

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

1a. Type of work: ☒ DRILL ☐ REENTER		7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		8. Lease Name and Well No. HH SO 8 5 FED 003 3H 322146
2. Name of Operator CHEVRON USA INCORPORATED		9. API Well No. 30-015-45117
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 NENW / 579 FNL / 2309 FWL / LAT 32.048172 / LONG -104.213421 At proposed prod. zone NENW / 280 FNL / 2430 FWL / LAT 32.078243 / LONG -104.21313		11. Sec., T. R. M. or Blk. and Survey or Area SEC 17 / T26S / R27E / NMP
14. Distance in miles and direction from nearest town or post office* 12.8 miles		12. County or Parish EDDY
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet		13. State NM
16. No. of acres in lease 1120	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 9709 feet / 20044 feet	20. BLM/BIA Bond No. on file FED: CA0329
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3266 feet	22. Approximate date work will start* 11/01/2017	23. Estimated duration 130 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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 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). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Laura Becerra / Ph: (432)687-7665	Date 07/12/2017
Title Permitting Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 07/13/2018
Title Assistant Field Manager Lands & Minerals		

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
Approval Date: 07/13/2018

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 17 2018

RECEIVED

RIP 7-17-18

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: NENW / 579 FNL / 2309 FWL / TWSP: 26S / RANGE: 27E / SECTION: 17 / LAT: 32.048172 / LONG: -104.213421 (TVD: 0 feet, MD: 0 feet)
PPP: SESW / 330 FSL / 2430 FWL / TWSP: 26S / RANGE: 27E / SECTION: 8 / LAT: 32.05067 / LONG: -104.213065 (TVD: 9709 feet, MD: 20044 feet)
BHL: NENW / 280 FNL / 2430 FWL / TWSP: 26S / RANGE: 27E / SECTION: 5 / LAT: 32.078243 / LONG: -104.21313 (TVD: 9709 feet, MD: 20044 feet)

BLM Point of Contact

Name: Judith Yeager

Title: Legal Instruments Examiner

Phone: 5752345936

Email: jyeager@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.

JUL 17 2018

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

RECEIVED

OPERATOR'S NAME:	Chevron USA Incorporated
LEASE NO.:	NMNM118108
WELL NAME & NO.:	HH SO 8 5 Fed 003 3H
SURFACE HOLE FOOTAGE:	579'/N & 2309'/W
BOTTOM HOLE FOOTAGE:	280'/N & 2430'/W
LOCATION:	Section 17, T.26 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

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

A. Hydrogen Sulfide

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.

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

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is: Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

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

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job. **Additional cement maybe required. Excess calculates to 5%.**
 - b. Second stage above DV tool: Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement maybe required. Excess calculates to 22%.**
- ❖ In High 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**.

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall

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

A. CASING

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

larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

Waste Minimization Plan (WMP)

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

ZS 071218

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System

Pressure Rating : 5,000 psi

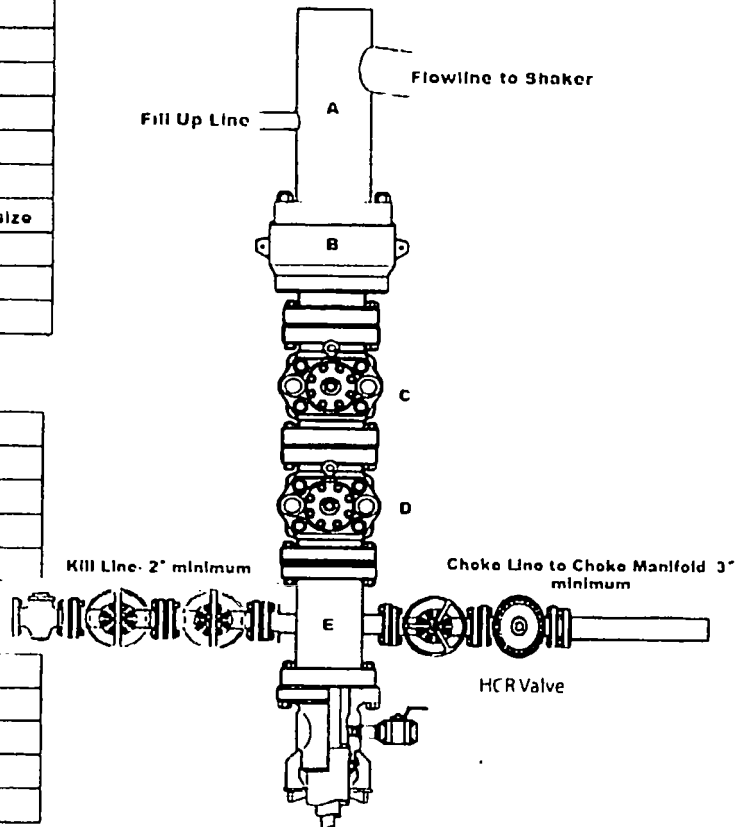
SIZE	PRESSURE	DESCRIPTION
A	N/A	Bell Nipple
B	13 5/8" 5,000 psi	Annular
C	13 5/8" 5,000 psi	Pipe Ram
D	13 5/8" 5,000 psi	Blind Ram
E	13 5/8" 5,000 psi	Mud Cross
F		
DSA	As required for each hole size	
C-Sec		
B-Sec	13-5/8" 5K x 11" 5K	
A-Sec	13-3/8" 5OW x 13-5/8" 5K	

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 tool, 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: _____

Approval Date: 07/13/2018

BOPE Testing

Minimum Requirements

Closing Unit and Accumulator Checklist

The following item must be performed, verified, and checked off at least once per well prior to low/high pressure testing of BOP equipment. This must be repeated after 6 months on the same well.

- ☐ Precharge pressure for each accumulator bottle must fall within the range below. Bottles may be further charged with nitrogen gas only. Tested precharge pressures must be recorded for each individual bottle and kept on location through the end of the well. Test will be conducted prior to connecting unit to BOP stack.

Check one that applies	Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
☐	1500 psi	1500 psi	750 psi	800 psi	700 psi
☐	2000 psi	2000 psi	1000 psi	1100 psi	900 psi
☐	3000 psi	3000 psi	1000 psi	1100 psi	900 psi

- ☐ Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well

- ☐ Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. Reservoir capacity will be recorded. Reservoir fluid level will be recorded along with manufacturer's recommendation. All will be kept on location through the end of the well.

- ☐ Closing unit system will have two independent power sources (not counting accumulator bottles) to close the preventers.

- ☐ Power for the closing unit pumps will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure decreases to the pre-set level. It is recommended to check that air line to accumulator pump is "ON" during each tour change.

- ☐ With accumulator bottles isolated, closing unit will be capable of opening the hydraulically-operated choke line valve (if used) plus close the annular preventer on the smallest size drill pipe within 2 minutes and obtain a minimum of 200 psi above maximum acceptable precharge pressure (see table above) on the closing manifold. Test pressure and closing time will be recorded and kept on location through the end of the well.

- ☐ Master controls for the BOPE system will be located at the accumulator and will be capable of opening and closing all preventer and the choke line valve (if used)

- ☐ Remote controls for the BOPE system will be readily accessible (clear path) to the driller and located on the rig floor (not in the dog house). Remote controls will be capable of closing all preventers.

- ☐ Record accumulator tests in drilling reports and IADC sheet

BOPE Test Checklist

The following item must be checked off prior to beginning test

- ☐ BLM will be given at least 4 hour notice prior to beginning BOPE testing

- ☐ Valve on casing head below test plug will be open

- ☐ Test will be performed using clear water.

The following item must be performed during the BOPE testing and then checked off

- ☐ BOPE will be pressure tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs, and at a minimum of 30 days intervals. Test pressure and times will be recorded by a 3rd party on a test chart and kept on location through the end of the well.

- ☐ Test plug will be used

- ☐ Ram type preventer and all related well control equipment will be tested to 250 psi (low) and 5,000 psi (high).

- ☐ Annular type preventer will be tested to 250 psi (low) and 3,500 psi (high).

- ☐ Valves will be tested from the working pressure side with all down stream valves open. The check valve will be held open to test the kill line valve(s)

- ☐ Each pressure test will be held for 10 minutes with no allowable leak off.

- ☐ Master controls and remote controls to the closing unit (accumulator) must be function tested as part of the BOP testing

- ☐ Record BOP tests and pressures in drilling reports and IADC sheet

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer along with any/all BOP and accumulator test charts and reports from 3rd parties.

Wellname: _____

Representative: _____

Date: _____

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Chevron USA Incorporated
LEASE NO.:	NMNM118108
WELL NAME & NO.:	HH SO 8 5 Fed 003 3H
SURFACE HOLE FOOTAGE:	579'/N & 2309'/W
BOTTOM HOLE FOOTAGE	280'/N & 2430'/W
LOCATION:	Section 17, 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 Conditions of Approval for APDs

****** 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:

1. The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
2. The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
3. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
4. The topsoil stockpile shall be located outside the bermed well pad.
5. Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
6. No storm drains, tubing or openings shall be placed in the berm.
7. 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.
8. 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.
9. 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.)
10. Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

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, or equivalent, 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 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

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

• 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.

• 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.

- **CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

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

- **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.

- **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.

- **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.)

- **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

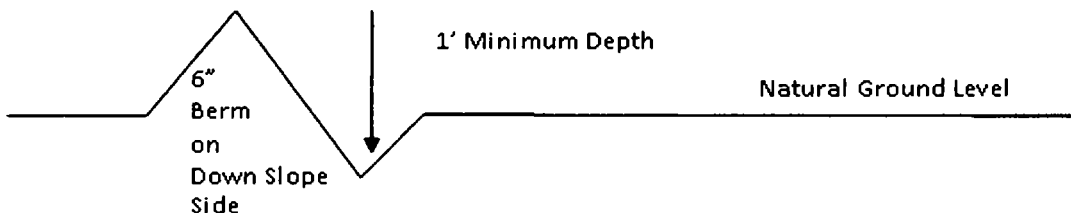
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

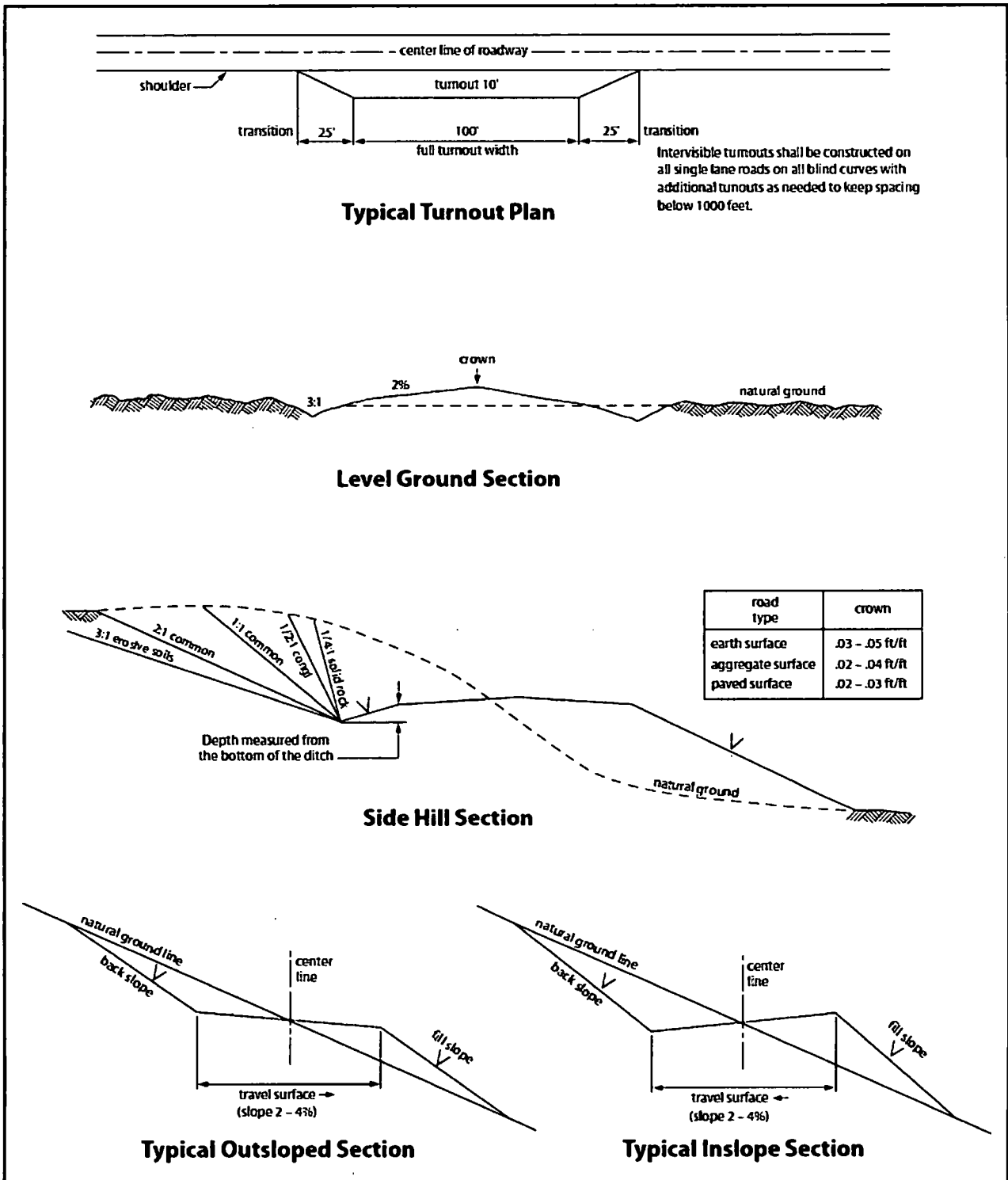


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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:

- Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- 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;
- 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 30 feet:

1. 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.*)
2. 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.)

3. 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:

1. 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.
2. 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.

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



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

Operator Certification Data Report

07/16/2018

Operator Certification

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

NAME: Laura Becerra

Signed on: 07/06/2017

Title: Permitting Specialist

Street Address: 6301 Deauville Blvd., S2211

City: Midland

State: TX

Zip: 79706

Phone: (432)687-7665

Email address: LBecerra@Chevron.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



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

Application Data Report

07/16/2018

APD ID: 10400014949

Submission Date: 07/12/2017

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Highlighted data
reflects the most
recent changes

[Show Final Text](#)

Section 1 - General

APD ID: 10400014949

Tie to previous NOS? 10400009707

Submission Date: 07/12/2017

BLM Office: CARLSBAD

User: Laura Becerra

Title: Permitting Specialist

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM118108

Lease Acres: 1120

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:

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 8 5 FED 003

Well Number: 3H

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 8 5 FED 003

Well Number: 3H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

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
8 5 FED

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: 12.8 Miles

Distance to nearest well: 4300 FT

Distance to lease line: 330 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: HH_SO_8_5_FED_003_3H_C_102_07-06-2017.pdf

Well work start Date: 11/01/2017

Duration: 130 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	579	FNL	2309	FWL	26S	27E	17	Aliquot NENW	32.048172	-104.213421	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 100549	3266	0	0
KOP Leg #1	579	FNL	2309	FWL	26S	27E	17	Aliquot NENW	32.048172	-104.213421	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 100549	3266	0	0
PPP Leg #1	330	FSL	2430	FWL	26S	27E	8	Aliquot SESW	32.05067	-104.213065	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 118108	-6443	20044	9709

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

	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	FNL	243 0	FWL	26S	27E	5	Aliquot NENW	32.07810 6	- 104.2131 31	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 118108	- 644 3	200 44	970 9
BHL Leg #1	280	FNL	243 0	FWL	26S	27E	5	Aliquot NENW	32.07824 3	- 104.2131 3	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 118108	- 644 3	200 44	970 9

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Choke Diagram Attachment:

HH_SO_8_5_FED_003_3H_Choke_Diagram_07-10-2017.pdf

BOP Diagram Attachment:

10K_UHS_Wellhead_schematics_20180713064416.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	-5734	-6184	450	K-55	54.5	STC	5.11	1.82	DRY	3.97	DRY	2.31
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	9300	0	9300	-5734	-14749	9300	L-80	43.5	OTHER - TXP	1.32	1.45	DRY	2.31	DRY	3.97
3	PRODUCTION	8.5	5.5	NEW	API	N	0	20044	0	20044	-5734	-24453	20044	P-110	20	OTHER - TXP	1.5	1.26	DRY	1.35	DRY	2.43

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_8_5_FED_003_3H_9pt_plan_07-10-2017.pdf

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

HH_SO_8_5_FED_003_3H_9.625_TXP_07-10-2017.pdf

Casing Design Assumptions and Worksheet(s):

HH_SO_8_5_FED_003_3H_9.625_TXP_07-10-2017.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_8_5_FED_003_3H_P110_TXP_07-10-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	450	356	1.33	14.8	1.33	50	C	Class C

INTERMEDIATE	Lead	2100	0	1100	213	2.43	11.9	14.21	50	C	50/50 Poz Class C + Antifoam, Extender, Salt, Retarder
INTERMEDIATE	Tail		1100	2100	235	1.33	14.8	6.37	0	C	Class C + Antifoam, Retarder, Viscosifier
INTERMEDIATE	Lead	2100	2100	8015	1524	2.43	11.9	13.76	10	H	50/50 Poz Class H + Extender, Antifoam,

Operator Name: CHEVRON USA INCORPORATED**Well Name:** HH SO 8 5 FED 003**Well Number:** 3H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Retarder, Salt, Viscosifier
INTERMEDIATE	Tail		8015	9300	389	1.21	15.6	5.54	10	H	Class H + Retarder, Extender, Dispersant
PRODUCTION	Lead		7015	8015	237	1.21	14.5	5.54	10	H	50/50 Poz: Class H + Extender, Antifoam, Dispersant, Retarder
PRODUCTION	Tail		8015	2004 4	3258	1.2	15.6	5.3	10	H	Class H, + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent

Section 5 - Circulating Medium

Mud System Type: Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

Describe what will be on location to control well or mitigate other conditions: A closed system will be utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill. All fluids and cuttings will be disposed of in accordance with NMOCD regulations.

Describe the mud monitoring system utilized: A mud test shall be performed every 24 hours after mudding up to determine, as applicable density, viscosity, gel strength, dilution, and pH. Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated a PVT, stroke counter, flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume. In compliance with Onshore Order #2.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	450	SPUD MUD	8.3	8.7							
450	9015	OIL-BASED MUD	9	9.5							

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
9015	2004 4	OIL-BASED MUD	10	13							The mud weight will range depending on the targeted formation. The Wolfcamp A pore pressure will not exceed 9.5 ppg, but due to wellbore stability, the mud program will exceed the pore pressure. To control pressure we are using 13.0 and may end up using heavier mud weight to 14.0

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Drill Stem Tests are not planned

Logs

Type Mudlogs Logs: 2 man mudlog Interval: Int Csg to TD Timing: Drillout of Int Csg Vendor: TBD

Type: LWD Logs: MWD Gamma Interval: Int. & Prod. Hole Timing: While drilling Vendor: TBD

List of open and cased hole logs run in the well:

GR,MWD

Coring operation description for the well:

Conventional whole core samples are not planned; directional survey will be run - will send log(s) when run

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6563

Anticipated Surface Pressure: 4583

Anticipated Bottom Hole Temperature(F): 130

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

HH_SO_8_5_FED_003_3H_H2S_07-10-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

HH_SO_8_5_FED_003_3H_AC_Report_07-10-2017.pdf

HH_SO_8_5_FED_003_3H_Drill_Plan_07-10-2017.pdf

HH_SO_8_5_FED_003_3H_Rig_Layout_07-10-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

CHOKE MANIFOLD SCHEMATIC

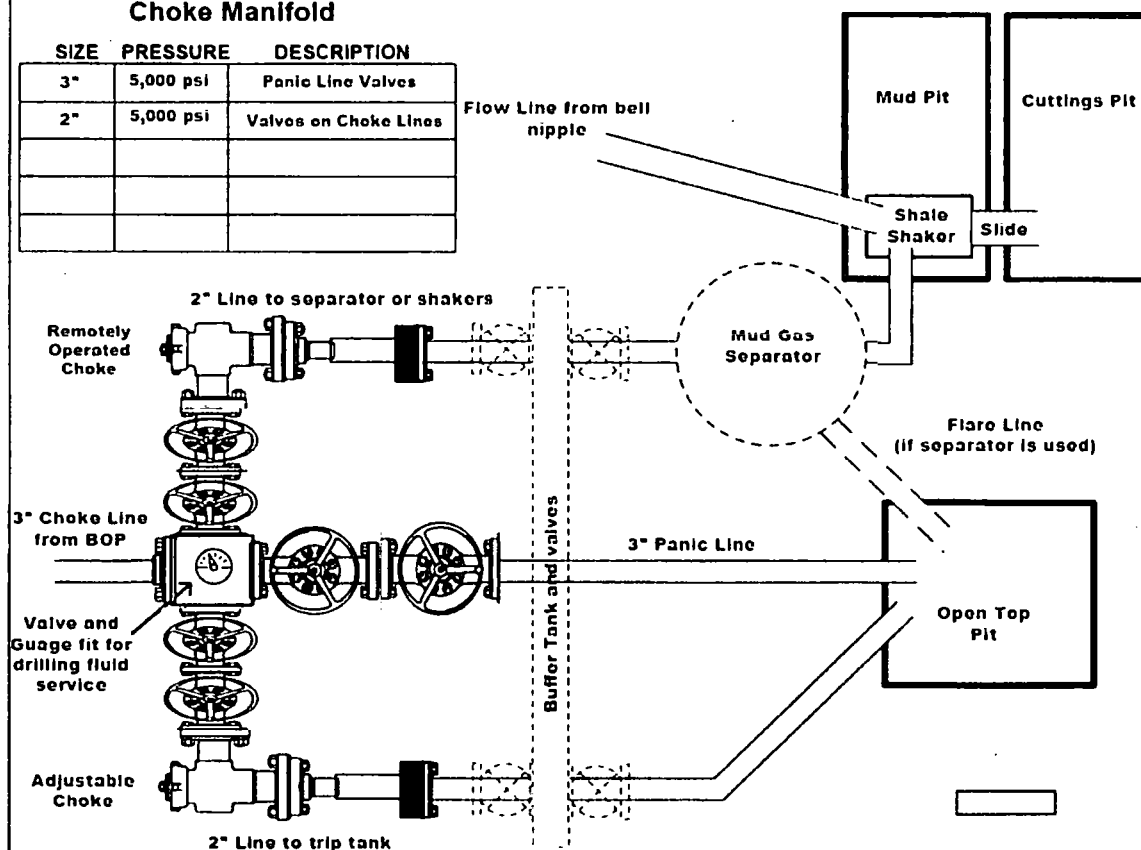
Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

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 Lines



Installation Checklist

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

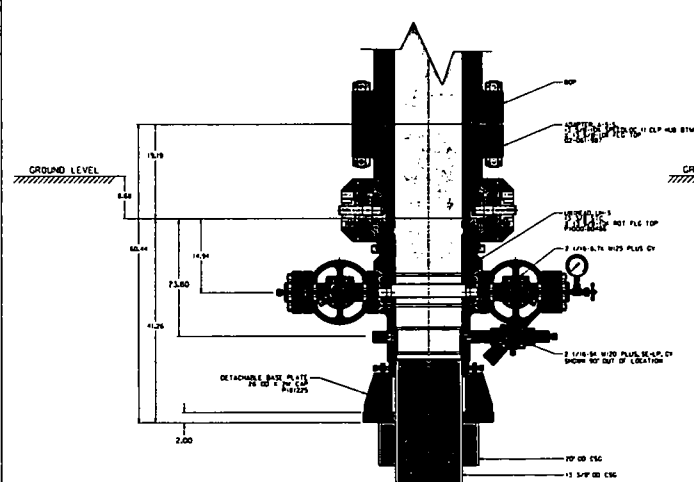
- ☐ The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.
- ☐ 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

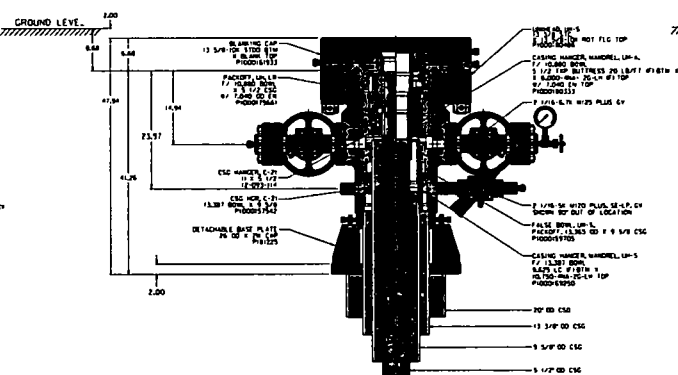
Wellname: _____

Representative: _____

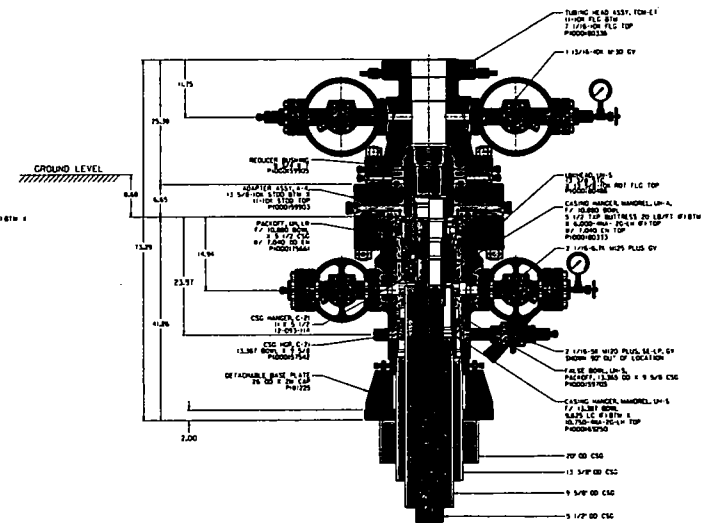
Date: _____



DRILLING MODE



CAPPING MODE



COMPLETION MODE

6650 PSI UH-S
CHEVRON
20 X 13 3/8 X 9 5/8 X 5 1/2

PRIVATE AND CONFIDENTIAL		DESCRIPTION		DATE		BY	
THIS DRAWING IS THE PROPERTY OF CHEVRON U.S.A. INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF CHEVRON U.S.A. INC. ANY VIOLATION OF THIS NOTICE IS SUBJECT TO PROSECUTION UNDER THE APPLICABLE LAWS.		20 X 13 3/8 X 9 5/8 X 5 1/2		03-07-17		J. GARCIA	
		20 X 13 3/8 X 9 5/8 X 5 1/2		03-07-17		J. GARCIA	
		20 X 13 3/8 X 9 5/8 X 5 1/2		03-07-17		J. GARCIA	
		20 X 13 3/8 X 9 5/8 X 5 1/2		03-07-17		J. GARCIA	

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

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Castile		505	
Lamar		2395	
Bell		2318	
Cherry		3208	
Brushy		4450	
Bone Spring/Limestone		6200	
First Bone Spring Sand		6588	
First Bone Spring Shale		6914	
Second Bone Spring Sand		7621	
Harvey Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9342	
Wolfcamp C		9709	
Lateral TVD Wolfcamp C		9742	9500-9241

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
Descent Expected Base of Fresh Water		450
Water	Castile	505
Water	Cherry Canyon	2308
Oil/Gas	Brushy Canyon	4450
Oil/Gas	Bone Spring Limestone	6888
Oil/Gas	First Bone Spring Sand	6914
Oil/Gas	Second Bone Spring Sand	7621
Oil/Gas	Harvey Sand	8123
Oil/Gas	Wolfcamp A	9342
Oil/Gas	Wolfcamp C	9709

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

3. BOP EQUIPMENT

Will have a minimum of a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified in the attached testing requirements. Chevron requests a variance to use a CoFlex hose with a metal protective covering that will be utilized between the BOP and Choke manifold. Please refer to the testing and specification documents.

Chevron requests a variance to use a FMC Technologies UH-2 Multibowl wellhead, which will be run through the rig floor on surface casing. BOP will be rigged up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC Technologies and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. CASING PROGRAM

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	17.10'	17.10"	13.00"	34.5 #	K-55	STC	New
Intermediate	0'	8100'	17.10"	9.50"	43.5 #	L-80	TCP	New
Production	0'	9742'	8.12"	5.12"	20.0 #	P-110	TCP	New

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

Dr. Geotechnical Engineers and the Engineer's World Case Casing Design.

Surface Casing: 450'

Intermediate Casing: 8015'

Production Casing: 9742'

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Trl-Axial
Surface	1.82	5.11	3.87	2.31
Intermediate	1.65	1.32	1.78	1.84
Production	1.28	1.5	2.43	1.35

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

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

5. CEMENTING PROGRAM

Slurry	Type	Cement Top	Cement Bottom	Weight (lbm)	Yield (bbl)	%Excess	Sacks	Water (m³)
Surface	Tail	Class C	0'	450	15.8	1.33	26.5	8.37
Intermediate	Stage 2 Lead	50/50 Poz: Class C + Antifoam, Extender, Salt Retarder	0'	1,100'	11.9	2.43	46	14.21
	Stage 2 Tail	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.33	46	8.37
	DV TOOL			2,100'				
	Stage 1 Lead	50/50 Poz: Class C + Extender, Antifoam, Retarder, Salt Viscosifier	2,100'	8,015'	11.9	2.43	46	13.78
	Stage 1 Tail	Class H + Retarder, Extender, Dispersant	8,015'	9,300'	15.8	1.21	46	5.54
Production	Lead	50/50 Poz: Class H + Extender, Antifoam, Dispersant, Retarder	7,015'	8,015'	14.5	1.21	46	5.54
	Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	9,445'	15.8	1.2	46	5.30

6. MUD PROGRAM

From	To	Type	Weight	F Vls	F Frame
0'	450'	Spud Mud	8.3 - 8.7	32 - 34	NG - NG
450'	8015'	OBM	9.0 - 9.5	50 - 70	5.0 - 10
8015'	9742'	OBM	10.2 - 13.0	50 - 70	5.0 - 10

7. TESTING, LOGGING, AND CORING

TYPE	Logs	Interval	Interval	Interval	Interval
Hydro	2 min mudlog	Int. Csg to TD	Int. Csg to Int. Csg	Int. Csg to Int. Csg	Int. Csg to Int. Csg
LWD	MWD Gamma	Int. and Prod. Hole	Int. and Prod. Hole	Int. and Prod. Hole	Int. and Prod. Hole

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
Nominal ID	4.778 in.	Wall Thickness	0.361 in.
Plain End Weight	19.83 lbs/ft	Standard Drift Diameter	4.653 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	641 x 1000 lbs	Internal Yield	12630 psi
Collapse	11100 psi	SMYS	110000 psi
TENARISXP™ BTC CONNECTION DATA			
GEOMETRY			
Connection OD	6.100 in.	Coupling Length	9.450 in.
Critical Section Area	5.828 sq. in.	Threads per in.	5.00
		Connection ID	4.766 in.
		Make-Up Loss	4.204 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	641 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	641 x 1000 lbs
External Pressure Capacity	11100 psi	Internal Pressure Capacity ⁽¹⁾	12630 psi
		Structural Bending ⁽²⁾	92 °/100 ft
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-tenarishydril@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

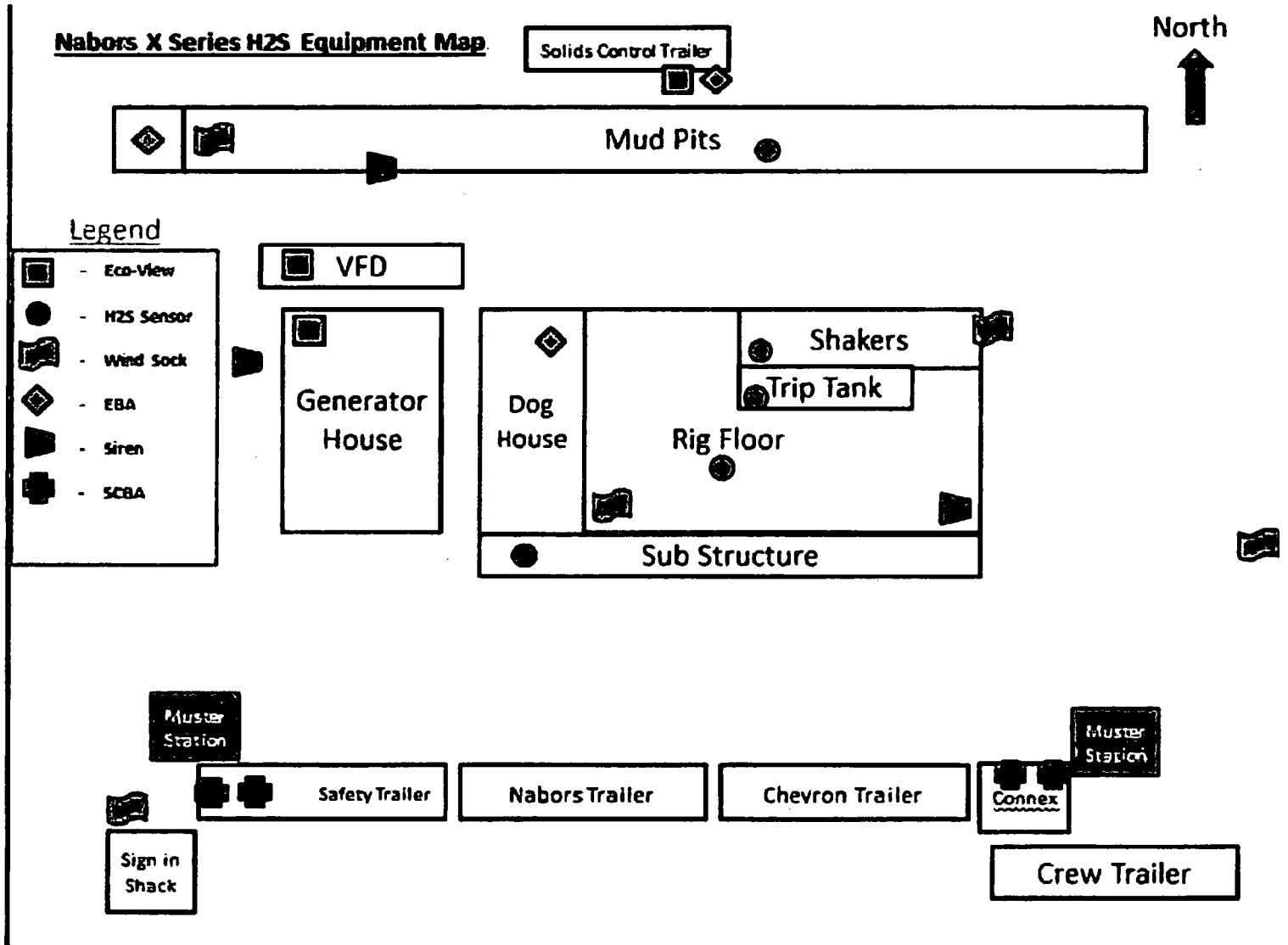
Public Safety - Emergency Assistance

<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



Nabors X Series H₂S Equipment Map





NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 17 2018

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Chevron

**Eddy County, NM (NAD27 NME)
HH SO 8 5 Fed 003
3H**

**OH
Plan 1 06-16-17**

Anticollision Report

16 June, 2017





Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 06-16-17		
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 6/15/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	20,043.68	Plan 1 06-16-17 (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						
Cottonwood Hills 32						
1H - OH - Surveys	20,044.41	9,397.80	1,877.83	1,612.61	7.080	CC, ES, SF
HH SO 8 5 Fed 003						
1H - OH - Plan 1 06-16-17	600.87	601.88	49.84	44.06	8.624	CC
1H - OH - Plan 1 06-16-17	700.00	701.75	50.71	43.86	7.407	ES
1H - OH - Plan 1 06-16-17	20,044.41	19,540.28	817.25	387.15	1.900	SF
2H - OH - Plan 1 06-16-17	674.08	675.70	25.08	18.51	3.816	CC
2H - OH - Plan 1 06-16-17	800.00	802.54	25.47	17.53	3.209	ES
2H - OH - Plan 1 06-16-17	20,044.41	19,416.71	568.78	261.48	1.851	SF
4H - OH - Plan 1 06-16-17	929.73	927.08	17.05	7.77	1.838	CC, ES
4H - OH - Plan 1 06-16-17	20,044.41	20,144.68	862.88	386.39	1.811	SF
5H - OH - Plan 1 06-16-17	856.05	851.51	48.16	39.67	5.670	CC
5H - OH - Plan 1 06-16-17	900.00	894.58	48.39	39.43	5.400	ES
6H - OH - Plan 1 06-16-17	1,226.04	1,218.56	59.22	46.75	4.750	CC
6H - OH - Plan 1 06-16-17	1,300.00	1,292.20	59.61	46.34	4.493	ES
HH SO 8 P2						
13HD - OH / Job #61220 - Plan 4 06-13-17	600.00	580.00	1,380.98	1,375.32	244.132	CC
13HD - OH / Job #61220 - Plan 4 06-13-17	800.00	779.84	1,382.04	1,374.24	177.098	ES
13HD - OH / Job #61220 - Plan 4 06-13-17	20,044.41	20,353.90	2,110.28	1,639.05	4.478	SF
14HD - OH / Job #61221 - Plan 3 05-10-17	9,100.00	9,074.46	1,261.42	1,164.73	13.046	CC
14HD - OH / Job #61221 - Plan 3 05-10-17	9,300.00	9,272.29	1,262.50	1,163.63	12.769	ES
14HD - OH / Job #61221 - Plan 3 05-10-17	9,600.00	9,525.82	1,280.36	1,178.56	12.576	SF
14HD - ST01 / Job #61221 - Plan 4 06-09-17	9,100.00	9,074.46	1,261.42	1,164.73	13.046	CC
14HD - ST01 / Job #61221 - Plan 4 06-09-17	20,044.41	20,419.42	1,300.78	837.55	2.808	ES, SF
21HA - OH / Job #61216 - Plan 4 06-09-17	1,064.20	1,061.00	1,377.55	1,368.73	156.163	CC
21HA - OH / Job #61216 - Plan 4 06-09-17	1,500.00	1,481.72	1,378.96	1,365.58	103.027	ES
21HA - OH / Job #61216 - Plan 4 06-09-17	20,044.41	19,357.96	2,205.12	1,749.75	4.842	SF
22HA - OH / Job #61217 - Plan 4 06-09-17	3,636.73	3,654.11	1,159.57	1,122.30	31.109	CC
22HA - OH / Job #61217 - Plan 4 06-09-17	20,044.41	19,473.36	1,313.67	879.40	3.025	ES, SF
5HC - OH / Job #61218 - Plan 3 06-09-17	600.00	579.00	1,392.85	1,387.20	246.465	CC
5HC - OH / Job #61218 - Plan 3 06-09-17	20,044.41	20,002.62	1,680.59	1,209.05	3.564	ES, SF
6HC - OH / Job #61219 - Plan 3 06-09-17	20,044.41	20,082.44	839.72	367.30	1.777	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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

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 8 P5						
11H - OH - Plan 1 11-01-16	2,031.79	1,957.19	937.22	916.30	44.812	CC
11H - OH - Plan 1 11-01-16	20,044.41	18,683.93	1,327.48	904.90	3.141	ES, SF
12H - OH - Plan 1 11-01-16	1,860.72	1,787.98	927.83	908.79	48.732	CC
12H - OH - Plan 1 11-01-16	1,900.00	1,820.16	927.98	908.55	47.760	ES
12H - OH - Plan 1 11-01-16	20,044.41	18,921.33	2,161.89	1,709.39	4.778	SF
19H - OH - Plan 2 11-17-16	12,478.33	11,772.37	840.23	680.28	5.253	CC
19H - OH - Plan 2 11-17-16	20,044.41	19,350.17	841.28	381.62	1.830	ES, SF
20H - OH - Plan 2 11-17-16	1,845.47	1,778.56	885.99	867.08	46.858	CC
20H - OH - Plan 2 11-17-16	1,900.00	1,823.58	886.30	866.85	45.563	ES
20H - OH - Plan 2 11-17-16	20,044.41	19,485.52	1,679.91	1,218.96	3.644	SF
27H - OH - Plan 2 11-17-16	1,853.04	1,788.81	864.81	845.81	45.508	CC
27H - OH - Plan 2 11-17-16	1,900.00	1,828.08	865.04	845.56	44.417	ES
27H - OH - Plan 2 11-17-16	20,044.41	19,886.83	2,124.74	1,667.53	4.647	SF
28H - OH - Plan 2 11-17-16	1,841.20	1,779.30	844.54	825.65	44.708	CC
28H - OH - Plan 2 11-17-16	1,900.00	1,828.56	844.90	825.42	43.372	ES
28H - OH - Plan 2 11-17-16	20,044.41	19,873.51	1,311.50	863.28	2.926	SF

