790	
18,100.00	9,817.09	18,458.44	10,189.92	191.49	191.47	131.59	-8,505.63	60.04	561.64	244.62	317.03	1.772	
18,200.00	9,816.17	18,558.44	10,189.44	193.57	193.54	131.63	-8,605.62	60.62	561.93	241.54	320.39	1.754	
18,300.00	9,815.25	18,658.44	10,188.96	195.64	195.61	131.66	-8,705.62	61.21	562.23	238.47	323.76	1.737	
18,400.00	9,814.33	18,758.44	10,188.48	197.72	197.69	131.69	-8,805.61	61.80	562.52	235.40	327.12	1.720	
18,500.00	9,813.41	18,858.44	10,188.00	199.80	199.77	131.73	-8,905.61	62.38	562.81	232.32	330.49	1.703	
18,600.00	9,812.49	18,958.44	10,187.52	201.89	201.85	131.76	-9,005.61	62.97	563.10	229.25	333.85	1.687	
18,700.00	9,811.57	19,058.43	10,187.04	203.97	203.93	131.79	-9,105.60	63.56	563.39	226.17	337.22	1.671	
18,800.00	9,810.65	19,158.43	10,186.56	206.06	206.01	131.83	-9,205.60	64.14	563.68	223.10	340.59	1.655	
18,900.00	9,809.73	19,258.43	10,186.08	208.14	208.10	131.86	-9,305.60	64.73	563.98	220.02	343.96	1.640	
19,000.00	9,808.81	19,358.43	10,185.60	210.23	210.18	131.89	-9,405.59	65.31	564.27	216.95	347.32	1.625	
19,100.00	9,807.88	19,458.43	10,185.12	212.32	212.27	131.93	-9,505.59	65.90	564.56	213.87	350.69	1.610	
19,200.00	9,806.96	19,558.43	10,184.64	214.41	214.36	131.96	-9,605.58	66.49	564.86	210.80	354.06	1.595	
19,300.00	9,806.04	19,658.43	10,184.16	216.51	216.45	131.99	-9,705.58	67.07	565.15	207.72	357.43	1.581	
19,400.00	9,805.12	19,758.43	10,183.68	218.60	218.54	132.03	-9,805.58	67.66	565.44	204.65	360.80	1.567	
19,500.00	9,804.20	19,858.43	10,183.20	220.69	220.64	132.06	-9,905.57	68.25	565.74	201.57	364.16	1.554	
19,600.00	9,803.28	19,958.43	10,182.72	222.79	222.73	132.09	-10,005.57	68.83	566.03	198.50	367.53	1.540	
19,700.00	9,802.36	20,058.43	10,182.24	224.89	224.82	132.13	-10,105.56	69.42	566.32	195.42	370.90	1.527	
19,800.00	9,801.44	20,158.42	10,181.76	226.99	226.92	132.16	-10,205.56	70.00	566.62	192.35	374.27	1.514	
19,900.00	9,800.52	20,258.42	10,181.28	229.09	229.02	132.19	-10,305.56	70.59	566.91	189.28	377.64	1.501	
20,000.00	9,799.60	20,358.42	10,180.80	231.19	231.12	132.23	-10,405.55	71.18	567.21	186.20	381.00	1.489 Level 3	
20,100.00	9,798.68	20,458.42	10,180.32	233.29	233.22	132.26	-10,505.55	71.76	567.50	183.13	384.37	1.476 Level 3	
20,173.70	9,798.00	20,525.44	10,180.00	234.84	234.55	132.28	-10,572.56	72.16	567.76	181.12	386.64	1.468 Level 3	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0026 - OH - Plan 1 02-01-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	2.00	0.00	0.00	0.85	50.00	0.74	50.04				
100.00	100.00	98.00	100.00	0.19	0.19	0.85	50.00	0.74	50.00	49.62	0.38	130.455	
200.00	200.00	198.00	200.00	0.73	0.72	0.85	50.00	0.74	50.00	48.55	1.45	34.440	
300.00	300.00	298.00	300.00	1.27	1.26	0.85	50.00	0.74	50.00	47.47	2.53	19.785	
400.00	400.00	398.00	400.00	1.81	1.80	0.85	50.00	0.74	50.00	46.40	3.60	13.879	
500.00	500.00	498.00	500.00	2.34	2.33	0.85	50.00	0.74	50.00	45.32	4.68	10.688	
600.00	600.00	598.00	600.00	2.88	2.87	0.85	50.00	0.74	50.00	44.25	5.75	8.690	
700.00	700.00	698.00	700.00	3.42	3.41	0.85	50.00	0.74	50.00	43.17	6.83	7.322	
800.00	800.00	798.00	800.00	3.96	3.95	0.85	50.00	0.74	50.00	42.10	7.90	6.326	
900.00	900.00	898.00	900.00	4.50	4.48	0.85	50.00	0.74	50.00	41.02	8.98	5.568	
1,000.00	1,000.00	998.00	1,000.00	5.03	5.02	0.85	50.00	0.74	50.00	39.95	10.06	4.973	
1,100.00	1,100.00	1,098.00	1,100.00	5.57	5.56	0.85	50.00	0.74	50.00	38.87	11.13	4.492	
1,200.00	1,200.00	1,198.00	1,200.00	6.11	6.10	0.85	50.00	0.74	50.00	37.79	12.21	4.096	
1,300.00	1,300.00	1,298.00	1,300.00	6.65	6.64	0.85	50.00	0.74	50.00	36.72	13.28	3.765	
1,400.00	1,400.00	1,398.00	1,400.00	7.18	7.17	0.85	50.00	0.74	50.00	35.64	14.36	3.483	
1,500.00	1,500.00	1,498.00	1,500.00	7.72	7.71	0.85	50.00	0.74	50.00	34.57	15.43	3.240	
1,600.00	1,600.00	1,598.00	1,600.00	8.26	8.25	0.85	50.00	0.74	50.00	33.49	16.51	3.029	
1,700.00	1,700.00	1,698.00	1,700.00	8.80	8.79	0.85	50.00	0.74	50.00	32.42	17.58	2.844	
1,800.00	1,800.00	1,798.00	1,800.00	9.33	9.32	0.85	50.00	0.74	50.00	31.34	18.66	2.680	
1,900.00	1,899.98	1,898.17	1,900.16	9.86	9.85	-93.85	49.80	2.41	49.95	30.24	19.71	2.534	
2,000.00	1,999.90	1,998.33	2,000.17	10.37	10.36	-92.58	49.20	7.56	49.70	28.97	20.73	2.397	
2,100.00	2,099.81	2,098.30	2,099.78	10.89	10.88	-87.59	48.22	15.92	49.39	27.63	21.77	2.269	
2,122.49	2,122.28	2,120.76	2,122.15	11.00	11.00	-86.29	47.98	17.95	49.38	27.38	22.00	2.244 CC	
2,200.00	2,199.73	2,198.17	2,199.24	11.41	11.40	-81.79	47.17	24.96	49.53	26.72	22.81	2.172	
2,300.00	2,299.64	2,298.05	2,298.70	11.93	11.93	-76.08	46.11	33.99	50.17	26.32	23.85	2.104 ES	
2,400.00	2,399.56	2,397.92	2,398.16	12.45	12.46	-70.56	45.05	43.03	51.30	26.40	24.90	2.060	
2,500.00	2,499.48	2,497.80	2,497.62	12.97	12.99	-65.33	44.00	52.07	52.88	26.93	25.95	2.038	
2,600.00	2,599.39	2,597.67	2,597.08	13.50	13.53	-60.44	42.94	61.11	54.88	27.87	27.01	2.032	
2,700.00	2,699.31	2,697.55	2,696.54	14.03	14.07	-55.92	41.89	70.14	57.25	29.18	28.07	2.040	
2,800.00	2,799.22	2,797.42	2,796.00	14.55	14.61	-51.79	40.83	79.18	59.94	30.82	29.12	2.058	
2,900.00	2,899.14	2,897.29	2,895.45	15.08	15.15	-48.02	39.78	88.22	62.92	32.74	30.18	2.085	
3,000.00	2,999.05	2,997.17	2,994.91	15.62	15.70	-44.61	38.72	97.26	66.15	34.91	31.24	2.117	
3,100.00	3,098.97	3,097.04	3,094.37	16.15	16.24	-41.53	37.66	106.29	69.58	37.29	32.30	2.154	
3,200.00	3,198.88	3,196.92	3,193.83	16.68	16.79	-38.74	36.61	115.33	73.20	39.85	33.36	2.194	
3,300.00	3,298.80	3,296.79	3,293.29	17.21	17.34	-36.22	35.55	124.37	76.98	42.56	34.42	2.237	
3,400.00	3,398.72	3,396.66	3,392.75	17.75	17.89	-33.94	34.50	133.41	80.89	45.41	35.48	2.280	
3,500.00	3,498.63	3,496.54	3,492.21	18.28	18.44	-31.87	33.44	142.44	84.92	48.38	36.55	2.324	
3,600.00	3,598.55	3,596.41	3,591.67	18.82	18.99	-30.00	32.39	151.48	89.05	51.44	37.61	2.368	
3,700.00	3,698.46	3,696.29	3,691.13	19.35	19.55	-28.29	31.33	160.52	93.27	54.59	38.67	2.412	
3,800.00	3,798.38	3,796.16	3,790.58	19.89	20.10	-26.73	30.27	169.56	97.56	57.82	39.74	2.455	
3,900.00	3,898.29	3,896.03	3,890.04	20.42	20.66	-25.30	29.22	178.59	101.91	61.11	40.81	2.497	
4,000.00	3,998.21	3,995.91	3,989.50	20.96	21.21	-23.99	28.16	187.63	106.33	64.45	41.87	2.539	
4,100.00	4,098.12	4,095.78	4,088.96	21.50	21.77	-22.78	27.11	196.67	110.80	67.85	42.94	2.580	
4,200.00	4,198.04	4,195.66	4,188.42	22.04	22.33	-21.67	26.05	205.71	115.31	71.30	44.01	2.620	
4,300.00	4,297.95	4,295.53	4,287.88	22.57	22.88	-20.64	25.00	214.74	119.86	74.78	45.08	2.659	
4,400.00	4,397.87	4,395.41	4,387.34	23.11	23.44	-19.69	23.94	223.78	124.45	78.29	46.15	2.696	
4,500.00	4,497.79	4,495.28	4,486.80	23.65	24.00	-18.81	22.88	232.82	129.07	81.84	47.22	2.733	
4,600.00	4,597.70	4,595.15	4,586.25	24.19	24.56	-17.98	21.83	241.86	133.71	85.42	48.29	2.769	
4,700.00	4,697.62	4,695.03	4,685.71	24.73	25.12	-17.22	20.77	250.89	138.39	89.02	49.37	2.803	
4,800.00	4,797.53	4,794.90	4,785.17	25.27	25.68	-16.50	19.72	259.93	143.08	92.64	50.44	2.837	
4,900.00	4,897.45	4,894.78	4,884.63	25.81	26.24	-15.83	18.66	268.97	147.80	96.29	51.51	2.869	
5,000.00	4,997.36	4,994.65	4,984.09	26.35	26.80	-15.20	17.61	278.01	152.54	99.95	52.58	2.901	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0026 - OH - Plan 1 02-01-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)						
5,100.00	5,097.28	5,094.52	5,083.55	26.89	27.36	-14.80	16.55	287.04	157.29	103.63	53.66	2.931		
5,200.00	5,197.19	5,194.40	5,183.01	27.43	27.92	-14.05	15.49	296.08	162.06	107.33	54.73	2.961		
5,300.00	5,297.11	5,294.27	5,282.47	27.97	28.48	-13.52	14.44	305.12	166.84	111.04	55.81	2.990		
5,400.00	5,397.03	5,394.15	5,381.92	28.51	29.05	-13.03	13.38	314.16	171.64	114.76	56.88	3.018		
5,500.00	5,496.94	5,494.02	5,481.38	29.05	29.61	-12.56	12.33	323.20	176.45	118.49	57.96	3.045		
5,600.00	5,596.86	5,593.90	5,580.84	29.59	30.17	-12.11	11.27	332.23	181.27	122.24	59.03	3.071		
5,700.00	5,696.77	5,693.77	5,680.30	30.13	30.73	-11.69	10.22	341.27	186.10	125.99	60.11	3.096		
5,800.00	5,796.69	5,793.64	5,779.76	30.67	31.30	-11.29	9.16	350.31	190.94	129.76	61.19	3.121		
5,900.00	5,896.60	5,893.52	5,879.22	31.21	31.86	-10.91	8.10	359.35	195.79	133.53	62.26	3.145		
6,000.00	5,996.52	5,993.39	5,978.68	31.75	32.42	-10.55	7.05	368.38	200.65	137.31	63.34	3.168		
6,100.00	6,096.43	6,093.27	6,078.14	32.29	32.99	-10.21	5.99	377.42	205.52	141.10	64.42	3.190		
6,200.00	6,196.35	6,193.14	6,177.59	32.83	33.55	-9.88	4.94	386.46	210.39	144.89	65.49	3.212		
6,300.00	6,296.27	6,293.01	6,277.05	33.37	34.11	-9.56	3.88	395.50	215.27	148.70	66.57	3.234		
6,400.00	6,396.18	6,392.89	6,376.51	33.92	34.68	-9.26	2.83	404.53	220.15	152.50	67.65	3.254		
6,500.00	6,496.10	6,492.76	6,475.97	34.46	35.24	-8.98	1.77	413.57	225.04	156.31	68.73	3.274		
6,600.00	6,596.01	6,592.64	6,575.43	35.00	35.80	-8.70	0.71	422.61	229.94	160.13	69.80	3.294		
6,700.00	6,695.93	6,692.51	6,674.89	35.54	36.37	-8.44	-0.34	431.65	234.84	163.96	70.88	3.313		
6,800.00	6,795.84	6,792.39	6,774.35	36.08	36.93	-8.19	-1.40	440.68	239.74	167.78	71.96	3.332		
6,900.00	6,895.76	6,892.26	6,873.81	36.62	37.50	-7.95	-2.45	449.72	244.65	171.61	73.04	3.350		
7,000.00	6,995.67	6,992.13	6,973.27	37.17	38.06	-7.71	-3.51	458.76	249.57	175.45	74.12	3.367		
7,100.00	7,095.59	7,092.01	7,072.72	37.71	38.63	-7.49	-4.56	467.80	254.49	179.29	75.20	3.384		
7,200.00	7,195.51	7,191.88	7,172.18	38.25	39.19	-7.27	-5.62	476.83	259.41	183.13	76.28	3.401		
7,300.00	7,295.42	7,291.76	7,271.64	38.79	39.76	-7.07	-6.68	485.87	264.34	186.98	77.36	3.417		
7,400.00	7,395.34	7,391.63	7,371.10	39.33	40.32	-6.87	-7.73	494.91	269.26	190.83	78.44	3.433		
7,500.00	7,495.25	7,491.50	7,470.56	39.88	40.89	-6.67	-8.79	503.95	274.20	194.68	79.52	3.448		
7,600.00	7,595.17	7,591.38	7,570.02	40.42	41.45	-6.49	-9.84	512.98	279.13	198.53	80.60	3.463		
7,700.00	7,695.08	7,691.25	7,669.48	40.96	42.02	-6.31	-10.90	522.02	284.07	202.39	81.68	3.478		
7,800.00	7,795.00	7,791.13	7,768.94	41.50	42.58	-6.14	-11.95	531.06	289.01	206.25	82.76	3.492		
7,900.00	7,894.91	7,891.00	7,868.39	42.05	43.15	-5.97	-13.01	540.10	293.95	210.12	83.84	3.506		
8,000.00	7,994.83	7,990.87	7,967.85	42.59	43.71	-5.81	-14.07	549.13	298.90	213.98	84.92	3.520		
8,100.00	8,094.75	8,090.75	8,067.31	43.13	44.28	-5.65	-15.12	558.17	303.85	217.85	86.00	3.533		
8,200.00	8,194.66	8,190.62	8,166.77	43.67	44.85	-5.50	-16.18	567.21	308.80	221.72	87.08	3.546		
8,300.00	8,294.58	8,290.50	8,266.23	44.22	45.41	-5.35	-17.23	576.25	313.75	225.59	88.16	3.559		
8,400.00	8,394.49	8,390.37	8,365.69	44.76	45.98	-5.21	-18.29	585.28	318.70	229.46	89.24	3.571		
8,500.00	8,494.41	8,490.25	8,465.15	45.30	46.54	-5.07	-19.35	594.32	323.66	233.34	90.32	3.583		
8,600.00	8,594.32	8,590.12	8,564.61	45.84	47.11	-4.94	-20.40	603.36	328.62	237.21	91.40	3.595		
8,700.00	8,694.24	8,689.99	8,664.06	46.39	47.68	-4.81	-21.46	612.40	333.58	241.09	92.48	3.607		
8,800.00	8,794.15	8,789.87	8,763.52	46.93	48.24	-4.68	-22.51	621.43	338.54	244.97	93.56	3.618		
8,900.00	8,894.07	8,889.74	8,862.98	47.47	48.81	-4.56	-23.57	630.47	343.50	248.85	94.64	3.629		
9,000.00	8,993.99	8,989.62	8,962.44	48.02	49.37	-4.44	-24.62	639.51	348.46	252.74	95.73	3.640		
9,100.00	9,093.90	9,089.49	9,061.90	48.56	49.94	-4.33	-25.68	648.55	353.43	256.62	96.81	3.651		
9,200.00	9,193.82	9,189.36	9,161.36	49.10	50.51	-4.22	-26.74	657.58	358.40	260.51	97.89	3.661		
9,300.00	9,293.73	9,289.24	9,260.82	49.64	51.07	-12.93	-27.79	666.62	363.36	264.39	98.97	3.671		
9,400.00	9,393.04	9,388.63	9,359.79	50.18	51.64	-76.43	-28.84	675.62	368.10	268.05	100.05	3.679		
9,500.00	9,489.15	9,485.03	9,455.79	50.69	52.18	-85.59	-29.86	684.34	373.50	272.38	101.12	3.694		
9,600.00	9,579.12	9,575.52	9,545.90	51.18	52.70	-92.40	-30.82	692.53	382.72	280.72	101.99	3.752		
9,700.00	9,660.24	9,665.56	9,635.53	51.64	53.21	-98.98	-33.10	700.70	399.83	297.56	102.28	3.909		
9,800.00	9,730.03	9,775.64	9,743.28	52.11	53.82	-105.76	-52.21	710.93	424.17	322.74	101.43	4.182		
9,900.00	9,786.38	9,906.01	9,863.26	52.59	54.52	-112.15	-101.01	723.00	452.71	353.63	99.08	4.569		
10,000.00	9,827.57	10,065.63	9,990.37	53.09	55.30	-118.11	-195.71	736.83	481.44	386.14	95.30	5.052		
10,100.00	9,852.35	10,262.93	10,103.88	53.62	56.24	-123.00	-355.26	751.02	504.73	413.59	91.14	5.538		
10,200.00	9,859.99	10,494.73	10,159.48	54.15	57.44	-125.49	-578.42	761.52	516.01	426.92	89.09	5.792		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0026 - OH - Plan 1 02-01-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,300.00	9,859.66	10,609.97	10,159.77	54.73	58.11	-125.55	-693.62	764.36	516.20	426.21	89.99	5.736	
10,400.00	9,859.34	10,709.97	10,159.50	55.39	58.76	-125.55	-793.59	766.79	516.23	425.20	91.03	5.671	
10,500.00	9,859.02	10,809.97	10,159.24	56.12	59.49	-125.56	-893.56	769.21	516.26	424.05	92.21	5.599	
10,600.00	9,858.70	10,909.97	10,158.98	56.92	60.28	-125.56	-993.53	771.63	516.29	422.76	93.53	5.520	
10,700.00	9,858.37	11,009.97	10,158.72	57.79	61.14	-125.57	-1,093.50	774.05	516.33	421.34	94.98	5.436	
10,800.00	9,858.05	11,109.97	10,158.46	58.73	62.06	-125.58	-1,193.47	776.48	516.36	419.80	96.56	5.348	
10,900.00	9,857.73	11,209.97	10,158.19	59.73	63.04	-125.58	-1,293.44	778.90	516.39	418.13	98.26	5.255	
11,000.00	9,857.41	11,309.97	10,157.93	60.79	64.07	-125.59	-1,393.41	781.32	516.42	416.35	100.07	5.161	
11,100.00	9,857.09	11,409.97	10,157.67	61.91	65.17	-125.59	-1,493.38	783.74	516.45	414.47	101.99	5.064	
11,200.00	9,856.76	11,509.97	10,157.41	63.08	66.31	-125.60	-1,593.35	786.17	516.49	412.48	104.01	4.966	
11,300.00	9,856.44	11,609.97	10,157.15	64.30	67.51	-125.60	-1,693.32	788.59	516.52	410.39	106.13	4.867	
11,400.00	9,856.12	11,709.97	10,156.88	65.58	68.75	-125.61	-1,793.29	791.01	516.55	408.22	108.33	4.768	
11,500.00	9,855.80	11,809.97	10,156.62	66.90	70.03	-125.62	-1,893.27	793.43	516.58	405.96	110.62	4.670	
11,600.00	9,855.47	11,909.97	10,156.36	68.26	71.36	-125.62	-1,993.24	795.85	516.61	403.62	113.00	4.572	
11,700.00	9,855.15	12,009.97	10,156.10	69.66	72.73	-125.63	-2,093.21	798.28	516.65	401.20	115.44	4.475	
11,800.00	9,854.83	12,109.97	10,155.84	71.10	74.14	-125.63	-2,193.18	800.70	516.68	398.72	117.96	4.380	
11,900.00	9,854.51	12,209.97	10,155.58	72.58	75.58	-125.64	-2,293.15	803.12	516.71	396.17	120.54	4.287	
12,000.00	9,854.18	12,309.97	10,155.31	74.09	77.06	-125.64	-2,393.12	805.54	516.74	393.56	123.18	4.195	
12,100.00	9,853.86	12,409.97	10,155.05	75.63	78.57	-125.65	-2,493.09	807.97	516.77	390.89	125.88	4.105	
12,200.00	9,853.54	12,509.97	10,154.79	77.21	80.10	-125.66	-2,593.06	810.39	516.81	388.17	128.64	4.018	
12,300.00	9,853.22	12,609.97	10,154.53	78.81	81.67	-125.66	-2,693.03	812.81	516.84	385.40	131.44	3.932	
12,400.00	9,852.90	12,709.97	10,154.27	80.44	83.27	-125.67	-2,793.00	815.23	516.87	382.58	134.29	3.849	
12,500.00	9,852.57	12,809.97	10,154.00	82.09	84.89	-125.67	-2,892.97	817.66	516.90	379.71	137.19	3.768	
12,600.00	9,852.25	12,909.97	10,153.74	83.77	86.53	-125.68	-2,992.94	820.08	516.93	376.81	140.13	3.689	
12,700.00	9,851.93	13,009.97	10,153.48	85.46	88.20	-125.68	-3,092.91	822.50	516.97	373.86	143.10	3.613	
12,800.00	9,851.61	13,109.97	10,153.22	87.18	89.88	-125.69	-3,192.88	824.92	517.00	370.88	146.11	3.538	
12,900.00	9,851.28	13,209.97	10,152.96	88.92	91.59	-125.70	-3,292.85	827.34	517.03	367.87	149.16	3.466	
13,000.00	9,850.96	13,309.97	10,152.69	90.68	93.32	-125.70	-3,392.82	829.77	517.06	364.82	152.24	3.396	
13,100.00	9,850.64	13,409.97	10,152.43	92.45	95.06	-125.71	-3,492.79	832.19	517.09	361.74	155.35	3.329	
13,200.00	9,850.32	13,509.97	10,152.17	94.25	96.82	-125.71	-3,592.76	834.61	517.13	358.64	158.49	3.263	
13,300.00	9,850.00	13,609.97	10,151.91	96.05	98.60	-125.72	-3,692.73	837.03	517.16	355.50	161.65	3.199	
13,400.00	9,849.67	13,709.97	10,151.65	97.87	100.40	-125.72	-3,792.70	839.46	517.19	352.35	164.84	3.137	
13,500.00	9,849.35	13,809.97	10,151.38	99.71	102.20	-125.73	-3,892.67	841.88	517.22	349.16	168.06	3.078	
13,600.00	9,849.03	13,909.97	10,151.12	101.56	104.02	-125.73	-3,992.64	844.30	517.25	345.96	171.29	3.020	
13,700.00	9,848.71	14,009.97	10,150.86	103.42	105.86	-125.74	-4,092.61	846.72	517.29	342.73	174.55	2.964	
13,800.00	9,848.38	14,109.97	10,150.60	105.29	107.71	-125.75	-4,192.58	849.14	517.32	339.49	177.83	2.909	
13,900.00	9,848.06	14,209.97	10,150.34	107.17	109.57	-125.75	-4,292.55	851.57	517.35	336.23	181.13	2.856	
14,000.00	9,847.74	14,309.97	10,150.07	109.07	111.44	-125.76	-4,392.52	853.99	517.38	332.94	184.44	2.805	
14,100.00	9,847.42	14,409.97	10,149.81	110.97	113.32	-125.76	-4,492.49	856.41	517.41	329.64	187.77	2.756	
14,200.00	9,847.09	14,509.97	10,149.55	112.89	115.21	-125.77	-4,592.46	858.83	517.45	326.33	191.12	2.707	
14,300.00	9,846.77	14,609.97	10,149.29	114.81	117.11	-125.77	-4,692.43	861.26	517.48	323.00	194.48	2.661	
14,400.00	9,846.45	14,709.97	10,149.03	116.74	119.02	-125.78	-4,792.40	863.68	517.51	319.66	197.86	2.616	
14,500.00	9,846.13	14,809.97	10,148.76	118.68	120.93	-125.79	-4,892.37	866.10	517.54	316.30	201.24	2.572	
14,600.00	9,845.81	14,909.97	10,148.50	120.63	122.86	-125.79	-4,992.34	868.52	517.58	312.93	204.65	2.529	
14,700.00	9,845.48	15,009.97	10,148.24	122.58	124.79	-125.80	-5,092.31	870.95	517.61	309.54	208.06	2.488	
14,800.00	9,845.16	15,109.97	10,147.98	124.54	126.74	-125.80	-5,192.28	873.37	517.64	306.15	211.49	2.448	
14,900.00	9,844.84	15,209.97	10,147.72	126.51	128.69	-125.81	-5,292.26	875.79	517.67	302.75	214.93	2.409	
15,000.00	9,844.52	15,309.97	10,147.45	128.49	130.64	-125.81	-5,392.23	878.21	517.70	299.33	218.37	2.371	
15,100.00	9,844.19	15,409.97	10,147.19	130.47	132.60	-125.82	-5,492.20	880.63	517.74	295.90	221.83	2.334	
15,200.00	9,843.79	15,515.22	10,146.88	132.45	134.67	-125.82	-5,597.41	883.01	517.90	292.75	225.14	2.300	
15,300.00	9,842.88	15,618.90	10,146.21	134.43	136.71	-125.84	-5,701.09	883.70	518.08	289.55	228.53	2.267	
15,400.00	9,841.96	15,718.90	10,145.55	136.42	138.68	-125.86	-5,801.09	884.29	518.23	286.26	231.96	2.234	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 15 Fed - 0026 - OH - Plan 1 02-01-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
15,500.00	9,841.04	15,818.90	10,144.89	138.42	140.65	-125.89	-5,901.08	884.87	518.38	282.97	235.41	2.202		
15,600.00	9,840.12	15,918.90	10,144.23	140.41	142.63	-125.91	-6,001.08	885.46	518.53	279.68	238.86	2.171		
15,700.00	9,839.19	16,018.90	10,143.57	142.42	144.62	-125.93	-6,101.07	886.04	518.69	276.37	242.31	2.141		
15,800.00	9,838.27	16,118.90	10,142.91	144.42	146.61	-125.96	-6,201.07	886.62	518.84	273.07	245.78	2.111		
15,900.00	9,837.35	16,218.90	10,142.25	146.43	148.60	-125.98	-6,301.06	887.21	518.99	269.75	249.24	2.082		
16,000.00	9,836.43	16,318.90	10,141.59	148.45	150.60	-126.00	-6,401.06	887.79	519.15	266.43	252.72	2.054		
16,100.00	9,835.51	16,418.90	10,140.93	150.47	152.60	-126.03	-6,501.06	888.38	519.30	263.10	256.20	2.027		
16,200.00	9,834.59	16,518.90	10,140.27	152.49	154.61	-126.05	-6,601.05	888.96	519.45	259.77	259.68	2.000		
16,300.00	9,833.67	16,618.90	10,139.61	154.52	156.62	-126.07	-6,701.05	889.55	519.61	256.44	263.17	1.974		
16,400.00	9,832.75	16,718.90	10,138.95	156.55	158.64	-126.09	-6,801.04	890.13	519.76	253.10	266.66	1.949		
16,500.00	9,831.83	16,818.90	10,138.29	158.58	160.66	-126.12	-6,901.04	890.72	519.91	249.75	270.16	1.924		
16,600.00	9,830.91	16,918.90	10,137.63	160.62	162.68	-126.14	-7,001.04	891.30	520.07	246.40	273.66	1.900		
16,700.00	9,829.99	17,018.90	10,136.96	162.66	164.71	-126.16	-7,101.03	891.88	520.22	243.05	277.17	1.877		
16,800.00	9,829.06	17,118.90	10,136.30	164.70	166.73	-126.19	-7,201.03	892.47	520.38	239.70	280.68	1.854		
16,900.00	9,828.14	17,218.90	10,135.64	166.75	168.77	-126.21	-7,301.02	893.05	520.53	236.34	284.19	1.832		
17,000.00	9,827.22	17,318.90	10,134.98	168.80	170.80	-126.23	-7,401.02	893.64	520.68	232.97	287.71	1.810		
17,100.00	9,826.30	17,418.90	10,134.32	170.85	172.84	-126.26	-7,501.01	894.22	520.84	229.61	291.23	1.788		
17,200.00	9,825.38	17,518.90	10,133.66	172.90	174.88	-126.28	-7,601.01	894.81	520.99	226.24	294.75	1.768		
17,300.00	9,824.46	17,618.90	10,133.00	174.96	176.93	-126.30	-7,701.01	895.39	521.15	222.87	298.28	1.747		
17,400.00	9,823.54	17,718.90	10,132.34	177.02	178.97	-126.33	-7,801.00	895.97	521.30	219.49	301.81	1.727		
17,500.00	9,822.62	17,818.90	10,131.68	179.08	181.02	-126.35	-7,901.00	896.56	521.46	216.12	305.34	1.708		
17,600.00	9,821.70	17,918.90	10,131.02	181.14	183.08	-126.37	-8,000.99	897.14	521.61	212.74	308.87	1.689		
17,700.00	9,820.78	18,018.90	10,130.36	183.21	185.13	-126.39	-8,100.99	897.73	521.76	209.36	312.41	1.670		
17,800.00	9,819.86	18,118.90	10,129.70	185.27	187.19	-126.42	-8,200.98	898.31	521.92	205.97	315.95	1.652		
17,900.00	9,818.94	18,218.90	10,129.04	187.34	189.25	-126.44	-8,300.98	898.90	522.07	202.59	319.49	1.634		
18,000.00	9,818.01	18,318.90	10,128.38	189.42	191.31	-126.46	-8,400.98	899.48	522.23	199.20	323.03	1.617		
18,100.00	9,817.09	18,418.90	10,127.72	191.49	193.37	-126.49	-8,500.97	900.06	522.38	195.81	326.57	1.600		
18,200.00	9,816.17	18,518.90	10,127.06	193.57	195.44	-126.51	-8,600.97	900.65	522.54	192.42	330.12	1.583		
18,300.00	9,815.25	18,618.90	10,126.39	195.64	197.50	-126.53	-8,700.96	901.23	522.69	189.03	333.66	1.567		
18,400.00	9,814.33	18,718.90	10,125.73	197.72	199.57	-126.56	-8,800.96	901.82	522.85	185.64	337.21	1.551		
18,500.00	9,813.41	18,818.90	10,125.07	199.80	201.64	-126.58	-8,900.95	902.40	523.00	182.24	340.76	1.535		
18,600.00	9,812.49	18,918.90	10,124.41	201.89	203.72	-126.60	-9,000.95	902.99	523.16	178.85	344.31	1.519		
18,700.00	9,811.57	19,018.90	10,123.75	203.97	205.79	-126.62	-9,100.95	903.57	523.32	175.45	347.87	1.504		
18,800.00	9,810.65	19,118.90	10,123.09	206.06	207.87	-126.65	-9,200.94	904.15	523.47	172.05	351.42	1.490 Level 3		
18,900.00	9,809.73	19,218.90	10,122.43	208.14	209.95	-126.67	-9,300.94	904.74	523.63	168.65	354.98	1.475 Level 3		
19,000.00	9,808.81	19,318.90	10,121.77	210.23	212.03	-126.69	-9,400.93	905.32	523.78	165.25	358.53	1.461 Level 3		
19,100.00	9,807.88	19,418.90	10,121.11	212.32	214.11	-126.72	-9,500.93	905.91	523.94	161.85	362.09	1.447 Level 3		
19,200.00	9,806.96	19,518.90	10,120.45	214.41	216.19	-126.74	-9,600.93	906.49	524.09	158.45	365.65	1.433 Level 3		
19,300.00	9,806.04	19,618.90	10,119.79	216.51	218.28	-126.76	-9,700.92	907.08	524.25	155.04	369.21	1.420 Level 3		
19,400.00	9,805.12	19,718.90	10,119.13	218.60	220.36	-126.78	-9,800.92	907.66	524.41	151.64	372.77	1.407 Level 3		
19,500.00	9,804.20	19,818.90	10,118.47	220.69	222.45	-126.81	-9,900.91	908.25	524.56	148.24	376.33	1.394 Level 3		
19,600.00	9,803.28	19,918.90	10,117.81	222.79	224.54	-126.83	-10,000.91	908.83	524.72	144.83	379.89	1.381 Level 3		
19,700.00	9,802.36	20,018.90	10,117.15	224.89	226.63	-126.85	-10,100.90	909.41	524.87	141.43	383.45	1.369 Level 3		
19,800.00	9,801.44	20,118.90	10,116.49	226.99	228.72	-126.87	-10,200.90	910.00	525.03	138.02	387.01	1.357 Level 3		
19,900.00	9,800.52	20,218.90	10,115.82	229.09	230.81	-126.90	-10,300.90	910.58	525.19	134.61	390.57	1.345 Level 3		
20,000.00	9,799.60	20,318.90	10,115.16	231.19	232.90	-126.92	-10,400.89	911.17	525.34	131.21	394.14	1.333 Level 3		
20,100.00	9,798.68	20,418.90	10,114.50	233.29	235.00	-126.94	-10,500.89	911.75	525.50	127.80	397.70	1.321 Level 3		
20,173.70	9,798.00	20,492.58	10,114.02	234.84	236.54	-126.96	-10,574.58	912.18	525.62	125.29	400.33	1.313 Level 3, SF		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #15H - OH - Plan 2 11-18-16												Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	12.00	0.00	0.00	0.02	74.34	347.09	1,238.25	1,285.97				
100.00	100.00	112.00	100.00	0.19	0.24	74.34	347.09	1,238.25	1,285.97	1,285.53	0.44	2,934.457	
200.00	200.00	212.00	200.00	0.73	0.78	74.34	347.09	1,238.25	1,285.97	1,284.46	1.51	849.586	
300.00	300.00	312.00	300.00	1.27	1.32	74.34	347.09	1,238.25	1,285.97	1,283.38	2.59	496.695	
400.00	400.00	412.00	400.00	1.81	1.86	74.34	347.09	1,238.25	1,285.97	1,282.31	3.66	350.930	
500.00	500.00	512.00	500.00	2.34	2.40	74.34	347.09	1,238.25	1,285.97	1,281.23	4.74	271.309	
600.00	600.00	612.00	600.00	2.88	2.93	74.34	347.09	1,238.25	1,285.97	1,280.16	5.82	221.136	
700.00	700.00	712.00	700.00	3.42	3.47	74.34	347.09	1,238.25	1,285.97	1,279.08	6.89	186.624	
800.00	800.00	812.00	800.00	3.96	4.01	74.34	347.09	1,238.25	1,285.97	1,278.01	7.97	161.430	
900.00	900.00	912.00	900.00	4.50	4.55	74.34	347.09	1,238.25	1,285.97	1,276.93	9.04	142.229	
1,000.00	1,000.00	1,012.00	1,000.00	5.03	5.08	74.34	347.09	1,238.25	1,285.97	1,275.86	10.12	127.111	
1,100.00	1,100.00	1,112.00	1,100.00	5.57	5.62	74.34	347.09	1,238.25	1,285.97	1,274.78	11.19	114.897	
1,200.00	1,200.00	1,212.00	1,200.00	6.11	6.16	74.34	347.09	1,238.25	1,285.97	1,273.71	12.27	104.825	
1,300.00	1,300.00	1,312.00	1,300.00	6.65	6.70	74.34	347.09	1,238.25	1,285.97	1,272.63	13.34	96.377	
1,400.00	1,400.00	1,412.00	1,400.00	7.18	7.23	74.34	347.09	1,238.25	1,285.97	1,271.55	14.42	89.188	
1,500.00	1,500.00	1,512.00	1,500.00	7.72	7.77	74.34	347.09	1,238.25	1,285.97	1,270.48	15.49	82.998	
1,600.00	1,600.00	1,612.00	1,600.00	8.26	8.31	74.34	347.09	1,238.25	1,285.97	1,269.40	16.57	77.611	
1,700.00	1,700.00	1,712.00	1,700.00	8.80	8.85	74.34	347.09	1,238.25	1,285.97	1,268.33	17.64	72.881	
1,800.00	1,800.00	1,812.00	1,800.00	9.33	9.39	74.34	347.09	1,238.25	1,285.97	1,267.25	18.72	68.554	
1,900.00	1,899.98	1,911.98	1,899.98	9.86	9.92	-20.32	347.09	1,238.25	1,284.34	1,266.16	19.77	64.957	
2,000.00	1,999.90	2,011.90	1,999.90	10.37	10.46	-20.38	347.09	1,238.25	1,280.53	1,259.72	20.82	61.517	
2,100.00	2,099.81	2,111.81	2,099.81	10.89	11.00	-20.45	347.09	1,238.25	1,276.68	1,254.82	21.87	58.386	
2,200.00	2,199.73	2,211.73	2,199.73	11.41	11.54	-20.51	347.09	1,238.25	1,272.83	1,249.91	22.92	55.535	
2,300.00	2,299.64	2,311.64	2,299.64	11.93	12.07	-20.58	347.09	1,238.25	1,268.99	1,245.01	23.97	52.931	
2,400.00	2,399.56	2,411.56	2,399.56	12.45	12.61	-20.64	347.09	1,238.25	1,265.14	1,240.11	25.03	50.542	
2,500.00	2,499.48	2,509.61	2,497.61	12.97	13.13	-20.71	347.07	1,238.26	1,261.30	1,235.23	26.08	48.367	
2,600.00	2,599.39	2,600.00	2,587.98	13.50	13.60	-20.70	345.79	1,239.42	1,258.27	1,231.21	27.06	46.491	
2,700.00	2,699.31	2,677.10	2,664.99	14.03	13.98	-20.59	343.03	1,241.92	1,256.48	1,228.52	27.97	44.925	
2,784.92	2,784.16	2,748.10	2,735.79	14.48	14.33	-20.43	339.13	1,245.46	1,256.01	1,227.24	28.77	43.663 CC	
2,800.00	2,799.22	2,760.69	2,748.33	14.55	14.40	-20.39	338.30	1,246.21	1,256.02	1,227.12	28.91	43.450	
2,900.00	2,899.14	2,843.98	2,831.15	15.08	14.81	-20.08	331.80	1,252.10	1,256.90	1,227.05	29.85	42.108	
3,000.00	2,999.05	2,926.83	2,913.25	15.62	15.23	-19.69	323.56	1,259.56	1,259.14	1,228.35	30.79	40.890	
3,100.00	3,098.97	3,012.49	2,997.77	16.15	15.67	-19.18	313.25	1,268.90	1,262.79	1,231.03	31.76	39.763	
3,200.00	3,198.88	3,111.45	3,095.27	16.68	16.19	-18.56	300.70	1,280.27	1,267.00	1,234.21	32.80	38.631	
3,300.00	3,298.80	3,210.40	3,192.76	17.21	16.72	-17.94	288.15	1,291.64	1,271.37	1,237.52	33.85	37.563	
3,400.00	3,398.72	3,309.35	3,290.26	17.75	17.25	-17.33	275.60	1,303.01	1,275.88	1,240.98	34.90	36.557	
3,500.00	3,498.63	3,408.31	3,387.75	18.28	17.79	-16.72	263.05	1,314.38	1,280.54	1,244.58	35.96	35.607	
3,600.00	3,598.55	3,507.26	3,485.24	18.82	18.34	-16.12	250.49	1,325.75	1,285.34	1,248.31	37.03	34.710	
3,700.00	3,698.46	3,606.22	3,582.74	19.35	18.90	-15.52	237.94	1,337.12	1,290.29	1,252.19	38.10	33.863	
3,800.00	3,798.38	3,705.17	3,680.23	19.89	19.46	-14.93	225.39	1,348.49	1,295.38	1,256.20	39.18	33.062	
3,900.00	3,898.29	3,804.12	3,777.73	20.42	20.02	-14.34	212.84	1,359.86	1,300.61	1,260.35	40.26	32.304	
4,000.00	3,998.21	3,903.08	3,875.22	20.96	20.59	-13.76	200.29	1,371.23	1,305.98	1,264.63	41.35	31.587	
4,100.00	4,098.12	4,002.03	3,972.71	21.50	21.16	-13.18	187.73	1,382.59	1,311.48	1,269.05	42.43	30.907	
4,200.00	4,198.04	4,100.98	4,070.21	22.04	21.74	-12.60	175.18	1,393.96	1,317.12	1,273.60	43.52	30.262	
4,300.00	4,297.95	4,199.94	4,167.70	22.57	22.32	-12.03	162.63	1,405.33	1,322.90	1,278.28	44.62	29.650	
4,400.00	4,397.87	4,298.89	4,265.19	23.11	22.91	-11.47	150.08	1,416.70	1,328.80	1,283.09	45.71	29.069	
4,500.00	4,497.79	4,397.85	4,362.69	23.65	23.49	-10.91	137.53	1,428.07	1,334.84	1,288.03	46.81	28.517	
4,600.00	4,597.70	4,496.80	4,460.18	24.19	24.09	-10.35	124.98	1,439.44	1,341.00	1,293.09	47.91	27.991	
4,700.00	4,697.62	4,595.75	4,557.68	24.73	24.68	-9.80	112.42	1,450.81	1,347.29	1,298.28	49.01	27.491	
4,800.00	4,797.53	4,694.71	4,655.17	25.27	25.27	-9.26	99.87	1,462.18	1,353.70	1,303.59	50.11	27.015	
4,900.00	4,897.45	4,793.66	4,752.66	25.81	25.87	-8.72	87.32	1,473.55	1,360.24	1,309.03	51.21	26.562	
5,000.00	4,997.36	4,892.62	4,850.16	26.35	26.47	-8.18	74.77	1,484.92	1,366.89	1,314.58	52.31	26.129	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #15H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,097.28	4,991.57	4,947.65	26.89	27.08	-7.65	62.22	1,496.29	1,373.67	1,320.25	53.42	25.716	
5,200.00	5,197.19	5,090.52	5,045.15	27.43	27.68	-7.13	49.67	1,507.66	1,380.56	1,326.04	54.52	25.321	
5,300.00	5,297.11	5,189.48	5,142.64	27.97	28.29	-6.61	37.11	1,519.03	1,387.57	1,331.95	55.63	24.945	
5,400.00	5,397.03	5,288.43	5,240.13	28.51	28.89	-6.10	24.56	1,530.40	1,394.70	1,337.97	56.73	24.584	
5,500.00	5,496.94	5,387.39	5,337.63	29.05	29.50	-5.59	12.01	1,541.77	1,401.93	1,344.10	57.84	24.240	
5,600.00	5,596.86	5,486.34	5,435.12	29.59	30.11	-5.08	-0.54	1,553.14	1,409.28	1,350.34	58.94	23.910	
5,700.00	5,696.77	5,603.12	5,550.27	30.13	30.83	-4.51	-14.99	1,566.23	1,416.51	1,356.36	60.15	23.550	
5,800.00	5,796.69	5,753.06	5,698.97	30.67	31.71	-3.96	-29.09	1,579.00	1,421.04	1,359.52	61.52	23.099	
5,900.00	5,896.60	5,904.12	5,849.60	31.21	32.54	-3.65	-37.44	1,586.57	1,422.04	1,359.17	62.87	22.618	
6,000.00	5,996.52	6,051.10	5,996.52	31.75	33.30	-3.56	-39.92	1,588.82	1,419.45	1,355.29	64.17	22.121	
6,100.00	6,096.43	6,151.02	6,096.43	32.29	33.79	-3.57	-39.92	1,588.82	1,415.35	1,350.15	65.20	21.707	
6,200.00	6,196.35	6,250.93	6,196.35	32.83	34.28	-3.59	-39.92	1,588.82	1,411.25	1,345.01	66.24	21.306	
6,300.00	6,296.27	6,350.85	6,296.27	33.37	34.77	-3.60	-39.92	1,588.82	1,407.15	1,339.88	67.27	20.917	
6,400.00	6,396.18	6,450.76	6,396.18	33.92	35.26	-3.61	-39.92	1,588.82	1,403.05	1,334.74	68.31	20.539	
6,500.00	6,496.10	6,550.68	6,496.10	34.46	35.76	-3.62	-39.92	1,588.82	1,398.95	1,329.60	69.35	20.173	
6,600.00	6,596.01	6,650.59	6,596.01	35.00	36.26	-3.63	-39.92	1,588.82	1,394.85	1,324.46	70.39	19.816	
6,700.00	6,695.93	6,750.51	6,695.93	35.54	36.75	-3.64	-39.92	1,588.82	1,390.75	1,319.32	71.43	19.470	
6,800.00	6,795.84	6,850.42	6,795.84	36.08	37.25	-3.65	-39.92	1,588.82	1,386.65	1,314.17	72.47	19.134	
6,900.00	6,895.76	6,950.34	6,895.76	36.62	37.75	-3.66	-39.92	1,588.82	1,382.54	1,309.03	73.51	18.807	
7,000.00	6,995.67	7,050.26	6,995.67	37.17	38.25	-3.67	-39.92	1,588.82	1,378.44	1,303.89	74.56	18.488	
7,100.00	7,095.59	7,150.17	7,095.59	37.71	38.75	-3.68	-39.92	1,588.82	1,374.34	1,298.74	75.60	18.179	
7,200.00	7,195.51	7,250.09	7,195.51	38.25	39.26	-3.69	-39.92	1,588.82	1,370.24	1,293.59	76.65	17.877	
7,300.00	7,295.42	7,350.00	7,295.42	38.79	39.76	-3.70	-39.92	1,588.82	1,366.14	1,288.45	77.69	17.584	
7,400.00	7,395.34	7,449.92	7,395.34	39.33	40.26	-3.71	-39.92	1,588.82	1,362.04	1,283.30	78.74	17.298	
7,500.00	7,495.25	7,549.83	7,495.25	39.88	40.77	-3.73	-39.92	1,588.82	1,357.94	1,278.15	79.79	17.019	
7,600.00	7,595.17	7,649.75	7,595.17	40.42	41.27	-3.74	-39.92	1,588.82	1,353.84	1,273.00	80.84	16.748	
7,700.00	7,695.08	7,749.66	7,695.08	40.96	41.78	-3.75	-39.92	1,588.82	1,349.74	1,267.85	81.89	16.483	
7,800.00	7,795.00	7,849.58	7,795.00	41.50	42.29	-3.76	-39.92	1,588.82	1,345.64	1,262.70	82.94	16.225	
7,900.00	7,894.91	7,949.50	7,894.91	42.05	42.80	-3.77	-39.92	1,588.82	1,341.54	1,257.55	83.99	15.973	
8,000.00	7,994.83	8,049.41	7,994.83	42.59	43.30	-3.78	-39.92	1,588.82	1,337.44	1,252.40	85.04	15.727	
8,100.00	8,094.75	8,149.33	8,094.75	43.13	43.81	-3.79	-39.92	1,588.82	1,333.34	1,247.25	86.09	15.487	
8,200.00	8,194.66	8,249.24	8,194.66	43.67	44.32	-3.81	-39.92	1,588.82	1,329.24	1,242.10	87.14	15.253	
8,300.00	8,294.58	8,349.16	8,294.58	44.22	44.84	-3.82	-39.92	1,588.82	1,325.14	1,236.94	88.20	15.025	
8,400.00	8,394.49	8,449.07	8,394.49	44.76	45.35	-3.83	-39.92	1,588.82	1,321.04	1,231.79	89.25	14.801	
8,500.00	8,494.41	8,548.99	8,494.41	45.30	45.86	-3.84	-39.92	1,588.82	1,316.94	1,226.63	90.31	14.583	
8,600.00	8,594.32	8,648.90	8,594.32	45.84	46.37	-3.85	-39.92	1,588.82	1,312.84	1,221.48	91.36	14.370	
8,700.00	8,694.24	8,748.82	8,694.24	46.39	46.88	-3.87	-39.92	1,588.82	1,308.74	1,216.33	92.42	14.161	
8,800.00	8,794.15	8,848.74	8,794.15	46.93	47.40	-3.88	-39.92	1,588.82	1,304.64	1,211.17	93.47	13.958	
8,900.00	8,894.07	8,948.65	8,894.07	47.47	47.91	-3.89	-39.92	1,588.82	1,300.54	1,206.01	94.53	13.758	
9,000.00	8,993.99	9,048.57	8,993.99	48.02	48.43	-3.90	-39.92	1,588.82	1,296.44	1,200.86	95.58	13.563	
9,100.00	9,093.90	9,148.48	9,093.90	48.56	48.94	-3.92	-39.92	1,588.82	1,292.34	1,195.70	96.64	13.373	
9,200.00	9,193.82	9,248.40	9,193.82	49.10	49.46	-3.93	-39.92	1,588.82	1,288.24	1,190.54	97.70	13.186	
9,300.00	9,293.73	9,348.31	9,293.73	49.64	49.97	-12.79	-39.92	1,588.82	1,284.14	1,185.39	98.76	13.003	
9,400.00	9,393.04	9,447.62	9,393.04	50.18	50.49	-76.30	-39.92	1,588.82	1,279.77	1,179.95	99.82	12.821	
9,500.00	9,489.15	9,543.73	9,489.15	50.69	50.99	-83.78	-39.92	1,588.82	1,275.34	1,174.48	100.87	12.644	
9,600.00	9,579.12	9,633.70	9,579.12	51.18	51.45	-87.89	-39.92	1,588.82	1,272.06	1,170.19	101.87	12.487	
9,680.98	9,645.61	9,709.05	9,654.33	51.55	51.84	-90.63	-43.67	1,588.91	1,271.18	1,168.55	102.63	12.386	
9,700.00	9,660.24	9,727.80	9,672.92	51.64	51.94	-91.22	-46.11	1,588.97	1,271.23	1,168.42	102.81	12.365	
9,800.00	9,730.03	9,833.50	9,775.45	52.11	52.53	-94.13	-71.13	1,589.57	1,273.08	1,169.40	103.68	12.279	
9,900.00	9,786.38	9,954.44	9,884.82	52.59	53.24	-96.82	-122.22	1,590.81	1,277.39	1,172.96	104.43	12.232	
10,000.00	9,827.57	10,096.17	9,995.94	53.09	54.13	-99.35	-209.58	1,592.92	1,283.46	1,178.37	105.08	12.214	
10,100.00	9,852.35	10,264.14	10,095.11	53.62	55.26	-101.61	-344.37	1,596.17	1,289.95	1,184.18	105.77	12.196	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #15H - OH - Plan 2 11-18-16												Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	9,859.99	10,459.32	10,155.70	54.15	56.71	-103.20	-528.86	1,600.63	1,294.98	1,188.17	106.82	12.123	
10,300.00	9,859.66	10,604.97	10,161.56	54.73	57.84	-103.47	-674.16	1,604.14	1,295.66	1,187.32	108.34	11.960	
10,400.00	9,859.34	10,704.97	10,161.04	55.39	58.69	-103.47	-774.13	1,606.55	1,295.60	1,185.82	109.79	11.801	
10,500.00	9,859.02	10,804.97	10,160.52	56.12	59.61	-103.46	-874.10	1,608.97	1,295.54	1,184.16	111.38	11.632	
10,600.00	9,858.70	10,904.97	10,159.99	56.92	60.60	-103.45	-974.07	1,611.38	1,295.49	1,182.37	113.12	11.453	
10,700.00	9,858.37	11,004.97	10,159.47	57.79	61.64	-103.44	-1,074.04	1,613.80	1,295.43	1,180.44	114.99	11.266	
10,800.00	9,858.05	11,104.97	10,158.94	58.73	62.75	-103.43	-1,174.01	1,616.21	1,295.37	1,178.39	116.98	11.073	
10,900.00	9,857.73	11,204.97	10,158.42	59.73	63.91	-103.42	-1,273.98	1,618.63	1,295.31	1,176.21	119.10	10.876	
11,000.00	9,857.41	11,304.97	10,157.90	60.79	65.13	-103.41	-1,373.95	1,621.04	1,295.25	1,173.92	121.33	10.675	
11,100.00	9,857.09	11,404.97	10,157.37	61.91	66.40	-103.41	-1,473.92	1,623.46	1,295.20	1,171.52	123.67	10.473	
11,200.00	9,856.76	11,504.97	10,156.85	63.08	67.71	-103.40	-1,573.89	1,625.87	1,295.14	1,169.02	126.12	10.269	
11,300.00	9,856.44	11,604.97	10,156.33	64.30	69.07	-103.39	-1,673.86	1,628.28	1,295.08	1,166.42	128.66	10.066	
11,400.00	9,856.12	11,704.97	10,155.80	65.58	70.47	-103.38	-1,773.83	1,630.70	1,295.02	1,163.73	131.29	9.864	
11,500.00	9,855.80	11,804.97	10,155.28	66.90	71.92	-103.37	-1,873.80	1,633.11	1,294.97	1,160.96	134.01	9.663	
11,600.00	9,855.47	11,904.97	10,154.76	68.26	73.40	-103.36	-1,973.76	1,635.53	1,294.91	1,158.10	136.80	9.465	
11,700.00	9,855.15	12,004.97	10,154.23	69.66	74.91	-103.35	-2,073.73	1,637.94	1,294.85	1,155.17	139.68	9.270	
11,800.00	9,854.83	12,104.96	10,153.71	71.10	76.46	-103.35	-2,173.70	1,640.36	1,294.79	1,152.17	142.62	9.078	
11,900.00	9,854.51	12,204.96	10,153.19	72.58	78.04	-103.34	-2,273.67	1,642.77	1,294.74	1,149.10	145.64	8.890	
12,000.00	9,854.18	12,304.96	10,152.66	74.09	79.65	-103.33	-2,373.64	1,645.19	1,294.68	1,145.97	148.71	8.706	
12,100.00	9,853.86	12,404.96	10,152.14	75.63	81.29	-103.32	-2,473.61	1,647.60	1,294.62	1,142.78	151.84	8.526	
12,200.00	9,853.54	12,504.96	10,151.61	77.21	82.95	-103.31	-2,573.58	1,650.02	1,294.56	1,139.53	155.03	8.350	
12,300.00	9,853.22	12,604.96	10,151.09	78.81	84.64	-103.30	-2,673.55	1,652.43	1,294.50	1,136.23	158.28	8.179	
12,400.00	9,852.90	12,704.96	10,150.57	80.44	86.35	-103.29	-2,773.52	1,654.85	1,294.45	1,132.88	161.57	8.012	
12,500.00	9,852.57	12,804.96	10,150.04	82.09	88.08	-103.29	-2,873.49	1,657.26	1,294.39	1,129.49	164.90	7.849	
12,600.00	9,852.25	12,904.96	10,149.52	83.77	89.83	-103.28	-2,973.46	1,659.68	1,294.33	1,126.05	168.28	7.691	
12,700.00	9,851.93	13,004.96	10,149.00	85.46	91.61	-103.27	-3,073.43	1,662.09	1,294.28	1,122.57	171.71	7.538	
12,800.00	9,851.61	13,104.96	10,148.47	87.18	93.40	-103.26	-3,173.40	1,664.51	1,294.22	1,119.05	175.17	7.389	
12,900.00	9,851.28	13,204.96	10,147.95	88.92	95.21	-103.25	-3,273.36	1,666.92	1,294.16	1,115.50	178.66	7.244	
13,000.00	9,850.96	13,304.96	10,147.43	90.68	97.03	-103.24	-3,373.33	1,669.33	1,294.10	1,111.91	182.19	7.103	
13,100.00	9,850.64	13,404.96	10,146.90	92.45	98.87	-103.24	-3,473.30	1,671.75	1,294.05	1,108.29	185.75	6.966	
13,200.00	9,850.32	13,504.96	10,146.38	94.25	100.72	-103.23	-3,573.27	1,674.16	1,293.99	1,104.64	189.35	6.834	
13,300.00	9,850.00	13,604.96	10,145.86	96.05	102.59	-103.22	-3,673.24	1,676.58	1,293.93	1,100.96	192.97	6.705	
13,400.00	9,849.67	13,704.96	10,145.33	97.87	104.47	-103.21	-3,773.21	1,678.99	1,293.87	1,097.26	196.62	6.581	
13,500.00	9,849.35	13,804.96	10,144.81	99.71	106.37	-103.20	-3,873.18	1,681.41	1,293.82	1,093.53	200.29	6.460	
13,600.00	9,849.03	13,904.96	10,144.28	101.56	108.27	-103.19	-3,973.15	1,683.82	1,293.76	1,089.77	203.99	6.342	
13,700.00	9,848.71	14,004.96	10,143.76	103.42	110.19	-103.18	-4,073.12	1,686.24	1,293.70	1,085.99	207.71	6.228	
13,800.00	9,848.38	14,104.96	10,143.24	105.29	112.11	-103.18	-4,173.09	1,688.65	1,293.65	1,082.19	211.46	6.118	
13,900.00	9,848.06	14,204.96	10,142.71	107.17	114.05	-103.17	-4,273.06	1,691.07	1,293.59	1,078.37	215.22	6.010	
14,000.00	9,847.74	14,304.96	10,142.19	109.07	115.99	-103.16	-4,373.03	1,693.48	1,293.53	1,074.53	219.01	5.906	
14,100.00	9,847.42	14,404.96	10,141.67	110.97	117.95	-103.15	-4,473.00	1,695.90	1,293.48	1,070.67	222.81	5.805	
14,200.00	9,847.09	14,504.96	10,141.14	112.89	119.91	-103.14	-4,572.97	1,698.31	1,293.42	1,066.79	226.63	5.707	
14,300.00	9,846.77	14,604.96	10,140.62	114.81	121.88	-103.13	-4,672.93	1,700.73	1,293.36	1,062.89	230.47	5.612	
14,400.00	9,846.45	14,704.96	10,140.10	116.74	123.86	-103.12	-4,772.90	1,703.14	1,293.30	1,058.98	234.32	5.519	
14,500.00	9,846.13	14,804.96	10,139.57	118.68	125.85	-103.12	-4,872.87	1,705.56	1,293.25	1,055.06	238.19	5.430	
14,600.00	9,845.81	14,904.96	10,139.05	120.63	127.84	-103.11	-4,972.84	1,707.97	1,293.19	1,051.12	242.07	5.342	
14,700.00	9,845.48	15,004.96	10,138.52	122.58	129.84	-103.10	-5,072.81	1,710.38	1,293.13	1,047.16	245.97	5.257	
14,800.00	9,845.16	15,104.96	10,138.00	124.54	131.85	-103.09	-5,172.78	1,712.80	1,293.08	1,043.20	249.88	5.175	
14,900.00	9,844.84	15,204.96	10,137.48	126.51	133.86	-103.08	-5,272.75	1,715.21	1,293.02	1,039.22	253.80	5.095	
15,000.00	9,844.52	15,304.96	10,136.95	128.49	135.88	-103.07	-5,372.72	1,717.63	1,292.96	1,035.23	257.74	5.017	
15,100.00	9,844.19	15,404.96	10,136.43	130.47	137.91	-103.06	-5,472.69	1,720.04	1,292.91	1,031.22	261.68	4.941	
15,143.61	9,844.01	15,448.57	10,136.20	131.33	138.79	-103.06	-5,516.29	1,721.10	1,293.01	1,029.69	263.33	4.910	
15,200.00	9,843.79	15,504.96	10,135.91	132.45	139.94	-103.05	-5,572.66	1,722.46	1,293.13	1,027.68	265.44	4.872	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #15H - OH - Plan 2 11-18-16													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,300.00	9,842.88	15,628.00	10,135.27	134.43	142.42	-103.06	-5,695.69	1,723.68	1,293.46	1,023.72	269.74	4.795		
15,400.00	9,841.96	15,727.99	10,134.75	136.42	144.44	-103.08	-5,795.68	1,724.26	1,293.55	1,019.88	273.67	4.727		
15,500.00	9,841.04	15,827.99	10,134.23	138.42	146.47	-103.10	-5,895.68	1,724.85	1,293.64	1,016.03	277.61	4.660		
15,600.00	9,840.12	15,927.99	10,133.72	140.41	148.50	-103.12	-5,995.67	1,725.43	1,293.74	1,012.18	281.56	4.595		
15,700.00	9,839.19	16,027.99	10,133.20	142.42	150.54	-103.13	-6,095.67	1,726.02	1,293.83	1,008.31	285.52	4.532		
15,800.00	9,838.27	16,127.99	10,132.68	144.42	152.58	-103.15	-6,195.67	1,726.60	1,293.92	1,004.44	289.48	4.470		
15,900.00	9,837.35	16,227.99	10,132.17	146.43	154.62	-103.17	-6,295.66	1,727.19	1,294.01	1,000.56	293.45	4.410		
16,000.00	9,836.43	16,327.99	10,131.65	148.45	156.67	-103.19	-6,395.66	1,727.77	1,294.11	996.67	297.43	4.351		
16,100.00	9,835.51	16,427.99	10,131.13	150.47	158.72	-103.20	-6,495.65	1,728.36	1,294.20	992.78	301.42	4.294		
16,200.00	9,834.59	16,527.99	10,130.61	152.49	160.78	-103.22	-6,595.65	1,728.94	1,294.29	988.88	305.41	4.238		
16,300.00	9,833.67	16,627.99	10,130.10	154.52	162.84	-103.24	-6,695.65	1,729.53	1,294.39	984.98	309.41	4.183		
16,400.00	9,832.75	16,727.99	10,129.58	156.55	164.90	-103.26	-6,795.64	1,730.11	1,294.48	981.06	313.42	4.130		
16,500.00	9,831.83	16,827.99	10,129.06	158.58	166.96	-103.27	-6,895.64	1,730.70	1,294.57	977.15	317.43	4.078		
16,600.00	9,830.91	16,927.98	10,128.55	160.62	169.03	-103.29	-6,995.64	1,731.28	1,294.67	973.22	321.44	4.028		
16,700.00	9,829.99	17,027.98	10,128.03	162.66	171.10	-103.31	-7,095.63	1,731.86	1,294.76	969.29	325.46	3.978		
16,800.00	9,829.06	17,127.98	10,127.51	164.70	173.17	-103.33	-7,195.63	1,732.45	1,294.85	965.36	329.49	3.930		
16,900.00	9,828.14	17,227.98	10,126.99	166.75	175.25	-103.34	-7,295.62	1,733.03	1,294.95	961.42	333.52	3.883		
17,000.00	9,827.22	17,327.98	10,126.48	168.80	177.33	-103.36	-7,395.62	1,733.62	1,295.04	957.48	337.56	3.836		
17,100.00	9,826.30	17,427.98	10,125.96	170.85	179.41	-103.38	-7,495.62	1,734.20	1,295.13	953.53	341.60	3.791		
17,200.00	9,825.38	17,527.98	10,125.44	172.90	181.49	-103.40	-7,595.61	1,734.79	1,295.23	949.58	345.65	3.747		
17,300.00	9,824.46	17,627.98	10,124.93	174.96	183.58	-103.41	-7,695.61	1,735.37	1,295.32	945.63	349.70	3.704		
17,400.00	9,823.54	17,727.98	10,124.41	177.02	185.67	-103.43	-7,795.60	1,735.96	1,295.42	941.67	353.75	3.662		
17,500.00	9,822.62	17,827.98	10,123.89	179.08	187.76	-103.45	-7,895.60	1,736.54	1,295.51	937.70	357.81	3.621		
17,600.00	9,821.70	17,927.98	10,123.38	181.14	189.85	-103.46	-7,995.60	1,737.13	1,295.61	933.74	361.87	3.580		
17,700.00	9,820.78	18,027.98	10,122.86	183.21	191.95	-103.48	-8,095.59	1,737.71	1,295.70	929.77	365.93	3.541		
17,800.00	9,819.86	18,127.98	10,122.34	185.27	194.04	-103.50	-8,195.59	1,738.30	1,295.79	925.79	370.00	3.502		
17,900.00	9,818.94	18,227.97	10,121.82	187.34	196.14	-103.52	-8,295.59	1,738.88	1,295.89	921.82	374.07	3.464		
18,000.00	9,818.01	18,327.97	10,121.31	189.42	198.24	-103.53	-8,395.58	1,739.47	1,295.98	917.84	378.15	3.427		
18,100.00	9,817.09	18,427.97	10,120.79	191.49	200.34	-103.55	-8,495.58	1,740.05	1,296.08	913.85	382.23	3.391		
18,200.00	9,816.17	18,527.97	10,120.27	193.57	202.45	-103.57	-8,595.57	1,740.63	1,296.18	909.87	386.31	3.355		
18,300.00	9,815.25	18,627.97	10,119.76	195.64	204.55	-103.59	-8,695.57	1,741.22	1,296.27	905.88	390.39	3.320		
18,400.00	9,814.33	18,727.97	10,119.24	197.72	206.66	-103.60	-8,795.57	1,741.80	1,296.37	901.89	394.48	3.286		
18,500.00	9,813.41	18,827.97	10,118.72	199.80	208.77	-103.62	-8,895.56	1,742.39	1,296.46	897.89	398.57	3.253		
18,600.00	9,812.49	18,927.97	10,118.20	201.89	210.88	-103.64	-8,995.56	1,742.97	1,296.56	893.90	402.66	3.220		
18,700.00	9,811.57	19,027.97	10,117.69	203.97	212.99	-103.66	-9,095.55	1,743.56	1,296.65	889.90	406.76	3.188		
18,800.00	9,810.65	19,127.97	10,117.17	206.06	215.10	-103.67	-9,195.55	1,744.14	1,296.75	885.90	410.85	3.156		
18,900.00	9,809.73	19,227.97	10,116.65	208.14	217.22	-103.69	-9,295.55	1,744.73	1,296.85	881.89	414.95	3.125		
19,000.00	9,808.81	19,327.97	10,116.14	210.23	219.34	-103.71	-9,395.54	1,745.31	1,296.94	877.89	419.05	3.095		
19,100.00	9,807.88	19,427.96	10,115.62	212.32	221.45	-103.72	-9,495.54	1,745.90	1,297.04	873.88	423.16	3.065		
19,200.00	9,806.96	19,527.96	10,115.10	214.41	223.57	-103.74	-9,595.54	1,746.48	1,297.13	869.87	427.26	3.036		
19,300.00	9,806.04	19,627.96	10,114.58	216.51	225.69	-103.76	-9,695.53	1,747.07	1,297.23	865.86	431.37	3.007		
19,400.00	9,805.12	19,727.96	10,114.07	218.60	227.81	-103.78	-9,795.53	1,747.65	1,297.33	861.85	435.48	2.979		
19,500.00	9,804.20	19,827.96	10,113.55	220.69	229.94	-103.79	-9,895.52	1,748.23	1,297.42	857.83	439.59	2.951		
19,600.00	9,803.28	19,927.96	10,113.03	222.79	232.06	-103.81	-9,995.52	1,748.82	1,297.52	853.82	443.70	2.924		
19,700.00	9,802.36	20,027.96	10,112.52	224.89	234.18	-103.83	-10,095.52	1,749.40	1,297.62	849.80	447.82	2.898		
19,800.00	9,801.44	20,127.96	10,112.00	226.99	236.31	-103.85	-10,195.51	1,749.99	1,297.72	845.78	451.93	2.871		
19,900.00	9,800.52	20,227.96	10,111.48	229.09	238.44	-103.86	-10,295.51	1,750.57	1,297.81	841.76	456.05	2.846		
20,000.00	9,799.60	20,327.96	10,110.96	231.19	240.56	-103.88	-10,395.50	1,751.16	1,297.91	837.74	460.17	2.820		
20,100.00	9,798.68	20,427.96	10,110.45	233.29	242.69	-103.90	-10,495.50	1,751.74	1,298.01	833.71	464.29	2.796		
20,173.70	9,798.00	20,501.65	10,110.07	234.84	244.26	-103.91	-10,569.19	1,752.17	1,298.08	830.75	467.33	2.778 ES, SF		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #16H - OH - Plan 2 11-18-16													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)						
0.00	0.00	12.00	0.00	0.00	0.02	73.27	372.09	1,238.25	1,292.94					
100.00	100.00	112.00	100.00	0.19	0.24	73.27	372.09	1,238.25	1,292.94	1,292.51	0.44	2,950.366		
200.00	200.00	212.00	200.00	0.73	0.78	73.27	372.09	1,238.25	1,292.94	1,291.43	1.51	854.192		
300.00	300.00	312.00	300.00	1.27	1.32	73.27	372.09	1,238.25	1,292.94	1,290.36	2.59	499.387		
400.00	400.00	412.00	400.00	1.81	1.86	73.27	372.09	1,238.25	1,292.94	1,289.28	3.66	352.832		
500.00	500.00	512.00	500.00	2.34	2.40	73.27	372.09	1,238.25	1,292.94	1,288.20	4.74	272.779		
600.00	600.00	612.00	600.00	2.88	2.93	73.27	372.09	1,238.25	1,292.94	1,287.13	5.82	222.335		
700.00	700.00	712.00	700.00	3.42	3.47	73.27	372.09	1,238.25	1,292.94	1,286.05	6.89	187.636		
800.00	800.00	812.00	800.00	3.96	4.01	73.27	372.09	1,238.25	1,292.94	1,284.98	7.97	162.305		
900.00	900.00	912.00	900.00	4.50	4.55	73.27	372.09	1,238.25	1,292.94	1,283.90	9.04	143.000		
1,000.00	1,000.00	1,012.00	1,000.00	5.03	5.08	73.27	372.09	1,238.25	1,292.94	1,282.83	10.12	127.800		
1,100.00	1,100.00	1,112.00	1,100.00	5.57	5.62	73.27	372.09	1,238.25	1,292.94	1,281.75	11.19	115.520		
1,200.00	1,200.00	1,212.00	1,200.00	6.11	6.16	73.27	372.09	1,238.25	1,292.94	1,280.68	12.27	105.393		
1,300.00	1,300.00	1,312.00	1,300.00	6.65	6.70	73.27	372.09	1,238.25	1,292.94	1,279.60	13.34	96.899		
1,400.00	1,400.00	1,412.00	1,400.00	7.18	7.23	73.27	372.09	1,238.25	1,292.94	1,278.53	14.42	89.672		
1,500.00	1,500.00	1,512.00	1,500.00	7.72	7.77	73.27	372.09	1,238.25	1,292.94	1,277.45	15.49	83.448		
1,600.00	1,600.00	1,612.00	1,600.00	8.26	8.31	73.27	372.09	1,238.25	1,292.94	1,276.38	16.57	78.032		
1,700.00	1,700.00	1,712.00	1,700.00	8.80	8.85	73.27	372.09	1,238.25	1,292.94	1,275.30	17.64	73.276		
1,800.00	1,800.00	1,812.00	1,800.00	9.33	9.39	73.27	372.09	1,238.25	1,292.94	1,274.22	18.72	69.067		
1,900.00	1,899.98	1,911.98	1,899.98	9.86	9.92	-21.38	372.09	1,238.25	1,291.32	1,271.55	19.77	65.310		
2,000.00	1,999.90	2,011.90	1,999.90	10.37	10.46	-21.46	372.09	1,238.25	1,287.55	1,266.73	20.82	61.853		
2,100.00	2,099.81	2,111.81	2,099.81	10.89	11.00	-21.52	372.09	1,238.25	1,283.72	1,261.85	21.87	58.707		
2,200.00	2,199.73	2,211.73	2,199.73	11.41	11.54	-21.59	372.09	1,238.25	1,279.90	1,256.98	22.92	55.843		
2,300.00	2,299.64	2,300.00	2,288.00	11.93	12.00	-21.64	371.94	1,238.66	1,276.48	1,252.58	23.90	53.403		
2,400.00	2,399.56	2,369.05	2,357.02	12.45	12.35	-21.63	371.26	1,240.58	1,274.96	1,250.19	24.77	51.472		
2,423.39	2,422.93	2,386.28	2,374.23	12.57	12.44	-21.62	371.00	1,241.30	1,274.90	1,249.92	24.98	51.040 CC		
2,500.00	2,499.48	2,442.70	2,430.55	12.97	12.72	-21.57	369.92	1,244.35	1,275.51	1,249.84	25.66	49.701 ES		
2,600.00	2,599.39	2,516.24	2,503.85	13.50	13.10	-21.47	367.95	1,249.90	1,278.13	1,251.57	26.56	48.123		
2,700.00	2,699.31	2,600.00	2,587.13	14.03	13.53	-21.28	364.93	1,258.37	1,282.88	1,255.37	27.51	46.632		
2,800.00	2,799.22	2,662.62	2,649.19	14.55	13.86	-21.11	362.15	1,266.20	1,289.60	1,261.24	28.36	45.476		
2,900.00	2,899.14	2,735.27	2,720.96	15.08	14.24	-20.86	358.35	1,276.88	1,298.46	1,269.20	29.26	44.378		
3,000.00	2,999.05	2,813.38	2,797.77	15.62	14.66	-20.54	353.62	1,290.20	1,309.37	1,279.18	30.19	43.366		
3,100.00	3,098.97	2,912.26	2,894.89	16.15	15.20	-20.13	347.40	1,307.71	1,320.96	1,289.73	31.24	42.287		
3,200.00	3,198.88	3,011.14	2,992.01	16.68	15.75	-19.73	341.17	1,325.22	1,332.62	1,300.33	32.29	41.272		
3,300.00	3,298.80	3,110.02	3,089.13	17.21	16.31	-19.33	334.95	1,342.73	1,344.35	1,311.00	33.35	40.315		
3,400.00	3,398.72	3,208.90	3,186.25	17.75	16.88	-18.95	328.73	1,360.24	1,356.14	1,321.73	34.41	39.414		
3,500.00	3,498.63	3,307.78	3,283.37	18.28	17.45	-18.56	322.50	1,377.75	1,367.98	1,332.51	35.47	38.564		
3,600.00	3,598.55	3,406.67	3,380.49	18.82	18.03	-18.19	316.28	1,395.26	1,379.89	1,343.35	36.54	37.761		
3,700.00	3,698.46	3,505.55	3,477.61	19.35	18.62	-17.82	310.06	1,412.77	1,391.86	1,354.24	37.62	37.002		
3,800.00	3,798.38	3,604.43	3,574.72	19.89	19.21	-17.46	303.83	1,430.28	1,403.88	1,365.19	38.69	36.283		
3,900.00	3,898.29	3,703.31	3,671.84	20.42	19.81	-17.10	297.61	1,447.79	1,415.96	1,376.18	39.77	35.602		
4,000.00	3,998.21	3,802.19	3,768.96	20.96	20.41	-16.75	291.39	1,465.30	1,428.09	1,387.23	40.85	34.957		
4,100.00	4,098.12	3,901.07	3,866.08	21.50	21.01	-16.40	285.16	1,482.81	1,440.27	1,398.33	41.94	34.344		
4,200.00	4,198.04	3,999.95	3,963.20	22.04	21.62	-16.06	278.94	1,500.32	1,452.50	1,409.48	43.02	33.762		
4,300.00	4,297.95	4,098.84	4,060.32	22.57	22.23	-15.73	272.72	1,517.83	1,464.79	1,420.68	44.11	33.209		
4,400.00	4,397.87	4,197.72	4,157.44	23.11	22.85	-15.40	266.49	1,535.34	1,477.12	1,431.92	45.20	32.682		
4,500.00	4,497.79	4,296.60	4,254.56	23.65	23.46	-15.08	260.27	1,552.85	1,489.50	1,443.21	46.29	32.180		
4,600.00	4,597.70	4,395.48	4,351.68	24.19	24.08	-14.76	254.04	1,570.36	1,501.93	1,454.55	47.38	31.701		
4,700.00	4,697.62	4,494.36	4,448.80	24.73	24.71	-14.45	247.82	1,587.87	1,514.40	1,465.93	48.47	31.245		
4,800.00	4,797.53	4,593.24	4,545.92	25.27	25.33	-14.14	241.60	1,605.38	1,526.91	1,477.35	49.56	30.808		
4,900.00	4,897.45	4,692.12	4,643.04	25.81	25.96	-13.84	235.37	1,622.89	1,539.47	1,488.81	50.66	30.391		
5,000.00	4,997.36	4,791.00	4,740.16	26.35	26.59	-13.54	229.15	1,640.40	1,552.07	1,500.32	51.75	29.992		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #16H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
5,100.00	5,097.28	4,889.89	4,837.28	26.89	27.22	-13.25	222.93	1,657.91	1,564.71	1,511.86	52.85	29.609	
5,200.00	5,197.19	4,988.77	4,934.40	27.43	27.85	-12.96	216.70	1,675.42	1,577.39	1,523.45	53.94	29.243	
5,300.00	5,297.11	5,087.65	5,031.52	27.97	28.48	-12.68	210.48	1,692.93	1,590.11	1,535.07	55.04	28.892	
5,400.00	5,397.03	5,186.53	5,128.64	28.51	29.12	-12.40	204.26	1,710.44	1,602.86	1,546.73	56.13	28.554	
5,500.00	5,496.94	5,285.41	5,225.76	29.05	29.76	-12.12	198.03	1,727.95	1,615.65	1,558.42	57.23	28.231	
5,600.00	5,596.86	5,384.29	5,322.88	29.59	30.40	-11.85	191.81	1,745.46	1,628.48	1,570.16	58.33	27.919	
5,700.00	5,696.77	5,483.17	5,420.00	30.13	31.03	-11.59	185.59	1,762.97	1,641.35	1,581.92	59.43	27.620	
5,800.00	5,796.69	5,582.06	5,517.11	30.67	31.67	-11.33	179.36	1,780.48	1,654.25	1,593.72	60.52	27.332	
5,900.00	5,896.60	5,680.94	5,614.23	31.21	32.32	-11.07	173.14	1,797.99	1,667.18	1,605.56	61.62	27.055	
6,000.00	5,996.52	5,779.82	5,711.35	31.75	32.96	-10.82	166.92	1,815.50	1,680.15	1,617.43	62.72	26.788	
6,100.00	6,096.43	5,878.70	5,808.47	32.29	33.60	-10.57	160.69	1,833.01	1,693.14	1,629.32	63.82	26.531	
6,200.00	6,196.35	5,977.58	5,905.59	32.83	34.25	-10.32	154.47	1,850.52	1,706.17	1,641.26	64.92	26.282	
6,300.00	6,296.27	6,076.46	6,002.71	33.37	34.89	-10.08	148.25	1,868.03	1,719.23	1,653.22	66.02	26.043	
6,400.00	6,396.18	6,175.34	6,099.83	33.92	35.54	-9.84	142.02	1,885.53	1,732.32	1,665.21	67.11	25.811	
6,500.00	6,496.10	6,274.22	6,196.95	34.46	36.18	-9.60	135.80	1,903.04	1,745.44	1,677.23	68.21	25.588	
6,600.00	6,596.01	6,373.11	6,294.07	35.00	36.83	-9.37	129.58	1,920.55	1,758.59	1,689.28	69.31	25.372	
6,700.00	6,695.93	6,471.99	6,391.19	35.54	37.48	-9.14	123.35	1,938.06	1,771.76	1,701.35	70.41	25.163	
6,800.00	6,795.84	6,570.87	6,488.31	36.08	38.13	-8.92	117.13	1,955.57	1,784.97	1,713.46	71.51	24.961	
6,900.00	6,895.76	6,669.75	6,585.43	36.62	38.78	-8.70	110.90	1,973.08	1,798.20	1,725.59	72.61	24.765	
7,000.00	6,995.67	6,768.63	6,682.55	37.17	39.43	-8.48	104.68	1,990.59	1,811.45	1,737.74	73.71	24.575	
7,100.00	7,095.59	6,867.51	6,779.67	37.71	40.08	-8.26	98.46	2,008.10	1,824.73	1,749.92	74.81	24.392	
7,200.00	7,195.51	6,966.39	6,876.79	38.25	40.73	-8.05	92.23	2,025.61	1,838.04	1,762.13	75.91	24.214	
7,300.00	7,295.42	7,065.28	6,973.91	38.79	41.38	-7.84	86.01	2,043.12	1,851.37	1,774.36	77.01	24.041	
7,400.00	7,395.34	7,164.16	7,071.03	39.33	42.03	-7.63	79.79	2,060.63	1,864.73	1,786.62	78.11	23.874	
7,500.00	7,495.25	7,263.04	7,168.15	39.88	42.69	-7.43	73.56	2,078.14	1,878.11	1,798.90	79.21	23.711	
7,600.00	7,595.17	7,361.92	7,265.27	40.42	43.34	-7.23	67.34	2,095.65	1,891.51	1,811.20	80.31	23.554	
7,700.00	7,695.08	7,460.80	7,362.38	40.96	43.99	-7.03	61.12	2,113.16	1,904.93	1,823.53	81.41	23.400	
7,800.00	7,795.00	7,559.68	7,459.50	41.50	44.64	-6.84	54.89	2,130.67	1,918.38	1,835.87	82.51	23.251	
7,900.00	7,894.91	7,658.56	7,556.62	42.05	45.30	-6.65	48.67	2,148.18	1,931.85	1,848.24	83.61	23.107	
8,000.00	7,994.83	7,757.44	7,653.74	42.59	45.95	-6.46	42.45	2,165.69	1,945.34	1,860.63	84.70	22.966	
8,100.00	8,094.75	7,856.33	7,750.86	43.13	46.61	-6.27	36.22	2,183.20	1,958.85	1,873.04	85.80	22.829	
8,200.00	8,194.66	7,955.21	7,847.98	43.67	47.26	-6.08	30.00	2,200.71	1,972.38	1,885.47	86.90	22.696	
8,300.00	8,294.58	8,054.09	7,945.10	44.22	47.92	-5.90	23.78	2,218.22	1,985.92	1,897.92	88.00	22.567	
8,400.00	8,394.49	8,152.97	8,042.22	44.76	48.57	-5.72	17.55	2,235.73	1,999.49	1,910.39	89.10	22.440	
8,500.00	8,494.41	8,251.85	8,139.34	45.30	49.23	-5.55	11.33	2,253.24	2,013.08	1,922.88	90.20	22.318	
8,600.00	8,594.32	8,350.73	8,236.46	45.84	49.89	-5.37	5.11	2,270.75	2,026.69	1,935.39	91.30	22.198	
8,700.00	8,694.24	8,449.61	8,333.58	46.39	50.54	-5.20	-1.12	2,288.26	2,040.31	1,947.91	92.40	22.081	
8,800.00	8,794.15	8,548.50	8,430.70	46.93	51.20	-5.03	-7.34	2,305.77	2,053.96	1,960.46	93.50	21.968	
8,900.00	8,894.07	8,647.38	8,527.82	47.47	51.86	-4.86	-13.57	2,323.28	2,067.62	1,973.02	94.60	21.857	
9,000.00	8,993.99	8,746.26	8,624.94	48.02	52.51	-4.70	-19.79	2,340.79	2,081.30	1,985.60	95.70	21.749	
9,100.00	9,093.90	8,845.14	8,722.06	48.56	53.17	-4.53	-26.01	2,358.30	2,094.99	1,998.19	96.80	21.643	
9,200.00	9,193.82	8,944.02	8,819.18	49.10	53.83	-4.37	-32.24	2,375.81	2,108.70	2,010.81	97.90	21.540	
9,300.00	9,293.73	9,042.64	8,907.66	49.64	54.44	-4.25	-38.49	2,413.10	2,119.89	2,020.02	99.07	21.442	
9,400.00	9,393.04	9,141.66	9,009.04	50.18	55.11	-4.13	-44.74	2,429.40	2,120.40	2,018.25	100.14	21.349	
9,500.00	9,492.15	9,240.76	9,106.15	50.69	55.74	-4.01	-50.99	2,429.40	2,115.77	2,012.57	101.20	21.260	
9,600.00	9,591.26	9,339.87	9,213.26	51.18	56.35	-3.89	-57.24	2,429.40	2,111.68	2,007.49	102.26	21.175	
9,700.00	9,690.37	9,438.98	9,320.37	51.64	56.96	-3.77	-63.49	2,429.40	2,107.20	2,002.41	103.32	21.090	
9,800.00	9,789.48	9,538.09	9,417.48	52.11	57.57	-3.65	-69.74	2,429.40	2,102.72	2,000.53	104.38	21.005	
9,900.00	9,888.59	9,637.20	9,516.59	52.59	58.18	-3.53	-75.99	2,430.00	2,112.38	2,005.79	105.44	20.920	
10,000.00	9,987.70	9,736.31	9,615.70	53.09	58.79	-3.41	-82.24	2,431.18	2,118.07	2,010.74	106.50	20.835	
10,100.00	10,086.81	9,835.42	9,714.81	53.62	59.40	-3.29	-88.49	2,433.58	2,125.70	2,017.58	107.56	20.750	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #16H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	9,859.99	10,491.98	10,209.95	54.15	62.15	-99.45	-416.34	2,438.18	2,133.34	2,024.20	109.14	19.548	
10,300.00	9,859.66	10,735.06	10,248.81	54.73	63.80	-100.50	-654.50	2,443.92	2,135.76	2,024.76	111.00	19.241	
10,400.00	9,859.34	10,835.06	10,248.28	55.39	64.57	-100.49	-754.47	2,446.32	2,135.70	2,023.28	112.42	18.997	
10,500.00	9,859.02	10,935.06	10,247.76	56.12	65.41	-100.49	-854.44	2,448.73	2,135.65	2,021.66	113.99	18.736	
10,600.00	9,858.70	11,035.06	10,247.24	56.92	66.31	-100.48	-954.41	2,451.14	2,135.59	2,019.90	115.69	18.459	
10,700.00	9,858.37	11,135.06	10,246.71	57.79	67.26	-100.48	-1,054.38	2,453.54	2,135.54	2,018.01	117.53	18.170	
10,800.00	9,858.05	11,235.06	10,246.19	58.73	68.28	-100.47	-1,154.35	2,455.95	2,135.48	2,015.98	119.50	17.871	
10,900.00	9,857.73	11,335.06	10,245.67	59.73	69.35	-100.47	-1,254.32	2,458.36	2,135.42	2,013.84	121.59	17.563	
11,000.00	9,857.41	11,435.06	10,245.14	60.79	70.48	-100.46	-1,354.29	2,460.76	2,135.37	2,011.58	123.79	17.250	
11,100.00	9,857.09	11,535.06	10,244.62	61.91	71.66	-100.46	-1,454.26	2,463.17	2,135.31	2,009.21	126.10	16.933	
11,200.00	9,856.76	11,635.06	10,244.10	63.08	72.88	-100.45	-1,554.23	2,465.58	2,135.26	2,006.73	128.52	16.614	
11,300.00	9,856.44	11,735.06	10,243.57	64.30	74.15	-100.45	-1,654.20	2,467.99	2,135.20	2,004.16	131.04	16.295	
11,400.00	9,856.12	11,835.06	10,243.05	65.58	75.46	-100.44	-1,754.17	2,470.39	2,135.15	2,001.50	133.65	15.976	
11,500.00	9,855.80	11,935.06	10,242.53	66.90	76.81	-100.44	-1,854.14	2,472.80	2,135.09	1,998.75	136.34	15.660	
11,600.00	9,855.47	12,035.06	10,242.00	68.26	78.20	-100.43	-1,954.11	2,475.21	2,135.03	1,995.91	139.12	15.347	
11,700.00	9,855.15	12,135.06	10,241.48	69.66	79.63	-100.43	-2,054.08	2,477.61	2,134.98	1,993.00	141.98	15.038	
11,800.00	9,854.83	12,235.06	10,240.95	71.10	81.09	-100.42	-2,154.05	2,480.02	2,134.92	1,990.02	144.90	14.733	
11,900.00	9,854.51	12,335.06	10,240.43	72.58	82.59	-100.41	-2,254.01	2,482.43	2,134.87	1,986.97	147.90	14.435	
12,000.00	9,854.18	12,435.06	10,239.91	74.09	84.12	-100.41	-2,353.98	2,484.83	2,134.81	1,983.85	150.96	14.142	
12,100.00	9,853.86	12,535.06	10,239.38	75.63	85.67	-100.40	-2,453.95	2,487.24	2,134.76	1,980.68	154.08	13.855	
12,200.00	9,853.54	12,635.05	10,238.86	77.21	87.25	-100.40	-2,553.92	2,489.65	2,134.70	1,977.44	157.26	13.574	
12,300.00	9,853.22	12,735.05	10,238.34	78.81	88.87	-100.39	-2,653.89	2,492.05	2,134.65	1,974.16	160.49	13.301	
12,400.00	9,852.90	12,835.05	10,237.81	80.44	90.50	-100.39	-2,753.86	2,494.46	2,134.59	1,970.82	163.77	13.034	
12,500.00	9,852.57	12,935.05	10,237.29	82.09	92.16	-100.38	-2,853.83	2,496.87	2,134.54	1,967.43	167.10	12.774	
12,600.00	9,852.25	13,035.05	10,236.77	83.77	93.84	-100.38	-2,953.80	2,499.27	2,134.48	1,964.00	170.48	12.521	
12,700.00	9,851.93	13,135.05	10,236.24	85.46	95.54	-100.37	-3,053.77	2,501.68	2,134.43	1,960.53	173.89	12.274	
12,800.00	9,851.61	13,235.05	10,235.72	87.18	97.26	-100.37	-3,153.74	2,504.09	2,134.37	1,957.02	177.35	12.035	
12,900.00	9,851.28	13,335.05	10,235.20	88.92	99.01	-100.36	-3,253.71	2,506.49	2,134.31	1,953.47	180.84	11.802	
13,000.00	9,850.96	13,435.05	10,234.67	90.68	100.77	-100.36	-3,353.68	2,508.90	2,134.26	1,949.89	184.37	11.576	
13,100.00	9,850.64	13,535.05	10,234.15	92.45	102.54	-100.35	-3,453.65	2,511.31	2,134.20	1,946.27	187.93	11.356	
13,200.00	9,850.32	13,635.05	10,233.62	94.25	104.33	-100.35	-3,553.62	2,513.71	2,134.15	1,942.63	191.52	11.143	
13,300.00	9,850.00	13,735.05	10,233.10	96.05	106.14	-100.34	-3,653.59	2,516.12	2,134.09	1,938.95	195.15	10.936	
13,400.00	9,849.67	13,835.05	10,232.58	97.87	107.96	-100.34	-3,753.56	2,518.53	2,134.04	1,935.24	198.80	10.735	
13,500.00	9,849.35	13,935.05	10,232.05	99.71	109.80	-100.33	-3,853.53	2,520.93	2,133.98	1,931.51	202.47	10.540	
13,600.00	9,849.03	14,035.05	10,231.53	101.56	111.65	-100.33	-3,953.50	2,523.34	2,133.93	1,927.75	206.18	10.350	
13,700.00	9,848.71	14,135.05	10,231.01	103.42	113.51	-100.32	-4,053.46	2,525.75	2,133.87	1,923.97	209.90	10.166	
13,800.00	9,848.38	14,235.05	10,230.48	105.29	115.39	-100.32	-4,153.43	2,528.15	2,133.82	1,920.17	213.65	9.987	
13,900.00	9,848.06	14,335.05	10,229.96	107.17	117.27	-100.31	-4,253.40	2,530.56	2,133.76	1,916.34	217.42	9.814	
14,000.00	9,847.74	14,435.05	10,229.44	109.07	119.17	-100.31	-4,353.37	2,532.97	2,133.71	1,912.50	221.21	9.646	
14,100.00	9,847.42	14,535.05	10,228.91	110.97	121.08	-100.30	-4,453.34	2,535.37	2,133.65	1,908.63	225.02	9.482	
14,200.00	9,847.09	14,635.05	10,228.39	112.89	122.99	-100.29	-4,553.31	2,537.78	2,133.60	1,904.75	228.85	9.323	
14,300.00	9,846.77	14,735.05	10,227.86	114.81	124.92	-100.29	-4,653.28	2,540.19	2,133.54	1,900.85	232.69	9.169	
14,400.00	9,846.45	14,835.05	10,227.34	116.74	126.85	-100.28	-4,753.25	2,542.59	2,133.49	1,896.93	236.55	9.019	
14,500.00	9,846.13	14,935.05	10,226.82	118.68	128.80	-100.28	-4,853.22	2,545.00	2,133.43	1,893.00	240.43	8.873	
14,600.00	9,845.81	15,035.05	10,226.29	120.63	130.75	-100.27	-4,953.19	2,547.41	2,133.38	1,889.05	244.32	8.732	
14,700.00	9,845.48	15,135.05	10,225.77	122.58	132.71	-100.27	-5,053.16	2,549.81	2,133.32	1,885.09	248.23	8.594	
14,800.00	9,845.16	15,235.05	10,225.25	124.54	134.68	-100.26	-5,153.13	2,552.22	2,133.27	1,881.12	252.15	8.460	
14,900.00	9,844.84	15,335.05	10,224.72	126.51	136.65	-100.26	-5,253.10	2,554.63	2,133.21	1,877.13	256.09	8.330	
15,000.00	9,844.52	15,435.05	10,224.20	128.49	138.63	-100.25	-5,353.07	2,557.04	2,133.16	1,873.13	260.03	8.203	
15,100.00	9,844.19	15,535.05	10,223.68	130.47	140.62	-100.25	-5,453.04	2,559.44	2,133.10	1,869.11	263.99	8.080	
15,143.50	9,844.01	15,578.55	10,223.45	131.33	141.49	-100.24	-5,496.53	2,560.49	2,133.21	1,867.66	265.55	8.033	
15,200.00	9,843.79	15,635.05	10,223.15	132.45	142.61	-100.24	-5,553.01	2,561.85	2,133.32	1,865.75	267.57	7.973	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #16H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
15,300.00	9,842.88	15,773.34	10,222.43	134.43	145.36	-100.25	-5,691.28	2,563.66	2,134.00	1,861.87	272.12	7.842	
15,400.00	9,841.96	15,873.34	10,221.90	136.42	147.35	-100.26	-5,791.28	2,564.25	2,134.07	1,857.99	276.08	7.730	
15,500.00	9,841.04	15,973.34	10,221.37	138.42	149.34	-100.27	-5,891.27	2,564.83	2,134.14	1,854.10	280.04	7.621	
15,600.00	9,840.12	16,073.34	10,220.84	140.41	151.33	-100.28	-5,991.27	2,565.41	2,134.21	1,850.20	284.01	7.515	
15,700.00	9,839.19	16,173.34	10,220.32	142.42	153.33	-100.29	-6,091.26	2,566.00	2,134.28	1,846.28	287.99	7.411	
15,800.00	9,838.27	16,273.33	10,219.79	144.42	155.34	-100.30	-6,191.26	2,566.58	2,134.35	1,842.37	291.98	7.310	
15,900.00	9,837.35	16,373.33	10,219.26	146.43	157.35	-100.31	-6,291.26	2,567.17	2,134.42	1,838.44	295.98	7.211	
16,000.00	9,836.43	16,473.33	10,218.74	148.45	159.37	-100.32	-6,391.25	2,567.75	2,134.49	1,834.50	299.98	7.115	
16,100.00	9,835.51	16,573.33	10,218.21	150.47	161.39	-100.33	-6,491.25	2,568.33	2,134.56	1,830.56	304.00	7.022	
16,200.00	9,834.59	16,673.33	10,217.68	152.49	163.41	-100.34	-6,591.24	2,568.92	2,134.63	1,826.61	308.02	6.930	
16,300.00	9,833.67	16,773.33	10,217.15	154.52	165.44	-100.35	-6,691.24	2,569.50	2,134.70	1,822.66	312.04	6.841	
16,400.00	9,832.75	16,873.33	10,216.63	156.55	167.47	-100.36	-6,791.24	2,570.08	2,134.77	1,818.69	316.08	6.754	
16,500.00	9,831.83	16,973.33	10,216.10	158.58	169.51	-100.37	-6,891.23	2,570.67	2,134.84	1,814.72	320.12	6.669	
16,600.00	9,830.91	17,073.33	10,215.57	160.62	171.55	-100.38	-6,991.23	2,571.25	2,134.91	1,810.75	324.16	6.586	
16,700.00	9,829.99	17,173.33	10,215.05	162.66	173.59	-100.39	-7,091.22	2,571.84	2,134.98	1,806.77	328.21	6.505	
16,800.00	9,829.06	17,273.33	10,214.52	164.70	175.64	-100.40	-7,191.22	2,572.42	2,135.05	1,802.78	332.27	6.426	
16,900.00	9,828.14	17,373.33	10,213.99	166.75	177.69	-100.41	-7,291.22	2,573.00	2,135.12	1,798.79	336.33	6.348	
17,000.00	9,827.22	17,473.33	10,213.46	168.80	179.74	-100.42	-7,391.21	2,573.59	2,135.20	1,794.79	340.40	6.273	
17,100.00	9,826.30	17,573.32	10,212.94	170.85	181.80	-100.43	-7,491.21	2,574.17	2,135.27	1,790.79	344.47	6.199	
17,200.00	9,825.38	17,673.32	10,212.41	172.90	183.86	-100.44	-7,591.21	2,574.76	2,135.34	1,786.79	348.55	6.126	
17,300.00	9,824.46	17,773.32	10,211.88	174.96	185.92	-100.45	-7,691.20	2,575.34	2,135.41	1,782.77	352.63	6.056	
17,400.00	9,823.54	17,873.32	10,211.36	177.02	187.98	-100.46	-7,791.20	2,575.92	2,135.48	1,778.76	356.72	5.986	
17,500.00	9,822.62	17,973.32	10,210.83	179.08	190.05	-100.47	-7,891.19	2,576.51	2,135.55	1,774.74	360.81	5.919	
17,600.00	9,821.70	18,073.32	10,210.30	181.14	192.12	-100.48	-7,991.19	2,577.09	2,135.62	1,770.72	364.91	5.853	
17,700.00	9,820.78	18,173.32	10,209.78	183.21	194.19	-100.49	-8,091.19	2,577.68	2,135.69	1,766.69	369.01	5.788	
17,800.00	9,819.86	18,273.32	10,209.25	185.27	196.27	-100.50	-8,191.18	2,578.26	2,135.77	1,762.66	373.11	5.724	
17,900.00	9,818.94	18,373.32	10,208.72	187.34	198.35	-100.52	-8,291.18	2,578.84	2,135.84	1,758.62	377.22	5.662	
18,000.00	9,818.01	18,473.32	10,208.19	189.42	200.43	-100.53	-8,391.17	2,579.43	2,135.91	1,754.58	381.33	5.601	
18,100.00	9,817.09	18,573.32	10,207.67	191.49	202.51	-100.54	-8,491.17	2,580.01	2,135.98	1,750.54	385.44	5.542	
18,200.00	9,816.17	18,673.32	10,207.14	193.57	204.59	-100.55	-8,591.17	2,580.59	2,136.05	1,746.49	389.56	5.483	
18,300.00	9,815.25	18,773.32	10,206.61	195.64	206.68	-100.56	-8,691.16	2,581.18	2,136.13	1,742.45	393.68	5.426	
18,400.00	9,814.33	18,873.31	10,206.09	197.72	208.77	-100.57	-8,791.16	2,581.76	2,136.20	1,738.39	397.80	5.370	
18,500.00	9,813.41	18,973.31	10,205.56	199.80	210.86	-100.58	-8,891.16	2,582.35	2,136.27	1,734.34	401.93	5.315	
18,600.00	9,812.49	19,073.31	10,205.03	201.89	212.95	-100.59	-8,991.15	2,582.93	2,136.34	1,730.28	406.06	5.261	
18,700.00	9,811.57	19,173.31	10,204.50	203.97	215.04	-100.60	-9,091.15	2,583.51	2,136.41	1,726.22	410.19	5.208	
18,800.00	9,810.65	19,273.31	10,203.98	206.06	217.14	-100.61	-9,191.14	2,584.10	2,136.49	1,722.16	414.33	5.157	
18,900.00	9,809.73	19,373.31	10,203.45	208.14	219.23	-100.62	-9,291.14	2,584.68	2,136.56	1,718.09	418.47	5.106	
19,000.00	9,808.81	19,473.31	10,202.92	210.23	221.33	-100.63	-9,391.14	2,585.27	2,136.63	1,714.02	422.61	5.056	
19,100.00	9,807.88	19,573.31	10,202.40	212.32	223.43	-100.64	-9,491.13	2,585.85	2,136.70	1,709.95	426.75	5.007	
19,200.00	9,806.96	19,673.31	10,201.87	214.41	225.54	-100.65	-9,591.13	2,586.43	2,136.78	1,705.88	430.90	4.959	
19,300.00	9,806.04	19,773.31	10,201.34	216.51	227.64	-100.66	-9,691.12	2,587.02	2,136.85	1,701.81	435.04	4.912	
19,400.00	9,805.12	19,873.31	10,200.81	218.60	229.75	-100.67	-9,791.12	2,587.60	2,136.92	1,697.73	439.19	4.866	
19,500.00	9,804.20	19,973.31	10,200.29	220.69	231.85	-100.68	-9,891.12	2,588.19	2,136.99	1,693.65	443.35	4.820	
19,600.00	9,803.28	20,073.31	10,199.76	222.79	233.96	-100.69	-9,991.11	2,588.77	2,137.07	1,689.57	447.50	4.776	
19,700.00	9,802.36	20,173.30	10,199.23	224.89	236.07	-100.70	-10,091.11	2,589.35	2,137.14	1,685.48	451.66	4.732	
19,800.00	9,801.44	20,273.30	10,198.71	226.99	238.18	-100.71	-10,191.10	2,589.94	2,137.21	1,681.40	455.82	4.689	
19,900.00	9,800.52	20,373.30	10,198.18	229.09	240.29	-100.72	-10,291.10	2,590.52	2,137.29	1,677.31	459.98	4.647	
20,000.00	9,799.60	20,473.30	10,197.65	231.19	242.41	-100.73	-10,391.10	2,591.10	2,137.36	1,673.22	464.14	4.605	
20,100.00	9,798.68	20,573.30	10,197.13	233.29	244.52	-100.74	-10,491.09	2,591.69	2,137.43	1,669.13	468.30	4.564	
20,173.70	9,798.00	20,647.00	10,196.74	234.84	246.08	-100.75	-10,564.79	2,592.12	2,137.49	1,666.11	471.37	4.535 SF	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #23H - OH - Plan 2 11-18-16											Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM											Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	11.00	0.00	0.00	0.02	78.70	247.09	1,236.25	1,260.70		
100.00	100.00	111.00	100.00	0.19	0.24	78.70	247.09	1,236.25	1,260.70	0.43	2,912.520
200.00	200.00	211.00	200.00	0.73	0.78	78.70	247.09	1,236.25	1,260.70	1.51	835.858
300.00	300.00	311.00	300.00	1.27	1.31	78.70	247.09	1,236.25	1,260.70	2.58	487.946
400.00	400.00	411.00	400.00	1.81	1.85	78.70	247.09	1,236.25	1,260.70	3.66	344.538
500.00	500.00	511.00	500.00	2.34	2.39	78.70	247.09	1,236.25	1,260.70	4.73	266.278
600.00	600.00	611.00	600.00	2.88	2.93	78.70	247.09	1,236.25	1,260.70	5.81	216.990
700.00	700.00	711.00	700.00	3.42	3.47	78.70	247.09	1,236.25	1,260.70	6.89	183.099
800.00	800.00	811.00	800.00	3.96	4.00	78.70	247.09	1,236.25	1,260.70	7.96	158.364
900.00	900.00	911.00	900.00	4.50	4.54	78.70	247.09	1,236.25	1,260.70	9.04	139.517
1,000.00	1,000.00	1,011.00	1,000.00	5.03	5.08	78.70	247.09	1,236.25	1,260.70	10.11	124.679
1,100.00	1,100.00	1,111.00	1,100.00	5.57	5.62	78.70	247.09	1,236.25	1,260.70	11.19	112.693
1,200.00	1,200.00	1,211.00	1,200.00	6.11	6.15	78.70	247.09	1,236.25	1,260.70	12.26	102.810
1,300.00	1,300.00	1,311.00	1,300.00	6.65	6.69	78.70	247.09	1,236.25	1,260.70	13.34	94.521
1,400.00	1,400.00	1,411.00	1,400.00	7.18	7.23	78.70	247.09	1,236.25	1,260.70	14.41	87.468
1,500.00	1,500.00	1,511.00	1,500.00	7.72	7.77	78.70	247.09	1,236.25	1,260.70	15.49	81.395
1,600.00	1,600.00	1,611.00	1,600.00	8.26	8.30	78.70	247.09	1,236.25	1,260.70	16.56	76.110
1,700.00	1,700.00	1,711.00	1,700.00	8.80	8.84	78.70	247.09	1,236.25	1,260.70	17.64	71.470
1,800.00	1,800.00	1,811.00	1,800.00	9.33	9.38	78.70	247.09	1,236.25	1,260.70	18.71	67.363
1,900.00	1,899.98	1,910.98	1,899.98	9.86	9.92	-15.95	247.09	1,236.25	1,259.02	19.77	63.696
2,000.00	1,999.90	2,010.90	1,999.90	10.37	10.46	-16.01	247.09	1,236.25	1,255.12	20.81	60.314
2,100.00	2,099.81	2,110.81	2,099.81	10.89	10.99	-16.06	247.09	1,236.25	1,251.17	21.86	57.236
2,200.00	2,199.73	2,210.73	2,199.73	11.41	11.53	-16.11	247.09	1,236.25	1,247.22	22.91	54.434
2,300.00	2,299.64	2,307.20	2,296.19	11.93	12.03	-16.14	246.55	1,236.44	1,243.36	23.93	51.954
2,400.00	2,399.56	2,400.00	2,388.93	12.45	12.48	-16.03	243.38	1,237.56	1,239.92	24.90	49.792
2,500.00	2,499.48	2,495.38	2,484.08	12.97	12.95	-15.78	237.19	1,239.75	1,236.96	25.89	47.778
2,600.00	2,599.39	2,595.07	2,583.40	13.50	13.45	-15.44	229.15	1,242.60	1,234.27	26.91	45.874
2,700.00	2,699.31	2,694.76	2,682.73	14.03	13.94	-15.10	221.11	1,245.44	1,231.63	27.93	44.099
2,800.00	2,799.22	2,794.46	2,782.06	14.55	14.45	-14.76	213.07	1,248.29	1,229.03	28.96	42.443
2,900.00	2,899.14	2,894.15	2,881.39	15.08	14.96	-14.41	205.03	1,251.13	1,226.47	29.99	40.894
3,000.00	2,999.05	2,993.84	2,980.71	15.62	15.47	-14.06	197.00	1,253.98	1,223.96	31.03	39.444
3,100.00	3,098.97	3,093.53	3,080.04	16.15	15.98	-13.72	188.96	1,256.83	1,221.50	32.07	38.083
3,200.00	3,198.88	3,193.23	3,179.37	16.68	16.50	-13.37	180.92	1,259.67	1,219.08	33.12	36.805
3,300.00	3,298.80	3,292.92	3,278.70	17.21	17.03	-13.02	172.88	1,262.52	1,216.70	34.17	35.604
3,400.00	3,398.72	3,392.61	3,378.03	17.75	17.55	-12.67	164.84	1,265.36	1,214.37	35.23	34.472
3,500.00	3,498.63	3,492.31	3,477.35	18.28	18.08	-12.31	156.81	1,268.21	1,212.09	36.29	33.404
3,600.00	3,598.55	3,592.00	3,576.68	18.82	18.61	-11.96	148.77	1,271.05	1,209.85	37.35	32.396
3,700.00	3,698.46	3,691.69	3,676.01	19.35	19.14	-11.60	140.73	1,273.90	1,207.66	38.41	31.442
3,800.00	3,798.38	3,791.39	3,775.34	19.89	19.67	-11.25	132.69	1,276.74	1,205.52	39.47	30.539
3,900.00	3,898.29	3,891.08	3,874.66	20.42	20.21	-10.89	124.65	1,279.59	1,203.42	40.54	29.684
4,000.00	3,998.21	3,990.77	3,973.99	20.96	20.75	-10.53	116.62	1,282.44	1,201.37	41.61	28.872
4,100.00	4,098.12	4,090.46	4,073.32	21.50	21.29	-10.17	108.58	1,285.28	1,199.37	42.68	28.101
4,200.00	4,198.04	4,190.16	4,172.65	22.04	21.83	-9.81	100.54	1,288.13	1,197.42	43.75	27.367
4,300.00	4,297.95	4,289.85	4,271.97	22.57	22.37	-9.45	92.50	1,290.97	1,195.51	44.83	26.669
4,400.00	4,397.87	4,389.54	4,371.30	23.11	22.91	-9.08	84.46	1,293.82	1,193.66	45.90	26.004
4,500.00	4,497.79	4,489.24	4,470.63	23.65	23.46	-8.72	76.43	1,296.66	1,191.85	46.98	25.370
4,600.00	4,597.70	4,588.93	4,569.96	24.19	24.00	-8.35	68.39	1,299.51	1,190.09	48.06	24.764
4,700.00	4,697.62	4,688.62	4,669.29	24.73	24.55	-7.98	60.35	1,302.35	1,188.38	49.14	24.186
4,800.00	4,797.53	4,788.32	4,768.61	25.27	25.10	-7.62	52.31	1,305.20	1,186.72	50.22	23.632
4,900.00	4,897.45	4,888.01	4,867.94	25.81	25.64	-7.25	44.27	1,308.05	1,185.10	51.30	23.103
5,000.00	4,997.36	4,987.70	4,967.27	26.35	26.19	-6.88	36.24	1,310.89	1,183.54	52.38	22.596
5,100.00	5,097.28	5,087.39	5,066.60	26.89	26.74	-6.51	28.20	1,313.74	1,182.03	53.46	22.111