Offset Design Cottonwood Hills 32 - 1H - OH - Surveys

Survey Program: 129-MWD												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
11,100.00	9,650.56	9,260.00	9,311.99	65.71	28.86	-92.23	11,717.52	-1,576.72	9,918.95	9,824.44	94.51	104.953	
11,200.00	9,646.47	9,260.00	9,311.99	67.07	28.86	-92.23	11,717.52	-1,576.72	9,820.24	9,724.38	95.86	102.438	
11,300.00	9,642.39	9,260.00	9,311.99	68.46	28.86	-92.23	11,717.52	-1,576.72	9,721.56	9,624.30	97.26	99.952	
11,400.00	9,638.30	9,260.00	9,311.99	69.90	28.86	-92.23	11,717.52	-1,576.72	9,622.90	9,524.20	98.70	97.497	
11,500.00	9,634.22	9,260.00	9,311.99	71.37	28.86	-92.23	11,717.52	-1,576.72	9,524.28	9,424.10	100.17	95.079	
11,600.00	9,630.13	9,260.00	9,311.99	72.88	28.86	-92.23	11,717.52	-1,576.72	9,425.68	9,324.00	101.68	92.700	
11,700.00	9,626.05	9,260.00	9,311.99	74.42	28.86	-92.23	11,717.52	-1,576.72	9,327.11	9,223.89	103.22	90.362	
11,800.00	9,621.96	9,260.00	9,311.99	75.99	28.86	-92.23	11,717.52	-1,576.72	9,228.57	9,123.78	104.79	88.068	
11,900.00	9,617.88	9,260.00	9,311.99	77.59	28.86	-92.23	11,717.52	-1,576.72	9,130.06	9,023.67	106.39	85.819	
12,000.00	9,613.79	9,260.00	9,311.99	79.21	28.86	-92.23	11,717.52	-1,576.72	9,031.59	8,923.58	108.01	83.617	
12,100.00	9,609.71	9,260.00	9,311.99	80.86	28.86	-92.23	11,717.52	-1,576.72	8,933.15	8,823.49	109.66	81.461	
12,200.00	9,605.63	9,260.00	9,311.99	82.54	28.86	-92.23	11,717.52	-1,576.72	8,834.74	8,723.41	111.34	79.353	
12,300.00	9,601.54	9,260.00	9,311.99	84.23	28.86	-92.23	11,717.52	-1,576.72	8,736.37	8,623.34	113.03	77.292	
12,400.00	9,597.71	9,260.00	9,311.99	85.95	28.86	-88.16	11,717.52	-1,576.72	8,638.04	8,523.35	114.69	75.316	
12,500.00	9,596.68	9,260.00	9,311.99	87.68	28.86	-77.66	11,717.52	-1,576.72	8,539.78	8,425.65	116.13	74.828	
12,600.00	9,597.97	9,260.00	9,311.99	89.42	28.86	-75.88	11,717.52	-1,576.72	8,441.63	8,326.48	115.15	73.311	
12,700.00	9,599.31	9,260.00	9,311.99	91.19	28.86	-75.88	11,717.52	-1,576.72	8,343.53	8,226.65	116.88	71.387	
12,800.00	9,600.66	9,260.00	9,311.99	92.97	28.86	-75.88	11,717.52	-1,576.72	8,245.47	8,126.85	118.62	69.510	
12,900.00	9,602.00	9,260.00	9,311.99	94.77	28.86	-75.88	11,717.52	-1,576.72	8,147.47	8,027.08	120.38	67.679	
13,000.00	9,603.34	9,275.91	9,327.90	96.58	28.91	-76.42	11,717.78	-1,576.72	8,049.19	7,926.75	122.44	65.738	
13,100.00	9,604.68	9,276.16	9,328.15	98.40	28.91	-76.43	11,717.79	-1,576.72	7,951.28	7,827.04	124.24	63.999	
13,200.00	9,606.02	9,276.42	9,328.41	100.24	28.91	-76.44	11,717.79	-1,576.72	7,853.41	7,727.36	126.05	62.304	
13,300.00	9,607.37	9,276.68	9,328.67	102.09	28.91	-76.45	11,717.80	-1,576.72	7,755.60	7,627.73	127.87	60.651	
13,400.00	9,608.71	9,276.95	9,328.93	103.96	28.91	-76.46	11,717.81	-1,576.72	7,657.84	7,528.14	129.71	59.040	
13,500.00	9,610.05	9,277.22	9,329.21	105.83	28.91	-76.47	11,717.83	-1,576.72	7,560.15	7,428.59	131.55	57.469	
13,600.00	9,611.39	9,293.00	9,344.96	107.72	28.96	-77.01	11,718.73	-1,576.67	7,462.81	7,329.11	133.69	55.821	
13,700.00	9,612.73	9,293.00	9,344.96	109.61	28.96	-77.01	11,718.73	-1,576.67	7,365.22	7,229.67	135.55	54.334	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 Cottonwood Hills 32 - 1H - OH - Surveys													Offset Site Error: 0.00 usft
Survey Program: 129-MWD													Offset Well Error: 0.00 usft
Reference	Offset		Semi Major Axis		Distance		Minimum Separation		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	
13,800.00	9,614.07	9,293.00	9,344.96	111.52	28.96	-77.01	11,718.73	-1,576.67	7,267.70	7,130.28	137.43	52.884	
13,900.00	9,615.42	9,293.00	9,344.96	113.43	28.96	-77.01	11,718.73	-1,576.67	7,170.25	7,030.94	139.31	51.470	
14,000.00	9,616.76	9,293.00	9,344.96	115.36	28.96	-77.01	11,718.73	-1,576.67	7,072.88	6,931.68	141.20	50.091	
14,100.00	9,618.10	9,293.00	9,344.96	117.29	28.96	-77.01	11,718.73	-1,576.67	6,975.57	6,832.47	143.10	48.747	
14,200.00	9,619.44	9,293.00	9,344.96	119.23	28.96	-77.01	11,718.73	-1,576.67	6,878.34	6,733.34	145.00	47.436	
14,300.00	9,620.78	9,293.00	9,344.96	121.18	28.96	-77.01	11,718.73	-1,576.67	6,781.20	6,634.28	146.92	46.157	
14,400.00	9,622.13	9,293.00	9,344.96	123.13	28.96	-77.01	11,718.73	-1,576.67	6,684.13	6,535.30	148.84	44.909	
14,500.00	9,623.47	9,293.00	9,344.96	125.09	28.96	-77.01	11,718.73	-1,576.67	6,587.16	6,436.40	150.76	43.692	
14,600.00	9,624.81	9,293.00	9,344.96	127.06	28.96	-77.01	11,718.73	-1,576.67	6,490.28	6,337.58	152.70	42.504	
14,700.00	9,626.15	9,293.00	9,344.96	129.03	28.96	-77.01	11,718.73	-1,576.67	6,393.49	6,238.86	154.64	41.346	
14,800.00	9,627.49	9,293.00	9,344.96	131.01	28.96	-77.01	11,718.73	-1,576.67	6,296.81	6,140.23	156.58	40.214	
14,900.00	9,628.84	9,293.00	9,344.96	132.99	28.96	-77.01	11,718.73	-1,576.67	6,200.22	6,041.69	158.53	39.111	
15,000.00	9,630.18	9,293.00	9,344.96	134.98	28.96	-77.01	11,718.73	-1,576.67	6,103.75	5,943.27	160.49	38.033	
15,100.00	9,631.55	9,293.00	9,344.96	136.98	28.96	-77.29	11,718.73	-1,576.67	6,007.47	5,844.86	162.61	36.945	
15,200.00	9,633.07	9,293.00	9,344.96	138.97	28.96	-77.29	11,718.73	-1,576.67	5,911.62	5,747.05	164.57	35.921	
15,300.00	9,634.58	9,293.00	9,344.96	140.97	28.96	-77.29	11,718.73	-1,576.67	5,815.92	5,649.38	166.54	34.923	
15,400.00	9,636.09	9,293.00	9,344.96	142.98	28.96	-77.29	11,718.73	-1,576.67	5,720.36	5,551.85	168.51	33.947	
15,500.00	9,637.61	9,293.00	9,344.96	144.98	28.96	-77.29	11,718.73	-1,576.67	5,624.95	5,454.47	170.48	32.994	
15,600.00	9,639.12	9,293.00	9,344.96	147.00	28.96	-77.29	11,718.73	-1,576.67	5,529.71	5,357.25	172.46	32.063	
15,700.00	9,640.63	9,293.00	9,344.96	149.01	28.96	-77.29	11,718.73	-1,576.67	5,434.64	5,260.19	174.44	31.154	
15,800.00	9,642.15	9,293.00	9,344.96	151.03	28.96	-77.29	11,718.73	-1,576.67	5,339.75	5,163.31	176.43	30.265	
15,900.00	9,643.66	9,293.00	9,344.96	153.06	28.96	-77.29	11,718.73	-1,576.67	5,245.04	5,066.62	178.42	29.397	
16,000.00	9,645.17	9,293.00	9,344.96	155.08	28.96	-77.29	11,718.73	-1,576.67	5,150.54	4,970.13	180.41	28.549	
16,100.00	9,646.69	9,293.00	9,344.96	157.11	28.96	-77.29	11,718.73	-1,576.67	5,056.25	4,873.84	182.41	27.719	
16,200.00	9,648.20	9,293.00	9,344.96	159.15	28.96	-77.29	11,718.73	-1,576.67	4,962.18	4,777.77	184.41	26.908	
16,300.00	9,649.71	9,293.00	9,344.96	161.18	28.96	-77.29	11,718.73	-1,576.67	4,868.35	4,681.94	186.41	26.116	
16,400.00	9,651.23	9,293.00	9,344.96	163.22	28.96	-77.29	11,718.73	-1,576.67	4,774.77	4,586.36	188.42	25.341	
16,500.00	9,652.74	9,293.00	9,344.96	165.27	28.96	-77.29	11,718.73	-1,576.67	4,681.46	4,491.03	190.43	24.584	
16,600.00	9,654.25	9,293.00	9,344.96	167.31	28.96	-77.29	11,718.73	-1,576.67	4,588.43	4,395.99	192.44	23.844	
16,700.00	9,655.77	9,293.00	9,344.96	169.36	28.96	-77.29	11,718.73	-1,576.67	4,495.69	4,301.24	194.45	23.120	
16,800.00	9,657.28	9,293.00	9,344.96	171.41	28.96	-77.29	11,718.73	-1,576.67	4,403.28	4,206.81	196.47	22.412	
16,900.00	9,658.79	9,293.00	9,344.96	173.47	28.96	-77.29	11,718.73	-1,576.67	4,311.20	4,112.71	198.49	21.720	
17,000.00	9,660.31	9,293.00	9,344.96	175.52	28.96	-77.29	11,718.73	-1,576.67	4,219.49	4,018.98	200.51	21.044	
17,100.00	9,661.82	9,293.00	9,344.96	177.58	28.96	-77.29	11,718.73	-1,576.67	4,128.15	3,925.62	202.53	20.383	
17,200.00	9,663.33	9,293.00	9,344.96	179.64	28.96	-77.29	11,718.73	-1,576.67	4,037.23	3,832.68	204.56	19.736	
17,300.00	9,664.85	9,293.00	9,344.96	181.70	28.96	-77.29	11,718.73	-1,576.67	3,946.75	3,740.17	206.58	19.105	
17,400.00	9,666.36	9,293.00	9,344.96	183.77	28.96	-77.29	11,718.73	-1,576.67	3,856.74	3,648.13	208.61	18.487	
17,500.00	9,667.87	9,293.00	9,344.96	185.83	28.96	-77.29	11,718.73	-1,576.67	3,767.23	3,556.59	210.65	17.884	
17,600.00	9,669.39	9,293.00	9,344.96	187.90	28.96	-77.29	11,718.73	-1,576.67	3,678.27	3,465.59	212.68	17.295	
17,700.00	9,670.90	9,293.00	9,344.96	189.97	28.96	-77.29	11,718.73	-1,576.67	3,589.88	3,375.17	214.71	16.719	
17,800.00	9,672.44	9,293.00	9,344.96	192.04	28.96	-77.17	11,718.73	-1,576.67	3,502.12	3,285.45	216.67	16.163	
17,900.00	9,674.07	9,293.00	9,344.96	194.12	28.96	-77.17	11,718.73	-1,576.67	3,415.03	3,196.32	218.71	15.614	
18,000.00	9,675.70	9,293.00	9,344.96	196.19	28.96	-77.17	11,718.73	-1,576.67	3,328.67	3,107.92	220.75	15.079	
18,100.00	9,677.33	9,293.00	9,344.96	198.27	28.96	-77.17	11,718.73	-1,576.67	3,243.09	3,020.30	222.79	14.557	
18,200.00	9,678.96	9,307.71	9,359.59	200.35	29.01	-77.65	11,720.21	-1,576.57	3,158.05	2,932.85	225.20	14.023	
18,300.00	9,680.59	9,309.30	9,361.17	202.43	29.02	-77.70	11,720.42	-1,576.55	3,074.16	2,846.88	227.28	13.526	
18,400.00	9,682.22	9,323.00	9,374.71	204.51	29.06	-78.15	11,722.50	-1,576.36	2,991.47	2,761.81	229.66	13.025	
18,500.00	9,683.84	9,323.00	9,374.71	206.60	29.06	-78.15	11,722.50	-1,576.36	2,909.58	2,677.86	231.72	12.557	
18,600.00	9,685.47	9,323.00	9,374.71	208.68	29.06	-78.15	11,722.50	-1,576.36	2,828.85	2,595.08	233.77	12.101	
18,700.00	9,687.10	9,323.00	9,374.71	210.77	29.06	-78.15	11,722.50	-1,576.36	2,749.39	2,513.56	235.83	11.659	
18,800.00	9,688.73	9,323.00	9,374.71	212.86	29.06	-78.15	11,722.50	-1,576.36	2,671.31	2,433.42	237.88	11.229	
18,900.00	9,690.36	9,323.00	9,374.71	214.94	29.06	-78.15	11,722.50	-1,576.36	2,594.73	2,354.79	239.94	10.814	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 Cottonwood Hills 32 - 1H - OH - Surveys													Offset Site Error:	0.00 usft
Survey Program: 129-MWD													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		
19,000.00	9,691.99	9,323.00	9,374.71	217.03	29.06	-78.15	11,722.50	-1,576.36	2,519.79	2,277.79	242.00	10.412		
19,100.00	9,693.62	9,323.00	9,374.71	219.13	29.06	-78.15	11,722.50	-1,576.36	2,446.65	2,202.59	244.06	10.025		
19,200.00	9,695.25	9,323.00	9,374.71	221.22	29.06	-78.15	11,722.50	-1,576.36	2,375.47	2,129.35	246.12	9.652		
19,300.00	9,696.87	9,336.77	9,388.22	223.31	29.11	-78.59	11,725.17	-1,576.10	2,306.22	2,057.69	248.53	9.280		
19,400.00	9,698.50	9,341.57	9,392.90	225.41	29.12	-78.75	11,726.23	-1,575.99	2,239.35	1,988.64	250.71	8.932		
19,500.00	9,700.13	9,354.00	9,404.95	227.50	29.16	-79.15	11,729.26	-1,575.68	2,175.03	1,921.95	253.07	8.594		
19,600.00	9,701.76	9,354.00	9,404.95	229.60	29.16	-79.15	11,729.26	-1,575.68	2,113.30	1,858.16	255.14	8.283		
19,700.00	9,703.39	9,354.00	9,404.95	231.70	29.16	-79.15	11,729.26	-1,575.68	2,054.59	1,797.37	257.22	7.988		
19,800.00	9,705.02	9,370.27	9,420.56	233.80	29.22	-79.66	11,733.81	-1,575.19	1,998.95	1,739.28	259.67	7.698		
19,900.00	9,706.65	9,386.00	9,435.47	235.90	29.27	-80.16	11,738.79	-1,574.64	1,946.76	1,684.66	262.10	7.428		
20,000.00	9,708.28	9,386.00	9,435.47	238.00	29.27	-80.16	11,738.79	-1,574.64	1,898.20	1,634.02	264.18	7.185		
20,044.41	9,709.00	9,397.80	9,446.52	238.80	29.30	-80.52	11,742.90	-1,574.18	1,877.83	1,612.61	265.22	7.080 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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 5 Fed 003 - 1H - OH - Plan 1 06-16-17													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	1.00	0.00	0.00	0.00	-179.71	-49.84	-0.25	49.84					
100.00	100.00	101.00	100.00	0.19	0.20	-179.71	-49.84	-0.25	49.84	49.44	0.39	126.962		
200.00	200.00	201.00	200.00	0.73	0.74	-179.71	-49.84	-0.25	49.84	48.37	1.47	33.950		
300.00	300.00	301.00	300.00	1.27	1.27	-179.71	-49.84	-0.25	49.84	47.29	2.54	19.595		
400.00	400.00	401.00	400.00	1.81	1.81	-179.71	-49.84	-0.25	49.84	46.22	3.62	13.772		
500.00	500.00	501.00	500.00	2.34	2.35	-179.71	-49.84	-0.25	49.84	45.14	4.69	10.617		
600.00	600.00	601.01	600.01	2.88	2.89	-179.71	-49.84	-0.25	49.84	44.07	5.77	8.638		
600.87	600.87	601.88	600.88	2.89	2.89	160.06	-49.84	-0.25	49.84	44.06	5.78	8.624 CC		
700.00	699.98	701.75	700.73	3.42	3.42	158.89	-49.06	1.38	50.71	43.86	6.85	7.407 ES		
800.00	799.84	802.38	801.22	3.96	3.96	155.69	-46.77	6.20	53.46	45.54	7.92	6.749		
900.00	899.45	902.81	901.24	4.50	4.50	151.09	-42.97	14.18	58.38	49.38	9.00	6.486		
1,000.00	998.90	1,002.94	1,000.61	5.05	5.05	145.07	-37.68	25.29	64.32	54.23	10.09	6.375		
1,100.00	1,098.36	1,102.61	1,099.04	5.60	5.61	137.32	-30.94	39.46	70.56	59.36	11.20	6.300		
1,200.00	1,197.81	1,201.78	1,196.53	6.15	6.20	129.08	-23.15	55.83	78.06	65.73	12.33	6.330		
1,300.00	1,297.26	1,300.91	1,293.96	6.71	6.79	122.29	-15.30	72.33	86.92	73.44	13.47	6.450		
1,400.00	1,396.72	1,400.03	1,391.39	7.27	7.40	116.80	-7.45	88.82	96.77	82.14	14.62	6.617		
1,500.00	1,496.17	1,499.16	1,488.82	7.84	8.01	112.36	0.39	105.31	107.33	91.56	15.77	6.805		
1,600.00	1,595.62	1,598.29	1,586.25	8.40	8.63	108.72	8.24	121.81	118.42	101.50	16.92	6.997		
1,700.00	1,695.07	1,697.41	1,683.68	8.97	9.25	105.72	16.09	138.30	129.91	111.83	18.08	7.187		
1,800.00	1,794.53	1,796.54	1,781.11	9.53	9.88	103.20	23.94	154.79	141.69	122.46	19.23	7.369		
1,900.00	1,893.98	1,895.67	1,878.54	10.10	10.51	101.08	31.78	171.29	153.69	133.31	20.38	7.541		
2,000.00	1,993.43	1,994.80	1,975.97	10.67	11.14	99.26	39.63	187.78	165.88	144.35	21.53	7.704		
2,100.00	2,092.89	2,093.92	2,073.40	11.24	11.77	97.69	47.48	204.27	178.21	155.52	22.69	7.856		
2,200.00	2,192.34	2,193.05	2,170.83	11.81	12.41	96.33	55.33	220.77	190.65	166.81	23.84	7.998		
2,300.00	2,291.79	2,292.18	2,268.26	12.38	13.05	95.13	63.17	237.26	203.19	178.20	24.99	8.130		
2,400.00	2,391.24	2,391.30	2,365.69	12.95	13.68	94.08	71.02	253.76	215.80	189.66	26.15	8.254		
2,500.00	2,490.70	2,490.43	2,463.12	13.52	14.32	93.14	78.87	270.25	228.48	201.18	27.30	8.370		
2,600.00	2,590.15	2,589.56	2,560.55	14.09	14.96	92.30	86.72	286.74	241.21	212.76	28.45	8.478		
2,700.00	2,689.60	2,688.69	2,657.98	14.66	15.60	91.54	94.56	303.24	253.99	224.38	29.61	8.579		
2,800.00	2,789.06	2,787.81	2,755.41	15.23	16.25	90.86	102.41	319.73	266.81	236.05	30.76	8.674		
2,900.00	2,888.51	2,886.94	2,852.84	15.80	16.89	90.23	110.26	336.22	279.66	247.74	31.92	8.763		
3,000.00	2,987.96	2,986.07	2,950.27	16.37	17.53	89.67	118.11	352.72	292.54	259.47	33.07	8.846		
3,100.00	3,087.41	3,085.19	3,047.70	16.94	18.17	89.15	125.95	369.21	305.45	271.22	34.23	8.925		
3,200.00	3,186.87	3,184.32	3,145.13	17.51	18.82	88.67	133.80	385.70	318.38	283.00	35.38	8.999		
3,300.00	3,286.32	3,283.45	3,242.56	18.08	19.46	88.23	141.65	402.20	331.33	294.79	36.54	9.069		
3,400.00	3,385.77	3,382.58	3,339.99	18.66	20.11	87.82	149.50	418.69	344.30	306.61	37.69	9.135		
3,500.00	3,485.23	3,481.70	3,437.42	19.23	20.75	87.45	157.34	435.18	357.28	318.43	38.85	9.197		
3,600.00	3,584.68	3,580.83	3,534.85	19.80	21.40	87.10	165.19	451.68	370.28	330.28	40.00	9.257		
3,700.00	3,684.13	3,679.96	3,632.28	20.37	22.04	86.77	173.04	468.17	383.29	342.13	41.16	9.313		
3,800.00	3,783.59	3,779.08	3,729.71	20.94	22.69	86.49	180.89	484.66	396.31	354.00	42.31	9.366		
3,900.00	3,883.24	3,878.12	3,827.05	21.50	23.33	86.17	188.73	501.14	409.49	366.04	43.45	9.425		
4,000.00	3,983.12	3,976.92	3,924.16	22.04	23.98	85.41	196.55	517.58	422.99	378.45	44.54	9.496		
4,100.00	4,083.11	4,075.37	4,020.92	22.56	24.62	104.47	204.34	533.96	436.96	391.35	45.62	9.579		
4,200.00	4,183.11	4,173.66	4,117.52	23.07	25.26	102.98	212.12	550.32	451.34	404.70	46.64	9.677		
4,300.00	4,283.11	4,271.94	4,214.13	23.58	25.90	101.58	219.90	566.67	466.01	418.34	47.67	9.776		
4,400.00	4,383.11	4,370.23	4,310.73	24.10	26.54	100.27	227.68	583.02	480.94	432.24	48.70	9.875		
4,500.00	4,483.11	4,468.52	4,407.34	24.61	27.19	99.03	235.47	599.38	496.10	446.37	49.73	9.975		
4,600.00	4,583.11	4,566.81	4,503.94	25.13	27.83	97.87	243.25	615.73	511.48	460.71	50.77	10.075		
4,700.00	4,683.11	4,665.09	4,600.55	25.64	28.47	96.77	251.03	632.08	527.05	475.25	51.80	10.174		
4,800.00	4,783.11	4,763.38	4,697.15	26.16	29.11	95.74	258.81	648.44	542.80	489.96	52.84	10.272		
4,900.00	4,883.11	4,861.67	4,793.76	26.68	29.76	94.77	266.59	664.79	558.72	504.84	53.88	10.369		
5,000.00	4,983.11	4,959.96	4,890.36	27.20	30.40	93.85	274.37	681.15	574.78	519.86	54.93	10.465		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 1H - OH - Plan 1 06-16-17													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		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	5,083.11	5,058.25	4,986.97	27.72	31.04	92.98	282.15	697.50	590.99	535.02	55.97	10.559	
5,200.00	5,183.11	5,156.53	5,083.57	28.24	31.68	92.15	289.93	713.85	607.32	550.30	57.02	10.652	
5,300.00	5,283.11	5,254.82	5,180.18	28.76	32.33	91.37	297.71	730.21	623.76	565.70	58.07	10.742	
5,400.00	5,383.11	5,353.11	5,276.78	29.28	32.97	90.63	305.49	746.56	640.32	581.20	59.12	10.832	
5,500.00	5,483.11	5,451.40	5,373.39	29.80	33.61	89.92	313.28	762.92	656.97	596.80	60.17	10.919	
5,600.00	5,583.11	5,549.68	5,469.99	30.32	34.25	89.26	321.06	779.27	673.72	612.50	61.22	11.005	
5,700.00	5,683.11	5,675.40	5,594.02	30.85	35.04	88.54	329.86	797.78	688.62	626.20	62.42	11.033	
5,800.00	5,783.11	5,803.04	5,720.73	31.37	35.79	88.03	336.40	811.52	699.55	635.94	63.62	10.997	
5,900.00	5,883.11	5,931.80	5,849.12	31.90	36.47	87.72	340.54	820.21	706.42	641.61	64.81	10.901	
6,000.00	5,983.11	6,061.17	5,978.42	32.42	37.10	87.59	342.19	823.69	709.16	643.18	65.98	10.747	
6,100.00	6,083.11	6,165.86	6,083.11	32.95	37.58	87.59	342.22	823.76	709.21	642.19	67.02	10.582	
6,200.00	6,183.11	6,265.86	6,183.11	33.47	38.04	87.59	342.22	823.76	709.21	641.17	68.04	10.424	
6,300.00	6,283.11	6,365.86	6,283.11	34.00	38.50	87.59	342.22	823.76	709.21	640.15	69.06	10.270	
6,400.00	6,383.11	6,465.86	6,383.11	34.52	38.96	87.59	342.22	823.76	709.21	639.13	70.08	10.120	
6,500.00	6,483.11	6,565.86	6,483.11	35.05	39.42	87.59	342.22	823.76	709.21	638.11	71.10	9.975	
6,600.00	6,583.11	6,665.86	6,583.11	35.58	39.88	87.59	342.22	823.76	709.21	637.09	72.12	9.834	
6,700.00	6,683.11	6,765.86	6,683.11	36.10	40.35	87.59	342.22	823.76	709.21	636.07	73.15	9.696	
6,800.00	6,783.11	6,865.86	6,783.11	36.63	40.81	87.59	342.22	823.76	709.21	635.04	74.17	9.562	
6,900.00	6,883.11	6,965.86	6,883.11	37.16	41.28	87.59	342.22	823.76	709.21	634.01	75.20	9.431	
7,000.00	6,983.11	7,065.86	6,983.11	37.69	41.75	87.59	342.22	823.76	709.21	632.98	76.23	9.304	
7,100.00	7,083.11	7,165.86	7,083.11	38.21	42.22	87.59	342.22	823.76	709.21	631.95	77.26	9.180	
7,200.00	7,183.11	7,265.86	7,183.11	38.74	42.70	87.59	342.22	823.76	709.21	630.92	78.29	9.059	
7,300.00	7,283.11	7,365.86	7,283.11	39.27	43.17	87.59	342.22	823.76	709.21	629.89	79.32	8.941	
7,400.00	7,383.11	7,465.86	7,383.11	39.80	43.65	87.59	342.22	823.76	709.21	628.86	80.35	8.826	
7,500.00	7,483.11	7,565.86	7,483.11	40.33	44.13	87.59	342.22	823.76	709.21	627.82	81.39	8.714	
7,600.00	7,583.11	7,665.86	7,583.11	40.86	44.61	87.59	342.22	823.76	709.21	626.79	82.42	8.605	
7,700.00	7,683.11	7,765.86	7,683.11	41.39	45.09	87.59	342.22	823.76	709.21	625.75	83.46	8.498	
7,800.00	7,783.11	7,865.86	7,783.11	41.92	45.57	87.59	342.22	823.76	709.21	624.72	84.50	8.394	
7,900.00	7,883.11	7,965.86	7,883.11	42.45	46.05	87.59	342.22	823.76	709.21	623.68	85.53	8.292	
8,000.00	7,983.11	8,065.86	7,983.11	42.98	46.54	87.59	342.22	823.76	709.21	622.64	86.57	8.192	
8,100.00	8,083.11	8,165.86	8,083.11	43.51	47.02	87.59	342.22	823.76	709.21	621.60	87.61	8.095	
8,200.00	8,183.11	8,265.86	8,183.11	44.04	47.51	87.59	342.22	823.76	709.21	620.56	88.65	8.000	
8,300.00	8,283.11	8,365.86	8,283.11	44.57	48.00	87.59	342.22	823.76	709.21	619.52	89.69	7.907	
8,400.00	8,383.11	8,465.86	8,383.11	45.10	48.49	87.59	342.22	823.76	709.21	618.47	90.74	7.816	
8,500.00	8,483.11	8,565.86	8,483.11	45.63	48.98	87.59	342.22	823.76	709.21	617.43	91.78	7.727	
8,600.00	8,583.11	8,665.86	8,583.11	46.17	49.47	87.59	342.22	823.76	709.21	616.39	92.82	7.640	
8,700.00	8,683.11	8,762.27	8,679.15	46.70	49.96	87.02	349.35	823.64	709.44	615.59	93.84	7.560	
8,800.00	8,783.11	8,853.67	8,767.88	47.23	50.45	85.28	370.83	823.27	710.67	615.84	94.82	7.495	
8,900.00	8,883.11	8,936.45	8,844.40	47.76	50.90	82.77	402.24	822.74	714.29	618.55	95.74	7.461	
9,000.00	8,983.11	9,008.88	8,907.03	48.29	51.29	79.89	438.52	822.12	722.12	625.53	96.59	7.476	
9,100.00	9,083.11	9,070.90	8,956.66	48.82	51.62	76.99	475.65	821.49	735.87	638.49	97.39	7.556	
9,200.00	9,182.98	9,125.04	8,996.49	49.36	51.90	73.57	512.29	820.86	755.92	657.69	98.23	7.695	
9,300.00	9,280.93	9,178.09	9,031.99	49.93	52.18	69.06	551.67	820.19	778.55	679.55	99.01	7.864	
9,400.00	9,374.01	9,230.77	9,063.49	50.51	52.46	64.95	593.86	819.48	801.69	702.45	99.24	8.078	
9,500.00	9,459.39	9,283.18	9,090.86	51.11	52.75	61.37	638.54	818.72	823.79	725.15	98.64	8.351	
9,600.00	9,534.47	9,335.40	9,113.95	51.72	53.04	58.40	685.34	817.92	843.57	746.39	97.18	8.681	
9,700.00	9,596.97	9,387.47	9,132.64	52.35	53.35	56.07	733.92	817.09	860.03	764.90	95.13	9.040	
9,800.00	9,644.99	9,450.00	9,149.14	53.00	53.73	54.29	794.20	816.07	872.55	779.52	93.02	9.380	
9,900.00	9,677.08	9,500.00	9,157.55	53.67	54.06	53.32	843.46	815.23	880.30	788.75	91.55	9.615	
10,000.00	9,692.26	9,550.00	9,161.63	54.34	54.39	52.96	893.27	814.38	883.14	791.84	91.30	9.672	
10,100.00	9,691.40	9,623.72	9,162.79	55.05	54.92	53.16	966.97	813.13	880.76	788.15	92.61	9.510	
10,200.00	9,687.32	9,723.57	9,164.13	55.83	55.69	53.42	1,066.79	811.43	876.94	782.61	94.33	9.296	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 1H - OH - Plan 1 06-16-17													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	9,683.23	9,823.42	9,165.47	56.69	56.55	53.68	1,166.62	809.73	873.14	776.96	96.18	9.078	
10,400.00	9,679.15	9,923.27	9,166.81	57.61	57.48	53.94	1,266.45	808.03	869.36	771.21	98.15	8.857	
10,500.00	9,675.07	10,023.12	9,168.15	58.59	58.48	54.20	1,366.27	806.34	865.60	765.35	100.24	8.635	
10,600.00	9,670.98	10,122.97	9,169.49	59.64	59.54	54.46	1,466.10	804.64	861.85	759.41	102.45	8.413	
10,700.00	9,666.90	10,222.82	9,170.83	60.75	60.66	54.73	1,565.93	802.94	858.12	753.37	104.75	8.192	
10,800.00	9,662.81	10,322.67	9,172.16	61.92	61.83	55.00	1,665.75	801.24	854.42	747.25	107.16	7.973	
10,900.00	9,658.73	10,422.52	9,173.50	63.13	63.06	55.27	1,765.58	799.54	850.73	741.06	109.67	7.757	
11,000.00	9,654.64	10,522.37	9,174.84	64.40	64.34	55.54	1,865.41	797.84	847.06	734.79	112.27	7.545	
11,100.00	9,650.56	10,622.22	9,176.18	65.71	65.67	55.82	1,965.23	796.15	843.41	728.46	114.95	7.337	
11,200.00	9,646.47	10,722.07	9,177.52	67.07	67.04	56.10	2,065.06	794.45	839.78	722.06	117.72	7.134	
11,300.00	9,642.39	10,821.92	9,178.86	68.46	68.45	56.38	2,164.89	792.75	836.17	715.60	120.56	6.936	
11,400.00	9,638.30	10,921.77	9,180.20	69.90	69.90	56.66	2,264.72	791.05	832.58	709.09	123.48	6.742	
11,500.00	9,634.22	11,021.62	9,181.54	71.37	71.39	56.95	2,364.54	789.35	829.01	702.53	126.47	6.555	
11,600.00	9,630.13	11,121.47	9,182.87	72.88	72.91	57.24	2,464.37	787.65	825.46	695.93	129.53	6.373	
11,700.00	9,626.05	11,221.32	9,184.21	74.42	74.46	57.53	2,564.20	785.96	821.93	689.28	132.65	6.196	
11,800.00	9,621.96	11,321.17	9,185.55	75.99	76.04	57.82	2,664.02	784.26	818.42	682.59	135.84	6.025	
11,900.00	9,617.88	11,421.02	9,186.89	77.59	77.65	58.12	2,763.85	782.56	814.94	675.86	139.08	5.860	
12,000.00	9,613.79	11,520.87	9,188.23	79.21	79.29	58.41	2,863.68	780.86	811.48	669.10	142.38	5.700	
12,100.00	9,609.71	11,620.72	9,189.57	80.86	80.95	58.72	2,963.50	779.16	808.04	662.31	145.73	5.545	
12,200.00	9,605.63	11,720.57	9,190.91	82.54	82.63	59.02	3,063.33	777.46	804.62	655.49	149.13	5.396	
12,300.00	9,601.54	11,820.42	9,192.25	84.23	84.34	59.32	3,163.16	775.77	801.22	648.65	152.58	5.251	
12,400.00	9,597.46	11,920.29	9,193.58	85.95	86.07	59.60	3,263.00	774.07	797.98	642.00	155.98	5.116	
12,500.00	9,593.38	12,020.15	9,194.92	87.68	87.81	59.89	3,362.84	772.37	796.17	637.04	159.13	5.003	
12,600.00	9,589.29	12,120.02	9,196.27	89.42	89.58	59.66	3,462.67	770.67	795.54	633.23	162.30	4.902	
12,700.00	9,585.21	12,220.24	9,197.61	91.19	91.36	59.64	3,562.88	768.97	794.93	629.40	165.53	4.802	
12,800.00	9,581.13	12,320.24	9,198.95	92.97	93.16	59.61	3,662.86	767.27	794.32	625.53	168.79	4.706	
12,900.00	9,577.05	12,420.24	9,200.29	94.77	94.98	59.59	3,762.83	765.56	793.71	621.65	172.07	4.613	
13,000.00	9,573.34	12,520.24	9,201.63	96.58	96.80	59.56	3,862.81	763.86	793.11	617.73	175.37	4.522	
13,100.00	9,569.64	12,620.23	9,202.97	98.40	98.65	59.53	3,962.78	762.16	792.50	613.80	178.70	4.435	
13,200.00	9,565.94	12,720.23	9,204.31	100.24	100.50	59.51	4,062.76	760.46	791.89	609.85	182.05	4.350	
13,300.00	9,562.24	12,820.23	9,205.65	102.09	102.37	59.48	4,162.73	758.76	791.28	605.87	185.41	4.268	
13,400.00	9,558.54	12,920.23	9,206.99	103.96	104.25	59.46	4,262.70	757.06	790.68	601.88	188.80	4.188	
13,500.00	9,554.84	13,020.22	9,208.33	105.83	106.14	59.43	4,362.68	755.36	790.07	597.87	192.20	4.111	
13,600.00	9,551.14	13,120.22	9,209.67	107.72	108.04	59.40	4,462.65	753.66	789.46	593.84	195.62	4.036	
13,700.00	9,547.44	13,220.22	9,211.01	109.61	109.95	59.38	4,562.63	751.96	788.86	589.80	199.06	3.963	
13,800.00	9,543.74	13,320.22	9,212.35	111.52	111.87	59.35	4,662.60	750.26	788.25	585.74	202.51	3.892	
13,900.00	9,540.04	13,420.21	9,213.69	113.43	113.79	59.33	4,762.57	748.56	787.65	581.67	205.98	3.824	
14,000.00	9,536.34	13,520.21	9,215.03	115.36	115.73	59.30	4,862.55	746.86	787.04	577.59	209.45	3.758	
14,100.00	9,532.64	13,620.21	9,216.38	117.29	117.67	59.27	4,962.52	745.16	786.43	573.49	212.94	3.693	
14,200.00	9,528.94	13,720.21	9,217.72	119.23	119.62	59.25	5,062.50	743.45	785.83	569.38	216.45	3.631	
14,300.00	9,525.24	13,820.21	9,219.06	121.18	121.58	59.22	5,162.47	741.75	785.22	565.26	219.96	3.570	
14,400.00	9,521.54	13,920.20	9,220.40	123.13	123.55	59.19	5,262.44	740.05	784.62	561.13	223.48	3.511	
14,500.00	9,517.84	14,020.20	9,221.74	125.09	125.52	59.17	5,362.42	738.35	784.01	556.99	227.02	3.454	
14,600.00	9,514.14	14,120.20	9,223.08	127.06	127.50	59.14	5,462.39	736.65	783.41	552.85	230.56	3.398	
14,700.00	9,510.44	14,220.20	9,224.42	129.03	129.48	59.11	5,562.37	734.95	782.80	548.69	234.11	3.344	
14,800.00	9,506.74	14,320.19	9,225.76	131.01	131.47	59.09	5,662.34	733.25	782.20	544.52	237.68	3.291	
14,900.00	9,503.04	14,420.19	9,227.10	132.99	133.47	59.06	5,762.31	731.55	781.60	540.35	241.24	3.240	
15,000.00	9,499.34	14,520.19	9,228.44	134.98	135.47	59.03	5,862.29	729.85	780.99	536.17	244.82	3.190	
15,100.00	9,495.64	14,620.19	9,230.06	136.98	137.38	59.02	5,962.27	728.15	780.35	531.90	248.45	3.141	
15,200.00	9,491.94	14,720.19	9,231.68	138.97	139.31	59.14	6,062.25	726.45	779.70	527.72	252.11	3.091	
15,300.00	9,488.24	14,820.19	9,233.30	140.97	141.32	59.30	6,162.23	724.75	779.05	523.54	255.82	3.041	
15,400.00	9,484.54	14,920.19	9,234.92	142.98	143.33	59.46	6,262.21	723.05	778.40	519.36	259.53	2.993	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 1H - OH - Plan 1 06-16-17												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 +N/-S (usft)	Centre +E/-W (usft)					
15,500.00	9,637.61	15,011.78	9,244.32	144.98	145.35	59.61	6,353.59	732.03	777.75	513.78	263.97	2.946	
15,600.00	9,639.12	15,111.76	9,247.98	147.00	147.37	59.77	6,453.49	732.96	777.14	509.23	267.92	2.901	
15,700.00	9,640.63	15,211.73	9,251.65	149.01	149.39	59.93	6,553.39	733.90	776.55	504.67	271.87	2.856	
15,800.00	9,642.15	15,311.71	9,255.31	151.03	151.42	60.09	6,653.30	734.83	775.95	500.11	275.84	2.813	
15,900.00	9,643.66	15,411.68	9,258.98	153.06	153.45	60.25	6,753.20	735.77	775.37	495.54	279.83	2.771	
16,000.00	9,645.17	15,511.66	9,262.64	155.08	155.49	60.40	6,853.10	736.71	774.79	490.96	283.82	2.730	
16,100.00	9,646.69	15,611.63	9,266.30	157.11	157.53	60.56	6,953.01	737.64	774.21	486.38	287.83	2.690	
16,200.00	9,648.20	15,711.61	9,269.97	159.15	159.57	60.72	7,052.91	738.58	773.65	481.80	291.85	2.651	
16,300.00	9,649.71	15,811.58	9,273.63	161.18	161.61	60.88	7,152.81	739.52	773.08	477.20	295.88	2.613	
16,400.00	9,651.23	15,911.56	9,277.30	163.22	163.65	61.04	7,252.72	740.45	772.53	472.60	299.92	2.576	
16,500.00	9,652.74	16,011.53	9,280.96	165.27	165.70	61.20	7,352.62	741.39	771.98	468.00	303.97	2.540	
16,600.00	9,654.25	16,111.51	9,284.62	167.31	167.75	61.36	7,452.53	742.32	771.43	463.39	308.04	2.504	
16,700.00	9,655.77	16,211.48	9,288.29	169.36	169.81	61.52	7,552.43	743.26	770.89	458.78	312.11	2.470	
16,800.00	9,657.28	16,311.46	9,291.95	171.41	171.86	61.68	7,652.33	744.20	770.36	454.17	316.20	2.436	
16,865.65	9,658.27	16,373.04	9,294.02	172.76	173.13	61.77	7,713.88	744.77	770.11	451.34	318.77	2.416	
16,900.00	9,658.79	16,403.64	9,294.63	173.47	173.76	61.78	7,744.47	745.05	770.20	450.17	320.03	2.407	
17,000.00	9,660.31	16,496.61	9,294.69	175.52	175.67	61.71	7,837.43	745.86	771.30	447.77	323.54	2.384	
17,100.00	9,661.82	16,596.59	9,294.14	177.58	177.73	61.59	7,937.40	746.72	772.71	445.61	327.09	2.362	
17,200.00	9,663.33	16,696.56	9,293.59	179.64	179.80	61.48	8,037.38	747.58	774.11	443.47	330.64	2.341	
17,300.00	9,664.85	16,796.54	9,293.05	181.70	181.86	61.36	8,137.35	748.43	775.52	441.32	334.19	2.321	
17,400.00	9,666.36	16,896.52	9,292.50	183.77	183.93	61.24	8,237.32	749.29	776.93	439.19	337.74	2.300	
17,500.00	9,667.87	16,996.50	9,291.95	185.83	186.00	61.13	8,337.29	750.15	778.34	437.05	341.29	2.281	
17,600.00	9,669.39	17,096.47	9,291.41	187.90	188.07	61.01	8,437.27	751.01	779.76	434.93	344.84	2.261	
17,700.00	9,670.90	17,196.45	9,290.86	189.97	190.14	60.90	8,537.24	751.87	781.18	432.81	348.38	2.242	
17,800.00	9,672.44	17,296.43	9,290.31	192.04	192.22	60.78	8,637.21	752.73	782.63	430.72	351.91	2.224	
17,900.00	9,674.07	17,396.40	9,289.77	194.12	194.29	60.66	8,737.18	753.59	784.14	428.70	355.43	2.206	
18,000.00	9,675.70	17,496.38	9,289.22	196.19	196.37	60.54	8,837.15	754.45	785.65	426.69	358.96	2.189	
18,100.00	9,677.33	17,596.35	9,288.68	198.27	198.45	60.42	8,937.12	755.31	787.16	424.68	362.48	2.172	
18,200.00	9,678.96	17,696.33	9,288.13	200.35	200.53	60.30	9,037.09	756.17	788.68	422.69	365.99	2.155	
18,300.00	9,680.59	17,796.30	9,287.58	202.43	202.62	60.18	9,137.06	757.03	790.20	420.69	369.50	2.139	
18,400.00	9,682.22	17,896.28	9,287.04	204.51	204.70	60.07	9,237.03	757.89	791.72	418.71	373.01	2.122	
18,500.00	9,683.84	17,996.25	9,286.49	206.60	206.78	59.95	9,337.00	758.75	793.25	416.73	376.52	2.107	
18,600.00	9,685.47	18,096.23	9,285.94	208.68	208.87	59.83	9,436.97	759.61	794.78	414.75	380.03	2.091	
18,700.00	9,687.10	18,196.20	9,285.40	210.77	210.96	59.71	9,536.94	760.46	796.31	412.79	383.53	2.076	
18,800.00	9,688.73	18,296.18	9,284.85	212.86	213.05	59.60	9,636.91	761.32	797.85	410.83	387.02	2.062	
18,900.00	9,690.36	18,396.15	9,284.30	214.94	215.14	59.48	9,736.88	762.18	799.39	408.87	390.52	2.047	
19,000.00	9,691.99	18,496.13	9,283.76	217.03	217.23	59.36	9,836.85	763.04	800.94	406.93	394.01	2.033	
19,100.00	9,693.62	18,596.10	9,283.21	219.13	219.32	59.25	9,936.82	763.90	802.48	404.99	397.50	2.019	
19,200.00	9,695.25	18,696.08	9,282.66	221.22	221.42	59.13	10,036.79	764.76	804.03	403.05	400.98	2.005	
19,300.00	9,696.87	18,796.05	9,282.12	223.31	223.51	59.02	10,136.76	765.62	805.59	401.12	404.46	1.992	
19,400.00	9,698.50	18,896.03	9,281.57	225.41	225.61	58.91	10,236.73	766.48	807.14	399.20	407.94	1.979	
19,500.00	9,700.13	18,996.00	9,281.02	227.50	227.71	58.79	10,336.70	767.34	808.70	397.29	411.41	1.966	
19,600.00	9,701.76	19,095.98	9,280.48	229.60	229.80	58.68	10,436.67	768.20	810.27	395.38	414.88	1.953	
19,700.00	9,703.39	19,195.95	9,279.93	231.70	231.90	58.57	10,536.64	769.06	811.83	393.48	418.35	1.941	
19,800.00	9,705.02	19,295.93	9,279.39	233.80	234.00	58.46	10,636.61	769.92	813.40	391.59	421.81	1.928	
19,900.00	9,706.65	19,395.90	9,278.84	235.90	236.11	58.34	10,736.58	770.78	814.97	389.70	425.27	1.916	
20,000.00	9,708.28	19,495.88	9,278.29	238.00	238.21	58.23	10,836.55	771.63	816.55	387.82	428.72	1.905	
20,044.41	9,709.00	19,540.28	9,278.05	238.80	239.14	58.18	10,880.94	772.02	817.25	387.15	430.10	1.900 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17													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
0.00	0.00	1.00	0.00	0.00	0.00	179.94	-25.10	0.03	25.10				
100.00	100.00	101.00	100.00	0.19	0.20	179.94	-25.10	0.03	25.10	24.71	0.39	63.943	
200.00	200.00	201.00	200.00	0.73	0.74	179.94	-25.10	0.03	25.10	23.63	1.47	17.098	
300.00	300.00	301.00	300.00	1.27	1.27	179.94	-25.10	0.03	25.10	22.56	2.54	9.869	
400.00	400.00	401.00	400.00	1.81	1.81	179.94	-25.10	0.03	25.10	21.48	3.62	6.936	
500.00	500.00	501.00	500.00	2.34	2.35	179.94	-25.10	0.03	25.10	20.41	4.69	5.347	
600.00	600.00	601.01	600.01	2.88	2.89	179.94	-25.10	0.03	25.10	19.33	5.77	4.350	
674.08	674.07	675.70	674.69	3.28	3.29	161.27	-24.16	-0.32	25.08	18.51	6.57	3.816 CC	
700.00	699.98	701.82	700.80	3.42	3.43	162.54	-23.41	-0.61	25.09	18.23	6.85	3.661	
800.00	799.84	802.54	801.37	3.96	3.97	170.89	-18.40	-2.49	25.47	17.53	7.94	3.209 ES	
900.00	899.45	903.05	901.49	4.50	4.52	-176.30	-10.11	-5.60	27.25	18.23	9.02	3.021	
1,000.00	998.90	1,002.79	1,000.68	5.05	5.06	-163.91	-0.35	-9.26	30.93	20.83	10.10	3.063	
1,100.00	1,098.36	1,102.52	1,099.87	5.60	5.61	-154.48	9.41	-12.92	35.74	24.55	11.19	3.195	
1,200.00	1,197.81	1,202.26	1,199.05	6.15	6.17	-147.42	19.17	-16.58	41.28	28.99	12.29	3.359	
1,300.00	1,297.26	1,301.99	1,298.24	6.71	6.73	-142.09	28.93	-20.24	47.29	33.89	13.40	3.530	
1,400.00	1,396.72	1,401.73	1,397.43	7.27	7.29	-137.99	38.69	-23.90	53.62	39.11	14.51	3.695	
1,500.00	1,496.17	1,501.46	1,496.62	7.84	7.85	-134.76	48.44	-27.56	60.16	44.53	15.63	3.850	
1,600.00	1,595.62	1,601.20	1,595.81	8.40	8.42	-132.18	58.20	-31.23	66.85	50.11	16.75	3.992	
1,700.00	1,695.07	1,700.93	1,695.00	8.97	8.98	-130.06	67.96	-34.89	73.66	55.79	17.87	4.122	
1,800.00	1,794.53	1,800.67	1,794.19	9.53	9.55	-128.31	77.72	-38.55	80.55	61.55	19.00	4.241	
1,900.00	1,893.98	1,900.40	1,893.37	10.10	10.11	-126.84	87.48	-42.21	87.50	67.38	20.12	4.349	
2,000.00	1,993.43	2,000.13	1,992.56	10.67	10.68	-125.58	97.24	-45.87	94.50	73.25	21.25	4.447	
2,100.00	2,092.89	2,099.87	2,091.75	11.24	11.25	-124.49	107.00	-49.53	101.54	79.17	22.38	4.538	
2,200.00	2,192.34	2,199.60	2,190.94	11.81	11.82	-123.55	116.75	-53.19	108.62	85.11	23.51	4.620	
2,300.00	2,291.79	2,299.34	2,290.13	12.38	12.38	-122.72	126.51	-56.86	115.72	91.08	24.64	4.696	
2,400.00	2,391.24	2,399.07	2,389.32	12.95	12.95	-121.99	136.27	-60.52	122.83	97.06	25.77	4.767	
2,500.00	2,490.70	2,498.81	2,488.51	13.52	13.52	-121.34	146.03	-64.18	129.97	103.07	26.90	4.831	
2,600.00	2,590.15	2,598.54	2,587.69	14.09	14.09	-120.75	155.79	-67.84	137.12	109.09	28.03	4.891	
2,700.00	2,689.60	2,698.28	2,686.88	14.66	14.66	-120.23	165.55	-71.50	144.29	115.12	29.17	4.947	
2,800.00	2,789.06	2,798.01	2,786.07	15.23	15.23	-119.75	175.31	-75.16	151.46	121.16	30.30	4.999	
2,900.00	2,888.51	2,897.75	2,885.26	15.80	15.80	-119.32	185.06	-78.82	158.65	127.22	31.43	5.047	
3,000.00	2,987.96	2,997.48	2,984.45	16.37	16.37	-118.92	194.82	-82.48	165.84	133.28	32.57	5.092	
3,100.00	3,087.41	3,097.22	3,083.64	16.94	16.94	-118.56	204.58	-86.15	173.04	139.34	33.70	5.135	
3,200.00	3,186.87	3,196.95	3,182.83	17.51	17.51	-118.23	214.34	-89.81	180.25	145.42	34.83	5.175	
3,300.00	3,286.32	3,296.69	3,282.01	18.08	18.08	-117.92	224.10	-93.47	187.46	151.49	35.97	5.212	
3,400.00	3,385.77	3,396.42	3,381.20	18.66	18.65	-117.63	233.86	-97.13	194.68	157.58	37.10	5.247	
3,500.00	3,485.23	3,496.15	3,480.39	19.23	19.23	-117.37	243.62	-100.79	201.90	163.67	38.24	5.280	
3,600.00	3,584.68	3,595.89	3,579.58	19.80	19.80	-117.12	253.38	-104.45	209.13	169.76	39.37	5.312	
3,700.00	3,684.13	3,695.62	3,678.77	20.37	20.37	-116.89	263.13	-108.11	216.36	175.85	40.51	5.341	
3,800.00	3,783.59	3,795.36	3,777.96	20.94	20.94	-116.69	272.89	-111.78	223.58	181.93	41.65	5.369	
3,900.00	3,883.24	3,895.12	3,877.17	21.50	21.51	-116.11	282.65	-115.44	229.84	187.06	42.79	5.372	
4,000.00	3,983.12	3,994.83	3,976.34	22.04	22.08	-114.77	292.41	-119.10	234.67	190.76	43.91	5.345	
4,100.00	4,083.11	4,094.38	4,075.34	22.56	22.65	-92.47	302.15	-122.75	238.27	193.28	45.00	5.296	
4,200.00	4,183.11	4,193.83	4,174.24	23.07	23.22	-90.13	311.88	-126.40	241.74	195.67	46.07	5.247	
4,300.00	4,283.11	4,293.28	4,273.15	23.58	23.79	-87.85	321.61	-130.05	245.60	198.46	47.14	5.210	
4,400.00	4,383.11	4,394.75	4,374.11	24.10	24.37	-85.72	331.05	-133.60	249.63	201.41	48.22	5.177	
4,500.00	4,483.11	4,498.46	4,477.58	24.61	24.94	-84.28	337.60	-136.05	252.54	203.25	49.29	5.123	
4,600.00	4,583.11	4,602.54	4,581.61	25.13	25.49	-83.62	340.64	-137.19	253.94	203.59	50.35	5.043	
4,700.00	4,683.11	4,704.04	4,683.11	25.64	26.01	-83.57	340.87	-137.28	254.05	202.66	51.39	4.943	
4,800.00	4,783.11	4,804.04	4,783.11	26.16	26.52	-83.57	340.87	-137.28	254.05	201.63	52.42	4.846	
4,900.00	4,883.11	4,904.04	4,883.11	26.68	27.03	-83.57	340.87	-137.28	254.05	200.59	53.45	4.753	
5,000.00	4,983.11	5,004.04	4,983.11	27.20	27.54	-83.57	340.87	-137.28	254.05	199.56	54.49	4.662	

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 8 5 Fed 003
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 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17												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	5,083.11	5,104.04	5,083.11	27.72	28.06	-83.57	340.87	-137.28	254.05	198.52	55.53	4.575	
5,200.00	5,183.11	5,204.04	5,183.11	28.24	28.57	-83.57	340.87	-137.28	254.05	197.49	56.56	4.491	
5,300.00	5,283.11	5,304.04	5,283.11	28.76	29.08	-83.57	340.87	-137.28	254.05	196.45	57.60	4.410	
5,400.00	5,383.11	5,404.04	5,383.11	29.28	29.60	-83.57	340.87	-137.28	254.05	195.41	58.64	4.332	
5,500.00	5,483.11	5,504.04	5,483.11	29.80	30.12	-83.57	340.87	-137.28	254.05	194.37	59.68	4.257	
5,600.00	5,583.11	5,604.04	5,583.11	30.32	30.63	-83.57	340.87	-137.28	254.05	193.32	60.73	4.184	
5,700.00	5,683.11	5,704.04	5,683.11	30.85	31.15	-83.57	340.87	-137.28	254.05	192.28	61.77	4.113	
5,800.00	5,783.11	5,804.04	5,783.11	31.37	31.67	-83.57	340.87	-137.28	254.05	191.24	62.81	4.044	
5,900.00	5,883.11	5,904.04	5,883.11	31.90	32.19	-83.57	340.87	-137.28	254.05	190.19	63.86	3.978	
6,000.00	5,983.11	6,004.04	5,983.11	32.42	32.71	-83.57	340.87	-137.28	254.05	189.14	64.91	3.914	
6,100.00	6,083.11	6,104.04	6,083.11	32.95	33.23	-83.57	340.87	-137.28	254.05	188.10	65.95	3.852	
6,200.00	6,183.11	6,204.04	6,183.11	33.47	33.75	-83.57	340.87	-137.28	254.05	187.05	67.00	3.792	
6,300.00	6,283.11	6,304.04	6,283.11	34.00	34.27	-83.57	340.87	-137.28	254.05	186.00	68.05	3.733	
6,400.00	6,383.11	6,404.04	6,383.11	34.52	34.80	-83.57	340.87	-137.28	254.05	184.95	69.10	3.676	
6,500.00	6,483.11	6,504.04	6,483.11	35.05	35.32	-83.57	340.87	-137.28	254.05	183.90	70.15	3.621	
6,600.00	6,583.11	6,604.04	6,583.11	35.58	35.84	-83.57	340.87	-137.28	254.05	182.84	71.20	3.568	
6,700.00	6,683.11	6,704.04	6,683.11	36.10	36.36	-83.57	340.87	-137.28	254.05	181.79	72.26	3.516	
6,800.00	6,783.11	6,804.04	6,783.11	36.63	36.89	-83.57	340.87	-137.28	254.05	180.74	73.31	3.465	
6,900.00	6,883.11	6,904.04	6,883.11	37.16	37.41	-83.57	340.87	-137.28	254.05	179.69	74.36	3.416	
7,000.00	6,983.11	7,004.04	6,983.11	37.69	37.94	-83.57	340.87	-137.28	254.05	178.63	75.42	3.369	
7,100.00	7,083.11	7,104.04	7,083.11	38.21	38.46	-83.57	340.87	-137.28	254.05	177.58	76.47	3.322	
7,200.00	7,183.11	7,204.04	7,183.11	38.74	38.99	-83.57	340.87	-137.28	254.05	176.52	77.53	3.277	
7,300.00	7,283.11	7,304.04	7,283.11	39.27	39.51	-83.57	340.87	-137.28	254.05	175.46	78.58	3.233	
7,400.00	7,383.11	7,404.04	7,383.11	39.80	40.04	-83.57	340.87	-137.28	254.05	174.41	79.64	3.190	
7,500.00	7,483.11	7,504.04	7,483.11	40.33	40.57	-83.57	340.87	-137.28	254.05	173.35	80.70	3.148	
7,600.00	7,583.11	7,604.04	7,583.11	40.86	41.09	-83.57	340.87	-137.28	254.05	172.29	81.76	3.107	
7,700.00	7,683.11	7,704.04	7,683.11	41.39	41.62	-83.57	340.87	-137.28	254.05	171.24	82.81	3.068	
7,800.00	7,783.11	7,804.04	7,783.11	41.92	42.15	-83.57	340.87	-137.28	254.05	170.18	83.87	3.029	
7,900.00	7,883.11	7,904.04	7,883.11	42.45	42.67	-83.57	340.87	-137.28	254.05	169.12	84.93	2.991	
8,000.00	7,983.11	8,004.04	7,983.11	42.98	43.20	-83.57	340.87	-137.28	254.05	168.06	85.99	2.954	
8,100.00	8,083.11	8,104.04	8,083.11	43.51	43.73	-83.57	340.87	-137.28	254.05	167.00	87.05	2.918	
8,200.00	8,183.11	8,204.04	8,183.11	44.04	44.26	-83.57	340.87	-137.28	254.05	165.94	88.11	2.883	
8,300.00	8,283.11	8,304.04	8,283.11	44.57	44.79	-83.57	340.87	-137.28	254.05	164.88	89.17	2.849	
8,400.00	8,383.11	8,404.04	8,383.11	45.10	45.32	-83.57	340.87	-137.28	254.05	163.82	90.23	2.816	
8,500.00	8,483.11	8,504.04	8,483.11	45.63	45.84	-83.57	340.87	-137.28	254.05	162.76	91.29	2.783	
8,530.91	8,514.02	8,534.95	8,514.02	45.80	46.01	-83.57	340.87	-137.28	254.05	162.43	91.62	2.773	
8,600.00	8,583.11	8,600.00	8,578.96	46.17	46.36	-82.89	343.91	-137.31	254.47	162.13	92.34	2.756	
8,700.00	8,683.11	8,692.08	8,669.41	46.70	46.89	-79.19	360.68	-137.48	257.58	164.20	93.38	2.758	
8,800.00	8,783.11	8,776.36	8,748.87	47.23	47.39	-73.25	388.54	-137.75	266.34	171.97	94.37	2.822	
8,900.00	8,883.11	8,850.00	8,814.30	47.76	47.85	-66.57	422.19	-138.09	284.47	189.19	95.28	2.986	
9,000.00	8,983.11	8,915.79	8,868.69	48.29	48.27	-59.95	459.14	-138.45	314.55	218.44	96.11	3.273	
9,100.00	9,083.11	8,970.94	8,910.78	48.82	48.63	-54.33	494.75	-138.81	356.99	260.13	96.87	3.685	
9,200.00	9,182.98	9,019.28	8,944.71	49.36	48.95	-46.35	529.17	-139.15	408.59	311.08	97.50	4.190	
9,300.00	9,280.93	9,067.35	8,975.44	49.93	49.28	-39.18	566.10	-139.51	459.70	362.88	96.82	4.748	
9,400.00	9,374.01	9,115.63	9,003.10	50.51	49.62	-33.83	605.66	-139.90	507.10	413.05	94.05	5.392	
9,500.00	9,459.39	9,164.09	9,027.40	51.11	49.96	-29.91	647.56	-140.32	549.18	460.06	89.12	6.162	
9,600.00	9,534.47	9,212.67	9,048.12	51.72	50.32	-27.09	691.48	-140.76	584.85	502.54	82.30	7.106	
9,700.00	9,596.97	9,250.00	9,061.48	52.35	50.59	-25.23	726.33	-141.10	613.59	539.36	74.23	8.266	
9,800.00	9,644.99	9,300.00	9,075.76	53.00	50.96	-23.86	774.23	-141.58	634.44	568.68	65.76	9.648	
9,900.00	9,677.08	9,350.00	9,085.81	53.67	51.34	-23.06	823.19	-142.06	647.33	589.08	58.25	11.113	
10,000.00	9,692.26	9,400.00	9,091.55	54.34	51.72	-22.76	872.84	-142.55	652.07	598.61	53.46	12.198	
10,100.00	9,691.40	9,477.02	9,093.30	55.05	52.32	-22.89	949.82	-143.32	649.11	596.03	53.08	12.230	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17													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	
10,200.00	9,687.32	9,576.90	9,094.04	55.83	53.15	-23.05	1,049.70	-144.31	644.67	590.39	54.28	11.877	
10,300.00	9,683.23	9,676.79	9,094.78	56.69	54.06	-23.22	1,149.58	-145.30	640.23	584.63	55.60	11.515	
10,400.00	9,679.15	9,776.67	9,095.52	57.61	55.04	-23.39	1,249.45	-146.29	635.80	578.76	57.04	11.147	
10,500.00	9,675.07	9,876.55	9,096.26	58.59	56.08	-23.57	1,349.33	-147.28	631.38	572.79	58.59	10.776	
10,600.00	9,670.98	9,976.44	9,097.00	59.64	57.18	-23.74	1,449.20	-148.27	626.96	566.71	60.25	10.406	
10,700.00	9,666.90	10,076.32	9,097.74	60.75	58.34	-23.92	1,549.08	-149.26	622.55	560.54	62.00	10.040	
10,800.00	9,662.81	10,176.21	9,098.48	61.92	59.56	-24.10	1,648.96	-150.25	618.14	554.29	63.85	9.681	
10,900.00	9,658.73	10,276.09	9,099.22	63.13	60.83	-24.29	1,748.83	-151.24	613.74	547.96	65.79	9.329	
11,000.00	9,654.64	10,375.97	9,099.95	64.40	62.15	-24.48	1,848.71	-152.23	609.35	541.55	67.80	8.987	
11,100.00	9,650.56	10,475.86	9,100.69	65.71	63.52	-24.67	1,948.58	-153.22	604.96	535.07	69.89	8.656	
11,200.00	9,646.47	10,575.74	9,101.43	67.07	64.93	-24.86	2,048.46	-154.21	600.58	528.53	72.05	8.335	
11,300.00	9,642.39	10,675.62	9,102.17	68.46	66.38	-25.05	2,148.34	-155.20	596.21	521.93	74.28	8.026	
11,400.00	9,638.30	10,775.51	9,102.91	69.90	67.86	-25.25	2,248.21	-156.19	591.84	515.27	76.58	7.729	
11,500.00	9,634.22	10,875.39	9,103.65	71.37	69.39	-25.45	2,348.09	-157.18	587.48	508.55	78.93	7.443	
11,600.00	9,630.13	10,975.27	9,104.39	72.88	70.94	-25.66	2,447.96	-158.17	583.13	501.79	81.34	7.169	
11,700.00	9,626.05	11,075.16	9,105.13	74.42	72.53	-25.86	2,547.84	-159.16	578.79	494.98	83.80	6.906	
11,800.00	9,621.96	11,175.04	9,105.87	75.99	74.14	-26.07	2,647.72	-160.15	574.45	488.13	86.32	6.655	
11,900.00	9,617.88	11,274.92	9,106.61	77.59	75.78	-26.29	2,747.59	-161.14	570.12	481.24	88.88	6.414	
12,000.00	9,613.79	11,374.81	9,107.35	79.21	77.45	-26.50	2,847.47	-162.12	565.80	474.31	91.50	6.184	
12,100.00	9,609.71	11,474.69	9,108.09	80.86	79.14	-26.72	2,947.34	-163.11	561.49	467.34	94.16	5.963	
12,200.00	9,605.63	11,574.58	9,108.83	82.54	80.85	-26.95	3,047.22	-164.10	557.19	460.33	96.86	5.753	
12,300.00	9,601.54	11,674.46	9,109.57	84.23	82.59	-27.17	3,147.09	-165.09	552.89	453.29	99.60	5.551	
12,400.00	9,597.46	11,774.35	9,110.31	85.95	84.34	-27.38	3,246.96	-166.08	548.82	446.39	102.44	5.358	
12,500.00	9,593.37	11,874.23	9,111.05	87.68	86.11	-27.45	3,346.83	-167.08	544.26	440.00	105.26	5.199	
12,502.88	9,596.71	11,877.21	9,111.07	87.73	86.16	-27.45	3,349.83	-167.10	547.26	441.93	105.33	5.196	
12,600.00	9,597.97	11,974.33	9,111.79	89.42	87.90	-27.42	3,446.94	-168.07	547.74	440.02	107.73	5.085	
12,700.00	9,599.31	12,074.33	9,112.53	91.19	89.71	-27.39	3,546.93	-169.06	548.28	438.12	110.16	4.977	
12,800.00	9,600.66	12,174.33	9,113.27	92.97	91.53	-27.36	3,646.93	-170.05	548.81	436.20	112.61	4.874	
12,900.00	9,602.00	12,274.33	9,114.01	94.77	93.37	-27.33	3,746.92	-171.04	549.34	434.26	115.08	4.774	
13,000.00	9,603.34	12,374.32	9,114.75	96.58	95.22	-27.30	3,846.91	-172.03	549.87	432.31	117.56	4.677	
13,100.00	9,604.68	12,474.32	9,115.49	98.40	97.08	-27.28	3,946.90	-173.02	550.41	430.35	120.06	4.585	
13,200.00	9,606.02	12,574.32	9,116.23	100.24	98.96	-27.25	4,046.89	-174.01	550.94	428.37	122.57	4.495	
13,300.00	9,607.37	12,674.32	9,116.97	102.09	100.85	-27.22	4,146.88	-175.00	551.47	426.38	125.09	4.409	
13,400.00	9,608.71	12,774.32	9,117.71	103.96	102.74	-27.19	4,246.87	-176.00	552.00	424.38	127.62	4.325	
13,500.00	9,610.05	12,874.31	9,118.45	105.83	104.65	-27.16	4,346.86	-176.99	552.54	422.37	130.17	4.245	
13,600.00	9,611.39	12,974.31	9,119.19	107.72	106.57	-27.13	4,446.85	-177.98	553.07	420.35	132.72	4.167	
13,700.00	9,612.73	13,074.31	9,119.93	109.61	108.50	-27.10	4,546.84	-178.97	553.60	418.32	135.29	4.092	
13,800.00	9,614.07	13,174.31	9,120.67	111.52	110.43	-27.07	4,646.83	-179.96	554.14	416.28	137.86	4.020	
13,900.00	9,615.42	13,274.31	9,121.41	113.43	112.37	-27.04	4,746.82	-180.95	554.67	414.23	140.44	3.950	
14,000.00	9,616.76	13,374.31	9,122.15	115.36	114.33	-27.02	4,846.81	-181.94	555.21	412.18	143.03	3.882	
14,100.00	9,618.10	13,474.30	9,122.89	117.29	116.28	-26.99	4,946.80	-182.93	555.74	410.12	145.62	3.816	
14,200.00	9,619.44	13,574.30	9,123.63	119.23	118.25	-26.96	5,046.79	-183.92	556.27	408.05	148.23	3.753	
14,300.00	9,620.78	13,674.30	9,124.37	121.18	120.22	-26.93	5,146.78	-184.92	556.81	405.97	150.83	3.692	
14,400.00	9,622.13	13,774.30	9,125.11	123.13	122.20	-26.90	5,246.77	-185.91	557.34	403.89	153.45	3.632	
14,500.00	9,623.47	13,874.30	9,125.85	125.09	124.19	-26.87	5,346.76	-186.90	557.88	401.81	156.07	3.575	
14,600.00	9,624.81	13,974.29	9,126.59	127.06	126.18	-26.84	5,446.75	-187.89	558.41	399.72	158.69	3.519	
14,700.00	9,626.15	14,074.29	9,127.33	129.03	128.17	-26.82	5,546.75	-188.88	558.95	397.62	161.32	3.465	
14,800.00	9,627.49	14,174.29	9,128.07	131.01	130.17	-26.79	5,646.74	-189.87	559.48	395.52	163.96	3.412	
14,900.00	9,628.84	14,274.29	9,128.81	132.99	132.18	-26.76	5,746.73	-190.86	560.02	393.42	166.60	3.362	
15,000.00	9,630.18	14,374.29	9,129.55	134.98	134.19	-26.73	5,846.72	-191.85	560.55	391.31	169.24	3.312	
15,100.00	9,631.55	14,480.97	9,130.50	136.98	136.34	-26.71	5,953.40	-192.58	560.98	388.97	172.02	3.261	
15,200.00	9,633.07	14,580.97	9,131.88	138.97	138.35	-26.71	6,053.38	-192.21	561.10	386.38	174.72	3.211	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDMG													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	9,634.58	14,680.97	9,133.27	140.97	140.37	-26.70	6,153.37	-191.83	561.21	383.79	177.42	3.163	
15,400.00	9,636.09	14,780.97	9,134.66	142.98	142.39	-26.70	6,253.36	-191.46	561.33	381.20	180.13	3.116	
15,500.00	9,637.61	14,880.97	9,136.05	144.98	144.42	-26.69	6,353.35	-191.09	561.44	378.60	182.84	3.071	
15,600.00	9,639.12	14,980.97	9,137.44	147.00	146.45	-26.69	6,453.34	-190.71	561.56	376.00	185.56	3.026	
15,700.00	9,640.63	15,080.97	9,138.82	149.01	148.48	-26.68	6,553.33	-190.34	561.67	373.39	188.28	2.983	
15,800.00	9,642.15	15,180.97	9,140.21	151.03	150.52	-26.68	6,653.32	-189.97	561.78	370.78	191.00	2.941	
15,900.00	9,643.66	15,280.97	9,141.60	153.06	152.56	-26.67	6,753.31	-189.59	561.90	368.17	193.73	2.900	
16,000.00	9,645.17	15,380.97	9,142.99	155.08	154.60	-26.67	6,853.30	-189.22	562.01	365.56	196.45	2.861	
16,100.00	9,646.69	15,480.97	9,144.37	157.11	156.65	-26.66	6,953.29	-188.84	562.13	362.94	199.19	2.822	
16,200.00	9,648.20	15,580.97	9,145.76	159.15	158.70	-26.66	7,053.28	-188.47	562.24	360.32	201.92	2.784	
16,300.00	9,649.71	15,680.97	9,147.15	161.18	160.75	-26.65	7,153.27	-188.10	562.35	357.70	204.66	2.748	
16,400.00	9,651.23	15,780.97	9,148.54	163.22	162.80	-26.64	7,253.26	-187.72	562.47	355.07	207.40	2.712	
16,500.00	9,652.74	15,880.97	9,149.93	165.27	164.86	-26.64	7,353.25	-187.35	562.58	352.44	210.14	2.677	
16,600.00	9,654.25	15,980.97	9,151.31	167.31	166.92	-26.63	7,453.24	-186.98	562.70	349.81	212.88	2.643	
16,700.00	9,655.77	16,080.97	9,152.70	169.36	168.98	-26.63	7,553.23	-186.60	562.81	347.18	215.63	2.610	
16,800.00	9,657.28	16,180.97	9,154.09	171.41	171.04	-26.62	7,653.22	-186.23	562.92	344.55	218.38	2.578	
16,900.00	9,658.79	16,280.97	9,155.48	173.47	173.11	-26.62	7,753.21	-185.85	563.04	341.91	221.13	2.546	
17,000.00	9,660.31	16,380.97	9,156.87	175.52	175.18	-26.61	7,853.20	-185.48	563.15	339.27	223.88	2.515	
17,100.00	9,661.82	16,480.97	9,158.25	177.58	177.25	-26.61	7,953.19	-185.11	563.27	336.64	226.63	2.485	
17,200.00	9,663.33	16,580.97	9,159.64	179.64	179.32	-26.60	8,053.18	-184.73	563.38	333.99	229.39	2.456	
17,300.00	9,664.85	16,680.97	9,161.03	181.70	181.39	-26.60	8,153.17	-184.36	563.49	331.35	232.14	2.427	
17,400.00	9,666.36	16,780.97	9,162.42	183.77	183.47	-26.59	8,253.16	-183.99	563.61	328.71	234.90	2.399	
17,500.00	9,667.87	16,880.97	9,163.81	185.83	185.55	-26.59	8,353.15	-183.61	563.72	326.06	237.66	2.372	
17,600.00	9,669.39	16,980.97	9,165.19	187.90	187.63	-26.58	8,453.13	-183.24	563.84	323.41	240.43	2.345	
17,700.00	9,670.90	17,080.97	9,166.58	189.97	189.71	-26.58	8,553.12	-182.87	563.95	320.76	243.19	2.319	
17,800.00	9,672.44	17,180.97	9,167.97	192.04	191.79	-26.57	8,653.11	-182.49	564.09	318.14	245.95	2.293	
17,900.00	9,674.07	17,280.97	9,169.36	194.12	193.87	-26.56	8,753.10	-182.12	564.29	315.60	248.69	2.269	
18,000.00	9,675.70	17,380.97	9,170.75	196.19	195.96	-26.54	8,853.09	-181.74	564.50	313.06	251.44	2.245	
18,100.00	9,677.33	17,480.97	9,172.13	198.27	198.05	-26.53	8,953.08	-181.37	564.71	310.52	254.18	2.222	
18,200.00	9,678.96	17,580.97	9,173.52	200.35	200.13	-26.52	9,053.07	-181.00	564.91	307.99	256.93	2.199	
18,300.00	9,680.59	17,680.97	9,174.91	202.43	202.22	-26.50	9,153.06	-180.62	565.12	305.45	259.67	2.176	
18,400.00	9,682.22	17,780.97	9,176.30	204.51	204.32	-26.49	9,253.05	-180.25	565.32	302.91	262.42	2.154	
18,500.00	9,683.84	17,880.97	9,177.69	206.60	206.41	-26.48	9,353.04	-179.88	565.53	300.37	265.16	2.133	
18,600.00	9,685.47	17,980.97	9,179.07	208.68	208.50	-26.47	9,453.03	-179.50	565.74	297.82	267.91	2.112	
18,700.00	9,687.10	18,080.97	9,180.46	210.77	210.60	-26.45	9,553.02	-179.13	565.94	295.28	270.66	2.091	
18,800.00	9,688.73	18,180.97	9,181.85	212.86	212.69	-26.44	9,653.01	-178.75	566.15	292.74	273.41	2.071	
18,900.00	9,690.36	18,280.97	9,183.24	214.94	214.79	-26.43	9,753.00	-178.38	566.35	290.20	276.16	2.051	
19,000.00	9,691.99	18,380.97	9,184.62	217.03	216.89	-26.41	9,852.99	-178.01	566.56	287.65	278.90	2.031	
19,100.00	9,693.62	18,480.97	9,186.01	219.13	218.99	-26.40	9,952.98	-177.63	566.77	285.11	281.65	2.012	
19,200.00	9,695.25	18,580.97	9,187.40	221.22	221.09	-26.39	10,052.97	-177.26	566.97	282.57	284.40	1.994	
19,300.00	9,696.87	18,680.97	9,188.79	223.31	223.19	-26.38	10,152.95	-176.89	567.18	280.02	287.15	1.975	
19,400.00	9,698.50	18,780.97	9,190.18	225.41	225.29	-26.36	10,252.94	-176.51	567.38	277.48	289.90	1.957	
19,500.00	9,700.13	18,880.97	9,191.56	227.50	227.39	-26.35	10,352.93	-176.14	567.59	274.94	292.65	1.939	
19,600.00	9,701.76	18,980.97	9,192.95	229.60	229.50	-26.34	10,452.92	-175.77	567.80	272.39	295.40	1.922	
19,700.00	9,703.39	19,080.97	9,194.34	231.70	231.60	-26.32	10,552.91	-175.39	568.00	269.85	298.16	1.905	
19,800.00	9,705.02	19,180.97	9,195.73	233.80	233.71	-26.31	10,652.90	-175.02	568.21	267.30	300.91	1.888	
19,900.00	9,706.65	19,280.97	9,197.12	235.90	235.82	-26.30	10,752.89	-174.64	568.42	264.76	303.66	1.872	
20,000.00	9,708.28	19,380.96	9,198.50	238.00	237.92	-26.29	10,852.88	-174.27	568.62	262.21	306.41	1.856	
20,015.11	9,708.52	19,396.07	9,198.71	238.27	238.24	-26.28	10,867.99	-174.21	568.65	261.90	306.75	1.854	
20,044.41	9,709.00	19,416.71	9,199.00	238.80	238.68	-26.28	10,888.62	-174.14	568.78	261.48	307.30	1.851 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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17												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)					
0.00	0.00	0.00	1.00	0.00	0.00	-0.06	25.10	-0.03	25.12				
100.00	100.00	99.00	100.00	0.19	0.19	-0.06	25.10	-0.03	25.10	24.71	0.39	65.157	
200.00	200.00	199.00	200.00	0.73	0.73	-0.06	25.10	-0.03	25.10	23.64	1.46	17.225	
300.00	300.00	299.00	300.00	1.27	1.26	-0.06	25.10	-0.03	25.10	22.57	2.53	9.911	
400.00	400.00	399.00	400.00	1.81	1.80	-0.06	25.10	-0.03	25.10	21.49	3.61	6.957	
500.00	500.00	499.00	500.00	2.34	2.34	-0.06	25.10	-0.03	25.10	20.42	4.68	5.359	
600.00	600.00	599.00	600.00	2.88	2.88	-0.06	25.10	-0.03	25.10	19.34	5.76	4.358	
700.00	699.98	698.74	699.72	3.42	3.40	-17.83	25.56	1.61	23.95	17.12	6.83	3.507	
800.00	799.84	798.33	799.17	3.96	3.93	-8.73	26.97	6.57	20.86	12.96	7.90	2.641	
900.00	899.45	897.63	898.09	4.50	4.46	12.52	29.32	14.83	17.42	8.45	8.96	1.943	
929.73	929.02	927.08	927.37	4.66	4.62	21.92	30.20	17.91	17.05	7.77	9.28	1.838 CC, ES	
1,000.00	998.90	996.55	996.28	5.05	5.00	44.35	32.59	26.33	19.25	9.23	10.02	1.921	
1,100.00	1,098.36	1,094.94	1,093.48	5.60	5.56	64.07	36.75	41.00	28.86	17.75	11.11	2.599	
1,200.00	1,197.81	1,192.59	1,189.38	6.15	6.14	71.88	41.79	58.72	43.34	31.14	12.20	3.553	
1,300.00	1,297.26	1,290.90	1,285.48	6.71	6.75	75.00	47.43	78.59	60.23	46.93	13.30	4.527	
1,400.00	1,396.72	1,389.41	1,381.79	7.27	7.37	76.75	53.10	98.54	77.25	62.84	14.41	5.360	
1,500.00	1,496.17	1,487.93	1,478.11	7.84	8.00	77.86	58.77	118.50	94.32	78.79	15.53	6.073	
1,600.00	1,595.62	1,586.45	1,574.42	8.40	8.63	78.63	64.44	138.45	111.41	94.75	16.65	6.689	
1,700.00	1,695.07	1,684.97	1,670.73	8.97	9.28	79.20	70.11	158.40	128.51	110.73	17.78	7.227	
1,800.00	1,794.53	1,783.49	1,767.04	9.53	9.93	79.63	75.78	178.35	145.63	126.71	18.92	7.699	
1,900.00	1,893.98	1,882.01	1,863.35	10.10	10.58	79.98	81.44	198.31	162.75	142.70	20.05	8.116	
2,000.00	1,993.43	1,980.53	1,959.66	10.67	11.24	80.25	87.11	218.26	179.87	158.68	21.19	8.488	
2,100.00	2,092.89	2,079.05	2,055.97	11.24	11.90	80.48	92.78	238.21	197.00	174.67	22.33	8.821	
2,200.00	2,192.34	2,177.57	2,152.28	11.81	12.56	80.68	98.45	258.16	214.13	190.65	23.48	9.121	
2,300.00	2,291.79	2,276.09	2,248.59	12.38	13.23	80.84	104.12	278.12	231.26	206.64	24.62	9.393	
2,400.00	2,391.24	2,374.61	2,344.91	12.95	13.90	80.98	109.78	298.07	248.40	222.63	25.77	9.639	
2,500.00	2,490.70	2,473.13	2,441.22	13.52	14.56	81.10	115.45	318.02	265.53	238.62	26.92	9.865	
2,600.00	2,590.15	2,571.65	2,537.53	14.09	15.23	81.21	121.12	337.97	282.67	254.60	28.07	10.071	
2,700.00	2,689.60	2,670.17	2,633.84	14.66	15.91	81.31	126.79	357.93	299.81	270.59	29.22	10.261	
2,800.00	2,789.06	2,768.69	2,730.15	15.23	16.58	81.39	132.46	377.88	316.95	286.58	30.37	10.436	
2,900.00	2,888.51	2,867.21	2,826.46	15.80	17.25	81.47	138.13	397.83	334.09	302.56	31.52	10.598	
3,000.00	2,987.96	2,965.73	2,922.77	16.37	17.92	81.54	143.79	417.79	351.23	318.55	32.68	10.749	
3,100.00	3,087.41	3,064.24	3,019.08	16.94	18.60	81.60	149.46	437.74	368.37	334.54	33.83	10.889	
3,200.00	3,186.87	3,162.76	3,115.39	17.51	19.27	81.66	155.13	457.69	385.51	350.52	34.99	11.019	
3,300.00	3,286.32	3,261.28	3,211.71	18.08	19.95	81.71	160.80	477.64	402.65	366.51	36.14	11.141	
3,400.00	3,385.77	3,359.80	3,308.02	18.66	20.62	81.76	166.47	497.60	419.79	382.49	37.30	11.256	
3,500.00	3,485.23	3,458.32	3,404.33	19.23	21.30	81.80	172.14	517.55	436.93	398.48	38.45	11.363	
3,600.00	3,584.68	3,556.84	3,500.64	19.80	21.98	81.84	177.80	537.50	454.07	414.46	39.61	11.464	
3,700.00	3,684.13	3,655.36	3,596.95	20.37	22.66	81.88	183.47	557.45	471.21	430.45	40.77	11.559	
3,800.00	3,783.59	3,753.88	3,693.26	20.94	23.33	81.96	189.14	577.41	488.36	446.43	41.92	11.649	
3,900.00	3,883.24	3,852.32	3,789.50	21.50	24.01	82.09	194.80	597.34	505.80	462.74	43.06	11.747	
4,000.00	3,983.12	3,950.56	3,885.53	22.04	24.69	81.87	200.46	617.24	523.75	479.60	44.15	11.862	
4,100.00	4,083.11	4,048.47	3,981.25	22.56	25.36	101.52	206.09	637.07	542.27	497.03	45.24	11.987	
4,200.00	4,183.11	4,146.23	4,076.81	23.07	26.03	100.53	211.71	656.87	561.14	514.86	46.28	12.125	
4,300.00	4,283.11	4,243.98	4,172.38	23.58	26.71	99.61	217.34	676.66	580.15	532.83	47.32	12.260	
4,400.00	4,383.11	4,341.74	4,267.95	24.10	27.38	98.75	222.96	696.46	599.30	550.94	48.36	12.392	
4,500.00	4,483.11	4,439.50	4,363.51	24.61	28.06	97.94	228.59	716.26	618.58	569.17	49.41	12.519	
4,600.00	4,583.11	4,537.26	4,459.08	25.13	28.73	97.18	234.21	736.06	637.97	587.51	50.46	12.644	
4,700.00	4,683.11	4,635.02	4,554.65	25.64	29.41	96.46	239.84	755.86	657.46	605.95	51.51	12.764	
4,800.00	4,783.11	4,732.78	4,650.22	26.16	30.08	95.79	245.46	775.66	677.04	624.48	52.56	12.881	
4,900.00	4,883.11	4,830.54	4,745.78	26.68	30.76	95.15	251.09	795.46	696.71	643.10	53.62	12.994	
5,000.00	4,983.11	4,928.29	4,841.35	27.20	31.43	94.55	256.71	815.25	716.46	661.79	54.67	13.105	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17													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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,083.11	5,026.05	4,936.92	27.72	32.11	93.98	262.33	835.05	736.28	680.55	55.73	13.211	
5,200.00	5,183.11	5,123.81	5,032.49	28.24	32.78	93.44	267.96	854.85	756.17	699.38	56.79	13.315	
5,300.00	5,283.11	5,221.57	5,128.05	28.76	33.46	92.93	273.58	874.65	776.12	718.26	57.85	13.416	
5,400.00	5,383.11	5,319.33	5,223.62	29.28	34.13	92.44	279.21	894.45	796.12	737.21	58.91	13.513	
5,500.00	5,483.11	5,417.09	5,319.19	29.80	34.81	91.98	284.83	914.25	816.18	756.20	59.98	13.608	
5,600.00	5,583.11	5,521.54	5,421.32	30.32	35.52	91.51	290.82	935.31	836.22	775.14	61.08	13.690	
5,700.00	5,683.11	5,658.62	5,556.18	30.85	36.42	91.01	297.52	958.89	853.34	790.99	62.35	13.686	
5,800.00	5,783.11	5,797.80	5,694.14	31.37	37.24	90.66	302.51	976.46	865.93	802.30	63.62	13.610	
5,900.00	5,883.11	5,938.45	5,834.29	31.90	37.99	90.44	305.68	987.64	873.86	808.98	64.88	13.469	
6,000.00	5,983.11	6,079.91	5,975.66	32.42	38.66	90.36	306.98	992.20	877.08	810.97	66.12	13.266	
6,100.00	6,083.11	6,187.36	6,083.11	32.95	39.13	90.35	307.01	992.31	877.16	809.99	67.16	13.060	
6,200.00	6,183.11	6,287.36	6,183.11	33.47	39.57	90.35	307.01	992.31	877.16	808.99	68.17	12.867	
6,300.00	6,283.11	6,387.36	6,283.11	34.00	40.01	90.35	307.01	992.31	877.16	807.97	69.18	12.679	
6,400.00	6,383.11	6,487.36	6,383.11	34.52	40.45	90.35	307.01	992.31	877.16	806.96	70.20	12.496	
6,500.00	6,483.11	6,587.36	6,483.11	35.05	40.89	90.35	307.01	992.31	877.16	805.95	71.21	12.318	
6,600.00	6,583.11	6,687.36	6,583.11	35.58	41.34	90.35	307.01	992.31	877.16	804.93	72.23	12.145	
6,700.00	6,683.11	6,787.36	6,683.11	36.10	41.79	90.35	307.01	992.31	877.16	803.91	73.24	11.976	
6,800.00	6,783.11	6,887.36	6,783.11	36.63	42.24	90.35	307.01	992.31	877.16	802.89	74.26	11.811	
6,900.00	6,883.11	6,987.36	6,883.11	37.16	42.69	90.35	307.01	992.31	877.16	801.87	75.29	11.651	
7,000.00	6,983.11	7,087.36	6,983.11	37.69	43.14	90.35	307.01	992.31	877.16	800.85	76.31	11.495	
7,100.00	7,083.11	7,187.36	7,083.11	38.21	43.60	90.35	307.01	992.31	877.16	799.82	77.33	11.343	
7,200.00	7,183.11	7,287.36	7,183.11	38.74	44.06	90.35	307.01	992.31	877.16	798.80	78.36	11.194	
7,300.00	7,283.11	7,387.36	7,283.11	39.27	44.52	90.35	307.01	992.31	877.16	797.77	79.38	11.049	
7,400.00	7,383.11	7,487.36	7,383.11	39.80	44.98	90.35	307.01	992.31	877.16	796.74	80.41	10.908	
7,500.00	7,483.11	7,587.36	7,483.11	40.33	45.44	90.35	307.01	992.31	877.16	795.72	81.44	10.770	
7,600.00	7,583.11	7,687.36	7,583.11	40.86	45.90	90.35	307.01	992.31	877.16	794.68	82.47	10.636	
7,700.00	7,683.11	7,787.36	7,683.11	41.39	46.37	90.35	307.01	992.31	877.16	793.65	83.50	10.504	
7,800.00	7,783.11	7,887.36	7,783.11	41.92	46.84	90.35	307.01	992.31	877.16	792.62	84.54	10.376	
7,900.00	7,883.11	7,987.36	7,883.11	42.45	47.31	90.35	307.01	992.31	877.16	791.59	85.57	10.251	
8,000.00	7,983.11	8,087.36	7,983.11	42.98	47.78	90.35	307.01	992.31	877.16	790.55	86.60	10.128	
8,100.00	8,083.11	8,187.36	8,083.11	43.51	48.25	90.35	307.01	992.31	877.16	789.52	87.64	10.009	
8,200.00	8,183.11	8,287.36	8,183.11	44.04	48.72	90.35	307.01	992.31	877.16	788.48	88.68	9.892	
8,300.00	8,283.11	8,387.36	8,283.11	44.57	49.20	90.35	307.01	992.31	877.16	787.44	89.71	9.777	
8,400.00	8,383.11	8,487.36	8,383.11	45.10	49.68	90.35	307.01	992.31	877.16	786.41	90.75	9.665	
8,500.00	8,483.11	8,587.36	8,483.11	45.63	50.15	90.35	307.01	992.31	877.16	785.37	91.79	9.556	
8,600.00	8,583.11	8,687.36	8,583.11	46.17	50.63	90.35	307.01	992.31	877.16	784.33	92.83	9.449	
8,700.00	8,683.11	8,787.36	8,683.11	46.70	51.11	90.35	307.01	992.31	877.16	783.29	93.87	9.344	
8,800.00	8,783.11	8,887.36	8,783.11	47.23	51.59	90.35	307.01	992.31	877.16	782.24	94.91	9.242	
8,900.00	8,883.11	8,987.36	8,883.11	47.76	52.07	90.35	307.01	992.31	877.16	781.20	95.96	9.141	
9,000.00	8,983.11	9,087.36	8,983.11	48.29	52.56	90.35	307.01	992.31	877.16	780.16	97.00	9.043	
9,100.00	9,083.11	9,187.36	9,083.11	48.82	53.04	90.35	307.01	992.31	877.16	779.12	98.04	8.947	
9,200.00	9,182.98	9,289.16	9,184.85	49.36	53.54	91.01	309.12	992.28	877.17	778.09	99.08	8.853	
9,300.00	9,280.93	9,393.29	9,287.22	49.93	54.06	91.16	327.41	991.96	877.08	776.89	100.19	8.755	
9,400.00	9,374.01	9,497.74	9,384.87	50.51	54.58	91.26	364.03	991.34	876.85	775.52	101.33	8.654	
9,500.00	9,459.39	9,602.35	9,474.41	51.11	55.08	91.33	417.85	990.42	876.49	774.00	102.49	8.552	
9,600.00	9,534.47	9,706.96	9,552.68	51.72	55.54	91.35	487.02	989.24	876.00	772.32	103.68	8.449	
9,700.00	9,596.97	9,811.42	9,617.01	52.35	55.98	91.33	569.13	987.83	875.41	770.50	104.91	8.344	
9,800.00	9,644.99	9,915.57	9,665.27	53.00	56.41	91.27	661.25	986.26	874.73	768.55	106.18	8.239	
9,900.00	9,677.08	10,019.28	9,695.98	53.67	56.86	91.17	760.15	984.57	873.99	766.51	107.48	8.132	
10,000.00	9,692.26	10,122.42	9,708.36	54.34	57.37	91.03	862.39	982.82	873.21	764.40	108.81	8.025	
10,100.00	9,691.40	10,223.58	9,705.33	55.05	57.95	90.93	963.45	981.10	872.45	762.24	110.21	7.916	
10,200.00	9,687.32	10,323.57	9,700.63	55.83	58.61	90.89	1,063.32	979.39	871.72	759.97	111.76	7.800	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HOGM													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)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	9,683.23	10,423.57	9,695.92	56.69	59.35	90.85	1,163.19	977.69	870.99	757.55	113.45	7.678	
10,400.00	9,679.15	10,523.56	9,691.22	57.61	60.17	90.81	1,263.06	975.98	870.26	754.99	115.28	7.549	
10,500.00	9,675.07	10,623.56	9,686.52	58.59	61.07	90.77	1,362.93	974.27	869.54	752.30	117.24	7.417	
10,600.00	9,670.98	10,723.55	9,681.81	59.64	62.04	90.73	1,462.80	972.57	868.81	749.49	119.32	7.281	
10,700.00	9,666.90	10,823.55	9,677.11	60.75	63.07	90.69	1,562.67	970.86	868.08	746.55	121.53	7.143	
10,800.00	9,662.81	10,923.55	9,672.41	61.92	64.16	90.65	1,662.54	969.15	867.35	743.51	123.84	7.004	
10,900.00	9,658.73	11,023.54	9,667.70	63.13	65.31	90.61	1,762.41	967.45	866.63	740.36	126.26	6.864	
11,000.00	9,654.64	11,123.54	9,663.00	64.40	66.51	90.57	1,862.28	965.74	865.90	737.11	128.79	6.723	
11,100.00	9,650.56	11,223.53	9,658.30	65.71	67.76	90.53	1,962.16	964.04	865.17	733.77	131.40	6.584	
11,200.00	9,646.47	11,323.53	9,653.59	67.07	69.05	90.49	2,062.03	962.33	864.45	730.34	134.11	6.446	
11,300.00	9,642.39	11,423.52	9,648.89	68.46	70.39	90.45	2,161.90	960.62	863.72	726.82	136.90	6.309	
11,400.00	9,638.30	11,523.52	9,644.19	69.90	71.77	90.41	2,261.77	958.92	863.00	723.23	139.76	6.175	
11,500.00	9,634.22	11,623.52	9,640.46	71.37	73.18	90.43	2,361.40	957.22	862.29	719.60	142.69	6.043	
11,600.00	9,630.13	11,722.92	9,636.87	72.88	74.62	90.66	2,461.06	955.54	861.62	715.99	145.63	5.916	
11,700.00	9,626.05	11,822.83	9,633.97	74.42	76.09	90.94	2,560.96	953.86	860.98	712.35	148.63	5.793	
11,800.00	9,621.96	11,922.74	9,640.07	75.99	77.60	91.22	2,660.86	952.18	860.37	708.67	151.69	5.672	
11,900.00	9,617.88	12,022.65	9,640.17	77.59	79.14	91.50	2,760.75	950.49	859.77	704.96	154.81	5.554	
12,000.00	9,613.79	12,122.56	9,640.28	79.21	80.70	91.78	2,860.65	948.81	859.19	701.22	157.97	5.439	
12,100.00	9,609.71	12,222.47	9,640.38	80.86	82.30	92.06	2,960.54	947.13	858.64	697.46	161.18	5.327	
12,200.00	9,605.63	12,322.38	9,640.48	82.54	83.91	92.34	3,060.44	945.45	858.10	693.67	164.44	5.218	
12,300.00	9,601.54	12,422.29	9,640.58	84.23	85.56	92.62	3,160.33	943.77	857.59	689.86	167.73	5.113	
12,400.00	9,597.71	12,522.21	9,640.68	85.95	87.22	92.88	3,260.24	942.08	857.08	686.00	171.08	5.010	
12,500.00	9,593.68	12,622.20	9,640.79	87.68	88.91	92.95	3,360.21	940.40	856.45	681.92	174.53	4.907	
12,600.00	9,589.97	12,722.19	9,640.89	89.42	90.62	92.87	3,460.19	938.72	855.70	677.66	178.04	4.806	
12,700.00	9,586.31	12,822.18	9,640.99	91.19	92.34	92.79	3,560.16	937.04	854.95	673.38	181.58	4.708	
12,800.00	9,582.66	12,922.17	9,641.09	92.97	94.08	92.77	3,659.79	935.34	854.24	669.11	185.13	4.614	
12,900.00	9,579.00	13,022.16	9,641.19	94.77	95.85	92.78	3,759.76	933.63	853.53	664.81	188.72	4.523	
13,000.00	9,575.34	13,122.15	9,641.29	96.58	97.63	92.79	3,859.74	931.93	852.82	660.49	192.33	4.434	
13,100.00	9,571.68	13,222.14	9,641.39	98.40	99.43	92.80	3,959.71	930.22	852.12	656.14	195.98	4.348	
13,200.00	9,568.02	13,322.13	9,641.49	100.24	101.24	92.80	4,059.68	928.51	851.41	651.76	199.65	4.265	
13,300.00	9,564.37	13,422.12	9,641.59	102.09	103.06	92.81	4,159.66	926.81	850.71	647.36	203.34	4.184	
13,400.00	9,560.71	13,522.11	9,641.69	103.96	104.90	92.82	4,259.63	925.10	850.00	642.93	207.07	4.105	
13,500.00	9,557.05	13,622.10	9,641.79	105.83	106.75	92.83	4,359.60	923.39	849.29	638.49	210.81	4.029	
13,600.00	9,553.39	13,722.09	9,641.89	107.72	108.61	92.83	4,459.57	921.69	848.59	634.01	214.57	3.955	
13,700.00	9,549.73	13,822.08	9,641.99	109.61	110.48	92.84	4,559.55	919.98	847.88	629.52	218.36	3.883	
13,800.00	9,546.07	13,922.07	9,642.09	111.52	112.37	92.85	4,659.52	918.27	847.18	625.01	222.16	3.813	
13,900.00	9,542.41	14,022.06	9,642.19	113.43	114.26	92.86	4,759.49	916.57	846.47	620.48	225.99	3.746	
14,000.00	9,538.75	14,122.05	9,642.29	115.36	116.16	92.87	4,859.46	914.86	845.76	615.94	229.83	3.680	
14,100.00	9,535.09	14,222.04	9,642.39	117.29	118.07	92.87	4,959.44	913.16	845.06	611.37	233.68	3.616	
14,200.00	9,531.43	14,322.03	9,642.49	119.23	119.99	92.88	5,059.41	911.45	844.35	606.80	237.56	3.554	
14,300.00	9,527.77	14,422.02	9,642.59	121.18	121.92	92.89	5,159.38	909.74	843.65	602.20	241.44	3.494	
14,400.00	9,524.11	14,522.01	9,642.69	123.13	123.86	92.90	5,259.36	908.04	842.94	597.59	245.35	3.436	
14,500.00	9,520.45	14,622.00	9,642.79	125.09	125.80	92.91	5,359.33	906.33	842.23	592.97	249.26	3.379	
14,600.00	9,516.79	14,722.00	9,642.89	127.06	127.75	92.91	5,459.30	904.62	841.53	588.34	253.19	3.324	
14,700.00	9,513.13	14,822.00	9,642.99	129.03	129.71	92.92	5,559.27	902.92	840.82	583.69	257.13	3.270	
14,800.00	9,509.47	14,922.00	9,643.09	131.01	131.67	92.93	5,659.25	901.21	840.12	579.03	261.08	3.218	
14,900.00	9,505.81	15,022.00	9,643.19	132.99	133.64	92.94	5,759.22	899.50	839.41	574.36	265.05	3.167	
15,000.00	9,502.15	15,122.00	9,643.29	134.98	135.62	92.95	5,859.19	897.80	838.71	569.68	269.02	3.118	
15,100.00	9,498.49	15,222.00	9,643.39	136.98	137.35	92.95	5,959.16	896.10	838.01	565.00	273.00	3.071	
15,200.00	9,494.83	15,322.00	9,643.49	138.97	139.13	92.96	6,059.13	894.40	837.31	560.32	277.00	3.024	
15,300.00	9,491.17	15,422.00	9,643.59	140.97	141.12	93.02	6,159.10	892.70	836.61	555.64	281.00	2.977	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17												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)	
15,400.00	9,636.09	15,499.31	9,680.84	142.98	143.11	93.06	6,236.63	899.13	839.66	554.97	284.69	2.949
15,500.00	9,637.61	15,599.30	9,682.98	144.98	145.11	93.10	6,336.60	900.07	840.25	551.57	288.69	2.911
15,600.00	9,639.12	15,699.30	9,685.12	147.00	147.11	93.14	6,436.57	901.01	840.85	548.16	292.69	2.873
15,700.00	9,640.63	15,799.30	9,687.26	149.01	149.11	93.18	6,536.54	901.95	841.44	544.74	296.70	2.836
15,800.00	9,642.15	15,899.29	9,689.39	151.03	151.12	93.22	6,636.51	902.89	842.04	541.32	300.72	2.800
15,900.00	9,643.66	15,999.29	9,691.53	153.06	153.13	93.26	6,736.48	903.83	842.63	537.89	304.74	2.765
16,000.00	9,645.17	16,099.28	9,693.67	155.08	155.15	93.30	6,836.45	904.77	843.23	534.45	308.77	2.731
16,100.00	9,646.69	16,199.28	9,695.80	157.11	157.17	93.34	6,936.41	905.70	843.82	531.01	312.81	2.698
16,200.00	9,648.20	16,299.28	9,697.94	159.15	159.19	93.38	7,036.38	906.64	844.42	527.57	316.85	2.665
16,300.00	9,649.71	16,399.27	9,700.08	161.18	161.22	93.42	7,136.35	907.58	845.02	524.11	320.90	2.633
16,400.00	9,651.23	16,499.27	9,702.22	163.22	163.25	93.46	7,236.32	908.52	845.61	520.65	324.96	2.602
16,500.00	9,652.74	16,599.27	9,704.35	165.27	165.28	93.50	7,336.29	909.46	846.21	517.19	329.02	2.572
16,600.00	9,654.25	16,700.11	9,706.41	167.31	167.33	93.54	7,437.10	910.40	846.80	513.69	333.11	2.542
16,700.00	9,655.77	16,800.74	9,707.16	169.36	169.38	93.48	7,537.73	911.26	847.23	510.00	337.23	2.512
16,800.00	9,657.28	16,900.73	9,707.84	171.41	171.42	93.42	7,637.72	912.12	847.66	506.31	341.34	2.483
16,900.00	9,658.79	17,000.73	9,708.53	173.47	173.46	93.37	7,737.71	912.97	848.08	502.62	345.46	2.455
17,000.00	9,660.31	17,100.72	9,709.22	175.52	175.51	93.31	7,837.70	913.83	848.51	498.92	349.59	2.427
17,100.00	9,661.82	17,200.72	9,709.90	177.58	177.56	93.25	7,937.69	914.68	848.94	495.22	353.72	2.400
17,200.00	9,663.33	17,300.71	9,710.59	179.64	179.61	93.19	8,037.67	915.53	849.36	491.51	357.85	2.374
17,300.00	9,664.85	17,400.71	9,711.27	181.70	181.66	93.14	8,137.66	916.39	849.79	487.80	361.99	2.348
17,400.00	9,666.36	17,500.70	9,711.96	183.77	183.71	93.08	8,237.65	917.24	850.22	484.09	366.13	2.322
17,500.00	9,667.87	17,600.70	9,712.65	185.83	185.77	93.02	8,337.64	918.10	850.66	480.37	370.28	2.297
17,600.00	9,669.39	17,700.69	9,713.33	187.90	187.83	92.96	8,437.63	918.95	851.09	476.66	374.43	2.273
17,700.00	9,670.90	17,800.69	9,714.02	189.97	189.89	92.91	8,537.62	919.80	851.52	472.93	378.59	2.249
17,800.00	9,672.44	17,900.69	9,714.71	192.04	191.96	92.85	8,637.61	920.66	851.96	469.22	382.74	2.226
17,900.00	9,674.07	18,000.68	9,715.39	194.12	194.02	92.78	8,737.60	921.51	852.42	465.51	386.91	2.203
18,000.00	9,675.70	18,100.67	9,716.08	196.19	196.09	92.72	8,837.59	922.37	852.87	461.79	391.08	2.181
18,100.00	9,677.33	18,200.67	9,716.77	198.27	198.16	92.65	8,937.58	923.22	853.33	458.08	395.25	2.159
18,200.00	9,678.96	18,300.66	9,717.45	200.35	200.23	92.59	9,037.56	924.07	853.79	454.36	399.42	2.138
18,300.00	9,680.59	18,400.66	9,718.14	202.43	202.30	92.52	9,137.55	924.93	854.25	450.64	403.60	2.117
18,400.00	9,682.22	18,500.65	9,718.82	204.51	204.37	92.46	9,237.54	925.78	854.71	446.92	407.78	2.096
18,500.00	9,683.84	18,600.65	9,719.51	206.60	206.45	92.40	9,337.53	926.64	855.17	443.20	411.97	2.076
18,600.00	9,685.47	18,700.64	9,720.20	208.68	208.53	92.33	9,437.52	927.49	855.63	439.48	416.16	2.056
18,700.00	9,687.10	18,800.63	9,720.88	210.77	210.61	92.27	9,537.51	928.34	856.10	435.75	420.34	2.037
18,800.00	9,688.73	18,900.29	9,722.19	212.86	212.68	92.24	9,637.14	929.20	856.59	432.08	424.51	2.018
18,900.00	9,690.36	19,000.28	9,723.77	214.94	214.76	92.24	9,737.13	930.06	857.10	428.41	428.69	1.999
19,000.00	9,691.99	19,100.28	9,725.35	217.03	216.84	92.23	9,837.11	930.92	857.60	424.74	432.87	1.981
19,100.00	9,693.62	19,200.28	9,726.93	219.13	218.93	92.23	9,937.09	931.78	858.11	421.06	437.04	1.963
19,200.00	9,695.25	19,300.28	9,728.51	221.22	221.01	92.23	10,037.07	932.64	858.61	417.39	441.23	1.946
19,300.00	9,696.87	19,400.28	9,730.09	223.31	223.10	92.22	10,137.06	933.50	859.12	413.71	445.41	1.929
19,400.00	9,698.50	19,500.28	9,731.67	225.41	225.19	92.22	10,237.04	934.35	859.62	410.03	449.60	1.912
19,500.00	9,700.13	19,600.28	9,733.26	227.50	227.28	92.21	10,337.02	935.21	860.13	406.34	453.79	1.895
19,600.00	9,701.76	19,700.27	9,734.84	229.60	229.37	92.21	10,437.00	936.07	860.63	402.66	457.98	1.879
19,700.00	9,703.39	19,800.27	9,736.42	231.70	231.46	92.20	10,536.99	936.93	861.14	398.97	462.17	1.863
19,800.00	9,705.02	19,900.27	9,738.00	233.80	233.55	92.20	10,636.97	937.79	861.65	395.28	466.36	1.848
19,900.00	9,706.65	20,000.27	9,739.58	235.90	235.65	92.19	10,736.95	938.65	862.15	391.59	470.56	1.832
20,000.00	9,708.28	20,100.27	9,741.16	238.00	237.74	92.19	10,836.93	939.51	862.66	387.90	474.76	1.817
20,044.41	9,709.00	20,144.68	9,741.86	238.80	238.67	92.19	10,881.33	939.89	862.88	386.39	476.49	1.811 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17													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		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)				Between Centres (usft)	Between Ellipses (usft)
0.00	0.00	0.00	1.00	0.00	0.00	-0.06	49.84	-0.06	49.85				
100.00	100.00	99.00	100.00	0.19	0.19	-0.06	49.84	-0.06	49.84	49.45	0.39	129.370	
200.00	200.00	199.00	200.00	0.73	0.73	-0.06	49.84	-0.06	49.84	48.38	1.46	34.199	
300.00	300.00	299.00	300.00	1.27	1.26	-0.06	49.84	-0.06	49.84	47.30	2.53	19.677	
400.00	400.00	399.00	400.00	1.81	1.80	-0.06	49.84	-0.06	49.84	46.23	3.61	13.812	
500.00	500.00	499.00	500.00	2.34	2.34	-0.06	49.84	-0.06	49.84	45.15	4.68	10.641	
600.00	600.00	599.00	600.00	2.88	2.88	-0.06	49.84	-0.06	49.84	44.08	5.76	8.654	
700.00	699.98	697.83	698.81	3.42	3.40	-22.44	50.95	-1.30	49.36	42.53	6.83	7.229	
800.00	799.84	796.43	797.27	3.96	3.93	-29.11	54.31	-5.08	48.42	40.52	7.90	6.132	
856.05	855.71	851.51	852.19	4.27	4.23	-34.90	57.17	-8.29	48.16	39.67	8.49	5.670 CC	
900.00	899.45	894.58	895.06	4.50	4.46	-40.42	59.90	-11.35	48.39	39.43	8.96	5.400 ES	
1,000.00	998.90	993.80	993.74	5.05	5.01	-53.55	66.80	-19.10	51.04	41.01	10.04	5.085	
1,100.00	1,098.36	1,093.11	1,092.50	5.60	5.56	-64.88	73.71	-26.85	56.09	44.97	11.12	5.043	
1,200.00	1,197.81	1,192.42	1,191.26	6.15	6.11	-74.07	80.62	-34.61	62.95	50.74	12.21	5.155	
1,300.00	1,297.26	1,291.72	1,290.03	6.71	6.67	-81.32	87.52	-42.36	71.10	57.79	13.31	5.344	
1,400.00	1,396.72	1,391.03	1,388.79	7.27	7.23	-87.02	94.43	-50.11	80.15	65.74	14.40	5.564	
1,500.00	1,496.17	1,490.34	1,487.55	7.84	7.79	-91.53	101.34	-57.87	89.82	74.32	15.51	5.793	
1,600.00	1,595.62	1,589.64	1,586.31	8.40	8.35	-95.15	108.25	-65.62	99.95	83.34	16.61	6.016	
1,700.00	1,695.07	1,688.95	1,685.08	8.97	8.91	-98.10	115.16	-73.38	110.39	92.67	17.72	6.230	
1,800.00	1,794.53	1,788.26	1,783.84	9.53	9.48	-100.53	122.06	-81.13	121.08	102.25	18.83	6.430	
1,900.00	1,893.98	1,887.57	1,882.60	10.10	10.04	-102.57	128.97	-88.89	131.95	112.00	19.94	6.616	
2,000.00	1,993.43	1,986.87	1,981.37	10.67	10.61	-104.30	135.88	-96.64	142.95	121.90	21.05	6.790	
2,100.00	2,092.89	2,086.18	2,080.13	11.24	11.18	-105.77	142.79	-104.39	154.07	131.90	22.17	6.950	
2,200.00	2,192.34	2,185.49	2,178.89	11.81	11.74	-107.05	149.70	-112.15	165.27	141.99	23.28	7.098	
2,300.00	2,291.79	2,284.79	2,277.65	12.38	12.31	-108.17	156.61	-119.90	176.55	152.15	24.40	7.236	
2,400.00	2,391.24	2,384.10	2,376.42	12.95	12.88	-109.15	163.51	-127.66	187.88	162.37	25.52	7.363	
2,500.00	2,490.70	2,483.41	2,475.18	13.52	13.45	-110.02	170.42	-135.41	199.26	172.63	26.63	7.482	
2,600.00	2,590.15	2,582.72	2,573.94	14.09	14.02	-110.80	177.33	-143.17	210.69	182.94	27.75	7.592	
2,700.00	2,689.60	2,682.02	2,672.70	14.66	14.59	-111.49	184.24	-150.92	222.14	193.27	28.87	7.695	
2,800.00	2,789.06	2,781.33	2,771.47	15.23	15.16	-112.12	191.15	-158.67	233.63	203.64	29.99	7.791	
2,900.00	2,888.51	2,880.64	2,870.23	15.80	15.73	-112.69	198.05	-166.43	245.14	214.03	31.11	7.881	
3,000.00	2,987.96	2,979.95	2,968.99	16.37	16.30	-113.21	204.96	-174.18	256.67	224.45	32.23	7.965	
3,100.00	3,087.41	3,079.25	3,067.76	16.94	16.87	-113.68	211.87	-181.94	268.22	234.88	33.34	8.044	
3,200.00	3,186.87	3,178.56	3,166.52	17.51	17.44	-114.12	218.78	-189.69	279.79	245.33	34.46	8.118	
3,300.00	3,286.32	3,277.87	3,265.28	18.08	18.01	-114.51	225.69	-197.45	291.37	255.79	35.58	8.188	
3,400.00	3,385.77	3,377.17	3,364.04	18.66	18.58	-114.88	232.60	-205.20	302.97	266.26	36.70	8.254	
3,500.00	3,485.23	3,476.48	3,462.81	19.23	19.15	-115.23	239.50	-212.95	314.58	276.75	37.83	8.317	
3,600.00	3,584.68	3,575.79	3,561.57	19.80	19.72	-115.54	246.41	-220.71	326.19	287.25	38.95	8.376	
3,700.00	3,684.13	3,675.10	3,660.33	20.37	20.29	-115.84	253.32	-228.46	337.82	297.75	40.07	8.431	
3,800.00	3,783.59	3,774.41	3,759.10	20.94	20.86	-116.14	260.23	-236.22	349.44	308.25	41.19	8.483	
3,900.00	3,883.24	3,873.83	3,857.97	21.50	21.43	-116.27	267.14	-243.98	360.12	317.79	42.33	8.507	
4,000.00	3,983.12	3,973.34	3,956.94	22.04	22.00	-115.90	274.07	-251.75	369.27	325.83	43.44	8.500	
4,100.00	4,083.11	4,072.83	4,055.89	22.56	22.57	-94.80	280.99	-259.52	376.99	332.47	44.52	8.467	
4,200.00	4,183.11	4,172.28	4,154.79	23.07	23.15	-93.67	287.91	-267.29	384.29	338.70	45.58	8.430	
4,300.00	4,283.11	4,271.74	4,253.70	23.58	23.72	-92.58	294.82	-275.05	391.73	345.08	46.65	8.398	
4,400.00	4,383.11	4,371.19	4,352.61	24.10	24.29	-91.54	301.74	-282.82	399.30	351.59	47.71	8.370	
4,500.00	4,483.11	4,470.64	4,451.51	24.61	24.86	-90.53	308.66	-290.58	407.00	358.23	48.77	8.345	
4,600.00	4,583.11	4,577.96	4,558.33	25.13	25.47	-89.57	315.52	-298.29	414.21	364.34	49.87	8.306	
4,700.00	4,683.11	4,690.11	4,670.27	25.64	26.08	-88.96	320.00	-303.31	418.74	367.75	50.99	8.212	
4,800.00	4,783.11	4,802.61	4,782.74	26.16	26.67	-88.76	321.55	-305.05	420.32	368.23	52.09	8.068	
4,900.00	4,883.11	4,902.97	4,883.11	26.68	27.18	-88.76	321.55	-305.05	420.32	367.19	53.13	7.911	
5,000.00	4,983.11	5,002.97	4,983.11	27.20	27.68	-88.76	321.55	-305.05	420.32	366.16	54.17	7.760	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17													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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	5,083.11	5,102.97	5,083.11	27.72	28.19	-88.76	321.55	-305.05	420.32	365.12	55.20	7.614	
5,200.00	5,183.11	5,202.97	5,183.11	28.24	28.70	-88.76	321.55	-305.05	420.32	364.08	56.24	7.474	
5,300.00	5,283.11	5,302.97	5,283.11	28.76	29.21	-88.76	321.55	-305.05	420.32	363.04	57.28	7.338	
5,400.00	5,383.11	5,402.97	5,383.11	29.28	29.72	-88.76	321.55	-305.05	420.32	362.00	58.32	7.207	
5,500.00	5,483.11	5,502.97	5,483.11	29.80	30.23	-88.76	321.55	-305.05	420.32	360.96	59.36	7.081	
5,600.00	5,583.11	5,602.97	5,583.11	30.32	30.75	-88.76	321.55	-305.05	420.32	359.92	60.40	6.958	
5,700.00	5,683.11	5,702.97	5,683.11	30.85	31.26	-88.76	321.55	-305.05	420.32	358.87	61.45	6.840	
5,800.00	5,783.11	5,802.97	5,783.11	31.37	31.78	-88.76	321.55	-305.05	420.32	357.83	62.49	6.726	
5,900.00	5,883.11	5,902.97	5,883.11	31.90	32.29	-88.76	321.55	-305.05	420.32	356.78	63.54	6.615	
6,000.00	5,983.11	6,002.97	5,983.11	32.42	32.81	-88.76	321.55	-305.05	420.32	355.74	64.59	6.508	
6,100.00	6,083.11	6,102.97	6,083.11	32.95	33.32	-88.76	321.55	-305.05	420.32	354.69	65.64	6.404	
6,200.00	6,183.11	6,202.97	6,183.11	33.47	33.84	-88.76	321.55	-305.05	420.32	353.64	66.68	6.303	
6,300.00	6,283.11	6,302.97	6,283.11	34.00	34.36	-88.76	321.55	-305.05	420.32	352.59	67.73	6.205	
6,400.00	6,383.11	6,402.97	6,383.11	34.52	34.88	-88.76	321.55	-305.05	420.32	351.54	68.78	6.111	
6,500.00	6,483.11	6,502.97	6,483.11	35.05	35.40	-88.76	321.55	-305.05	420.32	350.49	69.84	6.019	
6,600.00	6,583.11	6,602.97	6,583.11	35.58	35.92	-88.76	321.55	-305.05	420.32	349.43	70.89	5.929	
6,700.00	6,683.11	6,702.97	6,683.11	36.10	36.44	-88.76	321.55	-305.05	420.32	348.38	71.94	5.843	
6,800.00	6,783.11	6,802.97	6,783.11	36.63	36.96	-88.76	321.55	-305.05	420.32	347.33	72.99	5.758	
6,900.00	6,883.11	6,902.97	6,883.11	37.16	37.48	-88.76	321.55	-305.05	420.32	346.27	74.05	5.676	
7,000.00	6,983.11	7,002.97	6,983.11	37.69	38.00	-88.76	321.55	-305.05	420.32	345.22	75.10	5.597	
7,100.00	7,083.11	7,102.97	7,083.11	38.21	38.52	-88.76	321.55	-305.05	420.32	344.16	76.16	5.519	
7,200.00	7,183.11	7,202.97	7,183.11	38.74	39.04	-88.76	321.55	-305.05	420.32	343.11	77.21	5.444	
7,300.00	7,283.11	7,302.97	7,283.11	39.27	39.57	-88.76	321.55	-305.05	420.32	342.05	78.27	5.370	
7,400.00	7,383.11	7,402.97	7,383.11	39.80	40.09	-88.76	321.55	-305.05	420.32	341.00	79.33	5.299	
7,500.00	7,483.11	7,502.97	7,483.11	40.33	40.61	-88.76	321.55	-305.05	420.32	339.94	80.38	5.229	
7,600.00	7,583.11	7,602.97	7,583.11	40.86	41.14	-88.76	321.55	-305.05	420.32	338.88	81.44	5.161	
7,700.00	7,683.11	7,702.97	7,683.11	41.39	41.66	-88.76	321.55	-305.05	420.32	337.82	82.50	5.095	
7,800.00	7,783.11	7,802.97	7,783.11	41.92	42.19	-88.76	321.55	-305.05	420.32	336.76	83.56	5.030	
7,900.00	7,883.11	7,902.97	7,883.11	42.45	42.71	-88.76	321.55	-305.05	420.32	335.70	84.62	4.967	
8,000.00	7,983.11	8,002.97	7,983.11	42.98	43.24	-88.76	321.55	-305.05	420.32	334.64	85.68	4.906	
8,100.00	8,083.11	8,102.97	8,083.11	43.51	43.76	-88.76	321.55	-305.05	420.32	333.58	86.74	4.846	
8,200.00	8,183.11	8,202.97	8,183.11	44.04	44.29	-88.76	321.55	-305.05	420.32	332.52	87.80	4.787	
8,300.00	8,283.11	8,302.97	8,283.11	44.57	44.82	-88.76	321.55	-305.05	420.32	331.46	88.86	4.730	
8,400.00	8,383.11	8,402.97	8,383.11	45.10	45.34	-88.76	321.55	-305.05	420.32	330.40	89.92	4.674	
8,500.00	8,483.11	8,502.97	8,483.11	45.63	45.87	-88.76	321.55	-305.05	420.32	329.34	90.98	4.620	
8,600.00	8,583.11	8,602.97	8,583.11	46.17	46.40	-88.76	321.55	-305.05	420.32	328.28	92.04	4.567	
8,700.00	8,683.11	8,702.97	8,683.11	46.70	46.92	-88.76	321.55	-305.05	420.32	327.22	93.10	4.515	
8,800.00	8,783.11	8,802.97	8,783.11	47.23	47.45	-88.76	321.55	-305.05	420.32	326.16	94.17	4.464	
8,900.00	8,883.11	8,902.97	8,883.11	47.76	47.98	-88.76	321.55	-305.05	420.32	325.09	95.23	4.414	
9,000.00	8,983.11	9,002.97	8,983.11	48.29	48.51	-88.76	321.55	-305.05	420.32	324.03	96.29	4.365	
9,100.00	9,083.11	9,102.97	9,083.11	48.82	49.04	-88.76	321.55	-305.05	420.32	322.97	97.36	4.317	
9,200.00	9,182.98	9,202.85	9,182.98	49.36	49.56	-88.66	321.55	-305.05	420.23	321.79	98.43	4.269	
9,260.99	9,243.14	9,263.01	9,243.14	49.71	49.88	-90.00	321.55	-305.05	420.11	321.01	99.10	4.239	
9,300.00	9,280.93	9,300.80	9,280.93	49.93	50.08	-91.26	321.55	-305.05	420.22	320.70	99.53	4.222	
9,400.00	9,374.01	9,393.88	9,374.01	50.51	50.57	-95.59	321.55	-305.05	422.61	322.08	100.53	4.204	
9,500.00	9,459.39	9,487.78	9,467.85	51.11	51.07	-101.04	323.79	-305.07	430.90	329.76	101.13	4.261	
9,600.00	9,534.47	9,596.89	9,574.96	51.72	51.68	-106.82	343.68	-305.27	445.12	344.17	100.94	4.410	
9,700.00	9,596.97	9,721.75	9,690.32	52.35	52.36	-112.41	390.81	-305.73	463.52	363.92	99.60	4.654	
9,800.00	9,644.99	9,867.45	9,808.25	53.00	53.16	-117.62	475.70	-306.57	483.44	386.35	97.09	4.979	
9,900.00	9,677.08	10,038.20	9,913.98	53.67	54.13	-122.00	608.96	-307.88	501.14	407.05	94.09	5.326	
10,000.00	9,692.26	10,232.76	9,980.73	54.34	55.32	-124.74	790.71	-309.67	512.36	420.16	92.20	5.557	
10,100.00	9,691.40	10,394.37	9,988.88	55.05	56.37	-125.31	951.72	-311.25	514.81	422.00	92.80	5.547	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17													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)					
10,200.00	9,687.32	10,494.36	9,986.20	55.83	57.09	-125.44	1,051.67	-312.23	515.62	421.65	93.97	5.487	
10,300.00	9,683.23	10,594.35	9,983.53	56.69	57.89	-125.57	1,151.62	-313.21	516.44	421.17	95.26	5.421	
10,400.00	9,679.15	10,694.34	9,980.85	57.61	58.76	-125.69	1,251.57	-314.20	517.25	420.57	96.68	5.350	
10,500.00	9,675.07	10,794.33	9,978.18	58.59	59.70	-125.82	1,351.52	-315.18	518.08	419.86	98.22	5.275	
10,600.00	9,670.98	10,894.32	9,975.50	59.64	60.69	-125.95	1,451.47	-316.16	518.90	419.04	99.86	5.196	
10,700.00	9,666.90	10,994.31	9,972.83	60.75	61.75	-126.07	1,551.42	-317.15	519.73	418.11	101.61	5.115	
10,800.00	9,662.81	11,094.30	9,970.15	61.92	62.86	-126.20	1,651.37	-318.13	520.55	417.09	103.46	5.031	
10,900.00	9,658.73	11,194.29	9,967.48	63.13	64.03	-126.32	1,751.32	-319.11	521.39	415.98	105.41	4.946	
11,000.00	9,654.64	11,294.28	9,964.81	64.40	65.24	-126.45	1,851.27	-320.10	522.22	414.78	107.44	4.861	
11,100.00	9,650.56	11,394.27	9,962.13	65.71	66.51	-126.57	1,951.22	-321.08	523.06	413.51	109.55	4.775	
11,200.00	9,646.47	11,494.26	9,959.46	67.07	67.82	-126.70	2,051.17	-322.06	523.89	412.16	111.73	4.689	
11,300.00	9,642.39	11,594.25	9,956.78	68.46	69.17	-126.82	2,151.12	-323.04	524.74	410.74	113.99	4.603	
11,400.00	9,638.30	11,694.24	9,954.11	69.90	70.56	-126.95	2,251.07	-324.03	525.58	409.26	116.32	4.519	
11,500.00	9,634.22	11,794.84	9,951.27	71.37	72.03	-127.06	2,353.62	-325.04	526.37	407.63	118.74	4.433	
11,600.00	9,630.13	11,897.76	9,947.45	72.88	73.51	-127.09	2,454.46	-326.04	526.56	405.24	121.32	4.340	
11,700.00	9,626.05	11,997.76	9,943.65	74.42	75.02	-127.11	2,554.38	-327.03	526.73	402.79	123.94	4.250	
11,800.00	9,621.96	12,097.76	9,939.86	75.99	76.55	-127.14	2,654.31	-328.01	526.91	400.29	126.62	4.161	
11,900.00	9,617.88	12,197.76	9,936.06	77.59	78.12	-127.16	2,754.23	-329.00	527.09	397.74	129.35	4.075	
12,000.00	9,613.79	12,297.76	9,932.27	79.21	79.71	-127.19	2,854.15	-329.99	527.27	395.14	132.12	3.991	
12,100.00	9,609.71	12,397.76	9,928.47	80.86	81.33	-127.21	2,954.08	-330.98	527.44	392.50	134.94	3.909	
12,200.00	9,605.63	12,497.76	9,924.68	82.54	82.98	-127.24	3,054.00	-331.97	527.62	389.82	137.80	3.829	
12,300.00	9,601.54	12,597.76	9,920.88	84.23	84.65	-127.26	3,153.92	-332.96	527.80	387.10	140.70	3.751	
12,400.00	9,597.71	12,697.76	9,917.09	85.95	86.34	-127.27	3,253.84	-333.95	527.82	384.12	143.71	3.673	
12,500.00	9,593.68	12,797.71	9,913.30	87.68	88.05	-127.00	3,353.72	-334.94	526.15	378.94	147.21	3.574	
12,600.00	9,597.97	12,897.59	9,909.50	89.42	89.77	-126.55	3,453.52	-335.93	523.10	372.19	150.91	3.466	
12,700.00	9,599.31	12,997.45	9,905.71	91.19	91.52	-126.09	3,553.31	-336.92	520.05	365.42	154.63	3.363	
12,800.00	9,600.66	13,097.32	9,901.92	92.97	93.28	-125.63	3,653.10	-337.91	517.04	358.62	158.41	3.264	
12,900.00	9,602.00	13,197.19	9,898.13	94.77	95.06	-125.17	3,752.89	-338.90	514.05	351.81	162.24	3.168	
13,000.00	9,603.34	13,297.06	9,894.34	96.58	96.85	-124.70	3,852.68	-339.88	511.10	344.99	166.11	3.077	
13,100.00	9,604.68	13,393.46	9,890.90	98.40	98.60	-124.26	3,949.02	-340.84	508.32	338.40	169.92	2.991	
13,200.00	9,606.02	13,484.37	9,889.99	100.24	100.25	-124.06	4,039.91	-341.74	507.00	333.68	173.33	2.925	
13,300.00	9,607.37	13,583.90	9,890.73	102.09	102.07	-124.01	4,139.44	-342.73	506.67	329.99	176.68	2.868	
13,400.00	9,608.71	13,683.90	9,891.48	103.96	103.91	-123.95	4,239.43	-343.73	506.34	326.28	180.06	2.812	
13,500.00	9,610.05	13,783.90	9,892.23	105.83	105.77	-123.89	4,339.42	-344.73	506.01	322.54	183.47	2.758	
13,600.00	9,611.39	13,883.90	9,892.98	107.72	107.63	-123.84	4,439.41	-345.72	505.68	318.78	186.90	2.706	
13,700.00	9,612.73	13,983.90	9,893.73	109.61	109.51	-123.78	4,539.40	-346.72	505.35	315.00	190.35	2.655	
13,800.00	9,614.07	14,083.89	9,894.48	111.52	111.39	-123.73	4,639.39	-347.71	505.02	311.20	193.82	2.606	
13,900.00	9,615.42	14,183.89	9,895.23	113.43	113.29	-123.67	4,739.38	-348.71	504.69	307.39	197.31	2.558	
14,000.00	9,616.76	14,283.89	9,895.98	115.36	115.20	-123.62	4,839.37	-349.71	504.37	303.55	200.81	2.512	
14,100.00	9,618.10	14,383.89	9,896.73	117.29	117.11	-123.56	4,939.36	-350.70	504.04	299.70	204.34	2.467	
14,200.00	9,619.44	14,483.89	9,897.48	119.23	119.03	-123.50	5,039.35	-351.70	503.71	295.84	207.88	2.423	
14,300.00	9,620.78	14,583.88	9,898.23	121.18	120.96	-123.45	5,139.34	-352.69	503.39	291.95	211.43	2.381	
14,400.00	9,622.13	14,683.88	9,898.98	123.13	122.90	-123.39	5,239.33	-353.69	503.06	288.06	215.00	2.340	
14,500.00	9,623.47	14,783.88	9,899.73	125.09	124.85	-123.33	5,339.32	-354.69	502.74	284.15	218.59	2.300	
14,600.00	9,624.81	14,883.88	9,900.48	127.06	126.80	-123.28	5,439.31	-355.68	502.41	280.22	222.19	2.261	
14,700.00	9,626.15	14,983.88	9,901.23	129.03	128.76	-123.22	5,539.31	-356.68	502.09	276.28	225.80	2.224	
14,800.00	9,627.49	15,083.88	9,901.98	131.01	130.72	-123.17	5,639.30	-357.68	501.76	272.33	229.43	2.187	
14,900.00	9,628.84	15,183.87	9,902.73	132.99	132.69	-123.11	5,739.29	-358.67	501.44	268.37	233.07	2.151	
15,000.00	9,630.18	15,283.87	9,903.48	134.98	134.67	-123.05	5,839.28	-359.67	501.12	264.40	236.72	2.117	
15,066.31	9,631.10	15,350.18	9,903.98	136.31	135.98	-123.00	5,905.58	-360.33	501.13	261.99	239.14	2.096	
15,100.00	9,631.55	15,382.32	9,904.36	136.98	136.62	-123.01	5,937.71	-360.61	501.04	260.76	240.28	2.085	
15,200.00	9,633.07	15,477.23	9,907.52	138.97	138.51	-123.13	6,032.57	-360.88	502.59	259.08	243.51	2.064	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17		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				
15,300.00	9,634.58	15,575.35	9,913.26	140.97	140.46	-123.54	6,130.52	-360.49	504.96	258.70	246.26	2.051				
15,400.00	9,636.09	15,675.25	9,919.29	142.98	142.45	-123.97	6,230.24	-360.04	507.41	258.45	248.96	2.038				
15,500.00	9,637.61	15,775.15	9,925.32	144.98	144.45	-124.39	6,329.95	-359.59	509.90	258.24	251.66	2.026				
15,600.00	9,639.12	15,875.05	9,931.35	147.00	146.45	-124.82	6,429.67	-359.14	512.41	258.07	254.34	2.015				
15,700.00	9,640.63	15,974.94	9,937.38	149.01	148.45	-125.23	6,529.38	-358.69	514.95	257.94	257.00	2.004				
15,800.00	9,642.15	16,074.84	9,943.41	151.03	150.46	-125.65	6,629.09	-358.24	517.51	257.86	259.66	1.993				
15,900.00	9,643.66	16,174.74	9,949.44	153.06	152.47	-126.06	6,728.81	-357.79	520.10	257.81	262.30	1.983				
16,000.00	9,645.17	16,274.64	9,955.47	155.08	154.49	-126.46	6,828.52	-357.34	522.72	257.80	264.92	1.973				
16,100.00	9,646.69	16,374.53	9,961.50	157.11	156.51	-126.86	6,928.24	-356.89	525.37	257.83	267.53	1.964				
16,200.00	9,648.20	16,474.43	9,967.53	159.15	158.53	-127.26	7,027.95	-356.44	528.04	257.91	270.13	1.955				
16,300.00	9,649.71	16,574.33	9,973.56	161.18	160.56	-127.65	7,127.67	-355.98	530.73	258.02	272.72	1.946				
16,400.00	9,651.23	16,674.23	9,979.59	163.22	162.58	-128.04	7,227.38	-355.53	533.45	258.16	275.29	1.938				
16,500.00	9,652.74	16,781.81	9,985.29	165.27	164.77	-128.39	7,334.81	-355.06	535.77	257.69	278.08	1.927				
16,600.00	9,654.25	16,892.09	9,987.29	167.31	167.02	-128.42	7,445.07	-354.65	535.94	254.25	281.69	1.903				
16,700.00	9,655.77	16,992.09	9,987.81	169.36	169.05	-128.33	7,545.06	-354.30	535.34	249.93	285.41	1.876				
16,800.00	9,657.28	17,092.08	9,988.32	171.41	171.09	-128.25	7,645.05	-353.95	534.74	245.60	289.14	1.849				
16,900.00	9,658.79	17,192.08	9,988.84	173.47	173.14	-128.16	7,745.05	-353.60	534.15	241.26	292.89	1.824				
17,000.00	9,660.31	17,292.07	9,989.36	175.52	175.18	-128.08	7,845.04	-353.24	533.56	236.92	296.63	1.799				
17,100.00	9,661.82	17,392.07	9,989.88	177.58	177.23	-127.99	7,945.03	-352.89	532.96	232.57	300.39	1.774				
17,200.00	9,663.33	17,492.06	9,990.40	179.64	179.28	-127.90	8,045.02	-352.54	532.37	228.21	304.16	1.750				
17,300.00	9,664.85	17,592.06	9,990.91	181.70	181.33	-127.82	8,145.02	-352.19	531.78	223.85	307.94	1.727				
17,400.00	9,666.36	17,692.05	9,991.43	183.77	183.39	-127.73	8,245.01	-351.84	531.19	219.47	311.72	1.704				
17,500.00	9,667.87	17,792.05	9,991.95	185.83	185.45	-127.64	8,345.00	-351.49	530.61	215.09	315.51	1.682				
17,600.00	9,669.39	17,892.04	9,992.47	187.90	187.51	-127.56	8,445.00	-351.14	530.02	210.71	319.31	1.660				
17,700.00	9,670.90	17,992.04	9,992.98	189.97	189.57	-127.47	8,544.99	-350.78	529.43	206.31	323.12	1.638				
17,800.00	9,672.42	18,092.03	9,993.50	192.04	191.63	-127.38	8,644.98	-350.43	528.83	201.87	326.95	1.617				
17,900.00	9,674.07	18,192.03	9,994.02	194.12	193.70	-127.28	8,744.97	-350.08	528.15	197.35	330.80	1.597				
18,000.00	9,675.70	18,292.02	9,994.54	196.19	195.77	-127.19	8,844.97	-349.73	527.48	192.82	334.66	1.576				
18,100.00	9,677.33	18,392.01	9,995.06	198.27	197.84	-127.09	8,944.96	-349.38	526.81	188.29	338.52	1.556				
18,200.00	9,678.96	18,492.01	9,995.57	200.35	199.91	-127.00	9,044.95	-349.03	526.14	183.74	342.40	1.537				
18,300.00	9,680.59	18,590.31	9,996.13	202.43	201.95	-126.90	9,143.25	-348.68	525.50	179.27	346.23	1.518				
18,400.00	9,682.22	18,689.92	9,997.31	204.51	204.01	-126.87	9,242.85	-348.32	525.23	175.29	349.94	1.501				
18,500.00	9,683.84	18,789.91	9,998.51	206.60	206.09	-126.83	9,342.84	-347.95	524.96	171.30	353.66	1.484 Level 3				
18,600.00	9,685.47	18,889.91	9,999.71	208.68	208.17	-126.79	9,442.83	-347.59	524.69	167.31	357.38	1.468 Level 3				
18,700.00	9,687.10	18,989.91	10,000.90	210.77	210.25	-126.76	9,542.82	-347.23	524.42	163.31	361.11	1.452 Level 3				
18,800.00	9,688.73	19,089.91	10,002.10	212.86	212.33	-126.72	9,642.81	-346.86	524.15	159.31	364.84	1.437 Level 3				
18,900.00	9,690.36	19,189.91	10,003.30	214.94	214.41	-126.68	9,742.80	-346.50	523.89	155.31	368.58	1.421 Level 3				
19,000.00	9,691.99	19,289.91	10,004.49	217.03	216.50	-126.64	9,842.79	-346.13	523.62	151.30	372.32	1.406 Level 3				
19,100.00	9,693.62	19,389.91	10,005.69	219.13	218.58	-126.61	9,942.79	-345.77	523.35	147.29	376.06	1.392 Level 3				
19,200.00	9,695.25	19,489.91	10,006.88	221.22	220.67	-126.57	10,042.78	-345.40	523.08	143.27	379.81	1.377 Level 3				
19,300.00	9,696.87	19,589.91	10,008.08	223.31	222.76	-126.53	10,142.77	-345.04	522.81	139.25	383.57	1.363 Level 3				
19,400.00	9,698.50	19,689.91	10,009.28	225.41	224.85	-126.50	10,242.76	-344.67	522.55	135.22	387.32	1.349 Level 3				
19,500.00	9,700.13	19,789.90	10,010.47	227.50	226.94	-126.46	10,342.75	-344.31	522.28	131.20	391.08	1.335 Level 3				
19,600.00	9,701.76	19,889.90	10,011.67	229.60	229.03	-126.42	10,442.74	-343.95	522.01	127.16	394.85	1.322 Level 3				
19,700.00	9,703.39	19,989.90	10,012.86	231.70	231.12	-126.38	10,542.73	-343.58	521.74	123.13	398.62	1.309 Level 3				
19,800.00	9,705.02	20,089.90	10,014.06	233.80	233.22	-126.35	10,642.72	-343.22	521.48	119.09	402.39	1.296 Level 3				
19,900.00	9,706.65	20,189.90	10,015.26	235.90	235.31	-126.31	10,742.72	-342.85	521.21	115.05	406.16	1.283 Level 3				
20,000.00	9,708.28	20,289.90	10,016.45	238.00	237.41	-126.27	10,842.71	-342.49	520.94	111.00	409.94	1.271 Level 3				
20,044.41	9,709.00	20,334.31	10,016.98	238.80	238.34	-126.25	10,887.11	-342.33	520.83	109.36	411.47	1.266 Level 3, SF				