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #23H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
5,200.00	5,197.19	5,187.09	5,165.92	27.43	27.29	-6.13	20.16	1,316.58	1,180.57	1,126.03	54.54	21.645	
5,300.00	5,297.11	5,286.78	5,265.25	27.97	27.84	-5.76	12.12	1,319.43	1,179.16	1,123.53	55.63	21.198	
5,400.00	5,397.03	5,386.47	5,364.58	28.51	28.39	-5.39	4.09	1,322.27	1,177.79	1,121.08	56.71	20.769	
5,500.00	5,496.94	5,486.17	5,463.91	29.05	28.95	-5.01	-3.95	1,325.12	1,176.48	1,118.69	57.79	20.356	
5,600.00	5,596.86	5,585.86	5,563.23	29.59	29.50	-4.64	-11.99	1,327.96	1,175.22	1,116.34	58.88	19.960	
5,700.00	5,696.77	5,685.55	5,662.56	30.13	30.05	-4.26	-20.03	1,330.81	1,174.01	1,114.05	59.97	19.578	
5,800.00	5,796.69	5,788.22	5,764.86	30.67	30.62	-3.88	-28.23	1,333.72	1,172.83	1,111.76	61.07	19.206	
5,900.00	5,896.60	5,904.70	5,881.13	31.21	31.26	-3.58	-34.60	1,335.97	1,170.75	1,108.52	62.23	18.812	
6,000.00	5,996.52	6,020.11	5,996.52	31.75	31.86	-3.50	-36.51	1,336.65	1,167.26	1,103.88	63.38	18.417	
6,100.00	6,096.43	6,120.02	6,096.43	32.29	32.37	-3.52	-36.51	1,336.65	1,163.16	1,098.74	64.42	18.056	
6,200.00	6,196.35	6,219.94	6,196.35	32.83	32.87	-3.53	-36.51	1,336.65	1,159.06	1,093.60	65.46	17.706	
6,300.00	6,296.27	6,319.86	6,296.27	33.37	33.38	-3.54	-36.51	1,336.65	1,154.96	1,088.45	66.50	17.367	
6,400.00	6,396.18	6,419.77	6,396.18	33.92	33.88	-3.55	-36.51	1,336.65	1,150.86	1,083.31	67.55	17.038	
6,500.00	6,496.10	6,519.69	6,496.10	34.46	34.39	-3.57	-36.51	1,336.65	1,146.75	1,078.16	68.59	16.718	
6,600.00	6,596.01	6,619.60	6,596.01	35.00	34.90	-3.58	-36.51	1,336.65	1,142.65	1,073.02	69.64	16.408	
6,700.00	6,695.93	6,719.52	6,695.93	35.54	35.41	-3.59	-36.51	1,336.65	1,138.55	1,067.87	70.68	16.107	
6,800.00	6,795.84	6,819.43	6,795.84	36.08	35.92	-3.60	-36.51	1,336.65	1,134.45	1,062.72	71.73	15.815	
6,900.00	6,895.76	6,919.35	6,895.76	36.62	36.43	-3.62	-36.51	1,336.65	1,130.35	1,057.57	72.78	15.531	
7,000.00	6,995.67	7,019.26	6,995.67	37.17	36.94	-3.63	-36.51	1,336.65	1,126.25	1,052.42	73.83	15.255	
7,100.00	7,095.59	7,119.18	7,095.59	37.71	37.46	-3.64	-36.51	1,336.65	1,122.15	1,047.27	74.88	14.986	
7,200.00	7,195.51	7,219.10	7,195.51	38.25	37.97	-3.66	-36.51	1,336.65	1,118.05	1,042.12	75.93	14.725	
7,300.00	7,295.42	7,319.01	7,295.42	38.79	38.48	-3.67	-36.51	1,336.65	1,113.95	1,036.97	76.98	14.470	
7,400.00	7,395.34	7,418.93	7,395.34	39.33	39.00	-3.68	-36.51	1,336.65	1,109.85	1,031.81	78.03	14.223	
7,500.00	7,495.25	7,518.84	7,495.25	39.88	39.51	-3.70	-36.51	1,336.65	1,105.75	1,026.66	79.09	13.981	
7,600.00	7,595.17	7,618.76	7,595.17	40.42	40.03	-3.71	-36.51	1,336.65	1,101.65	1,021.51	80.14	13.746	
7,700.00	7,695.08	7,718.67	7,695.08	40.96	40.54	-3.73	-36.51	1,336.65	1,097.55	1,016.35	81.19	13.517	
7,800.00	7,795.00	7,818.59	7,795.00	41.50	41.06	-3.74	-36.51	1,336.65	1,093.45	1,011.20	82.25	13.294	
7,900.00	7,894.91	7,918.50	7,894.91	42.05	41.58	-3.75	-36.51	1,336.65	1,089.35	1,006.04	83.30	13.077	
8,000.00	7,994.83	8,018.42	7,994.83	42.59	42.09	-3.77	-36.51	1,336.65	1,085.25	1,000.89	84.36	12.864	
8,100.00	8,094.75	8,118.33	8,094.75	43.13	42.61	-3.78	-36.51	1,336.65	1,081.15	995.73	85.42	12.657	
8,200.00	8,194.66	8,218.25	8,194.66	43.67	43.13	-3.80	-36.51	1,336.65	1,077.05	990.57	86.47	12.455	
8,300.00	8,294.58	8,318.17	8,294.58	44.22	43.65	-3.81	-36.51	1,336.65	1,072.95	985.41	87.53	12.258	
8,400.00	8,394.49	8,418.08	8,394.49	44.76	44.17	-3.83	-36.51	1,336.65	1,068.85	980.26	88.59	12.065	
8,500.00	8,494.41	8,518.00	8,494.41	45.30	44.69	-3.84	-36.51	1,336.65	1,064.75	975.10	89.65	11.877	
8,600.00	8,594.32	8,617.75	8,594.16	45.84	45.21	-3.86	-36.52	1,336.65	1,060.65	969.94	90.70	11.694	
8,700.00	8,694.24	8,710.36	8,686.33	46.39	45.71	-3.44	-44.36	1,336.84	1,056.90	965.16	91.74	11.521	
8,800.00	8,794.15	8,800.00	8,773.23	46.93	46.21	-2.28	-65.99	1,337.36	1,054.16	961.38	92.78	11.362	
8,883.66	8,877.75	8,865.98	8,834.47	47.38	46.60	-0.96	-90.43	1,337.95	1,053.27	959.67	93.61	11.252 CC	
8,900.00	8,894.07	8,878.42	8,845.69	47.47	46.68	-0.67	-95.82	1,338.08	1,053.31	959.54	93.77	11.233	
9,000.00	8,993.99	8,950.00	8,907.71	48.02	47.12	1.26	-131.45	1,338.94	1,055.53	960.81	94.73	11.143	
9,100.00	9,093.90	9,009.67	8,955.69	48.56	47.49	3.17	-166.88	1,339.80	1,062.00	966.38	95.62	11.106	
9,200.00	9,193.82	9,061.51	8,994.19	49.10	47.83	5.02	-201.55	1,340.64	1,073.69	977.21	96.47	11.129	
9,300.00	9,293.73	9,100.00	9,020.66	49.64	48.09	-2.26	-229.48	1,341.31	1,091.31	994.07	97.24	11.223	
9,400.00	9,393.04	9,150.00	9,052.14	50.18	48.43	-60.91	-268.29	1,342.25	1,112.85	1,014.98	97.87	11.371	
9,500.00	9,489.15	9,200.00	9,080.12	50.69	48.77	-63.03	-309.70	1,343.25	1,135.42	1,037.37	98.05	11.580	
9,600.00	9,579.12	9,233.15	9,096.63	51.18	49.01	-62.10	-338.43	1,343.95	1,157.34	1,059.81	97.53	11.867	
9,700.00	9,660.24	9,277.16	9,115.93	51.64	49.33	-60.25	-377.95	1,344.90	1,177.64	1,081.32	96.32	12.226	
9,800.00	9,730.03	9,321.59	9,132.29	52.11	49.66	-58.46	-419.25	1,345.90	1,195.19	1,100.68	94.51	12.646	
9,900.00	9,786.38	9,366.35	9,145.47	52.59	50.00	-57.00	-461.99	1,346.93	1,209.19	1,116.72	92.47	13.077	
10,000.00	9,827.57	9,400.00	9,153.17	53.09	50.26	-56.05	-494.74	1,347.72	1,219.13	1,128.46	90.67	13.446	
10,100.00	9,852.35	9,450.00	9,161.02	53.62	50.65	-55.46	-544.09	1,348.92	1,224.30	1,134.57	89.72	13.645	
10,200.00	9,859.99	9,500.00	9,164.54	54.15	51.04	-55.40	-593.93	1,350.12	1,224.72	1,134.68	90.04	13.602	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #23H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,242.60	9,859.85	9,523.58	9,164.71	54.40	51.22	-55.41	-617.50	1,350.69	1,224.46	1,134.02	90.44	13.539	
10,300.00	9,859.66	9,580.98	9,164.40	54.73	51.69	-55.40	-674.88	1,352.08	1,224.52	1,133.36	91.16	13.433	
10,400.00	9,859.34	9,680.98	9,163.86	55.39	52.57	-55.40	-774.85	1,354.50	1,224.64	1,132.11	92.53	13.235	
10,500.00	9,859.02	9,780.98	9,163.32	56.12	53.52	-55.39	-874.82	1,356.91	1,224.76	1,130.72	94.04	13.024	
10,600.00	9,858.70	9,880.98	9,162.78	56.92	54.54	-55.38	-974.79	1,359.33	1,224.87	1,129.19	95.68	12.802	
10,700.00	9,858.37	9,980.98	9,162.24	57.79	55.63	-55.37	-1,074.76	1,361.75	1,224.99	1,127.55	97.44	12.572	
10,800.00	9,858.05	10,080.98	9,161.70	58.73	56.78	-55.36	-1,174.73	1,364.17	1,225.11	1,125.79	99.32	12.335	
10,900.00	9,857.73	10,180.98	9,161.15	59.73	58.00	-55.35	-1,274.70	1,366.58	1,225.22	1,123.92	101.30	12.094	
11,000.00	9,857.41	10,280.98	9,160.61	60.79	59.27	-55.34	-1,374.67	1,369.00	1,225.34	1,121.95	103.40	11.851	
11,100.00	9,857.09	10,380.98	9,160.07	61.91	60.60	-55.33	-1,474.64	1,371.42	1,225.46	1,119.87	105.58	11.606	
11,200.00	9,856.76	10,480.98	9,159.53	63.08	61.97	-55.33	-1,574.61	1,373.83	1,225.57	1,117.71	107.86	11.362	
11,300.00	9,856.44	10,580.98	9,158.99	64.30	63.40	-55.32	-1,674.58	1,376.25	1,225.69	1,115.46	110.23	11.120	
11,400.00	9,856.12	10,680.98	9,158.45	65.58	64.86	-55.31	-1,774.54	1,378.67	1,225.81	1,113.14	112.67	10.879	
11,500.00	9,855.80	10,780.98	9,157.91	66.90	66.37	-55.30	-1,874.51	1,381.08	1,225.93	1,110.73	115.19	10.642	
11,600.00	9,855.47	10,880.98	9,157.37	68.26	67.91	-55.29	-1,974.48	1,383.50	1,226.04	1,108.26	117.78	10.409	
11,700.00	9,855.15	10,980.98	9,156.83	69.66	69.49	-55.28	-2,074.45	1,385.92	1,226.16	1,105.72	120.44	10.181	
11,800.00	9,854.83	11,080.98	9,156.29	71.10	71.10	-55.27	-2,174.42	1,388.34	1,226.28	1,103.12	123.16	9.957	
11,900.00	9,854.51	11,180.98	9,155.74	72.58	72.75	-55.27	-2,274.39	1,390.75	1,226.39	1,100.46	125.93	9.739	
12,000.00	9,854.18	11,280.98	9,155.20	74.09	74.42	-55.26	-2,374.36	1,393.17	1,226.51	1,097.75	128.76	9.526	
12,100.00	9,853.86	11,380.98	9,154.66	75.63	76.12	-55.25	-2,474.33	1,395.59	1,226.63	1,094.99	131.64	9.318	
12,200.00	9,853.54	11,480.98	9,154.12	77.21	77.84	-55.24	-2,574.30	1,398.00	1,226.75	1,092.18	134.66	9.117	
12,300.00	9,853.22	11,580.98	9,153.58	78.81	79.59	-55.23	-2,674.27	1,400.42	1,226.86	1,089.33	137.53	8.921	
12,400.00	9,852.90	11,680.98	9,153.04	80.44	81.36	-55.22	-2,774.24	1,402.84	1,226.98	1,086.44	140.54	8.730	
12,500.00	9,852.57	11,780.98	9,152.50	82.09	83.15	-55.21	-2,874.20	1,405.25	1,227.10	1,083.51	143.59	8.546	
12,600.00	9,852.25	11,880.98	9,151.96	83.77	84.96	-55.20	-2,974.17	1,407.67	1,227.21	1,080.54	146.67	8.367	
12,700.00	9,851.93	11,980.97	9,151.42	85.46	86.79	-55.20	-3,074.14	1,410.09	1,227.33	1,077.54	149.79	8.194	
12,800.00	9,851.61	12,080.97	9,150.87	87.18	88.64	-55.19	-3,174.11	1,412.51	1,227.45	1,074.51	152.94	8.026	
12,900.00	9,851.28	12,180.97	9,150.33	88.92	90.50	-55.18	-3,274.08	1,414.92	1,227.57	1,071.45	156.12	7.863	
13,000.00	9,850.96	12,280.97	9,149.79	90.68	92.37	-55.17	-3,374.05	1,417.34	1,227.68	1,068.36	159.33	7.705	
13,100.00	9,850.64	12,380.97	9,149.25	92.45	94.26	-55.16	-3,474.02	1,419.76	1,227.80	1,065.24	162.56	7.553	
13,200.00	9,850.32	12,480.97	9,148.71	94.25	96.17	-55.15	-3,573.99	1,422.17	1,227.92	1,062.10	165.82	7.405	
13,300.00	9,850.00	12,580.97	9,148.17	96.05	98.08	-55.14	-3,673.96	1,424.59	1,228.04	1,058.94	169.10	7.262	
13,400.00	9,849.67	12,680.97	9,147.63	97.87	100.01	-55.14	-3,773.93	1,427.01	1,228.15	1,055.75	172.40	7.124	
13,500.00	9,849.35	12,780.97	9,147.09	99.71	101.95	-55.13	-3,873.90	1,429.43	1,228.27	1,052.54	175.73	6.990	
13,600.00	9,849.03	12,880.97	9,146.55	101.56	103.90	-55.12	-3,973.86	1,431.84	1,228.39	1,049.32	179.07	6.860	
13,700.00	9,848.71	12,980.97	9,146.01	103.42	105.86	-55.11	-4,073.83	1,434.26	1,228.51	1,046.07	182.43	6.734	
13,800.00	9,848.38	13,080.97	9,145.46	105.29	107.83	-55.10	-4,173.80	1,436.68	1,228.63	1,042.81	185.81	6.612	
13,900.00	9,848.06	13,180.97	9,144.92	107.17	109.80	-55.09	-4,273.77	1,439.09	1,228.74	1,039.54	189.21	6.494	
14,000.00	9,847.74	13,280.97	9,144.38	109.07	111.79	-55.08	-4,373.74	1,441.51	1,228.86	1,036.24	192.62	6.380	
14,100.00	9,847.42	13,380.97	9,143.84	110.97	113.78	-55.08	-4,473.71	1,443.93	1,228.98	1,032.94	196.04	6.269	
14,200.00	9,847.09	13,480.97	9,143.30	112.89	115.78	-55.07	-4,573.68	1,446.34	1,229.10	1,029.62	199.48	6.161	
14,300.00	9,846.77	13,580.97	9,142.76	114.81	117.79	-55.06	-4,673.65	1,448.76	1,229.21	1,026.28	202.93	6.057	
14,400.00	9,846.45	13,680.97	9,142.22	116.74	119.81	-55.05	-4,773.62	1,451.18	1,229.33	1,022.94	206.40	5.956	
14,500.00	9,846.13	13,780.97	9,141.68	118.68	121.83	-55.04	-4,873.59	1,453.60	1,229.45	1,019.58	209.87	5.858	
14,600.00	9,845.81	13,880.97	9,141.14	120.63	123.86	-55.03	-4,973.56	1,456.01	1,229.57	1,016.21	213.36	5.763	
14,700.00	9,845.48	13,980.97	9,140.60	122.58	125.89	-55.02	-5,073.52	1,458.43	1,229.69	1,012.83	216.86	5.670	
14,800.00	9,845.16	14,080.97	9,140.05	124.54	127.93	-55.02	-5,173.49	1,460.85	1,229.80	1,009.44	220.37	5.581	
14,900.00	9,844.84	14,180.97	9,139.51	126.51	129.97	-55.01	-5,273.46	1,463.26	1,229.92	1,006.04	223.88	5.494	
15,000.00	9,844.52	14,280.97	9,138.97	128.49	132.02	-55.00	-5,373.43	1,465.68	1,230.04	1,002.63	227.41	5.409	
15,100.00	9,844.19	14,380.97	9,138.43	130.47	134.08	-54.99	-5,473.40	1,468.10	1,230.16	999.21	230.94	5.327	
15,200.00	9,843.79	14,482.01	9,137.88	132.45	136.16	-54.98	-5,574.41	1,470.54	1,230.44	995.98	234.46	5.248	
15,300.00	9,842.88	14,599.49	9,137.26	134.43	138.56	-55.01	-5,691.88	1,471.65	1,230.42	992.07	238.35	5.162	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #23H - OH - Plan 2 11-18-16													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,400.00	9,841.96	14,699.49	9,136.72	136.42	140.62	-55.02	-5,791.88	1,472.24	1,230.20	988.27	241.93	5.085		
15,500.00	9,841.04	14,799.49	9,136.19	138.42	142.67	-55.04	-5,891.87	1,472.82	1,229.98	984.45	245.53	5.009		
15,600.00	9,840.12	14,899.49	9,135.66	140.41	144.73	-55.05	-5,991.87	1,473.41	1,229.76	980.62	249.13	4.936		
15,700.00	9,839.19	14,999.49	9,135.12	142.42	146.79	-55.07	-6,091.86	1,473.99	1,229.54	976.79	252.74	4.865		
15,800.00	9,838.27	15,099.48	9,134.59	144.42	148.86	-55.08	-6,191.86	1,474.58	1,229.32	972.95	256.36	4.795		
15,900.00	9,837.35	15,199.48	9,134.05	146.43	150.93	-55.10	-6,291.86	1,475.16	1,229.09	969.11	259.99	4.728		
16,000.00	9,836.43	15,299.48	9,133.52	148.45	153.00	-55.11	-6,391.85	1,475.75	1,228.87	965.25	263.62	4.662		
16,100.00	9,835.51	15,399.48	9,132.99	150.47	155.08	-55.12	-6,491.85	1,476.33	1,228.65	961.40	267.26	4.597		
16,200.00	9,834.59	15,499.48	9,132.45	152.49	157.16	-55.14	-6,591.85	1,476.92	1,228.43	957.53	270.90	4.535		
16,300.00	9,833.67	15,599.48	9,131.92	154.52	159.24	-55.15	-6,691.84	1,477.50	1,228.21	953.66	274.55	4.473		
16,400.00	9,832.75	15,699.48	9,131.39	156.55	161.32	-55.17	-6,791.84	1,478.09	1,227.99	949.78	278.21	4.414		
16,500.00	9,831.83	15,799.48	9,130.85	158.58	163.41	-55.18	-6,891.83	1,478.67	1,227.77	945.90	281.87	4.356		
16,600.00	9,830.91	15,899.48	9,130.32	160.62	165.50	-55.20	-6,991.83	1,479.26	1,227.55	942.01	285.54	4.299		
16,700.00	9,829.99	15,999.48	9,129.79	162.66	167.59	-55.21	-7,091.83	1,479.84	1,227.33	938.12	289.21	4.244		
16,800.00	9,829.06	16,099.48	9,129.25	164.70	169.69	-55.23	-7,191.82	1,480.43	1,227.11	934.22	292.89	4.190		
16,900.00	9,828.14	16,199.48	9,128.72	166.75	171.78	-55.24	-7,291.82	1,481.01	1,226.89	930.31	296.58	4.137		
17,000.00	9,827.22	16,299.48	9,128.19	168.80	173.88	-55.26	-7,391.81	1,481.60	1,226.67	926.40	300.27	4.085		
17,100.00	9,826.30	16,399.47	9,127.65	170.85	175.98	-55.27	-7,491.81	1,482.18	1,226.45	922.49	303.96	4.035		
17,200.00	9,825.38	16,499.47	9,127.12	172.90	178.09	-55.29	-7,591.81	1,482.77	1,226.23	918.57	307.66	3.986		
17,300.00	9,824.46	16,599.47	9,126.59	174.96	180.19	-55.30	-7,691.80	1,483.35	1,226.01	914.65	311.36	3.938		
17,400.00	9,823.54	16,699.47	9,126.05	177.02	182.30	-55.32	-7,791.80	1,483.94	1,225.79	910.72	315.07	3.891		
17,500.00	9,822.62	16,799.47	9,125.52	179.08	184.41	-55.33	-7,891.79	1,484.52	1,225.57	906.79	318.78	3.845		
17,600.00	9,821.70	16,899.47	9,124.98	181.14	186.52	-55.35	-7,991.79	1,485.10	1,225.35	902.86	322.49	3.800		
17,700.00	9,820.78	16,999.47	9,124.45	183.21	188.63	-55.36	-8,091.79	1,485.69	1,225.13	898.92	326.21	3.756		
17,800.00	9,819.86	17,099.47	9,123.92	185.27	190.74	-55.38	-8,191.78	1,486.27	1,224.91	894.98	329.93	3.713		
17,900.00	9,818.94	17,199.47	9,123.38	187.34	192.86	-55.39	-8,291.78	1,486.86	1,224.69	891.03	333.66	3.670		
18,000.00	9,818.01	17,299.47	9,122.85	189.42	194.97	-55.41	-8,391.78	1,487.44	1,224.47	887.08	337.39	3.629		
18,100.00	9,817.09	17,399.47	9,122.32	191.49	197.09	-55.42	-8,491.77	1,488.03	1,224.25	883.13	341.13	3.589		
18,200.00	9,816.17	17,499.47	9,121.78	193.57	199.21	-55.44	-8,591.77	1,488.61	1,224.03	879.17	344.86	3.549		
18,300.00	9,815.25	17,599.47	9,121.25	195.64	201.33	-55.45	-8,691.76	1,489.20	1,223.81	875.21	348.60	3.511		
18,400.00	9,814.33	17,699.47	9,120.72	197.72	203.46	-55.47	-8,791.76	1,489.78	1,223.60	871.25	352.35	3.473		
18,500.00	9,813.41	17,799.46	9,120.18	199.80	205.58	-55.48	-8,891.76	1,490.37	1,223.38	867.28	356.10	3.436		
18,600.00	9,812.49	17,899.46	9,119.65	201.89	207.70	-55.50	-8,991.75	1,490.95	1,223.16	863.31	359.85	3.399		
18,700.00	9,811.57	17,999.46	9,119.12	203.97	209.83	-55.51	-9,091.75	1,491.54	1,222.94	859.34	363.60	3.363		
18,800.00	9,810.65	18,099.46	9,118.58	206.06	211.96	-55.53	-9,191.74	1,492.12	1,222.72	855.36	367.36	3.328		
18,900.00	9,809.73	18,199.46	9,118.05	208.14	214.09	-55.54	-9,291.74	1,492.71	1,222.50	851.39	371.12	3.294		
19,000.00	9,808.81	18,299.46	9,117.52	210.23	216.22	-55.56	-9,391.74	1,493.29	1,222.28	847.40	374.88	3.260		
19,100.00	9,807.88	18,399.46	9,116.98	212.32	218.35	-55.57	-9,491.73	1,493.88	1,222.07	843.42	378.65	3.227		
19,200.00	9,806.96	18,499.46	9,116.45	214.41	220.48	-55.59	-9,591.73	1,494.46	1,221.85	839.43	382.41	3.195		
19,300.00	9,806.04	18,599.46	9,115.91	216.51	222.61	-55.60	-9,691.72	1,495.05	1,221.63	835.44	386.19	3.163		
19,400.00	9,805.12	18,699.46	9,115.38	218.60	224.74	-55.62	-9,791.72	1,495.63	1,221.41	831.45	389.96	3.132		
19,500.00	9,804.20	18,799.46	9,114.85	220.69	226.88	-55.63	-9,891.72	1,496.22	1,221.19	827.46	393.74	3.102		
19,600.00	9,803.28	18,899.46	9,114.31	222.79	229.02	-55.65	-9,991.71	1,496.80	1,220.98	823.46	397.52	3.072		
19,700.00	9,802.36	18,999.46	9,113.78	224.89	231.15	-55.66	-10,091.71	1,497.39	1,220.76	819.46	401.30	3.042		
19,800.00	9,801.44	19,099.45	9,113.25	226.99	233.29	-55.68	-10,191.71	1,497.97	1,220.54	815.46	405.08	3.013		
19,900.00	9,800.52	19,199.45	9,112.71	229.09	235.43	-55.69	-10,291.70	1,498.56	1,220.32	811.45	408.87	2.985		
20,000.00	9,799.60	19,299.45	9,112.18	231.19	237.57	-55.71	-10,391.70	1,499.14	1,220.10	807.45	412.66	2.957		
20,100.00	9,798.68	19,399.45	9,111.65	233.29	239.71	-55.72	-10,491.69	1,499.73	1,219.89	803.44	416.45	2.929		
20,173.70	9,798.00	19,473.15	9,111.25	234.84	241.29	-55.73	-10,565.39	1,500.16	1,219.73	800.48	419.24	2.909 ES, SF		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #24H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	12.00	0.00	0.00	0.02	77.60	272.09	1,237.25	1,266.81				
100.00	100.00	112.00	100.00	0.19	0.24	77.60	272.09	1,237.25	1,266.81	1,266.37	0.44	2,890.734	
200.00	200.00	212.00	200.00	0.73	0.78	77.60	272.09	1,237.25	1,266.81	1,265.30	1.51	836.927	
300.00	300.00	312.00	300.00	1.27	1.32	77.60	272.09	1,237.25	1,266.81	1,264.22	2.59	489.294	
400.00	400.00	412.00	400.00	1.81	1.86	77.60	272.09	1,237.25	1,266.81	1,263.15	3.66	345.701	
500.00	500.00	512.00	500.00	2.34	2.40	77.60	272.09	1,237.25	1,266.81	1,262.07	4.74	267.266	
600.00	600.00	612.00	600.00	2.88	2.93	77.60	272.09	1,237.25	1,266.81	1,261.00	5.82	217.841	
700.00	700.00	712.00	700.00	3.42	3.47	77.60	272.09	1,237.25	1,266.81	1,259.92	6.89	183.843	
800.00	800.00	812.00	800.00	3.96	4.01	77.60	272.09	1,237.25	1,266.81	1,258.85	7.97	159.025	
900.00	900.00	912.00	900.00	4.50	4.55	77.60	272.09	1,237.25	1,266.81	1,257.77	9.04	140.110	
1,000.00	1,000.00	1,012.00	1,000.00	5.03	5.08	77.60	272.09	1,237.25	1,266.81	1,256.70	10.12	125.217	
1,100.00	1,100.00	1,112.00	1,100.00	5.57	5.62	77.60	272.09	1,237.25	1,266.81	1,255.62	11.19	113.185	
1,200.00	1,200.00	1,212.00	1,200.00	6.11	6.16	77.60	272.09	1,237.25	1,266.81	1,254.54	12.27	103.263	
1,300.00	1,300.00	1,312.00	1,300.00	6.65	6.70	77.60	272.09	1,237.25	1,266.81	1,253.47	13.34	94.941	
1,400.00	1,400.00	1,412.00	1,400.00	7.18	7.23	77.60	272.09	1,237.25	1,266.81	1,252.39	14.42	87.859	
1,500.00	1,500.00	1,512.00	1,500.00	7.72	7.77	77.60	272.09	1,237.25	1,266.81	1,251.32	15.49	81.761	
1,600.00	1,600.00	1,612.00	1,600.00	8.26	8.31	77.60	272.09	1,237.25	1,266.81	1,250.24	16.57	76.455	
1,700.00	1,700.00	1,712.00	1,700.00	8.80	8.85	77.60	272.09	1,237.25	1,266.81	1,249.17	17.64	71.795	
1,800.00	1,800.00	1,812.00	1,800.00	9.33	9.39	77.60	272.09	1,237.25	1,266.81	1,248.09	18.72	67.671	
1,900.00	1,899.98	1,911.98	1,899.98	9.86	9.92	-17.06	272.09	1,237.25	1,265.14	1,245.37	19.77	63.988	
2,000.00	1,999.90	2,011.90	1,999.90	10.37	10.46	-17.11	272.09	1,237.25	1,261.27	1,240.45	20.82	60.593	
2,100.00	2,099.81	2,111.81	2,099.81	10.89	11.00	-17.17	272.09	1,237.25	1,257.34	1,235.48	21.87	57.503	
2,200.00	2,199.73	2,211.73	2,199.73	11.41	11.54	-17.22	272.09	1,237.25	1,253.42	1,230.50	22.92	54.690	
2,300.00	2,299.64	2,300.00	2,288.00	11.93	12.00	-17.26	271.95	1,237.66	1,249.92	1,226.02	23.90	52.294	
2,400.00	2,399.56	2,367.53	2,355.50	12.45	12.34	-17.25	271.34	1,239.54	1,248.42	1,223.66	24.76	50.418	
2,418.08	2,417.62	2,380.68	2,368.63	12.54	12.41	-17.25	271.17	1,240.08	1,248.38	1,223.46	24.92	50.092 CC, ES	
2,500.00	2,499.48	2,440.24	2,428.10	12.97	12.71	-17.20	270.13	1,243.25	1,249.12	1,223.47	25.65	48.698	
2,600.00	2,599.39	2,500.00	2,487.68	13.50	13.02	-17.13	268.72	1,247.62	1,252.09	1,225.62	26.48	47.292	
2,700.00	2,699.31	2,585.27	2,572.50	14.03	13.45	-16.98	266.03	1,255.88	1,257.08	1,229.64	27.43	45.821	
2,800.00	2,799.22	2,657.40	2,644.03	14.55	13.83	-16.80	263.15	1,264.75	1,264.34	1,236.01	28.33	44.629	
2,900.00	2,899.14	2,729.17	2,714.94	15.08	14.21	-16.59	259.73	1,275.27	1,273.80	1,244.57	29.23	43.585	
3,000.00	2,999.05	2,800.00	2,784.63	15.62	14.59	-16.34	255.82	1,287.31	1,285.45	1,255.33	30.12	42.679	
3,100.00	3,098.97	2,889.60	2,872.45	16.15	15.08	-15.99	250.33	1,304.19	1,298.83	1,267.72	31.11	41.744	
3,200.00	3,198.88	2,988.30	2,969.17	16.68	15.63	-15.62	244.25	1,322.91	1,312.40	1,280.24	32.16	40.809	
3,300.00	3,298.80	3,087.01	3,065.90	17.21	16.19	-15.25	238.17	1,341.62	1,326.02	1,292.81	33.21	39.927	
3,400.00	3,398.72	3,185.72	3,162.62	17.75	16.76	-14.89	232.09	1,360.34	1,339.69	1,305.43	34.27	39.095	
3,500.00	3,498.63	3,284.42	3,259.35	18.28	17.34	-14.53	226.01	1,379.06	1,353.42	1,318.09	35.33	38.310	
3,600.00	3,598.55	3,383.13	3,356.07	18.82	17.93	-14.18	219.93	1,397.77	1,367.20	1,330.80	36.39	37.568	
3,700.00	3,698.46	3,481.84	3,452.80	19.35	18.52	-13.84	213.85	1,416.49	1,381.02	1,343.56	37.46	36.865	
3,800.00	3,798.38	3,580.54	3,549.52	19.89	19.12	-13.51	207.77	1,435.20	1,394.89	1,356.36	38.53	36.200	
3,900.00	3,898.29	3,679.25	3,646.25	20.42	19.72	-13.18	201.69	1,453.92	1,408.81	1,369.21	39.61	35.569	
4,000.00	3,998.21	3,777.96	3,742.97	20.96	20.33	-12.86	195.60	1,472.63	1,422.78	1,382.09	40.68	34.971	
4,100.00	4,098.12	3,876.66	3,839.70	21.50	20.94	-12.55	189.52	1,491.35	1,436.78	1,395.02	41.76	34.403	
4,200.00	4,198.04	3,975.37	3,936.42	22.04	21.56	-12.24	183.44	1,510.07	1,450.83	1,407.98	42.84	33.863	
4,300.00	4,297.95	4,074.08	4,033.15	22.57	22.18	-11.93	177.36	1,528.78	1,464.92	1,420.99	43.93	33.349	
4,400.00	4,397.87	4,172.78	4,129.87	23.11	22.81	-11.64	171.28	1,547.50	1,479.05	1,434.03	45.01	32.859	
4,500.00	4,497.79	4,271.49	4,226.60	23.65	23.43	-11.35	165.20	1,566.21	1,493.21	1,447.11	46.10	32.392	
4,600.00	4,597.70	4,370.20	4,323.32	24.19	24.07	-11.06	159.12	1,584.93	1,507.42	1,460.23	47.19	31.947	
4,700.00	4,697.62	4,468.90	4,420.05	24.73	24.70	-10.78	153.04	1,603.65	1,521.66	1,473.38	48.27	31.522	
4,800.00	4,797.53	4,567.61	4,516.77	25.27	25.33	-10.50	146.96	1,622.36	1,535.93	1,486.57	49.36	31.115	
4,900.00	4,897.45	4,666.32	4,613.50	25.81	25.97	-10.23	140.87	1,641.08	1,550.24	1,499.79	50.45	30.726	
5,000.00	4,997.36	4,765.02	4,710.22	26.35	26.61	-9.97	134.79	1,659.79	1,564.58	1,513.04	51.54	30.354	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #24H - OH - Plan 2 11-18-16													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,097.28	4,863.73	4,806.95	26.89	27.26	-9.71	128.71	1,678.51	1,578.96	1,526.32	52.64	29.997		
5,200.00	5,197.19	4,962.44	4,903.67	27.43	27.90	-9.45	122.63	1,697.22	1,593.37	1,539.64	53.73	29.655		
5,300.00	5,297.11	5,061.14	5,000.40	27.97	28.55	-9.20	116.55	1,715.94	1,607.81	1,552.98	54.82	29.327		
5,400.00	5,397.03	5,159.85	5,097.12	28.51	29.20	-8.95	110.47	1,734.66	1,622.27	1,566.36	55.92	29.012		
5,500.00	5,496.94	5,258.56	5,193.85	29.05	29.84	-8.71	104.39	1,753.37	1,636.77	1,579.76	57.01	28.710		
5,600.00	5,596.86	5,357.26	5,290.57	29.59	30.50	-8.47	98.31	1,772.09	1,651.30	1,593.19	58.11	28.419		
5,700.00	5,696.77	5,455.97	5,387.30	30.13	31.15	-8.24	92.22	1,790.80	1,665.85	1,606.65	59.20	28.139		
5,800.00	5,796.69	5,554.68	5,484.03	30.67	31.80	-8.01	86.14	1,809.52	1,680.43	1,620.13	60.30	27.869		
5,900.00	5,896.60	5,653.38	5,580.75	31.21	32.46	-7.78	80.06	1,828.24	1,695.03	1,633.64	61.39	27.609		
6,000.00	5,996.52	5,752.09	5,677.48	31.75	33.11	-7.56	73.98	1,846.95	1,709.67	1,647.18	62.49	27.359		
6,100.00	6,096.43	5,850.80	5,774.20	32.29	33.77	-7.34	67.90	1,865.67	1,724.32	1,660.74	63.59	27.118		
6,200.00	6,196.35	5,949.50	5,870.93	32.83	34.43	-7.13	61.82	1,884.38	1,739.00	1,674.32	64.68	26.885		
6,300.00	6,296.27	6,048.21	5,967.65	33.37	35.08	-6.91	55.74	1,903.10	1,753.71	1,687.93	65.78	26.660		
6,400.00	6,396.18	6,146.92	6,064.38	33.92	35.74	-6.71	49.66	1,921.81	1,768.43	1,701.56	66.88	26.443		
6,500.00	6,496.10	6,245.62	6,161.10	34.46	36.40	-6.50	43.58	1,940.53	1,783.18	1,715.21	67.98	26.233		
6,600.00	6,596.01	6,344.33	6,257.83	35.00	37.07	-6.30	37.49	1,959.25	1,797.96	1,728.88	69.07	26.030		
6,700.00	6,695.93	6,443.04	6,354.55	35.54	37.73	-6.10	31.41	1,977.96	1,812.75	1,742.58	70.17	25.833		
6,800.00	6,795.84	6,541.74	6,451.28	36.08	38.39	-5.91	25.33	1,996.68	1,827.56	1,756.29	71.27	25.643		
6,900.00	6,895.76	6,640.45	6,548.00	36.62	39.05	-5.72	19.25	2,015.39	1,842.40	1,770.03	72.37	25.459		
7,000.00	6,995.67	6,739.16	6,644.73	37.17	39.72	-5.53	13.17	2,034.11	1,857.25	1,783.79	73.47	25.280		
7,100.00	7,095.59	6,837.86	6,741.45	37.71	40.38	-5.34	7.09	2,052.82	1,872.13	1,797.56	74.57	25.107		
7,200.00	7,195.51	6,936.57	6,838.18	38.25	41.05	-5.16	1.01	2,071.54	1,887.02	1,811.36	75.66	24.940		
7,300.00	7,295.42	7,041.28	6,940.79	38.79	41.75	-4.97	-5.48	2,091.37	1,901.91	1,825.12	76.80	24.765		
7,400.00	7,395.34	7,197.78	7,094.32	39.33	42.79	-4.56	-19.42	2,118.19	1,915.04	1,836.82	78.22	24.482		
7,500.00	7,495.25	7,348.77	7,242.41	39.88	43.76	-3.97	-39.57	2,139.53	1,925.28	1,845.66	79.62	24.182		
7,600.00	7,595.17	7,447.25	7,338.92	40.42	44.37	-3.54	-54.61	2,152.15	1,934.39	1,853.68	80.71	23.968		
7,700.00	7,695.08	7,545.74	7,435.43	40.96	44.99	-3.11	-69.65	2,164.77	1,943.62	1,861.81	81.80	23.760		
7,800.00	7,795.00	7,644.22	7,531.93	41.50	45.61	-2.68	-84.69	2,177.39	1,952.95	1,870.06	82.90	23.559		
7,900.00	7,894.91	7,742.71	7,628.44	42.05	46.24	-2.26	-99.73	2,190.01	1,962.40	1,878.41	83.99	23.364		
8,000.00	7,994.83	7,841.19	7,724.95	42.59	46.86	-1.84	-114.78	2,202.63	1,971.95	1,886.87	85.09	23.176		
8,100.00	8,094.75	7,939.68	7,821.46	43.13	47.49	-1.42	-129.82	2,215.26	1,981.61	1,895.43	86.18	22.993		
8,200.00	8,194.66	8,038.16	7,917.97	43.67	48.12	-1.01	-144.86	2,227.88	1,991.37	1,904.10	87.28	22.816		
8,300.00	8,294.58	8,229.37	8,106.45	44.22	49.28	-0.35	-169.34	2,248.42	1,999.00	1,910.12	88.88	22.491		
8,400.00	8,394.49	8,425.11	8,301.17	44.76	50.35	0.05	-184.38	2,261.04	2,001.94	1,911.47	90.47	22.129		
8,500.00	8,494.41	8,618.50	8,494.41	45.30	51.30	0.18	-189.20	2,265.08	2,000.08	1,908.09	92.00	21.740		
8,600.00	8,594.32	8,718.41	8,594.32	45.84	51.75	0.18	-189.20	2,265.08	1,995.98	1,902.95	93.02	21.457		
8,700.00	8,694.24	8,818.33	8,694.24	46.39	52.21	0.18	-189.20	2,265.08	1,991.87	1,897.82	94.05	21.179		
8,800.00	8,794.15	8,907.48	8,783.38	46.93	52.62	0.20	-189.92	2,265.10	1,987.86	1,892.84	95.02	20.920		
8,900.00	8,894.07	8,979.28	8,854.68	47.47	52.97	0.43	-198.00	2,265.29	1,985.00	1,889.08	95.93	20.693		
9,000.00	8,993.99	9,050.00	8,923.37	48.02	53.34	0.91	-214.60	2,265.69	1,983.69	1,886.86	96.83	20.486		
9,024.62	9,018.58	9,064.41	8,937.09	48.15	53.42	1.03	-219.02	2,265.80	1,983.63	1,886.59	97.04	20.441		
9,100.00	9,093.90	9,112.35	8,981.84	48.56	53.69	1.53	-236.16	2,266.21	1,984.20	1,886.50	97.70	20.309		
9,200.00	9,193.82	9,170.99	9,034.39	49.10	54.02	2.27	-262.12	2,266.83	1,986.90	1,888.35	98.55	20.161		
9,300.00	9,293.73	9,223.67	9,079.12	49.64	54.33	-5.75	-289.91	2,267.50	1,992.17	1,892.80	99.37	20.047		
9,400.00	9,393.04	9,273.61	9,119.00	50.18	54.63	-66.99	-319.94	2,268.22	1,998.74	1,898.55	100.20	19.948		
9,500.00	9,489.15	9,323.56	9,156.11	50.69	54.94	-71.64	-353.34	2,269.02	2,004.94	1,904.01	100.93	19.864		
9,600.00	9,579.12	9,373.52	9,190.19	51.18	55.25	-72.63	-389.84	2,269.90	2,010.30	1,908.74	101.55	19.795		
9,700.00	9,660.24	9,423.49	9,220.95	51.64	55.57	-72.83	-429.18	2,270.84	2,014.41	1,912.33	102.08	19.734		
9,800.00	9,730.03	9,473.47	9,248.18	52.11	55.91	-72.86	-471.06	2,271.85	2,016.99	1,914.41	102.58	19.662		
9,900.00	9,786.38	9,523.46	9,271.66	52.59	56.25	-72.96	-515.16	2,272.91	2,017.84	1,914.66	103.18	19.557		
10,000.00	9,827.57	9,573.45	9,291.21	53.09	56.61	-73.22	-561.14	2,274.01	2,016.85	1,912.86	103.98	19.396		
10,100.00	9,852.35	9,623.45	9,306.68	53.62	56.98	-73.69	-608.66	2,275.15	2,014.03	1,908.96	105.07	19.168		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #24H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,200.00	9,859.99	9,873.45	9,317.95	54.15	57.36	-74.34	-657.34	2,276.32	2,009.52	1,903.10	106.43	18.882	
10,300.00	9,859.66	9,724.23	9,325.00	54.73	57.76	-74.54	-707.60	2,277.53	2,005.64	1,898.13	107.52	18.654	
10,400.00	9,859.34	9,781.72	9,327.58	55.39	58.23	-74.61	-764.99	2,278.91	2,004.21	1,895.51	108.70	18.438	
10,429.03	9,859.25	9,799.56	9,327.49	55.60	58.38	-74.61	-782.82	2,279.34	2,004.19	1,895.12	109.07	18.375	
10,500.00	9,859.02	9,870.54	9,327.12	56.12	58.99	-74.61	-853.78	2,281.04	2,004.21	1,893.96	110.25	18.178	
10,600.00	9,858.70	9,970.53	9,326.59	56.92	59.91	-74.60	-953.75	2,283.44	2,004.24	1,892.21	112.03	17.890	
10,700.00	9,858.37	10,070.53	9,326.07	57.79	60.90	-74.60	-1,053.72	2,285.84	2,004.27	1,890.33	113.94	17.590	
10,800.00	9,858.05	10,170.53	9,325.55	58.73	61.95	-74.59	-1,153.69	2,288.24	2,004.30	1,888.32	115.98	17.281	
10,900.00	9,857.73	10,270.53	9,325.02	59.73	63.06	-74.59	-1,253.66	2,290.64	2,004.33	1,886.19	118.13	16.967	
11,000.00	9,857.41	10,370.53	9,324.50	60.79	64.23	-74.58	-1,353.63	2,293.04	2,004.36	1,883.96	120.40	16.648	
11,100.00	9,857.09	10,470.53	9,323.97	61.91	65.45	-74.58	-1,453.60	2,295.44	2,004.38	1,881.61	122.77	16.326	
11,200.00	9,856.76	10,570.53	9,323.45	63.08	66.72	-74.57	-1,553.57	2,297.84	2,004.41	1,879.17	125.24	16.004	
11,300.00	9,856.44	10,670.53	9,322.93	64.30	68.03	-74.56	-1,653.54	2,300.24	2,004.44	1,876.64	127.81	15.683	
11,400.00	9,856.12	10,770.53	9,322.40	65.58	69.40	-74.56	-1,753.50	2,302.64	2,004.47	1,874.01	130.46	15.365	
11,500.00	9,855.80	10,870.53	9,321.88	66.90	70.80	-74.55	-1,853.47	2,305.05	2,004.50	1,871.30	133.20	15.049	
11,600.00	9,855.47	10,970.53	9,321.36	68.26	72.25	-74.55	-1,953.44	2,307.45	2,004.53	1,868.52	136.01	14.738	
11,700.00	9,855.15	11,070.53	9,320.83	69.66	73.73	-74.54	-2,053.41	2,309.85	2,004.56	1,865.66	138.90	14.432	
11,800.00	9,854.83	11,170.53	9,320.31	71.10	75.25	-74.53	-2,153.38	2,312.25	2,004.59	1,862.73	141.86	14.131	
11,900.00	9,854.51	11,270.53	9,319.79	72.58	76.80	-74.53	-2,253.35	2,314.65	2,004.62	1,859.74	144.88	13.836	
12,000.00	9,854.18	11,370.53	9,319.26	74.09	78.38	-74.52	-2,353.32	2,317.05	2,004.65	1,856.68	147.96	13.548	
12,100.00	9,853.86	11,470.53	9,318.74	75.63	79.99	-74.52	-2,453.29	2,319.45	2,004.67	1,853.57	151.10	13.267	
12,200.00	9,853.54	11,570.53	9,318.22	77.21	81.63	-74.51	-2,553.26	2,321.85	2,004.70	1,850.41	154.30	12.993	
12,300.00	9,853.22	11,670.53	9,317.69	78.81	83.29	-74.51	-2,653.23	2,324.25	2,004.73	1,847.19	157.54	12.725	
12,400.00	9,852.90	11,770.53	9,317.17	80.44	84.98	-74.50	-2,753.20	2,326.65	2,004.76	1,843.93	160.83	12.465	
12,500.00	9,852.57	11,870.53	9,316.64	82.09	86.69	-74.49	-2,853.17	2,329.05	2,004.79	1,840.63	164.16	12.212	
12,600.00	9,852.25	11,970.53	9,316.12	83.77	88.43	-74.49	-2,953.14	2,331.45	2,004.82	1,837.28	167.54	11.966	
12,700.00	9,851.93	12,070.53	9,315.60	85.46	90.18	-74.48	-3,053.11	2,333.85	2,004.85	1,833.89	170.96	11.727	
12,800.00	9,851.61	12,170.53	9,315.07	87.18	91.95	-74.48	-3,153.08	2,336.25	2,004.88	1,830.47	174.41	11.495	
12,900.00	9,851.28	12,270.53	9,314.55	88.92	93.75	-74.47	-3,253.05	2,338.65	2,004.91	1,827.01	177.89	11.270	
13,000.00	9,850.96	12,370.53	9,314.03	90.68	95.55	-74.47	-3,353.02	2,341.05	2,004.94	1,823.52	181.41	11.052	
13,100.00	9,850.64	12,470.53	9,313.50	92.45	97.38	-74.46	-3,452.99	2,343.45	2,004.97	1,820.00	184.96	10.840	
13,200.00	9,850.32	12,570.53	9,312.98	94.25	99.22	-74.45	-3,552.96	2,345.85	2,004.99	1,816.45	188.54	10.634	
13,300.00	9,850.00	12,670.53	9,312.46	96.05	101.07	-74.45	-3,652.93	2,348.25	2,005.02	1,812.87	192.15	10.435	
13,400.00	9,849.67	12,770.53	9,311.93	97.87	102.94	-74.44	-3,752.90	2,350.65	2,005.05	1,809.27	195.78	10.241	
13,500.00	9,849.35	12,870.53	9,311.41	99.71	104.82	-74.44	-3,852.87	2,353.06	2,005.08	1,805.64	199.44	10.053	
13,600.00	9,849.03	12,970.53	9,310.88	101.56	106.71	-74.43	-3,952.84	2,355.46	2,005.11	1,801.99	203.12	9.871	
13,700.00	9,848.71	13,070.53	9,310.36	103.42	108.62	-74.43	-4,052.81	2,357.86	2,005.14	1,798.32	206.83	9.695	
13,800.00	9,848.38	13,170.53	9,309.84	105.29	110.53	-74.42	-4,152.78	2,360.26	2,005.17	1,794.62	210.55	9.524	
13,900.00	9,848.06	13,270.53	9,309.31	107.17	112.46	-74.41	-4,252.74	2,362.66	2,005.20	1,790.91	214.29	9.357	
14,000.00	9,847.74	13,370.53	9,308.79	109.07	114.40	-74.41	-4,352.71	2,365.06	2,005.23	1,787.18	218.05	9.196	
14,100.00	9,847.42	13,470.53	9,308.27	110.97	116.34	-74.40	-4,452.68	2,367.46	2,005.26	1,783.43	221.83	9.040	
14,200.00	9,847.09	13,570.53	9,307.74	112.89	118.30	-74.40	-4,552.65	2,369.86	2,005.29	1,779.66	225.63	8.888	
14,300.00	9,846.77	13,670.53	9,307.22	114.81	120.26	-74.39	-4,652.62	2,372.26	2,005.32	1,775.88	229.44	8.740	
14,400.00	9,846.45	13,770.53	9,306.70	116.74	122.23	-74.39	-4,752.59	2,374.66	2,005.35	1,772.08	233.27	8.597	
14,500.00	9,846.13	13,870.53	9,306.17	118.68	124.21	-74.38	-4,852.56	2,377.06	2,005.38	1,768.27	237.11	8.458	
14,600.00	9,845.81	13,970.53	9,305.65	120.63	126.19	-74.37	-4,952.53	2,379.46	2,005.41	1,764.44	240.96	8.322	
14,700.00	9,845.48	14,070.53	9,305.13	122.58	128.19	-74.37	-5,052.50	2,381.86	2,005.44	1,760.60	244.83	8.191	
14,800.00	9,845.16	14,170.53	9,304.60	124.54	130.19	-74.36	-5,152.47	2,384.26	2,005.47	1,756.75	248.71	8.063	
14,900.00	9,844.84	14,270.53	9,304.08	126.51	132.19	-74.36	-5,252.44	2,386.66	2,005.49	1,752.89	252.60	7.939	
15,000.00	9,844.52	14,370.53	9,303.55	128.49	134.21	-74.35	-5,352.41	2,389.06	2,005.52	1,749.02	256.51	7.819	
15,100.00	9,844.19	14,470.53	9,303.03	130.47	136.22	-74.35	-5,452.38	2,391.46	2,005.55	1,745.13	260.42	7.701	
15,135.56	9,844.05	14,506.08	9,302.84	131.17	136.94	-74.34	-5,487.93	2,392.32	2,005.64	1,743.91	261.72	7.663	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #24H - OH - Plan 2 11-18-16													Offset Site Error:
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,200.00	9,843.79	14,570.52	9,302.51	132.45	138.25	-74.34	-5,552.35	2,393.86	2,005.81	1,741.74	264.08	7.596	
15,300.00	9,842.88	14,705.61	9,301.80	134.43	140.97	-74.35	-5,687.42	2,395.64	2,006.31	1,737.72	268.60	7.470	
15,400.00	9,841.96	14,805.61	9,301.28	136.42	142.99	-74.37	-5,787.42	2,396.22	2,006.20	1,733.67	272.53	7.361	
15,500.00	9,841.04	14,905.61	9,300.75	138.42	145.00	-74.38	-5,887.41	2,396.80	2,006.10	1,729.62	276.47	7.256	
15,600.00	9,840.12	15,005.61	9,300.23	140.41	147.03	-74.39	-5,987.41	2,397.39	2,005.99	1,725.56	280.43	7.153	
15,700.00	9,839.19	15,105.61	9,299.70	142.42	149.06	-74.40	-6,087.41	2,397.97	2,005.88	1,721.49	284.39	7.053	
15,800.00	9,838.27	15,205.61	9,299.18	144.42	151.09	-74.41	-6,187.40	2,398.56	2,005.78	1,717.42	288.36	6.956	
15,900.00	9,837.35	15,305.61	9,298.66	146.43	153.13	-74.42	-6,287.40	2,399.14	2,005.67	1,713.33	292.34	6.861	
16,000.00	9,836.43	15,405.61	9,298.13	148.45	155.17	-74.43	-6,387.39	2,399.72	2,005.56	1,709.24	296.32	6.768	
16,100.00	9,835.51	15,505.61	9,297.61	150.47	157.21	-74.44	-6,487.39	2,400.31	2,005.46	1,705.14	300.32	6.678	
16,200.00	9,834.59	15,605.61	9,297.09	152.49	159.26	-74.45	-6,587.39	2,400.89	2,005.35	1,701.04	304.32	6.590	
16,300.00	9,833.67	15,705.61	9,296.56	154.52	161.31	-74.46	-6,687.38	2,401.48	2,005.24	1,696.92	308.32	6.504	
16,400.00	9,832.75	15,805.61	9,296.04	156.55	163.37	-74.47	-6,787.38	2,402.06	2,005.14	1,692.80	312.33	6.420	
16,500.00	9,831.83	15,905.61	9,295.51	158.58	165.43	-74.49	-6,887.38	2,402.64	2,005.03	1,688.68	316.35	6.338	
16,600.00	9,830.91	16,005.60	9,294.99	160.62	167.49	-74.50	-6,987.37	2,403.23	2,004.93	1,684.55	320.38	6.258	
16,700.00	9,829.99	16,105.60	9,294.47	162.66	169.55	-74.51	-7,087.37	2,403.81	2,004.82	1,680.41	324.41	6.180	
16,800.00	9,829.06	16,205.60	9,293.94	164.70	171.62	-74.52	-7,187.36	2,404.40	2,004.71	1,676.27	328.45	6.104	
16,900.00	9,828.14	16,305.60	9,293.42	166.75	173.69	-74.53	-7,287.36	2,404.98	2,004.61	1,672.12	332.49	6.029	
17,000.00	9,827.22	16,405.60	9,292.90	168.80	175.76	-74.54	-7,387.36	2,405.57	2,004.50	1,667.97	336.54	5.956	
17,100.00	9,826.30	16,505.60	9,292.37	170.85	177.84	-74.55	-7,487.35	2,406.15	2,004.40	1,663.81	340.59	5.885	
17,200.00	9,825.38	16,605.60	9,291.85	172.90	179.92	-74.56	-7,587.35	2,406.73	2,004.29	1,659.65	344.65	5.816	
17,300.00	9,824.46	16,705.60	9,291.32	174.96	182.00	-74.57	-7,687.34	2,407.32	2,004.19	1,655.48	348.71	5.747	
17,400.00	9,823.54	16,805.60	9,290.80	177.02	184.08	-74.58	-7,787.34	2,407.90	2,004.08	1,651.31	352.77	5.681	
17,500.00	9,822.62	16,905.60	9,290.28	179.08	186.17	-74.59	-7,887.34	2,408.49	2,003.97	1,647.13	356.85	5.616	
17,600.00	9,821.70	17,005.60	9,289.75	181.14	188.26	-74.61	-7,987.33	2,409.07	2,003.87	1,642.95	360.92	5.552	
17,700.00	9,820.78	17,105.60	9,289.23	183.21	190.35	-74.62	-8,087.33	2,409.65	2,003.76	1,638.76	365.00	5.490	
17,800.00	9,819.86	17,205.59	9,288.70	185.27	192.44	-74.63	-8,187.32	2,410.24	2,003.66	1,634.57	369.08	5.429	
17,900.00	9,818.94	17,305.59	9,288.18	187.34	194.54	-74.64	-8,287.32	2,410.82	2,003.55	1,630.38	373.17	5.369	
18,000.00	9,818.01	17,405.59	9,287.66	189.42	196.63	-74.65	-8,387.32	2,411.41	2,003.45	1,626.18	377.26	5.310	
18,100.00	9,817.09	17,505.59	9,287.13	191.49	198.73	-74.66	-8,487.31	2,411.99	2,003.34	1,621.98	381.36	5.253	
18,200.00	9,816.17	17,605.59	9,286.61	193.57	200.83	-74.67	-8,587.31	2,412.57	2,003.24	1,617.78	385.46	5.197	
18,300.00	9,815.25	17,705.59	9,286.09	195.64	202.93	-74.68	-8,687.31	2,413.16	2,003.13	1,613.57	389.56	5.142	
18,400.00	9,814.33	17,805.59	9,285.56	197.72	205.04	-74.69	-8,787.30	2,413.74	2,003.03	1,609.36	393.67	5.088	
18,500.00	9,813.41	17,905.59	9,285.04	199.80	207.14	-74.70	-8,887.30	2,414.33	2,002.92	1,605.15	397.77	5.035	
18,600.00	9,812.49	18,005.59	9,284.51	201.89	209.25	-74.72	-8,987.29	2,414.91	2,002.82	1,600.93	401.89	4.984	
18,700.00	9,811.57	18,105.59	9,283.99	203.97	211.36	-74.73	-9,087.29	2,415.49	2,002.71	1,596.71	406.00	4.933	
18,800.00	9,810.65	18,205.59	9,283.47	206.06	213.47	-74.74	-9,187.29	2,416.08	2,002.61	1,592.49	410.12	4.883	
18,900.00	9,809.73	18,305.59	9,282.94	208.14	215.58	-74.75	-9,287.28	2,416.66	2,002.51	1,588.27	414.24	4.834	
19,000.00	9,808.81	18,405.59	9,282.42	210.23	217.69	-74.76	-9,387.28	2,417.25	2,002.40	1,584.04	418.36	4.786	
19,100.00	9,807.88	18,505.58	9,281.90	212.32	219.81	-74.77	-9,487.27	2,417.83	2,002.30	1,579.81	422.49	4.739	
19,200.00	9,806.96	18,605.58	9,281.37	214.41	221.92	-74.78	-9,587.27	2,418.41	2,002.19	1,575.57	426.62	4.693	
19,300.00	9,806.04	18,705.58	9,280.85	216.51	224.04	-74.79	-9,687.27	2,419.00	2,002.09	1,571.34	430.75	4.648	
19,400.00	9,805.12	18,805.58	9,280.32	218.60	226.16	-74.80	-9,787.26	2,419.58	2,001.98	1,567.10	434.89	4.603	
19,500.00	9,804.20	18,905.58	9,279.80	220.69	228.28	-74.81	-9,887.26	2,420.17	2,001.88	1,562.86	439.02	4.560	
19,600.00	9,803.28	19,005.58	9,279.28	222.79	230.40	-74.82	-9,987.26	2,420.75	2,001.78	1,558.61	443.16	4.517	
19,700.00	9,802.36	19,105.58	9,278.75	224.89	232.52	-74.84	-10,087.25	2,421.34	2,001.67	1,554.37	447.31	4.475	
19,800.00	9,801.44	19,205.58	9,278.23	226.99	234.64	-74.85	-10,187.25	2,421.92	2,001.57	1,550.12	451.45	4.434	
19,900.00	9,800.52	19,305.58	9,277.70	229.09	236.77	-74.86	-10,287.24	2,422.50	2,001.47	1,545.87	455.60	4.393	
20,000.00	9,799.60	19,405.58	9,277.18	231.19	238.89	-74.87	-10,387.24	2,423.09	2,001.36	1,541.62	459.75	4.353	
20,100.00	9,798.68	19,505.58	9,276.66	233.29	241.02	-74.88	-10,487.24	2,423.67	2,001.26	1,537.36	463.90	4.314	
20,173.70	9,798.00	19,579.27	9,276.27	234.84	242.59	-74.89	-10,560.93	2,424.10	2,001.18	1,534.23	466.96	4.286 SF	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #7H - OH - Plan 2 11-18-16												Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	12.00	0.00	0.00	0.02	76.50	297.09	1,237.25	1,272.42				
100.00	100.00	112.00	100.00	0.19	0.24	76.50	297.09	1,237.25	1,272.42	1,271.98	0.44	2,903.522	
200.00	200.00	212.00	200.00	0.73	0.78	76.50	297.09	1,237.25	1,272.42	1,270.90	1.51	840.630	
300.00	300.00	312.00	300.00	1.27	1.32	76.50	297.09	1,237.25	1,272.42	1,269.83	2.59	491.458	
400.00	400.00	412.00	400.00	1.81	1.86	76.50	297.09	1,237.25	1,272.42	1,268.75	3.66	347.230	
500.00	500.00	512.00	500.00	2.34	2.40	76.50	297.09	1,237.25	1,272.42	1,267.68	4.74	268.448	
600.00	600.00	612.00	600.00	2.88	2.93	76.50	297.09	1,237.25	1,272.42	1,266.60	5.82	218.805	
700.00	700.00	712.00	700.00	3.42	3.47	76.50	297.09	1,237.25	1,272.42	1,265.53	6.89	184.656	
800.00	800.00	812.00	800.00	3.96	4.01	76.50	297.09	1,237.25	1,272.42	1,264.45	7.97	159.728	
900.00	900.00	912.00	900.00	4.50	4.55	76.50	297.09	1,237.25	1,272.42	1,263.37	9.04	140.730	
1,000.00	1,000.00	1,012.00	1,000.00	5.03	5.08	76.50	297.09	1,237.25	1,272.42	1,262.30	10.12	125.771	
1,100.00	1,100.00	1,112.00	1,100.00	5.57	5.62	76.50	297.09	1,237.25	1,272.42	1,261.22	11.19	113.686	
1,200.00	1,200.00	1,212.00	1,200.00	6.11	6.16	76.50	297.09	1,237.25	1,272.42	1,260.15	12.27	103.720	
1,300.00	1,300.00	1,312.00	1,300.00	6.65	6.70	76.50	297.09	1,237.25	1,272.42	1,259.07	13.34	95.361	
1,400.00	1,400.00	1,412.00	1,400.00	7.18	7.23	76.50	297.09	1,237.25	1,272.42	1,258.00	14.42	88.248	
1,500.00	1,500.00	1,512.00	1,500.00	7.72	7.77	76.50	297.09	1,237.25	1,272.42	1,256.92	15.49	82.123	
1,600.00	1,600.00	1,612.00	1,600.00	8.26	8.31	76.50	297.09	1,237.25	1,272.42	1,255.85	16.57	76.793	
1,700.00	1,700.00	1,712.00	1,700.00	8.80	8.85	76.50	297.09	1,237.25	1,272.42	1,254.77	17.64	72.113	
1,800.00	1,800.00	1,812.00	1,800.00	9.33	9.39	76.50	297.09	1,237.25	1,272.42	1,253.70	18.72	67.771	
1,900.00	1,899.98	1,911.98	1,899.98	9.86	9.92	-18.16	297.09	1,237.25	1,270.76	1,250.99	19.77	64.271	
2,000.00	1,999.90	2,011.90	1,999.90	10.37	10.46	-18.22	297.09	1,237.25	1,266.91	1,246.09	20.82	60.863	
2,100.00	2,099.81	2,111.81	2,099.81	10.89	11.00	-18.28	297.09	1,237.25	1,263.00	1,241.14	21.87	57.761	
2,200.00	2,199.73	2,211.73	2,199.73	11.41	11.54	-18.33	297.09	1,237.25	1,259.10	1,236.18	22.92	54.938	
2,300.00	2,299.64	2,311.64	2,299.64	11.93	12.07	-18.39	296.04	1,235.63	1,254.13	1,229.96	24.17	51.879	
2,400.00	2,399.56	2,411.56	2,399.56	12.45	12.60	-18.42	289.95	1,226.25	1,244.00	1,218.46	25.54	48.711	
2,500.00	2,499.48	2,511.48	2,499.48	12.97	13.12	-18.41	284.47	1,219.04	1,230.98	1,204.47	26.51	46.433	
2,600.00	2,599.39	2,611.39	2,599.39	13.50	13.65	-18.41	277.88	1,214.24	1,219.75	1,192.30	27.46	44.426	
2,700.00	2,699.31	2,711.31	2,699.31	14.03	14.18	-17.79	271.67	1,211.96	1,210.32	1,182.00	28.32	42.743	
2,800.00	2,799.22	2,811.22	2,799.22	14.55	14.70	-17.42	262.40	1,210.50	1,202.49	1,173.20	29.29	41.052	
2,900.00	2,899.14	2,911.14	2,899.14	15.08	15.23	-17.02	252.11	1,209.04	1,194.87	1,164.55	30.32	39.409	
3,000.00	2,999.05	3,011.05	2,999.05	15.62	15.77	-16.60	241.82	1,207.59	1,187.31	1,155.96	31.35	37.869	
3,100.00	3,098.97	3,110.97	3,098.97	16.15	16.30	-16.18	231.53	1,206.13	1,179.82	1,147.43	32.39	36.422	
3,200.00	3,198.88	3,210.88	3,198.88	16.68	16.83	-15.76	221.24	1,204.68	1,172.39	1,138.95	33.44	35.063	
3,300.00	3,298.80	3,310.80	3,298.80	17.21	17.37	-15.33	210.95	1,203.22	1,165.02	1,130.53	34.49	33.783	
3,400.00	3,398.72	3,410.72	3,398.72	17.75	17.90	-14.90	200.67	1,201.77	1,157.72	1,122.18	35.54	32.576	
3,500.00	3,498.63	3,510.63	3,498.63	18.28	18.43	-14.45	190.38	1,200.31	1,150.49	1,113.89	36.60	31.438	
3,600.00	3,598.55	3,610.55	3,598.55	18.82	18.96	-14.01	180.09	1,198.86	1,143.33	1,105.67	37.66	30.362	
3,700.00	3,698.46	3,710.46	3,698.46	19.35	19.49	-13.56	169.80	1,197.40	1,136.23	1,097.51	38.72	29.345	
3,800.00	3,798.38	3,810.38	3,798.38	19.89	20.03	-13.10	159.51	1,195.95	1,129.21	1,089.42	39.79	28.382	
3,900.00	3,898.29	3,910.29	3,898.29	20.42	20.57	-12.64	149.23	1,194.49	1,122.26	1,081.41	40.86	27.468	
4,000.00	3,998.21	4,010.21	3,998.21	20.96	21.11	-12.17	138.94	1,193.04	1,115.39	1,073.46	41.93	26.602	
4,100.00	4,098.12	4,110.12	4,098.12	21.50	21.65	-11.70	128.65	1,191.58	1,108.59	1,065.59	43.00	25.779	
4,200.00	4,198.04	4,210.04	4,198.04	22.04	22.20	-11.22	118.36	1,190.12	1,101.87	1,057.79	44.08	24.996	
4,300.00	4,297.95	4,309.95	4,297.95	22.57	22.74	-10.73	108.07	1,188.67	1,095.23	1,050.07	45.16	24.252	
4,400.00	4,397.87	4,409.87	4,397.87	23.11	23.29	-10.24	97.79	1,187.21	1,088.67	1,042.42	46.24	23.543	
4,500.00	4,497.79	4,509.79	4,497.79	23.65	23.84	-9.74	87.50	1,185.76	1,082.19	1,034.86	47.33	22.867	
4,600.00	4,597.70	4,609.70	4,597.70	24.19	24.39	-9.24	77.21	1,184.30	1,075.79	1,027.38	48.41	22.222	
4,700.00	4,697.62	4,709.62	4,697.62	24.73	24.95	-8.73	66.92	1,182.85	1,069.47	1,019.98	49.50	21.607	
4,800.00	4,797.53	4,809.53	4,797.53	25.27	25.50	-8.21	56.63	1,181.39	1,063.25	1,012.66	50.59	21.019	
4,900.00	4,897.45	4,909.45	4,897.45	25.81	26.05	-7.69	46.35	1,179.94	1,057.11	1,005.43	51.68	20.457	
5,000.00	4,997.36	5,009.36	4,997.36	26.35	26.61	-7.16	36.06	1,178.48	1,051.05	998.29	52.77	19.919	
5,100.00	5,097.28	5,109.28	5,097.28	26.89	27.17	-6.63	25.77	1,177.03	1,045.09	991.23	53.86	19.404	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #7H - OH - Plan 2 11-18-16													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,197.19	5,242.42	5,215.26	27.43	27.72	-6.09	15.48	1,175.57	1,039.23	984.27	54.95	18.911		
5,300.00	5,297.11	5,341.76	5,314.06	27.97	28.28	-5.55	5.19	1,174.12	1,033.45	977.40	56.05	18.438		
5,400.00	5,397.03	5,441.10	5,412.85	28.51	28.84	-5.00	-5.10	1,172.66	1,027.77	970.63	57.14	17.985		
5,500.00	5,496.94	5,540.44	5,511.65	29.05	29.40	-4.44	-15.38	1,171.21	1,022.19	963.95	58.24	17.551		
5,600.00	5,596.86	5,636.85	5,607.60	29.59	29.94	-3.93	-24.65	1,169.89	1,016.80	957.48	59.32	17.141		
5,700.00	5,696.77	5,732.30	5,702.83	30.13	30.46	-3.60	-30.85	1,169.02	1,011.88	951.50	60.38	16.759		
5,800.00	5,796.69	5,828.07	5,798.56	30.67	30.97	-3.44	-33.90	1,168.59	1,007.39	945.97	61.42	16.401		
5,900.00	5,896.60	5,926.12	5,896.60	31.21	31.47	-3.43	-34.24	1,168.54	1,003.24	940.79	62.46	16.063		
6,000.00	5,996.52	6,026.04	5,996.52	31.75	31.97	-3.44	-34.24	1,168.54	999.14	935.65	63.49	15.736		
6,100.00	6,096.43	6,125.95	6,096.43	32.29	32.47	-3.46	-34.24	1,168.54	995.04	930.51	64.53	15.419		
6,200.00	6,196.35	6,225.87	6,196.35	32.83	32.98	-3.47	-34.24	1,168.54	990.94	925.36	65.57	15.112		
6,300.00	6,296.27	6,325.78	6,296.27	33.37	33.48	-3.49	-34.24	1,168.54	986.84	920.22	66.62	14.814		
6,400.00	6,396.18	6,425.70	6,396.18	33.92	33.99	-3.50	-34.24	1,168.54	982.74	915.08	67.66	14.525		
6,500.00	6,496.10	6,525.62	6,496.10	34.46	34.50	-3.52	-34.24	1,168.54	978.63	909.93	68.70	14.245		
6,600.00	6,596.01	6,625.53	6,596.01	35.00	35.00	-3.53	-34.24	1,168.54	974.53	904.79	69.75	13.973		
6,700.00	6,695.93	6,725.45	6,695.93	35.54	35.51	-3.55	-34.24	1,168.54	970.43	899.64	70.79	13.708		
6,800.00	6,795.84	6,825.36	6,795.84	36.08	36.02	-3.56	-34.24	1,168.54	966.33	894.49	71.84	13.451		
6,900.00	6,895.76	6,925.28	6,895.76	36.62	36.53	-3.58	-34.24	1,168.54	962.23	889.34	72.89	13.202		
7,000.00	6,995.67	7,025.19	6,995.67	37.17	37.04	-3.59	-34.24	1,168.54	958.13	884.19	73.93	12.959		
7,100.00	7,095.59	7,125.11	7,095.59	37.71	37.55	-3.61	-34.24	1,168.54	954.03	879.04	74.98	12.723		
7,200.00	7,195.51	7,225.02	7,195.51	38.25	38.07	-3.62	-34.24	1,168.54	949.93	873.89	76.03	12.494		
7,300.00	7,295.42	7,324.94	7,295.42	38.79	38.58	-3.64	-34.24	1,168.54	945.83	868.74	77.08	12.270		
7,400.00	7,395.34	7,424.86	7,395.34	39.33	39.09	-3.66	-34.24	1,168.54	941.72	863.59	78.13	12.053		
7,500.00	7,495.25	7,524.77	7,495.25	39.88	39.61	-3.67	-34.24	1,168.54	937.62	858.44	79.19	11.841		
7,600.00	7,595.17	7,624.69	7,595.17	40.42	40.12	-3.69	-34.24	1,168.54	933.52	853.28	80.24	11.634		
7,700.00	7,695.08	7,724.60	7,695.08	40.96	40.64	-3.70	-34.24	1,168.54	929.42	848.13	81.29	11.433		
7,800.00	7,795.00	7,824.52	7,795.00	41.50	41.15	-3.72	-34.24	1,168.54	925.32	842.98	82.35	11.237		
7,900.00	7,894.91	7,924.43	7,894.91	42.05	41.67	-3.74	-34.24	1,168.54	921.22	837.82	83.40	11.046		
8,000.00	7,994.83	8,024.35	7,994.83	42.59	42.19	-3.75	-34.24	1,168.54	917.12	832.67	84.45	10.859		
8,100.00	8,094.75	8,124.26	8,094.75	43.13	42.70	-3.77	-34.24	1,168.54	913.02	827.51	85.51	10.677		
8,200.00	8,194.66	8,224.18	8,194.66	43.67	43.22	-3.79	-34.24	1,168.54	908.92	822.36	86.57	10.500		
8,300.00	8,294.58	8,324.10	8,294.58	44.22	43.74	-3.80	-34.24	1,168.54	904.82	817.20	87.62	10.326		
8,400.00	8,394.49	8,424.01	8,394.49	44.76	44.26	-3.82	-34.24	1,168.54	900.72	812.04	88.68	10.157		
8,500.00	8,494.41	8,523.93	8,494.41	45.30	44.78	-3.84	-34.24	1,168.54	896.62	806.88	89.74	9.992		
8,600.00	8,594.32	8,623.84	8,594.32	45.84	45.30	-3.86	-34.24	1,168.54	892.52	801.73	90.80	9.830		
8,700.00	8,694.24	8,723.76	8,694.24	46.39	45.82	-3.87	-34.24	1,168.54	888.42	796.57	91.85	9.672		
8,800.00	8,794.15	8,823.67	8,794.15	46.93	46.34	-3.89	-34.24	1,168.54	884.32	791.41	92.91	9.518		
8,900.00	8,894.07	8,923.59	8,894.07	47.47	46.86	-3.91	-34.24	1,168.54	880.22	786.25	93.97	9.367		
9,000.00	8,993.99	9,023.50	8,993.99	48.02	47.38	-3.93	-34.24	1,168.54	876.12	781.09	95.03	9.219		
9,100.00	9,093.90	9,123.42	9,093.90	48.56	47.90	-3.95	-34.24	1,168.54	872.02	775.93	96.09	9.075		
9,200.00	9,193.82	9,223.34	9,193.82	49.10	48.43	-3.97	-34.24	1,168.54	867.93	770.77	97.15	8.934		
9,300.00	9,293.73	9,323.27	9,293.73	49.64	48.94	-12.79	-34.90	1,168.55	863.85	765.65	98.20	8.797		
9,400.00	9,393.04	9,416.21	9,385.78	50.18	49.45	-75.62	-47.16	1,168.85	859.91	760.69	99.23	8.666		
9,500.00	9,489.15	9,510.27	9,475.67	50.69	50.00	-81.74	-74.45	1,169.51	856.07	755.80	100.27	8.538		
9,600.00	9,579.12	9,604.09	9,559.70	51.18	50.56	-84.05	-115.95	1,170.51	852.43	751.11	101.32	8.413		
9,700.00	9,660.24	9,697.84	9,635.78	51.64	51.15	-85.37	-170.53	1,171.84	849.11	746.70	102.41	8.291		
9,800.00	9,730.03	9,791.68	9,702.00	52.11	51.77	-86.29	-236.84	1,173.44	846.20	742.67	103.53	8.174		
9,900.00	9,786.38	9,885.76	9,756.65	52.59	52.42	-87.00	-313.27	1,175.29	843.79	739.10	104.69	8.060		
10,000.00	9,827.57	9,980.23	9,798.21	53.09	53.10	-87.58	-397.96	1,177.34	841.97	736.07	105.90	7.951		
10,100.00	9,852.35	10,075.23	9,825.42	53.62	53.81	-88.06	-488.85	1,179.54	840.79	733.66	107.14	7.848		
10,200.00	9,859.99	10,170.91	9,837.27	54.15	54.54	-88.45	-583.65	1,181.83	840.32	731.92	108.39	7.752		
10,247.34	9,859.83	10,217.21	9,837.63	54.42	54.90	-88.49	-629.93	1,182.95	840.30	731.27	109.02	7.707		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #7H - OH - Plan 2 11-18-16												Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,300.00	9,859.66	10,269.87	9,837.36	54.73	55.32	-88.48	-682.58	1,184.22	840.30	730.55	109.75	7.657	
10,400.00	9,859.34	10,369.87	9,836.83	55.39	56.18	-88.47	-782.55	1,186.64	840.29	729.04	111.26	7.553	
10,500.00	9,859.02	10,469.87	9,836.31	56.12	57.10	-88.45	-882.51	1,189.06	840.29	727.38	112.91	7.442	
10,600.00	9,858.70	10,569.87	9,835.79	56.92	58.10	-88.44	-982.48	1,191.48	840.29	725.58	114.71	7.325	
10,700.00	9,858.37	10,669.87	9,835.26	57.79	59.16	-88.42	-1,082.45	1,193.90	840.29	723.65	116.64	7.204	
10,800.00	9,858.05	10,769.87	9,834.74	58.73	60.29	-88.41	-1,182.42	1,196.32	840.29	721.58	118.70	7.079	
10,900.00	9,857.73	10,869.87	9,834.22	59.73	61.47	-88.40	-1,282.39	1,198.73	840.28	719.40	120.89	6.951	
11,000.00	9,857.41	10,969.87	9,833.69	60.79	62.70	-88.38	-1,382.36	1,201.15	840.28	717.09	123.19	6.821	
11,100.00	9,857.09	11,069.87	9,833.17	61.91	63.99	-88.37	-1,482.33	1,203.57	840.28	714.68	125.60	6.690	
11,200.00	9,856.76	11,169.87	9,832.65	63.08	65.33	-88.36	-1,582.30	1,205.99	840.28	712.16	128.11	6.559	
11,300.00	9,856.44	11,269.87	9,832.12	64.30	66.71	-88.34	-1,682.27	1,208.41	840.28	709.55	130.73	6.428	
11,400.00	9,856.12	11,369.87	9,831.60	65.58	68.14	-88.33	-1,782.24	1,210.83	840.27	706.85	133.43	6.298	
11,500.00	9,855.80	11,469.87	9,831.07	66.90	69.61	-88.31	-1,882.21	1,213.25	840.27	704.05	136.22	6.169	
11,600.00	9,855.47	11,569.87	9,830.55	68.26	71.11	-88.30	-1,982.18	1,215.66	840.27	701.18	139.09	6.041	
11,700.00	9,855.15	11,669.87	9,830.03	69.66	72.65	-88.29	-2,082.15	1,218.08	840.27	698.23	142.04	5.916	
11,800.00	9,854.83	11,769.87	9,829.50	71.10	74.23	-88.27	-2,182.11	1,220.50	840.27	695.21	145.06	5.793	
11,900.00	9,854.51	11,869.87	9,828.98	72.58	75.83	-88.26	-2,282.08	1,222.92	840.27	692.12	148.14	5.672	
12,000.00	9,854.18	11,969.87	9,828.46	74.09	77.46	-88.25	-2,382.05	1,225.34	840.26	688.97	151.29	5.554	
12,100.00	9,853.86	12,069.87	9,827.93	75.63	79.13	-88.23	-2,482.02	1,227.76	840.26	685.76	154.50	5.439	
12,200.00	9,853.54	12,169.87	9,827.41	77.21	80.81	-88.22	-2,581.99	1,230.17	840.26	682.50	157.76	5.326	
12,300.00	9,853.22	12,269.87	9,826.89	78.81	82.53	-88.20	-2,681.96	1,232.59	840.26	679.18	161.08	5.216	
12,400.00	9,852.90	12,369.87	9,826.36	80.44	84.26	-88.19	-2,781.93	1,235.01	840.26	675.81	164.45	5.110	
12,500.00	9,852.57	12,469.87	9,825.84	82.09	86.02	-88.18	-2,881.90	1,237.43	840.26	672.40	167.86	5.006	
12,600.00	9,852.25	12,569.87	9,825.31	83.77	87.79	-88.16	-2,981.87	1,239.85	840.26	668.94	171.31	4.905	
12,700.00	9,851.93	12,669.87	9,824.79	85.46	89.59	-88.15	-3,081.84	1,242.27	840.26	665.44	174.81	4.807	
12,800.00	9,851.61	12,769.87	9,824.27	87.18	91.40	-88.14	-3,181.81	1,244.69	840.25	661.91	178.35	4.711	
12,900.00	9,851.28	12,869.87	9,823.74	88.92	93.23	-88.12	-3,281.78	1,247.10	840.25	658.34	181.92	4.619	
13,000.00	9,850.96	12,969.87	9,823.22	90.68	95.07	-88.11	-3,381.74	1,249.52	840.25	654.73	185.52	4.529	
13,100.00	9,850.64	13,069.87	9,822.70	92.45	96.93	-88.09	-3,481.71	1,251.94	840.25	651.09	189.16	4.442	
13,200.00	9,850.32	13,169.87	9,822.17	94.25	98.81	-88.08	-3,581.68	1,254.36	840.25	647.43	192.82	4.358	
13,300.00	9,850.00	13,269.87	9,821.65	96.05	100.69	-88.07	-3,681.65	1,256.78	840.25	643.73	196.52	4.276	
13,400.00	9,849.67	13,369.87	9,821.13	97.87	102.59	-88.05	-3,781.62	1,259.20	840.25	640.01	200.24	4.196	
13,500.00	9,849.35	13,469.87	9,820.60	99.71	104.51	-88.04	-3,881.59	1,261.62	840.25	636.26	203.99	4.119	
13,600.00	9,849.03	13,569.87	9,820.08	101.56	106.43	-88.03	-3,981.56	1,264.03	840.25	632.48	207.76	4.044	
13,700.00	9,848.71	13,669.87	9,819.56	103.42	108.36	-88.01	-4,081.53	1,266.45	840.25	628.69	211.56	3.972	
13,800.00	9,848.38	13,769.86	9,819.03	105.29	110.31	-88.00	-4,181.50	1,268.87	840.25	624.87	215.38	3.901	
13,900.00	9,848.06	13,869.86	9,818.51	107.17	112.26	-87.98	-4,281.47	1,271.29	840.25	621.03	219.21	3.833	
14,000.00	9,847.74	13,969.86	9,817.98	109.07	114.22	-87.97	-4,381.44	1,273.71	840.24	617.17	223.07	3.767	
14,100.00	9,847.42	14,069.86	9,817.46	110.97	116.19	-87.96	-4,481.41	1,276.13	840.24	613.30	226.95	3.702	
14,200.00	9,847.09	14,169.86	9,816.94	112.89	118.17	-87.94	-4,581.37	1,278.54	840.24	609.40	230.84	3.640	
14,300.00	9,846.77	14,269.86	9,816.41	114.81	120.16	-87.93	-4,681.34	1,280.96	840.24	605.49	234.75	3.579	
14,400.00	9,846.45	14,369.86	9,815.89	116.74	122.15	-87.92	-4,781.31	1,283.38	840.24	601.57	238.67	3.520	
14,500.00	9,846.13	14,469.86	9,815.37	118.68	124.15	-87.90	-4,881.28	1,285.80	840.24	597.63	242.61	3.463	
14,600.00	9,845.81	14,569.86	9,814.84	120.63	126.16	-87.89	-4,981.25	1,288.22	840.24	593.67	246.57	3.408	
14,700.00	9,845.48	14,669.86	9,814.32	122.58	128.17	-87.87	-5,081.22	1,290.64	840.24	589.70	250.54	3.354	
14,800.00	9,845.16	14,769.86	9,813.80	124.54	130.19	-87.86	-5,181.19	1,293.06	840.24	585.72	254.52	3.301	
14,900.00	9,844.84	14,869.86	9,813.27	126.51	132.22	-87.85	-5,281.16	1,295.47	840.24	581.73	258.51	3.250	
15,000.00	9,844.52	14,969.86	9,812.75	128.49	134.25	-87.83	-5,381.13	1,297.89	840.24	577.72	262.52	3.201	
15,031.56	9,844.41	15,001.42	9,812.58	129.11	134.89	-87.83	-5,412.68	1,298.66	840.24	576.46	263.78	3.185	
15,100.00	9,844.19	15,069.86	9,812.22	130.47	136.29	-87.82	-5,481.10	1,300.31	840.24	573.71	266.53	3.152	
15,108.91	9,844.16	15,078.77	9,812.18	130.65	136.47	-87.82	-5,490.00	1,300.53	840.25	573.36	266.89	3.148	
15,200.00	9,843.79	15,174.52	9,811.68	132.45	138.42	-87.81	-5,585.73	1,302.80	840.47	569.89	270.58	3.106	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #7H - OH - Plan 2 11-18-16														Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
15,300.00	9,842.88	15,285.26	9,811.10	134.43	140.68	-87.83	-5,696.46	1,303.68	840.58	565.80	274.78	3.059			
15,400.00	9,841.96	15,385.26	9,810.58	136.42	142.71	-87.86	-5,796.46	1,304.27	840.57	561.76	278.81	3.015			
15,500.00	9,841.04	15,485.26	9,810.05	138.42	144.75	-87.89	-5,896.45	1,304.85	840.55	557.71	282.85	2.972			
15,600.00	9,840.12	15,585.26	9,809.53	140.41	146.80	-87.91	-5,996.45	1,305.44	840.54	553.64	286.90	2.930			
15,700.00	9,839.19	15,685.26	9,809.01	142.42	148.85	-87.94	-6,096.45	1,306.02	840.53	549.58	290.95	2.889			
15,800.00	9,838.27	15,785.26	9,808.49	144.42	150.90	-87.97	-6,196.44	1,306.61	840.51	545.50	295.02	2.849			
15,900.00	9,837.35	15,885.26	9,807.96	146.43	152.96	-88.00	-6,296.44	1,307.19	840.50	541.41	299.09	2.810			
16,000.00	9,836.43	15,985.26	9,807.44	148.45	155.02	-88.02	-6,396.43	1,307.78	840.49	537.32	303.17	2.772			
16,100.00	9,835.51	16,085.26	9,806.92	150.47	157.08	-88.05	-6,496.43	1,308.36	840.48	533.22	307.25	2.735			
16,200.00	9,834.59	16,185.26	9,806.40	152.49	159.15	-88.08	-6,596.43	1,308.95	840.46	529.11	311.35	2.699			
16,300.00	9,833.67	16,285.25	9,805.88	154.52	161.22	-88.10	-6,696.42	1,309.53	840.45	525.00	315.45	2.664			
16,400.00	9,832.75	16,385.25	9,805.35	156.55	163.29	-88.13	-6,796.42	1,310.12	840.44	520.88	319.56	2.630			
16,500.00	9,831.83	16,485.25	9,804.83	158.58	165.37	-88.16	-6,896.41	1,310.70	840.43	516.76	323.67	2.597			
16,600.00	9,830.91	16,585.25	9,804.31	160.62	167.44	-88.19	-6,996.41	1,311.29	840.42	512.63	327.79	2.564			
16,700.00	9,829.99	16,685.25	9,803.79	162.66	169.52	-88.21	-7,096.41	1,311.87	840.40	508.49	331.91	2.532			
16,800.00	9,829.06	16,785.25	9,803.26	164.70	171.61	-88.24	-7,196.40	1,312.45	840.39	504.35	336.04	2.501			
16,900.00	9,828.14	16,885.25	9,802.74	166.75	173.69	-88.27	-7,296.40	1,313.04	840.38	500.20	340.18	2.470			
17,000.00	9,827.22	16,985.25	9,802.22	168.80	175.78	-88.29	-7,396.39	1,313.62	840.37	496.05	344.32	2.441			
17,100.00	9,826.30	17,085.25	9,801.70	170.85	177.87	-88.32	-7,496.39	1,314.21	840.36	491.89	348.47	2.412			
17,200.00	9,825.38	17,185.25	9,801.17	172.90	179.97	-88.35	-7,596.39	1,314.79	840.35	487.73	352.62	2.383			
17,300.00	9,824.46	17,285.25	9,800.65	174.96	182.06	-88.38	-7,696.38	1,315.38	840.34	483.56	356.77	2.355			
17,400.00	9,823.54	17,385.25	9,800.13	177.02	184.16	-88.40	-7,796.38	1,315.96	840.33	479.39	360.93	2.328			
17,500.00	9,822.62	17,485.25	9,799.61	179.08	186.26	-88.43	-7,896.38	1,316.55	840.32	475.22	365.10	2.302			
17,600.00	9,821.70	17,585.24	9,799.09	181.14	188.36	-88.46	-7,996.37	1,317.13	840.31	471.04	369.27	2.276			
17,700.00	9,820.78	17,685.24	9,798.56	183.21	190.46	-88.49	-8,096.37	1,317.72	840.30	466.86	373.44	2.250			
17,800.00	9,819.86	17,785.24	9,798.04	185.27	192.57	-88.51	-8,196.36	1,318.30	840.29	462.67	377.62	2.225			
17,900.00	9,818.94	17,885.24	9,797.52	187.34	194.68	-88.54	-8,296.36	1,318.89	840.28	458.48	381.80	2.201			
18,000.00	9,818.01	17,985.24	9,797.00	189.42	196.78	-88.57	-8,396.36	1,319.47	840.27	454.29	385.98	2.177			
18,100.00	9,817.09	18,085.24	9,796.47	191.49	198.89	-88.59	-8,496.35	1,320.06	840.26	450.09	390.17	2.154			
18,200.00	9,816.17	18,185.24	9,795.95	193.57	201.01	-88.62	-8,596.35	1,320.64	840.25	445.89	394.36	2.131			
18,300.00	9,815.25	18,285.24	9,795.43	195.64	203.12	-88.65	-8,696.34	1,321.23	840.24	441.69	398.55	2.108			
18,400.00	9,814.33	18,385.24	9,794.91	197.72	205.23	-88.68	-8,796.34	1,321.81	840.24	437.49	402.75	2.086			
18,500.00	9,813.41	18,485.24	9,794.38	199.80	207.35	-88.70	-8,896.34	1,322.40	840.23	433.28	406.95	2.065			
18,600.00	9,812.49	18,585.24	9,793.86	201.89	209.47	-88.73	-8,996.33	1,322.98	840.22	429.07	411.15	2.044			
18,700.00	9,811.57	18,685.24	9,793.34	203.97	211.59	-88.76	-9,096.33	1,323.57	840.21	424.85	415.36	2.023			
18,800.00	9,810.65	18,785.23	9,792.82	206.06	213.71	-88.78	-9,196.33	1,324.15	840.20	420.64	419.57	2.003			
18,900.00	9,809.73	18,885.23	9,792.29	208.14	215.83	-88.81	-9,296.32	1,324.74	840.20	416.42	423.78	1.983			
19,000.00	9,808.81	18,985.23	9,791.77	210.23	217.95	-88.84	-9,396.32	1,325.32	840.19	412.19	427.99	1.963			
19,100.00	9,807.88	19,085.23	9,791.25	212.32	220.07	-88.87	-9,496.31	1,325.91	840.18	407.97	432.21	1.944			
19,200.00	9,806.96	19,185.23	9,790.73	214.41	222.20	-88.89	-9,596.31	1,326.49	840.18	403.74	436.43	1.925			
19,300.00	9,806.04	19,285.23	9,790.21	216.51	224.33	-88.92	-9,696.31	1,327.08	840.17	399.52	440.65	1.907			
19,400.00	9,805.12	19,385.23	9,789.68	218.60	226.45	-88.95	-9,796.30	1,327.66	840.16	395.29	444.88	1.889			
19,500.00	9,804.20	19,485.23	9,789.16	220.69	228.58	-88.97	-9,896.30	1,328.25	840.16	391.05	449.10	1.871			
19,600.00	9,803.28	19,585.23	9,788.64	222.79	230.71	-89.00	-9,996.29	1,328.83	840.15	386.82	453.33	1.853			
19,700.00	9,802.36	19,685.23	9,788.12	224.89	232.84	-89.03	-10,096.29	1,329.42	840.14	382.58	457.56	1.836			
19,800.00	9,801.44	19,785.23	9,787.59	226.99	234.97	-89.06	-10,196.29	1,330.00	840.14	378.34	461.80	1.819			
19,900.00	9,800.52	19,885.23	9,787.07	229.09	237.11	-89.08	-10,296.28	1,330.59	840.13	374.10	466.03	1.803			
20,000.00	9,799.60	19,985.23	9,786.55	231.19	239.24	-89.11	-10,396.28	1,331.17	840.13	369.86	470.27	1.786			
20,100.00	9,798.68	20,085.22	9,786.03	233.29	241.37	-89.14	-10,496.27	1,331.76	840.12	365.62	474.51	1.771			
20,173.70	9,798.00	20,158.92	9,785.64	234.84	242.95	-89.16	-10,569.97	1,332.19	840.12	362.49	477.63	1.759 CC, ES, SF			