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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	0.17	74.93	0.23	74.96				
100.00	100.00	98.00	100.00	0.19	0.19	0.17	74.93	0.23	74.94	74.55	0.38	195.511	
200.00	200.00	198.00	200.00	0.73	0.72	0.17	74.93	0.23	74.94	73.48	1.45	51.615	
300.00	300.00	298.00	300.00	1.27	1.26	0.17	74.93	0.23	74.94	72.41	2.53	29.651	
400.00	400.00	398.00	400.00	1.81	1.80	0.17	74.93	0.23	74.94	71.33	3.60	20.800	
500.00	500.00	498.00	500.00	2.34	2.33	0.17	74.93	0.23	74.94	70.26	4.68	16.018	
600.00	600.00	598.00	600.00	2.88	2.87	0.17	74.93	0.23	74.94	69.18	5.75	13.024	
700.00	699.98	697.01	698.99	3.42	3.40	-19.35	75.56	1.74	73.94	67.12	6.82	10.840	
800.00	799.84	795.88	797.73	3.96	3.92	-17.01	77.49	6.41	71.08	63.20	7.89	9.013	
900.00	899.45	894.54	896.02	4.50	4.45	-12.65	80.71	14.21	66.65	57.70	8.96	7.443	
1,000.00	998.90	993.48	994.29	5.05	4.99	-5.59	85.10	24.85	62.77	52.74	10.02	6.261	
1,100.00	1,098.36	1,093.05	1,093.12	5.60	5.55	2.65	89.71	36.04	60.35	49.24	11.11	5.434	
1,200.00	1,197.81	1,192.63	1,191.96	6.15	6.11	11.37	94.33	47.23	59.27	47.08	12.19	4.864	
1,226.04	1,223.71	1,218.56	1,217.69	6.30	6.25	13.68	95.53	50.15	59.22	46.75	12.47	4.750 CC	
1,300.00	1,297.26	1,292.20	1,290.80	6.71	6.67	20.21	98.95	58.42	59.61	46.34	13.27	4.493 ES	
1,400.00	1,396.72	1,391.78	1,389.63	7.27	7.24	28.74	103.57	69.61	61.35	46.99	14.35	4.274	
1,500.00	1,496.17	1,491.36	1,488.47	7.84	7.81	36.65	108.18	80.80	64.36	48.92	15.45	4.167	
1,600.00	1,595.62	1,590.93	1,587.31	8.40	8.39	43.73	112.80	91.99	68.49	51.95	16.54	4.140	
1,700.00	1,695.07	1,690.51	1,686.15	8.97	8.96	49.93	117.42	103.18	73.55	55.90	17.65	4.167	
1,800.00	1,794.53	1,790.08	1,784.98	9.53	9.54	55.29	122.04	114.37	79.35	60.58	18.77	4.228	
1,900.00	1,893.98	1,889.66	1,883.82	10.10	10.12	59.88	126.65	125.57	85.75	65.86	19.89	4.312	
2,000.00	1,993.43	1,989.24	1,982.66	10.67	10.70	63.82	131.27	136.76	92.62	71.61	21.01	4.408	
2,100.00	2,092.89	2,088.81	2,081.49	11.24	11.28	67.20	135.89	147.95	99.87	77.73	22.14	4.511	
2,200.00	2,192.34	2,188.39	2,180.33	11.81	11.86	70.11	140.51	159.14	107.42	84.15	23.27	4.616	
2,300.00	2,291.79	2,287.96	2,279.17	12.38	12.44	72.64	145.13	170.33	115.21	90.80	24.41	4.720	
2,400.00	2,391.24	2,387.54	2,378.01	12.95	13.02	74.85	149.74	181.52	123.19	97.65	25.54	4.823	
2,500.00	2,490.70	2,487.11	2,476.84	13.52	13.61	76.78	154.36	192.71	131.33	104.66	26.68	4.923	
2,600.00	2,590.15	2,586.69	2,575.68	14.09	14.19	78.49	158.98	203.90	139.61	111.79	27.82	5.019	
2,700.00	2,689.60	2,686.27	2,674.52	14.66	14.77	80.00	163.60	215.09	147.99	119.04	28.95	5.111	
2,800.00	2,789.06	2,785.84	2,773.35	15.23	15.36	81.36	168.21	226.28	156.47	126.38	30.09	5.199	
2,900.00	2,888.51	2,885.42	2,872.19	15.80	15.94	82.57	172.83	237.47	165.02	133.79	31.23	5.284	
3,000.00	2,987.96	2,984.99	2,971.03	16.37	16.53	83.66	177.45	248.66	173.64	141.27	32.37	5.364	
3,100.00	3,087.41	3,084.57	3,069.87	16.94	17.11	84.65	182.07	259.85	182.32	148.81	33.51	5.440	
3,200.00	3,186.87	3,184.14	3,168.70	17.51	17.69	85.55	186.68	271.04	191.05	156.39	34.66	5.513	
3,300.00	3,286.32	3,283.72	3,267.54	18.08	18.28	86.37	191.30	282.23	199.81	164.02	35.80	5.582	
3,400.00	3,385.77	3,383.30	3,366.38	18.66	18.86	87.12	195.92	293.42	208.62	171.68	36.94	5.648	
3,500.00	3,485.23	3,482.87	3,465.21	19.23	19.45	87.81	200.54	304.61	217.46	179.38	38.08	5.711	
3,600.00	3,584.68	3,582.45	3,564.05	19.80	20.04	88.45	205.15	315.80	226.33	187.11	39.22	5.770	
3,700.00	3,684.13	3,682.02	3,662.89	20.37	20.62	89.04	209.77	326.99	235.22	194.86	40.36	5.828	
3,800.00	3,783.59	3,781.60	3,761.73	20.94	21.21	89.60	214.39	338.18	244.14	202.63	41.51	5.882	
3,900.00	3,883.24	3,881.19	3,860.58	21.50	21.79	89.79	219.01	349.38	253.08	210.45	42.63	5.937	
4,000.00	3,983.12	3,980.73	3,959.38	22.04	22.38	89.21	223.62	360.56	262.05	218.33	43.72	5.994	
4,100.00	4,083.11	4,080.08	4,057.99	22.56	22.96	108.17	228.23	371.73	271.18	226.40	44.78	6.056	
4,200.00	4,183.11	4,179.34	4,156.52	23.07	23.55	106.56	232.83	382.88	280.55	234.74	45.82	6.123	
4,300.00	4,283.11	4,278.60	4,255.04	23.58	24.13	105.05	237.44	394.04	290.13	243.28	46.85	6.192	
4,400.00	4,383.11	4,377.86	4,353.56	24.10	24.71	103.64	242.04	405.19	299.90	252.01	47.89	6.262	
4,500.00	4,483.11	4,477.11	4,452.08	24.61	25.30	102.32	246.64	416.35	309.83	260.90	48.93	6.332	
4,600.00	4,583.11	4,576.37	4,550.60	25.13	25.88	101.08	251.25	427.50	319.92	269.95	49.97	6.402	
4,700.00	4,683.11	4,675.63	4,649.13	25.64	26.47	99.92	255.85	438.66	330.15	279.14	51.01	6.472	
4,800.00	4,783.11	4,774.89	4,747.65	26.16	27.05	98.83	260.45	449.81	340.50	288.45	52.05	6.541	
4,900.00	4,883.11	4,874.15	4,846.17	26.68	27.64	97.80	265.05	460.96	350.97	297.87	53.10	6.610	
5,000.00	4,983.11	4,973.41	4,944.69	27.20	28.22	96.83	269.66	472.12	361.55	307.40	54.15	6.677	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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	
5,100.00	5,083.11	5,072.66	5,043.21	27.72	28.81	95.92	274.26	483.27	372.22	317.02	55.19	6.744	
5,200.00	5,183.11	5,171.92	5,141.74	28.24	29.39	95.06	278.86	494.43	382.98	326.74	56.24	6.809	
5,300.00	5,283.11	5,271.18	5,240.26	28.76	29.98	94.24	283.47	505.58	393.82	336.53	57.30	6.874	
5,400.00	5,383.11	5,370.44	5,338.78	29.28	30.56	93.47	288.07	516.74	404.74	346.39	58.35	6.937	
5,500.00	5,483.11	5,469.70	5,437.30	29.80	31.15	92.74	292.67	527.89	415.72	356.32	59.40	6.999	
5,600.00	5,583.11	5,568.95	5,535.82	30.32	31.73	92.05	297.27	539.05	426.77	366.32	60.46	7.059	
5,700.00	5,683.11	5,668.21	5,634.35	30.85	32.32	91.39	301.88	550.20	437.88	376.37	61.51	7.119	
5,800.00	5,783.11	5,768.88	5,746.34	31.37	32.97	90.76	306.53	561.47	447.85	385.21	62.64	7.150	
5,900.00	5,883.11	5,897.57	5,862.75	31.90	33.61	90.36	309.60	568.91	454.20	390.42	63.78	7.121	
6,000.00	5,983.11	6,014.72	5,979.85	32.42	34.21	90.20	310.86	571.96	456.80	391.88	64.92	7.036	
6,100.00	6,083.11	6,117.98	6,083.11	32.95	34.72	90.19	310.89	572.04	456.87	390.90	65.97	6.925	
6,200.00	6,183.11	6,217.98	6,183.11	33.47	35.21	90.19	310.89	572.04	456.87	389.86	67.01	6.818	
6,300.00	6,283.11	6,317.98	6,283.11	34.00	35.70	90.19	310.89	572.04	456.87	388.83	68.04	6.715	
6,400.00	6,383.11	6,417.98	6,383.11	34.52	36.20	90.19	310.89	572.04	456.87	387.79	69.08	6.614	
6,500.00	6,483.11	6,517.98	6,483.11	35.05	36.69	90.19	310.89	572.04	456.87	386.76	70.11	6.516	
6,600.00	6,583.11	6,617.98	6,583.11	35.58	37.19	90.19	310.89	572.04	456.87	385.72	71.15	6.421	
6,700.00	6,683.11	6,717.98	6,683.11	36.10	37.68	90.19	310.89	572.04	456.87	384.68	72.19	6.328	
6,800.00	6,783.11	6,817.98	6,783.11	36.63	38.18	90.19	310.89	572.04	456.87	383.64	73.23	6.239	
6,900.00	6,883.11	6,917.98	6,883.11	37.16	38.68	90.19	310.89	572.04	456.87	382.59	74.27	6.151	
7,000.00	6,983.11	7,017.98	6,983.11	37.69	39.18	90.19	310.89	572.04	456.87	381.55	75.32	6.066	
7,100.00	7,083.11	7,117.98	7,083.11	38.21	39.68	90.19	310.89	572.04	456.87	380.51	76.36	5.983	
7,200.00	7,183.11	7,217.98	7,183.11	38.74	40.18	90.19	310.89	572.04	456.87	379.46	77.41	5.902	
7,300.00	7,283.11	7,317.98	7,283.11	39.27	40.69	90.19	310.89	572.04	456.87	378.42	78.45	5.824	
7,400.00	7,383.11	7,417.98	7,383.11	39.80	41.19	90.19	310.89	572.04	456.87	377.37	79.50	5.747	
7,500.00	7,483.11	7,517.98	7,483.11	40.33	41.69	90.19	310.89	572.04	456.87	376.33	80.54	5.672	
7,600.00	7,583.11	7,617.98	7,583.11	40.86	42.20	90.19	310.89	572.04	456.87	375.28	81.59	5.600	
7,700.00	7,683.11	7,717.98	7,683.11	41.39	42.71	90.19	310.89	572.04	456.87	374.23	82.64	5.528	
7,800.00	7,783.11	7,817.98	7,783.11	41.92	43.21	90.19	310.89	572.04	456.87	373.18	83.69	5.459	
7,900.00	7,883.11	7,917.98	7,883.11	42.45	43.72	90.19	310.89	572.04	456.87	372.13	84.74	5.392	
8,000.00	7,983.11	8,017.98	7,983.11	42.98	44.23	90.19	310.89	572.04	456.87	371.08	85.79	5.326	
8,100.00	8,083.11	8,117.98	8,083.11	43.51	44.74	90.19	310.89	572.04	456.87	370.03	86.84	5.261	
8,200.00	8,183.11	8,217.98	8,183.11	44.04	45.25	90.19	310.89	572.04	456.87	368.98	87.89	5.198	
8,300.00	8,283.11	8,317.98	8,283.11	44.57	45.76	90.19	310.89	572.04	456.87	367.93	88.94	5.137	
8,400.00	8,383.11	8,417.98	8,383.11	45.10	46.27	90.19	310.89	572.04	456.87	366.87	90.00	5.077	
8,500.00	8,483.11	8,517.98	8,483.11	45.63	46.78	90.19	310.89	572.04	456.87	365.82	91.05	5.018	
8,600.00	8,583.11	8,617.98	8,583.11	46.17	47.29	90.19	310.89	572.04	456.87	364.77	92.10	4.960	
8,700.00	8,683.11	8,717.98	8,683.11	46.70	47.81	90.19	310.89	572.04	456.87	363.71	93.16	4.904	
8,800.00	8,783.11	8,817.98	8,783.11	47.23	48.32	90.19	310.89	572.04	456.87	362.66	94.21	4.849	
8,900.00	8,883.11	8,917.98	8,883.11	47.76	48.83	90.19	310.89	572.04	456.87	361.60	95.27	4.796	
9,000.00	8,983.11	9,017.98	8,983.11	48.29	49.35	90.19	310.89	572.04	456.87	360.55	96.32	4.743	
9,100.00	9,083.11	9,117.98	9,083.11	48.82	49.86	90.19	310.89	572.04	456.87	359.49	97.38	4.692	
9,125.93	9,109.03	9,143.91	9,109.03	48.96	50.00	90.80	310.89	572.04	456.87	359.23	97.64	4.679	
9,200.00	9,182.98	9,217.86	9,182.98	49.36	50.38	91.18	310.89	572.04	456.93	358.50	98.43	4.642	
9,300.00	9,280.93	9,315.81	9,280.93	49.93	50.88	93.48	310.89	572.04	457.75	358.25	99.49	4.601	
9,400.00	9,374.01	9,408.89	9,374.01	50.51	51.36	97.29	310.89	572.04	461.46	361.06	100.39	4.597	
9,500.00	9,459.39	9,494.75	9,459.87	51.11	51.81	101.70	310.89	572.04	471.57	370.74	100.83	4.677	
9,600.00	9,534.47	9,604.87	9,569.27	51.72	52.38	107.50	321.88	571.85	489.26	388.90	100.36	4.875	
9,700.00	9,596.97	9,735.27	9,693.19	52.35	53.07	113.31	361.58	571.18	511.62	413.05	98.57	5.191	
9,800.00	9,644.99	9,894.91	9,827.74	53.00	53.85	119.02	446.52	569.75	535.21	439.90	95.31	5.616	
9,900.00	9,677.08	10,092.22	9,953.64	53.67	54.75	123.92	597.15	567.20	554.86	463.51	91.35	6.074	
10,000.00	9,692.26	10,324.06	10,026.43	54.34	55.97	126.54	815.57	563.50	564.35	475.27	89.08	6.335	
10,100.00	9,691.40	10,478.44	10,027.39	55.05	56.93	126.65	969.70	560.90	563.62	473.80	89.82	6.275	

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
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 Reference Well: 3H
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 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
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 North Reference: Grid
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 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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
10,200.00	9,687.32	10,578.44	10,023.18	55.83	57.65	126.68	1,069.60	559.21	562.98	471.98	91.01	6.186	
10,300.00	9,683.23	10,678.44	10,018.97	56.69	58.44	126.71	1,169.49	557.52	562.34	470.01	92.33	6.091	
10,400.00	9,679.15	10,778.43	10,014.76	57.61	59.30	126.75	1,269.39	555.83	561.70	467.93	93.78	5.990	
10,500.00	9,675.07	10,878.43	10,010.55	58.59	60.22	126.78	1,369.28	554.14	561.07	465.72	95.35	5.884	
10,600.00	9,670.98	10,978.43	10,006.34	59.64	61.21	126.81	1,469.18	552.45	560.43	463.39	97.04	5.775	
10,700.00	9,666.90	11,078.43	10,002.13	60.75	62.26	126.84	1,569.07	550.76	559.79	460.95	98.84	5.664	
10,800.00	9,662.81	11,178.42	9,997.92	61.92	63.36	126.88	1,668.96	549.07	559.15	458.41	100.74	5.550	
10,900.00	9,658.73	11,278.42	9,993.71	63.13	64.52	126.91	1,768.86	547.38	558.51	455.77	102.74	5.436	
11,000.00	9,654.64	11,378.42	9,989.50	64.40	65.73	126.94	1,868.75	545.69	557.88	453.04	104.84	5.321	
11,100.00	9,650.56	11,478.42	9,985.29	65.71	66.98	126.98	1,968.65	544.00	557.24	450.22	107.02	5.207	
11,200.00	9,646.47	11,578.41	9,981.08	67.07	68.28	127.01	2,068.54	542.31	556.60	447.32	109.28	5.093	
11,300.00	9,642.39	11,678.41	9,976.87	68.46	69.63	127.04	2,168.44	540.62	555.96	444.35	111.61	4.981	
11,400.00	9,638.30	11,778.41	9,972.66	69.90	71.01	127.08	2,268.33	538.93	555.33	441.30	114.02	4.870	
11,500.00	9,634.22	11,878.40	9,968.45	71.37	72.43	127.11	2,368.23	537.24	554.69	438.19	116.50	4.761	
11,600.00	9,630.13	11,978.40	9,964.23	72.88	73.89	127.14	2,468.12	535.55	554.05	435.02	119.04	4.655	
11,700.00	9,626.05	12,078.40	9,960.02	74.42	75.38	127.18	2,568.02	533.86	553.42	431.79	121.63	4.550	
11,781.81	9,622.71	12,156.69	9,956.89	75.70	76.57	127.21	2,646.23	532.54	553.00	429.27	123.73	4.469	
11,800.00	9,621.96	12,172.98	9,956.42	75.99	76.82	127.24	2,662.51	532.27	553.03	428.87	124.17	4.454	
11,900.00	9,617.88	12,266.85	9,952.22	77.59	78.27	127.50	2,756.36	530.67	554.16	427.69	126.47	4.382	
12,000.00	9,613.79	12,366.79	9,954.46	79.21	79.83	127.81	2,856.29	528.98	555.63	426.81	128.82	4.313	
12,100.00	9,609.71	12,466.74	9,953.69	80.86	81.43	128.13	2,956.21	527.28	557.11	425.91	131.20	4.246	
12,200.00	9,605.63	12,566.68	9,952.92	82.54	83.05	128.44	3,056.14	525.58	558.61	425.00	133.61	4.181	
12,300.00	9,601.54	12,666.62	9,952.16	84.23	84.69	128.75	3,156.06	523.89	560.12	424.08	136.04	4.117	
12,400.00	9,597.71	12,766.57	9,951.39	85.95	86.36	129.05	3,255.99	522.19	561.50	422.88	138.62	4.051	
12,500.00	9,596.68	12,866.56	9,950.62	87.68	88.05	129.11	3,355.97	520.49	561.11	419.38	141.73	3.959	
12,600.00	9,597.97	12,966.54	9,949.86	89.42	89.76	128.98	3,455.93	518.79	559.27	414.33	144.94	3.859	
12,700.00	9,599.31	13,066.51	9,949.09	91.19	91.49	128.86	3,555.88	517.10	557.40	409.26	148.14	3.763	
12,800.00	9,600.66	13,166.49	9,948.32	92.97	93.23	128.74	3,655.84	515.40	555.53	404.15	151.38	3.670	
12,900.00	9,602.00	13,266.46	9,947.55	94.77	95.00	128.61	3,755.80	513.70	553.66	399.02	154.65	3.580	
13,000.00	9,603.34	13,366.44	9,946.79	96.58	96.78	128.49	3,855.76	512.00	551.80	393.85	157.95	3.494	
13,100.00	9,604.68	13,466.42	9,946.02	98.40	98.57	128.36	3,955.72	510.31	549.94	388.66	161.28	3.410	
13,200.00	9,606.02	13,566.39	9,945.25	100.24	100.38	128.23	4,055.67	508.61	548.08	383.43	164.65	3.329	
13,300.00	9,607.37	13,666.37	9,944.49	102.09	102.21	128.10	4,155.63	506.91	546.22	378.19	168.04	3.251	
13,400.00	9,608.71	13,766.34	9,943.72	103.96	104.04	127.98	4,255.59	505.21	544.37	372.91	171.46	3.175	
13,500.00	9,610.05	13,866.32	9,942.95	105.83	105.89	127.85	4,355.55	503.52	542.52	367.61	174.91	3.102	
13,600.00	9,611.39	13,966.29	9,942.18	107.72	107.75	127.71	4,455.51	501.82	540.68	362.29	178.38	3.031	
13,700.00	9,612.73	14,066.27	9,941.42	109.61	109.63	127.58	4,555.46	500.12	538.83	356.95	181.88	2.963	
13,800.00	9,614.07	14,166.22	9,940.68	111.52	111.42	127.48	4,650.80	498.50	537.19	351.92	185.27	2.899	
13,900.00	9,615.42	14,269.88	9,942.12	113.43	113.28	127.51	4,749.04	496.81	536.50	348.01	188.50	2.846	
14,000.00	9,616.76	14,359.88	9,943.32	115.36	115.18	127.55	4,849.02	495.10	535.84	344.09	191.75	2.794	
14,100.00	9,618.10	14,459.88	9,944.52	117.29	117.09	127.58	4,948.99	493.38	535.19	340.16	195.03	2.744	
14,200.00	9,619.44	14,559.87	9,945.72	119.23	119.01	127.62	5,048.97	491.67	534.53	336.22	198.31	2.695	
14,300.00	9,620.78	14,659.87	9,946.92	121.18	120.94	127.65	5,148.94	489.95	533.88	332.27	201.60	2.648	
14,400.00	9,622.13	14,759.87	9,948.12	123.13	122.88	127.69	5,248.92	488.24	533.22	328.31	204.91	2.602	
14,500.00	9,623.47	14,859.87	9,949.32	125.09	124.82	127.72	5,348.89	486.52	532.56	324.34	208.22	2.558	
14,600.00	9,624.81	14,959.86	9,950.52	127.06	126.77	127.76	5,448.87	484.81	531.91	320.37	211.54	2.514	
14,700.00	9,626.15	15,059.86	9,951.72	129.03	128.73	127.79	5,548.85	483.09	531.25	316.38	214.87	2.472	
14,800.00	9,627.49	15,159.86	9,952.92	131.01	130.69	127.83	5,648.82	481.38	530.60	312.39	218.21	2.432	
14,900.00	9,628.84	15,259.86	9,954.12	132.99	132.66	127.86	5,748.80	479.66	529.94	308.39	221.56	2.392	
15,000.00	9,630.18	15,359.85	9,955.32	134.98	134.64	127.90	5,848.77	477.94	529.29	304.38	224.91	2.353	
15,100.00	9,631.55	15,453.36	9,956.52	136.98	136.49	127.93	5,942.26	476.57	528.68	300.41	228.27	2.316	
15,121.14	9,631.87	15,471.37	9,956.83	137.40	136.84	127.94	5,960.26	476.53	528.61	299.69	228.92	2.309	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,200.00	9,633.07	15,545.96	9,958.37	138.97	138.32	127.95	6,034.84	477.12	529.11	297.59	231.52	2.285	
15,300.00	9,634.58	15,645.96	9,960.47	140.97	140.31	127.97	6,134.81	478.03	529.89	294.96	234.93	2.256	
15,400.00	9,636.09	15,745.96	9,962.57	142.98	142.29	127.98	6,234.78	478.95	530.68	292.33	238.35	2.226	
15,500.00	9,637.61	15,845.95	9,964.66	144.98	144.29	128.00	6,334.75	479.86	531.46	289.69	241.77	2.198	
15,600.00	9,639.12	15,945.95	9,966.76	147.00	146.29	128.01	6,434.72	480.77	532.24	287.05	245.19	2.171	
15,700.00	9,640.63	16,045.95	9,968.86	149.01	148.29	128.02	6,534.69	481.69	533.03	284.40	248.63	2.144	
15,800.00	9,642.15	16,145.94	9,970.96	151.03	150.30	128.04	6,634.66	482.60	533.81	281.74	252.06	2.118	
15,900.00	9,643.66	16,245.94	9,973.06	153.06	152.31	128.05	6,734.64	483.52	534.59	279.08	255.51	2.092	
16,000.00	9,645.17	16,345.94	9,975.16	155.08	154.32	128.07	6,834.61	484.43	535.38	276.42	258.96	2.067	
16,100.00	9,646.69	16,445.93	9,977.26	157.11	156.34	128.08	6,934.58	485.34	536.16	273.75	262.41	2.043	
16,200.00	9,648.20	16,545.93	9,979.36	159.15	158.36	128.09	7,034.55	486.26	536.94	271.07	265.87	2.020	
16,300.00	9,649.71	16,645.93	9,981.46	161.18	160.38	128.11	7,134.52	487.17	537.73	268.39	269.33	1.997	
16,400.00	9,651.23	16,745.92	9,983.56	163.22	162.41	128.12	7,234.49	488.09	538.51	265.71	272.80	1.974	
16,500.00	9,652.74	16,845.92	9,985.66	165.27	164.44	128.14	7,334.46	489.00	539.29	263.02	276.27	1.952	
16,600.00	9,654.25	16,945.92	9,987.76	167.31	166.48	128.15	7,434.43	489.91	540.08	260.33	279.75	1.931	
16,700.00	9,655.77	17,045.91	9,989.85	169.36	168.51	128.16	7,534.40	490.83	540.86	257.64	283.22	1.910	
16,800.00	9,657.28	17,145.91	9,991.95	171.41	170.55	128.18	7,634.37	491.74	541.64	254.94	286.71	1.889	
16,900.00	9,658.79	17,245.91	9,994.05	173.47	172.60	128.19	7,734.34	492.66	542.43	252.24	290.19	1.869	
17,000.00	9,660.31	17,345.90	9,996.15	175.52	174.64	128.20	7,834.31	493.57	543.21	249.53	293.68	1.850	
17,100.00	9,661.82	17,445.90	9,998.25	177.58	176.69	128.22	7,934.28	494.48	543.99	246.82	297.17	1.831	
17,200.00	9,663.33	17,545.90	10,000.35	179.64	178.74	128.23	8,034.25	495.40	544.78	244.11	300.67	1.812	
17,300.00	9,664.85	17,645.90	10,002.45	181.70	180.79	128.25	8,134.22	496.31	545.56	241.40	304.17	1.794	
17,400.00	9,666.36	17,745.95	10,004.47	183.77	182.92	128.25	8,237.95	497.25	546.26	238.49	307.76	1.775	
17,500.00	9,667.87	17,849.85	10,005.47	185.83	184.98	128.17	8,338.15	498.11	546.31	234.80	311.51	1.754	
17,600.00	9,669.39	17,949.85	10,006.47	187.90	187.04	128.10	8,438.14	498.97	546.37	231.11	315.26	1.733	
17,700.00	9,670.90	18,049.85	10,007.48	189.97	189.10	128.03	8,538.13	499.82	546.43	227.41	319.02	1.713	
17,800.00	9,672.44	18,149.85	10,008.48	192.04	191.16	127.95	8,638.12	500.68	546.48	223.69	322.80	1.693	
17,900.00	9,674.07	18,249.84	10,009.48	194.12	193.23	127.87	8,738.10	501.54	546.50	219.89	326.60	1.673	
18,000.00	9,675.70	18,349.84	10,010.48	196.19	195.29	127.78	8,838.09	502.39	546.51	216.10	330.41	1.654	
18,100.00	9,677.33	18,449.84	10,011.48	198.27	197.36	127.70	8,938.08	503.25	546.52	212.29	334.23	1.635	
18,200.00	9,678.96	18,549.83	10,012.48	200.35	199.43	127.61	9,038.07	504.11	546.54	208.48	338.05	1.617	
18,300.00	9,680.59	18,649.83	10,013.48	202.43	201.50	127.53	9,138.06	504.96	546.56	204.67	341.89	1.599	
18,400.00	9,682.22	18,749.83	10,014.48	204.51	203.58	127.44	9,238.04	505.82	546.57	200.85	345.72	1.581	
18,500.00	9,683.84	18,849.82	10,015.48	206.60	205.65	127.36	9,338.03	506.68	546.59	197.02	349.57	1.564	
18,600.00	9,685.47	18,949.82	10,016.48	208.68	207.73	127.27	9,438.02	507.53	546.61	193.19	353.42	1.547	
18,700.00	9,687.10	19,049.82	10,017.48	210.77	209.81	127.19	9,538.01	508.39	546.64	189.35	357.28	1.530	
18,800.00	9,688.73	19,149.81	10,018.48	212.86	211.88	127.11	9,638.00	509.25	546.66	185.51	361.15	1.514	
18,900.00	9,690.36	19,249.81	10,019.48	214.94	213.97	127.02	9,737.98	510.10	546.68	181.66	365.02	1.498 Level 3	
19,000.00	9,691.99	19,349.81	10,020.48	217.03	216.05	126.94	9,837.97	510.96	546.71	177.81	368.90	1.482 Level 3	
19,100.00	9,693.62	19,449.80	10,021.48	219.13	218.13	126.85	9,937.96	511.82	546.73	173.95	372.78	1.467 Level 3	
19,200.00	9,695.25	19,549.80	10,022.48	221.22	220.22	126.77	10,037.95	512.67	546.76	170.09	376.67	1.452 Level 3	
19,300.00	9,696.87	19,649.80	10,023.48	223.31	222.30	126.68	10,137.94	513.53	546.79	166.22	380.57	1.437 Level 3	
19,400.00	9,698.50	19,749.79	10,024.48	225.41	224.39	126.60	10,237.92	514.39	546.82	162.35	384.47	1.422 Level 3	
19,500.00	9,700.13	19,849.79	10,025.48	227.50	226.48	126.51	10,337.91	515.24	546.85	158.47	388.38	1.408 Level 3	
19,600.00	9,701.76	19,949.79	10,026.48	229.60	228.57	126.43	10,437.90	516.10	546.88	154.59	392.30	1.394 Level 3	
19,700.00	9,703.39	20,049.78	10,027.48	231.70	230.66	126.35	10,537.89	516.96	546.92	150.70	396.22	1.380 Level 3	
19,800.00	9,705.02	20,149.78	10,028.48	233.80	232.75	126.26	10,637.88	517.81	546.95	146.81	400.14	1.367 Level 3	
19,900.00	9,706.65	20,249.78	10,029.48	235.90	234.84	126.18	10,737.87	518.67	546.99	142.91	404.08	1.354 Level 3	
20,000.00	9,708.28	20,349.77	10,030.48	238.00	236.94	126.09	10,837.85	519.53	547.03	139.01	408.02	1.341 Level 3	
20,044.41	9,709.00	20,394.18	10,030.93	238.80	237.87	126.06	10,882.25	519.91	547.04	137.43	409.61	1.336 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 13HD - OH / Job #61220 - Plan 4 06-13-17												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		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	0.00	20.00	0.00	0.00	-78.42	277.27	-1,352.86	1,381.12				
100.00	100.00	80.00	100.00	0.19	0.15	-78.42	277.27	-1,352.86	1,380.98	0.35	3,963.374		
200.00	200.00	180.00	200.00	0.73	0.62	-78.42	277.27	-1,352.86	1,380.98	1.36	1,019.154		
300.00	300.00	280.00	300.00	1.27	1.16	-78.42	277.27	-1,352.86	1,380.98	2.43	568.201		
400.00	400.00	380.00	400.00	1.81	1.70	-78.42	277.27	-1,352.86	1,380.98	3.51	393.906		
500.00	500.00	480.00	500.00	2.34	2.24	-78.42	277.27	-1,352.86	1,380.98	4.58	301.440		
600.00	600.00	580.00	600.00	2.88	2.77	-78.42	277.27	-1,352.86	1,380.98	5.66	244.132 CC		
700.00	699.98	679.98	699.98	3.42	3.31	-98.72	277.27	-1,352.86	1,381.24	6.73	205.217		
800.00	799.84	779.84	799.84	3.96	3.85	-98.92	277.27	-1,352.86	1,382.04	7.80	177.098 ES		
900.00	899.45	879.45	899.45	4.50	4.38	-99.25	277.27	-1,352.86	1,383.43	8.88	155.791		
1,000.00	998.90	978.90	998.90	5.05	4.92	-99.67	277.27	-1,352.86	1,385.15	9.96	139.046		
1,100.00	1,098.36	1,078.36	1,098.36	5.60	5.45	-100.09	277.27	-1,352.86	1,386.95	11.05	125.532		
1,200.00	1,197.81	1,177.81	1,197.81	6.15	5.99	-100.52	277.27	-1,352.86	1,388.83	12.14	114.411		
1,300.00	1,297.26	1,277.26	1,297.26	6.71	6.52	-100.94	277.27	-1,352.86	1,390.79	13.23	105.108		
1,400.00	1,396.72	1,376.72	1,396.72	7.27	7.06	-101.36	277.27	-1,352.86	1,392.82	14.33	97.217		
1,500.00	1,496.17	1,476.17	1,496.17	7.84	7.59	-101.77	277.27	-1,352.86	1,394.92	15.42	90.442		
1,600.00	1,595.62	1,575.62	1,595.62	8.40	8.13	-102.19	277.27	-1,352.86	1,397.10	16.52	84.565		
1,700.00	1,695.07	1,675.07	1,695.07	8.97	8.66	-102.61	277.27	-1,352.86	1,399.36	17.62	79.421		
1,800.00	1,794.53	1,774.53	1,794.53	9.53	9.20	-103.02	277.27	-1,352.86	1,401.69	18.72	74.881		
1,900.00	1,893.98	1,873.98	1,893.98	10.10	9.73	-103.44	277.27	-1,352.86	1,404.09	19.82	70.847		
2,000.00	1,993.43	1,973.43	1,993.43	10.67	10.27	-103.85	277.27	-1,352.86	1,406.57	20.92	67.239		
2,100.00	2,092.89	2,072.89	2,092.89	11.24	10.80	-104.26	277.27	-1,352.86	1,409.12	22.02	63.994		
2,200.00	2,192.34	2,172.34	2,192.34	11.81	11.34	-104.67	277.27	-1,352.86	1,411.74	23.12	61.061		
2,300.00	2,291.79	2,264.63	2,284.63	12.38	11.83	-105.04	277.26	-1,352.89	1,414.49	24.18	58.497		
2,400.00	2,391.24	2,331.28	2,351.27	12.95	12.18	-105.32	277.23	-1,354.01	1,418.91	25.09	56.547		
2,500.00	2,490.70	2,400.00	2,419.93	13.52	12.53	-105.61	277.13	-1,356.78	1,425.70	26.01	54.812		
2,600.00	2,590.15	2,463.88	2,483.68	14.09	12.86	-105.89	276.99	-1,360.83	1,434.84	26.91	53.329		
2,700.00	2,689.60	2,529.69	2,549.24	14.66	13.20	-106.18	276.79	-1,366.49	1,446.34	27.81	52.007		
2,800.00	2,789.06	2,600.00	2,619.13	15.23	13.57	-106.49	276.52	-1,374.20	1,460.17	28.74	50.810		
2,900.00	2,888.51	2,660.00	2,678.60	15.80	13.88	-106.75	276.24	-1,382.13	1,476.29	29.61	49.853		
3,000.00	2,987.96	2,724.38	2,742.21	16.37	14.23	-107.04	275.90	-1,392.02	1,494.71	30.51	48.990		
3,100.00	3,087.41	2,800.00	2,816.63	16.94	14.64	-107.37	275.43	-1,405.46	1,515.45	31.46	48.164		
3,200.00	3,186.87	2,878.78	2,893.96	17.51	15.07	-107.71	274.90	-1,420.48	1,537.58	32.43	47.408		
3,300.00	3,286.32	2,975.65	2,989.05	18.08	15.61	-108.12	274.26	-1,438.95	1,559.88	33.49	46.572		
3,400.00	3,385.77	3,072.52	3,084.14	18.66	16.16	-108.52	273.61	-1,457.43	1,582.27	34.56	45.787		
3,500.00	3,485.23	3,169.39	3,179.23	19.23	16.72	-108.91	272.97	-1,475.90	1,604.72	35.62	45.047		
3,600.00	3,584.68	3,266.26	3,274.32	19.80	17.28	-109.29	272.32	-1,494.37	1,627.25	36.69	44.349		
3,700.00	3,684.13	3,363.13	3,369.41	20.37	17.85	-109.65	271.68	-1,512.85	1,649.84	37.76	43.690		
3,800.00	3,783.59	3,460.01	3,464.51	20.94	18.43	-110.07	271.03	-1,531.32	1,672.48	38.84	43.064		
3,900.00	3,883.24	3,557.23	3,559.95	21.50	19.01	-110.77	270.39	-1,549.86	1,694.45	39.92	42.451		
4,000.00	3,983.12	3,654.94	3,655.85	22.04	19.60	-111.32	269.74	-1,568.49	1,715.23	40.98	41.856		
4,100.00	4,083.11	3,752.99	3,752.11	22.56	20.20	-91.46	269.08	-1,587.19	1,734.78	42.03	41.274		
4,200.00	4,183.11	3,851.15	3,848.47	23.07	20.80	-91.46	268.43	-1,605.91	1,753.86	43.07	40.722		
4,300.00	4,283.11	3,949.32	3,944.83	23.58	21.40	-91.47	267.78	-1,624.63	1,772.94	44.11	40.193		
4,400.00	4,383.11	4,047.48	4,041.19	24.10	22.01	-91.48	267.12	-1,643.35	1,792.02	45.15	39.687		
4,500.00	4,483.11	4,145.64	4,137.54	24.61	22.62	-91.48	266.47	-1,662.06	1,811.10	46.20	39.201		
4,600.00	4,583.11	4,243.80	4,233.90	25.13	23.23	-91.49	265.82	-1,680.78	1,830.18	47.25	38.735		
4,700.00	4,683.11	4,341.97	4,330.26	25.64	23.84	-91.49	265.16	-1,699.50	1,849.26	48.30	38.288		
4,800.00	4,783.11	4,440.13	4,426.62	26.16	24.46	-91.50	264.51	-1,718.22	1,868.34	49.35	37.859		
4,900.00	4,883.11	4,538.29	4,522.98	26.68	25.08	-91.50	263.85	-1,736.94	1,887.42	50.40	37.446		
5,000.00	4,983.11	4,636.45	4,619.34	27.20	25.70	-91.51	263.20	-1,755.66	1,906.50	51.46	37.048		
5,100.00	5,083.11	4,734.62	4,715.70	27.72	26.33	-91.51	262.55	-1,774.38	1,925.58	52.52	36.666		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 13HD - OH / Job #61220 - Plan 4 06-13-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDM													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
5,200.00	5,183.11	4,832.78	4,812.06	28.24	26.95	-91.52	261.89	-1,793.10	1,944.67	1,891.09	53.58	36.298	
5,300.00	5,283.11	4,930.94	4,908.42	28.76	27.58	-91.52	261.24	-1,811.82	1,963.75	1,909.11	54.64	35.943	
5,400.00	5,383.11	5,029.10	5,004.78	29.28	28.21	-91.53	260.59	-1,830.54	1,982.83	1,927.13	55.70	35.600	
5,500.00	5,483.11	5,127.27	5,101.14	29.80	28.84	-91.53	259.93	-1,849.25	2,001.91	1,945.15	56.76	35.270	
5,600.00	5,583.11	5,225.43	5,197.50	30.32	29.47	-91.54	259.28	-1,867.97	2,020.99	1,963.16	57.82	34.951	
5,700.00	5,683.11	5,323.59	5,293.85	30.85	30.10	-91.54	258.63	-1,886.69	2,040.07	1,981.18	58.89	34.643	
5,800.00	5,783.11	5,421.76	5,390.21	31.37	30.74	-91.54	257.97	-1,905.41	2,059.15	1,999.19	59.95	34.346	
5,900.00	5,883.11	5,519.92	5,486.57	31.90	31.37	-91.55	257.32	-1,924.13	2,078.23	2,017.21	61.02	34.058	
6,000.00	5,983.11	5,776.37	5,739.66	32.42	32.96	-91.56	256.69	-1,964.98	2,095.11	2,032.16	62.95	33.282	
6,100.00	6,083.11	6,120.56	6,083.11	32.95	34.80	-91.56	255.22	-1,984.38	2,100.33	2,035.02	65.31	32.162	
6,200.00	6,183.11	6,220.56	6,183.11	33.47	35.29	-91.56	255.22	-1,984.38	2,100.33	2,033.98	66.34	31.658	
6,300.00	6,283.11	6,320.56	6,283.11	34.00	35.78	-91.56	255.22	-1,984.38	2,100.33	2,032.94	67.38	31.170	
6,400.00	6,383.11	6,420.56	6,383.11	34.52	36.27	-91.56	255.22	-1,984.38	2,100.33	2,031.90	68.42	30.696	
6,500.00	6,483.11	6,520.56	6,483.11	35.05	36.76	-91.56	255.22	-1,984.38	2,100.33	2,030.86	69.47	30.235	
6,600.00	6,583.11	6,620.56	6,583.11	35.58	37.25	-91.56	255.22	-1,984.38	2,100.33	2,029.82	70.51	29.788	
6,700.00	6,683.11	6,720.56	6,683.11	36.10	37.75	-91.56	255.22	-1,984.38	2,100.33	2,028.78	71.55	29.354	
6,800.00	6,783.11	6,820.56	6,783.11	36.63	38.24	-91.56	255.22	-1,984.38	2,100.33	2,027.73	72.60	28.931	
6,900.00	6,883.11	6,920.56	6,883.11	37.16	38.74	-91.56	255.22	-1,984.38	2,100.33	2,026.69	73.64	28.520	
7,000.00	6,983.11	7,020.56	6,983.11	37.69	39.23	-91.56	255.22	-1,984.38	2,100.33	2,025.64	74.69	28.121	
7,100.00	7,083.11	7,120.56	7,083.11	38.21	39.73	-91.56	255.22	-1,984.38	2,100.33	2,024.59	75.74	27.732	
7,200.00	7,183.11	7,220.56	7,183.11	38.74	40.23	-91.56	255.22	-1,984.38	2,100.33	2,023.54	76.78	27.353	
7,300.00	7,283.11	7,320.56	7,283.11	39.27	40.73	-91.56	255.22	-1,984.38	2,100.33	2,022.49	77.83	26.985	
7,400.00	7,383.11	7,420.56	7,383.11	39.80	41.23	-91.56	255.22	-1,984.38	2,100.33	2,021.45	78.88	26.626	
7,500.00	7,483.11	7,520.56	7,483.11	40.33	41.73	-91.56	255.22	-1,984.38	2,100.33	2,020.40	79.93	26.276	
7,600.00	7,583.11	7,620.56	7,583.11	40.86	42.24	-91.56	255.22	-1,984.38	2,100.33	2,019.34	80.98	25.935	
7,700.00	7,683.11	7,720.56	7,683.11	41.39	42.74	-91.56	255.22	-1,984.38	2,100.33	2,018.29	82.04	25.603	
7,800.00	7,783.11	7,820.56	7,783.11	41.92	43.24	-91.56	255.22	-1,984.38	2,100.33	2,017.24	83.09	25.278	
7,900.00	7,883.11	7,920.56	7,883.11	42.45	43.75	-91.56	255.22	-1,984.38	2,100.33	2,016.19	84.14	24.962	
8,000.00	7,983.11	8,020.56	7,983.11	42.98	44.25	-91.56	255.22	-1,984.38	2,100.33	2,015.13	85.19	24.654	
8,100.00	8,083.11	8,120.56	8,083.11	43.51	44.76	-91.56	255.22	-1,984.38	2,100.33	2,014.08	86.25	24.352	
8,200.00	8,183.11	8,220.56	8,183.11	44.04	45.27	-91.56	255.22	-1,984.38	2,100.33	2,013.03	87.30	24.058	
8,300.00	8,283.11	8,320.56	8,283.11	44.57	45.78	-91.56	255.22	-1,984.38	2,100.33	2,011.97	88.36	23.771	
8,400.00	8,383.11	8,420.56	8,383.11	45.10	46.29	-91.56	255.22	-1,984.38	2,100.33	2,010.92	89.41	23.491	
8,500.00	8,483.11	8,520.56	8,483.11	45.63	46.79	-91.56	255.22	-1,984.38	2,100.33	2,009.86	90.47	23.216	
8,600.00	8,583.11	8,620.56	8,583.11	46.17	47.31	-91.56	255.22	-1,984.38	2,100.33	2,008.80	91.52	22.948	
8,700.00	8,683.11	8,720.56	8,683.11	46.70	47.82	-91.56	255.22	-1,984.38	2,100.33	2,007.75	92.58	22.687	
8,800.00	8,783.11	8,820.56	8,783.11	47.23	48.33	-91.56	255.22	-1,984.38	2,100.33	2,006.69	93.64	22.430	
8,900.00	8,883.11	8,920.56	8,883.11	47.76	48.84	-91.56	255.22	-1,984.38	2,100.33	2,005.63	94.70	22.180	
9,000.00	8,983.11	9,020.56	8,983.11	48.29	49.35	-91.56	255.22	-1,984.38	2,100.33	2,004.58	95.75	21.935	
9,100.00	9,083.11	9,120.56	9,083.11	48.82	49.86	-91.56	255.22	-1,984.38	2,100.33	2,003.52	96.81	21.695	
9,111.18	9,094.29	9,131.75	9,094.29	48.88	49.92	-91.00	255.22	-1,984.38	2,100.33	2,003.40	96.93	21.669	
9,200.00	9,182.98	9,220.44	9,182.98	49.36	50.38	-91.08	255.22	-1,984.38	2,100.39	2,002.52	97.87	21.462	
9,300.00	9,280.93	9,318.39	9,280.93	49.93	50.88	-91.56	255.22	-1,984.38	2,100.85	2,001.92	98.93	21.235	
9,400.00	9,374.01	9,417.22	9,374.01	50.51	51.39	-92.38	256.27	-1,984.39	2,102.15	2,002.15	100.00	21.022	
9,500.00	9,459.39	9,532.87	9,459.39	51.11	51.97	-93.36	274.84	-1,984.57	2,104.18	2,003.06	101.11	20.810	
9,600.00	9,534.47	9,660.18	9,534.47	51.72	52.56	-94.30	321.19	-1,985.03	2,106.60	2,004.37	102.23	20.606	
9,700.00	9,596.97	9,800.40	9,726.86	52.35	53.09	-95.14	400.97	-1,985.82	2,109.05	2,005.70	103.35	20.407	
9,800.00	9,644.99	9,953.16	9,825.93	53.00	53.55	-95.79	516.67	-1,986.97	2,111.06	2,006.57	104.50	20.202	
9,900.00	9,677.08	10,115.34	9,893.79	53.67	53.97	-96.14	663.36	-1,988.42	2,112.19	2,006.46	105.73	19.978	
10,000.00	9,692.26	10,280.84	9,918.00	54.34	54.55	-96.12	826.49	-1,990.04	2,112.13	2,005.06	107.07	19.726	
10,041.70	9,694.06	10,323.75	9,917.89	54.64	54.74	-96.08	869.39	-1,990.47	2,111.93	2,004.36	107.57	19.633	
10,100.00	9,691.40	10,382.03	9,917.73	55.05	55.02	-96.15	927.68	-1,991.05	2,112.20	2,003.96	108.24	19.514	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 13HD - OH / Job #61220 - Plan 4 06-13-17													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		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)				Between Centres (usft)	Between Ellipses (usft)
10,200.00	9,687.32	10,481.96	9,917.47	55.83	55.57	-96.25	1,027.60	-1,992.04	2,112.62	2,003.06	109.56	19.283	
10,300.00	9,683.23	10,581.89	9,917.20	56.69	56.20	-96.35	1,127.52	-1,993.03	2,113.04	2,002.02	111.02	19.033	
10,400.00	9,679.15	10,681.81	9,916.93	57.61	56.92	-96.46	1,227.44	-1,994.02	2,113.47	2,000.84	112.63	18.765	
10,500.00	9,675.07	10,781.74	9,916.67	58.59	57.71	-96.56	1,327.36	-1,995.01	2,113.91	1,999.53	114.38	18.482	
10,600.00	9,670.98	10,881.67	9,916.40	59.64	58.57	-96.66	1,427.29	-1,996.00	2,114.35	1,998.10	116.25	18.188	
10,700.00	9,666.90	10,981.59	9,916.13	60.75	59.49	-96.76	1,527.21	-1,996.99	2,114.80	1,996.55	118.25	17.884	
10,800.00	9,662.81	11,081.52	9,915.87	61.92	60.48	-96.87	1,627.13	-1,997.98	2,115.26	1,994.89	120.37	17.573	
10,900.00	9,658.73	11,181.45	9,915.60	63.13	61.53	-96.97	1,727.05	-1,998.97	2,115.72	1,993.12	122.60	17.257	
11,000.00	9,654.64	11,281.37	9,915.33	64.40	62.64	-97.07	1,826.97	-1,999.96	2,116.20	1,991.25	124.94	16.938	
11,100.00	9,650.56	11,381.30	9,915.07	65.71	63.80	-97.17	1,926.89	-2,000.96	2,116.67	1,989.30	127.38	16.617	
11,200.00	9,646.47	11,481.23	9,914.80	67.07	65.01	-97.28	2,026.82	-2,001.95	2,117.16	1,987.25	129.91	16.297	
11,300.00	9,642.39	11,581.16	9,914.53	68.46	66.27	-97.38	2,126.74	-2,002.94	2,117.65	1,985.12	132.53	15.979	
11,400.00	9,638.30	11,681.08	9,914.26	69.90	67.58	-97.48	2,226.66	-2,003.93	2,118.15	1,982.92	135.23	15.663	
11,500.00	9,634.22	11,781.12	9,914.00	71.37	68.93	-97.58	2,326.69	-2,004.92	2,118.65	1,980.64	138.01	15.351	
11,600.00	9,630.13	11,888.60	9,911.81	72.88	70.43	-97.64	2,434.14	-2,005.99	2,118.93	1,977.93	140.99	15.029	
11,700.00	9,626.05	11,988.59	9,908.80	74.42	71.87	-97.67	2,534.08	-2,006.98	2,119.08	1,975.12	143.96	14.720	
11,800.00	9,621.96	12,088.59	9,905.79	75.99	73.34	-97.70	2,634.03	-2,007.98	2,119.23	1,972.24	146.99	14.418	
11,900.00	9,617.88	12,188.58	9,902.77	77.59	74.85	-97.73	2,733.97	-2,008.98	2,119.38	1,969.31	150.08	14.122	
12,000.00	9,613.79	12,288.58	9,899.76	79.21	76.39	-97.76	2,833.91	-2,009.97	2,119.54	1,966.31	153.22	13.833	
12,100.00	9,609.71	12,388.57	9,896.75	80.86	77.96	-97.79	2,933.86	-2,010.97	2,119.69	1,963.26	156.43	13.551	
12,200.00	9,605.63	12,488.57	9,893.74	82.54	79.56	-97.81	3,033.80	-2,011.96	2,119.84	1,960.17	159.68	13.276	
12,300.00	9,601.54	12,588.56	9,890.73	84.23	81.19	-97.84	3,133.75	-2,012.96	2,120.00	1,957.02	162.98	13.008	
12,400.00	9,597.71	12,688.56	9,887.72	85.95	82.84	-97.87	3,233.69	-2,013.95	2,120.12	1,953.79	166.33	12.746	
12,500.00	9,596.68	12,788.53	9,884.71	87.68	84.51	-97.81	3,333.62	-2,014.95	2,119.85	1,950.07	169.78	12.486	
12,600.00	9,597.97	12,888.44	9,881.70	89.42	86.20	-97.69	3,433.47	-2,015.94	2,119.27	1,946.01	173.26	12.232	
12,700.00	9,599.31	12,988.34	9,878.69	91.19	87.91	-97.57	3,533.33	-2,016.94	2,118.69	1,941.92	176.77	11.985	
12,800.00	9,600.66	13,088.25	9,875.68	92.97	89.64	-97.46	3,633.18	-2,017.93	2,118.12	1,937.80	180.32	11.746	
12,900.00	9,602.00	13,188.15	9,872.68	94.77	91.39	-97.34	3,733.04	-2,018.93	2,117.56	1,933.66	183.91	11.514	
13,000.00	9,603.34	13,288.06	9,869.67	96.58	93.16	-97.22	3,832.89	-2,019.92	2,117.01	1,929.49	187.52	11.289	
13,100.00	9,604.68	13,387.96	9,866.66	98.40	94.94	-97.11	3,932.75	-2,020.92	2,116.47	1,925.30	191.17	11.071	
13,200.00	9,606.02	13,487.87	9,863.65	100.24	96.74	-96.99	4,032.60	-2,021.91	2,115.93	1,921.09	194.84	10.860	
13,300.00	9,607.37	13,587.77	9,860.64	102.09	98.55	-96.87	4,132.46	-2,022.91	2,115.41	1,916.86	198.55	10.654	
13,400.00	9,608.71	13,687.68	9,857.63	103.96	100.38	-96.76	4,232.31	-2,023.90	2,114.89	1,912.62	202.27	10.456	
13,500.00	9,610.05	13,787.58	9,854.63	105.83	102.22	-96.64	4,332.17	-2,024.89	2,114.38	1,908.36	206.03	10.263	
13,600.00	9,611.39	13,887.49	9,851.62	107.72	104.07	-96.52	4,432.02	-2,025.89	2,113.88	1,904.08	209.80	10.076	
13,700.00	9,612.73	13,987.40	9,848.61	109.61	105.94	-96.41	4,531.88	-2,026.88	2,113.39	1,899.79	213.60	9.894	
13,800.00	9,614.07	14,081.38	9,846.73	111.52	107.70	-96.32	4,625.83	-2,027.82	2,113.02	1,895.73	217.29	9.724	
13,900.00	9,615.42	14,177.76	9,847.47	113.43	109.51	-96.31	4,722.21	-2,028.78	2,112.96	1,891.94	221.02	9.560	
14,000.00	9,616.76	14,277.76	9,848.60	115.36	111.40	-96.30	4,822.19	-2,029.77	2,112.93	1,888.10	224.83	9.398	
14,100.00	9,618.10	14,377.76	9,849.74	117.29	113.30	-96.29	4,922.18	-2,030.76	2,112.90	1,884.25	228.66	9.241	
14,200.00	9,619.44	14,477.76	9,850.87	119.23	115.21	-96.29	5,022.17	-2,031.75	2,112.87	1,880.38	232.50	9.088	
14,300.00	9,620.78	14,577.76	9,852.01	121.18	117.12	-96.28	5,122.16	-2,032.74	2,112.85	1,876.49	236.36	8.939	
14,400.00	9,622.13	14,677.76	9,853.14	123.13	119.05	-96.28	5,222.15	-2,033.73	2,112.82	1,872.59	240.23	8.795	
14,500.00	9,623.47	14,777.76	9,854.27	125.09	120.98	-96.27	5,322.14	-2,034.72	2,112.79	1,868.67	244.12	8.655	
14,600.00	9,624.81	14,877.76	9,855.41	127.06	122.93	-96.27	5,422.12	-2,035.72	2,112.77	1,864.74	248.03	8.518	
14,700.00	9,626.15	14,977.76	9,856.54	129.03	124.87	-96.26	5,522.11	-2,036.71	2,112.74	1,860.80	251.94	8.386	
14,800.00	9,627.49	15,077.76	9,857.68	131.01	126.83	-96.26	5,622.10	-2,037.70	2,112.71	1,856.84	255.87	8.257	
14,900.00	9,628.84	15,177.76	9,858.81	132.99	128.79	-96.25	5,722.09	-2,038.69	2,112.69	1,852.88	259.81	8.132	
15,000.00	9,630.18	15,277.76	9,859.95	134.98	130.76	-96.24	5,822.08	-2,039.68	2,112.66	1,848.90	263.76	8.010	
15,026.95	9,630.55	15,304.71	9,860.25	135.52	131.29	-96.25	5,849.03	-2,039.95	2,112.70	1,847.90	264.80	7.978	
15,100.00	9,631.55	15,387.31	9,861.21	136.98	132.92	-96.25	5,931.62	-2,040.73	2,112.87	1,845.08	267.79	7.890	
15,200.00	9,633.07	15,505.12	9,863.50	138.97	135.25	-96.26	6,049.40	-2,040.39	2,112.95	1,840.86	272.10	7.765	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 13HD - OH / Job #61220 - Plan 4 06-13-17												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 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
15,300.00	9,634.58	15,605.11	9,865.52	140.97	137.23	-96.28	6,149.38	-2,039.98	2,112.98	1,836.92	276.06	7.654	
15,400.00	9,636.09	15,705.11	9,867.53	142.98	139.21	-96.29	6,249.36	-2,039.57	2,113.00	1,832.97	280.03	7.546	
15,500.00	9,637.61	15,805.11	9,869.55	144.98	141.20	-96.30	6,349.34	-2,039.17	2,113.03	1,829.01	284.02	7.440	
15,600.00	9,639.12	15,905.11	9,871.56	147.00	143.19	-96.32	6,449.31	-2,038.76	2,113.05	1,825.04	288.01	7.337	
15,700.00	9,640.63	16,005.11	9,873.58	149.01	145.19	-96.33	6,549.29	-2,038.35	2,113.08	1,821.07	292.01	7.236	
15,800.00	9,642.15	16,105.11	9,875.60	151.03	147.19	-96.34	6,649.27	-2,037.94	2,113.11	1,817.09	296.02	7.138	
15,900.00	9,643.66	16,205.11	9,877.61	153.06	149.20	-96.36	6,749.25	-2,037.53	2,113.13	1,813.10	300.03	7.043	
16,000.00	9,645.17	16,305.11	9,879.63	155.08	151.21	-96.37	6,849.22	-2,037.13	2,113.16	1,809.11	304.05	6.950	
16,100.00	9,646.69	16,405.10	9,881.64	157.11	153.23	-96.38	6,949.20	-2,036.72	2,113.18	1,805.10	308.08	6.859	
16,200.00	9,648.20	16,505.10	9,883.66	159.15	155.25	-96.40	7,049.18	-2,036.31	2,113.21	1,801.09	312.12	6.771	
16,300.00	9,649.71	16,604.34	9,885.64	161.18	157.25	-96.41	7,148.39	-2,035.94	2,113.27	1,797.13	316.14	6.685	
16,400.00	9,651.23	16,704.34	9,887.62	163.22	159.28	-96.42	7,248.37	-2,035.57	2,113.33	1,793.14	320.19	6.600	
16,500.00	9,652.74	16,804.33	9,889.61	165.27	161.31	-96.44	7,348.35	-2,035.20	2,113.39	1,789.15	324.25	6.518	
16,600.00	9,654.25	16,904.33	9,891.60	167.31	163.34	-96.45	7,448.33	-2,034.84	2,113.46	1,785.15	328.30	6.437	
16,700.00	9,655.77	17,004.33	9,893.59	169.36	165.38	-96.46	7,548.31	-2,034.47	2,113.52	1,781.15	332.37	6.359	
16,800.00	9,657.28	17,104.33	9,895.57	171.41	167.41	-96.47	7,648.28	-2,034.10	2,113.58	1,777.14	336.44	6.282	
16,900.00	9,658.79	17,204.33	9,897.56	173.47	169.45	-96.49	7,748.26	-2,033.73	2,113.65	1,773.13	340.52	6.207	
17,000.00	9,660.31	17,304.33	9,899.55	175.52	171.50	-96.50	7,848.24	-2,033.36	2,113.71	1,769.11	344.60	6.134	
17,100.00	9,661.82	17,404.33	9,901.54	177.58	173.55	-96.51	7,948.22	-2,033.00	2,113.77	1,765.09	348.68	6.062	
17,200.00	9,663.33	17,504.33	9,903.52	179.64	175.59	-96.53	8,048.20	-2,032.63	2,113.84	1,761.07	352.77	5.992	
17,300.00	9,664.85	17,604.33	9,905.51	181.70	177.65	-96.54	8,148.18	-2,032.26	2,113.90	1,757.04	356.86	5.924	
17,400.00	9,666.36	17,704.32	9,907.50	183.77	179.70	-96.55	8,248.15	-2,031.89	2,113.97	1,753.00	360.96	5.856	
17,500.00	9,667.87	17,804.32	9,909.48	185.83	181.76	-96.56	8,348.13	-2,031.52	2,114.03	1,748.97	365.06	5.791	
17,600.00	9,669.39	17,904.32	9,911.47	187.90	183.81	-96.58	8,448.11	-2,031.16	2,114.09	1,744.92	369.17	5.727	
17,700.00	9,670.90	18,004.32	9,913.46	189.97	185.88	-96.59	8,548.09	-2,030.79	2,114.16	1,740.88	373.28	5.664	
17,800.00	9,672.44	18,104.32	9,915.45	192.04	187.94	-96.60	8,648.07	-2,030.42	2,114.21	1,736.82	377.40	5.602	
17,900.00	9,674.07	18,204.32	9,917.43	194.12	190.00	-96.61	8,748.05	-2,030.05	2,114.24	1,732.72	381.52	5.542	
18,000.00	9,675.70	18,304.32	9,919.42	196.19	192.07	-96.62	8,848.03	-2,029.68	2,114.26	1,728.63	385.64	5.483	
18,100.00	9,677.33	18,404.32	9,921.41	198.27	194.14	-96.63	8,948.01	-2,029.32	2,114.29	1,724.53	389.76	5.425	
18,200.00	9,678.96	18,506.23	9,923.35	200.35	196.25	-96.64	9,049.90	-2,028.94	2,114.31	1,720.37	393.93	5.367	
18,300.00	9,680.59	18,609.79	9,923.44	202.43	198.39	-96.60	9,153.45	-2,028.55	2,114.10	1,715.93	398.17	5.310	
18,400.00	9,682.22	18,709.77	9,923.25	204.51	200.46	-96.55	9,253.44	-2,028.18	2,113.87	1,711.53	402.34	5.254	
18,500.00	9,683.84	18,809.75	9,923.05	206.60	202.54	-96.50	9,353.42	-2,027.80	2,113.64	1,707.12	406.52	5.199	
18,600.00	9,685.47	18,909.74	9,922.86	208.68	204.61	-96.45	9,453.40	-2,027.43	2,113.41	1,702.72	410.69	5.146	
18,700.00	9,687.10	19,009.72	9,922.67	210.77	206.69	-96.40	9,553.38	-2,027.05	2,113.18	1,698.31	414.88	5.094	
18,800.00	9,688.73	19,109.71	9,922.48	212.86	208.77	-96.35	9,653.37	-2,026.68	2,112.96	1,693.90	419.06	5.042	
18,900.00	9,690.36	19,209.69	9,922.28	214.94	210.85	-96.30	9,753.35	-2,026.30	2,112.73	1,689.48	423.25	4.992	
19,000.00	9,691.99	19,309.67	9,922.09	217.03	212.93	-96.25	9,853.33	-2,025.92	2,112.51	1,685.07	427.44	4.942	
19,100.00	9,693.62	19,409.66	9,921.90	219.13	215.02	-96.20	9,953.31	-2,025.55	2,112.29	1,680.66	431.63	4.894	
19,200.00	9,695.25	19,509.64	9,921.70	221.22	217.10	-96.15	10,053.30	-2,025.17	2,112.07	1,676.24	435.83	4.846	
19,300.00	9,696.87	19,609.62	9,921.51	223.31	219.19	-96.10	10,153.28	-2,024.80	2,111.85	1,671.82	440.03	4.799	
19,400.00	9,698.50	19,709.61	9,921.32	225.41	221.28	-96.06	10,253.26	-2,024.42	2,111.63	1,667.40	444.23	4.753	
19,500.00	9,700.13	19,809.59	9,921.12	227.50	223.36	-96.01	10,353.25	-2,024.05	2,111.42	1,662.99	448.43	4.708	
19,600.00	9,701.76	19,909.57	9,920.93	229.60	225.45	-95.96	10,453.23	-2,023.67	2,111.21	1,658.57	452.64	4.664	
19,700.00	9,703.39	20,009.56	9,920.74	231.70	227.55	-95.91	10,553.21	-2,023.30	2,110.99	1,654.14	456.85	4.621	
19,800.00	9,705.02	20,109.54	9,920.55	233.80	229.64	-95.86	10,653.19	-2,022.92	2,110.78	1,649.72	461.06	4.578	
19,900.00	9,706.65	20,209.52	9,920.35	235.90	231.73	-95.81	10,753.18	-2,022.54	2,110.58	1,645.30	465.28	4.536	
20,000.00	9,708.28	20,309.51	9,920.16	238.00	233.83	-95.76	10,853.16	-2,022.17	2,110.37	1,640.88	469.49	4.495	
20,044.41	9,709.00	20,353.90	9,920.07	238.80	234.76	-95.74	10,897.56	-2,022.00	2,110.28	1,639.05	471.23	4.478 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17													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)					
0.00	0.00	0.00	19.00	0.00	0.00	-79.44	252.27	-1,352.86	1,376.31				
100.00	100.00	81.00	100.00	0.19	0.16	-79.44	252.27	-1,352.86	1,376.18	1,375.83	0.35	3,927.773	
200.00	200.00	181.00	200.00	0.73	0.63	-79.44	252.27	-1,352.86	1,376.18	1,374.82	1.36	1,011.597	
300.00	300.00	281.00	300.00	1.27	1.17	-79.44	252.27	-1,352.86	1,376.18	1,373.74	2.44	564.976	
400.00	400.00	381.00	400.00	1.81	1.70	-79.44	252.27	-1,352.86	1,376.18	1,372.66	3.51	391.936	
500.00	500.00	481.00	500.00	2.34	2.24	-79.44	252.27	-1,352.86	1,376.18	1,371.59	4.59	300.040	
600.00	600.00	581.00	600.00	2.88	2.78	-79.44	252.27	-1,352.86	1,376.18	1,370.51	5.66	243.052	
700.00	699.98	680.98	699.98	3.42	3.32	-99.74	252.27	-1,352.86	1,376.47	1,369.73	6.74	204.344	
800.00	799.84	780.84	799.84	3.96	3.85	-99.94	252.27	-1,352.86	1,377.37	1,369.56	7.81	176.375	
900.00	899.45	880.45	899.45	4.50	4.39	-100.26	252.27	-1,352.86	1,378.90	1,370.01	8.89	155.187	
1,000.00	998.90	979.90	998.90	5.05	4.92	-100.69	252.27	-1,352.86	1,380.81	1,370.84	9.97	138.536	
1,100.00	1,098.36	1,079.36	1,098.36	5.60	5.46	-101.11	252.27	-1,352.86	1,382.79	1,371.74	11.05	125.098	
1,200.00	1,197.81	1,178.81	1,197.81	6.15	5.99	-101.53	252.27	-1,352.86	1,384.86	1,372.71	12.14	114.037	
1,300.00	1,297.26	1,278.26	1,297.26	6.71	6.53	-101.95	252.27	-1,352.86	1,386.99	1,373.76	13.24	104.784	
1,400.00	1,396.72	1,377.72	1,396.72	7.27	7.06	-102.37	252.27	-1,352.86	1,389.20	1,374.87	14.33	96.934	
1,500.00	1,496.17	1,477.17	1,496.17	7.84	7.60	-102.79	252.27	-1,352.86	1,391.49	1,376.06	15.43	90.195	
1,600.00	1,595.62	1,576.62	1,595.62	8.40	8.13	-103.20	252.27	-1,352.86	1,393.85	1,377.33	16.53	84.348	
1,700.00	1,695.07	1,676.07	1,695.07	8.97	8.67	-103.62	252.27	-1,352.86	1,396.29	1,378.67	17.62	79.229	
1,800.00	1,794.53	1,775.53	1,794.53	9.53	9.20	-104.03	252.27	-1,352.86	1,398.80	1,380.08	18.72	74.713	
1,900.00	1,893.98	1,874.98	1,893.98	10.10	9.74	-104.45	252.27	-1,352.86	1,401.38	1,381.56	19.82	70.699	
2,000.00	1,993.43	1,974.43	1,993.43	10.67	10.27	-104.86	252.27	-1,352.86	1,404.04	1,383.12	20.92	67.109	
2,100.00	2,092.89	2,073.89	2,092.89	11.24	10.81	-105.27	252.27	-1,352.86	1,406.77	1,384.74	22.02	63.880	
2,200.00	2,192.34	2,173.34	2,192.34	11.81	11.34	-105.67	252.27	-1,352.86	1,409.57	1,386.44	23.12	60.961	
2,300.00	2,291.79	2,294.84	2,313.84	12.38	11.99	-106.17	252.27	-1,352.51	1,412.26	1,387.93	24.34	58.034	
2,400.00	2,391.24	2,490.57	2,509.29	12.95	13.00	-106.94	252.27	-1,342.76	1,410.26	1,384.35	25.90	54.442	
2,500.00	2,490.70	2,619.05	2,637.13	13.52	13.67	-107.43	252.27	-1,329.95	1,403.19	1,376.05	27.13	51.718	
2,600.00	2,590.15	2,718.34	2,735.87	14.09	14.19	-107.82	252.27	-1,319.57	1,395.86	1,367.65	28.21	49.481	
2,700.00	2,689.60	2,817.62	2,834.61	14.66	14.72	-108.21	252.27	-1,309.19	1,388.60	1,359.31	29.29	47.407	
2,800.00	2,789.06	2,916.91	2,933.35	15.23	15.25	-108.60	252.27	-1,298.81	1,381.41	1,351.04	30.37	45.480	
2,900.00	2,888.51	3,016.20	3,032.09	15.80	15.79	-109.00	252.27	-1,288.43	1,374.28	1,342.82	31.46	43.685	
3,000.00	2,987.96	3,115.48	3,130.84	16.37	16.32	-109.40	252.27	-1,278.05	1,367.22	1,334.67	32.55	42.010	
3,100.00	3,087.41	3,214.77	3,229.58	16.94	16.86	-109.80	252.27	-1,267.68	1,360.23	1,326.59	33.63	40.443	
3,200.00	3,186.87	3,314.05	3,328.32	17.51	17.40	-110.21	252.27	-1,257.30	1,353.30	1,318.58	34.72	38.975	
3,300.00	3,286.32	3,413.34	3,427.06	18.08	17.95	-110.63	252.27	-1,246.92	1,346.45	1,310.64	35.81	37.597	
3,400.00	3,385.77	3,512.62	3,525.80	18.66	18.49	-111.04	252.27	-1,236.54	1,339.67	1,302.76	36.90	36.301	
3,500.00	3,485.23	3,611.91	3,624.55	19.23	19.04	-111.47	252.27	-1,226.16	1,332.95	1,294.96	38.00	35.081	
3,600.00	3,584.68	3,711.20	3,723.29	19.80	19.59	-111.89	252.27	-1,215.79	1,326.32	1,287.23	39.09	33.930	
3,700.00	3,684.13	3,810.48	3,822.03	20.37	20.14	-112.32	252.27	-1,205.41	1,319.75	1,279.57	40.18	32.843	
3,800.00	3,783.59	3,909.77	3,920.77	20.94	20.69	-112.74	252.27	-1,195.03	1,313.26	1,271.98	41.28	31.814	
3,900.00	3,883.24	4,009.18	4,019.63	21.50	21.24	-112.96	252.27	-1,184.64	1,305.99	1,263.62	42.36	30.828	
4,000.00	3,983.12	4,108.68	4,118.60	22.04	21.80	-113.01	252.27	-1,174.24	1,297.39	1,253.97	43.42	29.878	
4,100.00	4,083.11	4,208.17	4,217.54	22.56	22.35	-92.69	252.27	-1,163.84	1,287.46	1,243.00	44.46	28.956	
4,200.00	4,183.11	4,286.78	4,295.76	23.07	22.79	-92.71	252.27	-1,156.00	1,277.57	1,232.18	45.40	28.143	
4,300.00	4,283.11	4,355.83	4,364.60	23.58	23.17	-92.72	252.27	-1,150.73	1,269.95	1,223.68	46.28	27.442	
4,400.00	4,383.11	4,425.09	4,433.77	24.10	23.54	-92.73	252.27	-1,147.12	1,264.74	1,217.58	47.16	26.818	
4,500.00	4,483.11	4,500.00	4,508.65	24.61	23.94	-92.73	252.27	-1,145.10	1,261.96	1,213.89	48.07	26.250	
4,571.08	4,554.19	4,545.54	4,554.19	24.98	24.18	-92.73	252.27	-1,144.82	1,261.42	1,212.74	48.68	25.911	
4,600.00	4,583.11	4,574.46	4,583.11	25.13	24.33	-92.73	252.27	-1,144.82	1,261.42	1,212.44	48.98	25.752	
4,700.00	4,683.11	4,674.46	4,683.11	25.64	24.86	-92.73	252.27	-1,144.82	1,261.42	1,211.39	50.03	25.213	
4,800.00	4,783.11	4,774.46	4,783.11	26.16	25.38	-92.73	252.27	-1,144.82	1,261.42	1,210.35	51.08	24.696	
4,900.00	4,883.11	4,874.46	4,883.11	26.68	25.90	-92.73	252.27	-1,144.82	1,261.42	1,209.30	52.13	24.199	
5,000.00	4,983.11	4,974.46	4,983.11	27.20	26.43	-92.73	252.27	-1,144.82	1,261.42	1,208.25	53.18	23.722	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17												Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDM												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)	
5,100.00	5,083.11	5,074.46	5,083.11	27.72	26.96	-92.73	252.27	-1,144.82	1,261.42	1,207.20	54.23	23.262
5,200.00	5,183.11	5,174.46	5,183.11	28.24	27.48	-92.73	252.27	-1,144.82	1,261.42	1,206.15	55.28	22.820
5,300.00	5,283.11	5,274.46	5,283.11	28.76	28.01	-92.73	252.27	-1,144.82	1,261.42	1,205.09	56.33	22.394
5,400.00	5,383.11	5,374.46	5,383.11	29.28	28.53	-92.73	252.27	-1,144.82	1,261.42	1,204.04	57.38	21.983
5,500.00	5,483.11	5,474.46	5,483.11	29.80	29.06	-92.73	252.27	-1,144.82	1,261.42	1,202.99	58.44	21.586
5,600.00	5,583.11	5,574.46	5,583.11	30.32	29.59	-92.73	252.27	-1,144.82	1,261.42	1,201.93	59.49	21.203
5,700.00	5,683.11	5,674.46	5,683.11	30.85	30.12	-92.73	252.27	-1,144.82	1,261.42	1,200.88	60.55	20.834
5,800.00	5,783.11	5,774.46	5,783.11	31.37	30.65	-92.73	252.27	-1,144.82	1,261.42	1,199.82	61.60	20.477
5,900.00	5,883.11	5,874.46	5,883.11	31.90	31.18	-92.73	252.27	-1,144.82	1,261.42	1,198.76	62.66	20.131
6,000.00	5,983.11	5,974.46	5,983.11	32.42	31.70	-92.73	252.27	-1,144.82	1,261.42	1,197.71	63.72	19.797
6,100.00	6,083.11	6,074.46	6,083.11	32.95	32.23	-92.73	252.27	-1,144.82	1,261.42	1,196.65	64.78	19.474
6,200.00	6,183.11	6,174.46	6,183.11	33.47	32.76	-92.73	252.27	-1,144.82	1,261.42	1,195.59	65.83	19.161
6,300.00	6,283.11	6,274.46	6,283.11	34.00	33.29	-92.73	252.27	-1,144.82	1,261.42	1,194.53	66.89	18.857
6,400.00	6,383.11	6,374.46	6,383.11	34.52	33.82	-92.73	252.27	-1,144.82	1,261.42	1,193.47	67.95	18.563
6,500.00	6,483.11	6,474.46	6,483.11	35.05	34.35	-92.73	252.27	-1,144.82	1,261.42	1,192.41	69.01	18.278
6,600.00	6,583.11	6,574.46	6,583.11	35.58	34.88	-92.73	252.27	-1,144.82	1,261.42	1,191.35	70.07	18.002
6,700.00	6,683.11	6,674.46	6,683.11	36.10	35.41	-92.73	252.27	-1,144.82	1,261.42	1,190.29	71.13	17.733
6,800.00	6,783.11	6,774.46	6,783.11	36.63	35.95	-92.73	252.27	-1,144.82	1,261.42	1,189.23	72.20	17.472
6,900.00	6,883.11	6,874.46	6,883.11	37.16	36.48	-92.73	252.27	-1,144.82	1,261.42	1,188.17	73.26	17.219
7,000.00	6,983.11	6,974.46	6,983.11	37.69	37.01	-92.73	252.27	-1,144.82	1,261.42	1,187.10	74.32	16.973
7,100.00	7,083.11	7,074.46	7,083.11	38.21	37.54	-92.73	252.27	-1,144.82	1,261.42	1,186.04	75.38	16.734
7,200.00	7,183.11	7,174.46	7,183.11	38.74	38.07	-92.73	252.27	-1,144.82	1,261.42	1,184.98	76.45	16.501
7,300.00	7,283.11	7,274.46	7,283.11	39.27	38.60	-92.73	252.27	-1,144.82	1,261.42	1,183.92	77.51	16.275
7,400.00	7,383.11	7,374.46	7,383.11	39.80	39.14	-92.73	252.27	-1,144.82	1,261.42	1,182.85	78.57	16.054
7,500.00	7,483.11	7,474.46	7,483.11	40.33	39.67	-92.73	252.27	-1,144.82	1,261.42	1,181.79	79.64	15.840
7,600.00	7,583.11	7,574.46	7,583.11	40.86	40.20	-92.73	252.27	-1,144.82	1,261.42	1,180.72	80.70	15.631
7,700.00	7,683.11	7,674.46	7,683.11	41.39	40.73	-92.73	252.27	-1,144.82	1,261.42	1,179.66	81.76	15.427
7,800.00	7,783.11	7,774.46	7,783.11	41.92	41.26	-92.73	252.27	-1,144.82	1,261.42	1,178.59	82.83	15.229
7,900.00	7,883.11	7,874.46	7,883.11	42.45	41.80	-92.73	252.27	-1,144.82	1,261.42	1,177.53	83.89	15.036
8,000.00	7,983.11	7,974.46	7,983.11	42.98	42.33	-92.73	252.27	-1,144.82	1,261.42	1,176.46	84.96	14.847
8,100.00	8,083.11	8,074.46	8,083.11	43.51	42.86	-92.73	252.27	-1,144.82	1,261.42	1,175.40	86.03	14.663
8,200.00	8,183.11	8,174.46	8,183.11	44.04	43.40	-92.73	252.27	-1,144.82	1,261.42	1,174.33	87.09	14.484
8,300.00	8,283.11	8,274.46	8,283.11	44.57	43.93	-92.73	252.27	-1,144.82	1,261.42	1,173.27	88.16	14.309
8,400.00	8,383.11	8,374.46	8,383.11	45.10	44.46	-92.73	252.27	-1,144.82	1,261.42	1,172.20	89.22	14.138
8,500.00	8,483.11	8,474.46	8,483.11	45.63	45.00	-92.73	252.27	-1,144.82	1,261.42	1,171.13	90.29	13.971
8,600.00	8,583.11	8,574.46	8,583.11	46.17	45.53	-92.73	252.27	-1,144.82	1,261.42	1,170.07	91.36	13.808
8,700.00	8,683.11	8,674.46	8,683.11	46.70	46.06	-92.73	252.27	-1,144.82	1,261.42	1,169.00	92.42	13.648
8,800.00	8,783.11	8,774.46	8,783.11	47.23	46.60	-92.73	252.27	-1,144.82	1,261.42	1,167.93	93.49	13.492
8,900.00	8,883.11	8,874.46	8,883.11	47.76	47.13	-92.73	252.27	-1,144.82	1,261.42	1,166.87	94.56	13.340
9,000.00	8,983.11	8,974.46	8,983.11	48.29	47.67	-92.73	252.27	-1,144.82	1,261.42	1,165.80	95.63	13.191
9,100.00	9,083.11	9,074.46	9,083.11	48.82	48.20	-92.73	252.27	-1,144.82	1,261.42	1,164.73	96.69	13.046 CC
9,109.94	9,093.04	9,084.00	9,093.04	48.88	48.25	-92.17	252.27	-1,144.82	1,261.43	1,164.63	96.80	13.031
9,200.00	9,182.98	9,174.34	9,182.98	49.36	48.73	-92.31	252.27	-1,144.82	1,261.56	1,163.79	97.77	12.903
9,300.00	9,280.93	9,272.29	9,280.93	49.93	49.26	-93.08	252.27	-1,144.82	1,262.50	1,163.63	98.87	12.769 ES
9,400.00	9,374.01	9,365.37	9,374.01	50.51	49.75	-94.35	252.27	-1,144.82	1,265.04	1,165.10	99.94	12.658
9,500.00	9,459.39	9,450.74	9,459.39	51.11	50.21	-95.80	252.27	-1,144.82	1,270.47	1,169.54	100.93	12.587
9,600.00	9,534.47	9,525.82	9,534.47	51.72	50.61	-97.02	252.27	-1,144.82	1,280.36	1,178.56	101.81	12.576 SF
9,700.00	9,596.97	9,588.32	9,596.97	52.35	50.94	-97.59	252.27	-1,144.82	1,296.29	1,193.68	102.62	12.632
9,800.00	9,644.99	9,636.35	9,644.99	53.00	51.20	-97.10	252.27	-1,144.82	1,319.47	1,215.97	103.50	12.749
9,900.00	9,677.08	9,668.44	9,677.08	53.67	51.37	-95.22	252.27	-1,144.82	1,350.45	1,245.92	104.53	12.919
10,000.00	9,692.26	9,683.61	9,692.26	54.34	51.45	-91.73	252.27	-1,144.82	1,388.93	1,283.41	105.52	13.163
10,100.00	9,691.40	9,682.76	9,691.40	55.05	51.45	-88.73	252.27	-1,144.82	1,433.77	1,327.62	106.15	13.507

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17													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		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,200.00	9,687.32	9,678.67	9,687.32	55.83	51.43	-88.55	252.27	-1,144.82	1,483.99	1,377.09	106.90	13.882	
10,300.00	9,683.23	9,674.59	9,683.23	56.69	51.41	-88.36	252.27	-1,144.82	1,539.06	1,431.34	107.71	14.288	
10,400.00	9,679.15	9,670.50	9,679.15	57.61	51.38	-88.18	252.27	-1,144.82	1,598.48	1,489.88	108.60	14.719	
10,500.00	9,675.07	9,666.42	9,675.07	58.59	51.36	-87.99	252.27	-1,144.82	1,661.79	1,552.24	109.55	15.170	
10,600.00	9,670.98	9,662.33	9,670.98	59.64	51.34	-87.81	252.27	-1,144.82	1,728.56	1,618.01	110.56	15.635	
10,700.00	9,666.90	9,658.25	9,666.90	60.75	51.32	-87.62	252.27	-1,144.82	1,798.41	1,686.79	111.62	16.112	
10,800.00	9,662.81	9,654.17	9,662.81	61.92	51.30	-87.43	252.27	-1,144.82	1,870.99	1,758.24	112.74	16.595	
10,900.00	9,658.73	9,650.08	9,658.73	63.13	51.27	-87.25	252.27	-1,144.82	1,945.99	1,832.07	113.92	17.083	
11,000.00	9,654.64	9,646.00	9,654.64	64.40	51.25	-87.06	252.27	-1,144.82	2,023.14	1,908.01	115.14	17.572	
11,100.00	9,650.56	9,641.91	9,650.56	65.71	51.23	-86.88	252.27	-1,144.82	2,102.22	1,985.82	116.40	18.060	
11,200.00	9,646.47	9,637.83	9,646.47	67.07	51.21	-86.69	252.27	-1,144.82	2,183.00	2,065.29	117.71	18.546	
11,300.00	9,642.39	9,633.74	9,642.39	68.46	51.19	-86.51	252.27	-1,144.82	2,265.31	2,146.26	119.06	19.027	
11,400.00	9,638.30	9,629.66	9,638.30	69.90	51.17	-86.32	252.27	-1,144.82	2,348.99	2,228.55	120.44	19.503	
11,500.00	9,634.22	9,625.57	9,634.22	71.37	51.14	-86.14	252.27	-1,144.82	2,433.89	2,312.03	121.87	19.972	
11,600.00	9,630.13	9,621.49	9,630.13	72.88	51.12	-85.96	252.27	-1,144.82	2,519.90	2,396.58	123.32	20.434	
11,700.00	9,626.05	9,617.40	9,626.05	74.42	51.10	-85.77	252.27	-1,144.82	2,606.89	2,482.09	124.80	20.888	
11,800.00	9,621.96	9,613.32	9,621.96	75.99	51.08	-85.59	252.27	-1,144.82	2,694.79	2,568.47	126.32	21.334	
11,900.00	9,617.88	9,609.23	9,617.88	77.59	51.06	-85.40	252.27	-1,144.82	2,783.49	2,655.63	127.86	21.771	
12,000.00	9,613.79	9,605.15	9,613.79	79.21	51.03	-85.22	252.27	-1,144.82	2,872.93	2,743.51	129.42	22.198	
12,100.00	9,609.71	9,601.06	9,609.71	80.86	51.01	-85.03	252.27	-1,144.82	2,963.04	2,832.03	131.01	22.617	
12,200.00	9,605.63	9,596.98	9,605.63	82.54	50.99	-84.85	252.27	-1,144.82	3,053.76	2,921.14	132.62	23.027	
12,300.00	9,601.54	9,592.89	9,601.54	84.23	50.97	-84.67	252.27	-1,144.82	3,145.04	3,010.79	134.25	23.427	
12,400.00	9,597.71	9,588.06	9,597.71	85.95	50.95	-84.26	252.27	-1,144.82	3,236.83	3,100.59	136.24	23.758	
12,500.00	9,593.68	9,583.93	9,593.68	87.68	50.94	-83.01	252.27	-1,144.82	3,329.16	3,190.80	138.35	24.063	
12,600.00	9,589.97	9,580.33	9,589.97	89.42	50.95	-91.94	252.27	-1,144.82	3,421.91	3,281.82	140.09	24.427	
12,700.00	9,586.31	9,576.67	9,586.31	91.19	50.96	-92.00	252.27	-1,144.82	3,515.06	3,373.20	141.86	24.779	
12,800.00	9,582.66	9,573.01	9,582.66	92.97	50.96	-92.06	252.27	-1,144.82	3,608.58	3,464.93	143.64	25.122	
12,900.00	9,579.00	9,569.35	9,579.00	94.77	50.97	-92.12	252.27	-1,144.82	3,702.43	3,556.99	145.44	25.456	
13,000.00	9,575.34	9,565.69	9,575.34	96.58	50.98	-92.18	252.27	-1,144.82	3,796.60	3,649.34	147.26	25.782	
13,100.00	9,571.68	9,562.04	9,571.68	98.40	50.99	-92.24	252.27	-1,144.82	3,891.06	3,741.97	149.09	26.099	
13,200.00	9,568.02	9,558.38	9,568.02	100.24	50.99	-92.30	252.27	-1,144.82	3,985.78	3,834.85	150.93	26.408	
13,300.00	9,564.37	9,554.73	9,564.37	102.09	51.00	-92.37	252.27	-1,144.82	4,080.76	3,927.98	152.79	26.709	
13,400.00	9,560.71	9,551.07	9,560.71	103.96	51.01	-92.43	252.27	-1,144.82	4,175.98	4,021.32	154.65	27.002	
13,500.00	9,557.05	9,547.41	9,557.05	105.83	51.01	-92.49	252.27	-1,144.82	4,271.41	4,114.88	156.53	27.288	
13,600.00	9,553.39	9,543.75	9,553.39	107.72	51.02	-92.55	252.27	-1,144.82	4,367.05	4,208.62	158.42	27.566	
13,700.00	9,549.73	9,540.09	9,549.73	109.61	51.03	-92.61	252.27	-1,144.82	4,462.87	4,302.55	160.32	27.838	
13,800.00	9,546.07	9,536.43	9,546.07	111.52	51.04	-92.67	252.27	-1,144.82	4,558.88	4,396.65	162.23	28.102	
13,900.00	9,542.42	9,532.77	9,542.42	113.43	51.04	-92.73	252.27	-1,144.82	4,655.05	4,490.91	164.14	28.360	
14,000.00	9,538.76	9,529.11	9,538.76	115.36	51.05	-92.79	252.27	-1,144.82	4,751.38	4,585.32	166.07	28.611	
14,100.00	9,535.10	9,525.45	9,535.10	117.29	51.06	-92.85	252.27	-1,144.82	4,847.86	4,679.86	168.00	28.857	
14,200.00	9,531.44	9,521.80	9,531.44	119.23	51.06	-92.91	252.27	-1,144.82	4,944.48	4,774.54	169.94	29.096	
14,300.00	9,527.78	9,518.14	9,527.78	121.18	51.07	-92.97	252.27	-1,144.82	5,041.23	4,869.34	171.89	29.329	
14,400.00	9,524.13	9,514.48	9,524.13	123.13	51.08	-93.03	252.27	-1,144.82	5,138.10	4,964.26	173.84	29.557	
14,500.00	9,520.47	9,510.82	9,520.47	125.09	51.09	-93.10	252.27	-1,144.82	5,235.10	5,059.30	175.80	29.779	
14,600.00	9,516.81	9,507.16	9,516.81	127.06	51.09	-93.16	252.27	-1,144.82	5,332.20	5,154.43	177.77	29.996	
14,700.00	9,513.15	9,503.50	9,513.15	129.03	51.10	-93.22	252.27	-1,144.82	5,429.41	5,249.67	179.74	30.207	
14,800.00	9,509.49	9,500.84	9,509.49	131.01	51.11	-93.28	252.27	-1,144.82	5,526.71	5,345.00	181.72	30.414	
14,900.00	9,505.83	9,497.18	9,505.83	132.99	51.11	-93.34	252.27	-1,144.82	5,624.11	5,440.41	183.70	30.616	
15,000.00	9,502.17	9,493.52	9,502.17	134.98	51.12	-93.40	252.27	-1,144.82	5,721.60	5,535.92	185.69	30.813	
15,100.00	9,498.51	9,489.86	9,498.51	136.98	51.13	-93.46	252.27	-1,144.82	5,819.23	5,631.64	187.60	31.020	
15,200.00	9,494.85	9,486.20	9,494.85	138.97	51.14	-93.52	252.27	-1,144.82	5,917.17	5,727.59	189.58	31.212	
15,300.00	9,491.19	9,482.54	9,491.19	140.97	51.15	-93.58	252.27	-1,144.82	6,015.17	5,823.60	191.57	31.399	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17												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 +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,400.00	9,636.09	9,627.45	9,636.09	142.98	51.15	-94.39	252.27	-1,144.82	6,113.24	5,919.67	193.57	31.582	
15,500.00	9,637.61	9,628.96	9,637.61	144.98	51.16	-94.46	252.27	-1,144.82	6,211.37	6,015.80	195.57	31.760	
15,600.00	9,639.12	9,630.47	9,639.12	147.00	51.17	-94.53	252.27	-1,144.82	6,309.56	6,111.98	197.57	31.935	
15,700.00	9,640.63	9,631.99	9,640.63	149.01	51.18	-94.61	252.27	-1,144.82	6,407.80	6,208.22	199.58	32.106	
15,800.00	9,642.15	9,633.50	9,642.15	151.03	51.19	-94.68	252.27	-1,144.82	6,506.10	6,304.51	201.59	32.274	
15,900.00	9,643.66	9,635.01	9,643.66	153.06	51.19	-94.75	252.27	-1,144.82	6,604.44	6,400.84	203.60	32.438	
16,000.00	9,645.17	9,636.53	9,645.17	155.08	51.20	-94.82	252.27	-1,144.82	6,702.84	6,497.22	205.62	32.598	
16,100.00	9,646.69	9,638.04	9,646.69	157.11	51.21	-94.90	252.27	-1,144.82	6,801.28	6,593.64	207.64	32.756	
16,200.00	9,648.20	9,639.55	9,648.20	159.15	51.22	-94.97	252.27	-1,144.82	6,899.77	6,690.11	209.66	32.909	
16,300.00	9,649.71	9,641.07	9,649.71	161.18	51.23	-95.04	252.27	-1,144.82	6,998.30	6,786.61	211.68	33.060	
16,400.00	9,651.23	9,642.58	9,651.23	163.22	51.23	-95.12	252.27	-1,144.82	7,096.87	6,883.16	213.71	33.208	
16,500.00	9,652.74	9,644.09	9,652.74	165.27	51.24	-95.19	252.27	-1,144.82	7,195.48	6,979.74	215.74	33.353	
16,600.00	9,654.25	9,645.61	9,654.25	167.31	51.25	-95.26	252.27	-1,144.82	7,294.12	7,076.35	217.77	33.495	
16,700.00	9,655.77	9,647.12	9,655.77	169.36	51.26	-95.33	252.27	-1,144.82	7,392.81	7,173.00	219.80	33.634	
16,800.00	9,657.28	9,648.63	9,657.28	171.41	51.27	-95.41	252.27	-1,144.82	7,491.52	7,269.69	221.84	33.770	
16,900.00	9,658.79	9,650.15	9,658.79	173.47	51.27	-95.48	252.27	-1,144.82	7,590.27	7,366.40	223.87	33.904	
17,000.00	9,660.31	9,651.66	9,660.31	175.52	51.28	-95.55	252.27	-1,144.82	7,689.06	7,463.14	225.91	34.036	
17,100.00	9,661.82	9,653.17	9,661.82	177.58	51.29	-95.62	252.27	-1,144.82	7,787.87	7,559.92	227.95	34.164	
17,200.00	9,663.33	9,654.69	9,663.33	179.64	51.30	-95.70	252.27	-1,144.82	7,886.71	7,656.72	229.99	34.291	
17,300.00	9,664.85	9,656.20	9,664.85	181.70	51.31	-95.77	252.27	-1,144.82	7,985.58	7,753.55	232.04	34.415	
17,400.00	9,666.36	9,657.71	9,666.36	183.77	51.32	-95.84	252.27	-1,144.82	8,084.48	7,850.40	234.08	34.537	
17,500.00	9,667.87	9,659.23	9,667.87	185.83	51.32	-95.91	252.27	-1,144.82	8,183.41	7,947.28	236.13	34.657	
17,600.00	9,669.39	9,660.74	9,669.39	187.90	51.33	-95.99	252.27	-1,144.82	8,282.36	8,044.18	238.18	34.774	
17,700.00	9,670.90	9,662.25	9,670.90	189.97	51.34	-96.06	252.27	-1,144.82	8,381.34	8,141.11	240.22	34.890	
17,800.00	9,672.44	9,663.80	9,672.44	192.04	51.35	-96.58	252.27	-1,144.82	8,480.33	8,238.21	242.13	35.024	
17,900.00	9,674.07	9,665.42	9,674.07	194.12	51.36	-96.66	252.27	-1,144.82	8,579.35	8,335.18	244.17	35.136	
18,000.00	9,675.70	9,667.05	9,675.70	196.19	51.37	-96.74	252.27	-1,144.82	8,678.39	8,432.17	246.22	35.246	
18,100.00	9,677.33	9,668.68	9,677.33	198.27	51.37	-96.82	252.27	-1,144.82	8,777.45	8,529.18	248.27	35.355	
18,200.00	9,678.96	9,670.31	9,678.96	200.35	51.38	-96.89	252.27	-1,144.82	8,876.53	8,626.21	250.32	35.461	
18,300.00	9,680.59	9,671.94	9,680.59	202.43	51.39	-96.97	252.27	-1,144.82	8,975.63	8,723.27	252.37	35.566	
18,400.00	9,682.22	9,673.57	9,682.22	204.51	51.40	-97.05	252.27	-1,144.82	9,074.76	8,820.34	254.42	35.669	
18,500.00	9,683.84	9,675.20	9,683.84	206.60	51.41	-97.13	252.27	-1,144.82	9,173.90	8,917.42	256.47	35.770	
18,600.00	9,685.47	9,676.83	9,685.47	208.68	51.42	-97.20	252.27	-1,144.82	9,273.05	9,014.53	258.52	35.869	
18,700.00	9,687.10	9,678.46	9,687.10	210.77	51.43	-97.28	252.27	-1,144.82	9,372.23	9,111.65	260.57	35.967	
18,800.00	9,688.73	9,680.08	9,688.73	212.86	51.43	-97.36	252.27	-1,144.82	9,471.42	9,208.79	262.63	36.064	
18,900.00	9,690.36	9,681.71	9,690.36	214.94	51.44	-97.44	252.27	-1,144.82	9,570.63	9,305.95	264.68	36.159	
19,000.00	9,691.99	9,683.34	9,691.99	217.03	51.45	-97.51	252.27	-1,144.82	9,669.86	9,403.12	266.74	36.253	
19,100.00	9,693.62	9,684.97	9,693.62	219.13	51.46	-97.59	252.27	-1,144.82	9,769.10	9,500.31	268.79	36.345	
19,200.00	9,695.25	9,686.60	9,695.25	221.22	51.47	-97.67	252.27	-1,144.82	9,868.35	9,597.51	270.84	36.436	
19,300.00	9,696.87	9,688.23	9,696.87	223.31	51.48	-97.75	252.27	-1,144.82	9,967.62	9,694.72	272.90	36.525	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM, 9445-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	19.00	0.00	0.00	-79.44	252.27	-1,352.86	1,376.31				
100.00	100.00	81.00	100.00	0.19	0.16	-79.44	252.27	-1,352.86	1,376.18	1,375.83	0.35	3,927.773	
200.00	200.00	181.00	200.00	0.73	0.63	-79.44	252.27	-1,352.86	1,376.18	1,374.82	1.36	1,011.597	
300.00	300.00	281.00	300.00	1.27	1.17	-79.44	252.27	-1,352.86	1,376.18	1,373.74	2.44	564.976	
400.00	400.00	381.00	400.00	1.81	1.70	-79.44	252.27	-1,352.86	1,376.18	1,372.66	3.51	391.936	
500.00	500.00	481.00	500.00	2.34	2.24	-79.44	252.27	-1,352.86	1,376.18	1,371.59	4.59	300.040	
600.00	600.00	581.00	600.00	2.88	2.78	-79.44	252.27	-1,352.86	1,376.18	1,370.51	5.66	243.052	
700.00	699.98	680.98	699.98	3.42	3.32	-99.74	252.27	-1,352.86	1,376.47	1,369.73	6.74	204.344	
800.00	799.84	780.84	799.84	3.96	3.85	-99.94	252.27	-1,352.86	1,377.37	1,369.56	7.81	176.375	
900.00	899.45	880.45	899.45	4.50	4.39	-100.26	252.27	-1,352.86	1,378.90	1,370.01	8.89	155.187	
1,000.00	998.90	979.90	998.90	5.05	4.92	-100.69	252.27	-1,352.86	1,380.81	1,370.84	9.97	138.536	
1,100.00	1,098.36	1,079.36	1,098.36	5.60	5.46	-101.11	252.27	-1,352.86	1,382.79	1,371.74	11.05	125.098	
1,200.00	1,197.81	1,178.81	1,197.81	6.15	5.99	-101.53	252.27	-1,352.86	1,384.86	1,372.71	12.14	114.037	
1,300.00	1,297.26	1,278.26	1,297.26	6.71	6.53	-101.95	252.27	-1,352.86	1,386.99	1,373.76	13.24	104.784	
1,400.00	1,396.72	1,377.72	1,396.72	7.27	7.06	-102.37	252.27	-1,352.86	1,389.20	1,374.87	14.33	96.934	
1,500.00	1,496.17	1,477.17	1,496.17	7.84	7.60	-102.79	252.27	-1,352.86	1,391.49	1,376.06	15.43	90.195	
1,600.00	1,595.62	1,576.62	1,595.62	8.40	8.13	-103.20	252.27	-1,352.86	1,393.85	1,377.33	16.53	84.348	
1,700.00	1,695.07	1,676.07	1,695.07	8.97	8.67	-103.62	252.27	-1,352.86	1,396.29	1,378.67	17.62	79.229	
1,800.00	1,794.53	1,775.53	1,794.53	9.53	9.20	-104.03	252.27	-1,352.86	1,398.80	1,380.08	18.72	74.713	
1,900.00	1,893.98	1,874.98	1,893.98	10.10	9.74	-104.45	252.27	-1,352.86	1,401.38	1,381.56	19.82	70.699	
2,000.00	1,993.43	1,974.43	1,993.43	10.67	10.27	-104.86	252.27	-1,352.86	1,404.04	1,383.12	20.92	67.109	
2,100.00	2,092.89	2,073.89	2,092.89	11.24	10.81	-105.27	252.27	-1,352.86	1,406.77	1,384.74	22.02	63.880	
2,200.00	2,192.34	2,173.34	2,192.34	11.81	11.34	-105.67	252.27	-1,352.86	1,409.57	1,386.44	23.12	60.961	
2,300.00	2,291.79	2,272.79	2,291.79	12.38	11.99	-106.17	252.27	-1,352.51	1,412.26	1,387.93	24.34	58.034	
2,400.00	2,391.24	2,490.57	2,509.29	12.95	13.00	-106.94	252.27	-1,342.76	1,410.26	1,384.35	25.90	54.442	
2,500.00	2,490.70	2,619.05	2,637.13	13.52	13.67	-107.43	252.27	-1,329.95	1,403.19	1,376.05	27.13	51.718	
2,600.00	2,590.15	2,718.34	2,735.87	14.09	14.19	-107.82	252.27	-1,319.57	1,395.86	1,367.65	28.21	49.481	
2,700.00	2,689.60	2,817.82	2,834.61	14.66	14.72	-108.21	252.27	-1,309.19	1,388.60	1,359.31	29.29	47.407	
2,800.00	2,789.06	2,916.91	2,933.35	15.23	15.25	-108.60	252.27	-1,298.81	1,381.41	1,351.04	30.37	45.480	
2,900.00	2,888.51	3,016.20	3,032.09	15.80	15.79	-109.00	252.27	-1,288.43	1,374.28	1,342.82	31.46	43.685	
3,000.00	2,987.96	3,115.48	3,130.84	16.37	16.32	-109.40	252.27	-1,278.05	1,367.22	1,334.67	32.55	42.010	
3,100.00	3,087.41	3,214.77	3,229.58	16.94	16.86	-109.80	252.27	-1,267.68	1,360.23	1,326.59	33.63	40.443	
3,200.00	3,186.87	3,314.05	3,328.32	17.51	17.40	-110.21	252.27	-1,257.30	1,353.30	1,318.58	34.72	38.975	
3,300.00	3,286.32	3,413.34	3,427.06	18.08	17.95	-110.63	252.27	-1,246.92	1,346.45	1,310.64	35.81	37.597	
3,400.00	3,385.77	3,512.62	3,525.80	18.66	18.49	-111.04	252.27	-1,236.54	1,339.67	1,302.76	36.90	36.301	
3,500.00	3,485.23	3,611.91	3,624.55	19.23	19.04	-111.47	252.27	-1,226.16	1,332.95	1,294.96	38.00	35.081	
3,600.00	3,584.68	3,711.20	3,723.29	19.80	19.59	-111.89	252.27	-1,215.79	1,326.32	1,287.23	39.09	33.930	
3,700.00	3,684.13	3,810.48	3,822.03	20.37	20.14	-112.32	252.27	-1,205.41	1,319.75	1,279.57	40.18	32.843	
3,800.00	3,783.59	3,909.77	3,920.77	20.94	20.69	-112.74	252.27	-1,195.03	1,313.26	1,271.98	41.28	31.814	
3,900.00	3,883.24	4,009.18	4,019.63	21.50	21.24	-112.96	252.27	-1,184.64	1,305.99	1,263.62	42.36	30.828	
4,000.00	3,983.12	4,108.68	4,118.60	22.04	21.80	-113.01	252.27	-1,174.24	1,297.39	1,253.97	43.42	29.878	
4,100.00	4,083.11	4,208.17	4,217.54	22.56	22.35	-92.69	252.27	-1,163.84	1,287.46	1,243.00	44.46	28.956	
4,200.00	4,183.11	4,286.78	4,295.76	23.07	22.79	-92.71	252.27	-1,156.00	1,277.57	1,232.18	45.40	28.143	
4,300.00	4,283.11	4,355.83	4,364.60	23.58	23.17	-92.72	252.27	-1,150.73	1,269.95	1,223.68	46.28	27.442	
4,400.00	4,383.11	4,425.09	4,433.77	24.10	23.54	-92.73	252.27	-1,147.12	1,264.74	1,217.58	47.16	26.818	
4,500.00	4,483.11	4,500.00	4,508.65	24.61	23.94	-92.73	252.27	-1,145.10	1,261.96	1,213.89	48.07	26.250	
4,571.08	4,554.19	4,545.54	4,554.19	24.98	24.18	-92.73	252.27	-1,144.82	1,261.42	1,212.74	48.68	25.911	
4,600.00	4,583.11	4,574.46	4,583.11	25.13	24.33	-92.73	252.27	-1,144.82	1,261.42	1,212.44	48.98	25.752	
4,700.00	4,683.11	4,674.46	4,683.11	25.64	24.86	-92.73	252.27	-1,144.82	1,261.42	1,211.39	50.03	25.213	
4,800.00	4,783.11	4,774.46	4,783.11	26.16	25.38	-92.73	252.27	-1,144.82	1,261.42	1,210.35	51.08	24.696	
4,900.00	4,883.11	4,874.46	4,883.11	26.68	25.90	-92.73	252.27	-1,144.82	1,261.42	1,209.30	52.13	24.199	
5,000.00	4,983.11	4,974.46	4,983.11	27.20	26.43	-92.73	252.27	-1,144.82	1,261.42	1,208.25	53.18	23.722	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM, 9445-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
5,100.00	5,083.11	5,074.46	5,083.11	27.72	26.96	-92.73	252.27	-1,144.82	1,261.42	1,207.20	54.23	23.262	
5,200.00	5,183.11	5,174.46	5,183.11	28.24	27.48	-92.73	252.27	-1,144.82	1,261.42	1,206.15	55.28	22.820	
5,300.00	5,283.11	5,274.46	5,283.11	28.76	28.01	-92.73	252.27	-1,144.82	1,261.42	1,205.09	56.33	22.394	
5,400.00	5,383.11	5,374.46	5,383.11	29.28	28.53	-92.73	252.27	-1,144.82	1,261.42	1,204.04	57.38	21.983	
5,500.00	5,483.11	5,474.46	5,483.11	29.80	29.06	-92.73	252.27	-1,144.82	1,261.42	1,202.99	58.44	21.586	
5,600.00	5,583.11	5,574.46	5,583.11	30.32	29.59	-92.73	252.27	-1,144.82	1,261.42	1,201.93	59.49	21.203	
5,700.00	5,683.11	5,674.46	5,683.11	30.85	30.12	-92.73	252.27	-1,144.82	1,261.42	1,200.88	60.55	20.834	
5,800.00	5,783.11	5,774.46	5,783.11	31.37	30.65	-92.73	252.27	-1,144.82	1,261.42	1,199.82	61.60	20.477	
5,900.00	5,883.11	5,874.46	5,883.11	31.90	31.18	-92.73	252.27	-1,144.82	1,261.42	1,198.76	62.66	20.131	
6,000.00	5,983.11	5,974.46	5,983.11	32.42	31.70	-92.73	252.27	-1,144.82	1,261.42	1,197.71	63.72	19.797	
6,100.00	6,083.11	6,074.46	6,083.11	32.95	32.23	-92.73	252.27	-1,144.82	1,261.42	1,196.65	64.78	19.474	
6,200.00	6,183.11	6,174.46	6,183.11	33.47	32.76	-92.73	252.27	-1,144.82	1,261.42	1,195.59	65.83	19.161	
6,300.00	6,283.11	6,274.46	6,283.11	34.00	33.29	-92.73	252.27	-1,144.82	1,261.42	1,194.53	66.89	18.857	
6,400.00	6,383.11	6,374.46	6,383.11	34.52	33.82	-92.73	252.27	-1,144.82	1,261.42	1,193.47	67.95	18.563	
6,500.00	6,483.11	6,474.46	6,483.11	35.05	34.35	-92.73	252.27	-1,144.82	1,261.42	1,192.41	69.01	18.278	
6,600.00	6,583.11	6,574.46	6,583.11	35.58	34.88	-92.73	252.27	-1,144.82	1,261.42	1,191.35	70.07	18.002	
6,700.00	6,683.11	6,674.46	6,683.11	36.10	35.41	-92.73	252.27	-1,144.82	1,261.42	1,190.29	71.13	17.733	
6,800.00	6,783.11	6,774.46	6,783.11	36.63	35.95	-92.73	252.27	-1,144.82	1,261.42	1,189.23	72.20	17.472	
6,900.00	6,883.11	6,874.46	6,883.11	37.16	36.48	-92.73	252.27	-1,144.82	1,261.42	1,188.17	73.26	17.219	
7,000.00	6,983.11	6,974.46	6,983.11	37.69	37.01	-92.73	252.27	-1,144.82	1,261.42	1,187.10	74.32	16.973	
7,100.00	7,083.11	7,074.46	7,083.11	38.21	37.54	-92.73	252.27	-1,144.82	1,261.42	1,186.04	75.38	16.734	
7,200.00	7,183.11	7,174.46	7,183.11	38.74	38.07	-92.73	252.27	-1,144.82	1,261.42	1,184.98	76.45	16.501	
7,300.00	7,283.11	7,274.46	7,283.11	39.27	38.60	-92.73	252.27	-1,144.82	1,261.42	1,183.92	77.51	16.275	
7,400.00	7,383.11	7,374.46	7,383.11	39.80	39.14	-92.73	252.27	-1,144.82	1,261.42	1,182.85	78.57	16.054	
7,500.00	7,483.11	7,474.46	7,483.11	40.33	39.67	-92.73	252.27	-1,144.82	1,261.42	1,181.79	79.64	15.840	
7,600.00	7,583.11	7,574.46	7,583.11	40.86	40.20	-92.73	252.27	-1,144.82	1,261.42	1,180.72	80.70	15.631	
7,700.00	7,683.11	7,674.46	7,683.11	41.39	40.73	-92.73	252.27	-1,144.82	1,261.42	1,179.66	81.76	15.427	
7,800.00	7,783.11	7,774.46	7,783.11	41.92	41.26	-92.73	252.27	-1,144.82	1,261.42	1,178.59	82.83	15.229	
7,900.00	7,883.11	7,874.46	7,883.11	42.45	41.80	-92.73	252.27	-1,144.82	1,261.42	1,177.53	83.89	15.036	
8,000.00	7,983.11	7,974.46	7,983.11	42.98	42.33	-92.73	252.27	-1,144.82	1,261.42	1,176.46	84.96	14.847	
8,100.00	8,083.11	8,074.46	8,083.11	43.51	42.86	-92.73	252.27	-1,144.82	1,261.42	1,175.40	86.03	14.663	
8,200.00	8,183.11	8,174.46	8,183.11	44.04	43.40	-92.73	252.27	-1,144.82	1,261.42	1,174.33	87.09	14.484	
8,300.00	8,283.11	8,274.46	8,283.11	44.57	43.93	-92.73	252.27	-1,144.82	1,261.42	1,173.27	88.16	14.309	
8,400.00	8,383.11	8,374.46	8,383.11	45.10	44.46	-92.73	252.27	-1,144.82	1,261.42	1,172.20	89.22	14.138	
8,500.00	8,483.11	8,474.46	8,483.11	45.63	45.00	-92.73	252.27	-1,144.82	1,261.42	1,171.13	90.29	13.971	
8,600.00	8,583.11	8,574.46	8,583.11	46.17	45.53	-92.73	252.27	-1,144.82	1,261.42	1,170.07	91.36	13.808	
8,700.00	8,683.11	8,674.46	8,683.11	46.70	46.06	-92.73	252.27	-1,144.82	1,261.42	1,169.00	92.42	13.648	
8,800.00	8,783.11	8,774.46	8,783.11	47.23	46.60	-92.73	252.27	-1,144.82	1,261.42	1,167.93	93.49	13.492	
8,900.00	8,883.11	8,874.46	8,883.11	47.76	47.13	-92.73	252.27	-1,144.82	1,261.42	1,166.87	94.56	13.340	
9,000.00	8,983.11	8,974.46	8,983.11	48.29	47.67	-92.73	252.27	-1,144.82	1,261.42	1,165.80	95.63	13.191	
9,100.00	9,083.11	9,074.46	9,083.11	48.82	48.20	-92.73	252.27	-1,144.82	1,261.42	1,164.73	96.69	13.046 CC	
9,109.94	9,093.04	9,084.40	9,093.04	48.88	48.25	-92.17	252.27	-1,144.82	1,261.43	1,164.63	96.80	13.031	
9,200.00	9,182.98	9,174.34	9,182.98	49.36	48.73	-92.31	252.27	-1,144.82	1,261.56	1,163.79	97.77	12.903	
9,300.00	9,280.93	9,272.29	9,280.93	49.93	49.26	-93.08	252.27	-1,144.82	1,262.50	1,163.63	98.87	12.769	
9,400.00	9,374.01	9,365.37	9,374.01	50.51	49.75	-94.35	252.27	-1,144.82	1,265.04	1,165.10	99.94	12.658	
9,500.00	9,459.39	9,453.05	9,461.70	51.11	50.19	-95.85	252.33	-1,144.82	1,270.46	1,169.55	100.92	12.589	
9,600.00	9,534.47	9,525.81	9,583.31	51.72	50.20	-98.14	267.20	-1,144.96	1,278.76	1,177.46	101.30	12.623	
9,700.00	9,596.97	9,724.45	9,722.12	52.35	50.24	-100.55	319.21	-1,145.47	1,288.41	1,186.94	101.48	12.697	
9,800.00	9,644.99	9,908.20	9,867.93	53.00	50.37	-102.94	429.72	-1,146.55	1,297.59	1,196.09	101.49	12.785	
9,900.00	9,677.08	10,129.46	9,986.36	53.67	50.75	-104.64	614.99	-1,148.36	1,303.57	1,201.73	101.84	12.800	
10,000.00	9,692.26	10,366.32	10,025.91	54.34	51.69	-104.77	846.80	-1,150.62	1,303.91	1,200.62	103.29	12.623	
10,072.51	9,694.20	10,438.68	10,023.50	54.86	52.10	-104.65	919.12	-1,151.32	1,302.79	1,198.55	104.24	12.498	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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													Offset Site Error: 0.00 usft	
HH SO 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17														
Survey Program: 0-MWD+HDGM, 9445-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		
10,100.00	9,691.40	10,466.23	10,022.58	55.05	52.26	-104.73	946.65	-1,151.59	1,303.27	1,198.70	104.57	12.463		
10,200.00	9,687.32	10,566.22	10,019.25	55.83	52.91	-104.76	1,046.58	-1,152.57	1,303.45	1,197.48	105.96	12.301		
10,300.00	9,683.23	10,666.22	10,015.91	56.69	53.64	-104.79	1,146.52	-1,153.54	1,303.63	1,196.12	107.50	12.126		
10,400.00	9,679.15	10,766.22	10,012.58	57.61	54.44	-104.83	1,246.46	-1,154.52	1,303.81	1,194.62	109.19	11.941		
10,500.00	9,675.07	10,866.22	10,009.24	58.59	55.32	-104.86	1,346.39	-1,155.49	1,303.99	1,192.99	111.00	11.748		
10,600.00	9,670.98	10,966.21	10,005.91	59.64	56.26	-104.89	1,446.33	-1,156.47	1,304.17	1,191.23	112.94	11.547		
10,700.00	9,666.90	11,066.21	10,002.58	60.75	57.28	-104.92	1,546.27	-1,157.44	1,304.35	1,189.34	115.01	11.341		
10,800.00	9,662.81	11,166.21	9,999.24	61.92	58.35	-104.95	1,646.20	-1,158.42	1,304.54	1,187.35	117.19	11.132		
10,900.00	9,658.73	11,266.21	9,995.91	63.13	59.49	-104.99	1,746.14	-1,159.39	1,304.72	1,185.24	119.48	10.920		
11,000.00	9,654.64	11,366.20	9,992.57	64.40	60.68	-105.02	1,846.08	-1,160.37	1,304.90	1,183.03	121.87	10.708		
11,100.00	9,650.56	11,466.20	9,989.24	65.71	61.92	-105.05	1,946.02	-1,161.34	1,305.08	1,180.73	124.35	10.495		
11,200.00	9,646.47	11,566.20	9,985.90	67.07	63.22	-105.08	2,045.95	-1,162.32	1,305.27	1,178.34	126.93	10.283		
11,300.00	9,642.39	11,666.19	9,982.57	68.46	64.56	-105.11	2,145.89	-1,163.29	1,305.45	1,175.86	129.59	10.073		
11,400.00	9,638.30	11,766.19	9,979.24	69.90	65.94	-105.15	2,245.83	-1,164.27	1,305.64	1,173.30	132.34	9.866		
11,500.00	9,634.22	11,866.19	9,975.90	71.37	67.37	-105.18	2,345.76	-1,165.24	1,305.82	1,170.67	135.16	9.662		
11,600.00	9,630.13	11,966.19	9,972.57	72.88	68.83	-105.21	2,445.70	-1,166.22	1,306.01	1,167.96	138.04	9.461		
11,700.00	9,626.05	12,066.18	9,969.23	74.42	70.33	-105.24	2,545.64	-1,167.19	1,306.19	1,165.20	141.00	9.264		
11,800.00	9,621.96	12,165.85	9,965.91	75.99	71.85	-105.27	2,645.24	-1,168.17	1,306.38	1,162.38	144.00	9.072		
11,900.00	9,617.88	12,261.46	9,963.79	77.59	73.35	-105.35	2,740.83	-1,169.10	1,306.86	1,159.87	146.99	8.891		
12,000.00	9,613.79	12,361.44	9,961.80	79.21	74.94	-105.44	2,840.78	-1,170.08	1,307.41	1,157.33	150.08	8.711		
12,100.00	9,609.71	12,461.42	9,959.82	80.86	76.56	-105.53	2,940.73	-1,171.06	1,307.96	1,154.74	153.23	8.536		
12,200.00	9,605.63	12,561.40	9,957.84	82.54	78.21	-105.61	3,040.69	-1,172.04	1,308.52	1,152.10	156.42	8.366		
12,300.00	9,601.54	12,661.37	9,955.85	84.23	79.88	-105.70	3,140.64	-1,173.02	1,309.08	1,149.43	159.65	8.200		
12,400.00	9,597.71	12,761.36	9,953.87	85.95	81.57	-105.78	3,240.60	-1,174.00	1,309.57	1,146.66	162.91	8.038		
12,500.00	9,593.68	12,861.35	9,951.89	87.68	83.29	-105.74	3,340.56	-1,174.98	1,309.30	1,143.03	166.27	7.875		
12,600.00	9,597.97	12,961.29	9,949.90	89.42	85.02	-105.60	3,440.49	-1,175.95	1,308.40	1,138.66	169.74	7.708		
12,700.00	9,599.31	13,061.24	9,947.92	91.19	86.78	-105.46	3,540.41	-1,176.93	1,307.49	1,134.23	173.26	7.546		
12,800.00	9,600.66	13,161.18	9,945.94	92.97	88.55	-105.32	3,640.33	-1,177.91	1,306.59	1,129.78	176.82	7.389		
12,900.00	9,602.00	13,261.13	9,943.95	94.77	90.34	-105.18	3,740.25	-1,178.89	1,305.70	1,125.29	180.41	7.237		
13,000.00	9,603.34	13,361.07	9,941.97	96.58	92.14	-105.04	3,840.17	-1,179.87	1,304.82	1,120.79	184.03	7.090		
13,100.00	9,604.68	13,461.02	9,939.99	98.40	93.96	-104.90	3,940.09	-1,180.85	1,303.95	1,116.26	187.68	6.948		
13,200.00	9,606.02	13,560.96	9,938.01	100.24	95.80	-104.75	4,040.01	-1,181.83	1,303.08	1,111.71	191.37	6.809		
13,300.00	9,607.37	13,660.91	9,936.02	102.09	97.64	-104.61	4,139.93	-1,182.81	1,302.22	1,107.14	195.08	6.675		
13,400.00	9,608.71	13,760.85	9,934.04	103.96	99.50	-104.47	4,239.85	-1,183.78	1,301.37	1,102.56	198.81	6.546		
13,500.00	9,610.05	13,860.79	9,932.06	105.83	101.38	-104.33	4,339.77	-1,184.76	1,300.52	1,097.95	202.57	6.420		
13,600.00	9,611.39	13,960.74	9,930.07	107.72	103.26	-104.19	4,439.69	-1,185.74	1,299.69	1,093.33	206.36	6.298		
13,700.00	9,612.73	14,060.68	9,928.09	109.61	105.15	-104.05	4,539.61	-1,186.72	1,298.86	1,088.70	210.16	6.180		
13,800.00	9,614.07	14,160.63	9,926.11	111.52	107.06	-103.90	4,639.53	-1,187.70	1,298.04	1,084.05	213.99	6.066		
13,900.00	9,615.42	14,260.57	9,924.13	113.43	108.97	-103.76	4,739.45	-1,188.68	1,297.23	1,079.39	217.84	5.955		
14,000.00	9,616.76	14,360.52	9,922.14	115.36	110.89	-103.62	4,839.37	-1,189.66	1,296.43	1,074.72	221.71	5.847		
14,100.00	9,618.10	14,461.41	9,921.56	117.29	112.65	-103.54	4,930.25	-1,190.55	1,295.96	1,070.58	225.38	5.750		
14,112.60	9,618.27	14,462.77	9,921.69	117.53	112.87	-103.54	4,941.61	-1,190.67	1,295.95	1,070.12	225.83	5.738		
14,200.00	9,619.44	14,541.71	9,923.83	119.23	114.40	-103.59	5,020.52	-1,191.46	1,296.24	1,067.27	228.96	5.661		
14,300.00	9,620.78	14,641.67	9,927.89	121.18	116.34	-103.70	5,120.39	-1,192.47	1,296.89	1,064.20	232.70	5.573		
14,400.00	9,622.13	14,741.64	9,931.94	123.13	118.29	-103.82	5,220.27	-1,193.48	1,297.56	1,061.11	236.44	5.488		
14,500.00	9,623.47	14,841.60	9,935.99	125.09	120.25	-103.94	5,320.14	-1,194.49	1,298.22	1,058.03	240.20	5.405		
14,600.00	9,624.81	14,941.56	9,940.05	127.06	122.21	-104.05	5,420.02	-1,195.50	1,298.90	1,054.93	243.96	5.324		
14,700.00	9,626.15	15,041.53	9,944.10	129.03	124.18	-104.17	5,519.89	-1,196.52	1,299.57	1,051.84	247.73	5.246		
14,800.00	9,627.49	15,141.49	9,948.16	131.01	126.16	-104.28	5,619.77	-1,197.53	1,300.26	1,048.74	251.52	5.170		
14,900.00	9,628.84	15,241.45	9,952.21	132.99	128.14	-104.40	5,719.65	-1,198.54	1,300.95	1,045.64	255.31	5.096		
15,000.00	9,630.18	15,341.42	9,956.26	134.98	130.12	-104.52	5,819.52	-1,199.55	1,301.64	1,042.54	259.10	5.024		
15,100.00	9,631.55	15,444.75	9,960.43	136.98	132.18	-104.64	5,922.76	-1,200.58	1,302.57	1,039.57	263.00	4.953		