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #8H - OH - Plan 2 11-18-16												Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	12.00	0.00	0.00	0.02	75.41	322.09	1,237.25	1,278.48				
100.00	100.00	112.00	100.00	0.19	0.24	75.41	322.09	1,237.25	1,278.48	1,278.05	0.44	2,917.369	
200.00	200.00	212.00	200.00	0.73	0.78	75.41	322.09	1,237.25	1,278.48	1,276.97	1.51	844.639	
300.00	300.00	312.00	300.00	1.27	1.32	75.41	322.09	1,237.25	1,278.48	1,275.90	2.59	493.802	
400.00	400.00	412.00	400.00	1.81	1.86	75.41	322.09	1,237.25	1,278.48	1,274.82	3.66	348.886	
500.00	500.00	512.00	500.00	2.34	2.40	75.41	322.09	1,237.25	1,278.48	1,273.74	4.74	269.729	
600.00	600.00	612.00	600.00	2.88	2.93	75.41	322.09	1,237.25	1,278.48	1,272.67	5.82	219.848	
700.00	700.00	712.00	700.00	3.42	3.47	75.41	322.09	1,237.25	1,278.48	1,271.59	6.89	185.537	
800.00	800.00	812.00	800.00	3.96	4.01	75.41	322.09	1,237.25	1,278.48	1,270.52	7.97	160.490	
900.00	900.00	912.00	900.00	4.50	4.55	75.41	322.09	1,237.25	1,278.48	1,269.44	9.04	141.401	
1,000.00	1,000.00	1,012.00	1,000.00	5.03	5.08	75.41	322.09	1,237.25	1,278.48	1,268.37	10.12	126.370	
1,100.00	1,100.00	1,112.00	1,100.00	5.57	5.62	75.41	322.09	1,237.25	1,278.48	1,267.29	11.19	114.228	
1,200.00	1,200.00	1,212.00	1,200.00	6.11	6.16	75.41	322.09	1,237.25	1,278.48	1,266.22	12.27	104.215	
1,300.00	1,300.00	1,312.00	1,300.00	6.65	6.70	75.41	322.09	1,237.25	1,278.48	1,265.14	13.34	95.815	
1,400.00	1,400.00	1,412.00	1,400.00	7.18	7.23	75.41	322.09	1,237.25	1,278.48	1,264.07	14.42	88.669	
1,500.00	1,500.00	1,512.00	1,500.00	7.72	7.77	75.41	322.09	1,237.25	1,278.48	1,262.99	15.49	82.515	
1,600.00	1,600.00	1,612.00	1,600.00	8.26	8.31	75.41	322.09	1,237.25	1,278.48	1,261.91	16.57	77.159	
1,700.00	1,700.00	1,712.00	1,700.00	8.80	8.85	75.41	322.09	1,237.25	1,278.48	1,260.84	17.64	72.456	
1,800.00	1,800.00	1,812.00	1,800.00	9.33	9.39	75.41	322.09	1,237.25	1,278.48	1,259.76	18.72	68.294	
1,900.00	1,899.98	1,911.98	1,899.98	9.86	9.92	-19.25	322.09	1,237.25	1,276.84	1,257.06	19.77	64.578	
2,000.00	1,999.90	2,011.90	1,999.90	10.37	10.46	-19.31	322.09	1,237.25	1,273.01	1,252.19	20.82	61.156	
2,100.00	2,099.81	2,111.81	2,099.81	10.89	11.00	-19.37	322.09	1,237.25	1,269.13	1,247.27	21.87	58.041	
2,200.00	2,199.73	2,211.73	2,199.73	11.41	11.54	-19.44	322.09	1,237.25	1,265.26	1,242.34	22.92	55.206	
2,300.00	2,299.64	2,300.00	2,288.00	11.93	12.00	-19.48	321.90	1,237.64	1,261.77	1,237.87	23.90	52.790	
2,400.00	2,399.56	2,371.01	2,358.97	12.45	12.36	-19.46	320.99	1,239.56	1,260.11	1,235.33	24.78	50.859	
2,437.22	2,436.75	2,400.00	2,387.93	12.64	12.50	-19.44	320.40	1,240.79	1,260.00	1,234.89	25.12	50.168 CC	
2,500.00	2,499.48	2,445.86	2,433.70	12.97	12.73	-19.38	319.21	1,243.29	1,260.45	1,234.78	25.67	49.095	
2,600.00	2,599.39	2,520.59	2,508.18	13.50	13.11	-19.25	316.59	1,248.78	1,262.80	1,236.22	26.57	47.520	
2,700.00	2,699.31	2,600.00	2,587.13	14.03	13.52	-19.05	312.90	1,256.53	1,267.17	1,239.66	27.50	46.076	
2,800.00	2,799.22	2,684.66	2,671.08	14.55	13.96	-18.79	308.20	1,266.40	1,273.17	1,244.71	28.46	44.735	
2,900.00	2,899.14	2,784.22	2,769.79	15.08	14.48	-18.47	302.62	1,278.11	1,279.37	1,249.87	29.50	43.370	
3,000.00	2,999.05	2,883.79	2,868.51	15.62	15.01	-18.16	297.04	1,289.83	1,285.62	1,255.07	30.54	42.092	
3,100.00	3,098.97	2,983.35	2,967.22	16.15	15.54	-17.86	291.46	1,301.55	1,291.90	1,260.31	31.59	40.893	
3,200.00	3,198.88	3,082.91	3,065.94	16.68	16.08	-17.55	285.87	1,313.26	1,298.22	1,265.57	32.64	39.768	
3,300.00	3,298.80	3,182.48	3,164.65	17.21	16.63	-17.25	280.29	1,324.98	1,304.57	1,270.87	33.70	38.709	
3,400.00	3,398.72	3,282.04	3,263.36	17.75	17.17	-16.95	274.71	1,336.70	1,310.96	1,276.20	34.76	37.713	
3,500.00	3,498.63	3,381.60	3,362.08	18.28	17.72	-16.66	269.13	1,348.42	1,317.39	1,281.56	35.82	36.773	
3,600.00	3,598.55	3,481.17	3,460.79	18.82	18.28	-16.37	263.55	1,360.13	1,323.85	1,286.96	36.89	35.886	
3,700.00	3,698.46	3,580.73	3,559.51	19.35	18.83	-16.08	257.97	1,371.85	1,330.34	1,292.38	37.96	35.047	
3,800.00	3,798.38	3,680.29	3,658.22	19.89	19.39	-15.79	252.38	1,383.57	1,336.87	1,297.84	39.03	34.254	
3,900.00	3,898.29	3,779.86	3,756.93	20.42	19.95	-15.51	246.80	1,395.29	1,343.43	1,303.33	40.10	33.501	
4,000.00	3,998.21	3,879.42	3,855.65	20.96	20.52	-15.23	241.22	1,407.00	1,350.02	1,308.85	41.17	32.788	
4,100.00	4,098.12	3,978.99	3,954.36	21.50	21.09	-14.95	235.64	1,418.72	1,356.65	1,314.40	42.25	32.110	
4,200.00	4,198.04	4,078.55	4,053.08	22.04	21.65	-14.67	230.06	1,430.44	1,363.30	1,319.98	43.33	31.465	
4,300.00	4,297.95	4,178.11	4,151.79	22.57	22.22	-14.40	224.47	1,442.15	1,369.99	1,325.59	44.41	30.852	
4,400.00	4,397.87	4,277.68	4,250.50	23.11	22.79	-14.13	218.89	1,453.87	1,376.71	1,331.23	45.48	30.268	
4,500.00	4,497.79	4,377.24	4,349.22	23.65	23.37	-13.86	213.31	1,465.59	1,383.46	1,336.89	46.56	29.710	
4,600.00	4,597.70	4,476.80	4,447.93	24.19	23.94	-13.60	207.73	1,477.31	1,390.24	1,342.59	47.65	29.178	
4,700.00	4,697.62	4,576.37	4,546.65	24.73	24.52	-13.33	202.15	1,489.02	1,397.05	1,348.32	48.73	28.670	
4,800.00	4,797.53	4,675.93	4,645.36	25.27	25.09	-13.07	196.57	1,500.74	1,403.88	1,354.07	49.81	28.184	
4,900.00	4,897.45	4,775.49	4,744.07	25.81	25.67	-12.82	190.98	1,512.46	1,410.75	1,359.86	50.90	27.719	
5,000.00	4,997.36	4,875.06	4,842.79	26.35	26.25	-12.56	185.40	1,524.18	1,417.65	1,365.67	51.98	27.273	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #8H - OH - Plan 2 11-18-16													Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,097.28	4,974.62	4,941.50	26.89	26.83	-12.31	179.82	1,535.89	1,424.57	1,371.50	53.06	26.846		
5,200.00	5,197.19	5,074.18	5,040.22	27.43	27.41	-12.06	174.24	1,547.61	1,431.52	1,377.37	54.15	26.436		
5,300.00	5,297.11	5,173.75	5,138.93	27.97	27.99	-11.81	168.66	1,559.33	1,438.49	1,383.26	55.24	26.042		
5,400.00	5,397.03	5,273.31	5,237.64	28.51	28.58	-11.57	163.08	1,571.04	1,445.50	1,389.17	56.32	25.664		
5,500.00	5,496.94	5,372.87	5,336.36	29.05	29.16	-11.32	157.49	1,582.76	1,452.53	1,395.12	57.41	25.301		
5,600.00	5,596.86	5,472.44	5,435.07	29.59	29.75	-11.08	151.91	1,594.48	1,459.58	1,401.08	58.50	24.951		
5,700.00	5,696.77	5,572.00	5,533.79	30.13	30.33	-10.84	146.33	1,606.20	1,466.66	1,407.08	59.58	24.615		
5,800.00	5,796.69	5,671.57	5,632.50	30.67	30.92	-10.61	140.75	1,617.91	1,473.77	1,413.10	60.67	24.291		
5,900.00	5,896.60	5,771.13	5,731.21	31.21	31.50	-10.37	135.17	1,629.63	1,480.90	1,419.14	61.76	23.978		
6,000.00	5,996.52	5,870.69	5,829.93	31.75	32.09	-10.14	129.58	1,641.35	1,488.05	1,425.21	62.85	23.677		
6,100.00	6,096.43	5,970.26	5,928.64	32.29	32.68	-9.91	124.00	1,653.07	1,495.23	1,431.30	63.94	23.386		
6,200.00	6,196.35	6,069.82	6,027.36	32.83	33.26	-9.69	118.42	1,664.78	1,502.44	1,437.41	65.03	23.105		
6,300.00	6,296.27	6,169.38	6,126.07	33.37	33.85	-9.46	112.84	1,676.50	1,509.66	1,443.55	66.12	22.834		
6,400.00	6,396.18	6,268.95	6,224.78	33.92	34.44	-9.24	107.26	1,688.22	1,516.91	1,449.71	67.20	22.572		
6,500.00	6,496.10	6,368.51	6,323.50	34.46	35.03	-9.02	101.68	1,699.93	1,524.18	1,455.89	68.29	22.318		
6,600.00	6,596.01	6,468.07	6,422.21	35.00	35.62	-8.80	96.09	1,711.65	1,531.48	1,462.09	69.38	22.073		
6,700.00	6,695.93	6,567.64	6,520.92	35.54	36.21	-8.58	90.51	1,723.37	1,538.79	1,468.32	70.47	21.835		
6,800.00	6,795.84	6,667.20	6,619.64	36.08	36.80	-8.37	84.93	1,735.09	1,546.13	1,474.57	71.56	21.606		
6,900.00	6,895.76	6,766.76	6,718.35	36.62	37.39	-8.16	79.35	1,746.80	1,553.49	1,480.84	72.65	21.383		
7,000.00	6,995.67	6,866.33	6,817.07	37.17	37.98	-7.95	73.77	1,758.52	1,560.87	1,487.13	73.74	21.167		
7,100.00	7,095.59	6,965.89	6,915.78	37.71	38.57	-7.74	68.19	1,770.24	1,568.27	1,493.44	74.83	20.958		
7,200.00	7,195.51	7,065.45	7,014.49	38.25	39.16	-7.53	62.60	1,781.96	1,575.69	1,499.77	75.92	20.755		
7,300.00	7,295.42	7,165.02	7,113.21	38.79	39.76	-7.33	57.02	1,793.67	1,583.13	1,506.12	77.01	20.557		
7,400.00	7,395.34	7,264.58	7,211.92	39.33	40.35	-7.12	51.44	1,805.39	1,590.59	1,512.49	78.10	20.366		
7,500.00	7,495.25	7,364.15	7,310.64	39.88	40.94	-6.92	45.86	1,817.11	1,598.08	1,518.89	79.19	20.180		
7,600.00	7,595.17	7,463.71	7,409.35	40.42	41.53	-6.72	40.28	1,828.82	1,605.58	1,525.30	80.28	20.000		
7,700.00	7,695.08	7,563.27	7,508.06	40.96	42.13	-6.53	34.70	1,840.54	1,613.10	1,531.73	81.37	19.824		
7,800.00	7,795.00	7,662.84	7,606.78	41.50	42.72	-6.33	29.11	1,852.26	1,620.84	1,538.18	82.46	19.654		
7,900.00	7,894.91	7,762.40	7,705.49	42.05	43.31	-6.14	23.53	1,863.98	1,628.19	1,544.64	83.55	19.488		
8,000.00	7,994.83	7,861.96	7,804.21	42.59	43.91	-5.95	17.95	1,875.69	1,635.77	1,551.13	84.64	19.326		
8,100.00	8,094.75	7,961.53	7,902.92	43.13	44.50	-5.76	12.37	1,887.41	1,643.36	1,557.63	85.73	19.169		
8,200.00	8,194.66	8,061.09	8,001.63	43.67	45.10	-5.57	6.79	1,899.13	1,650.97	1,564.15	86.82	19.016		
8,300.00	8,294.58	8,160.65	8,100.35	44.22	45.69	-5.38	1.20	1,910.85	1,658.60	1,570.69	87.91	18.867		
8,400.00	8,394.49	8,260.22	8,199.06	44.76	46.29	-5.20	-4.38	1,922.56	1,666.25	1,577.25	89.00	18.722		
8,500.00	8,494.41	8,359.78	8,297.78	45.30	46.88	-5.01	-9.96	1,934.28	1,673.91	1,583.82	90.09	18.581		
8,600.00	8,594.32	8,459.34	8,396.49	45.84	47.48	-4.83	-15.54	1,946.00	1,681.59	1,590.41	91.18	18.443		
8,700.00	8,694.24	8,558.91	8,495.20	46.39	48.07	-4.65	-21.12	1,957.71	1,689.29	1,597.02	92.27	18.308		
8,800.00	8,794.15	8,658.47	8,593.92	46.93	48.67	-4.47	-26.70	1,969.43	1,697.00	1,603.65	93.36	18.177		
8,900.00	8,894.07	8,758.03	8,692.63	47.47	49.26	-4.30	-32.29	1,981.15	1,704.73	1,610.29	94.45	18.049		
9,000.00	8,993.99	8,916.35	8,849.84	48.02	50.19	-4.05	-40.29	1,997.94	1,711.63	1,615.77	95.86	17.856		
9,100.00	9,093.90	9,134.97	9,068.07	48.56	51.37	-3.90	-45.43	2,008.75	1,712.50	1,614.94	97.56	17.553		
9,200.00	9,193.82	9,260.71	9,193.82	49.10	51.99	-3.91	-45.60	2,009.10	1,708.57	1,609.83	98.73	17.305		
9,300.00	9,293.73	9,360.63	9,293.73	49.64	52.47	-12.77	-45.60	2,009.10	1,704.47	1,604.70	99.77	17.084		
9,400.00	9,393.04	9,453.95	9,386.93	50.18	52.93	-76.02	-49.02	2,009.18	1,700.19	1,599.39	100.80	16.866		
9,500.00	9,489.15	9,545.25	9,476.51	50.69	53.42	-82.58	-66.14	2,009.60	1,696.00	1,594.16	101.85	16.653		
9,600.00	9,579.12	9,637.78	9,563.36	51.18	53.93	-85.31	-97.77	2,010.36	1,692.06	1,589.15	102.91	16.441		
9,700.00	9,660.24	9,731.80	9,645.23	51.64	54.47	-87.01	-143.78	2,011.47	1,688.52	1,584.52	104.00	16.235		
9,800.00	9,730.03	9,827.56	9,719.73	52.11	55.03	-88.27	-203.73	2,012.92	1,685.50	1,580.38	105.12	16.035		
9,900.00	9,786.38	9,925.26	9,784.39	52.59	55.62	-89.26	-276.81	2,014.68	1,683.11	1,576.86	106.25	15.841		
10,000.00	9,827.57	10,025.12	9,836.67	53.09	56.26	-90.07	-361.71	2,016.73	1,681.42	1,574.02	107.41	15.654		
10,100.00	9,852.35	10,127.27	9,874.08	53.62	56.96	-90.70	-456.59	2,019.01	1,680.50	1,571.91	108.59	15.475		
10,171.92	9,859.78	10,202.21	9,890.50	54.00	57.50	-91.05	-529.64	2,020.77	1,680.32	1,570.86	109.46	15.351		