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM, 9445-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
15,200.00	9,633.07	15,568.35	9,962.96	138.97	134.65	-104.67	6,046.33	-1,200.57	1,302.98	1,035.63	267.35	4.874	
15,300.00	9,634.58	15,668.35	9,964.23	140.97	136.65	-104.66	6,146.32	-1,200.17	1,302.90	1,031.63	271.27	4.803	
15,400.00	9,636.09	15,768.35	9,965.51	142.98	138.66	-104.65	6,246.31	-1,199.77	1,302.82	1,027.62	275.20	4.734	
15,500.00	9,637.61	15,868.35	9,966.78	144.98	140.67	-104.64	6,346.30	-1,199.37	1,302.74	1,023.60	279.14	4.667	
15,600.00	9,639.12	15,968.35	9,968.05	147.00	142.68	-104.63	6,446.29	-1,198.97	1,302.65	1,019.57	283.08	4.602	
15,700.00	9,640.63	16,068.34	9,969.33	149.01	144.70	-104.62	6,546.29	-1,198.57	1,302.57	1,015.53	287.04	4.538	
15,800.00	9,642.15	16,168.34	9,970.60	151.03	146.72	-104.61	6,646.28	-1,198.17	1,302.49	1,011.49	291.00	4.476	
15,900.00	9,643.66	16,268.34	9,971.87	153.06	148.75	-104.60	6,746.27	-1,197.77	1,302.41	1,007.44	294.97	4.415	
16,000.00	9,645.17	16,368.34	9,973.15	155.08	150.78	-104.59	6,846.26	-1,197.37	1,302.33	1,003.38	298.95	4.356	
16,100.00	9,646.69	16,468.34	9,974.42	157.11	152.81	-104.58	6,946.25	-1,196.97	1,302.24	999.31	302.93	4.299	
16,200.00	9,648.20	16,568.34	9,975.69	159.15	154.85	-104.57	7,046.24	-1,196.57	1,302.16	995.24	306.92	4.243	
16,300.00	9,649.71	16,668.34	9,976.97	161.18	156.89	-104.56	7,146.23	-1,196.17	1,302.08	991.16	310.92	4.188	
16,400.00	9,651.23	16,768.34	9,978.24	163.22	158.93	-104.55	7,246.22	-1,195.77	1,302.00	987.08	314.92	4.134	
16,500.00	9,652.74	16,868.34	9,979.52	165.27	160.98	-104.54	7,346.21	-1,195.37	1,301.92	982.99	318.93	4.082	
16,600.00	9,654.25	16,968.34	9,980.79	167.31	163.02	-104.53	7,446.20	-1,194.97	1,301.83	978.89	322.94	4.031	
16,700.00	9,655.77	17,068.34	9,982.06	169.36	165.08	-104.52	7,546.19	-1,194.57	1,301.75	974.79	326.96	3.981	
16,781.84	9,657.00	17,149.30	9,983.10	171.04	166.74	-104.51	7,627.15	-1,194.24	1,301.69	971.45	330.23	3.942	
16,800.00	9,657.28	17,165.50	9,983.40	171.41	167.07	-104.51	7,643.34	-1,194.18	1,301.70	970.78	330.92	3.934	
16,900.00	9,658.79	17,261.93	9,986.25	173.47	169.05	-104.57	7,739.73	-1,193.82	1,302.07	967.26	334.80	3.889	
17,000.00	9,660.31	17,361.92	9,989.37	175.52	171.11	-104.64	7,839.67	-1,193.45	1,302.48	963.73	338.75	3.845	
17,100.00	9,661.82	17,461.91	9,992.49	177.58	173.17	-104.71	7,939.61	-1,193.08	1,302.89	960.19	342.70	3.802	
17,200.00	9,663.33	17,561.89	9,995.61	179.64	175.23	-104.78	8,039.54	-1,192.71	1,303.31	956.66	346.65	3.760	
17,300.00	9,664.85	17,661.88	9,998.74	181.70	177.29	-104.84	8,139.48	-1,192.34	1,303.73	953.12	350.61	3.718	
17,400.00	9,666.36	17,761.87	10,001.86	183.77	179.35	-104.91	8,239.42	-1,191.97	1,304.15	949.58	354.56	3.678	
17,500.00	9,667.87	17,861.86	10,004.98	185.83	181.42	-104.98	8,339.36	-1,191.59	1,304.57	946.05	358.52	3.639	
17,600.00	9,669.39	17,961.84	10,008.10	187.90	183.49	-105.05	8,439.29	-1,191.22	1,304.99	942.51	362.48	3.600	
17,700.00	9,670.90	18,061.83	10,011.22	189.97	185.56	-105.12	8,539.23	-1,190.85	1,305.42	938.97	366.44	3.562	
17,800.00	9,672.44	18,161.82	10,014.34	192.04	187.64	-105.18	8,639.17	-1,190.48	1,305.83	935.42	370.40	3.525	
17,900.00	9,674.07	18,261.81	10,017.46	194.12	189.71	-105.25	8,739.11	-1,190.11	1,306.20	931.83	374.37	3.489	
18,000.00	9,675.70	18,361.79	10,020.58	196.19	191.79	-105.31	8,839.05	-1,189.74	1,306.58	928.23	378.35	3.453	
18,100.00	9,677.33	18,461.78	10,023.70	198.27	193.86	-105.37	8,938.99	-1,189.37	1,306.95	924.63	382.32	3.418	
18,200.00	9,678.96	18,561.77	10,026.82	200.35	195.94	-105.44	9,038.93	-1,189.00	1,307.33	921.04	386.29	3.384	
18,300.00	9,680.59	18,661.76	10,029.94	202.43	198.02	-105.50	9,138.87	-1,188.63	1,307.71	917.44	390.27	3.351	
18,400.00	9,682.22	18,761.75	10,033.06	204.51	200.11	-105.56	9,238.81	-1,188.26	1,308.09	913.85	394.24	3.318	
18,500.00	9,683.84	18,861.74	10,036.18	206.60	202.19	-105.63	9,338.75	-1,187.89	1,308.47	910.25	398.22	3.286	
18,600.00	9,685.47	18,961.73	10,039.30	208.68	204.28	-105.69	9,438.69	-1,187.52	1,308.86	906.66	402.20	3.254	
18,700.00	9,687.10	19,068.20	10,042.15	210.77	206.50	-105.74	9,545.11	-1,187.12	1,309.13	902.80	406.33	3.222	
18,800.00	9,688.73	19,175.35	10,041.98	212.86	208.74	-105.66	9,652.26	-1,186.72	1,308.61	897.96	410.66	3.187	
18,900.00	9,690.36	19,275.32	10,041.28	214.94	210.83	-105.56	9,752.23	-1,186.34	1,307.96	893.09	414.87	3.153	
19,000.00	9,691.99	19,375.29	10,040.58	217.03	212.92	-105.46	9,852.20	-1,185.96	1,307.31	888.23	419.09	3.119	
19,100.00	9,693.62	19,475.27	10,039.88	219.13	215.02	-105.36	9,952.17	-1,185.58	1,306.67	883.36	423.31	3.087	
19,200.00	9,695.25	19,575.24	10,039.18	221.22	217.11	-105.26	10,052.14	-1,185.20	1,306.03	878.50	427.53	3.055	
19,300.00	9,696.87	19,675.21	10,038.49	223.31	219.21	-105.17	10,152.11	-1,184.83	1,305.39	873.63	431.76	3.023	
19,400.00	9,698.50	19,775.19	10,037.79	225.41	221.31	-105.07	10,252.08	-1,184.45	1,304.76	868.77	436.00	2.993	
19,500.00	9,700.13	19,875.16	10,037.09	227.50	223.41	-104.97	10,352.05	-1,184.07	1,304.13	863.90	440.23	2.962	
19,600.00	9,701.76	19,975.13	10,036.39	229.60	225.51	-104.87	10,452.02	-1,183.69	1,303.51	859.03	444.47	2.933	
19,700.00	9,703.39	20,075.10	10,035.69	231.70	227.61	-104.77	10,551.99	-1,183.31	1,302.89	854.17	448.72	2.904	
19,800.00	9,705.02	20,175.08	10,034.99	233.80	229.71	-104.67	10,651.96	-1,182.94	1,302.27	849.30	452.97	2.875	
19,900.00	9,706.65	20,275.05	10,034.30	235.90	231.81	-104.58	10,751.93	-1,182.56	1,301.66	844.44	457.22	2.847	
20,000.00	9,708.28	20,375.02	10,033.60	238.00	233.92	-104.48	10,851.90	-1,182.18	1,301.05	839.57	461.47	2.819	
20,044.41	9,709.00	20,419.42	10,033.29	238.80	234.85	-104.43	10,896.29	-1,182.01	1,300.78	837.55	463.22	2.808 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 21HA - OH / Job #61216 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM, 9054-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	0.00	21.00	0.00	0.00	-74.44	377.27	-1,354.86	1,406.56				
100.00	100.00	88.12	109.12	0.19	0.13	-74.45	377.03	-1,354.63	1,406.15	1,405.83	0.32	4,407.607	
200.00	200.00	194.35	215.34	0.73	0.33	-74.47	376.16	-1,353.78	1,405.15	1,404.09	1.06	1,327.741	
300.00	300.00	309.42	330.40	1.27	0.68	-74.49	375.40	-1,352.61	1,404.06	1,402.11	1.95	719.133	
400.00	400.00	428.38	449.30	1.81	1.07	-74.51	373.85	-1,348.93	1,400.65	1,397.77	2.87	487.222	
500.00	500.00	529.24	550.09	2.34	1.29	-74.53	372.56	-1,345.73	1,397.25	1,393.62	3.63	384.790	
600.00	600.00	645.34	666.10	2.88	1.59	-74.54	370.96	-1,341.15	1,393.08	1,388.61	4.47	311.772	
700.00	699.98	750.75	771.37	3.42	1.98	-94.97	368.91	-1,336.18	1,388.15	1,382.76	5.39	257.589	
800.00	799.84	850.29	870.77	3.96	2.43	-95.32	366.59	-1,331.51	1,383.48	1,377.12	6.36	217.498	
900.00	899.45	931.50	951.88	4.50	2.82	-95.73	364.60	-1,328.14	1,379.70	1,372.41	7.29	189.347	
1,000.00	998.90	1,007.58	1,027.92	5.05	3.19	-96.10	363.05	-1,326.22	1,377.81	1,369.61	8.21	167.908	
1,064.20	1,062.75	1,061.00	1,081.33	5.40	3.46	-96.36	362.15	-1,325.62	1,377.55	1,368.73	8.82	156.163 CC	
1,100.00	1,098.36	1,091.66	1,111.98	5.60	3.61	-96.51	361.74	-1,325.42	1,377.61	1,368.44	9.17	150.162	
1,200.00	1,197.81	1,194.68	1,215.00	6.15	4.13	-96.97	361.07	-1,324.40	1,377.72	1,367.47	10.25	134.410	
1,272.00	1,269.41	1,267.31	1,287.62	6.56	4.49	-97.27	361.26	-1,323.36	1,377.70	1,366.68	11.02	125.030	
1,300.00	1,297.26	1,293.50	1,313.81	6.71	4.63	-97.37	361.45	-1,322.98	1,377.72	1,366.41	11.31	121.835	
1,400.00	1,396.72	1,387.10	1,407.40	7.27	5.10	-97.72	362.56	-1,321.78	1,378.11	1,365.76	12.34	111.653	
1,500.00	1,496.17	1,481.72	1,502.00	7.84	5.58	-98.05	364.24	-1,320.85	1,378.96	1,365.58	13.38	103.027 ES	
1,600.00	1,595.62	1,577.48	1,597.74	8.40	6.06	-98.40	365.58	-1,320.28	1,380.17	1,365.74	14.43	95.622	
1,700.00	1,695.07	1,660.87	1,681.13	8.97	6.48	-98.73	366.24	-1,320.27	1,381.93	1,366.51	15.42	89.624	
1,800.00	1,794.53	1,729.71	1,749.95	9.53	6.82	-99.04	366.15	-1,321.77	1,385.67	1,369.34	16.33	84.855	
1,900.00	1,893.98	1,818.00	1,838.12	10.10	7.26	-99.49	365.07	-1,326.14	1,391.91	1,374.57	17.34	80.278	
2,000.00	1,993.43	1,883.60	1,903.57	10.67	7.59	-99.85	363.85	-1,330.52	1,399.59	1,381.36	18.23	76.760	
2,100.00	2,092.89	1,976.00	1,995.71	11.24	8.05	-100.36	362.09	-1,337.06	1,408.12	1,388.86	19.26	73.102	
2,200.00	2,192.34	2,067.13	2,086.57	11.81	8.51	-100.85	360.37	-1,343.95	1,417.26	1,396.97	20.29	69.851	
2,300.00	2,291.79	2,157.62	2,176.75	12.38	8.97	-101.33	358.93	-1,351.27	1,427.07	1,405.76	21.32	66.948	
2,400.00	2,391.24	2,235.42	2,254.25	12.95	9.37	-101.72	358.09	-1,358.12	1,437.82	1,415.54	22.28	64.531	
2,500.00	2,490.70	2,291.00	2,309.52	13.52	9.66	-101.98	358.28	-1,363.92	1,450.68	1,427.55	23.13	62.708	
2,600.00	2,590.15	2,368.79	2,386.69	14.09	10.07	-102.28	359.94	-1,373.57	1,465.65	1,441.54	24.10	60.810	
2,700.00	2,689.60	2,455.41	2,472.38	14.66	10.53	-102.56	363.17	-1,385.81	1,482.40	1,457.29	25.11	59.025	
2,800.00	2,789.06	2,549.30	2,565.22	15.23	11.04	-102.86	366.77	-1,399.37	1,499.55	1,473.39	26.16	57.312	
2,900.00	2,888.51	2,629.66	2,644.60	15.80	11.49	-103.13	369.47	-1,411.48	1,517.34	1,490.19	27.15	55.891	
3,000.00	2,987.96	2,711.11	2,724.90	16.37	11.94	-103.44	371.16	-1,425.01	1,536.52	1,508.38	28.14	54.603	
3,100.00	3,087.41	2,801.13	2,813.55	16.94	12.46	-103.79	372.64	-1,440.58	1,556.41	1,527.23	29.18	53.344	
3,200.00	3,186.87	2,894.41	2,905.35	17.51	13.00	-104.16	373.91	-1,457.12	1,576.76	1,546.53	30.23	52.155	
3,300.00	3,286.32	2,989.08	2,998.50	18.08	13.55	-104.53	374.97	-1,474.01	1,597.29	1,565.99	31.30	51.035	
3,400.00	3,385.77	3,078.91	3,086.82	18.66	14.09	-104.88	375.82	-1,490.38	1,618.24	1,585.90	32.34	50.039	
3,500.00	3,485.23	3,167.25	3,173.60	19.23	14.62	-105.22	376.52	-1,506.90	1,639.72	1,606.35	33.37	49.132	
3,600.00	3,584.68	3,252.54	3,257.27	19.80	15.14	-105.55	377.09	-1,523.42	1,661.91	1,627.51	34.40	48.318	
3,700.00	3,684.13	3,340.64	3,343.59	20.37	15.68	-105.89	377.47	-1,541.03	1,684.78	1,649.34	35.43	47.549	
3,800.00	3,783.59	3,445.73	3,446.53	20.94	16.33	-106.35	377.57	-1,562.17	1,707.81	1,671.25	36.56	46.710	
3,900.00	3,883.24	3,564.07	3,562.74	21.50	17.07	-107.14	377.36	-1,584.54	1,729.04	1,691.28	37.76	45.788	
4,000.00	3,983.12	3,666.31	3,663.20	22.04	17.70	-107.73	377.04	-1,603.51	1,749.00	1,710.14	38.86	45.008	
4,100.00	4,083.11	3,798.41	3,793.24	22.56	18.52	-87.90	376.23	-1,626.69	1,766.97	1,726.86	40.11	44.058	
4,200.00	4,183.11	3,890.50	3,884.06	23.07	19.09	-87.95	375.22	-1,641.93	1,783.48	1,742.36	41.12	43.374	
4,300.00	4,283.11	3,986.57	3,978.74	23.58	19.68	-88.00	374.25	-1,658.17	1,800.34	1,758.18	42.16	42.707	
4,400.00	4,383.11	4,093.31	4,083.97	24.10	20.34	-88.04	373.81	-1,676.02	1,817.04	1,773.79	43.25	42.009	
4,500.00	4,483.11	4,191.68	4,181.00	24.61	20.95	-88.05	373.81	-1,692.24	1,833.52	1,789.21	44.31	41.383	
4,600.00	4,583.11	4,294.63	4,282.57	25.13	21.58	-88.08	373.47	-1,709.09	1,849.86	1,804.48	45.39	40.758	
4,700.00	4,683.11	4,392.67	4,379.30	25.64	22.19	-88.11	373.14	-1,725.04	1,866.11	1,819.67	46.44	40.183	
4,800.00	4,783.11	4,486.74	4,472.09	26.16	22.78	-88.12	373.32	-1,740.45	1,882.49	1,835.02	47.47	39.652	
4,900.00	4,883.11	4,577.24	4,561.31	26.68	23.34	-88.10	374.54	-1,755.58	1,899.24	1,850.75	48.49	39.167	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 P2 - 21HA - OH / Job #61216 - Plan 4 06-09-17													Offset Site Error:	0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM, 9054-MWD+HDGM													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		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		
5,000.00	4,983.11	4,871.51	4,854.20	27.20	23.93	-88.07	375.97	-1,771.60	1,916.28	1,866.75	49.53	38.690		
5,100.00	5,083.11	4,760.73	4,742.06	27.72	24.49	-88.06	376.96	-1,787.11	1,933.69	1,883.15	50.54	38.260		
5,200.00	5,183.11	4,858.19	4,837.98	28.24	25.11	-88.05	377.67	-1,804.30	1,951.34	1,899.74	51.60	37.817		
5,300.00	5,283.11	4,950.53	4,928.84	28.76	25.70	-88.06	378.08	-1,820.76	1,969.18	1,916.55	52.63	37.414		
5,400.00	5,383.11	5,039.00	5,015.84	29.28	26.27	-88.07	378.33	-1,836.83	1,987.35	1,933.71	53.64	37.048		
5,500.00	5,483.11	5,133.00	5,108.21	29.80	26.87	-88.08	378.35	-1,854.28	2,005.90	1,951.21	54.69	36.680		
5,600.00	5,583.11	5,222.99	5,196.57	30.32	27.46	-88.10	378.16	-1,871.32	2,024.82	1,969.11	55.71	36.346		
5,700.00	5,683.11	5,341.11	5,312.62	30.85	28.22	-88.13	378.07	-1,893.34	2,043.45	1,986.56	56.89	35.920		
5,800.00	5,783.11	5,450.79	5,420.55	31.37	28.93	-88.14	378.33	-1,912.85	2,061.23	2,003.21	58.02	35.526		
5,900.00	5,883.11	5,571.52	5,539.46	31.90	29.69	-88.15	378.48	-1,933.75	2,078.59	2,019.37	59.21	35.103		
6,000.00	5,983.11	5,741.74	5,707.79	32.42	30.74	-88.21	377.35	-1,958.93	2,093.30	2,032.62	60.67	34.500		
6,100.00	6,083.11	5,871.38	5,836.41	32.95	31.51	-88.27	375.64	-1,975.06	2,105.69	2,043.78	61.91	34.012		
6,200.00	6,183.11	6,105.65	6,069.68	33.47	32.82	-88.36	372.96	-1,995.98	2,115.06	2,051.36	63.70	33.203		
6,300.00	6,283.11	6,277.49	6,241.41	34.00	33.71	-88.38	372.37	-2,001.88	2,118.31	2,053.17	65.13	32.523		
6,400.00	6,383.11	6,404.93	6,368.84	34.52	34.33	-88.40	371.75	-2,003.50	2,119.55	2,053.23	66.32	31.958		
6,500.00	6,483.11	6,514.03	6,477.93	35.05	34.86	-88.42	371.03	-2,003.93	2,119.92	2,052.51	67.41	31.449		
6,600.00	6,583.11	6,616.92	6,580.82	35.58	35.35	-88.43	370.42	-2,004.13	2,120.10	2,051.64	68.46	30.968		
6,700.00	6,683.11	6,718.14	6,682.04	36.10	35.83	-88.46	369.47	-2,004.22	2,120.16	2,050.66	69.50	30.505		
6,800.00	6,783.11	6,818.81	6,782.71	36.63	36.30	-88.48	368.76	-2,004.28	2,120.20	2,049.66	70.54	30.057		
6,900.00	6,883.11	6,928.44	6,892.34	37.16	36.82	-88.49	368.19	-2,004.11	2,120.03	2,048.42	71.62	29.602		
7,000.00	6,983.11	7,039.33	7,003.22	37.69	37.33	-88.50	368.02	-2,003.36	2,119.35	2,046.67	72.69	29.157		
7,100.00	7,083.11	7,161.37	7,125.24	38.21	37.88	-88.49	368.19	-2,001.63	2,117.95	2,044.14	73.81	28.694		
7,200.00	7,183.11	7,279.31	7,243.15	38.74	38.42	-88.50	367.92	-1,998.65	2,115.40	2,040.49	74.91	28.238		
7,300.00	7,283.11	7,382.06	7,345.86	39.27	38.89	-88.50	367.65	-1,995.63	2,112.46	2,036.52	75.94	27.817		
7,400.00	7,383.11	7,483.96	7,447.70	39.80	39.35	-88.50	367.63	-1,992.57	2,109.45	2,032.49	76.97	27.407		
7,500.00	7,483.11	7,584.84	7,548.54	40.33	39.82	-88.51	367.31	-1,989.46	2,106.36	2,028.37	77.99	27.009		
7,600.00	7,583.11	7,690.24	7,653.89	40.86	40.30	-88.52	366.89	-1,986.07	2,103.14	2,024.10	79.03	26.610		
7,700.00	7,683.11	7,791.66	7,755.24	41.39	40.77	-88.52	366.45	-1,982.62	2,099.72	2,019.66	80.06	26.226		
7,800.00	7,783.11	7,881.00	7,844.54	41.92	41.19	-88.53	366.03	-1,979.70	2,096.46	2,015.43	81.03	25.872		
7,900.00	7,883.11	7,976.00	7,939.49	42.45	41.63	-88.54	365.57	-1,976.96	2,093.56	2,011.53	82.03	25.522		
8,000.00	7,983.11	8,073.58	8,037.04	42.98	42.09	-88.55	365.15	-1,974.40	2,090.93	2,007.88	83.05	25.178		
8,100.00	8,083.11	8,173.70	8,137.13	43.51	42.56	-88.58	364.29	-1,971.82	2,088.33	2,004.26	84.07	24.839		
8,200.00	8,183.11	8,266.59	8,229.98	44.04	43.00	-88.61	362.91	-1,969.60	2,085.91	2,000.84	85.07	24.520		
8,300.00	8,283.11	8,353.14	8,316.49	44.57	43.42	-88.65	361.34	-1,967.91	2,083.92	1,997.88	86.04	24.221		
8,400.00	8,383.11	8,432.73	8,396.07	45.10	43.80	-88.69	360.15	-1,967.05	2,082.81	1,995.84	86.98	23.947		
8,433.23	8,416.34	8,453.00	8,416.34	45.28	43.90	-88.69	359.91	-1,966.96	2,082.67	1,995.41	87.26	23.869		
8,500.00	8,483.11	8,500.00	8,463.34	45.63	44.13	-88.69	360.17	-1,967.21	2,083.02	1,995.17	87.85	23.710		
8,600.00	8,583.11	8,560.94	8,524.17	46.17	44.45	-88.60	363.39	-1,968.50	2,085.13	1,996.43	88.70	23.508		
8,700.00	8,683.11	8,660.78	8,622.57	46.70	44.95	-88.16	379.51	-1,970.80	2,087.93	1,998.18	89.74	23.266		
8,800.00	8,783.11	8,719.95	8,678.91	47.23	45.23	-87.67	397.41	-1,972.27	2,091.77	2,001.20	90.57	23.095		
8,900.00	8,883.11	8,767.84	8,722.47	47.76	45.45	-87.13	417.14	-1,974.10	2,098.05	2,006.72	91.34	22.970		
9,000.00	8,983.11	8,816.93	8,764.09	48.29	45.66	-86.43	443.01	-1,976.45	2,107.11	2,015.01	92.10	22.878		
9,100.00	9,083.11	8,861.53	8,799.28	48.82	45.84	-85.69	470.28	-1,978.76	2,118.96	2,026.13	92.84	22.824		
9,200.00	9,182.98	8,902.24	8,829.03	49.36	45.98	-83.46	497.96	-1,981.03	2,133.63	2,040.04	93.59	22.798		
9,300.00	9,280.93	8,949.52	8,860.08	49.93	46.15	-81.11	533.49	-1,983.58	2,149.46	2,055.08	94.38	22.774		
9,400.00	9,374.01	9,027.89	8,905.96	50.51	46.39	-78.48	596.90	-1,987.02	2,164.86	2,069.67	95.19	22.743		
9,500.00	9,459.39	9,110.00	8,949.63	51.11	46.66	-76.25	666.40	-1,989.42	2,177.99	2,082.17	95.82	22.731		
9,600.00	9,534.47	9,166.38	8,977.47	51.72	46.87	-74.75	715.38	-1,990.96	2,188.57	2,092.40	96.17	22.758		
9,700.00	9,596.97	9,221.23	9,000.68	52.35	47.10	-73.64	765.04	-1,992.31	2,196.72	2,100.31	96.41	22.785		
9,800.00	9,644.99	9,276.26	9,019.99	53.00	47.34	-72.94	816.55	-1,993.50	2,202.06	2,105.35	96.72	22.768		
9,900.00	9,677.08	9,331.39	9,035.22	53.67	47.62	-72.66	869.51	-1,994.53	2,204.34	2,107.09	97.25	22.667		
10,000.00	9,692.26	9,386.52	9,046.22	54.34	47.92	-72.81	923.51	-1,995.39	2,203.46	2,105.32	98.14	22.452		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 21HA - OH / Job #61216 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM, 9054-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 +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,100.00	9,691.40	9,450.00	9,053.58	55.05	48.30	-73.21	986.53	-1,996.15	2,199.90	2,100.50	99.40	22.133	
10,200.00	9,687.32	9,500.00	9,055.33	55.83	48.61	-73.31	1,036.49	-1,996.59	2,197.37	2,096.85	100.52	21.860	
10,300.00	9,683.23	9,591.15	9,054.53	56.69	49.24	-73.38	1,127.63	-1,997.21	2,196.15	2,094.11	102.04	21.523	
10,400.00	9,679.15	9,691.10	9,053.62	57.61	50.01	-73.46	1,227.58	-1,997.90	2,194.95	2,091.19	103.76	21.155	
10,500.00	9,675.07	9,791.05	9,052.72	58.59	50.86	-73.53	1,327.52	-1,998.58	2,193.75	2,088.13	105.62	20.770	
10,600.00	9,670.98	9,891.00	9,051.81	59.64	51.80	-73.61	1,427.46	-1,999.26	2,192.56	2,084.95	107.62	20.374	
10,700.00	9,666.90	9,990.95	9,050.90	60.75	52.80	-73.69	1,527.40	-1,999.95	2,191.37	2,081.64	109.74	19.969	
10,800.00	9,662.81	10,090.90	9,050.00	61.92	53.87	-73.77	1,627.35	-2,000.63	2,190.19	2,078.21	111.98	19.558	
10,900.00	9,658.73	10,190.85	9,049.09	63.13	55.00	-73.84	1,727.29	-2,001.31	2,189.01	2,074.68	114.34	19.145	
11,000.00	9,654.64	10,290.80	9,048.18	64.40	56.20	-73.92	1,827.23	-2,001.99	2,187.84	2,071.04	116.80	18.732	
11,100.00	9,650.56	10,390.75	9,047.28	65.71	57.45	-74.00	1,927.17	-2,002.68	2,186.67	2,067.31	119.36	18.320	
11,200.00	9,646.47	10,490.70	9,046.37	67.07	58.75	-74.08	2,027.12	-2,003.36	2,185.50	2,063.49	122.02	17.912	
11,300.00	9,642.39	10,590.64	9,045.46	68.46	60.10	-74.15	2,127.06	-2,004.04	2,184.34	2,059.58	124.76	17.509	
11,400.00	9,638.30	10,690.59	9,044.55	69.90	61.50	-74.23	2,227.00	-2,004.73	2,183.18	2,055.60	127.58	17.112	
11,500.00	9,634.22	10,790.54	9,043.65	71.37	62.94	-74.31	2,326.95	-2,005.41	2,182.02	2,051.54	130.49	16.722	
11,600.00	9,630.13	10,890.49	9,042.74	72.88	64.42	-74.39	2,426.89	-2,006.09	2,180.87	2,047.41	133.46	16.341	
11,700.00	9,626.05	10,986.41	9,041.83	74.42	65.87	-74.46	2,522.80	-2,006.75	2,179.74	2,043.31	136.44	15.976	
11,800.00	9,621.96	11,066.29	9,039.62	75.99	67.11	-74.49	2,602.64	-2,007.46	2,179.29	2,040.08	139.21	15.655	
11,900.00	9,617.88	11,166.29	9,035.74	77.59	68.70	-74.49	2,702.56	-2,008.47	2,179.25	2,036.90	142.35	15.309	
12,000.00	9,613.79	11,266.29	9,031.86	79.21	70.32	-74.50	2,802.48	-2,009.47	2,179.21	2,033.68	145.54	14.974	
12,100.00	9,609.71	11,366.29	9,027.98	80.86	71.97	-74.50	2,902.40	-2,010.48	2,179.18	2,030.40	148.78	14.647	
12,200.00	9,605.63	11,466.29	9,024.11	82.54	73.64	-74.51	3,002.32	-2,011.49	2,179.14	2,027.07	152.07	14.330	
12,300.00	9,601.54	11,566.29	9,020.23	84.23	75.34	-74.52	3,102.24	-2,012.49	2,179.10	2,023.71	155.40	14.023	
12,350.69	9,599.64	11,616.98	9,018.26	85.10	76.21	-74.51	3,152.89	-2,013.00	2,179.13	2,022.04	157.09	13.872	
12,400.00	9,597.71	11,666.29	9,016.35	85.95	77.06	-74.52	3,202.16	-2,013.50	2,179.13	2,020.38	158.75	13.727	
12,500.00	9,596.68	11,766.24	9,012.47	87.68	78.81	-74.46	3,302.03	-2,014.51	2,179.91	2,017.84	162.07	13.450	
12,600.00	9,597.97	11,866.11	9,008.60	89.42	80.57	-74.33	3,401.82	-2,015.51	2,181.32	2,015.89	165.43	13.186	
12,700.00	9,599.31	11,965.97	9,004.73	91.19	82.35	-74.20	3,501.60	-2,016.52	2,182.74	2,013.92	168.83	12.929	
12,800.00	9,600.66	12,065.84	9,000.85	92.97	84.15	-74.07	3,601.39	-2,017.52	2,184.18	2,011.93	172.25	12.680	
12,900.00	9,602.00	12,165.70	8,996.98	94.77	85.96	-73.94	3,701.17	-2,018.53	2,185.63	2,009.93	175.70	12.439	
13,000.00	9,603.34	12,265.56	8,993.11	96.58	87.79	-73.81	3,800.95	-2,019.53	2,187.10	2,007.92	179.18	12.206	
13,100.00	9,604.68	12,365.43	8,989.23	98.40	89.64	-73.68	3,900.74	-2,020.54	2,188.57	2,005.89	182.68	11.980	
13,200.00	9,606.02	12,465.29	8,985.36	100.24	91.50	-73.55	4,000.52	-2,021.54	2,190.06	2,003.85	186.20	11.762	
13,300.00	9,607.37	12,565.15	8,981.49	102.09	93.37	-73.41	4,100.30	-2,022.55	2,191.55	2,001.81	189.75	11.550	
13,400.00	9,608.71	12,665.02	8,977.61	103.96	95.25	-73.28	4,200.09	-2,023.55	2,193.06	1,999.75	193.31	11.345	
13,500.00	9,610.05	12,764.88	8,973.74	105.83	97.15	-73.15	4,299.87	-2,024.56	2,194.58	1,997.69	196.89	11.146	
13,600.00	9,611.39	12,864.81	8,970.13	107.72	99.36	-73.02	4,415.73	-2,025.72	2,195.91	1,995.13	200.78	10.937	
13,700.00	9,612.73	12,964.22	8,970.44	109.61	101.56	-72.99	4,531.14	-2,026.87	2,196.20	1,991.45	204.75	10.726	
13,800.00	9,614.07	13,064.22	8,971.42	111.52	103.49	-72.99	4,631.13	-2,027.86	2,196.30	1,987.83	208.47	10.535	
13,900.00	9,615.42	13,164.22	8,972.40	113.43	105.42	-72.98	4,731.12	-2,028.85	2,196.40	1,984.20	212.20	10.351	
14,000.00	9,616.76	13,264.22	8,973.38	115.36	107.36	-72.97	4,831.11	-2,029.85	2,196.51	1,980.55	215.95	10.171	
14,100.00	9,618.10	13,364.22	8,974.36	117.29	109.31	-72.96	4,931.10	-2,030.84	2,196.61	1,976.89	219.72	9.997	
14,200.00	9,619.44	13,464.22	8,975.34	119.23	111.27	-72.95	5,031.09	-2,031.83	2,196.71	1,973.22	223.50	9.829	
14,300.00	9,620.78	13,564.22	8,976.32	121.18	113.23	-72.94	5,131.08	-2,032.82	2,196.82	1,969.52	227.29	9.665	
14,400.00	9,622.13	13,664.22	8,977.30	123.13	115.20	-72.93	5,231.07	-2,033.82	2,196.92	1,965.82	231.10	9.506	
14,500.00	9,623.47	13,764.22	8,978.28	125.09	117.18	-72.92	5,331.05	-2,034.81	2,197.02	1,962.10	234.92	9.352	
14,600.00	9,624.81	13,864.22	8,979.26	127.06	119.16	-72.91	5,431.04	-2,035.80	2,197.13	1,958.38	238.75	9.203	
14,700.00	9,626.15	13,964.22	8,980.24	129.03	121.16	-72.90	5,531.03	-2,036.79	2,197.23	1,954.64	242.59	9.057	
14,800.00	9,627.49	14,064.22	8,981.22	131.01	123.15	-72.89	5,631.02	-2,037.79	2,197.33	1,950.89	246.44	8.916	
14,900.00	9,628.84	14,164.22	8,982.20	132.99	125.15	-72.89	5,731.01	-2,038.78	2,197.44	1,947.13	250.31	8.779	
15,000.00	9,630.18	14,264.22	8,983.18	134.98	127.16	-72.88	5,831.00	-2,039.77	2,197.54	1,943.36	254.18	8.646	
15,100.00	9,631.55	14,424.72	8,984.42	136.98	129.74	-72.87	5,959.50	-2,040.71	2,197.77	1,939.27	258.50	8.502	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 21HA - OH / Job #61216 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM, 9054-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
15,200.00	9,633.07	14,524.72	8,985.32	138.97	131.75	-72.86	6,059.49	-2,040.32	2,197.94	1,935.56	262.37	8.377	
15,300.00	9,634.58	14,624.72	8,986.22	140.97	133.76	-72.84	6,159.48	-2,039.93	2,198.11	1,931.85	266.25	8.256	
15,400.00	9,636.09	14,724.71	8,987.12	142.98	135.78	-72.83	6,259.48	-2,039.54	2,198.28	1,928.13	270.14	8.137	
15,500.00	9,637.61	14,824.71	8,988.02	144.98	137.80	-72.81	6,359.47	-2,039.15	2,198.45	1,924.40	274.04	8.022	
15,600.00	9,639.12	14,924.71	8,988.92	147.00	139.83	-72.80	6,459.46	-2,038.76	2,198.62	1,920.67	277.95	7.910	
15,700.00	9,640.63	15,024.71	8,989.82	149.01	141.86	-72.78	6,559.46	-2,038.37	2,198.79	1,916.93	281.86	7.801	
15,800.00	9,642.15	15,124.71	8,990.72	151.03	143.89	-72.77	6,659.45	-2,037.98	2,198.96	1,913.18	285.78	7.695	
15,900.00	9,643.66	15,224.71	8,991.62	153.06	145.93	-72.75	6,759.44	-2,037.59	2,199.13	1,909.43	289.70	7.591	
16,000.00	9,645.17	15,324.70	8,992.52	155.08	147.97	-72.74	6,859.44	-2,037.20	2,199.30	1,905.67	293.63	7.490	
16,100.00	9,646.69	15,424.70	8,993.42	157.11	150.01	-72.72	6,959.43	-2,036.82	2,199.47	1,901.90	297.57	7.391	
16,200.00	9,648.20	15,524.70	8,994.32	159.15	152.06	-72.71	7,059.42	-2,036.43	2,199.65	1,898.13	301.51	7.295	
16,300.00	9,649.71	15,624.70	8,995.22	161.18	154.11	-72.69	7,159.42	-2,036.04	2,199.82	1,894.36	305.46	7.202	
16,400.00	9,651.23	15,724.70	8,996.12	163.22	156.16	-72.68	7,259.41	-2,035.65	2,199.99	1,890.58	309.41	7.110	
16,500.00	9,652.74	15,824.69	8,997.02	165.27	158.21	-72.66	7,359.40	-2,035.26	2,200.16	1,886.79	313.37	7.021	
16,600.00	9,654.25	15,924.69	8,997.92	167.31	160.27	-72.64	7,459.40	-2,034.87	2,200.33	1,883.01	317.33	6.934	
16,700.00	9,655.77	16,024.69	8,998.82	169.36	162.33	-72.63	7,559.39	-2,034.48	2,200.51	1,879.21	321.29	6.849	
16,800.00	9,657.28	16,124.69	8,999.72	171.41	164.39	-72.61	7,659.38	-2,034.09	2,200.68	1,875.42	325.26	6.766	
16,900.00	9,658.79	16,224.69	9,000.62	173.47	166.46	-72.60	7,759.38	-2,033.70	2,200.85	1,871.61	329.24	6.685	
17,000.00	9,660.31	16,324.68	9,001.53	175.52	168.52	-72.58	7,859.37	-2,033.31	2,201.02	1,867.81	333.21	6.605	
17,100.00	9,661.82	16,424.68	9,002.43	177.58	170.58	-72.57	7,959.36	-2,032.92	2,201.19	1,863.99	337.17	6.524	
17,200.00	9,663.33	16,524.68	9,003.33	179.64	172.63	-72.56	8,059.35	-2,032.53	2,201.36	1,860.17	341.14	6.447	
17,300.00	9,664.85	16,624.68	9,004.23	181.70	174.69	-72.55	8,159.34	-2,032.14	2,201.53	1,856.35	345.11	6.371	
17,400.00	9,666.36	16,724.67	9,005.13	183.77	176.76	-72.54	8,259.33	-2,031.75	2,201.70	1,852.53	349.08	6.297	
17,500.00	9,667.87	16,824.67	9,006.03	185.83	178.82	-72.53	8,359.32	-2,031.36	2,201.87	1,848.71	353.05	6.224	
17,600.00	9,669.39	16,924.67	9,006.93	187.90	180.88	-72.52	8,459.31	-2,030.97	2,202.04	1,844.89	357.02	6.153	
17,700.00	9,670.90	17,024.67	9,007.83	189.97	182.94	-72.51	8,559.30	-2,030.58	2,202.21	1,841.07	361.00	6.084	
17,800.00	9,672.42	17,124.66	9,008.73	192.04	185.00	-72.50	8,659.29	-2,030.19	2,202.38	1,837.25	364.97	6.016	
17,900.00	9,673.93	17,224.66	9,009.63	194.12	187.06	-72.49	8,759.28	-2,029.80	2,202.55	1,833.43	368.94	5.950	
18,000.00	9,675.45	17,324.66	9,010.53	196.19	189.12	-72.48	8,859.27	-2,029.41	2,202.72	1,829.61	372.91	5.885	
18,100.00	9,676.96	17,424.66	9,011.43	198.27	191.18	-72.47	8,959.26	-2,029.02	2,202.89	1,825.79	376.88	5.821	
18,200.00	9,678.48	17,524.66	9,012.33	200.35	193.24	-72.46	9,059.25	-2,028.63	2,203.06	1,821.97	380.85	5.759	
18,300.00	9,680.00	17,624.66	9,013.23	202.43	195.30	-72.45	9,159.24	-2,028.24	2,203.23	1,818.15	384.82	5.697	
18,400.00	9,681.51	17,724.66	9,014.13	204.51	197.36	-72.44	9,259.23	-2,027.85	2,203.40	1,814.33	388.79	5.638	
18,500.00	9,683.03	17,824.66	9,015.03	206.60	199.42	-72.43	9,359.22	-2,027.46	2,203.57	1,810.51	392.76	5.579	
18,600.00	9,684.54	17,924.66	9,015.93	208.68	201.48	-72.42	9,459.21	-2,027.07	2,203.74	1,806.69	396.73	5.521	
18,700.00	9,686.06	18,024.66	9,016.83	210.77	203.54	-72.41	9,559.20	-2,026.68	2,203.91	1,802.87	400.70	5.465	
18,800.00	9,687.57	18,124.66	9,017.73	212.85	205.60	-72.40	9,659.19	-2,026.29	2,204.08	1,799.05	404.67	5.410	
18,900.00	9,689.09	18,224.66	9,018.63	214.94	207.66	-72.39	9,759.18	-2,025.90	2,204.25	1,795.23	408.64	5.355	
19,000.00	9,690.60	18,324.66	9,019.53	217.03	209.72	-72.38	9,859.17	-2,025.51	2,204.42	1,791.41	412.61	5.300	
19,100.00	9,692.12	18,424.66	9,020.43	219.13	211.78	-72.37	9,959.16	-2,025.12	2,204.59	1,787.59	416.58	5.260	
19,200.00	9,693.63	18,524.66	9,021.33	221.22	213.84	-72.36	10,059.15	-2,024.73	2,204.76	1,783.77	420.55	5.212	
19,300.00	9,695.15	18,624.66	9,022.23	223.31	215.90	-72.35	10,159.14	-2,024.34	2,204.93	1,779.95	424.52	5.165	
19,400.00	9,696.66	18,724.66	9,023.13	225.41	217.96	-72.34	10,259.13	-2,023.95	2,205.10	1,776.13	428.49	5.119	
19,500.00	9,698.18	18,824.66	9,024.03	227.50	220.02	-72.33	10,359.12	-2,023.56	2,205.27	1,772.31	432.46	5.073	
19,600.00	9,700.00	18,924.66	9,024.93	229.60	222.08	-72.32	10,459.11	-2,023.17	2,205.44	1,768.49	436.43	5.029	
19,700.00	9,701.51	19,024.66	9,025.83	231.70	224.14	-72.31	10,559.10	-2,022.78	2,205.61	1,764.67	440.40	4.985	
19,800.00	9,703.03	19,124.66	9,026.73	233.80	226.20	-72.30	10,659.09	-2,022.39	2,205.78	1,760.85	444.37	4.942	
19,900.00	9,704.54	19,224.66	9,027.63	235.90	228.26	-72.29	10,759.08	-2,022.00	2,205.95	1,757.03	448.34	4.900	
20,000.00	9,706.06	19,324.66	9,028.53	238.00	230.32	-72.28	10,859.07	-2,021.61	2,206.12	1,753.21	452.31	4.859	
20,044.41	9,709.00	19,357.96	9,035.35	238.80	231.98	-72.22	10,892.13	-2,022.03	2,205.12	1,749.75	455.38	4.842 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-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	0.00	21.00	0.00	0.00	-75.42	352.27	-1,353.86	1,399.09				
100.00	100.00	82.34	103.34	0.19	0.12	-75.41	352.33	-1,353.74	1,398.84	1,398.53	0.31	4,501.605	
200.00	200.00	189.94	210.93	0.73	0.30	-75.39	352.61	-1,353.21	1,398.44	1,397.41	1.03	1,355.464	
300.00	300.00	309.45	330.43	1.27	0.69	-75.36	352.92	-1,351.03	1,396.69	1,394.73	1.96	711.737	
400.00	400.00	412.93	433.88	1.81	1.02	-75.37	351.97	-1,348.81	1,394.39	1,391.56	2.83	493.293	
500.00	500.00	525.19	546.09	2.34	1.26	-75.42	350.22	-1,346.00	1,391.58	1,387.97	3.60	386.042	
600.00	600.00	761.20	781.36	2.88	2.00	-75.46	344.79	-1,329.77	1,385.66	1,380.78	4.88	283.797	
700.00	699.98	872.00	891.05	3.42	2.54	-96.06	340.61	-1,314.68	1,371.64	1,365.71	5.92	231.562	
800.00	799.84	949.86	968.20	3.96	2.96	-96.51	337.52	-1,304.70	1,358.83	1,352.01	6.83	199.080	
900.00	899.45	1,034.38	1,052.14	4.50	3.42	-97.06	334.56	-1,295.21	1,348.06	1,340.28	7.78	173.316	
1,000.00	998.90	1,122.74	1,139.96	5.05	3.90	-97.44	332.66	-1,285.73	1,338.39	1,329.62	8.77	152.608	
1,100.00	1,098.36	1,230.12	1,246.71	5.60	4.49	-97.83	332.13	-1,274.16	1,329.13	1,319.25	9.87	134.597	
1,200.00	1,197.81	1,320.27	1,336.28	6.15	5.00	-98.15	331.97	-1,264.00	1,319.51	1,308.61	10.90	121.034	
1,300.00	1,297.26	1,414.22	1,429.71	6.71	5.52	-98.45	332.77	-1,254.03	1,310.77	1,298.82	11.95	109.654	
1,400.00	1,396.72	1,510.02	1,524.95	7.27	6.06	-98.73	334.30	-1,243.90	1,302.28	1,289.26	13.02	100.017	
1,500.00	1,496.17	1,597.12	1,611.61	7.84	6.54	-99.01	335.29	-1,235.26	1,294.38	1,280.34	14.04	92.160	
1,600.00	1,595.62	1,704.79	1,718.82	8.40	7.14	-99.38	336.09	-1,225.30	1,287.11	1,271.93	15.18	84.774	
1,700.00	1,695.07	1,819.00	1,832.34	8.97	7.80	-99.75	337.25	-1,212.82	1,278.21	1,261.85	16.36	78.112	
1,800.00	1,794.53	1,913.00	1,925.78	9.53	8.33	-100.07	338.03	-1,202.62	1,269.45	1,252.01	17.44	72.806	
1,900.00	1,893.98	1,978.53	1,991.06	10.10	8.70	-100.32	338.29	-1,196.85	1,262.52	1,244.17	18.35	68.794	
2,000.00	1,993.43	2,064.72	2,077.03	10.67	9.17	-100.66	338.52	-1,190.73	1,257.42	1,238.04	19.38	64.885	
2,100.00	2,092.89	2,162.65	2,174.74	11.24	9.70	-101.06	338.76	-1,184.20	1,252.82	1,232.35	20.47	61.204	
2,200.00	2,192.34	2,264.15	2,276.00	11.81	10.26	-101.47	339.18	-1,177.34	1,248.23	1,226.65	21.58	57.838	
2,300.00	2,291.79	2,366.33	2,377.93	12.38	10.82	-101.87	339.83	-1,170.19	1,243.50	1,220.81	22.70	54.785	
2,400.00	2,391.24	2,468.54	2,479.87	12.95	11.38	-102.26	340.74	-1,162.78	1,238.62	1,214.80	23.81	52.011	
2,500.00	2,490.70	2,569.28	2,580.32	13.52	11.94	-102.64	341.87	-1,155.28	1,233.62	1,208.70	24.92	49.494	
2,600.00	2,590.15	2,690.47	2,701.08	14.09	12.62	-103.08	343.36	-1,145.18	1,227.83	1,201.69	26.15	46.956	
2,700.00	2,689.60	2,805.63	2,815.65	14.66	13.27	-103.52	344.46	-1,133.55	1,220.27	1,192.92	27.34	44.628	
2,800.00	2,789.06	2,904.00	2,913.47	15.23	13.84	-103.90	345.21	-1,123.21	1,212.35	1,183.90	28.45	42.617	
2,900.00	2,888.51	2,999.98	3,008.93	15.80	14.39	-104.26	346.09	-1,113.32	1,204.71	1,175.18	29.54	40.785	
3,000.00	2,987.96	3,099.08	3,107.52	16.37	14.96	-104.64	347.22	-1,103.30	1,197.35	1,166.70	30.65	39.070	
3,100.00	3,087.41	3,201.50	3,209.39	16.94	15.55	-105.02	348.57	-1,092.75	1,189.86	1,158.08	31.77	37.449	
3,200.00	3,186.87	3,304.57	3,311.86	17.51	16.14	-105.40	350.14	-1,081.83	1,182.15	1,149.24	32.90	35.928	
3,300.00	3,286.32	3,401.78	3,408.50	18.08	16.70	-105.77	351.63	-1,071.38	1,174.34	1,140.34	34.00	34.537	
3,400.00	3,385.77	3,484.33	3,490.64	18.66	17.17	-106.11	352.21	-1,063.15	1,167.32	1,132.30	35.02	33.334	
3,500.00	3,485.23	3,557.48	3,563.55	19.23	17.58	-106.48	351.70	-1,057.33	1,162.26	1,126.27	35.98	32.301	
3,600.00	3,584.68	3,619.00	3,624.97	19.80	17.91	-106.82	350.74	-1,053.97	1,159.86	1,122.98	36.88	31.449	
3,636.73	3,621.21	3,654.11	3,660.05	20.01	18.10	-107.02	350.09	-1,052.66	1,159.57	1,122.30	37.27	31.109 CC	
3,700.00	3,684.13	3,713.00	3,718.91	20.37	18.40	-107.36	349.08	-1,051.23	1,159.90	1,121.96	37.94	30.569	
3,800.00	3,783.59	3,791.12	3,797.01	20.94	18.79	-107.80	347.90	-1,050.18	1,161.49	1,122.58	38.92	29.846	
3,900.00	3,883.24	3,878.91	3,884.79	21.50	19.22	-108.22	346.93	-1,049.61	1,163.37	1,123.46	39.91	29.152	
4,000.00	3,983.12	3,975.96	3,981.84	22.04	19.69	-108.50	346.35	-1,049.73	1,164.98	1,124.07	40.91	28.474	
4,100.00	4,083.11	4,076.77	4,082.65	22.56	20.17	-88.37	345.65	-1,049.83	1,165.47	1,123.55	41.92	27.803	
4,200.00	4,183.11	4,175.79	4,181.67	23.07	20.65	-88.40	344.89	-1,049.92	1,165.54	1,122.61	42.93	27.151	
4,300.00	4,283.11	4,274.48	4,280.36	23.58	21.13	-88.44	344.17	-1,050.12	1,165.72	1,121.78	43.94	26.531	
4,400.00	4,383.11	4,372.09	4,377.96	24.10	21.59	-88.48	343.45	-1,050.46	1,166.06	1,121.12	44.94	25.947	
4,500.00	4,483.11	4,471.00	4,476.87	24.61	22.07	-88.52	342.58	-1,050.96	1,166.54	1,120.59	45.95	25.388	
4,600.00	4,583.11	4,569.61	4,575.47	25.13	22.55	-88.57	341.65	-1,051.55	1,167.12	1,120.16	46.96	24.855	
4,700.00	4,683.11	4,666.91	4,672.77	25.64	23.02	-88.61	340.85	-1,052.32	1,167.88	1,119.92	47.96	24.352	
4,800.00	4,783.11	4,763.00	4,768.84	26.16	23.48	-88.65	340.06	-1,053.35	1,168.94	1,119.98	48.95	23.878	
4,900.00	4,883.11	4,859.35	4,865.18	26.68	23.94	-88.69	339.16	-1,054.71	1,170.32	1,120.37	49.95	23.430	
5,000.00	4,983.11	4,958.67	4,964.48	27.20	24.42	-88.75	338.04	-1,056.28	1,171.88	1,120.92	50.96	22.994	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Saml 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	5,083.11	5,065.21	5,071.00	27.72	24.94	-88.82	336.58	-1,057.98	1,173.46	1,121.44	52.02	22.558	
5,200.00	5,183.11	5,177.32	5,183.11	28.24	25.49	-88.83	336.39	-1,058.19	1,173.61	1,120.50	53.11	22.099	
5,300.00	5,283.11	5,277.32	5,283.11	28.76	26.00	-88.83	336.39	-1,058.19	1,173.61	1,119.47	54.13	21.679	
5,400.00	5,383.11	5,377.32	5,383.11	29.28	26.50	-88.83	336.39	-1,058.19	1,173.61	1,118.44	55.17	21.274	
5,500.00	5,483.11	5,477.32	5,483.11	29.80	27.00	-88.83	336.39	-1,058.19	1,173.61	1,117.41	56.20	20.884	
5,600.00	5,583.11	5,577.32	5,583.11	30.32	27.51	-88.83	336.39	-1,058.19	1,173.61	1,116.38	57.23	20.506	
5,700.00	5,683.11	5,677.32	5,683.11	30.85	28.01	-88.83	336.39	-1,058.19	1,173.61	1,115.34	58.27	20.142	
5,800.00	5,783.11	5,777.32	5,783.11	31.37	28.52	-88.83	336.39	-1,058.19	1,173.61	1,114.30	59.30	19.790	
5,900.00	5,883.11	5,877.32	5,883.11	31.90	29.03	-88.83	336.39	-1,058.19	1,173.61	1,113.27	60.34	19.449	
6,000.00	5,983.11	5,977.32	5,983.11	32.42	29.54	-88.83	336.39	-1,058.19	1,173.61	1,112.23	61.38	19.120	
6,100.00	6,083.11	6,077.32	6,083.11	32.95	30.05	-88.83	336.39	-1,058.19	1,173.61	1,111.19	62.42	18.801	
6,200.00	6,183.11	6,177.32	6,183.11	33.47	30.56	-88.83	336.39	-1,058.19	1,173.61	1,110.14	63.46	18.493	
6,300.00	6,283.11	6,277.32	6,283.11	34.00	31.07	-88.83	336.39	-1,058.19	1,173.61	1,109.10	64.51	18.194	
6,400.00	6,383.11	6,377.32	6,383.11	34.52	31.58	-88.83	336.39	-1,058.19	1,173.61	1,108.06	65.55	17.904	
6,500.00	6,483.11	6,477.32	6,483.11	35.05	32.10	-88.83	336.39	-1,058.19	1,173.61	1,107.01	66.60	17.623	
6,600.00	6,583.11	6,577.32	6,583.11	35.58	32.61	-88.83	336.39	-1,058.19	1,173.61	1,105.97	67.64	17.350	
6,700.00	6,683.11	6,677.32	6,683.11	36.10	33.13	-88.83	336.39	-1,058.19	1,173.61	1,104.92	68.69	17.086	
6,800.00	6,783.11	6,777.32	6,783.11	36.63	33.64	-88.83	336.39	-1,058.19	1,173.61	1,103.87	69.74	16.829	
6,900.00	6,883.11	6,877.32	6,883.11	37.16	34.16	-88.83	336.39	-1,058.19	1,173.61	1,102.82	70.79	16.580	