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 10 15 Fed
 Site Error: 0.00 usft
 Reference Well: 0024
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #8H - OH - Plan 2 11-18-16													Offset Site Error: 0.00 usft
Survey Program: 0-PHX+MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,200.00	9,859.99	10,231.79	9,894.33	54.15	57.71	-91.17	-558.95	2,021.48	1,680.37	1,570.57	109.80	15.304	
10,300.00	9,859.66	10,335.68	9,897.19	54.73	58.51	-91.28	-662.70	2,023.98	1,680.42	1,569.26	111.16	15.117	
10,400.00	9,859.34	10,435.68	9,896.67	55.39	59.33	-91.27	-762.67	2,026.39	1,680.40	1,567.76	112.64	14.918	
10,500.00	9,859.02	10,535.68	9,896.15	56.12	60.23	-91.27	-862.64	2,028.81	1,680.38	1,566.11	114.27	14.706	
10,600.00	9,858.70	10,635.68	9,895.62	56.92	61.18	-91.26	-962.61	2,031.22	1,680.36	1,564.32	116.04	14.481	
10,700.00	9,858.37	10,735.68	9,895.10	57.79	62.20	-91.25	-1,062.58	2,033.63	1,680.34	1,562.39	117.94	14.247	
10,800.00	9,858.05	10,835.68	9,894.58	58.73	63.28	-91.25	-1,162.55	2,036.04	1,680.32	1,560.34	119.98	14.005	
10,900.00	9,857.73	10,935.68	9,894.05	59.73	64.42	-91.24	-1,262.52	2,038.45	1,680.30	1,558.16	122.14	13.758	
11,000.00	9,857.41	11,035.68	9,893.53	60.79	65.60	-91.23	-1,362.49	2,040.86	1,680.28	1,555.87	124.41	13.506	
11,100.00	9,857.09	11,135.68	9,893.01	61.91	66.84	-91.22	-1,462.46	2,043.27	1,680.26	1,553.47	126.79	13.252	
11,200.00	9,856.76	11,235.68	9,892.48	63.08	68.13	-91.22	-1,562.43	2,045.68	1,680.24	1,550.96	129.28	12.997	
11,300.00	9,856.44	11,335.68	9,891.96	64.30	69.46	-91.21	-1,662.40	2,048.09	1,680.22	1,548.36	131.86	12.742	
11,400.00	9,856.12	11,435.68	9,891.43	65.58	70.84	-91.20	-1,762.37	2,050.50	1,680.20	1,545.66	134.54	12.488	
11,500.00	9,855.80	11,535.68	9,890.91	66.90	72.26	-91.20	-1,862.34	2,052.91	1,680.18	1,542.88	137.30	12.237	
11,600.00	9,855.47	11,635.68	9,890.39	68.26	73.71	-91.19	-1,962.31	2,055.32	1,680.16	1,540.01	140.15	11.988	
11,700.00	9,855.15	11,735.68	9,889.86	69.66	75.20	-91.18	-2,062.27	2,057.74	1,680.14	1,537.07	143.07	11.743	
11,800.00	9,854.83	11,835.68	9,889.34	71.10	76.73	-91.18	-2,162.24	2,060.15	1,680.12	1,534.05	146.07	11.502	
11,900.00	9,854.51	11,935.68	9,888.82	72.58	78.28	-91.17	-2,262.21	2,062.56	1,680.10	1,530.97	149.13	11.266	
12,000.00	9,854.18	12,035.68	9,888.29	74.09	79.87	-91.16	-2,362.18	2,064.97	1,680.08	1,527.82	152.26	11.034	
12,100.00	9,853.86	12,135.68	9,887.77	75.63	81.48	-91.16	-2,462.15	2,067.38	1,680.06	1,524.62	155.45	10.808	
12,200.00	9,853.54	12,235.68	9,887.25	77.21	83.13	-91.15	-2,562.12	2,069.79	1,680.04	1,521.35	158.69	10.587	
12,300.00	9,853.22	12,335.68	9,886.72	78.81	84.79	-91.14	-2,662.09	2,072.20	1,680.02	1,518.04	161.99	10.371	
12,400.00	9,852.90	12,435.68	9,886.20	80.44	86.48	-91.14	-2,762.06	2,074.61	1,680.00	1,514.67	165.33	10.161	
12,500.00	9,852.57	12,535.68	9,885.68	82.09	88.20	-91.13	-2,862.03	2,077.02	1,679.98	1,511.26	168.72	9.957	
12,600.00	9,852.25	12,635.68	9,885.15	83.77	89.93	-91.12	-2,962.00	2,079.43	1,679.97	1,507.80	172.16	9.758	
12,700.00	9,851.93	12,735.67	9,884.63	85.46	91.69	-91.12	-3,061.97	2,081.84	1,679.95	1,504.31	175.64	9.565	
12,800.00	9,851.61	12,835.67	9,884.10	87.18	93.46	-91.11	-3,161.94	2,084.25	1,679.93	1,500.77	179.16	9.377	
12,900.00	9,851.28	12,935.67	9,883.58	88.92	95.25	-91.10	-3,261.91	2,086.66	1,679.91	1,497.19	182.71	9.194	
13,000.00	9,850.96	13,035.67	9,883.06	90.68	97.06	-91.09	-3,361.88	2,089.08	1,679.89	1,493.59	186.30	9.017	
13,100.00	9,850.64	13,135.67	9,882.53	92.45	98.89	-91.09	-3,461.85	2,091.49	1,679.87	1,489.94	189.93	8.845	
13,200.00	9,850.32	13,235.67	9,882.01	94.25	100.72	-91.08	-3,561.82	2,093.90	1,679.85	1,486.27	193.58	8.678	
13,300.00	9,850.00	13,335.67	9,881.49	96.05	102.58	-91.07	-3,661.78	2,096.31	1,679.83	1,482.57	197.26	8.516	
13,400.00	9,849.67	13,435.67	9,880.96	97.87	104.44	-91.07	-3,761.75	2,098.72	1,679.81	1,478.84	200.97	8.358	
13,500.00	9,849.35	13,535.67	9,880.44	99.71	106.32	-91.06	-3,861.72	2,101.13	1,679.79	1,475.09	204.71	8.206	
13,600.00	9,849.03	13,635.67	9,879.92	101.56	108.22	-91.05	-3,961.69	2,103.54	1,679.77	1,471.31	208.47	8.058	
13,700.00	9,848.71	13,735.67	9,879.39	103.42	110.12	-91.05	-4,061.66	2,105.95	1,679.75	1,467.50	212.25	7.914	
13,800.00	9,848.38	13,835.67	9,878.87	105.29	112.03	-91.04	-4,161.63	2,108.36	1,679.74	1,463.68	216.06	7.774	
13,900.00	9,848.06	13,935.67	9,878.34	107.17	113.96	-91.03	-4,261.60	2,110.77	1,679.72	1,459.83	219.89	7.639	
14,000.00	9,847.74	14,035.67	9,877.82	109.07	115.89	-91.03	-4,361.57	2,113.18	1,679.70	1,455.96	223.73	7.508	
14,100.00	9,847.42	14,135.67	9,877.30	110.97	117.84	-91.02	-4,461.54	2,115.59	1,679.68	1,452.08	227.60	7.380	
14,200.00	9,847.09	14,235.67	9,876.77	112.89	119.79	-91.01	-4,561.51	2,118.01	1,679.66	1,448.18	231.48	7.256	
14,300.00	9,846.77	14,335.67	9,876.25	114.81	121.75	-91.01	-4,661.48	2,120.42	1,679.64	1,444.26	235.38	7.136	
14,400.00	9,846.45	14,435.67	9,875.73	116.74	123.72	-91.00	-4,761.45	2,122.83	1,679.62	1,440.32	239.30	7.019	
14,500.00	9,846.13	14,535.67	9,875.20	118.68	125.70	-90.99	-4,861.42	2,125.24	1,679.60	1,436.37	243.23	6.905	
14,600.00	9,845.81	14,635.67	9,874.68	120.63	127.68	-90.99	-4,961.39	2,127.65	1,679.58	1,432.40	247.18	6.795	
14,700.00	9,845.48	14,735.67	9,874.16	122.58	129.67	-90.98	-5,061.36	2,130.06	1,679.57	1,428.42	251.14	6.688	
14,800.00	9,845.16	14,835.67	9,873.63	124.54	131.67	-90.97	-5,161.32	2,132.47	1,679.55	1,424.43	255.12	6.583	
14,900.00	9,844.84	14,935.67	9,873.11	126.51	133.67	-90.96	-5,261.29	2,134.88	1,679.53	1,420.42	259.11	6.482	
15,000.00	9,844.52	15,035.67	9,872.59	128.49	135.68	-90.96	-5,361.26	2,137.29	1,679.51	1,416.40	263.11	6.383	
15,100.00	9,844.19	15,135.67	9,872.06	130.47	137.70	-90.95	-5,461.23	2,139.70	1,679.49	1,412.37	267.12	6.287	
15,140.69	9,844.03	15,176.36	9,871.85	131.28	138.52	-90.95	-5,501.91	2,140.68	1,679.59	1,410.95	268.65	6.252	
15,200.00	9,843.79	15,235.67	9,871.54	132.45	139.72	-90.94	-5,561.20	2,142.11	1,679.74	1,408.87	270.87	6.201	