7,000.00	6,983.11	6,977.32	6,983.11	37.69	34.68	-88.83	336.39	-1,058.19	1,173.61	1,101.77	71.83	16.338	
7,100.00	7,083.11	7,077.32	7,083.11	38.21	35.20	-88.83	336.39	-1,058.19	1,173.61	1,100.72	72.89	16.102	
7,200.00	7,183.11	7,177.32	7,183.11	38.74	35.71	-88.83	336.39	-1,058.19	1,173.61	1,099.67	73.94	15.873	
7,300.00	7,283.11	7,277.32	7,283.11	39.27	36.23	-88.83	336.39	-1,058.19	1,173.61	1,098.62	74.99	15.651	
7,400.00	7,383.11	7,377.32	7,383.11	39.80	36.75	-88.83	336.39	-1,058.19	1,173.61	1,097.57	76.04	15.434	
7,500.00	7,483.11	7,477.32	7,483.11	40.33	37.27	-88.83	336.39	-1,058.19	1,173.61	1,096.51	77.09	15.223	
7,600.00	7,583.11	7,577.32	7,583.11	40.86	37.79	-88.83	336.39	-1,058.19	1,173.61	1,095.46	78.15	15.018	
7,700.00	7,683.11	7,677.32	7,683.11	41.39	38.31	-88.83	336.39	-1,058.19	1,173.61	1,094.41	79.20	14.818	
7,800.00	7,783.11	7,777.32	7,783.11	41.92	38.84	-88.83	336.39	-1,058.19	1,173.61	1,093.35	80.26	14.623	
7,900.00	7,883.11	7,877.32	7,883.11	42.45	39.36	-88.83	336.39	-1,058.19	1,173.61	1,092.30	81.31	14.434	
8,000.00	7,983.11	7,977.32	7,983.11	42.98	39.88	-88.83	336.39	-1,058.19	1,173.61	1,091.24	82.37	14.249	
8,100.00	8,083.11	8,077.32	8,083.11	43.51	40.40	-88.83	336.39	-1,058.19	1,173.61	1,090.18	83.42	14.068	
8,200.00	8,183.11	8,177.32	8,183.11	44.04	40.93	-88.83	336.39	-1,058.19	1,173.61	1,089.13	84.48	13.892	
8,300.00	8,283.11	8,277.32	8,283.11	44.57	41.45	-88.83	336.39	-1,058.19	1,173.61	1,088.07	85.54	13.720	
8,400.00	8,383.11	8,377.32	8,383.11	45.10	41.97	-88.83	336.39	-1,058.19	1,173.61	1,087.01	86.60	13.553	
8,500.00	8,483.11	8,477.32	8,483.11	45.63	42.50	-88.83	336.39	-1,058.19	1,173.61	1,085.95	87.65	13.389	
8,600.00	8,583.11	8,577.32	8,583.11	46.17	43.02	-88.83	336.39	-1,058.19	1,173.61	1,084.90	88.71	13.229	
8,700.00	8,683.11	8,671.19	8,676.67	46.70	43.51	-88.53	342.62	-1,058.26	1,173.84	1,084.10	89.74	13.081	
8,800.00	8,783.11	8,760.23	8,763.37	47.23	43.96	-87.56	362.50	-1,058.48	1,174.89	1,084.16	90.73	12.949	
8,900.00	8,883.11	8,841.43	8,838.90	47.76	44.35	-86.12	392.13	-1,058.81	1,177.52	1,085.84	91.67	12.845	
9,000.00	8,983.11	8,913.01	8,901.43	48.29	44.65	-84.43	426.88	-1,059.20	1,182.76	1,090.19	92.57	12.778	
9,100.00	9,083.11	8,974.76	8,951.53	48.82	44.89	-82.70	462.92	-1,059.60	1,191.66	1,098.25	93.41	12.758	
9,200.00	9,182.98	9,028.96	8,992.08	49.36	45.09	-79.65	498.84	-1,060.00	1,204.52	1,110.35	94.17	12.791	
9,300.00	9,280.93	9,082.08	9,028.38	49.93	45.28	-76.76	537.61	-1,060.43	1,219.10	1,124.31	94.79	12.862	
9,400.00	9,374.01	9,134.85	9,060.71	50.51	45.48	-74.05	579.28	-1,060.89	1,234.12	1,139.02	95.11	12.976	
9,500.00	9,459.39	9,187.35	9,088.95	51.11	45.71	-71.62	623.52	-1,061.38	1,248.59	1,153.58	95.02	13.141	
9,600.00	9,534.47	9,250.00	9,117.17	51.72	46.01	-69.40	679.41	-1,062.01	1,261.72	1,167.20	94.52	13.348	
9,700.00	9,596.97	9,300.00	9,135.22	52.35	46.26	-67.81	726.02	-1,062.52	1,272.60	1,178.87	93.73	13.577	
9,800.00	9,644.99	9,350.00	9,149.13	53.00	46.52	-66.65	774.03	-1,063.06	1,280.78	1,187.84	92.93	13.781	
9,900.00	9,677.08	9,400.00	9,158.80	53.67	46.78	-65.95	823.06	-1,063.60	1,285.85	1,193.41	92.44	13.910	
10,000.00	9,692.26	9,450.00	9,164.16	54.34	47.05	-65.72	872.76	-1,064.16	1,287.58	1,195.04	92.54	13.913	
10,100.00	9,691.40	9,507.25	9,165.16	55.05	47.37	-65.86	929.98	-1,064.79	1,286.39	1,192.99	93.40	13.773	
10,200.00	9,687.32	9,607.20	9,164.24	55.83	47.98	-65.99	1,029.92	-1,065.90	1,285.21	1,190.46	94.76	13.563	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-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	Warning
10,300.00	9,683.23	9,707.15	9,163.31	56.69	48.68	-66.12	1,129.86	-1,067.01	1,284.04	1,187.77	96.27	13.338	
10,400.00	9,679.15	9,807.10	9,162.39	57.61	49.47	-66.25	1,229.80	-1,068.13	1,282.88	1,184.94	97.93	13.099	
10,500.00	9,675.07	9,907.05	9,161.46	58.59	50.33	-66.38	1,329.74	-1,069.24	1,281.72	1,181.98	99.74	12.850	
10,600.00	9,670.98	10,007.00	9,160.54	59.64	51.27	-66.52	1,429.68	-1,070.35	1,280.57	1,178.88	101.69	12.593	
10,700.00	9,666.90	10,106.95	9,159.62	60.75	52.28	-66.65	1,529.62	-1,071.46	1,279.43	1,175.66	103.77	12.330	
10,800.00	9,662.81	10,206.90	9,158.69	61.92	53.35	-66.78	1,629.55	-1,072.57	1,278.30	1,172.33	105.97	12.063	
10,900.00	9,658.73	10,306.85	9,157.77	63.13	54.49	-66.91	1,729.49	-1,073.68	1,277.17	1,168.88	108.28	11.795	
11,000.00	9,654.64	10,406.80	9,156.84	64.40	55.70	-67.05	1,829.43	-1,074.79	1,276.05	1,165.34	110.71	11.526	
11,100.00	9,650.56	10,506.75	9,155.92	65.71	56.95	-67.18	1,929.37	-1,075.90	1,274.93	1,161.69	113.24	11.259	
11,200.00	9,646.47	10,606.70	9,154.99	67.07	58.26	-67.31	2,029.31	-1,077.01	1,273.82	1,157.96	115.86	10.994	
11,300.00	9,642.39	10,706.65	9,154.07	68.46	59.62	-67.44	2,129.25	-1,078.13	1,272.72	1,154.14	118.58	10.733	
11,400.00	9,638.30	10,806.60	9,153.14	69.90	61.03	-67.58	2,229.19	-1,079.24	1,271.63	1,150.25	121.38	10.477	
11,500.00	9,634.22	10,906.55	9,152.22	71.37	62.48	-67.71	2,329.13	-1,080.35	1,270.54	1,146.28	124.26	10.225	
11,600.00	9,630.13	11,006.50	9,151.29	72.88	63.97	-67.85	2,429.07	-1,081.46	1,269.46	1,142.25	127.21	9.979	
11,700.00	9,626.05	11,106.45	9,150.37	74.42	65.49	-67.98	2,529.01	-1,082.57	1,268.38	1,138.15	130.24	9.739	
11,800.00	9,621.96	11,206.40	9,149.45	75.99	67.06	-68.11	2,628.95	-1,083.68	1,267.32	1,133.99	133.33	9.505	
11,900.00	9,617.88	11,306.35	9,148.52	77.59	68.65	-68.25	2,728.89	-1,084.79	1,266.26	1,129.78	136.48	9.278	
12,000.00	9,613.79	11,406.30	9,147.60	79.21	70.27	-68.38	2,828.83	-1,085.90	1,265.21	1,125.52	139.69	9.057	
12,100.00	9,609.71	11,506.24	9,146.53	80.86	71.86	-68.51	2,928.77	-1,086.96	1,264.21	1,121.33	142.88	8.848	
12,200.00	9,605.63	11,606.19	9,145.41	82.54	73.54	-68.65	3,028.72	-1,087.94	1,263.20	1,117.35	146.15	8.645	
12,300.00	9,601.54	11,706.14	9,144.29	84.23	75.24	-68.78	3,128.67	-1,088.93	1,262.20	1,113.31	149.47	8.448	
12,400.00	9,597.46	11,806.09	9,143.16	85.95	76.97	-68.91	3,228.62	-1,089.91	1,261.20	1,109.31	152.85	8.258	
12,418.54	9,597.25	11,820.64	9,139.76	86.27	77.30	-68.74	3,243.06	-1,090.10	1,262.14	1,108.66	153.48	8.224	
12,500.00	9,596.68	11,902.08	9,138.03	87.68	78.72	-68.70	3,324.49	-1,090.90	1,262.56	1,106.34	156.22	8.082	
12,600.00	9,597.97	12,002.02	9,135.90	89.42	80.49	-68.56	3,424.40	-1,091.89	1,263.79	1,104.32	159.47	7.925	
12,700.00	9,599.31	12,101.96	9,133.78	91.19	82.28	-68.41	3,524.31	-1,092.87	1,265.06	1,102.33	162.73	7.774	
12,800.00	9,600.66	12,201.90	9,131.65	92.97	84.08	-68.27	3,624.23	-1,093.86	1,266.33	1,100.31	166.02	7.627	
12,900.00	9,602.00	12,301.84	9,129.53	94.77	85.91	-68.12	3,724.14	-1,094.84	1,267.61	1,098.27	169.34	7.486	
13,000.00	9,603.34	12,401.78	9,127.40	96.58	87.74	-67.98	3,824.05	-1,095.83	1,268.90	1,096.22	172.68	7.348	
13,100.00	9,604.68	12,501.72	9,125.27	98.40	89.60	-67.83	3,923.96	-1,096.82	1,270.20	1,094.18	176.04	7.215	
13,200.00	9,606.02	12,601.66	9,123.15	100.24	91.46	-67.69	4,023.88	-1,097.80	1,271.51	1,092.08	179.42	7.087	
13,300.00	9,607.37	12,701.60	9,121.02	102.09	93.34	-67.54	4,123.79	-1,098.79	1,272.82	1,090.00	182.82	6.962	
13,400.00	9,608.71	12,801.54	9,118.89	103.96	95.23	-67.40	4,223.70	-1,099.78	1,274.14	1,087.90	186.24	6.841	
13,500.00	9,610.05	12,901.48	9,116.77	105.83	97.13	-67.25	4,323.61	-1,100.76	1,275.47	1,085.80	189.67	6.725	
13,600.00	9,611.39	13,001.42	9,114.64	107.72	99.04	-67.11	4,423.52	-1,101.75	1,276.81	1,083.69	193.12	6.611	
13,700.00	9,612.73	13,101.36	9,112.51	109.61	100.96	-66.97	4,523.44	-1,102.74	1,278.15	1,081.57	196.58	6.502	
13,800.00	9,614.07	13,201.30	9,110.39	111.52	102.89	-66.82	4,623.35	-1,103.72	1,279.51	1,079.45	200.06	6.396	
13,900.00	9,615.42	13,301.24	9,108.26	113.43	104.83	-66.68	4,723.26	-1,104.71	1,280.87	1,077.33	203.54	6.293	
14,000.00	9,616.76	13,401.18	9,106.14	115.36	106.78	-66.54	4,823.17	-1,105.69	1,282.24	1,075.20	207.04	6.193	
14,100.00	9,618.10	13,501.12	9,104.01	117.29	108.74	-66.40	4,923.09	-1,106.68	1,283.62	1,073.08	210.54	6.097	
14,200.00	9,619.44	13,601.06	9,101.88	119.23	110.70	-66.26	5,023.00	-1,107.67	1,285.00	1,070.95	214.05	6.003	
14,300.00	9,620.78	13,703.53	9,099.74	121.18	112.73	-66.11	5,125.45	-1,108.68	1,286.39	1,068.77	217.62	5.911	
14,400.00	9,622.13	13,825.63	9,100.34	123.13	115.14	-66.07	5,247.53	-1,109.89	1,286.73	1,065.04	221.69	5.804	
14,500.00	9,623.47	13,925.81	9,103.00	125.09	117.13	-66.12	5,347.67	-1,110.89	1,286.20	1,060.71	225.48	5.704	
14,600.00	9,624.81	14,025.80	9,105.66	127.06	119.12	-66.18	5,447.62	-1,111.89	1,285.67	1,056.38	229.29	5.607	
14,700.00	9,626.15	14,125.80	9,108.32	129.03	121.12	-66.23	5,547.57	-1,112.89	1,285.14	1,052.03	233.11	5.513	
14,800.00	9,627.49	14,225.79	9,110.98	131.01	123.12	-66.28	5,647.52	-1,113.89	1,284.61	1,047.67	236.94	5.422	
14,900.00	9,628.84	14,325.78	9,113.64	132.99	125.13	-66.34	5,747.47	-1,114.89	1,284.09	1,043.31	240.78	5.333	
15,000.00	9,630.18	14,425.77	9,116.30	134.98	127.14	-66.39	5,847.42	-1,115.89	1,283.56	1,038.93	244.64	5.247	
15,100.00	9,631.55	14,538.47	9,119.11	136.98	129.42	-66.46	5,960.08	-1,116.65	1,283.09	1,034.29	248.81	5.157	
15,200.00	9,633.07	14,638.47	9,121.06	138.97	131.43	-66.47	6,060.06	-1,116.26	1,282.91	1,030.29	252.62	5.078	
15,300.00	9,634.58	14,738.47	9,123.01	140.97	133.45	-66.49	6,160.04	-1,115.87	1,282.72	1,026.28	256.44	5.002	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-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	9,636.09	14,838.47	9,124.96	142.98	135.48	-66.51	6,260.02	-1,115.48	1,282.54	1,022.26	260.27	4.928	
15,500.00	9,637.61	14,938.47	9,126.91	144.98	137.51	-66.53	6,360.00	-1,115.09	1,282.35	1,018.24	264.11	4.855	
15,600.00	9,639.12	15,038.47	9,128.85	147.00	139.54	-66.54	6,459.98	-1,114.70	1,282.17	1,014.20	267.96	4.785	
15,700.00	9,640.63	15,138.47	9,130.80	149.01	141.58	-66.56	6,559.96	-1,114.31	1,281.98	1,010.16	271.82	4.716	
15,800.00	9,642.15	15,238.46	9,132.75	151.03	143.62	-66.58	6,659.94	-1,113.92	1,281.80	1,006.12	275.68	4.650	
15,900.00	9,643.66	15,338.46	9,134.70	153.06	145.66	-66.60	6,759.92	-1,113.53	1,281.61	1,002.06	279.55	4.585	
16,000.00	9,645.17	15,438.46	9,136.65	155.08	147.71	-66.61	6,859.90	-1,113.14	1,281.43	998.00	283.42	4.521	
16,100.00	9,646.69	15,538.46	9,138.60	157.11	149.76	-66.63	6,959.88	-1,112.75	1,281.24	993.94	287.31	4.460	
16,200.00	9,648.20	15,638.46	9,140.55	159.15	151.81	-66.65	7,059.86	-1,112.35	1,281.06	989.86	291.19	4.399	
16,300.00	9,649.71	15,738.46	9,142.50	161.18	153.86	-66.67	7,159.83	-1,111.96	1,280.87	985.78	295.09	4.341	
16,400.00	9,651.23	15,838.46	9,144.45	163.22	155.92	-66.69	7,259.81	-1,111.57	1,280.69	981.70	298.99	4.283	
16,495.11	9,652.66	15,931.21	9,146.23	165.17	157.83	-66.70	7,352.55	-1,111.21	1,280.53	977.87	302.65	4.231	
16,500.00	9,652.74	15,935.36	9,146.28	165.27	157.92	-66.70	7,356.69	-1,111.19	1,280.53	977.70	302.83	4.229	
16,600.00	9,654.25	16,020.08	9,146.17	167.31	159.66	-66.64	7,441.41	-1,110.88	1,281.18	974.87	306.32	4.183	
16,700.00	9,655.77	16,119.11	9,144.41	169.36	161.71	-66.51	7,540.43	-1,110.52	1,282.51	972.55	309.96	4.138	
16,800.00	9,657.28	16,219.06	9,142.62	171.41	163.78	-66.37	7,640.36	-1,110.16	1,283.84	970.23	313.62	4.094	
16,900.00	9,658.79	16,319.00	9,140.84	173.47	165.84	-66.24	7,740.29	-1,109.80	1,285.18	967.91	317.27	4.051	
17,000.00	9,660.31	16,418.95	9,139.06	175.52	167.92	-66.11	7,840.22	-1,109.43	1,286.53	965.61	320.92	4.009	
17,100.00	9,661.82	16,518.89	9,137.27	177.58	169.99	-65.97	7,940.14	-1,109.07	1,287.89	963.31	324.58	3.968	
17,200.00	9,663.33	16,618.84	9,135.49	179.64	172.07	-65.84	8,040.07	-1,108.71	1,289.25	961.02	328.23	3.928	
17,300.00	9,664.85	16,718.78	9,133.70	181.70	174.14	-65.71	8,140.00	-1,108.35	1,290.62	958.75	331.87	3.889	
17,400.00	9,666.36	16,818.73	9,131.92	183.77	176.22	-65.57	8,239.93	-1,107.99	1,291.99	956.48	335.52	3.851	
17,500.00	9,667.87	16,918.68	9,130.13	185.83	178.30	-65.44	8,339.86	-1,107.63	1,293.38	954.22	339.16	3.813	
17,600.00	9,669.39	17,018.62	9,128.35	187.90	180.39	-65.31	8,439.79	-1,107.26	1,294.77	951.97	342.80	3.777	
17,700.00	9,670.90	17,118.57	9,126.56	189.97	182.47	-65.18	8,539.72	-1,106.90	1,296.16	949.73	346.43	3.741	
17,800.00	9,672.44	17,218.51	9,124.78	192.04	184.56	-65.04	8,639.65	-1,106.54	1,297.57	947.50	350.07	3.707	
17,900.00	9,674.07	17,318.45	9,122.99	194.12	186.65	-64.91	8,739.57	-1,106.18	1,299.01	945.32	353.69	3.673	
18,000.00	9,675.70	17,418.40	9,121.21	196.19	188.73	-64.77	8,839.50	-1,105.82	1,300.45	943.15	357.31	3.640	
18,100.00	9,677.33	17,519.17	9,120.60	198.27	191.05	-64.67	8,950.27	-1,105.40	1,301.35	940.14	361.21	3.603	
18,200.00	9,678.96	17,629.16	9,120.72	200.35	193.14	-64.61	9,050.25	-1,105.02	1,301.97	936.99	364.98	3.567	
18,300.00	9,680.59	17,729.15	9,120.84	202.43	195.23	-64.55	9,150.24	-1,104.64	1,302.59	933.84	368.75	3.532	
18,400.00	9,682.22	17,829.14	9,120.96	204.51	197.32	-64.49	9,250.23	-1,104.26	1,303.22	930.70	372.52	3.498	
18,500.00	9,683.84	17,929.13	9,121.08	206.60	199.42	-64.43	9,350.22	-1,103.88	1,303.84	927.55	376.29	3.465	
18,600.00	9,685.47	18,029.11	9,121.20	208.68	201.51	-64.37	9,450.21	-1,103.50	1,304.47	924.41	380.06	3.432	
18,700.00	9,687.10	18,129.10	9,121.32	210.77	203.61	-64.31	9,550.19	-1,103.13	1,305.10	921.27	383.83	3.400	
18,800.00	9,688.73	18,229.09	9,121.44	212.86	205.71	-64.25	9,650.18	-1,102.75	1,305.72	918.13	387.59	3.369	
18,900.00	9,690.36	18,329.08	9,121.57	214.94	207.81	-64.19	9,750.17	-1,102.37	1,306.36	914.99	391.36	3.338	
19,000.00	9,691.99	18,429.07	9,121.69	217.03	209.91	-64.13	9,850.16	-1,101.99	1,306.99	911.86	395.13	3.308	
19,100.00	9,693.62	18,529.06	9,121.81	219.13	212.01	-64.07	9,950.15	-1,101.61	1,307.62	908.73	398.89	3.278	
19,200.00	9,695.25	18,629.05	9,121.93	221.22	214.11	-64.01	10,050.13	-1,101.23	1,308.26	905.60	402.66	3.249	
19,300.00	9,696.87	18,729.03	9,122.05	223.31	216.22	-63.95	10,150.12	-1,100.85	1,308.89	902.47	406.42	3.221	
19,400.00	9,698.50	18,829.02	9,122.17	225.41	218.32	-63.89	10,250.11	-1,100.47	1,309.53	899.34	410.19	3.193	
19,500.00	9,700.13	18,929.01	9,122.29	227.50	220.43	-63.83	10,350.10	-1,100.09	1,310.17	896.22	413.95	3.165	
19,600.00	9,701.76	19,029.00	9,122.41	229.60	222.53	-63.77	10,450.08	-1,099.71	1,310.81	893.10	417.71	3.138	
19,700.00	9,703.39	19,128.99	9,122.53	231.70	224.64	-63.71	10,550.07	-1,099.33	1,311.45	889.98	421.47	3.112	
19,800.00	9,705.02	19,228.98	9,122.65	233.80	226.75	-63.65	10,650.06	-1,098.95	1,312.10	886.86	425.23	3.086	
19,900.00	9,706.65	19,328.97	9,122.77	235.90	228.86	-63.59	10,750.05	-1,098.57	1,312.74	883.75	428.99	3.060	
20,000.00	9,708.28	19,428.96	9,122.89	238.00	230.97	-63.53	10,850.04	-1,098.19	1,313.39	880.64	432.75	3.035	
20,044.41	9,709.00	19,473.36	9,122.95	238.80	231.90	-63.51	10,894.44	-1,098.02	1,313.67	879.40	434.27	3.025 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 5HC - OH / Job #61218 - Plan 3 06-09-17													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)					
0.00	0.00	0.00	21.00	0.00	0.00	-76.41	327.27	-1,353.86	1,393.01				
100.00	100.00	79.00	100.00	0.19	0.15	-76.41	327.27	-1,353.86	1,392.85	1,392.50	0.35	4,019.781	
200.00	200.00	179.00	200.00	0.73	0.62	-76.41	327.27	-1,353.86	1,392.85	1,391.50	1.35	1,032.012	
300.00	300.00	279.00	300.00	1.27	1.16	-76.41	327.27	-1,353.86	1,392.85	1,390.43	2.43	574.357	
400.00	400.00	379.00	400.00	1.81	1.69	-76.41	327.27	-1,353.86	1,392.85	1,389.35	3.50	397.903	
500.00	500.00	479.00	500.00	2.34	2.23	-76.41	327.27	-1,353.86	1,392.85	1,388.27	4.58	304.389	
600.00	600.00	579.00	600.00	2.88	2.77	-76.41	327.27	-1,353.86	1,392.85	1,387.20	5.65	246.465 CC	
700.00	699.98	678.98	699.98	3.42	3.31	-96.71	327.27	-1,353.86	1,393.05	1,386.33	6.73	207.139	
800.00	799.84	778.84	799.84	3.96	3.84	-96.91	327.27	-1,353.86	1,393.68	1,385.88	7.80	178.714	
900.00	899.45	878.45	899.45	4.50	4.38	-97.25	327.27	-1,353.86	1,394.75	1,385.88	8.87	157.163	
1,000.00	998.90	977.90	998.90	5.05	4.91	-97.67	327.27	-1,353.86	1,396.12	1,386.16	9.96	140.219	
1,100.00	1,098.36	1,077.36	1,098.36	5.60	5.45	-98.09	327.27	-1,353.86	1,397.56	1,386.51	11.04	126.548	
1,200.00	1,197.81	1,176.81	1,197.81	6.15	5.98	-98.51	327.27	-1,353.86	1,399.07	1,386.94	12.13	115.298	
1,300.00	1,297.26	1,276.26	1,297.26	6.71	6.52	-98.93	327.27	-1,353.86	1,400.67	1,387.44	13.23	105.889	
1,400.00	1,396.72	1,375.72	1,396.72	7.27	7.05	-99.35	327.27	-1,353.86	1,402.34	1,388.01	14.32	97.908	
1,500.00	1,496.17	1,475.17	1,496.17	7.84	7.59	-99.77	327.27	-1,353.86	1,404.08	1,388.66	15.42	91.057	
1,600.00	1,595.62	1,574.62	1,595.62	8.40	8.12	-100.19	327.27	-1,353.86	1,405.90	1,389.38	16.52	85.114	
1,700.00	1,695.07	1,674.07	1,695.07	8.97	8.66	-100.61	327.27	-1,353.86	1,407.80	1,390.18	17.62	79.912	
1,800.00	1,794.53	1,773.53	1,794.53	9.53	9.19	-101.02	327.27	-1,353.86	1,409.77	1,391.05	18.72	75.322	
1,900.00	1,893.98	1,872.98	1,893.98	10.10	9.73	-101.43	327.27	-1,353.86	1,411.81	1,392.00	19.82	71.243	
2,000.00	1,993.43	1,972.43	1,993.43	10.67	10.26	-101.85	327.27	-1,353.86	1,413.93	1,393.01	20.92	67.595	
2,100.00	2,092.89	2,071.89	2,092.89	11.24	10.80	-102.26	327.27	-1,353.86	1,416.12	1,394.11	22.02	64.314	
2,200.00	2,192.34	2,171.34	2,192.34	11.81	11.33	-102.67	327.27	-1,353.86	1,418.39	1,395.27	23.12	61.349	
2,300.00	2,291.79	2,263.93	2,291.79	12.38	11.83	-103.05	327.27	-1,353.89	1,420.78	1,396.60	24.18	58.751	
2,400.00	2,391.24	2,330.50	2,391.24	12.95	12.17	-103.33	327.27	-1,354.99	1,424.82	1,399.73	25.10	56.776	
2,500.00	2,490.70	2,400.00	2,490.70	13.52	12.53	-103.63	327.27	-1,357.78	1,431.23	1,405.21	26.02	55.007	
2,600.00	2,590.15	2,462.95	2,590.15	14.09	12.86	-103.90	327.27	-1,361.77	1,439.99	1,413.08	26.91	53.511	
2,700.00	2,689.60	2,528.71	2,689.60	14.66	13.20	-104.19	327.27	-1,367.40	1,451.10	1,423.29	27.82	52.168	
2,800.00	2,789.06	2,616.51	2,789.06	15.23	13.66	-104.57	327.27	-1,376.50	1,464.03	1,435.20	28.83	50.774	
2,900.00	2,888.51	2,715.04	2,888.51	15.80	14.18	-105.00	327.27	-1,386.80	1,477.17	1,447.26	29.91	49.392	
3,000.00	2,987.96	2,813.57	2,987.96	16.37	14.70	-105.42	327.27	-1,397.10	1,490.38	1,459.40	30.98	48.106	
3,100.00	3,087.41	2,912.10	3,087.41	16.94	15.23	-105.83	327.27	-1,407.40	1,503.67	1,471.61	32.06	46.905	
3,200.00	3,186.87	3,010.63	3,186.87	17.51	15.76	-106.24	327.27	-1,417.70	1,517.03	1,483.90	33.14	45.782	
3,300.00	3,286.32	3,109.16	3,286.32	18.08	16.29	-106.63	327.27	-1,428.00	1,530.48	1,496.26	34.22	44.730	
3,400.00	3,385.77	3,207.69	3,385.77	18.66	16.83	-107.02	327.27	-1,438.30	1,543.99	1,508.69	35.30	43.743	
3,500.00	3,485.23	3,306.22	3,485.23	19.23	17.36	-107.41	327.27	-1,448.60	1,557.57	1,521.19	36.38	42.816	
3,600.00	3,584.68	3,404.75	3,584.68	19.80	17.90	-107.79	327.27	-1,458.90	1,571.22	1,533.76	37.46	41.942	
3,700.00	3,684.13	3,503.28	3,684.13	20.37	18.44	-108.16	327.27	-1,469.20	1,584.94	1,546.39	38.55	41.118	
3,800.00	3,783.59	3,601.81	3,783.59	20.94	18.99	-108.56	327.27	-1,479.50	1,598.71	1,559.08	39.63	40.339	
3,900.00	3,883.24	3,700.62	3,883.24	21.50	19.53	-109.09	327.27	-1,489.82	1,611.85	1,571.13	40.72	39.585	
4,000.00	3,983.12	3,799.78	3,983.12	22.04	20.08	-109.48	327.27	-1,500.19	1,623.88	1,582.09	41.79	38.860	
4,100.00	4,083.11	3,899.17	4,083.11	22.56	20.64	-89.48	327.27	-1,510.58	1,634.77	1,591.93	42.84	38.159	
4,200.00	4,183.11	3,998.63	4,183.11	23.07	21.19	-89.48	327.27	-1,520.97	1,645.22	1,601.34	43.88	37.491	
4,300.00	4,283.11	4,098.08	4,283.11	23.58	21.75	-89.48	327.27	-1,531.37	1,655.68	1,610.75	44.93	36.853	
4,400.00	4,383.11	4,197.53	4,383.11	24.10	22.30	-89.49	327.27	-1,541.76	1,666.13	1,620.16	45.97	36.242	
4,500.00	4,483.11	4,297.04	4,483.11	24.61	22.87	-89.49	327.27	-1,552.15	1,676.58	1,629.55	47.02	35.698	
4,600.00	4,583.11	4,396.53	4,583.11	25.13	23.45	-89.49	327.27	-1,562.54	1,687.02	1,638.93	48.07	35.251	
4,700.00	4,683.11	4,496.03	4,683.11	25.64	24.03	-89.49	327.27	-1,572.93	1,697.46	1,648.33	49.12	34.804	
4,800.00	4,783.11	4,595.53	4,783.11	26.16	24.61	-89.49	327.27	-1,583.32	1,707.89	1,657.72	50.17	34.357	
4,900.00	4,883.11	4,695.03	4,883.11	26.68	25.19	-89.49	327.27	-1,593.71	1,718.32	1,667.11	51.22	33.910	
5,000.00	4,983.11	4,794.53	4,983.11	27.20	25.77	-89.49	327.27	-1,604.10	1,728.75	1,676.50	52.27	33.463	
5,100.00	5,083.11	4,894.03	5,083.11	27.72	26.35	-89.49	327.27	-1,614.49	1,739.18	1,686.89	53.32	33.016	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 5HC - OH / Job #61218 - Plan 3 06-09-17												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
5,200.00	5,183.11	5,172.63	5,183.11	28.24	27.49	-89.49	327.27	-1,565.03	1,680.27	1,624.98	55.29	30.391	
5,300.00	5,283.11	5,272.63	5,283.11	28.76	28.02	-89.49	327.27	-1,565.03	1,680.27	1,623.93	56.34	29.823	
5,400.00	5,383.11	5,372.63	5,383.11	29.28	28.54	-89.49	327.27	-1,565.03	1,680.27	1,622.88	57.39	29.276	
5,500.00	5,483.11	5,472.63	5,483.11	29.80	29.07	-89.49	327.27	-1,565.03	1,680.27	1,621.82	58.45	28.748	
5,600.00	5,583.11	5,572.63	5,583.11	30.32	29.60	-89.49	327.27	-1,565.03	1,680.27	1,620.77	59.50	28.239	
5,700.00	5,683.11	5,672.63	5,683.11	30.85	30.13	-89.49	327.27	-1,565.03	1,680.27	1,619.71	60.56	27.747	
5,800.00	5,783.11	5,772.63	5,783.11	31.37	30.65	-89.49	327.27	-1,565.03	1,680.27	1,618.66	61.61	27.272	
5,900.00	5,883.11	5,872.63	5,883.11	31.90	31.18	-89.49	327.27	-1,565.03	1,680.27	1,617.60	62.67	26.812	
6,000.00	5,983.11	5,972.63	5,983.11	32.42	31.71	-89.49	327.27	-1,565.03	1,680.27	1,616.54	63.73	26.367	
6,100.00	6,083.11	6,072.63	6,083.11	32.95	32.24	-89.49	327.27	-1,565.03	1,680.27	1,615.49	64.78	25.937	
6,200.00	6,183.11	6,172.63	6,183.11	33.47	32.77	-89.49	327.27	-1,565.03	1,680.27	1,614.43	65.84	25.520	
6,300.00	6,283.11	6,272.63	6,283.11	34.00	33.30	-89.49	327.27	-1,565.03	1,680.27	1,613.37	66.90	25.116	
6,400.00	6,383.11	6,372.63	6,383.11	34.52	33.83	-89.49	327.27	-1,565.03	1,680.27	1,612.31	67.96	24.725	
6,500.00	6,483.11	6,472.63	6,483.11	35.05	34.36	-89.49	327.27	-1,565.03	1,680.27	1,611.25	69.02	24.345	
6,600.00	6,583.11	6,572.63	6,583.11	35.58	34.89	-89.49	327.27	-1,565.03	1,680.27	1,610.19	70.08	23.977	
6,700.00	6,683.11	6,672.63	6,683.11	36.10	35.42	-89.49	327.27	-1,565.03	1,680.27	1,609.13	71.14	23.619	
6,800.00	6,783.11	6,772.63	6,783.11	36.63	35.95	-89.49	327.27	-1,565.03	1,680.27	1,608.07	72.20	23.272	
6,900.00	6,883.11	6,872.63	6,883.11	37.16	36.48	-89.49	327.27	-1,565.03	1,680.27	1,607.01	73.26	22.935	
7,000.00	6,983.11	6,972.63	6,983.11	37.69	37.01	-89.49	327.27	-1,565.03	1,680.27	1,605.95	74.32	22.607	
7,100.00	7,083.11	7,072.63	7,083.11	38.21	37.54	-89.49	327.27	-1,565.03	1,680.27	1,604.88	75.39	22.289	
7,200.00	7,183.11	7,172.63	7,183.11	38.74	38.08	-89.49	327.27	-1,565.03	1,680.27	1,603.82	76.45	21.979	
7,300.00	7,283.11	7,272.63	7,283.11	39.27	38.61	-89.49	327.27	-1,565.03	1,680.27	1,602.76	77.51	21.677	
7,400.00	7,383.11	7,372.63	7,383.11	39.80	39.14	-89.49	327.27	-1,565.03	1,680.27	1,601.69	78.58	21.384	
7,500.00	7,483.11	7,472.63	7,483.11	40.33	39.67	-89.49	327.27	-1,565.03	1,680.27	1,600.63	79.64	21.098	
7,600.00	7,583.11	7,572.63	7,583.11	40.86	40.20	-89.49	327.27	-1,565.03	1,680.27	1,599.57	80.70	20.820	
7,700.00	7,683.11	7,672.63	7,683.11	41.39	40.74	-89.49	327.27	-1,565.03	1,680.27	1,598.50	81.77	20.549	
7,800.00	7,783.11	7,772.63	7,783.11	41.92	41.27	-89.49	327.27	-1,565.03	1,680.27	1,597.44	82.83	20.285	
7,900.00	7,883.11	7,872.63	7,883.11	42.45	41.80	-89.49	327.27	-1,565.03	1,680.27	1,596.37	83.90	20.028	
8,000.00	7,983.11	7,972.63	7,983.11	42.98	42.33	-89.49	327.27	-1,565.03	1,680.27	1,595.31	84.96	19.777	
8,100.00	8,083.11	8,072.63	8,083.11	43.51	42.87	-89.49	327.27	-1,565.03	1,680.27	1,594.24	86.03	19.532	
8,200.00	8,183.11	8,172.63	8,183.11	44.04	43.40	-89.49	327.27	-1,565.03	1,680.27	1,593.18	87.09	19.293	
8,300.00	8,283.11	8,272.63	8,283.11	44.57	43.93	-89.49	327.27	-1,565.03	1,680.27	1,592.11	88.16	19.059	
8,400.00	8,383.11	8,372.63	8,383.11	45.10	44.46	-89.49	327.27	-1,565.03	1,680.27	1,591.05	89.23	18.832	
8,500.00	8,483.11	8,472.63	8,483.11	45.63	45.00	-89.49	327.27	-1,565.03	1,680.27	1,589.98	90.29	18.609	
8,600.00	8,583.11	8,572.63	8,583.11	46.17	45.53	-89.49	327.27	-1,565.03	1,680.27	1,588.91	91.36	18.392	
8,700.00	8,683.11	8,672.63	8,683.11	46.70	46.06	-89.49	327.27	-1,565.03	1,680.27	1,587.85	92.43	18.180	
8,800.00	8,783.11	8,772.63	8,783.11	47.23	46.60	-89.49	327.27	-1,565.03	1,680.27	1,586.78	93.49	17.972	
8,900.00	8,883.11	8,872.63	8,883.11	47.76	47.13	-89.49	327.27	-1,565.03	1,680.27	1,585.71	94.56	17.769	
9,000.00	8,983.11	8,972.63	8,983.11	48.29	47.67	-89.49	327.27	-1,565.03	1,680.27	1,584.64	95.63	17.571	
9,100.00	9,083.11	9,072.63	9,083.11	48.82	48.20	-89.49	327.27	-1,565.03	1,680.27	1,583.58	96.69	17.377	
9,200.00	9,182.98	9,169.08	9,179.43	49.36	48.71	-88.92	330.85	-1,565.07	1,680.28	1,582.53	97.75	17.190	
9,300.00	9,280.93	9,263.82	9,272.27	49.93	49.21	-88.92	349.15	-1,565.25	1,680.27	1,581.47	98.80	17.006	
9,400.00	9,374.01	9,358.65	9,360.92	50.51	49.67	-88.96	382.53	-1,565.58	1,680.26	1,580.39	99.87	16.825	
9,500.00	9,459.39	9,453.71	9,443.05	51.11	50.08	-89.03	430.18	-1,566.05	1,680.22	1,579.30	100.92	16.648	
9,600.00	9,534.47	9,550.00	9,517.05	51.72	50.45	-89.12	491.60	-1,566.66	1,680.18	1,578.19	101.99	16.474	
9,700.00	9,596.97	9,645.05	9,579.02	52.35	50.82	-89.24	563.53	-1,567.37	1,680.13	1,577.08	103.05	16.304	
9,800.00	9,644.99	9,741.57	9,628.90	53.00	51.24	-89.39	646.02	-1,568.19	1,680.08	1,575.94	104.14	16.132	
9,900.00	9,677.08	9,838.81	9,664.46	53.67	51.68	-89.55	736.40	-1,569.08	1,680.04	1,574.78	105.26	15.961	
10,000.00	9,692.26	9,936.86	9,684.33	54.34	52.14	-89.73	832.29	-1,570.03	1,680.01	1,573.62	106.39	15.791	
10,100.00	9,691.40	10,035.92	9,687.74	55.05	52.62	-89.87	931.17	-1,571.01	1,679.99	1,572.43	107.57	15.618	
10,171.40	9,688.49	10,107.31	9,685.78	55.61	53.00	-89.91	1,002.53	-1,571.72	1,679.99	1,571.49	108.51	15.483	
10,200.00	9,687.32	10,135.91	9,685.00	55.83	53.18	-89.92	1,031.12	-1,572.00	1,679.99	1,571.09	108.90	15.427	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 5HC - OH / Job #61218 - Plan 3 06-09-17													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	
10,300.00	9,683.23	10,235.90	9,682.26	56.69	53.81	-89.97	1,131.07	-1,572.99	1,679.99	1,569.61	110.39	15.219	
10,400.00	9,679.15	10,335.89	9,679.52	57.61	54.52	-90.01	1,231.02	-1,573.98	1,680.00	1,567.98	112.02	14.998	
10,500.00	9,675.07	10,435.88	9,676.78	58.59	55.31	-90.06	1,330.96	-1,574.97	1,680.00	1,566.21	113.79	14.764	
10,600.00	9,670.98	10,535.87	9,674.04	59.64	56.17	-90.10	1,430.91	-1,575.96	1,680.00	1,564.31	115.69	14.521	
10,700.00	9,666.90	10,635.86	9,671.30	60.75	57.09	-90.15	1,530.86	-1,576.95	1,680.01	1,562.28	117.73	14.270	
10,800.00	9,662.81	10,735.85	9,668.56	61.92	58.08	-90.20	1,630.81	-1,577.94	1,680.01	1,560.13	119.88	14.014	
10,900.00	9,658.73	10,835.84	9,665.82	63.13	59.14	-90.24	1,730.76	-1,578.92	1,680.02	1,557.87	122.15	13.753	
11,000.00	9,654.64	10,935.83	9,663.08	64.40	60.25	-90.29	1,830.71	-1,579.91	1,680.03	1,555.50	124.53	13.491	
11,100.00	9,650.56	11,035.82	9,660.34	65.71	61.42	-90.33	1,930.65	-1,580.90	1,680.04	1,553.03	127.01	13.227	
11,200.00	9,646.47	11,135.82	9,657.60	67.07	62.64	-90.38	2,030.60	-1,581.89	1,680.05	1,550.46	129.59	12.964	
11,300.00	9,642.39	11,235.81	9,654.86	68.46	63.91	-90.43	2,130.55	-1,582.88	1,680.06	1,547.80	132.26	12.703	
11,400.00	9,638.30	11,335.80	9,652.12	69.90	65.23	-90.47	2,230.50	-1,583.87	1,680.07	1,545.06	135.02	12.443	
11,500.00	9,634.22	11,435.79	9,649.38	71.37	66.59	-90.52	2,330.45	-1,584.86	1,680.09	1,542.24	137.85	12.188	
11,600.00	9,630.13	11,535.78	9,646.64	72.88	68.00	-90.56	2,430.40	-1,585.85	1,680.10	1,539.34	140.76	11.936	
11,700.00	9,626.05	11,635.77	9,643.90	74.42	69.44	-90.61	2,530.35	-1,586.84	1,680.12	1,536.37	143.74	11.688	
11,800.00	9,621.96	11,735.76	9,641.16	75.99	70.92	-90.65	2,630.29	-1,587.83	1,680.14	1,533.34	146.79	11.446	
11,900.00	9,617.88	11,835.75	9,638.43	77.59	72.43	-90.70	2,730.24	-1,588.82	1,680.15	1,530.25	149.90	11.208	
12,000.00	9,613.79	11,935.64	9,635.62	79.21	73.98	-90.74	2,830.09	-1,589.81	1,680.18	1,527.11	153.07	10.976	
12,100.00	9,609.71	12,035.63	9,632.80	80.86	75.55	-90.79	2,930.04	-1,590.81	1,680.20	1,523.91	156.30	10.750	
12,200.00	9,605.63	12,135.63	9,629.98	82.54	77.16	-90.83	3,029.98	-1,591.80	1,680.23	1,520.66	159.58	10.529	
12,300.00	9,601.54	12,235.62	9,627.16	84.23	78.79	-90.87	3,129.93	-1,592.80	1,680.26	1,517.36	162.90	10.315	
12,400.00	9,597.71	12,335.61	9,624.35	85.95	80.44	-90.91	3,229.88	-1,593.80	1,680.28	1,514.01	166.27	10.106	
12,500.00	9,593.68	12,435.59	9,621.53	87.68	82.12	-90.85	3,329.81	-1,594.79	1,680.26	1,510.58	169.69	9.902	
12,600.00	9,589.77	12,535.51	9,618.71	89.42	83.82	-90.71	3,429.68	-1,595.79	1,680.21	1,507.07	173.14	9.704	
12,700.00	9,585.93	12,635.42	9,615.89	91.19	85.54	-90.57	3,529.55	-1,596.78	1,680.16	1,503.53	176.63	9.512	
12,800.00	9,582.06	12,735.33	9,613.08	92.97	87.28	-90.42	3,629.42	-1,597.78	1,680.13	1,499.97	180.16	9.326	
12,900.00	9,578.18	12,835.25	9,610.26	94.77	89.04	-90.28	3,729.29	-1,598.77	1,680.10	1,496.38	183.72	9.145	
13,000.00	9,574.34	12,935.16	9,607.44	96.58	90.82	-90.14	3,829.16	-1,599.77	1,680.09	1,492.77	187.31	8.969	
13,100.00	9,570.55	13,035.07	9,604.62	98.42	92.61	-90.01	3,929.03	-1,600.76	1,680.08	1,489.15	190.94	8.799	
13,200.00	9,566.76	13,134.99	9,601.81	100.24	94.42	-89.86	4,028.90	-1,601.76	1,680.09	1,485.50	194.59	8.634	
13,300.00	9,562.97	13,234.90	9,599.99	102.09	96.24	-89.71	4,128.77	-1,602.76	1,680.11	1,481.84	198.26	8.474	
13,400.00	9,559.18	13,334.81	9,598.17	103.96	98.08	-89.57	4,228.63	-1,603.75	1,680.13	1,478.17	201.96	8.319	
13,500.00	9,555.39	13,434.73	9,596.36	105.83	99.93	-89.43	4,328.50	-1,604.75	1,680.17	1,474.48	205.69	8.169	
13,600.00	9,551.60	13,534.64	9,594.54	107.72	101.79	-89.29	4,428.37	-1,605.74	1,680.22	1,470.79	209.43	8.023	
13,700.00	9,547.81	13,634.55	9,592.72	109.61	103.66	-89.15	4,528.24	-1,606.74	1,680.27	1,467.08	213.20	7.881	
13,800.00	9,544.02	13,734.47	9,590.91	111.52	105.54	-89.01	4,628.11	-1,607.73	1,680.34	1,463.36	216.98	7.744	
13,900.00	9,540.23	13,834.38	9,589.10	113.43	107.45	-88.89	4,728.00	-1,608.74	1,680.41	1,459.61	220.80	7.611	
14,000.00	9,536.44	13,934.29	9,587.29	115.36	109.37	-88.79	4,827.89	-1,609.74	1,680.41	1,455.76	224.64	7.480	
14,100.00	9,532.65	14,034.20	9,585.48	117.29	111.28	-88.69	4,927.78	-1,610.74	1,680.38	1,451.89	228.49	7.354	
14,200.00	9,528.86	14,134.11	9,583.67	119.23	113.21	-88.59	5,027.67	-1,611.74	1,680.36	1,448.01	232.35	7.232	
14,300.00	9,525.07	14,234.02	9,581.86	121.18	115.14	-88.50	5,127.56	-1,612.73	1,680.34	1,444.11	236.23	7.113	
14,400.00	9,521.28	14,333.93	9,580.05	123.13	117.07	-88.41	5,227.45	-1,613.73	1,680.32	1,440.19	240.13	6.998	
14,500.00	9,517.49	14,433.84	9,578.24	125.09	119.02	-88.33	5,327.34	-1,614.72	1,680.30	1,436.26	244.03	6.885	
14,600.00	9,513.70	14,533.75	9,576.43	127.06	120.97	-88.25	5,427.23	-1,615.72	1,680.28	1,432.32	247.96	6.777	
14,700.00	9,509.91	14,633.66	9,574.62	129.03	122.93	-88.17	5,527.12	-1,616.72	1,680.26	1,428.37	251.89	6.671	
14,800.00	9,506.12	14,733.57	9,572.81	131.01	124.90	-88.09	5,627.01	-1,617.71	1,680.24	1,424.40	255.84	6.568	
14,900.00	9,502.33	14,833.48	9,571.00	132.99	126.87	-88.01	5,726.90	-1,618.71	1,680.23	1,420.43	259.80	6.467	
15,000.00	9,498.54	14,933.39	9,569.19	134.98	128.85	-87.93	5,826.79	-1,619.71	1,680.21	1,416.44	263.77	6.370	
15,100.00	9,494.75	15,033.30	9,567.38	136.98	130.83	-87.85	5,926.68	-1,620.72	1,680.21	1,412.43	267.97	6.271	
15,200.00	9,490.96	15,133.21	9,565.57	138.97	132.82	-87.77	6,026.57	-1,621.72	1,680.39	1,408.23	272.16	6.174	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 P2 - 5HC - OH / Job #61218 - Plan 3 06-09-17													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				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)	Between Centres (usft)	Between Ellipses (usft)			
15,300.00	9,634.58	15,259.85	9,616.83	140.97	135.27	-89.39	6,152.97	-1,619.89	1,680.34	1,404.19	276.15	6.085	
15,400.00	9,636.09	15,359.85	9,618.29	142.98	137.27	-89.39	6,252.96	-1,619.46	1,680.28	1,400.14	280.15	5.998	
15,500.00	9,637.61	15,459.85	9,619.75	144.98	139.26	-89.39	6,352.95	-1,619.03	1,680.23	1,396.08	284.15	5.913	
15,600.00	9,639.12	15,559.85	9,621.22	147.00	141.26	-89.39	6,452.94	-1,618.60	1,680.18	1,392.01	288.17	5.831	
15,700.00	9,640.63	15,659.85	9,622.68	149.01	143.27	-89.39	6,552.93	-1,618.17	1,680.13	1,387.93	292.19	5.750	
15,800.00	9,642.15	15,759.85	9,624.14	151.03	145.28	-89.39	6,652.92	-1,617.74	1,680.07	1,383.85	296.22	5.672	
15,900.00	9,643.66	15,859.85	9,625.61	153.06	147.30	-89.38	6,752.90	-1,617.31	1,680.02	1,379.76	300.26	5.595	
16,000.00	9,645.17	15,959.26	9,627.06	155.08	149.30	-89.38	6,852.30	-1,616.88	1,679.97	1,375.67	304.30	5.521	
16,009.28	9,645.31	15,967.97	9,627.21	155.27	149.48	-89.38	6,861.02	-1,616.85	1,679.97	1,375.31	304.66	5.514	
16,100.00	9,646.69	16,058.70	9,628.78	157.11	151.31	-89.39	6,951.72	-1,616.52	1,679.99	1,371.65	308.34	5.448	
16,200.00	9,648.20	16,158.70	9,630.52	159.15	153.34	-89.40	7,051.71	-1,616.16	1,680.00	1,367.60	312.40	5.378	
16,300.00	9,649.71	16,258.69	9,632.25	161.18	155.37	-89.40	7,151.69	-1,615.80	1,680.02	1,363.55	316.47	5.309	
16,400.00	9,651.23	16,358.69	9,633.98	163.22	157.40	-89.41	7,251.68	-1,615.44	1,680.04	1,359.49	320.54	5.241	
16,500.00	9,652.74	16,458.69	9,635.72	165.27	159.44	-89.42	7,351.66	-1,615.08	1,680.05	1,355.43	324.62	5.175	
16,600.00	9,654.25	16,558.69	9,637.45	167.31	161.48	-89.43	7,451.64	-1,614.72	1,680.07	1,351.36	328.71	5.111	
16,700.00	9,655.77	16,658.69	9,639.19	169.36	163.52	-89.43	7,551.63	-1,614.36	1,680.09	1,347.29	332.80	5.048	
16,800.00	9,657.28	16,758.69	9,640.92	171.41	165.56	-89.44	7,651.61	-1,614.00	1,680.10	1,343.21	336.90	4.987	
16,900.00	9,658.79	16,858.69	9,642.65	173.47	167.61	-89.45	7,751.60	-1,613.65	1,680.12	1,339.12	341.00	4.927	
17,000.00	9,660.31	16,958.69	9,644.39	175.52	169.66	-89.46	7,851.58	-1,613.29	1,680.14	1,335.03	345.11	4.868	
17,100.00	9,661.82	17,058.69	9,646.12	177.58	171.71	-89.46	7,951.56	-1,612.93	1,680.15	1,330.93	349.22	4.811	
17,200.00	9,663.33	17,158.69	9,647.85	179.64	173.77	-89.47	8,051.55	-1,612.57	1,680.17	1,326.83	353.33	4.755	
17,300.00	9,664.85	17,258.69	9,649.59	181.70	175.83	-89.48	8,151.53	-1,612.21	1,680.19	1,322.73	357.45	4.700	
17,400.00	9,666.36	17,358.69	9,651.32	183.77	177.89	-89.49	8,251.52	-1,611.85	1,680.20	1,318.62	361.58	4.647	
17,500.00	9,667.87	17,458.69	9,653.05	185.83	179.95	-89.49	8,351.50	-1,611.49	1,680.22	1,314.51	365.71	4.594	
17,600.00	9,669.39	17,558.69	9,654.79	187.90	182.01	-89.50	8,451.48	-1,611.13	1,680.24	1,310.39	369.84	4.543	
17,700.00	9,670.90	17,658.69	9,656.52	189.97	184.08	-89.51	8,551.47	-1,610.77	1,680.25	1,306.27	373.98	4.493	
17,800.00	9,672.44	17,758.69	9,658.25	192.04	186.15	-89.52	8,651.45	-1,610.41	1,680.26	1,302.14	378.12	4.444	
17,900.00	9,674.07	17,858.69	9,659.99	194.12	188.22	-89.52	8,751.44	-1,610.05	1,680.26	1,297.99	382.27	4.396	
18,000.00	9,675.70	17,958.69	9,661.72	196.19	190.29	-89.52	8,851.42	-1,609.69	1,680.25	1,293.83	386.42	4.348	
18,100.00	9,677.33	18,058.69	9,663.45	198.27	192.36	-89.53	8,951.41	-1,609.33	1,680.24	1,289.67	390.57	4.302	
18,200.00	9,678.96	18,158.69	9,665.17	200.35	194.44	-89.53	9,051.39	-1,608.97	1,680.23	1,285.51	394.72	4.257	
18,300.00	9,680.59	18,258.66	9,665.11	202.43	196.51	-89.47	9,151.35	-1,608.60	1,680.22	1,281.35	398.88	4.212	
18,400.00	9,682.22	18,358.63	9,664.48	204.51	198.59	-89.40	9,251.32	-1,608.22	1,680.22	1,277.19	403.03	4.169	
18,475.51	9,683.45	18,434.12	9,664.01	206.09	200.16	-89.34	9,326.81	-1,607.94	1,680.22	1,274.04	406.17	4.137	
18,500.00	9,683.84	18,458.60	9,663.86	206.60	200.67	-89.32	9,351.30	-1,607.85	1,680.22	1,273.03	407.19	4.126	
18,600.00	9,685.47	18,558.58	9,663.24	208.68	202.75	-89.24	9,451.27	-1,607.47	1,680.22	1,268.87	411.36	4.085	
18,700.00	9,687.10	18,658.55	9,662.62	210.77	204.84	-89.17	9,551.24	-1,607.09	1,680.23	1,264.71	415.52	4.044	
18,800.00	9,688.73	18,758.53	9,662.00	212.86	206.92	-89.09	9,651.21	-1,606.71	1,680.23	1,260.55	419.69	4.004	
18,900.00	9,690.36	18,858.50	9,661.37	214.94	209.01	-89.01	9,751.18	-1,606.33	1,680.25	1,256.39	423.85	3.964	
19,000.00	9,691.99	18,958.48	9,660.75	217.03	211.09	-88.93	9,851.16	-1,605.96	1,680.26	1,252.23	428.03	3.926	