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



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 10 P3 - #8H - OH - Plan 2 11-18-16														Offset Site Error:	0.00 usft
Survey Program: 0-PHX+MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Offset Wellbore Centre		Between Centres		Between Ellipses		Minimum Separation	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)		Between Centres (usft)		Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
15,300.00	9,842.88	15,366.35	9,870.85	134.43	142.35	-90.95	-5,691.87	2,143.66		1,680.21		1,404.83		275.38	6.101
15,400.00	9,841.96	15,466.35	9,870.33	136.42	144.37	-90.97	-5,791.87	2,144.25		1,680.22		1,400.82		279.40	6.014
15,500.00	9,841.04	15,566.35	9,869.81	138.42	146.39	-90.98	-5,891.86	2,144.83		1,680.22		1,396.80		283.42	5.928
15,600.00	9,840.12	15,666.35	9,869.28	140.41	148.41	-90.99	-5,991.86	2,145.41		1,680.23		1,392.77		287.46	5.845
15,700.00	9,839.19	15,766.35	9,868.76	142.42	150.44	-91.01	-6,091.85	2,146.00		1,680.24		1,388.74		291.50	5.764
15,800.00	9,838.27	15,866.35	9,868.24	144.42	152.47	-91.02	-6,191.85	2,146.58		1,680.24		1,384.69		295.55	5.685
15,900.00	9,837.35	15,966.35	9,867.71	146.43	154.51	-91.04	-6,291.85	2,147.17		1,680.25		1,380.64		299.61	5.608
16,000.00	9,836.43	16,066.35	9,867.19	148.45	156.55	-91.05	-6,391.84	2,147.75		1,680.26		1,376.58		303.68	5.533
16,100.00	9,835.51	16,166.35	9,866.67	150.47	158.59	-91.06	-6,491.84	2,148.34		1,680.27		1,372.52		307.75	5.460
16,200.00	9,834.59	16,266.34	9,866.14	152.49	160.64	-91.08	-6,591.84	2,148.92		1,680.27		1,368.44		311.83	5.388
16,300.00	9,833.67	16,366.34	9,865.62	154.52	162.69	-91.09	-6,691.83	2,149.50		1,680.28		1,364.36		315.92	5.319
16,400.00	9,832.75	16,466.34	9,865.09	156.55	164.74	-91.10	-6,791.83	2,150.09		1,680.29		1,360.27		320.02	5.251
16,500.00	9,831.83	16,566.34	9,864.57	158.58	166.80	-91.12	-6,891.82	2,150.67		1,680.30		1,356.18		324.12	5.184
16,600.00	9,830.91	16,666.34	9,864.05	160.62	168.86	-91.13	-6,991.82	2,151.26		1,680.31		1,352.08		328.22	5.119
16,700.00	9,829.99	16,766.34	9,863.52	162.66	170.93	-91.14	-7,091.82	2,151.84		1,680.31		1,347.98		332.34	5.056
16,800.00	9,829.06	16,866.34	9,863.00	164.70	172.99	-91.16	-7,191.81	2,152.43		1,680.32		1,343.87		336.46	4.994
16,900.00	9,828.14	16,966.34	9,862.48	166.75	175.06	-91.17	-7,291.81	2,153.01		1,680.33		1,339.75		340.58	4.934
17,000.00	9,827.22	17,066.34	9,861.95	168.80	177.14	-91.18	-7,391.80	2,153.60		1,680.34		1,335.63		344.71	4.875
17,100.00	9,826.30	17,166.34	9,861.43	170.85	179.21	-91.20	-7,491.80	2,154.18		1,680.35		1,331.50		348.85	4.817
17,200.00	9,825.38	17,266.34	9,860.91	172.90	181.29	-91.21	-7,591.80	2,154.76		1,680.36		1,327.37		352.98	4.760
17,300.00	9,824.46	17,366.34	9,860.38	174.96	183.37	-91.22	-7,691.79	2,155.35		1,680.37		1,323.24		357.13	4.705
17,400.00	9,823.54	17,466.34	9,859.86	177.02	185.45	-91.24	-7,791.79	2,155.93		1,680.37		1,319.10		361.28	4.651
17,500.00	9,822.62	17,566.33	9,859.34	179.08	187.54	-91.25	-7,891.78	2,156.52		1,680.38		1,314.95		365.43	4.598
17,600.00	9,821.70	17,666.33	9,858.81	181.14	189.63	-91.27	-7,991.78	2,157.10		1,680.39		1,310.80		369.59	4.547
17,700.00	9,820.78	17,766.33	9,858.29	183.21	191.72	-91.28	-8,091.78	2,157.69		1,680.40		1,306.65		373.75	4.496
17,800.00	9,819.86	17,866.33	9,857.76	185.27	193.81	-91.29	-8,191.77	2,158.27		1,680.41		1,302.50		377.92	4.447
17,900.00	9,818.94	17,966.33	9,857.24	187.34	195.90	-91.31	-8,291.77	2,158.85		1,680.42		1,298.34		382.08	4.398
18,000.00	9,818.01	18,066.33	9,856.72	189.42	198.00	-91.32	-8,391.77	2,159.44		1,680.43		1,294.17		386.26	4.351
18,100.00	9,817.09	18,166.33	9,856.19	191.49	200.09	-91.33	-8,491.76	2,160.02		1,680.44		1,290.00		390.43	4.304
18,200.00	9,816.17	18,266.33	9,855.67	193.57	202.19	-91.35	-8,591.76	2,160.61		1,680.45		1,285.83		394.61	4.258
18,300.00	9,815.25	18,366.33	9,855.15	195.64	204.30	-91.36	-8,691.75	2,161.19		1,680.46		1,281.66		398.80	4.214
18,400.00	9,814.33	18,466.33	9,854.62	197.72	206.40	-91.37	-8,791.75	2,161.78		1,680.47		1,277.48		402.98	4.170
18,500.00	9,813.41	18,566.33	9,854.10	199.80	208.50	-91.39	-8,891.75	2,162.36		1,680.48		1,273.30		407.17	4.127
18,600.00	9,812.49	18,666.33	9,853.58	201.89	210.61	-91.40	-8,991.74	2,162.94		1,680.49		1,269.12		411.37	4.085
18,700.00	9,811.57	18,766.32	9,853.05	203.97	212.72	-91.41	-9,091.74	2,163.53		1,680.50		1,264.94		415.56	4.044
18,800.00	9,810.65	18,866.32	9,852.53	206.06	214.83	-91.43	-9,191.73	2,164.11		1,680.51		1,260.75		419.76	4.003
18,900.00	9,809.73	18,966.32	9,852.01	208.14	216.94	-91.44	-9,291.73	2,164.70		1,680.52		1,256.56		423.96	3.964
19,000.00	9,808.81	19,066.32	9,851.48	210.23	219.05	-91.46	-9,391.73	2,165.28		1,680.53		1,252.36		428.17	3.925
19,100.00	9,807.88	19,166.32	9,850.96	212.32	221.16	-91.47	-9,491.72	2,165.87		1,680.54		1,248.17		432.37	3.887
19,200.00	9,806.96	19,266.32	9,850.44	214.41	223.28	-91.48	-9,591.72	2,166.45		1,680.55		1,243.97		436.58	3.849
19,300.00	9,806.04	19,366.32	9,849.91	216.51	225.40	-91.50	-9,691.72	2,167.03		1,680.56		1,239.77		440.79	3.813
19,400.00	9,805.12	19,466.32	9,849.39	218.60	227.51	-91.51	-9,791.71	2,167.62		1,680.57		1,235.56		445.01	3.777
19,500.00	9,804.20	19,566.32	9,848.86	220.69	229.63	-91.52	-9,891.71	2,168.20		1,680.58		1,231.36		449.22	3.741
19,600.00	9,803.28	19,666.32	9,848.34	222.79	231.75	-91.54	-9,991.70	2,168.79		1,680.59		1,227.15		453.44	3.706
19,700.00	9,802.36	19,766.32	9,847.82	224.89	233.87	-91.55	-10,091.70	2,169.37		1,680.60		1,222.94		457.66	3.672
19,800.00	9,801.44	19,866.32	9,847.29	226.99	236.00	-91.56	-10,191.70	2,169.96		1,680.61		1,218.73		461.89	3.639
19,900.00	9,800.52	19,966.32	9,846.77	229.09	238.12	-91.58	-10,291.69	2,170.54		1,680.63		1,214.52		466.11	3.606
20,000.00	9,799.60	20,066.31	9,846.25	231.19	240.24	-91.59	-10,391.69	2,171.12		1,680.64		1,210.30		470.34	3.573
20,100.00	9,798.68	20,166.31	9,845.72	233.29	242.37	-91.60	-10,491.68	2,171.71		1,680.65		1,206.08		474.57	3.541
20,173.70	9,798.00	20,240.01	9,845.34	234.84	243.94	-91.61	-10,565.38	2,172.14		1,680.66		1,202.97		477.68	3.518 ES, SF

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



Phoenix Technology Services LP

Anticollision Report

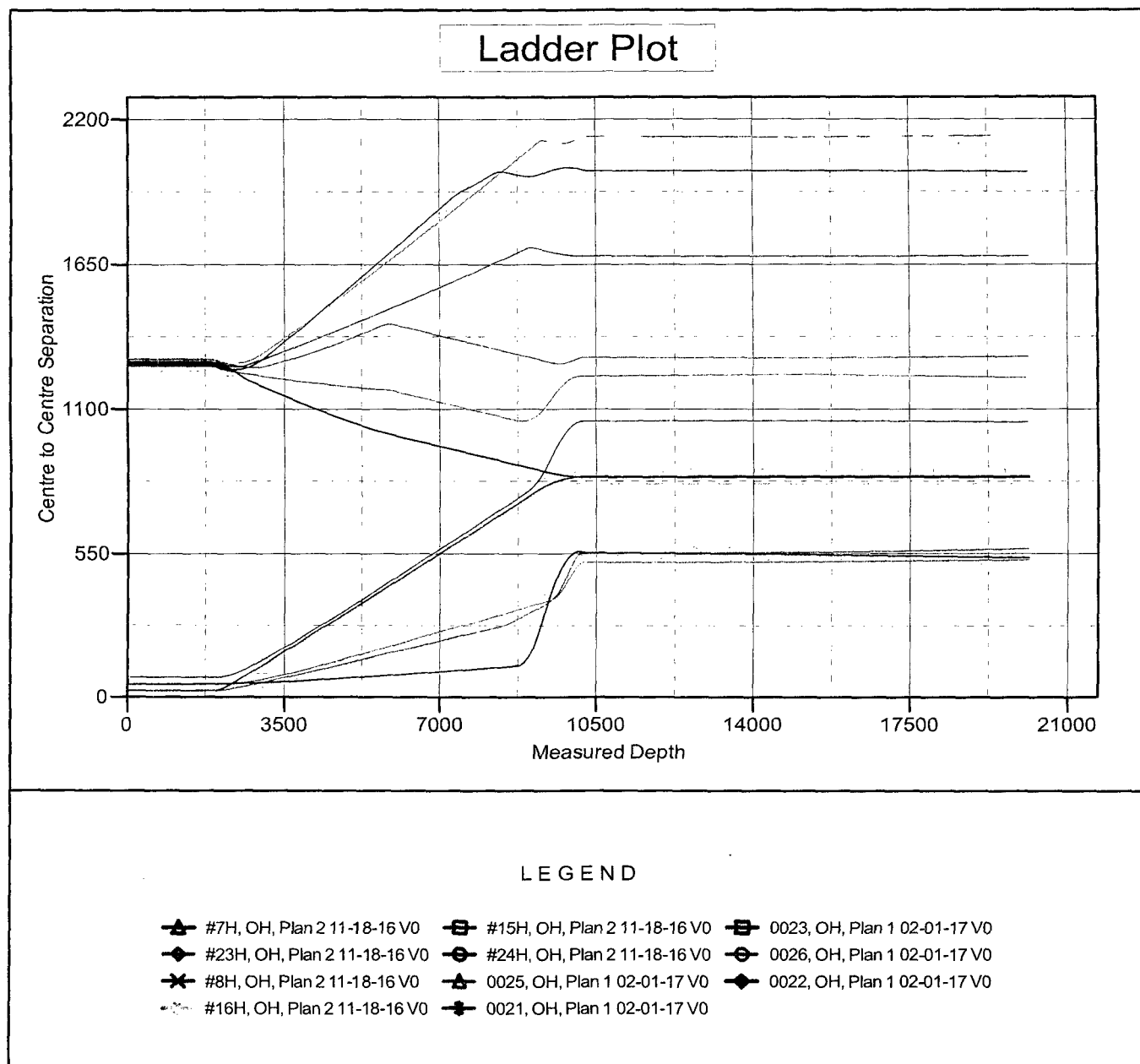


Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Reference Depths are relative to RKB @ 3300.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: 0024
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.08°



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



Phoenix Technology Services LP

Anticollision Report



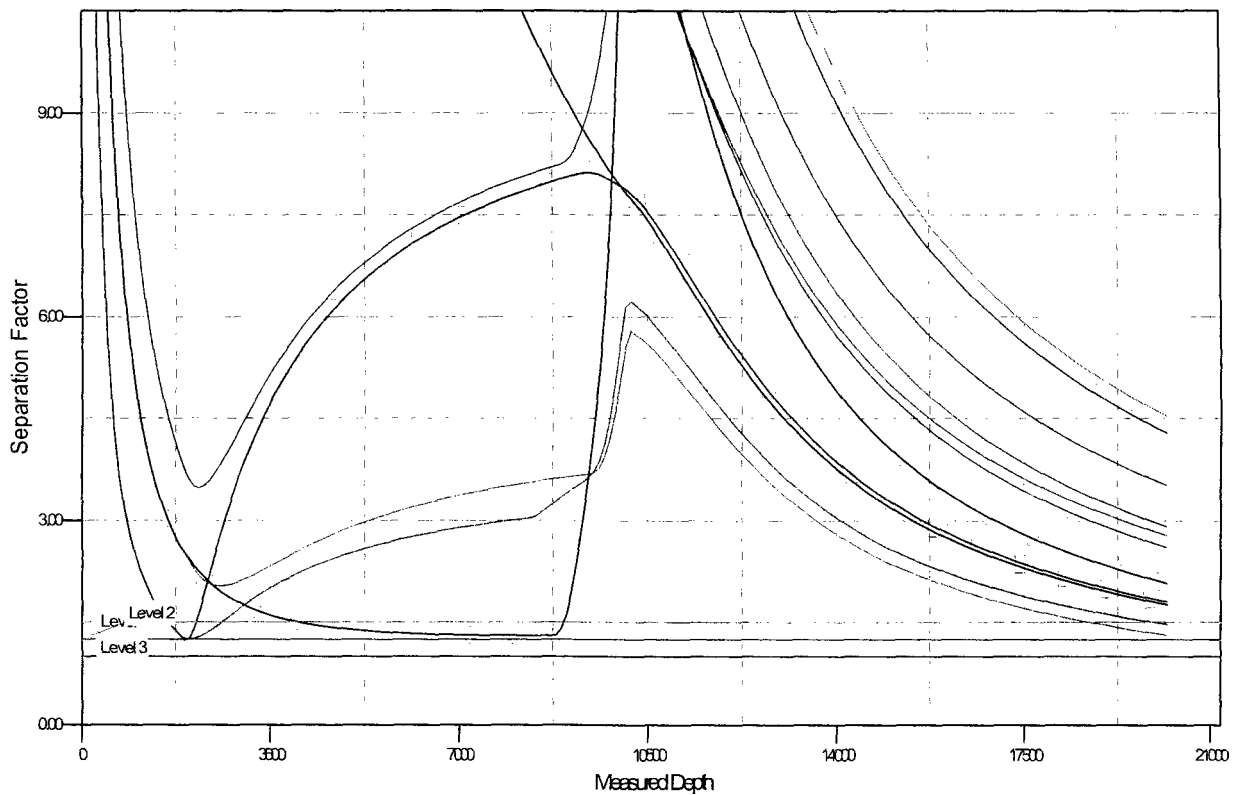
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 10 15 Fed
Site Error: 0.00 usft
Reference Well: 0024
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Reference Depths are relative to RKB @ 3300.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: 0024
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.08°

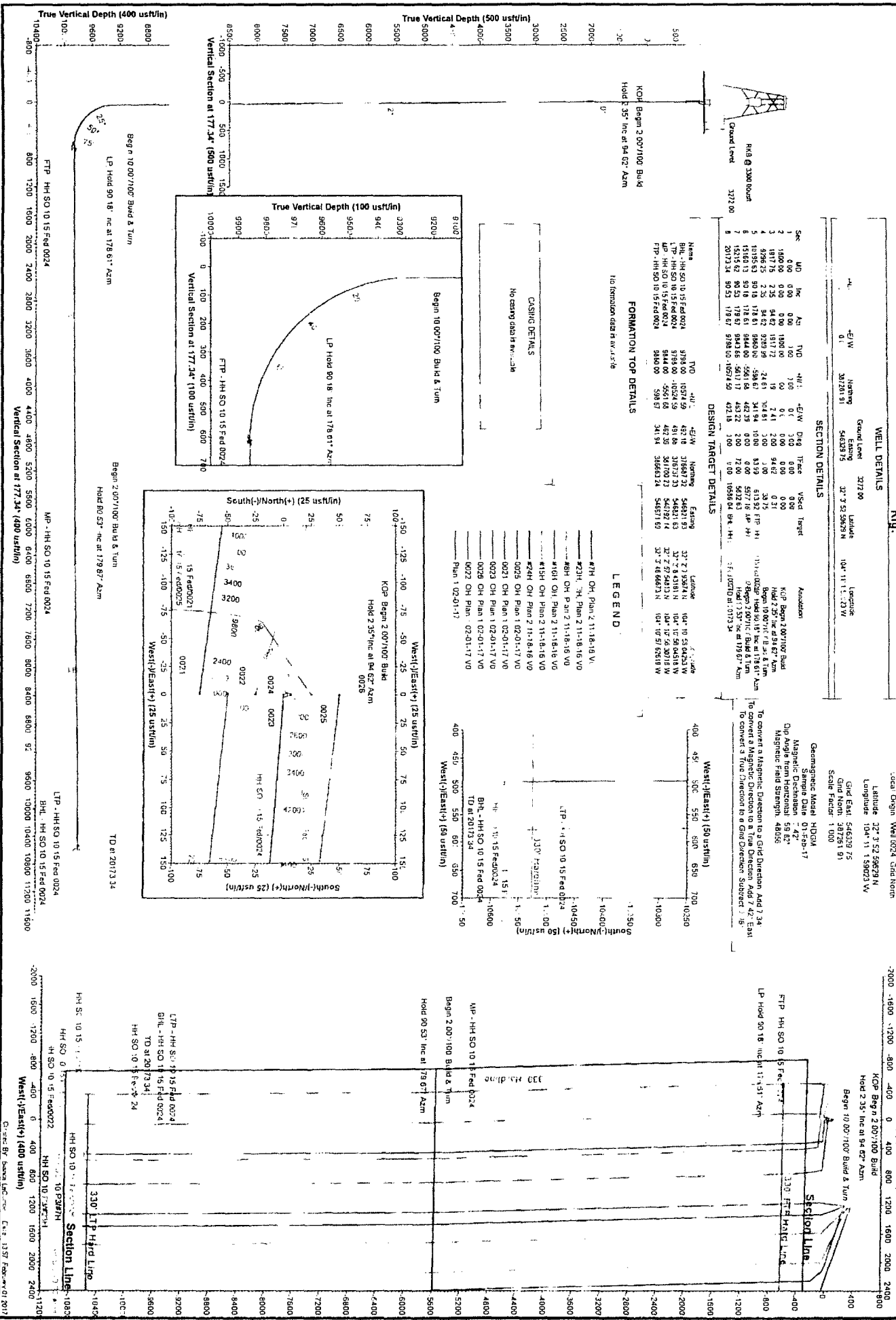
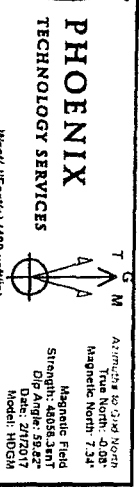
Separation Factor Plot



LEGEND

- | | | |
|----------------------------------|--------------------------------|--------------------------------|
| ▲ #7H, OH, Plan 2 11-18-16 V0 | ■ #15H, OH, Plan 2 11-18-16 V0 | ■ 0023, OH, Plan 1 02-01-17 V0 |
| ◆ #23H, OH, Plan 2 11-18-16 V0 | ● #24H, OH, Plan 2 11-18-16 V0 | ● 0026, OH, Plan 1 02-01-17 V0 |
| ✕ #8H, OH, Plan 2 11-18-16 V0 | ▲ 0025, OH, Plan 1 02-01-17 V0 | ◆ 0022, OH, Plan 1 02-01-17 V0 |
| --- #16H, OH, Plan 2 11-18-16 V0 | ◆ 0021, OH, Plan 1 02-01-17 V0 | |

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





Chevron

Eddy County, NM (NAD27 NME)
HH SO 10 15 Fed
0024

OH

Plan: Plan 1 02-01-17

Standard Planning Report

01 February, 2017





Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 15 Fed
Well: 0024
Wellbore: OH
Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site HH SO 10 15 Fed

Site Position:
From: Map
Position Uncertainty: 0.00 usft
Northing: 387,187.00 usft
Easting: 546,329.00 usft
Slot Radius: 13-3/16 "
Latitude: 32° 3' 51.85491 N
Longitude: 104° 11' 1.60017 W
Grid Convergence: 0.08

Well 0024

Well Position +N/-S 74.91 usft **Northing:** 387,261.91 usft **Latitude:** 32° 3' 52.59629 N
 +E/-W 0.75 usft **Easting:** 546,329.75 usft **Longitude:** 104° 11' 1.59023 W
Position Uncertainty 0.00 usft **Wellhead Elevation:** 0.00 usft **Ground Level:** 3,272.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HOGM	2/1/2017	7.42	59.82	48,056

Design Plan 1 02-01-17

Audit Notes:

Version: Phase: PROTOTYPE Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	177.34

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,917.75	2.35	94.62	1,917.72	-0.19	2.41	2.00	2.00	0.00	94.62	
9,296.25	2.35	94.62	9,289.99	-24.61	304.61	0.00	0.00	0.00	0.00	
10,195.63	90.18	178.61	9,860.00	-598.68	341.94	10.00	9.77	9.34	83.99	FTP - HH SO 10 15
15,160.13	90.18	178.61	9,844.00	-5,561.68	462.39	0.00	0.00	0.00	0.00	MP - HH SO 10 15
15,215.62	90.53	179.67	9,843.66	-5,617.17	463.22	2.00	0.62	1.90	72.00	
20,173.34	90.53	179.67	9,798.00	-10,574.59	492.18	0.00	0.00	0.00	0.00	BHL HH SO 10 15



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 15 Fed
Well: 0024
Wellbore: OH
Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	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
KOP, Begin 2.00°/100' Build									
1,900.00	2.00	94.62	1,899.98	-0.14	1.74	0.22	2.00	2.00	0.00
1,917.75	2.35	94.62	1,917.72	-0.19	2.41	0.31	2.00	2.00	0.00
Hold 2.35° Inc at 94.62° Azm									
2,000.00	2.35	94.62	1,999.90	-0.47	5.78	0.74	0.00	0.00	0.00
2,100.00	2.35	94.62	2,099.81	-0.80	9.88	1.26	0.00	0.00	0.00
2,200.00	2.35	94.62	2,199.73	-1.13	13.97	1.78	0.00	0.00	0.00
2,300.00	2.35	94.62	2,299.64	-1.46	18.07	2.30	0.00	0.00	0.00
2,400.00	2.35	94.62	2,399.56	-1.79	22.16	2.82	0.00	0.00	0.00
2,500.00	2.35	94.62	2,499.48	-2.12	26.26	3.34	0.00	0.00	0.00
2,600.00	2.35	94.62	2,599.39	-2.45	30.35	3.86	0.00	0.00	0.00
2,700.00	2.35	94.62	2,699.31	-2.78	34.45	4.38	0.00	0.00	0.00
2,800.00	2.35	94.62	2,799.22	-3.11	38.55	4.90	0.00	0.00	0.00
2,900.00	2.35	94.62	2,899.14	-3.45	42.64	5.42	0.00	0.00	0.00
3,000.00	2.35	94.62	2,999.05	-3.78	46.74	5.95	0.00	0.00	0.00
3,100.00	2.35	94.62	3,098.97	-4.11	50.83	6.47	0.00	0.00	0.00
3,200.00	2.35	94.62	3,198.88	-4.44	54.93	6.99	0.00	0.00	0.00
3,300.00	2.35	94.62	3,298.80	-4.77	59.02	7.51	0.00	0.00	0.00
3,400.00	2.35	94.62	3,398.72	-5.10	63.12	8.03	0.00	0.00	0.00
3,500.00	2.35	94.62	3,498.63	-5.43	67.22	8.55	0.00	0.00	0.00
3,600.00	2.35	94.62	3,598.55	-5.76	71.31	9.07	0.00	0.00	0.00
3,700.00	2.35	94.62	3,698.46	-6.09	75.41	9.59	0.00	0.00	0.00
3,800.00	2.35	94.62	3,798.38	-6.42	79.50	10.11	0.00	0.00	0.00
3,900.00	2.35	94.62	3,898.29	-6.76	83.60	10.63	0.00	0.00	0.00
4,000.00	2.35	94.62	3,998.21	-7.09	87.69	11.16	0.00	0.00	0.00
4,100.00	2.35	94.62	4,098.12	-7.42	91.79	11.68	0.00	0.00	0.00
4,200.00	2.35	94.62	4,198.04	-7.75	95.89	12.20	0.00	0.00	0.00
4,300.00	2.35	94.62	4,297.95	-8.08	99.98	12.72	0.00	0.00	0.00
4,400.00	2.35	94.62	4,397.87	-8.41	104.08	13.24	0.00	0.00	0.00
4,500.00	2.35	94.62	4,497.79	-8.74	108.17	13.76	0.00	0.00	0.00
4,600.00	2.35	94.62	4,597.70	-9.07	112.27	14.28	0.00	0.00	0.00
4,700.00	2.35	94.62	4,697.62	-9.40	116.36	14.80	0.00	0.00	0.00
4,800.00	2.35	94.62	4,797.53	-9.73	120.46	15.32	0.00	0.00	0.00
4,900.00	2.35	94.62	4,897.45	-10.06	124.56	15.84	0.00	0.00	0.00
5,000.00	2.35	94.62	4,997.36	-10.40	128.65	16.37	0.00	0.00	0.00
5,100.00	2.35	94.62	5,097.28	-10.73	132.75	16.89	0.00	0.00	0.00
5,200.00	2.35	94.62	5,197.19	-11.06	136.84	17.41	0.00	0.00	0.00
5,300.00	2.35	94.62	5,297.11	-11.39	140.94	17.93	0.00	0.00	0.00
5,400.00	2.35	94.62	5,397.03	-11.72	145.03	18.45	0.00	0.00	0.00
5,500.00	2.35	94.62	5,496.94	-12.05	149.13	18.97	0.00	0.00	0.00
5,600.00	2.35	94.62	5,596.86	-12.38	153.23	19.49	0.00	0.00	0.00
5,700.00	2.35	94.62	5,696.77	-12.71	157.32	20.01	0.00	0.00	0.00
5,800.00	2.35	94.62	5,796.69	-13.04	161.42	20.53	0.00	0.00	0.00
5,900.00	2.35	94.62	5,896.60	-13.37	165.51	21.05	0.00	0.00	0.00
6,000.00	2.35	94.62	5,996.52	-13.71	169.61	21.58	0.00	0.00	0.00
6,100.00	2.35	94.62	6,096.43	-14.04	173.70	22.10	0.00	0.00	0.00
6,200.00	2.35	94.62	6,196.35	-14.37	177.80	22.62	0.00	0.00	0.00
6,300.00	2.35	94.62	6,296.27	-14.70	181.89	23.14	0.00	0.00	0.00
6,400.00	2.35	94.62	6,396.18	-15.03	185.99	23.66	0.00	0.00	0.00
6,500.00	2.35	94.62	6,496.10	-15.36	190.09	24.18	0.00	0.00	0.00
6,600.00	2.35	94.62	6,596.01	-15.69	194.18	24.70	0.00	0.00	0.00
6,700.00	2.35	94.62	6,695.93	-16.02	198.28	25.22	0.00	0.00	0.00



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 10 15 Fed
 Well: 0024
 Wellbore: OH
 Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,800.00	2.35	94.62	6,795.84	-16.35	202.37	25.74	0.00	0.00	0.00
6,900.00	2.35	94.62	6,895.76	-16.68	206.47	26.26	0.00	0.00	0.00
7,000.00	2.35	94.62	6,995.67	-17.01	210.56	26.79	0.00	0.00	0.00
7,100.00	2.35	94.62	7,095.59	-17.35	214.66	27.31	0.00	0.00	0.00
7,200.00	2.35	94.62	7,195.51	-17.68	218.76	27.83	0.00	0.00	0.00
7,300.00	2.35	94.62	7,295.42	-18.01	222.85	28.35	0.00	0.00	0.00
7,400.00	2.35	94.62	7,395.34	-18.34	226.95	28.87	0.00	0.00	0.00
7,500.00	2.35	94.62	7,495.25	-18.67	231.04	29.39	0.00	0.00	0.00
7,600.00	2.35	94.62	7,595.17	-19.00	235.14	29.91	0.00	0.00	0.00
7,700.00	2.35	94.62	7,695.08	-19.33	239.23	30.43	0.00	0.00	0.00
7,800.00	2.35	94.62	7,795.00	-19.66	243.33	30.95	0.00	0.00	0.00
7,900.00	2.35	94.62	7,894.91	-19.99	247.43	31.47	0.00	0.00	0.00
8,000.00	2.35	94.62	7,994.83	-20.32	251.52	32.00	0.00	0.00	0.00
8,100.00	2.35	94.62	8,094.75	-20.66	255.62	32.52	0.00	0.00	0.00
8,200.00	2.35	94.62	8,194.66	-20.99	259.71	33.04	0.00	0.00	0.00
8,300.00	2.35	94.62	8,294.58	-21.32	263.81	33.56	0.00	0.00	0.00
8,400.00	2.35	94.62	8,394.49	-21.65	267.90	34.08	0.00	0.00	0.00
8,500.00	2.35	94.62	8,494.41	-21.98	272.00	34.60	0.00	0.00	0.00
8,600.00	2.35	94.62	8,594.32	-22.31	276.10	35.12	0.00	0.00	0.00
8,700.00	2.35	94.62	8,694.24	-22.64	280.19	35.64	0.00	0.00	0.00
8,800.00	2.35	94.62	8,794.15	-22.97	284.29	36.16	0.00	0.00	0.00
8,900.00	2.35	94.62	8,894.07	-23.30	288.38	36.68	0.00	0.00	0.00
9,000.00	2.35	94.62	8,993.99	-23.63	292.48	37.21	0.00	0.00	0.00
9,100.00	2.35	94.62	9,093.90	-23.96	296.57	37.73	0.00	0.00	0.00
9,200.00	2.35	94.62	9,193.82	-24.30	300.67	38.25	0.00	0.00	0.00
9,296.25	2.35	94.62	9,289.99	-24.61	304.61	38.75	0.00	0.00	0.00
Begin 10.00°/100' Build & Turn									
9,300.00	2.42	103.47	9,293.73	-24.64	304.77	38.78	10.00	1.82	236.17
9,400.00	10.87	166.31	9,393.04	-34.32	309.06	48.65	10.00	8.45	62.84
9,500.00	20.75	172.40	9,489.15	-61.11	313.65	75.63	10.00	9.87	6.10
9,600.00	30.70	174.65	9,579.12	-104.19	318.38	118.88	10.00	9.95	2.25
9,700.00	40.68	175.87	9,660.24	-162.26	323.12	177.11	10.00	9.98	1.22
9,800.00	50.66	176.68	9,730.03	-233.56	327.71	248.54	10.00	9.98	0.81
9,900.00	60.65	177.28	9,786.38	-315.90	332.03	331.00	10.00	9.99	0.60
10,000.00	70.64	177.78	9,827.57	-406.80	335.93	421.98	10.00	9.99	0.49
10,100.00	80.63	178.22	9,852.35	-503.49	339.30	518.72	10.00	9.99	0.44
10,195.63	90.18	178.61	9,860.00	-598.68	341.94	613.92	10.00	9.99	0.41
LP, Hold 90.18° Inc at 178.61° Azm - FTP - HH SO 10 15 Fed 0024									
10,200.00	90.18	178.61	9,859.99	-603.04	342.05	618.29	0.00	0.00	0.00
10,300.00	90.18	178.61	9,859.66	-703.01	344.47	718.26	0.00	0.00	0.00
10,400.00	90.18	178.61	9,859.34	-802.98	346.90	818.24	0.00	0.00	0.00
10,500.00	90.18	178.61	9,859.02	-902.95	349.32	918.21	0.00	0.00	0.00
10,600.00	90.18	178.61	9,858.70	-1,002.92	351.75	1,018.19	0.00	0.00	0.00
10,700.00	90.18	178.61	9,858.37	-1,102.89	354.18	1,118.16	0.00	0.00	0.00
10,800.00	90.18	178.61	9,858.05	-1,202.86	356.60	1,218.14	0.00	0.00	0.00
10,900.00	90.18	178.61	9,857.73	-1,302.83	359.03	1,318.11	0.00	0.00	0.00
11,000.00	90.18	178.61	9,857.41	-1,402.80	361.45	1,418.09	0.00	0.00	0.00
11,100.00	90.18	178.61	9,857.09	-1,502.77	363.88	1,518.06	0.00	0.00	0.00
11,200.00	90.18	178.61	9,856.76	-1,602.74	366.31	1,618.04	0.00	0.00	0.00
11,300.00	90.18	178.61	9,856.44	-1,702.71	368.73	1,718.01	0.00	0.00	0.00
11,400.00	90.18	178.61	9,856.12	-1,802.68	371.16	1,817.99	0.00	0.00	0.00
11,500.00	90.18	178.61	9,855.80	-1,902.65	373.59	1,917.96	0.00	0.00	0.00
11,600.00	90.18	178.61	9,855.47	-2,002.62	376.01	2,017.94	0.00	0.00	0.00
11,700.00	90.18	178.61	9,855.15	-2,102.59	378.44	2,117.91	0.00	0.00	0.00



Phoenix Technology Services LP Planning Report



Database: Compass 5000 GCR
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Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 15 Fed
Well: 0024
Wellbore: OH
Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,800.00	90.18	178.61	9,854.83	-2,202.56	380.86	2,217.89	0.00	0.00	0.00
11,900.00	90.18	178.61	9,854.51	-2,302.53	383.29	2,317.86	0.00	0.00	0.00
12,000.00	90.18	178.61	9,854.18	-2,402.50	385.72	2,417.83	0.00	0.00	0.00
12,100.00	90.18	178.61	9,853.86	-2,502.47	388.14	2,517.81	0.00	0.00	0.00
12,200.00	90.18	178.61	9,853.54	-2,602.44	390.57	2,617.78	0.00	0.00	0.00
12,300.00	90.18	178.61	9,853.22	-2,702.41	392.99	2,717.76	0.00	0.00	0.00
12,400.00	90.18	178.61	9,852.90	-2,802.38	395.42	2,817.73	0.00	0.00	0.00
12,500.00	90.18	178.61	9,852.57	-2,902.35	397.85	2,917.71	0.00	0.00	0.00
12,600.00	90.18	178.61	9,852.25	-3,002.32	400.27	3,017.68	0.00	0.00	0.00
12,700.00	90.18	178.61	9,851.93	-3,102.29	402.70	3,117.66	0.00	0.00	0.00
12,800.00	90.18	178.61	9,851.61	-3,202.26	405.13	3,217.63	0.00	0.00	0.00
12,900.00	90.18	178.61	9,851.28	-3,302.23	407.55	3,317.61	0.00	0.00	0.00
13,000.00	90.18	178.61	9,850.96	-3,402.20	409.98	3,417.58	0.00	0.00	0.00
13,100.00	90.18	178.61	9,850.64	-3,502.17	412.40	3,517.56	0.00	0.00	0.00
13,200.00	90.18	178.61	9,850.32	-3,602.14	414.83	3,617.53	0.00	0.00	0.00
13,300.00	90.18	178.61	9,850.00	-3,702.11	417.26	3,717.51	0.00	0.00	0.00
13,400.00	90.18	178.61	9,849.67	-3,802.08	419.68	3,817.48	0.00	0.00	0.00
13,500.00	90.18	178.61	9,849.35	-3,902.05	422.11	3,917.46	0.00	0.00	0.00
13,600.00	90.18	178.61	9,849.03	-4,002.02	424.53	4,017.43	0.00	0.00	0.00
13,700.00	90.18	178.61	9,848.71	-4,101.99	426.96	4,117.41	0.00	0.00	0.00
13,800.00	90.18	178.61	9,848.38	-4,201.96	429.39	4,217.38	0.00	0.00	0.00
13,900.00	90.18	178.61	9,848.06	-4,301.93	431.81	4,317.35	0.00	0.00	0.00
14,000.00	90.18	178.61	9,847.74	-4,401.90	434.24	4,417.33	0.00	0.00	0.00
14,100.00	90.18	178.61	9,847.42	-4,501.87	436.67	4,517.30	0.00	0.00	0.00
14,200.00	90.18	178.61	9,847.09	-4,601.84	439.09	4,617.28	0.00	0.00	0.00
14,300.00	90.18	178.61	9,846.77	-4,701.81	441.52	4,717.25	0.00	0.00	0.00
14,400.00	90.18	178.61	9,846.45	-4,801.78	443.94	4,817.23	0.00	0.00	0.00
14,500.00	90.18	178.61	9,846.13	-4,901.75	446.37	4,917.20	0.00	0.00	0.00
14,600.00	90.18	178.61	9,845.81	-5,001.72	448.80	5,017.18	0.00	0.00	0.00
14,700.00	90.18	178.61	9,845.48	-5,101.69	451.22	5,117.15	0.00	0.00	0.00
14,800.00	90.18	178.61	9,845.16	-5,201.66	453.65	5,217.13	0.00	0.00	0.00
14,900.00	90.18	178.61	9,844.84	-5,301.63	456.07	5,317.10	0.00	0.00	0.00
15,000.00	90.18	178.61	9,844.52	-5,401.60	458.50	5,417.08	0.00	0.00	0.00
15,100.00	90.18	178.61	9,844.19	-5,501.57	460.93	5,517.05	0.00	0.00	0.00
15,160.13	90.18	178.61	9,844.00	-5,561.68	462.39	5,577.16	0.00	0.00	0.00
Begin 2.00°/100' Build & Turn - MP - HH SO 10 15 Fed 0024									
15,200.00	90.43	179.37	9,843.79	-5,601.55	463.09	5,617.02	2.00	0.62	1.90
15,215.62	90.53	179.67	9,843.66	-5,617.17	463.22	5,632.63	2.00	0.62	1.90
Hold 90.53° Inc at 179.67° Azm									
15,300.00	90.53	179.67	9,842.88	-5,701.54	463.71	5,716.93	0.00	0.00	0.00
15,400.00	90.53	179.67	9,841.96	-5,801.53	464.30	5,816.85	0.00	0.00	0.00
15,500.00	90.53	179.67	9,841.04	-5,901.53	464.88	5,916.76	0.00	0.00	0.00
15,600.00	90.53	179.67	9,840.12	-6,001.52	465.47	6,016.67	0.00	0.00	0.00
15,700.00	90.53	179.67	9,839.19	-6,101.52	466.05	6,116.59	0.00	0.00	0.00
15,800.00	90.53	179.67	9,838.27	-6,201.51	466.63	6,216.50	0.00	0.00	0.00
15,900.00	90.53	179.67	9,837.35	-6,301.50	467.22	6,316.41	0.00	0.00	0.00
16,000.00	90.53	179.67	9,836.43	-6,401.50	467.80	6,416.33	0.00	0.00	0.00
16,100.00	90.53	179.67	9,835.51	-6,501.49	468.39	6,516.24	0.00	0.00	0.00
16,200.00	90.53	179.67	9,834.59	-6,601.49	468.97	6,616.15	0.00	0.00	0.00
16,300.00	90.53	179.67	9,833.67	-6,701.48	469.55	6,716.06	0.00	0.00	0.00
16,400.00	90.53	179.67	9,832.75	-6,801.47	470.14	6,815.98	0.00	0.00	0.00
16,500.00	90.53	179.67	9,831.83	-6,901.47	470.72	6,915.89	0.00	0.00	0.00
16,600.00	90.53	179.67	9,830.91	-7,001.46	471.31	7,015.80	0.00	0.00	0.00



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 10 15 Fed
 Well: 0024
 Wellbore: OH
 Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
 TVD Reference: RKB @ 3300.00usft
 MD Reference: RKB @ 3300.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
16,700.00	90.53	179.67	9,829.99	-7,101.46	471.89	7,115.72	0.00	0.00	0.00
16,800.00	90.53	179.67	9,829.06	-7,201.45	472.47	7,215.63	0.00	0.00	0.00
16,900.00	90.53	179.67	9,828.14	-7,301.45	473.06	7,315.54	0.00	0.00	0.00
17,000.00	90.53	179.67	9,827.22	-7,401.44	473.64	7,415.46	0.00	0.00	0.00
17,100.00	90.53	179.67	9,826.30	-7,501.43	474.23	7,515.37	0.00	0.00	0.00
17,200.00	90.53	179.67	9,825.38	-7,601.43	474.81	7,615.28	0.00	0.00	0.00
17,300.00	90.53	179.67	9,824.46	-7,701.42	475.39	7,715.20	0.00	0.00	0.00
17,400.00	90.53	179.67	9,823.54	-7,801.42	475.98	7,815.11	0.00	0.00	0.00
17,500.00	90.53	179.67	9,822.62	-7,901.41	476.56	7,915.02	0.00	0.00	0.00
17,600.00	90.53	179.67	9,821.70	-8,001.40	477.15	8,014.93	0.00	0.00	0.00
17,700.00	90.53	179.67	9,820.78	-8,101.40	477.73	8,114.85	0.00	0.00	0.00
17,800.00	90.53	179.67	9,819.86	-8,201.39	478.31	8,214.76	0.00	0.00	0.00
17,900.00	90.53	179.67	9,818.94	-8,301.39	478.90	8,314.67	0.00	0.00	0.00
18,000.00	90.53	179.67	9,818.01	-8,401.38	479.48	8,414.59	0.00	0.00	0.00
18,100.00	90.53	179.67	9,817.09	-8,501.37	480.07	8,514.50	0.00	0.00	0.00
18,200.00	90.53	179.67	9,816.17	-8,601.37	480.65	8,614.41	0.00	0.00	0.00
18,300.00	90.53	179.67	9,815.25	-8,701.36	481.23	8,714.33	0.00	0.00	0.00
18,400.00	90.53	179.67	9,814.33	-8,801.36	481.82	8,814.24	0.00	0.00	0.00
18,500.00	90.53	179.67	9,813.41	-8,901.35	482.40	8,914.15	0.00	0.00	0.00
18,600.00	90.53	179.67	9,812.49	-9,001.34	482.99	9,014.07	0.00	0.00	0.00
18,700.00	90.53	179.67	9,811.57	-9,101.34	483.57	9,113.98	0.00	0.00	0.00
18,800.00	90.53	179.67	9,810.65	-9,201.33	484.15	9,213.89	0.00	0.00	0.00
18,900.00	90.53	179.67	9,809.73	-9,301.33	484.74	9,313.80	0.00	0.00	0.00
19,000.00	90.53	179.67	9,808.81	-9,401.32	485.32	9,413.72	0.00	0.00	0.00
19,100.00	90.53	179.67	9,807.88	-9,501.31	485.91	9,513.63	0.00	0.00	0.00
19,200.00	90.53	179.67	9,806.96	-9,601.31	486.49	9,613.54	0.00	0.00	0.00
19,300.00	90.53	179.67	9,806.04	-9,701.30	487.07	9,713.46	0.00	0.00	0.00
19,400.00	90.53	179.67	9,805.12	-9,801.30	487.66	9,813.37	0.00	0.00	0.00
19,500.00	90.53	179.67	9,804.20	-9,901.29	488.24	9,913.28	0.00	0.00	0.00
19,600.00	90.53	179.67	9,803.28	-10,001.28	488.83	10,013.20	0.00	0.00	0.00
19,700.00	90.53	179.67	9,802.36	-10,101.28	489.41	10,113.11	0.00	0.00	0.00
19,800.00	90.53	179.67	9,801.44	-10,201.27	489.99	10,213.02	0.00	0.00	0.00
19,900.00	90.53	179.67	9,800.52	-10,301.27	490.58	10,312.94	0.00	0.00	0.00
20,000.00	90.53	179.67	9,799.60	-10,401.26	491.16	10,412.85	0.00	0.00	0.00
20,100.00	90.53	179.67	9,798.68	-10,501.25	491.75	10,512.76	0.00	0.00	0.00
LTP - HH SO 10 15 Fed 0024									
20,173.34	90.53	179.67	9,798.00	-10,574.59	492.18	10,586.04	0.00	0.00	0.00
TD at 20173.34 - BHL - HH SO 10 15 Fed 0024									



Phoenix Technology Services LP Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 10 15 Fed
Well: 0024
Wellbore: OH
Design: Plan 1 02-01-17

Local Co-ordinate Reference: Well 0024
TVD Reference: RKB @ 3300.00usft
MD Reference: RKB @ 3300.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets

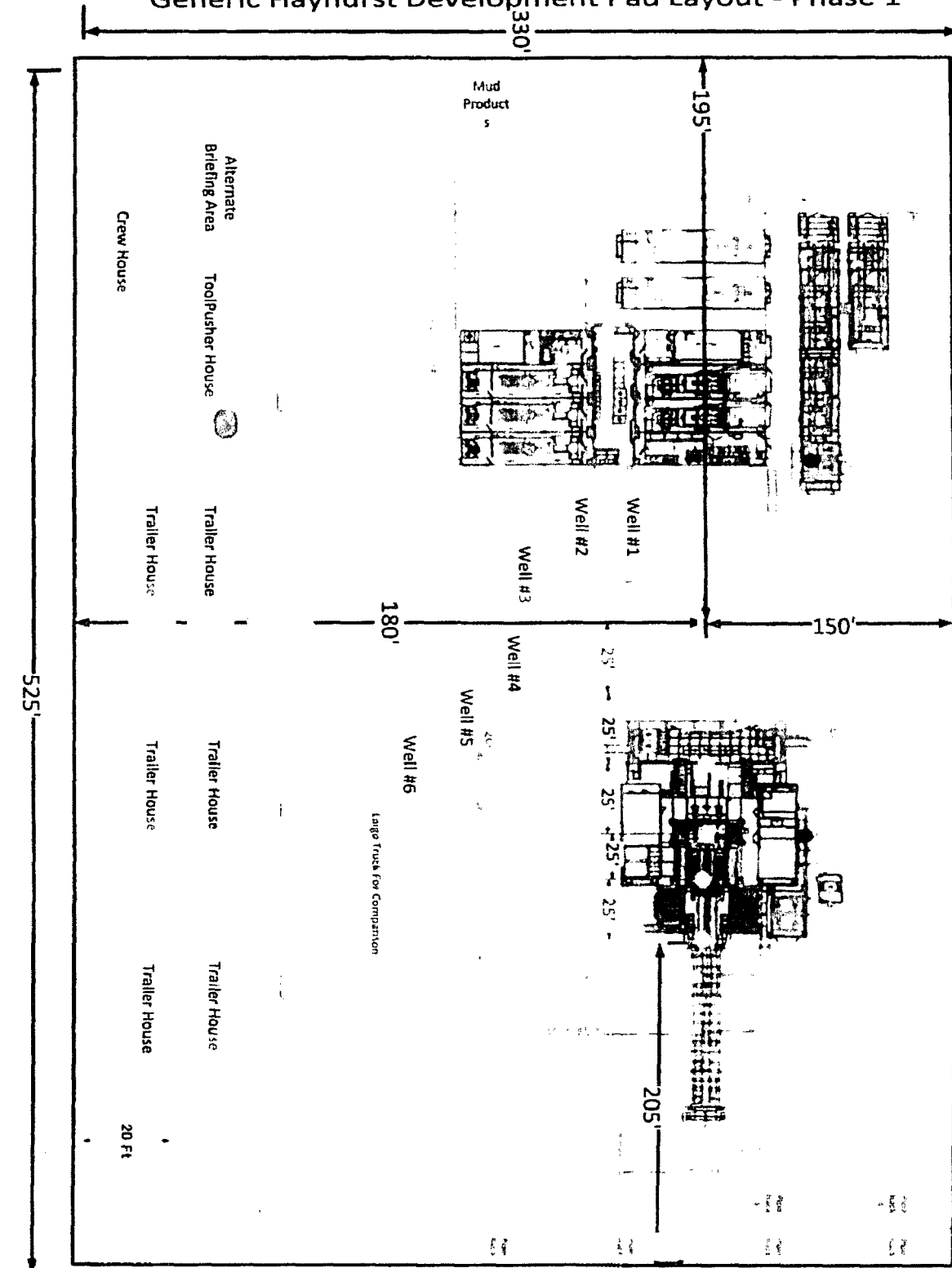
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - HH SO 10 15 F - plan hits target center Point	0.00	0.00	9,798.00	-10,574.59	492.18	376,687.32	546,821.93	32° 2' 7.93674 N 04° 10' 56.04253 W	
LTP HH SO 10 15 F - plan misses target center by 23.34usft at 20100.00usft MD (9798.68 TVD, 10501.25 N, 491.75 E) Point	0.00	0.00	9,798.00	-10,524.59	491.88	376,737.32	546,821.63	32° 2' 8.43161 N 04° 10' 56.04518 W	
MP HH SO 10 15 Fe - plan hits target center Point	0.00	0.00	9,844.00	-5,561.68	462.39	381,700.23	546,792.14	32° 2' 57.54813 N 04° 10' 56.30717 W	
FTP - HH SO 10 15 F - plan hits target center Point	0.00	0.00	9,860.00	-598.68	341.94	386,663.24	546,671.69	32° 3' 46.66674 N 04° 10' 57.62619 W	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,800.00	1,800.00	0.00	0.00	KOP, Begin 2.00°/100' Build
1,917.75	1,917.72	-0.19	2.41	Hold 2.35° Inc at 94.62° Azm
9,296.25	9,289.99	-24.61	304.61	Begin 10.00°/100' Build & Turn
10,195.63	9,860.00	-598.68	341.94	LP, Hold 90.18° Inc at 178.61° Azm
15,160.13	9,844.00	-5,561.68	462.39	Begin 2.00°/100' Build & Turn
15,215.62	9,843.66	-5,617.17	463.22	Hold 90.53° Inc at 179.67° Azm
20,173.34	9,798.00	-10,574.59	492.18	TD at 20173.34

Generic Hayhurst Development Pad Layout - Phase 1

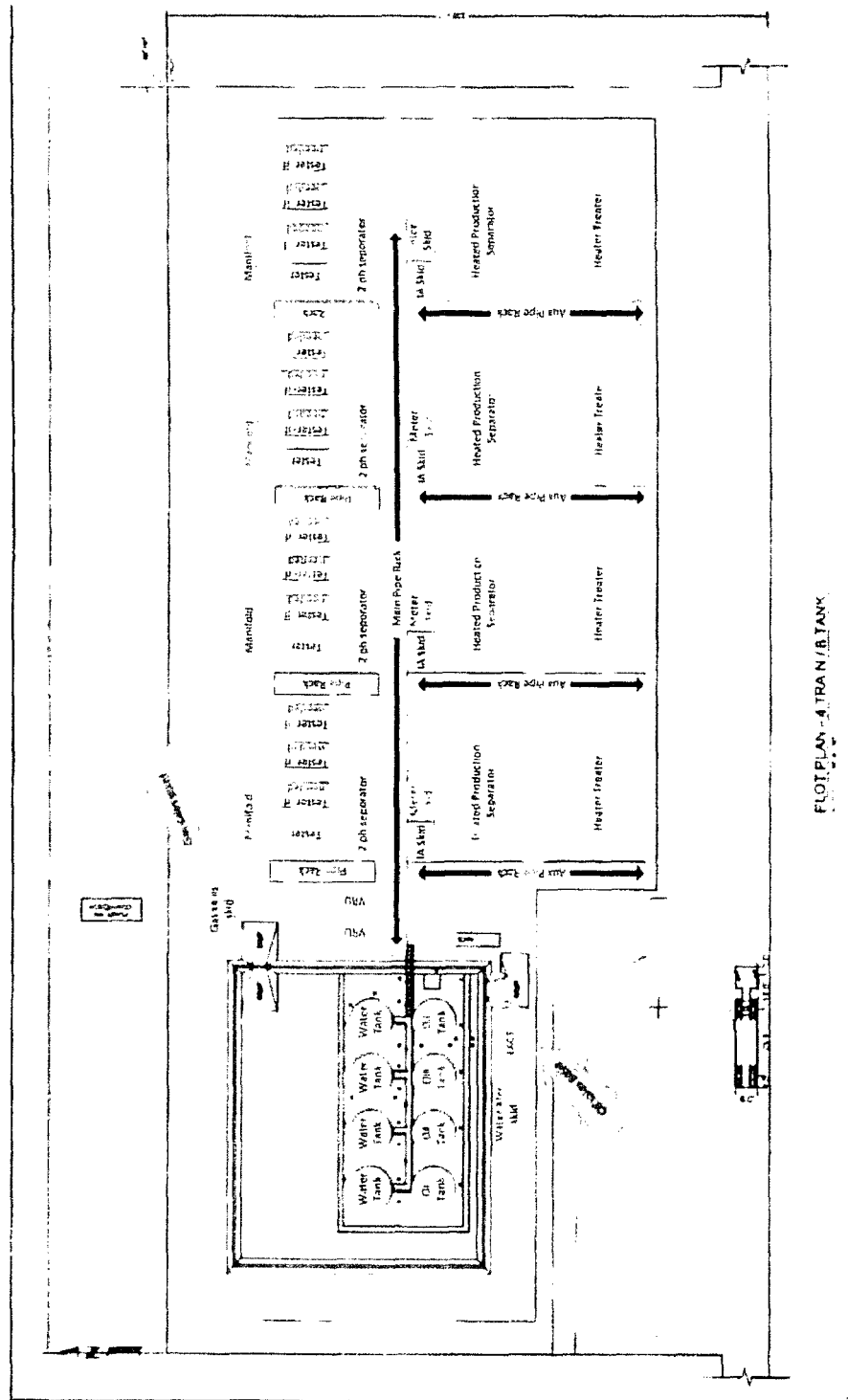


N

Location
Entrance

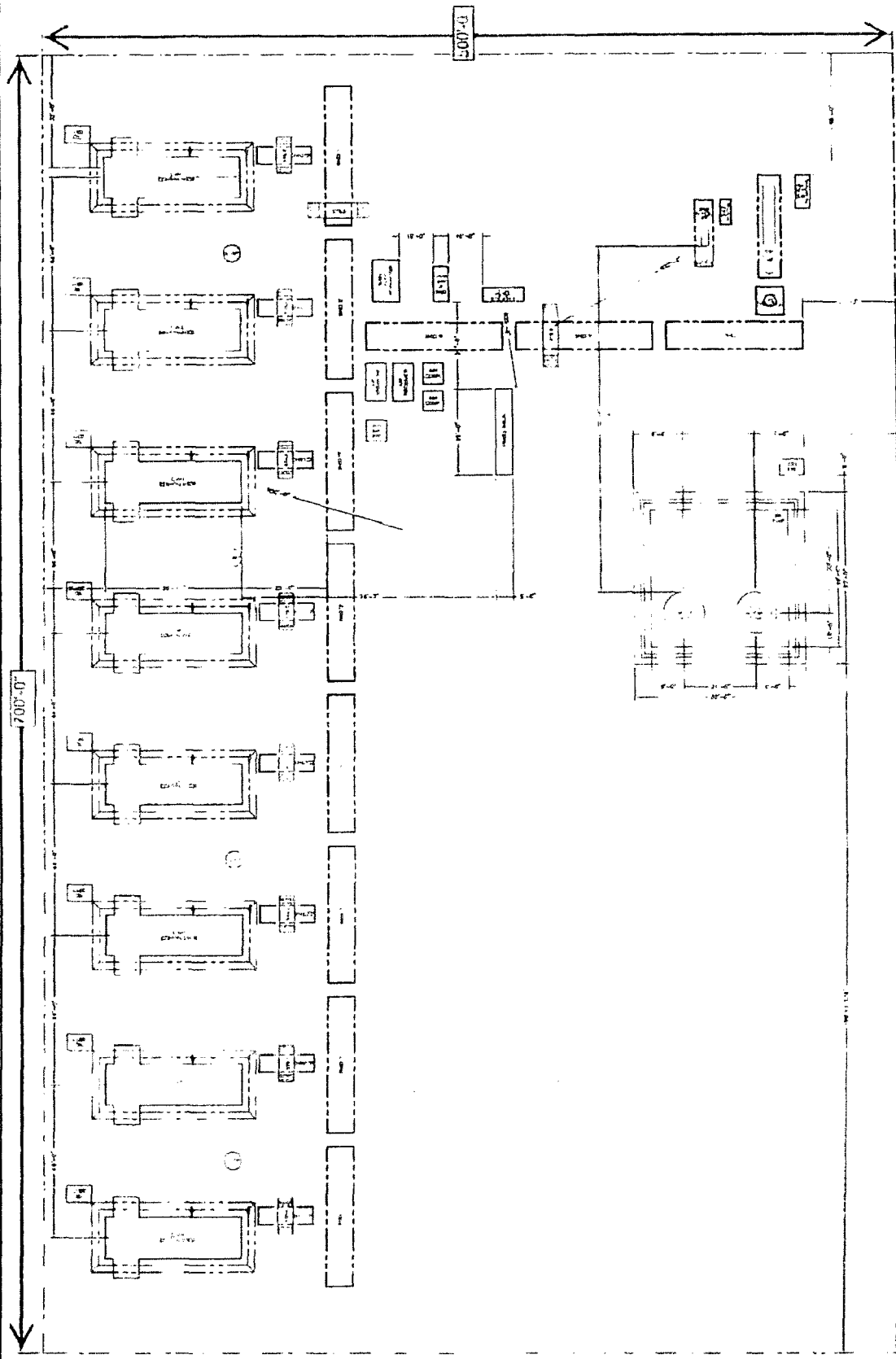
Legend
● H2S Monitor
● Flag

- H2S Monitor Locations**
 - Bop/Cellar
 - Rig Floor
 - Shaker Floor
 - Bed Room
- Flag Locations**
 - Sign-in Shack
 - Rig Floor
 - Dog House
- 10 Minute Escape Packs**
 - 1 at Pits
 - 1 at Telp Tank
 - 1 at Accumulator
 - 4 at Rig Floor
- 45 Minute Escape Packs**
 - 2 at Briefing Area
 - 2 at Alternate Briefing Area



FLOT PLAN - 4 TRAN / TANK

EXHIBIT 4



COMPRESSOR STATION - 8 COMPRESSOR LAYOUT

STANDARD COMPRESSOR GAS-LIFT STATION
Chevron U.S.A. Inc.
PLOT PLAN - 8 COMPRESSOR LAYOUT
COMPRESSOR PLOT PLAN TOTAL

FOR REVIEW

ISSUED FOR REVIEW	DATE	BY
APPROVED	DATE	BY
APPROVED	DATE	BY
APPROVED	DATE	BY

R 27 E

PROPOSED PAD
±4.81 Acres

NW PAD CORNER		NE PAD CORNER		HH SO 10 15 FED NO. 24 WELL	
X=	546,074 NAD 27	X=	546,459 NAD 27	X=	546,330 NAD 27
Y=	387,526	Y=	387,520	Y=	387,262
ELEVATION +3281' NAVD 88		ELEVATION +3272' NAVD 88		LAT 32.064610	
SW PAD CORNER		SE PAD CORNER		LONG. 104.183774	
X=	546,066 NAD 27	X=	546,451 NAD 27	X=	567,514 NAD 83
Y=	386,981	Y=	386,975	Y=	387,319
ELEVATION +3279' NAVD 88		ELEVATION +3281' NAVD 88		LAT 32.064732	
				LONG. 104.184267	
				ELEVATION +3272' NAVD 88	

Sec. 3

Bureau of Land Management
(Pad - ±4.63 Acres)

Find. 2" Iron Pipe
@ SW Corner of
Section 3

S 87° 16' 22" E 603.33'

Sec. 10

Bureau of Land Management
(Pad - ±0.18 Acres)
(Access - ±0.57 Acres, 1230.76' ±74.59 Rods)

**CENTERLINE
PROPOSED
ACCESS ROAD**
20' x 1230.76'
74.54 Rods
±0.57 Acres

Existing
±50' Frontier Energy
Pipeline ROW

Whites City Road

Future 30'
Chevron
Flowline ROW
Roadrunner Road

T 26 S

NAD 27 NEW MEXICO EAST ZONE

LEGEND

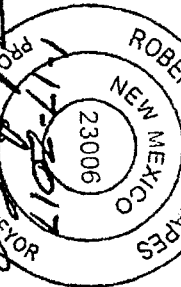
- Future FL ROW
- Existing PL ROW
- Existing Road
- Section Line
- Find. Monument

Scale 1" = 200'



C. H. Fenstermaker & Associates, LLC
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
Robert L. Lastapas, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



Registration No. 23006

SURFACE USE PLAT

Page 1 of 2

CHEVRON U.S.A. INC.

PROPOSED PAD & ACCESS ROAD
HH SO 10 15 FED 002, 44 Well
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS

DRAWN BY	BOR	No.	DATE	REVISOR	REVISOR BY
GRAD. MGR	GDC	No.	DATE		
DATE: 01/11/2017	No.	DATE:			
FILENAME: T:\2017\2175119\DWG\HH SO 10 15 FED 24_SUP.dwg					

PROPOSED PAD		
COURSE	BEARING	DISTANCE
1	S 89° 08' 26" E	385.01'
2	S 00° 52' 10" W	545.11'
3	N 89° 07' 37" W	385.03'
4	N 00° 52' 18" E	545.02'

CENTERLINE PROPOSED ACCESS ROAD		
COURSE	BEARING	DISTANCE
5	S 00° 52' 23" W	10.01'
6	S 89° 07' 37" E	1220.75'

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.

NOTE:

Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance: New Mexico One Call - www.nmonocall.org.

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastapas, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

ROBERT L. LASTAPAS
NEW MEXICO
K-18-23006
1-18-2017
Robert L. Lastapas
Registration No. 23008

SURFACE USE PLAT

Page 2 of 2

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 10 15 FED 002, 44 Well
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR

REVISIONS

PROJ. MGR. GDG

No.

DATE:

REVISED BY:

DATE: 01/11/2017

No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175119\DWG\HH SO 10 15 FED 24_SUP.dwg



C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

APD ID: 10400012333

Submission Date: 03/20/2017

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

HH_SO_10_15_FED_002_4H_ROADS_05-30-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:
Do the existing roads need to be improved? YES

Existing Road Improvement Description: The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will also repair any pot holes, clear ditches, repair crown; etc. All existing structures on the entire access route such as cattle guards, other range improvements project, culverts, etc. will be properly repaired or replace if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways. Existing lease roads operated by Chevron will be maintained as needed or upon request (based on historical weather data, CVX expects that maintenance will likely occur four to five times annually). Existing lease roads used by multiple operators will be maintained through road maintenance parameters with all parties. A complete SUPO attached to this APD.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HH_SO_10_15_FED_002_3H_New_Roads_05-30-2017.pdf

New road type: LOCAL

Length: 1230.76

Feet

Width (ft.): 24

Max slope (%): 2

Max grade (%): 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):
New road travel width: 24

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

New road access erosion control: Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditching and will be graveled as needed for drilling, side hill out-sloping and in-sloping, lead-off ditches, culvert installation, or low water crossings, culverts, and water bars where needed: straw wattles will be used on the down-slope side of new roads where undisturbed grades away from the roadway are 5% or greater.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: NONE

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: NONE NEEDED

Access other construction information: Enclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until back-filling takes place.

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: CROSSING,CULVERT,OTHER

Drainage Control comments: SEDIMENT TRAPS (HAY BALES SUGGESTED BY BLM) we don't use every time but keep handy.

Road Drainage Control Structures (DCS) description: Ditching will be constructed on both sides of road.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HH_SO_10_15_FED_002_3H_New_Roads_05-30-2017.pdf

New road type:

Length:

Width (ft.):

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Max slope (%):

Max grade (%):

Army Corp of Engineers (ACOE) permit required?

ACOE Permit Number(s):

New road travel width:

New road access erosion control:

New road access plan or profile prepared?

New road access plan attachment:

Access road engineering design?

Access road engineering design attachment:

Access surfacing type:

Access topsoil source:

Access surfacing type description:

Access onsite topsoil source depth:

Offsite topsoil source description:

Onsite topsoil removal process:

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing:

Drainage Control comments:

Road Drainage Control Structures (DCS) description:

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HH_SO_10_15_FED_002_3H_New_Roads_05-30-2017.pdf

New road type:

Length:

Width (ft.):

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Max slope (%):

Max grade (%):

Army Corp of Engineers (ACOE) permit required?

ACOE Permit Number(s):

New road travel width:

New road access erosion control:

New road access plan or profile prepared?

New road access plan attachment:

Access road engineering design?

Access road engineering design attachment:

Access surfacing type:

Access topsoil source:

Access surfacing type description:

Access onsite topsoil source depth:

Offsite topsoil source description:

Onsite topsoil removal process:

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing:

Drainage Control comments:

Road Drainage Control Structures (DCS) description:

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

HH_SO_10_15_FED_002_4H_Radius_Map_03-14-2017.pdf

Existing Wells description:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description: The existing production facilities located in the NE corner of Section 10, R26S-R27E where oil and gas sales will take place. o The existing facility is 500 X 700' o Attached Fac Plat was approved for this facility in the MDP SUP Pg. 2

Production Facilities map:

HH_SO_10_15_FED_002_4H_Fac_Plat_06-01-2017.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING,
SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 716000

Source volume (acre-feet): 92.28746

Source volume (gal): 30072000

Water source and transportation map:

HH_SO_10_15_FED_002_3H_DETAIL_05-30-2017.pdf

Water source comments: private source with ponds located in SW4 Section 9 T26S R27E. A temporary 10" expanding pipe surface transfer line will run along established disturbance corridors, such as along access roads or on top of flowline or pipeline right of way. o water line will run parallel to road and will stay within 10' of access road.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: CALICHE WILL BE SOURCED FROM A CHEVRON OPERATED NMSLO PIT IN S2 NW4 SECTION 16 T26S R27E OR AN ALTERNATE PRIVATE PIN IN SECTION 13 T24S R27E, EDDY COUNTY NM.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: o Garbage and Trash o Human waste and grey water o Other wastes material i.e. chemicals, salts, frac sand o Drill cutting

Amount of waste: 200 pounds

Waste disposal frequency : Daily

Safe containment description: o collected in a trash container collected for disposal o properly contained and disposed of state approved disposal facility o properly disposed of into steel tanks. All to be properly disposed at a State approved disposal facility.

Safe containmant attachment:

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

Disposal type description:

Disposal location description: STATE APPROVED FACILITY: o Carlsbad 6601 Hobbs HWY Carlsbad, NM 575-393-1079 o Eunice Sundance Services 5 miles East of Eunice on HWY 18 and Wallach Ln 575-390-0342 o Seminole Permian Disposal 587 US HWY 385 S 432-955-0322

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.)

Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

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

Reserve pit liner

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

HH_SO_10_15_FED_002_4H_Well_Plat_05-30-2017.pdf

HH_SO_10_15_FED_002_4H_Rig_Pad_Layout_05-30-2017.pdf

Comments: As referenced on the attached SUPO o Exterior well pad dimensions are 545' X 385' o Interior well pad dimensions from point of entry (well head) of the westernmost well are N-260', S-285', E-125', W-260'. The length to the east includes 25' spacing for next well on multi-well pad. Total disturbance area needed for construction of well pad will be 4.81 acres. o Topsoil placement is on the up-slope edge of each pad (unless otherwise directed by BLM - final placement to be included in APD's SUPO no higher than 3 feet where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices. o Construction methods: Pads would be constructed by clearing vegetation, salvaging and storing topsoil and leveling the drilling area cut-and-fill techniques where appropriate.

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

HH_SO_10_15_FED_002_4H_APD_SUP_05-31-2017.pdf

HH_SO_10_15_FED_002_4H_IR_Plat_06-01-2017.pdf

Drainage/Erosion control construction: Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area. Please reference the master development plan pages 8-9. A completed APD SUP attached for this APD.

Drainage/Erosion control reclamation: The well pad, road, and surrounding area will be cleared of material, trash, and equipment. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. Please reference the master development plan pg. 8-9.

Wellpad long term disturbance (acres): 1.5

Wellpad short term disturbance (acres): 4.8

Access road long term disturbance (acres): 0.52

Access road short term disturbance (acres): 0.52

Pipeline long term disturbance (acres): 4.275482

Pipeline short term disturbance (acres): 4.275482

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 6.295482

Total short term disturbance: 9.595482

Reconstruction method: see complete surface use plan attached to this APD Reclaimed pad size: 200 x 325' approximately 1.5 acres

Topsoil redistribution: Topsoil that was spread over the interim reclamation areas will be stockpiled prior to re-contouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful re-vegetation.

Soil treatment: After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Please reference the master development plan pages 9.

Existing Vegetation at the well pad: mesquite, grass, shrubs

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: mesquite, grass, shrubs

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: mesquite, grass, shrubs

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: mesquite, grass, shrubs

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Kevin

Last Name: Dickerson

Phone:

Email: lfuh@chevron.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Treat with BLM seed mixture (BLM #2) free of noxious weeds.

Weed treatment plan attachment:

Monitoring plan description: The interim reclamation will be monitored periodically to ensure that vegetation has re-established.

Monitoring plan attachment:

Success standards: As per BLM requirements.

Pit closure description: None

Pit closure attachment:

Section 11 - Surface Ownership

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 10 15 FED 002

Well Number: 4H

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? YES

Use APD as ROW? YES

ROW Type(s): 287001 ROW – Water Facility, 288100 ROW – O&G Pipeline, Other

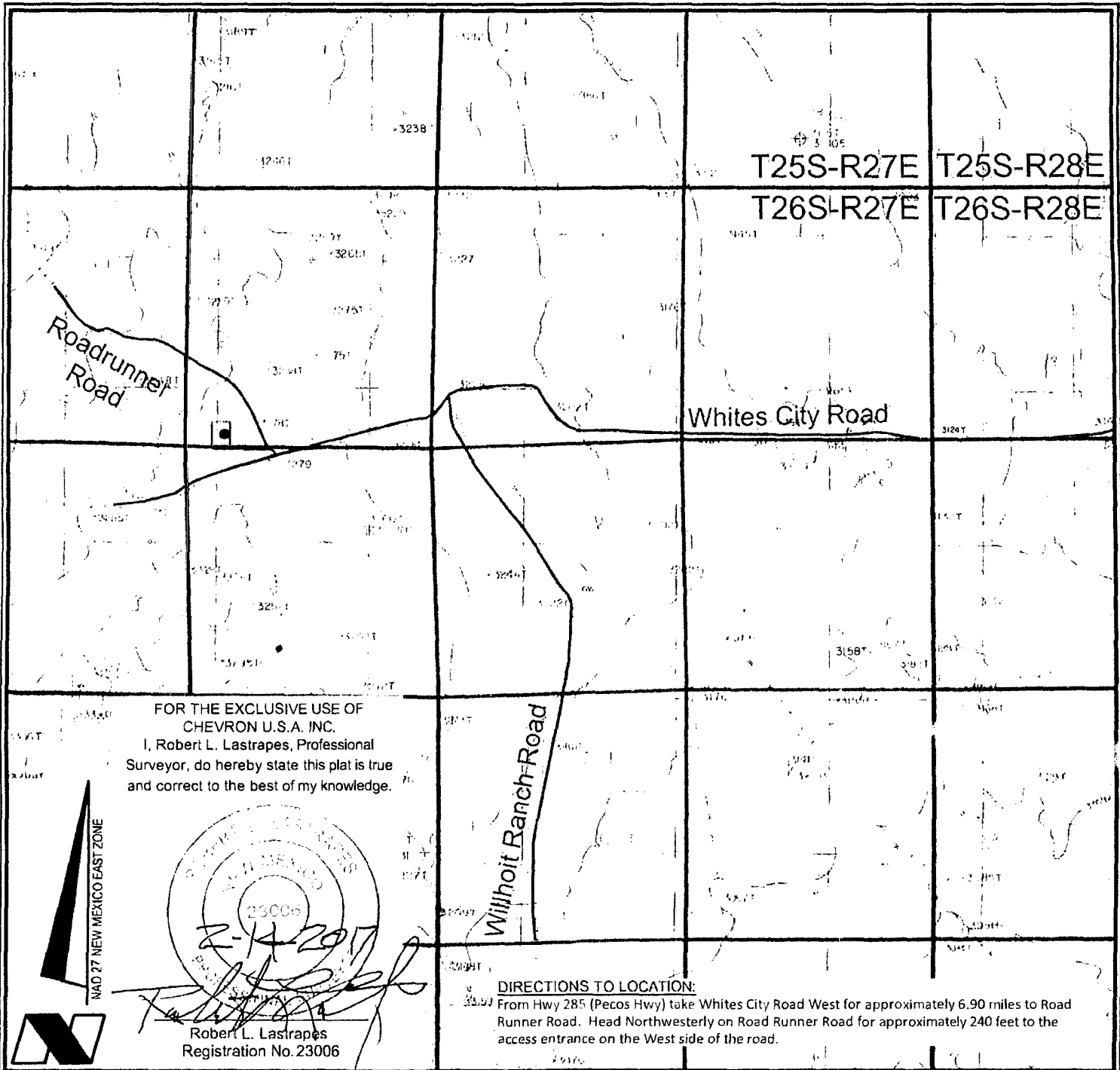
ROW Applications

SUPO Additional Information: Should questions arise, please contact Kevin Dickerson @ 432-687-7104

Use a previously conducted onsite? YES

Previous Onsite information: On-site performed by BLM, Mr. Paul Murphy.