19,100.00	9,693.62	19,058.45	9,660.13	219.13	213.18	-88.86	9,951.13	-1,605.58	1,680.28	1,248.08	432.20	3.888	
19,200.00	9,695.25	19,158.43	9,659.51	221.22	215.27	-88.78	10,051.10	-1,605.20	1,680.30	1,243.93	436.37	3.851	
19,300.00	9,696.87	19,258.40	9,658.89	223.31	217.36	-88.70	10,151.07	-1,604.82	1,680.32	1,239.77	440.55	3.814	
19,400.00	9,698.50	19,358.38	9,658.26	225.41	219.45	-88.63	10,251.04	-1,604.45	1,680.35	1,235.62	444.72	3.778	
19,500.00	9,700.13	19,458.35	9,657.64	227.50	221.55	-88.55	10,351.02	-1,604.07	1,680.38	1,231.47	448.90	3.743	
19,600.00	9,701.76	19,558.33	9,657.02	229.60	223.64	-88.47	10,450.99	-1,603.69	1,680.41	1,227.32	453.08	3.709	
19,700.00	9,703.39	19,658.30	9,656.40	231.70	225.74	-88.40	10,550.96	-1,603.31	1,680.44	1,223.18	457.27	3.675	
19,800.00	9,705.02	19,758.28	9,655.78	233.80	227.83	-88.32	10,650.93	-1,602.94	1,680.48	1,219.03	461.45	3.642	
19,900.00	9,706.65	19,858.25	9,655.15	235.90	229.93	-88.24	10,750.90	-1,602.56	1,680.52	1,214.89	465.63	3.609	
20,000.00	9,708.28	19,958.22	9,654.53	238.00	232.03	-88.17	10,850.88	-1,602.18	1,680.57	1,210.75	469.82	3.577	
20,044.41	9,709.00	20,002.62	9,654.26	238.80	232.96	-88.13	10,895.27	-1,602.01	1,680.59	1,209.05	471.54	3.564 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													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	21.00	0.00	0.00	-77.41	302.27	-1,353.86	1,387.35					
100.00	100.00	79.00	100.00	0.19	0.15	-77.41	302.27	-1,353.86	1,387.19	1,386.84	0.35	4,003.443		
200.00	200.00	179.00	200.00	0.73	0.62	-77.41	302.27	-1,353.86	1,387.19	1,385.84	1.35	1,027.817		
300.00	300.00	279.00	300.00	1.27	1.16	-77.41	302.27	-1,353.86	1,387.19	1,384.76	2.43	572.022		
400.00	400.00	379.00	400.00	1.81	1.69	-77.41	302.27	-1,353.86	1,387.19	1,383.69	3.50	396.286		
500.00	500.00	479.00	500.00	2.34	2.23	-77.41	302.27	-1,353.86	1,387.19	1,382.61	4.58	303.152		
600.00	600.00	579.00	600.00	2.88	2.77	-77.41	302.27	-1,353.86	1,387.19	1,381.54	5.65	245.464		
700.00	699.98	678.98	699.98	3.42	3.31	-97.72	302.27	-1,353.86	1,387.42	1,380.70	6.73	206.301		
800.00	799.84	778.84	799.84	3.96	3.84	-97.92	302.27	-1,353.86	1,388.14	1,380.34	7.80	178.002		
900.00	899.45	878.45	899.45	4.50	4.38	-98.25	302.27	-1,353.86	1,389.37	1,380.49	8.87	156.555		
1,000.00	998.90	977.90	998.90	5.05	4.91	-98.67	302.27	-1,353.86	1,390.91	1,380.95	9.96	139.698		
1,100.00	1,098.36	1,077.36	1,098.36	5.60	5.45	-99.09	302.27	-1,353.86	1,392.53	1,381.49	11.04	126.095		
1,200.00	1,197.81	1,176.81	1,197.81	6.15	5.98	-99.51	302.27	-1,353.86	1,394.23	1,382.10	12.13	114.903		
1,300.00	1,297.26	1,276.26	1,297.26	6.71	6.52	-99.94	302.27	-1,353.86	1,396.00	1,382.78	13.23	105.541		
1,400.00	1,396.72	1,375.72	1,396.72	7.27	7.05	-100.36	302.27	-1,353.86	1,397.85	1,383.53	14.32	97.600		
1,500.00	1,496.17	1,475.17	1,496.17	7.84	7.59	-100.77	302.27	-1,353.86	1,399.78	1,384.36	15.42	90.783		
1,600.00	1,595.62	1,574.62	1,595.62	8.40	8.12	-101.19	302.27	-1,353.86	1,401.78	1,385.26	16.52	84.870		
1,700.00	1,695.07	1,674.07	1,695.07	8.97	8.66	-101.61	302.27	-1,353.86	1,403.86	1,386.24	17.62	79.694		
1,800.00	1,794.53	1,773.53	1,794.53	9.53	9.19	-102.02	302.27	-1,353.86	1,406.01	1,387.29	18.72	75.127		
1,900.00	1,893.98	1,872.98	1,893.98	10.10	9.73	-102.44	302.27	-1,353.86	1,408.23	1,388.42	19.82	71.068		
2,000.00	1,993.43	1,972.43	1,993.43	10.67	10.26	-102.85	302.27	-1,353.86	1,410.53	1,389.61	20.92	67.439		
2,100.00	2,092.89	2,071.89	2,092.89	11.24	10.80	-103.26	302.27	-1,353.86	1,412.90	1,390.88	22.02	64.175		
2,200.00	2,192.34	2,171.34	2,192.34	11.81	11.33	-103.67	302.27	-1,353.86	1,415.35	1,392.23	23.12	61.224		
2,300.00	2,291.79	2,290.94	2,311.93	12.38	11.97	-104.16	302.27	-1,353.56	1,417.72	1,393.39	24.32	58.292		
2,400.00	2,391.24	2,486.81	2,507.54	12.95	12.98	-104.92	302.27	-1,344.07	1,415.50	1,389.61	25.89	54.671		
2,500.00	2,490.70	2,681.46	2,700.83	13.52	14.00	-105.64	302.27	-1,321.43	1,406.61	1,379.15	27.46	51.224		
2,600.00	2,590.15	2,837.74	2,854.68	14.09	14.85	-106.19	302.27	-1,294.02	1,391.61	1,362.78	28.83	48.264		
2,700.00	2,689.60	2,936.06	2,951.19	14.66	15.39	-106.55	302.27	-1,275.26	1,375.41	1,345.51	29.91	45.988		
2,800.00	2,789.06	3,034.37	3,047.70	15.23	15.95	-106.91	302.27	-1,256.50	1,359.27	1,328.28	30.99	43.868		
2,900.00	2,888.51	3,132.69	3,144.20	15.80	16.51	-107.28	302.27	-1,237.74	1,343.18	1,311.11	32.07	41.888		
3,000.00	2,987.96	3,231.00	3,240.71	16.37	17.08	-107.66	302.27	-1,218.98	1,327.15	1,294.00	33.15	40.036		
3,100.00	3,087.41	3,329.32	3,337.22	16.94	17.65	-108.05	302.27	-1,200.22	1,311.17	1,276.94	34.24	38.299		
3,200.00	3,186.87	3,427.63	3,433.73	17.51	18.24	-108.45	302.27	-1,181.46	1,295.26	1,259.94	35.32	36.669		
3,300.00	3,286.32	3,525.95	3,530.24	18.08	18.82	-108.86	302.27	-1,162.71	1,279.41	1,243.00	36.41	35.135		
3,400.00	3,385.77	3,624.26	3,626.75	18.66	19.41	-109.28	302.27	-1,143.95	1,263.63	1,226.12	37.51	33.691		
3,500.00	3,485.23	3,722.58	3,723.26	19.23	20.01	-109.71	302.27	-1,125.19	1,247.91	1,209.31	38.60	32.329		
3,600.00	3,584.68	3,820.89	3,819.77	19.80	20.61	-110.15	302.27	-1,106.43	1,232.27	1,192.57	39.70	31.042		
3,700.00	3,684.13	3,919.21	3,916.27	20.37	21.21	-110.60	302.27	-1,087.67	1,216.69	1,175.90	40.79	29.825		
3,800.00	3,783.59	4,017.53	4,012.78	20.94	21.81	-111.02	302.27	-1,068.91	1,201.19	1,159.30	41.89	28.673		
3,900.00	3,883.24	4,115.89	4,109.34	21.50	22.42	-111.09	302.27	-1,050.14	1,184.98	1,142.01	42.97	27.575		
4,000.00	3,983.12	4,214.25	4,205.90	22.04	23.03	-110.99	302.27	-1,031.37	1,167.57	1,123.54	44.03	26.519		
4,100.00	4,083.11	4,312.49	4,302.33	22.56	23.65	-90.52	302.27	-1,012.63	1,148.95	1,103.89	45.06	25.497		
4,200.00	4,183.11	4,410.65	4,398.69	23.07	24.26	-90.52	302.27	-993.90	1,129.87	1,083.76	46.11	24.505		
4,300.00	4,283.11	4,508.82	4,495.05	23.58	24.88	-90.53	302.27	-975.17	1,110.79	1,063.63	47.16	23.555		
4,400.00	4,383.11	4,606.98	4,591.41	24.10	25.50	-90.54	302.27	-956.44	1,091.71	1,043.50	48.21	22.647		
4,500.00	4,483.11	4,705.14	4,687.77	24.61	26.12	-90.55	302.27	-937.70	1,072.63	1,023.37	49.26	21.776		
4,600.00	4,583.11	4,803.30	4,784.13	25.13	26.75	-90.56	302.27	-918.97	1,053.55	1,003.24	50.31	20.940		
4,700.00	4,683.11	4,901.47	4,880.48	25.64	27.37	-90.57	302.27	-900.24	1,034.47	983.10	51.37	20.139		
4,800.00	4,783.11	4,999.63	4,976.84	26.16	28.00	-90.58	302.27	-881.51	1,015.39	962.97	52.42	19.369		
4,900.00	4,883.11	5,097.79	5,073.20	26.68	28.62	-90.60	302.27	-862.78	996.31	942.83	53.48	18.629		
5,000.00	4,983.11	5,195.95	5,169.56	27.20	29.25	-90.61	302.27	-844.05	977.23	922.69	54.54	17.917		
5,100.00	5,083.11	5,294.12	5,265.92	27.72	29.88	-90.62	302.27	-825.32	958.15	902.55	55.60	17.232		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													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
5,200.00	5,183.11	5,392.28	5,362.28	28.24	30.51	-90.63	302.27	-806.59	939.07	882.41	56.67	16.572	
5,300.00	5,283.11	5,490.44	5,458.64	28.76	31.15	-90.64	302.27	-787.86	919.99	862.26	57.73	15.936	
5,400.00	5,383.11	5,578.17	5,544.79	29.28	31.71	-90.66	302.27	-771.31	901.16	842.43	58.74	15.343	
5,500.00	5,483.11	5,653.35	5,618.92	29.80	32.18	-90.67	302.27	-758.79	884.51	824.84	59.67	14.823	
5,600.00	5,583.11	5,729.15	5,693.96	30.32	32.64	-90.67	302.27	-748.15	870.47	809.86	60.61	14.362	
5,700.00	5,683.11	5,800.00	5,764.34	30.85	33.05	-90.68	302.27	-739.99	859.07	797.56	61.52	13.965	
5,800.00	5,783.11	5,882.19	5,846.21	31.37	33.51	-90.69	302.27	-732.72	850.30	787.81	62.48	13.608	
5,900.00	5,883.11	5,959.23	5,923.10	31.90	33.92	-90.69	302.27	-728.03	844.22	780.80	63.42	13.312	
6,000.00	5,983.11	6,036.46	6,000.29	32.42	34.32	-90.69	302.27	-725.42	840.82	776.47	64.35	13.066	
6,100.00	6,083.11	6,119.29	6,083.11	32.95	34.73	-90.69	302.27	-724.82	840.05	774.75	65.31	12.863	
6,200.00	6,183.11	6,219.29	6,183.11	33.47	35.22	-90.69	302.27	-724.82	840.05	773.71	66.34	12.662	
6,300.00	6,283.11	6,319.29	6,283.11	34.00	35.71	-90.69	302.27	-724.82	840.05	772.67	67.39	12.466	
6,400.00	6,383.11	6,419.29	6,383.11	34.52	36.20	-90.69	302.27	-724.82	840.05	771.62	68.43	12.277	
6,500.00	6,483.11	6,519.29	6,483.11	35.05	36.70	-90.69	302.27	-724.82	840.05	770.58	69.47	12.092	
6,600.00	6,583.11	6,619.29	6,583.11	35.58	37.19	-90.69	302.27	-724.82	840.05	769.54	70.51	11.913	
6,700.00	6,683.11	6,719.29	6,683.11	36.10	37.69	-90.69	302.27	-724.82	840.05	768.49	71.56	11.740	
6,800.00	6,783.11	6,819.29	6,783.11	36.63	38.18	-90.69	302.27	-724.82	840.05	767.45	72.60	11.571	
6,900.00	6,883.11	6,919.29	6,883.11	37.16	38.68	-90.69	302.27	-724.82	840.05	766.40	73.65	11.406	
7,000.00	6,983.11	7,019.29	6,983.11	37.69	39.18	-90.69	302.27	-724.82	840.05	765.36	74.70	11.246	
7,100.00	7,083.11	7,119.29	7,083.11	38.21	39.68	-90.69	302.27	-724.82	840.05	764.31	75.74	11.091	
7,200.00	7,183.11	7,219.29	7,183.11	38.74	40.18	-90.69	302.27	-724.82	840.05	763.26	76.79	10.939	
7,300.00	7,283.11	7,319.29	7,283.11	39.27	40.68	-90.69	302.27	-724.82	840.05	762.21	77.84	10.792	
7,400.00	7,383.11	7,419.29	7,383.11	39.80	41.18	-90.69	302.27	-724.82	840.05	761.16	78.89	10.648	
7,500.00	7,483.11	7,519.29	7,483.11	40.33	41.68	-90.69	302.27	-724.82	840.05	760.11	79.94	10.508	
7,600.00	7,583.11	7,619.29	7,583.11	40.86	42.19	-90.69	302.27	-724.82	840.05	759.06	80.99	10.372	
7,700.00	7,683.11	7,719.29	7,683.11	41.39	42.69	-90.69	302.27	-724.82	840.05	758.01	82.05	10.239	
7,800.00	7,783.11	7,819.29	7,783.11	41.92	43.20	-90.69	302.27	-724.82	840.05	756.95	83.10	10.109	
7,900.00	7,883.11	7,919.29	7,883.11	42.45	43.70	-90.69	302.27	-724.82	840.05	755.90	84.15	9.983	
8,000.00	7,983.11	8,019.29	7,983.11	42.98	44.21	-90.69	302.27	-724.82	840.05	754.85	85.21	9.859	
8,100.00	8,083.11	8,119.29	8,083.11	43.51	44.72	-90.69	302.27	-724.82	840.05	753.79	86.26	9.739	
8,200.00	8,183.11	8,219.29	8,183.11	44.04	45.23	-90.69	302.27	-724.82	840.05	752.74	87.31	9.621	
8,300.00	8,283.11	8,319.29	8,283.11	44.57	45.74	-90.69	302.27	-724.82	840.05	751.68	88.37	9.506	
8,400.00	8,383.11	8,419.29	8,383.11	45.10	46.25	-90.69	302.27	-724.82	840.05	750.63	89.43	9.394	
8,500.00	8,483.11	8,519.29	8,483.11	45.63	46.76	-90.69	302.27	-724.82	840.05	749.57	90.48	9.284	
8,600.00	8,583.11	8,619.29	8,583.11	46.17	47.27	-90.69	302.27	-724.82	840.05	748.51	91.54	9.177	
8,700.00	8,683.11	8,719.29	8,683.11	46.70	47.78	-90.69	302.27	-724.82	840.05	747.46	92.60	9.072	
8,800.00	8,783.11	8,819.29	8,783.11	47.23	48.29	-90.69	302.27	-724.82	840.05	746.40	93.65	8.970	
8,900.00	8,883.11	8,919.29	8,883.11	47.76	48.81	-90.69	302.27	-724.82	840.05	745.34	94.71	8.870	
9,000.00	8,983.11	9,019.29	8,983.11	48.29	49.32	-90.69	302.27	-724.82	840.05	744.28	95.77	8.772	
9,100.00	9,083.11	9,119.29	9,083.11	48.82	49.83	-90.69	302.27	-724.82	840.05	743.22	96.83	8.676	
9,200.00	9,183.11	9,219.29	9,183.11	49.35	50.35	-90.69	302.27	-724.82	840.05	742.16	97.89	8.581	
9,300.00	9,283.11	9,319.29	9,283.11	49.88	50.86	-90.69	302.27	-724.82	840.05	741.10	98.94	8.487	
9,400.00	9,374.01	9,404.01	9,374.01	50.41	51.37	-90.69	302.27	-724.82	840.05	740.04	99.99	8.395	
9,500.00	9,459.39	9,489.39	9,459.39	50.94	51.88	-90.69	302.27	-724.82	840.05	738.98	101.04	8.305	
9,600.00	9,534.47	9,564.47	9,534.47	51.47	52.39	-90.69	302.27	-724.82	840.05	737.92	102.09	8.217	
9,700.00	9,596.97	9,626.97	9,596.97	52.00	52.90	-90.69	302.27	-724.82	840.05	736.86	103.14	8.130	
9,800.00	9,644.99	9,674.99	9,644.99	52.53	53.41	-90.69	302.27	-724.82	840.05	735.80	104.19	8.044	
9,900.00	9,677.08	9,707.08	9,677.08	53.06	53.92	-90.69	302.27	-724.82	840.05	734.74	105.24	7.957	
10,000.00	9,692.26	9,722.26	9,692.26	53.59	54.43	-90.69	302.27	-724.82	840.05	733.68	106.29	7.872	
10,100.00	9,691.40	9,721.40	9,691.40	54.12	54.94	-90.69	302.27	-724.82	840.05	732.62	107.34	7.783	
10,200.00	9,687.32	9,717.32	9,687.32	54.65	55.45	-90.69	302.27	-724.82	840.05	731.56	108.39	7.686	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													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	9,683.23	10,325.74	9,685.43	56.69	54.89	-90.15	1,139.52	-733.10	840.07	729.25	110.82	7.581	
10,368.74	9,680.43	10,394.47	9,682.01	57.32	55.38	-90.11	1,208.16	-733.78	840.07	728.12	111.95	7.504	
10,400.00	9,679.15	10,425.74	9,680.46	57.61	55.62	-90.09	1,239.39	-734.09	840.07	727.59	112.48	7.469	
10,500.00	9,675.07	10,525.73	9,675.49	58.59	56.43	-90.03	1,339.25	-735.08	840.07	725.79	114.28	7.351	
10,600.00	9,670.98	10,625.73	9,670.51	59.64	57.31	-89.97	1,439.12	-736.06	840.07	723.85	116.21	7.229	
10,700.00	9,666.90	10,725.73	9,665.54	60.75	58.26	-89.91	1,538.99	-737.05	840.07	721.80	118.27	7.103	
10,800.00	9,662.81	10,825.72	9,660.57	61.92	59.28	-89.85	1,638.86	-738.04	840.07	719.62	120.45	6.974	
10,900.00	9,658.73	10,925.72	9,655.60	63.13	60.35	-89.79	1,738.72	-739.03	840.08	717.34	122.74	6.844	
11,000.00	9,654.64	11,025.71	9,650.63	64.40	61.48	-89.73	1,838.59	-740.02	840.08	714.94	125.14	6.713	
11,100.00	9,650.56	11,125.71	9,645.66	65.71	62.67	-89.67	1,938.46	-741.00	840.09	712.45	127.64	6.582	
11,200.00	9,646.47	11,225.71	9,640.68	67.07	63.90	-89.60	2,038.33	-741.99	840.10	709.86	130.23	6.451	
11,300.00	9,642.39	11,325.70	9,635.71	68.46	65.19	-89.54	2,138.19	-742.98	840.11	707.19	132.92	6.321	
11,400.00	9,638.30	11,425.80	9,631.10	69.90	66.51	-89.51	2,238.17	-743.97	840.11	704.43	135.69	6.192	
11,500.00	9,634.22	11,525.88	9,629.07	71.37	67.88	-89.65	2,338.23	-744.96	840.10	701.56	138.55	6.064	
11,600.00	9,630.13	11,625.84	9,627.54	72.88	69.28	-89.82	2,438.18	-745.96	840.10	698.61	141.49	5.938	
11,613.45	9,629.58	11,639.29	9,627.34	73.09	69.47	-89.85	2,451.62	-746.09	840.10	698.21	141.89	5.921	
11,700.00	9,626.05	11,725.81	9,626.01	74.42	70.71	-90.00	2,538.13	-746.95	840.10	695.61	144.49	5.814	
11,800.00	9,621.96	11,825.78	9,624.48	75.99	72.19	-90.17	2,638.08	-747.95	840.11	692.55	147.56	5.693	
11,900.00	9,617.88	11,925.75	9,622.95	77.59	73.69	-90.35	2,738.03	-748.94	840.13	689.43	150.70	5.575	
12,000.00	9,613.79	12,025.71	9,621.42	79.21	75.23	-90.52	2,837.98	-749.93	840.16	686.27	153.89	5.460	
12,100.00	9,609.71	12,125.68	9,619.89	80.86	76.80	-90.69	2,937.93	-750.93	840.19	683.06	157.13	5.347	
12,200.00	9,605.63	12,225.65	9,618.36	82.54	78.40	-90.87	3,037.88	-751.92	840.23	679.80	160.43	5.237	
12,300.00	9,601.54	12,325.62	9,616.83	84.23	80.02	-91.04	3,137.83	-752.92	840.28	676.51	163.77	5.131	
12,400.00	9,597.71	12,425.59	9,615.30	85.95	81.67	-91.20	3,237.79	-753.91	840.33	673.18	167.15	5.027	
12,500.00	9,596.68	12,525.58	9,613.77	87.68	83.34	-91.16	3,337.77	-754.90	840.33	669.77	170.55	4.927	
12,600.00	9,597.97	12,625.54	9,612.24	89.42	85.04	-90.97	3,437.71	-755.90	840.27	666.28	173.99	4.829	
12,700.00	9,599.31	12,725.50	9,610.71	91.19	86.75	-90.78	3,537.65	-756.89	840.23	662.76	177.47	4.735	
12,800.00	9,600.66	12,825.46	9,609.18	92.97	88.48	-90.58	3,637.59	-757.88	840.19	659.21	180.98	4.643	
12,900.00	9,602.00	12,925.42	9,607.65	94.77	90.24	-90.39	3,737.54	-758.88	840.16	655.64	184.52	4.553	
13,000.00	9,603.34	13,025.38	9,606.12	96.58	92.01	-90.19	3,837.48	-759.87	840.15	652.06	188.09	4.467	
13,100.00	9,604.68	13,125.34	9,604.59	98.40	93.79	-89.99	3,937.42	-760.87	840.14	648.45	191.69	4.383	
13,112.20	9,604.84	13,137.53	9,604.40	98.63	94.01	-89.97	3,949.61	-760.99	840.14	648.01	192.14	4.373	
13,200.00	9,606.02	13,225.29	9,603.06	100.24	95.59	-89.80	4,037.36	-761.86	840.15	644.82	195.32	4.301	
13,300.00	9,607.37	13,325.25	9,601.53	102.09	97.41	-89.60	4,137.30	-762.85	840.16	641.18	198.98	4.222	
13,400.00	9,608.71	13,425.21	9,600.00	103.96	99.24	-89.41	4,237.25	-763.85	840.18	637.53	202.65	4.146	
13,500.00	9,610.05	13,525.17	9,598.47	105.83	101.08	-89.21	4,337.19	-764.84	840.22	633.86	206.35	4.072	
13,600.00	9,611.39	13,625.15	9,596.94	107.72	102.94	-89.01	4,437.15	-765.84	840.26	630.19	210.07	4.000	
13,700.00	9,612.73	13,725.54	9,597.13	109.61	104.81	-88.94	4,537.53	-766.83	840.28	626.44	213.84	3.930	
13,800.00	9,614.07	13,825.54	9,598.14	111.52	106.68	-88.91	4,637.52	-767.82	840.28	622.65	217.62	3.861	
13,900.00	9,615.42	13,925.54	9,599.15	113.43	108.57	-88.89	4,737.51	-768.81	840.28	618.85	221.43	3.795	
14,000.00	9,616.76	14,025.54	9,600.16	115.36	110.47	-88.87	4,837.50	-769.80	840.28	615.03	225.25	3.730	
14,100.00	9,618.10	14,125.54	9,601.17	117.29	112.37	-88.85	4,937.49	-770.79	840.28	611.19	229.09	3.668	
14,200.00	9,619.44	14,225.54	9,602.18	119.23	114.29	-88.82	5,037.48	-771.78	840.28	607.33	232.95	3.607	
14,300.00	9,620.78	14,325.53	9,603.19	121.18	116.21	-88.80	5,137.47	-772.77	840.28	603.46	236.82	3.548	
14,400.00	9,622.13	14,425.53	9,604.20	123.13	118.15	-88.78	5,237.46	-773.76	840.28	599.57	240.71	3.491	
14,500.00	9,623.47	14,525.53	9,605.22	125.09	120.09	-88.76	5,337.45	-774.75	840.28	595.67	244.61	3.435	
14,600.00	9,624.81	14,625.53	9,606.23	127.06	122.03	-88.73	5,437.44	-775.74	840.28	591.76	248.53	3.381	
14,700.00	9,626.15	14,725.53	9,607.24	129.03	123.99	-88.71	5,537.43	-776.73	840.29	587.83	252.46	3.328	
14,800.00	9,627.49	14,825.53	9,608.25	131.01	125.95	-88.69	5,637.42	-777.72	840.29	583.89	256.40	3.277	
14,900.00	9,628.84	14,925.53	9,609.26	132.99	127.92	-88.66	5,737.41	-778.71	840.29	579.94	260.35	3.228	
15,000.00	9,630.18	15,025.53	9,610.27	134.98	129.89	-88.64	5,837.39	-779.70	840.29	575.97	264.32	3.179	
15,030.75	9,630.60	15,056.28	9,610.58	135.60	130.50	-88.64	5,868.14	-780.01	840.36	574.78	265.58	3.164	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													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	
15,100.00	9,631.55	15,130.43	9,611.49	136.98	131.97	-88.64	5,942.28	-780.65	840.47	571.96	268.51	3.130	
15,200.00	9,633.07	15,237.71	9,614.84	138.97	134.09	-88.76	6,049.51	-780.42	840.58	567.92	272.66	3.083	
15,300.00	9,634.58	15,337.70	9,618.30	140.97	136.08	-88.89	6,149.43	-780.01	840.52	563.84	276.68	3.038	
15,400.00	9,636.09	15,437.68	9,621.76	142.98	138.08	-89.02	6,249.35	-779.61	840.45	559.75	280.70	2.994	
15,500.00	9,637.61	15,537.66	9,625.22	144.98	140.07	-89.15	6,349.27	-779.21	840.40	555.67	284.73	2.952	
15,600.00	9,639.12	15,637.64	9,628.67	147.00	142.08	-89.29	6,449.19	-778.80	840.34	551.58	288.77	2.910	
15,700.00	9,640.63	15,737.62	9,632.13	149.01	144.08	-89.42	6,549.11	-778.40	840.30	547.48	292.81	2.870	
15,800.00	9,642.15	15,837.60	9,635.59	151.03	146.10	-89.55	6,649.04	-777.99	840.25	543.39	296.86	2.830	
15,900.00	9,643.66	15,937.58	9,639.05	153.06	148.11	-89.69	6,748.96	-777.59	840.21	539.29	300.92	2.792	
16,000.00	9,645.17	16,037.56	9,642.50	155.08	150.13	-89.82	6,848.88	-777.19	840.18	535.19	304.99	2.755	
16,100.00	9,646.69	16,137.54	9,645.96	157.11	152.15	-89.95	6,948.80	-776.78	840.15	531.09	309.06	2.718	
16,200.00	9,648.20	16,237.53	9,649.42	159.15	154.18	-90.08	7,048.72	-776.38	840.12	526.99	313.13	2.683	
16,300.00	9,649.71	16,337.51	9,652.88	161.18	156.21	-90.22	7,148.64	-775.98	840.10	522.89	317.21	2.648	
16,400.00	9,651.23	16,437.49	9,656.33	163.22	158.24	-90.35	7,248.56	-775.57	840.09	518.79	321.30	2.615	
16,500.00	9,652.74	16,537.47	9,659.79	165.27	160.27	-90.48	7,348.48	-775.17	840.08	514.69	325.39	2.582	
16,600.00	9,654.25	16,637.45	9,663.25	167.31	162.31	-90.61	7,448.40	-774.76	840.07	510.59	329.48	2.550	
16,700.00	9,655.77	16,737.43	9,666.63	169.36	164.35	-90.74	7,548.32	-774.36	840.06	506.49	333.58	2.518	
16,800.00	9,657.28	16,837.43	9,667.74	171.41	166.40	-90.71	7,648.31	-773.99	840.06	502.39	337.67	2.488	
16,824.70	9,657.65	16,862.13	9,667.76	171.92	166.90	-90.69	7,673.01	-773.90	840.06	501.38	338.68	2.480	
16,900.00	9,658.79	16,937.42	9,667.84	173.47	168.44	-90.62	7,748.30	-773.63	840.06	498.30	341.77	2.458	
17,000.00	9,660.31	17,037.41	9,667.94	175.52	170.49	-90.52	7,848.29	-773.27	840.07	494.20	345.87	2.429	
17,100.00	9,661.82	17,137.40	9,668.04	177.58	172.54	-90.42	7,948.28	-772.90	840.07	490.10	349.97	2.400	
17,200.00	9,663.33	17,237.39	9,668.14	179.64	174.59	-90.33	8,048.27	-772.54	840.08	486.00	354.08	2.373	
17,300.00	9,664.85	17,337.38	9,668.24	181.70	176.65	-90.23	8,148.26	-772.18	840.09	481.90	358.19	2.345	
17,400.00	9,666.36	17,437.37	9,668.34	183.77	178.70	-90.14	8,248.25	-771.82	840.10	477.80	362.31	2.319	
17,500.00	9,667.87	17,537.36	9,668.44	185.83	180.76	-90.04	8,348.24	-771.46	840.12	473.69	366.43	2.293	
17,600.00	9,669.39	17,637.35	9,668.54	187.90	182.83	-89.94	8,448.23	-771.10	840.14	469.59	370.55	2.267	
17,700.00	9,670.90	17,737.34	9,668.64	189.97	184.89	-89.85	8,548.22	-770.74	840.15	465.48	374.67	2.242	
17,800.00	9,672.44	17,837.33	9,668.74	192.04	186.96	-89.75	8,648.21	-770.38	840.17	461.37	378.80	2.218	
17,894.29	9,673.98	17,931.61	9,668.84	194.00	188.91	-89.65	8,742.49	-770.04	840.17	457.47	382.70	2.195	
17,900.00	9,674.07	17,937.32	9,668.85	194.12	189.02	-89.64	8,748.19	-770.02	840.17	457.24	382.93	2.194	
18,000.00	9,675.70	18,037.31	9,668.95	196.19	191.09	-89.54	8,848.18	-769.65	840.17	453.11	387.06	2.171	
18,100.00	9,677.33	18,137.30	9,669.05	198.27	193.16	-89.44	8,948.17	-769.29	840.17	448.97	391.20	2.148	
18,200.00	9,678.96	18,237.29	9,669.15	200.35	195.24	-89.33	9,048.16	-768.93	840.18	444.84	395.34	2.125	
18,300.00	9,680.59	18,337.28	9,669.25	202.43	197.31	-89.23	9,148.14	-768.57	840.19	440.71	399.48	2.103	
18,400.00	9,682.22	18,437.26	9,669.35	204.51	199.39	-89.12	9,248.13	-768.21	840.20	436.58	403.62	2.082	
18,500.00	9,683.84	18,537.25	9,669.45	206.60	201.47	-89.02	9,348.12	-767.85	840.22	432.45	407.77	2.061	
18,600.00	9,685.47	18,637.24	9,669.55	208.68	203.55	-88.91	9,448.11	-767.49	840.24	428.32	411.91	2.040	
18,700.00	9,687.10	18,737.23	9,669.65	210.77	205.63	-88.81	9,548.10	-767.13	840.26	424.20	416.06	2.020	
18,800.00	9,688.73	18,837.22	9,669.75	212.86	207.71	-88.71	9,648.08	-766.77	840.28	420.07	420.21	2.000	
18,900.00	9,690.36	18,837.21	9,669.85	214.94	209.80	-88.60	9,748.07	-766.40	840.31	415.95	424.36	1.980	
19,000.00	9,691.99	19,037.19	9,669.95	217.03	211.88	-88.50	9,848.06	-766.04	840.34	411.82	428.51	1.961	
19,100.00	9,693.62	19,137.18	9,670.05	219.13	213.98	-88.43	9,948.05	-765.68	840.35	407.66	432.69	1.942	
19,200.00	9,695.25	19,238.28	9,674.05	221.22	216.08	-88.55	10,049.08	-765.29	840.27	403.36	436.91	1.923	
19,300.00	9,696.87	19,338.25	9,678.09	223.31	218.17	-88.72	10,148.96	-764.91	840.18	399.05	441.14	1.905	
19,400.00	9,698.50	19,438.22	9,682.13	225.41	220.26	-88.88	10,248.85	-764.52	840.10	394.74	445.36	1.886	
19,500.00	9,700.13	19,538.19	9,686.17	227.50	222.36	-89.05	10,348.74	-764.13	840.02	390.44	449.58	1.868	
19,600.00	9,701.76	19,638.16	9,690.21	229.60	224.45	-89.21	10,448.63	-763.75	839.95	386.15	453.80	1.851	
19,700.00	9,703.39	19,738.13	9,694.24	231.70	226.55	-89.38	10,548.52	-763.36	839.88	381.86	458.02	1.834	
19,800.00	9,705.02	19,838.11	9,698.28	233.80	228.64	-89.54	10,648.41	-762.98	839.83	377.58	462.24	1.817	
19,900.00	9,706.65	19,938.08	9,702.32	235.90	230.74	-89.70	10,748.30	-762.59	839.78	373.31	466.46	1.800	
20,000.00	9,708.28	20,038.05	9,706.36	238.00	232.84	-89.87	10,848.19	-762.21	839.73	369.05	470.68	1.784	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17		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		
20,044.41	9,709.00	20,082.44	9,708.15	238.80	233.77	-89.94	10,892.54	-762.03	839.72	367.30	472.42	1.777	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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 11H - OH - Plan 1 11-01-16													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toelface (°)	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	0.00	9.00	0.00	0.00	-26.20	910.27	-447.86	1,014.52				
100.00	100.00	91.00	100.00	0.19	0.18	-26.20	910.27	-447.86	1,014.48	1,014.11	0.37	2,743.859	
200.00	200.00	191.00	200.00	0.73	0.68	-26.20	910.27	-447.86	1,014.48	1,013.07	1.41	717.368	
300.00	300.00	291.00	300.00	1.27	1.22	-26.20	910.27	-447.86	1,014.48	1,011.99	2.49	407.490	
400.00	400.00	391.00	400.00	1.81	1.76	-26.20	910.27	-447.86	1,014.48	1,010.92	3.56	284.567	
500.00	500.00	491.00	500.00	2.34	2.30	-26.20	910.27	-447.86	1,014.48	1,009.84	4.64	218.619	
600.00	600.00	591.00	600.00	2.88	2.83	-26.20	910.27	-447.86	1,014.48	1,008.77	5.72	177.486	
700.00	699.98	690.98	699.98	3.42	3.37	-46.52	910.27	-447.86	1,013.28	1,006.49	6.79	149.163	
800.00	799.84	790.84	799.84	3.96	3.91	-46.79	910.27	-447.86	1,009.68	1,001.81	7.87	128.275	
900.00	899.45	890.45	899.45	4.50	4.44	-47.24	910.27	-447.86	1,003.73	994.78	8.95	112.171	
1,000.00	998.90	989.90	998.90	5.05	4.98	-47.68	910.27	-447.86	996.65	986.62	10.02	99.434	
1,100.00	1,098.36	1,089.36	1,098.36	5.60	5.51	-48.12	910.27	-447.86	989.62	978.52	11.10	89.134	
1,200.00	1,197.81	1,188.81	1,197.81	6.15	6.05	-48.58	910.27	-447.86	982.66	970.47	12.19	80.641	
1,300.00	1,297.26	1,288.26	1,297.26	6.71	6.58	-49.04	910.27	-447.86	975.75	962.48	13.27	73.524	
1,400.00	1,396.72	1,387.72	1,396.72	7.27	7.12	-49.50	910.27	-447.86	968.92	954.56	14.36	67.478	
1,500.00	1,496.17	1,487.17	1,496.17	7.84	7.65	-49.97	910.27	-447.86	962.14	946.69	15.45	62.280	
1,600.00	1,595.62	1,586.62	1,595.62	8.40	8.19	-50.45	910.27	-447.86	955.44	938.90	16.54	57.766	
1,700.00	1,695.07	1,686.07	1,695.07	8.97	8.72	-50.93	910.27	-447.86	948.80	931.16	17.63	53.810	
1,800.00	1,794.53	1,785.53	1,794.53	9.53	9.17	-51.39	910.45	-448.69	942.94	924.30	18.63	50.601	
1,900.00	1,893.98	1,884.98	1,893.98	10.10	9.59	-51.93	911.10	-451.74	939.09	919.47	19.62	47.868	
2,000.00	1,893.43	1,884.43	1,893.43	10.67	10.01	-52.57	912.21	-457.01	937.33	916.72	20.60	45.498	
2,031.79	2,025.05	1,957.19	1,965.85	10.85	10.15	-52.80	912.66	-459.14	937.22	916.30	20.91	44.812 CC	
2,100.00	2,024.89	2,011.91	2,020.29	11.24	10.43	-53.31	913.79	-464.45	937.73	916.14	21.59	43.441	
2,200.00	2,192.34	2,100.00	2,107.70	11.81	10.90	-54.23	916.05	-475.13	940.41	917.80	22.62	41.578	
2,300.00	2,291.79	2,171.12	2,178.00	12.38	11.29	-55.04	918.29	-485.67	945.32	921.76	23.56	40.117	
2,400.00	2,391.24	2,268.99	2,274.56	12.95	11.83	-56.20	921.59	-501.27	951.62	926.96	24.66	38.589	
2,500.00	2,490.70	2,366.87	2,371.13	13.52	12.38	-57.34	924.90	-516.88	958.31	932.55	25.76	37.201	
2,600.00	2,590.15	2,464.75	2,467.70	14.09	12.93	-58.47	928.21	-532.49	965.40	938.53	26.86	35.936	
2,700.00	2,689.60	2,562.63	2,564.27	14.66	13.49	-59.58	931.52	-548.10	972.86	944.89	27.97	34.781	
2,800.00	2,789.06	2,660.51	2,660.84	15.23	14.05	-60.67	934.83	-563.70	980.70	951.61	29.08	33.723	
2,900.00	2,888.51	2,758.38	2,757.41	15.80	14.62	-61.75	938.13	-579.31	988.89	958.70	30.19	32.753	
3,000.00	2,987.96	2,856.26	2,853.98	16.37	15.20	-62.81	941.44	-594.92	997.44	966.14	31.31	31.861	
3,100.00	3,087.41	2,954.14	2,950.55	16.94	15.77	-63.85	944.75	-610.52	1,008.34	973.92	32.42	31.041	
3,200.00	3,186.87	3,052.02	3,047.12	17.51	16.35	-64.87	948.06	-626.13	1,015.57	982.04	33.53	30.284	
3,300.00	3,286.32	3,149.89	3,143.68	18.08	16.94	-65.88	951.37	-641.74	1,025.13	990.48	34.65	29.585	
3,400.00	3,385.77	3,247.77	3,240.25	18.66	17.52	-66.87	954.67	-657.35	1,035.00	999.24	35.77	28.939	
3,500.00	3,485.23	3,345.65	3,336.82	19.23	18.11	-67.84	957.98	-672.95	1,045.19	1,008.31	36.88	28.339	
3,600.00	3,584.68	3,443.53	3,433.39	19.80	18.70	-68.79	961.29	-688.56	1,055.67	1,017.67	38.00	27.783	
3,700.00	3,684.13	3,541.41	3,529.96	20.37	19.30	-69.72	964.60	-704.17	1,066.44	1,027.33	39.11	27.267	
3,800.00	3,783.59	3,639.29	3,626.53	20.94	19.89	-70.66	967.90	-719.78	1,077.51	1,037.28	40.23	26.787	
3,900.00	3,883.24	3,737.41	3,723.35	21.50	20.49	-71.68	971.22	-735.42	1,089.53	1,048.21	41.32	26.368	
4,000.00	3,983.12	3,835.85	3,820.46	22.04	21.09	-72.54	974.55	-751.12	1,102.80	1,060.41	42.39	26.015	
4,100.00	4,083.11	3,934.47	3,917.76	22.56	21.69	-73.47	977.88	-766.84	1,117.19	1,073.75	43.45	25.714	
4,200.00	4,183.11	4,033.13	4,015.11	23.07	22.30	-74.33	981.22	-782.58	1,132.01	1,087.50	44.51	25.433	
4,300.00	4,283.11	4,131.79	4,112.45	23.58	22.90	-75.16	984.55	-798.31	1,146.87	1,101.30	45.58	25.164	
4,400.00	4,383.11	4,230.45	4,209.79	24.10	23.51	-75.99	987.88	-814.04	1,161.77	1,115.13	46.64	24.909	
4,500.00	4,483.11	4,329.12	4,307.14	24.61	24.12	-76.79	991.22	-829.77	1,176.71	1,129.00	47.71	24.665	
4,600.00	4,583.11	4,427.78	4,404.48	25.13	24.73	-77.56	994.55	-845.51	1,191.68	1,142.91	48.78	24.431	
4,700.00	4,683.11	4,526.44	4,501.82	25.64	25.34	-78.33	997.89	-861.24	1,206.69	1,156.84	49.85	24.209	
4,800.00	4,783.11	4,625.10	4,599.17	26.16	25.95	-79.09	1,001.22	-876.97	1,221.73	1,170.81	50.92	23.995	
4,900.00	4,883.11	4,723.77	4,696.51	26.68	26.56	-79.84	1,004.56	-892.70	1,236.80	1,184.82	51.99	23.791	
5,000.00	4,983.11	4,822.43	4,793.85	27.20	27.17	-80.58	1,007.89	-908.44	1,251.90	1,198.85	53.06	23.596	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 11H - OH - Plan 1 11-01-16													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	5,083.11	4,921.09	4,891.19	27.72	27.79	-56.09	1,011.22	-924.17	1,267.04	1,212.91	54.13	23.408	
5,200.00	5,183.11	5,019.76	4,988.54	28.24	28.40	-56.36	1,014.56	-939.90	1,282.20	1,227.00	55.20	23.228	
5,300.00	5,283.11	5,118.42	5,085.88	28.76	29.02	-56.62	1,017.89	-955.63	1,297.38	1,241.11	56.27	23.055	
5,400.00	5,383.11	5,217.08	5,183.22	29.28	29.63	-56.88	1,021.23	-971.37	1,312.60	1,255.25	57.35	22.889	
5,500.00	5,483.11	5,315.74	5,280.57	29.80	30.25	-57.13	1,024.56	-987.10	1,327.84	1,269.42	58.42	22.729	
5,600.00	5,583.11	5,414.41	5,377.91	30.32	30.86	-57.38	1,027.90	-1,002.83	1,343.11	1,283.61	59.50	22.575	
5,700.00	5,683.11	5,513.07	5,475.25	30.85	31.48	-57.62	1,031.23	-1,018.56	1,358.40	1,297.83	60.57	22.427	
5,800.00	5,783.11	5,637.14	5,597.76	31.37	32.24	-57.91	1,035.31	-1,037.81	1,373.42	1,311.64	61.78	22.229	
5,900.00	5,883.11	5,818.73	5,778.16	31.90	33.30	-58.20	1,039.53	-1,057.72	1,383.97	1,320.67	63.30	21.863	
6,000.00	5,983.11	6,002.19	5,961.38	32.42	34.28	-58.33	1,041.38	-1,066.45	1,388.55	1,323.75	64.80	21.428	
6,100.00	6,083.11	6,123.92	6,083.11	32.95	34.88	-58.33	1,041.46	-1,066.84	1,388.75	1,322.81	65.95	21.058	
6,200.00	6,183.11	6,223.92	6,183.11	33.47	35.37	-58.33	1,041.46	-1,066.84	1,388.75	1,321.77	66.98	20.733	
6,300.00	6,283.11	6,323.92	6,283.11	34.00	35.86	-58.33	1,041.46	-1,066.84	1,388.75	1,320.74	68.02	20.417	
6,400.00	6,383.11	6,423.92	6,383.11	34.52	36.35	-58.33	1,041.46	-1,066.84	1,388.75	1,319.70	69.06	20.110	
6,500.00	6,483.11	6,523.92	6,483.11	35.05	36.84	-58.33	1,041.46	-1,066.84	1,388.75	1,318.66	70.10	19.812	
6,600.00	6,583.11	6,623.92	6,583.11	35.58	37.33	-58.33	1,041.46	-1,066.84	1,388.75	1,317.62	71.13	19.523	
6,700.00	6,683.11	6,723.92	6,683.11	36.10	37.83	-58.33	1,041.46	-1,066.84	1,388.75	1,316.58	72.18	19.241	
6,800.00	6,783.11	6,823.92	6,783.11	36.63	38.33	-58.33	1,041.46	-1,066.84	1,388.75	1,315.54	73.22	18.968	
6,900.00	6,883.11	6,923.92	6,883.11	37.16	38.82	-58.33	1,041.46	-1,066.84	1,388.75	1,314.50	74.26	18.702	
7,000.00	6,983.11	7,023.92	6,983.11	37.69	39.32	-58.33	1,041.46	-1,066.84	1,388.75	1,313.45	75.30	18.442	
7,100.00	7,083.11	7,123.92	7,083.11	38.21	39.82	-58.33	1,041.46	-1,066.84	1,388.75	1,312.41	76.35	18.190	
7,200.00	7,183.11	7,223.92	7,183.11	38.74	40.32	-58.33	1,041.46	-1,066.84	1,388.75	1,311.36	77.39	17.945	
7,300.00	7,283.11	7,323.92	7,283.11	39.27	40.83	-58.33	1,041.46	-1,066.84	1,388.75	1,310.32	78.44	17.705	
7,400.00	7,383.11	7,423.92	7,383.11	39.80	41.33	-58.33	1,041.46	-1,066.84	1,388.75	1,309.27	79.48	17.472	
7,500.00	7,483.11	7,523.92	7,483.11	40.33	41.83	-58.33	1,041.46	-1,066.84	1,388.75	1,308.22	80.53	17.245	
7,600.00	7,583.11	7,623.92	7,583.11	40.86	42.34	-58.33	1,041.46	-1,066.84	1,388.75	1,307.18	81.58	17.023	
7,700.00	7,683.11	7,723.92	7,683.11	41.39	42.84	-58.33	1,041.46	-1,066.84	1,388.75	1,306.13	82.63	16.807	
7,800.00	7,783.11	7,823.92	7,783.11	41.92	43.35	-58.33	1,041.46	-1,066.84	1,388.75	1,305.08	83.68	16.596	
7,900.00	7,883.11	7,923.92	7,883.11	42.45	43.85	-58.33	1,041.46	-1,066.84	1,388.75	1,304.03	84.73	16.391	
8,000.00	7,983.11	8,023.92	7,983.11	42.98	44.36	-58.33	1,041.46	-1,066.84	1,388.75	1,302.98	85.78	16.190	
8,100.00	8,083.11	8,123.92	8,083.11	43.51	44.87	-58.33	1,041.46	-1,066.84	1,388.75	1,301.92	86.83	15.994	
8,200.00	8,183.11	8,223.92	8,183.11	44.04	45.38	-58.33	1,041.46	-1,066.84	1,388.75	1,300.87	87.88	15.802	
8,300.00	8,283.11	8,323.92	8,283.11	44.57	45.89	-58.33	1,041.46	-1,066.84	1,388.75	1,299.82	88.94	15.615	
8,400.00	8,383.11	8,423.92	8,383.11	45.10	46.40	-58.33	1,041.46	-1,066.84	1,388.75	1,298.77	89.99	15.433	
8,455.34	8,438.44	8,479.26	8,438.44	45.40	46.68	-58.33	1,041.46	-1,066.84	1,388.75	1,298.18	90.57	15.333	
8,500.00	8,483.11	8,500.00	8,459.19	45.63	46.79	-58.33	1,041.49	-1,066.84	1,388.97	1,298.06	90.92	15.277	
8,600.00	8,583.11	8,550.00	8,509.10	46.17	47.04	-58.24	1,044.12	-1,066.86	1,392.14	1,300.43	91.71	15.180	
8,700.00	8,683.11	8,600.00	8,558.60	46.70	47.30	-58.00	1,051.09	-1,066.94	1,399.46	1,306.96	92.50	15.129	
8,800.00	8,783.11	8,635.43	8,593.21	47.23	47.49	-57.74	1,058.63	-1,067.01	1,410.83	1,317.61	93.21	15.135	
8,900.00	8,883.11	8,675.67	8,631.87	47.76	47.69	-57.36	1,069.77	-1,067.13	1,426.36	1,332.41	93.95	15.182	
9,000.00	8,983.11	8,700.00	8,654.83	48.29	47.81	-57.08	1,077.81	-1,067.21	1,446.23	1,351.63	94.60	15.287	
9,100.00	9,083.11	8,750.00	8,700.83	48.82	48.06	-56.43	1,097.35	-1,067.41	1,469.94	1,374.56	95.38	15.412	
9,200.00	9,182.98	8,800.00	8,744.96	49.36	48.30	-53.81	1,120.83	-1,067.64	1,496.28	1,400.07	96.21	15.552	
9,300.00	9,280.93	8,821.22	8,763.04	49.93	48.40	-51.91	1,131.94	-1,067.76	1,517.10	1,420.95	96.15	15.779	
9,400.00	9,374.01	8,850.00	8,786.87	50.51	48.53	-50.55	1,148.06	-1,067.92	1,531.68	1,436.64	95.03	16.117	
9,500.00	9,459.39	8,900.00	8,826.25	51.11	48.75	-49.79	1,178.85	-1,068.24	1,539.31	1,446.23	93.08	16.537	
9,600.00	9,534.47	8,930.17	8,848.66	51.72	48.88	-49.76	1,199.04	-1,068.44	1,539.80	1,449.22	90.57	17.001	
9,700.00	9,596.97	8,966.59	8,874.25	52.35	49.03	-50.37	1,224.94	-1,068.70	1,533.19	1,444.93	88.26	17.370	
9,800.00	9,644.99	9,000.00	8,896.23	53.00	49.17	-51.64	1,250.10	-1,068.96	1,519.65	1,432.81	86.84	17.499	
9,900.00	9,677.08	9,050.00	8,926.30	53.67	49.37	-53.78	1,290.03	-1,069.37	1,499.68	1,412.52	87.16	17.206	
10,000.00	9,692.26	9,073.27	8,939.08	54.34	49.47	-56.34	1,309.47	-1,069.56	1,473.55	1,384.67	88.88	16.580	
10,100.00	9,691.40	9,100.00	8,952.78	55.05	49.58	-58.43	1,332.42	-1,069.80	1,443.17	1,352.02	91.16	15.832	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 11H - OH - Plan 1 11-01-16													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	
10,200.00	9,687.32	9,150.00	8,975.45	55.83	49.80	-59.31	1,376.96	-1,070.25	1,415.33	1,322.52	92.81	15.250	
10,300.00	9,683.23	9,182.07	8,987.92	56.69	49.94	-59.80	1,406.50	-1,070.55	1,391.72	1,297.58	94.14	14.784	
10,400.00	9,679.15	9,223.04	9,001.41	57.61	50.13	-60.36	1,445.18	-1,070.94	1,372.37	1,276.75	95.62	14.352	
10,500.00	9,675.07	9,266.20	9,012.59	58.59	50.34	-60.83	1,486.85	-1,071.37	1,357.20	1,260.07	97.14	13.972	
10,600.00	9,670.98	9,300.00	9,019.14	59.64	50.52	-61.13	1,520.00	-1,071.71	1,346.24	1,247.72	98.52	13.665	
10,700.00	9,666.90	9,350.00	9,025.22	60.75	50.79	-61.43	1,569.61	-1,072.21	1,339.15	1,239.08	100.06	13.383	
10,800.00	9,662.81	9,414.76	9,026.94	61.92	51.16	-61.60	1,634.33	-1,072.87	1,335.96	1,234.30	101.66	13.142	
10,900.00	9,658.73	9,514.68	9,026.78	63.13	51.80	-61.74	1,734.24	-1,073.89	1,334.12	1,230.56	103.56	12.882	
11,000.00	9,654.64	9,614.61	9,026.62	64.40	52.53	-61.89	1,834.16	-1,074.90	1,332.29	1,226.70	105.59	12.618	
11,100.00	9,650.56	9,714.53	9,026.47	65.71	53.34	-62.04	1,934.08	-1,075.92	1,330.47	1,222.74	107.73	12.350	
11,200.00	9,646.47	9,814.45	9,026.31	67.07	54.22	-62.19	2,034.00	-1,076.94	1,328.66	1,218.68	109.98	12.081	
11,300.00	9,642.39	9,914.37	9,026.15	68.46	55.18	-62.34	2,133.91	-1,077.95	1,326.86	1,214.52	112.34	11.811	
11,400.00	9,638.30	10,014.30	9,026.00	69.90	56.20	-62.50	2,233.83	-1,078.97	1,325.07	1,210.28	114.79	11.543	
11,500.00	9,634.22	10,114.22	9,025.84	71.37	57.28	-62.65	2,333.75	-1,079.99	1,323.28	1,205.95	117.34	11.278	
11,600.00	9,630.13	10,214.14	9,025.68	72.88	58.43	-62.80	2,433.67	-1,081.00	1,321.51	1,201.54	119.97	11.015	
11,700.00	9,626.05	10,314.07	9,025.53	74.42	59.63	-62.95	2,533.58	-1,082.02	1,319.74	1,197.06	122.69	10.757	
11,800.00	9,621.96	10,413.99	9,025.37	75.99	60.88	-63.10	2,633.50	-1,083.04	1,317.99	1,192.50	125.48	10.503	
11,900.00	9,617.88	10,513.91	9,025.21	77.59	62.19	-63.26	2,733.42	-1,084.05	1,316.24	1,187.89	128.35	10.255	
12,000.00	9,613.79	10,613.83	9,025.06	79.21	63.54	-63.41	2,833.34