Other SUPO Attachment

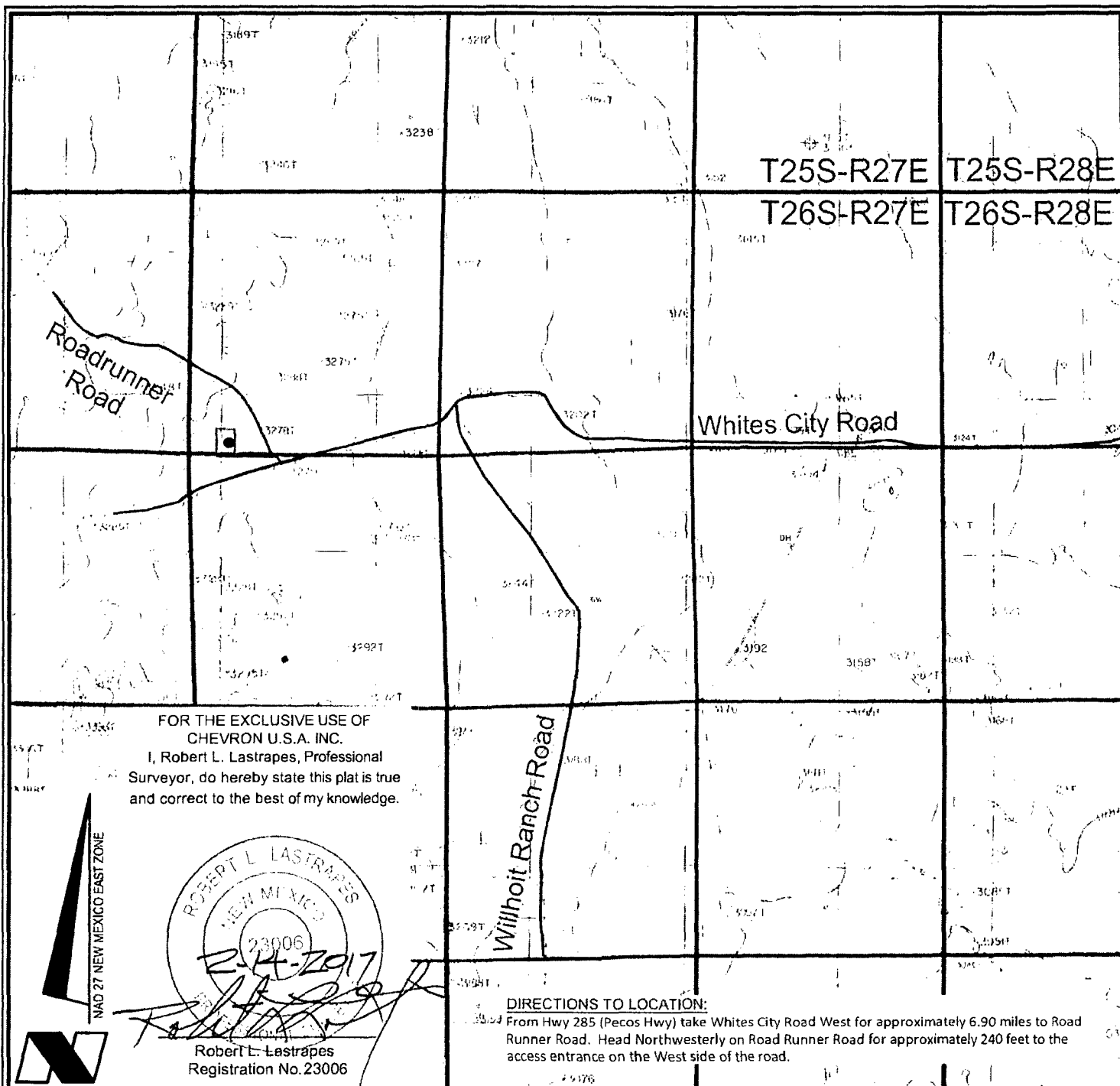


LEGEND

- Proposed Well
- Proposed Access Road
- - - Proposed Drillsite
- Existing Road
- Section Line

CHEVRON U.S.A. INC.
HH SO 10 15 FED 002 NO. 4H WELL
LOCATED 833' FWL AND 264' FSL
SECTION 3, T26S-R27E
EDDY COUNTY, NEW MEXICO

	C.H. Fenstermaker & Associates, L.L.C. 135 Regency Sq. Lafayette, LA 70508 Ph. 337-237-2200 Fax. 337-232-3299 www.fenstermaker.com		DRAWN BY: BOR		REVISIONS	
			PROJ. MGR.: GDG	No. 1	DATE: 02/13/2017	REVISED BY: TBD
			DATE: 01/11/2017	No.	DATE:	REVISED BY:
			FILENAME: T\2017\2175119\DWG\HH SO 10 15 FED 002 4H_APD.dwg			



VICINITY MAP

SCALE: 1" = 3000'

3000' 0 1500' 3000'

LEGEND

- Proposed Well
- Proposed Access Road
- Proposed Drillsite
- Existing Road
- Section Line

CHEVRON U.S.A. INC.
HH SO 10 15 FED 002 NO. 3H WELL
LOCATED 833' FWL AND 239' FSL
SECTION 3, T26S-R27E
EDDY COUNTY, NEW MEXICO



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www.fenstermaker.com

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PROJ. MGR.: GDG

No. 1

DATE: 02/13/2017

REVISED BY: TBD

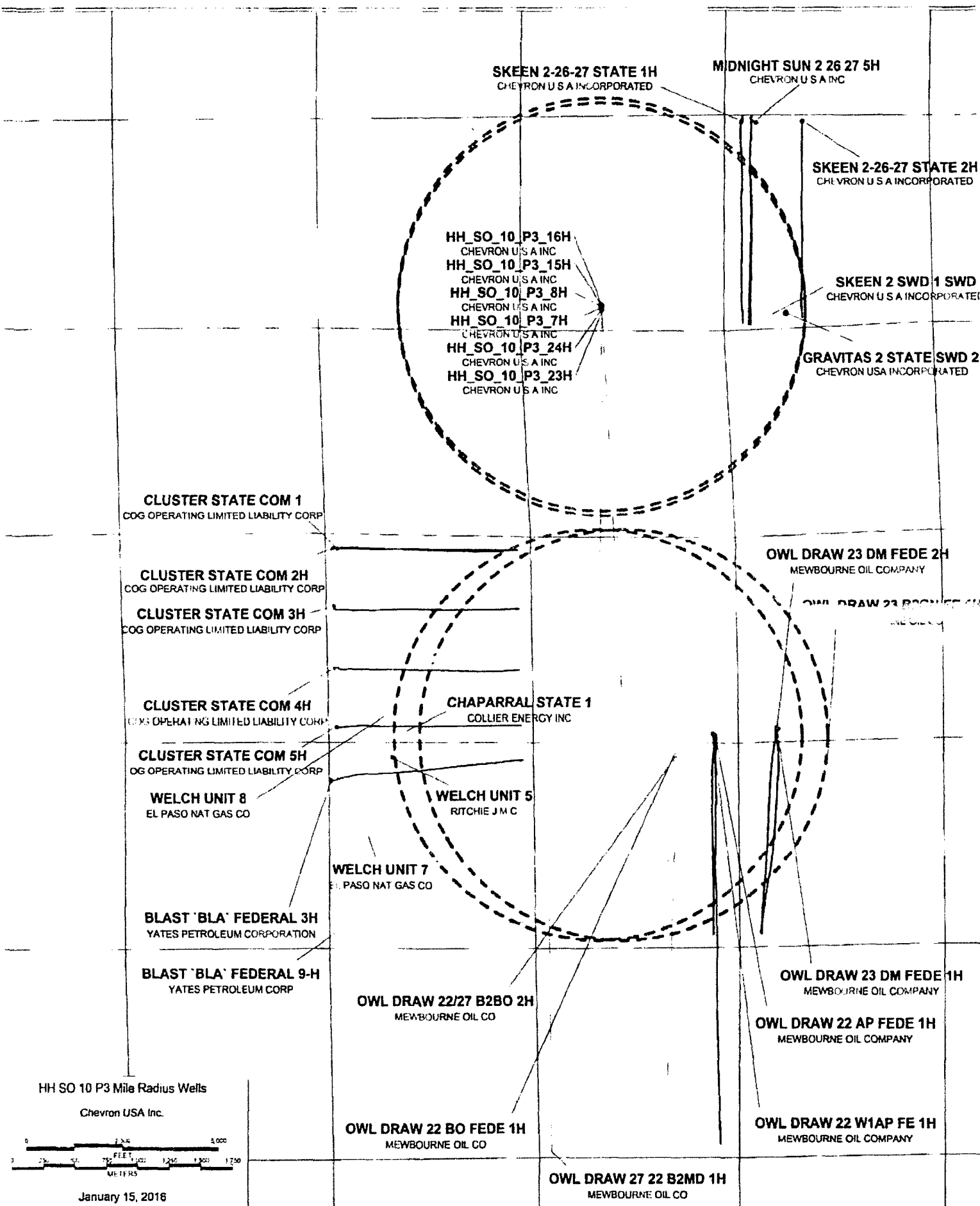
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No.

DATE:

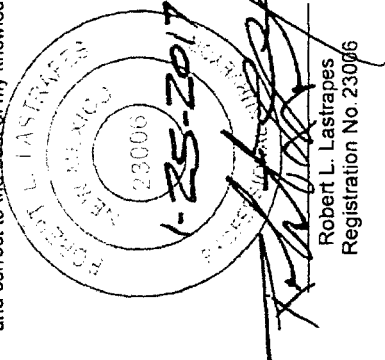
REVISED BY:

FILENAME: T12017\2175119\DWG\HH SO 10 15 FED 002 3H_APD.dwg



FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.

I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



Robert L. Lastrapes
Registration No. 23006

R 27 E

Sec. 3

Bureau of Land Management

PROPOSED PAD
±4.82 Acres

CENTERLINE
PROPOSED
ACCESS ROAD (A)
20' x ±234.04'
±14.18 Rods
±0.11 Acres

Road Runner
Road

HH SO 10 P3
No. 15H Well
628' FSL, 2,066' FWL

Fnd. 2" Iron Pipe w/
Cap at the SW corner
of Section 3

Sec. 4

NAD 27 NEW MEXICO EAST ZONE

Whites City Road

LEGEND
— Section Line
- - - Existing Road
- - - Centerline Access
● Found Monument

T 26 S

SURFACE USE PLAT

PAGE 1 of 4

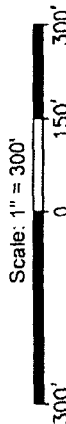
CHEVRON U.S.A. INC.
PROPOSED PADS, POND & ACCESS ROADS
HH SO 10 P3 NO. 15H WELL
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS

DRAWN BY: LUG	No. 1	DATE: 08/30/2016	REVISED BY: BOR
PROJ. MGR.: GDG	No. 2	DATE: 11/04/2016	REVISED BY: BOR
DATE: 12/16/2015			
FILENAME: T:\2015\2153371\DWG\HH SO 10 P3 15H_SUP.dwg			

Sec. 10

Bureau of Land Management



FENSTERMAKER
C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph 337-237-2200 Fax 337-232-3299
www.fenstermaker.com

R 27 E

Whites City Road

Sec. 3

Bureau of Land Management

CENTERLINE PROPOSED
ACCESS ROAD (D)
24' x ±101.00'
±6.12 Rods
±0.06 Acres

Elev.
3239.2'

PROPOSED 50' x 50'
FRAC PUMP PAD
±0.06 Acres

Fnd 1 1/2" Iron
Pipe w/Cap @ the
SE Corner of
Section 3

Sec. 2

State of New Mexico

LEGEND

- Section Line
- Existing Road
- Centerline Access
- Fence Line
- Found Monument

Sec. 11

Bureau of Land Management
(Proposed Frac Pond- ±1.93 Acres)
(Proposed Frac Pond Outside of
Existing Fence Line- ±0.78 Acres)
(Proposed Fence Line Re-Route-
±628.17', ±38.07 Rods)

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

Sec. 10

Bureau of Land Management
(Proposed Frac Pond- ±13.57 Acres)
(Proposed Frac Pond Outside of
Existing Fence Line- ±0.34 Acres)
(Proposed Fence Line Re-Route-
±109.36', ±6.63 Rods)

CENTERLINE PROPOSED
ACCESS ROAD (C)
24' x ±126.19'
±7.65 Rods
±0.07 Acres

PROPOSED
CENTRAL TANK
BATTERY
±8.03 Acres

PROPOSED
FRAC POND
±15.50 Acres

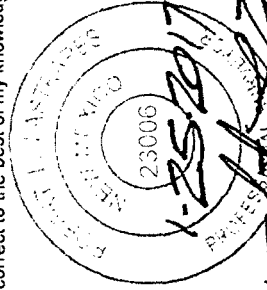
PROPOSED
COMPRESSOR
STATION
±3.44 Acres

CENTERLINE PROPOSED
ACCESS ROAD (B)
24' x ±199.02'
±120.55 Rods
±1.10 Acres

Scale: 1" = 300'



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www.fenstermaker.com



Robert L. Lastrapes
Registration No. 23006

SURFACE USE PLAT

PAGE 2 of 4

CHEVRON U.S.A. INC.

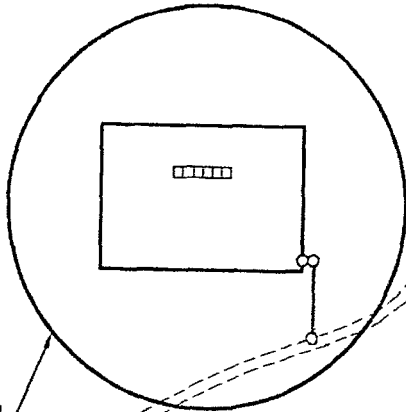
PROPOSED PADS, POND & ACCESS ROADS
HH SO 10 P3 NO. 15H WELL
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS

DRAWN BY: LUG	No. 1	DATE: 08/30/2016	REVISED BY: BOR
PROJ. MGR.: GDG	No. 2	DATE: 11/04/2016	REVISED BY: BOR
DATE: 12/16/2015			
FILENAME: T:\2015\15215337\1DWG\HH SO 10 P3 15H_RevSUP.dwg			

R 27 E

SEE PAGE
1 OF 4



Sec. 3

Bureau of Land Management

SEE PAGE
2 OF 4

Sec. 2

State of New Mexico

T 26 S

NW CTB CORNER		NE CTB CORNER		SW CTBNW COMPRESSOR CORNER	
X=	549,484	X=	549,984	X=	549,484
Y=	386,534	Y=	386,534	Y=	385,834
ELEVATION +3249' NAVD 88		ELEVATION +3243' NAVD 88		ELEVATION +3255' NAVD 88	
SW COMPRESSOR CORNER		SE COMPRESSOR CORNER		SE CTBNE COMPRESSOR CORNER	
X=	549,484	X=	549,984	X=	549,984
Y=	385,534	Y=	385,534	Y=	385,834
ELEVATION +3259' NAVD 88		ELEVATION +3252' NAVD 88		ELEVATION +3248' NAVD 88	

Sec. 10

Bureau of Land Management
(Proposed Frac Pond- ±13.57 Acres)
(Proposed Frac Pond Outside of
Existing Fence Line- ±0.34 Acres)
(Proposed Fence Line Re-Route-
±109.36', ±6.63 Rods)

Sec. 11

Bureau of Land
Management
(Proposed Frac Pond-
±1.93 Acres)
(Proposed Frac Pond
Outside of Existing Fence
Line- ±0.78 Acres)
(Proposed Fence Line
Re-Route- ±528.17',
±38.07 Rods)

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

LEGEND	
Section Line	---
Existing Road	---
Centerline Access	---
Fence Line	-X-
Found Monument	●

Scale: 1" = 500'

C. H. Fenstermaker & Associates, LLC
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax 337-232-3299
www.fenstermaker.com



SURFACE USE PLAT

PAGE 3 OF 4

CHEVRON U.S.A. INC.

PROPOSED PADS, POND & ACCESS ROADS
HH SO 10 P3 NO. 15H WELL
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS

REVISIONS			
DRAWN BY: LUG			
PROJ. MGR.: GDG	No. 1	DATE: 08/30/2016	REVISED BY: BOR
DATE: 12/16/2015	No. 2	DATE: 11/04/2016	REVISED BY: BOR
FILENAME: T:\2015\2153371\DWG\HH SO 10 P3 15H_RevSUP.dwg			

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.

NOTE:

Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance: New Mexico One Call www.nmonecall.org

CENTERLINE PROPOSED ACCESS ROAD (A)		
COURSE	BEARING	DISTANCE
1	S 00° 34' 31" W	29.92'
2	N 89° 08' 18" W	204.12'

CENTERLINE PROPOSED ACCESS ROAD (B)		
COURSE	BEARING	DISTANCE
3	N 89° 54' 54" E	139.42'
4	N 00° 05' 06" W	1849.60'

CENTERLINE PROPOSED ACCESS ROAD (C)		
COURSE	BEARING	DISTANCE
5	WEST	128.19'

CENTERLINE PROPOSED ACCESS ROAD (D)		
COURSE	BEARING	DISTANCE
6	EAST	101.00'

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.





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Robert L. Lastrapes
Registration No. 23006

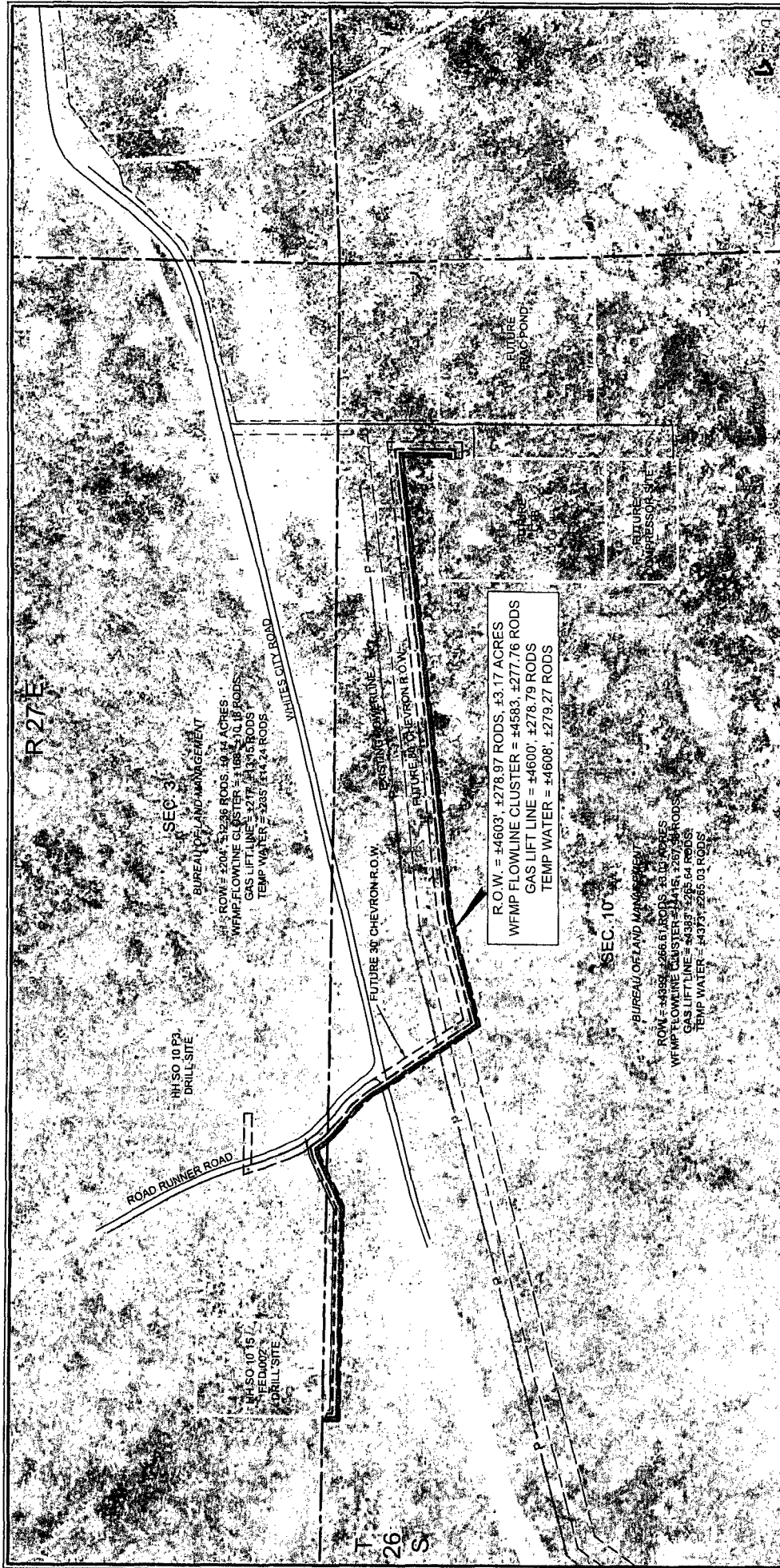
SURFACE USE PLAT

CHEVRON U.S.A. INC.

PROPOSED PADS, POND & ACCESS ROADS
HH SO 10 P3 NO. 15H WELL
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS

DRAWN BY: LJG	No. 1	DATE: 08/30/2016	REVISED BY: BOR
PROJ. MGR.: GDG	No. 2	DATE: 11/04/2016	REVISED BY: BOR
DATE: 12/16/2015			
FILENAME: T:\2015\152153371\DWG\HH SO 10 P3 15H RevSUP.dwg			



DETAIL

CHEVRON U.S.A. INC.
 30' ROW EASEMENT DETAIL FOR THE
 HH SO 10 15 FED 002 PAD
 SECTIONS 3 & 10, T26S-R27E
 EDDY COUNTY, NEW MEXICO

DRAWN BY: T8D		REVISIONS	
PROJ. MGR: GDG	No.	DATE:	REVISD BY:
DATE: 05/02/2017	No.	DATE:	REVISD BY:
FILENAME: T20172175119DGNHH SO 10 15 FED 002 DETAIL.dwg			

C. H. Fenstermaker & Associates, LLC
 135 Pegasus Sq. Lafayette, LA 70508
 Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com



LEGEND

WFMP FLOWLINE
 GAS LIFT LINE
 TEMP WATER
 UTILITY LINE
 ACCESS

NOT TO BE USED FOR CONSTRUCTION
 WITHOUT THE CONSULTATION OF THE
 DESIGNER OR ENGINEER

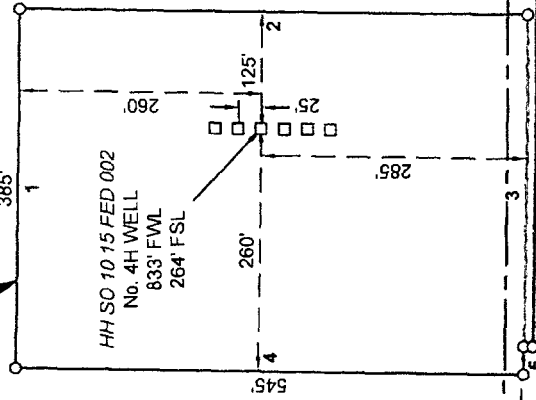


Scale: 1" = 400'
 400' 0 200' 400'



R 27 E

PROPOSED PAD
±4.81 Acres



End. 2" Iron Pipe
@ SW Corner of
Section 3

S 87° 16' 22" E 603.33'

Sec. 3

Bureau of Land Management
(Pad- ±4.63 Acres)

Sec. 10

Bureau of Land Management
(Pad- ±0.18 Acres)

(Access- ±0.57 Acres, 1230.76', ±74.59 Rods)

6

CENTERLINE
PROPOSED
ACCESS ROAD
20' x 1230.76'
74.54 Rods
±0.57 Acres

Future 30'
Chevron
Flowline ROW

Existing
±50' Frontier Energy
Pipeline ROW

Whites City Road

Roadrunner Road

T 26 S

NW PAD CORNER		NE PAD CORNER		HH SO 10 15 FED 002 NO. 4H WELL	
X=	546,074	NAD 27	X=	546,459	NAD 27
Y=	387,526		Y=	387,520	
ELEVATION +3251' NAVD 88		ELEVATION +3272' NAVD 88		LAT. 32.064610	
SW PAD CORNER		SE PAD CORNER		LONG. 104.183774	
X=	546,086	NAD 27	X=	546,451	NAD 27
Y=	386,981		Y=	386,975	
ELEVATION +3279' NAVD 88		ELEVATION +3281' NAVD 88		LAT. 32.064732	
				LONG. 104.184267	
				ELEVATION +3272' NAVD 88	

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



Robert L. Lastrapes
Registration No. 23006

LEGEND	
---	Future FL ROW
---	Existing PL ROW
---	Existing Road
---	Section Line
●	End. Monument

Scale: 1" = 200'

FENSTERMAKER
C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
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Page 1 of 2

SURFACE USE PLAT

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 10 15 FED 002 NO. 4H WELL
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

REVISIONS	
DRAWN BY: BOR	REVISOR: T20172175119DWGHH SO 10 15 FED 002 4H_SUP.dwg
PROJ. MGR.: GDG	DATE: 02/13/2017
DATE: 01/11/2017	REVISOR: T20172175119DWGHH SO 10 15 FED 002 4H_SUP.dwg

PROPOSED PAD		
COURSE	BEARING	DISTANCE
1	S 89° 08' 26" E	385.01'
2	S 00° 52' 10" W	545.11'
3	N 89° 07' 37" W	385.03'
4	N 00° 52' 18" E	545.02'

CENTERLINE PROPOSED ACCESS ROAD		
COURSE	BEARING	DISTANCE
5	S 00° 52' 23" W	10.01'
6	S 89° 07' 37" E	1220.75'

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

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FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.

230006
2-14-2017
Robert L. Lastrapes
Registration No. 230006

SURFACE USE PLAT Page 2 of 2

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 10 15 FED 002 NO. 4H WELL
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

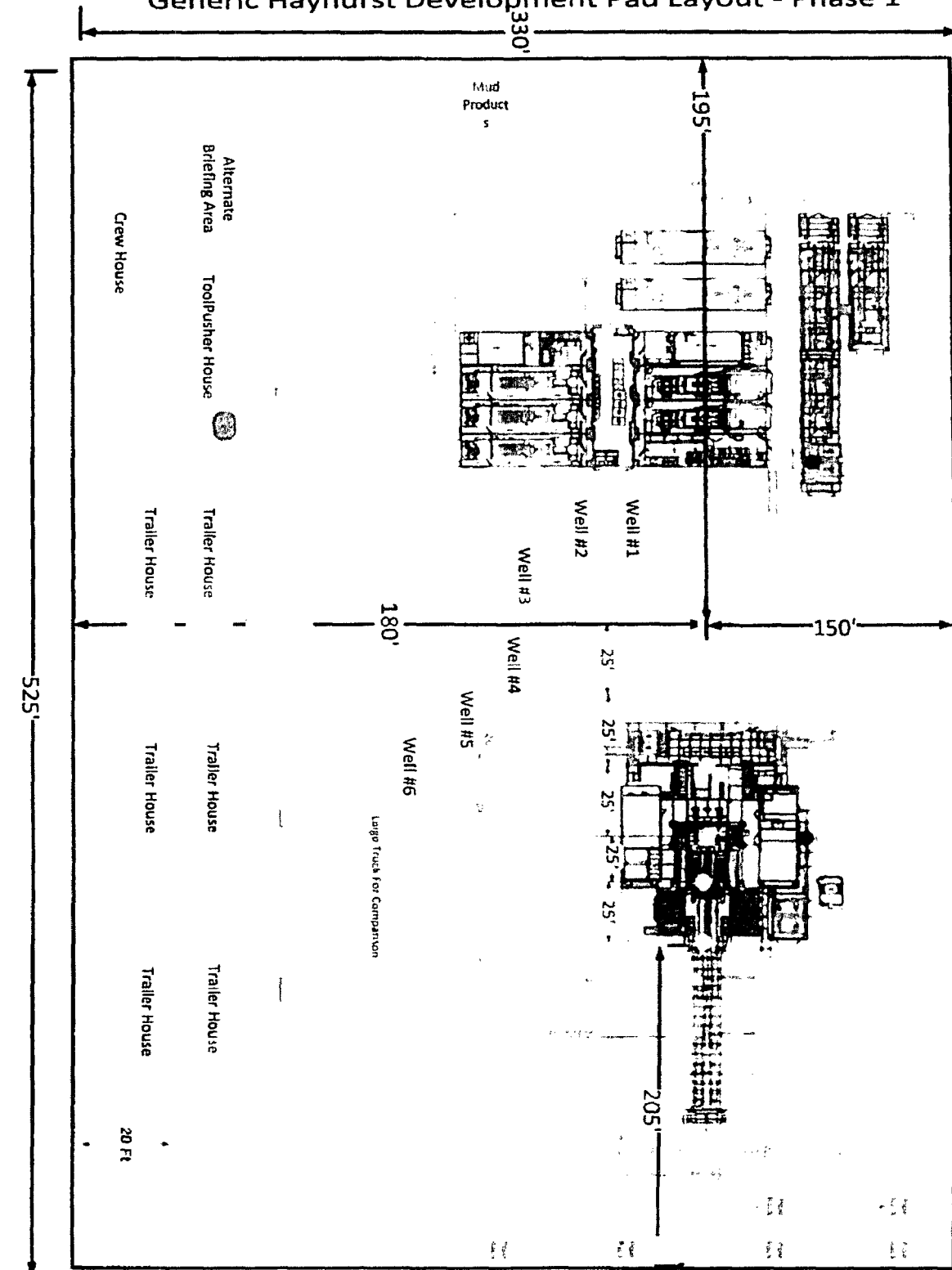
REVISIONS

DRAWN BY: BOR	No. 1	DATE: 02/13/2017	REVISED BY: TBD
PROJ. MGR: GDG	No.	DATE:	REVISED BY:
DATE: 01/11/2017			
FILENAME: T20172175119DWDGHH SO 10 15 FED 002 4H_SUP.dwg			



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Ph 337-237-2200 Fax 337-232-3299
www.fenstermaker.com

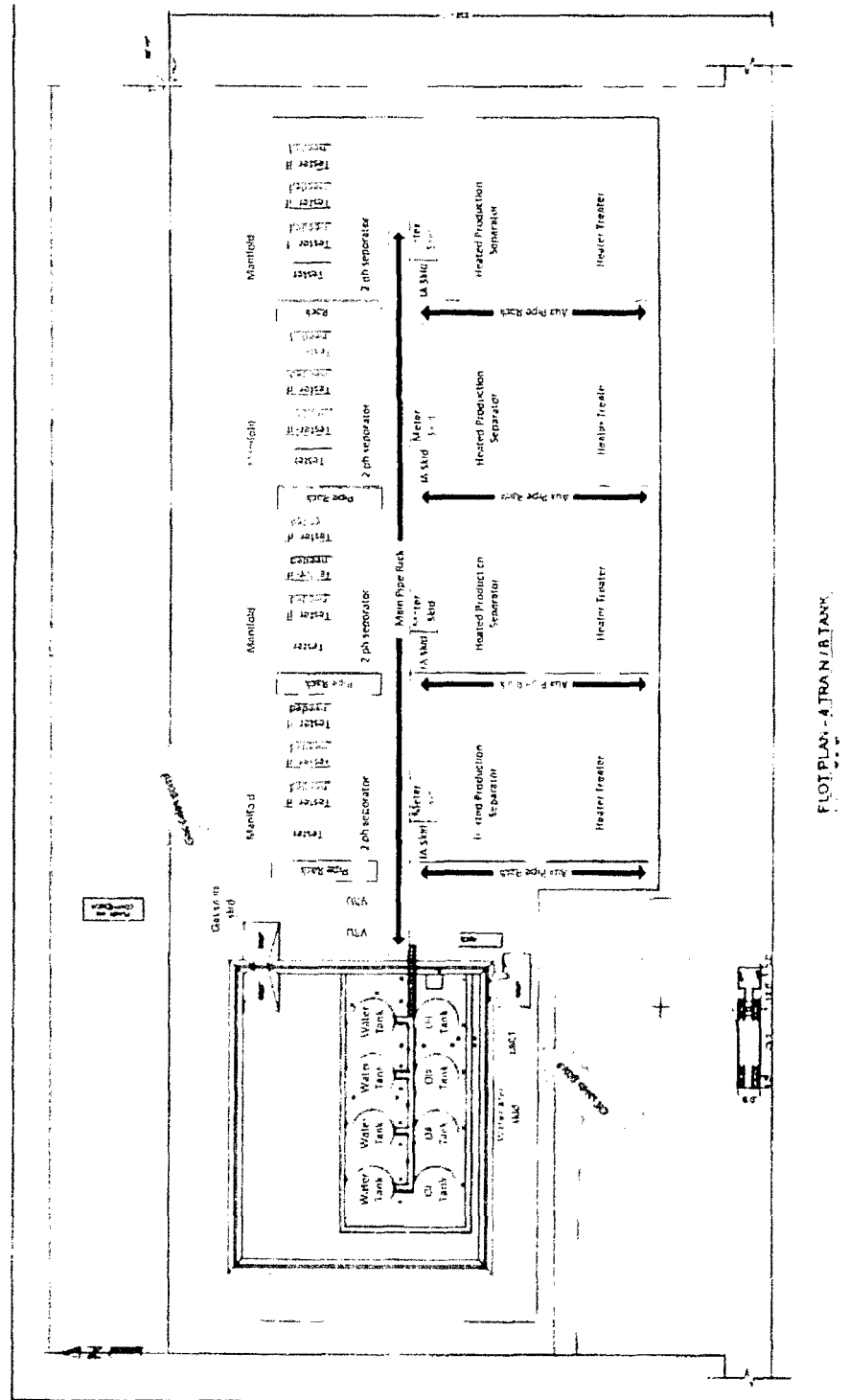
Generic Hayhurst Development Pad Layout - Phase 1



Location
Entrance

- Legend**
- H2S Monitor
 - Flag

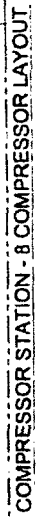
- H2S Monitor Locations**
- Bop/Cellar
 - Rig Floor
 - Shaker Skid
 - Tool Nipple
- Flag Locations**
- Sign-in Shack
 - Rig Floor
 - Dog House
- 10 Minute Escape Packs**
- 1 at Pits
 - 1 at Trip Tank
 - 1 at Accumulator
 - 4 at Rig Floor
- 45 Minute Escape Packs**
- 2 at Briefing Area
 - 2 at Alternate Briefing Area



STANDARD COMPRESSOR GAS-LIFT STATION

PLOT PLAN - 8 COMPRESSOR LAYOUT

COMPRESSOR_PLOTPLAN_8TOTAL



FOR REVIEW


Chevron U.S.A. Inc.

STANDARD COMPRESSOR GAS-LIFT STATION

PLOT PLAN - 8 COMPRESSOR LAYOUT

CHEVRON U.S.A. INC.

HH SO 10 15 FED 002 4H

NMNM 121473

SECTION 3, T26S, R27E (Off Lease SHL)

SHL 264' FSL & 833' FWL

SECTION 15, T26S, R27E

BHL 280' FSL & 1170' FWL

APD Surface Use Plan of Operations

This Surface Use Plan of Operations has been designed to be reviewed in conjunction with the Hurst Development Area (HDA) Master Development Plan

HDA Master Development Plan Reference Table

The contents referenced below apply to all HDA APD's

Existing Roads	Exhibit 1, MDP SUPO Page 1
Construction Materials	MDP SUPO Page 6
Methods for Handling Waste	MDP SUPO Page 6
Reclamation Objectives	MDP SUPO Page 6-8
Final Surface Reclamation	MDP SUPO Page 6-8

Driving Directions

- Driving Directions – From Malaga, New Mexico. The location is approximately 11.5 miles from the nearest town, which is Malaga, New Mexico. From Malaga, proceed South on Highway 285 approximately 11.5 miles and turn right (West) onto White City Rd and go approximately 6.8 miles on White City Road until the road reaches an intersection with Roadrunner Rd. Turn right onto this and travel 100 yards, then the access road and well location is on the right.

New or Reconstructed Access Roads – (MDP SUPO Pg. 1)

- There will be 1,136.45' of new road construction for this proposal (.52 acres)
- Ditches: See MDP
- Culverts: See MDP
- Road Cuts: See MDP

Location of Existing Wells

- 1-Mile radius map is attached

CHEVRON U.S.A. INC.

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Location of Existing and/or Proposed Production Facilities (MDP SUP Pg. 2)

- Facilities: Existing production facilities located in the NE corner of Sec. 10, T26S-R27E where oil and gas sales will take place.
 - The existing facility is 500' X 700'
 - Gas compression will occur within the proposed facility boundaries
 - Gas purchaser pipeline is in place at the tank battery.
 - Open top tanks or open containments will be netted.
 - Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting.
 - Facilities will have a secondary containment 1.5 times the holding capacity of largest storage tank.
 - All above ground structures will be painted non-reflective shale green for blending with surrounding environment.
 - The permanent water disposal system will be determined prior to construction of any water transfer pipeline. Until permanent water takeaway is available, produced water will be hauled off location in trucks.

Notification will be provided to BLM upon site selection and survey – plats (including SWD well information) will be provided.
- Pipelines: See Detail
 - Pipelines Include:
 - 4,583' of Flowlines carrying production (buried)
 - 4,600' Gas Lift Line carrying pressurized gas (buried)
 - 4,608' Temporary Water line carrying fresh water (surface)
 - A ROW will be applied for through the State and BLM. (30' wide, 3.2 acres)
 - All construction activity will be confined to the approved ROW.
 - Pipeline will run parallel to the road and will stay within approved ROW.

Location and Types of Water Supply (MDP SUP Pg. 5)

- Existing ponds in Section 9 & 10, T26S-R27E will be utilized for fresh water or recycled water.
- Fresh water will be obtained from a private water source.

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Construction Materials (MMP SUPA Pg. 6)

- Caliche will be sourced from a Chevron operated NMSLO pit in S2 NW4 Section 16 T26S R27E, or an alternate private pit in Section 13, T24S R27E in Eddy County, NM.

Methods for Handling Waste

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

Well Site Layout

- Surveyor Plat
 - Exterior well pad dimensions are 545' x 385'
 - Interior well pad dimensions from point of entry (well head) of the well are N-260', S-285', E-125', W-260'. Total disturbance area needed for construction of well pad will be approximately 4.81 acres
 - Topsoil placement is on the west where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices.
 - Cut and fill: will be minimal.
- Rig Layout (see diagram)

Plans for Surface Reclamation (MMP SUPA Pg. 11)

Interim Reclamation Procedures

- Reclaimed pad size: 200' x 325' (approximately 1.5 acres)
- Reclaimed pad layout, topsoil location & erosion control features

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BHL 280' FSL & 1170' FWL

Surface Ownership

- BLM Surface
 - Surface Tenant – Forehand Ranches, Inc.
- **Nearest Post Office:** Malaga Post Office; 11.4 Miles north

Other Information

- On-site performed by BLM NRS: Paul Murphy 1/6/2017
- Cultural report attached: Yes Participating Agreement attached: N/A

Chevron Representative:

Primary point of contact:

Jennifer Van Curen

Jennifer.VanCuren@arcadis-us.com

M- 432-270-8753

CHEVRON U.S.A. INC.

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NMNM 121473

SECTION 3, T26S, R27E (Off Lease SHL)

SHL 264' FSL & 833' FWL

SECTION 15, T26S, R27E

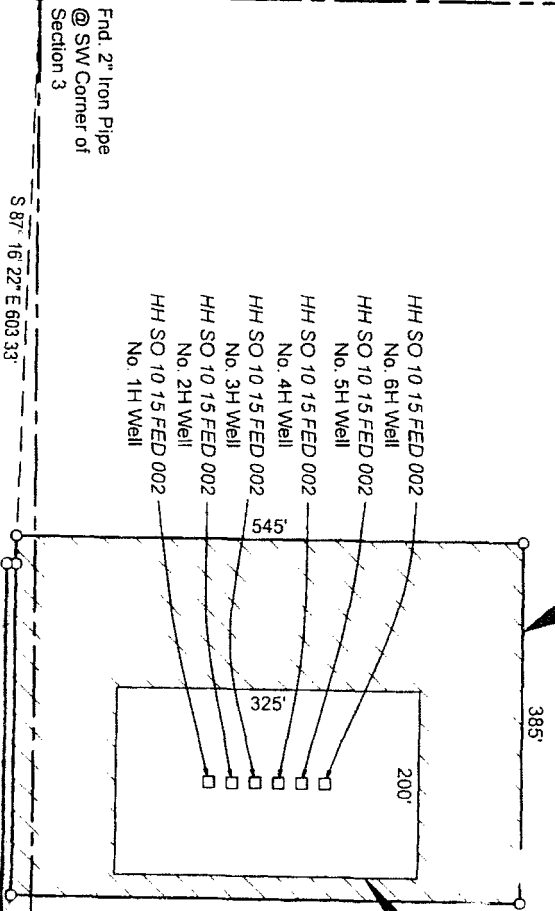
BHL 280' FSL & 1170' FWL

Chevron Functional Contacts

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Surface Land Representation Name: Kevin Dickerson Address: 6301 Deauville BLVD Midland TX 79706 Phone: (432) 687-7104 Email: Kevin.Dickerson@chevron.com	Facility Lead Name: Angel Bermea Address: 6301 Deauville BLVD Midland TX 79706 Phone: 432-770-7564 Email: Angel.Bermea@chevron.com
Geologist Name: Frank Karmanocky Address: 6301 Deauville BLVD Midland TX 79706 Phone: 432-687-7361 Email: FKarmanocky@chevron.com	Regulatory Specialist Dorian K. Fuentes Address: 6301 Deauville BLVD Midland TX 79706 Office: (432) 687-7631 Email: djvo@chevron.com

R 7 E

**PROPOSED
TEMPORARY
PAD AREA**
±3.32 Acres



**PROPOSED
PERMANENT
PAD AREA**
±1.49 Acres

Bureau of Land Management
(Access: ±0.11 Acres, 237.68' ±14.40 Rods)

Sec. 3

Roadrunner Road

NW PAD CORNER	NE PAD CORNER	HH SO 10 15 FED 002 NO. 1H WELL
X= 546,074 Y= 387,528	X= 546,459 Y= 387,520	X= 546,329 Y= 387,187
ELEVATION +3261' NAVD 88	ELEVATION +3272' NAVD 88	LAT. 32.064404 LONG. 104.183778
SW PAD CORNER	SE PAD CORNER	
X= 546,066 Y= 386,981	X= 546,451 Y= 386,975	X= 587,513 Y= 387,244
ELEVATION +3279' NAVD 88	ELEVATION +3281' NAVD 88	LAT. 32.064526 LONG. 104.184271
		ELEVATION +3273' NAVD 88

**T
26
S**

Sec. 10

Bureau of Land Management
(Access: ±0.41 Acres, 898.77' ±54.47 Rods)

**CENTERLINE
PROPOSED
ACCESS ROAD**
20' x 1136.45'
68.87 Rods
±0.52 Acres

Whites City Road

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge

WELL PLAT

Page 1 of 2

CHEVRON U.S.A. INC.

INTERIM RECLAMATION

HH SO 10 15 FED 002

SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR

REVISIONS

PROJ. MGR. GDG

No.

DATE:

REVISED BY:

DATE: MAY 31, 2017

No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175119\DWG\HH SO 10 15 FED 002 1H_IR.dwg



C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax 337-232-3299
www.fenstermaker.com



Robert L. Lastrapes
Registration No. 23006

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.

NOTE:

Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance: New Mexico One Call - www.nmonecall.org

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



Robert L. Lastrapes
Registration No. 23006

WELL PLAT

Page 2 of 2

CHEVRON U.S.A. INC.
INTERIM RECLAMATION
HH SO 10 15 FED 002
SECTIONS 3 & 10, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR		REVISIONS	
PROJ. MGR. GDG	No.	DATE:	REVISED BY:
DATE: MAY 31, 2017	No.	DATE:	REVISED BY:
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C. H. Fenstermaker & Associates, L.L.C.
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www.fenstermaker.com

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

07/26/2017

Bond Information

Federal/Indian APD: FED

BLM Bond number: CA0329

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: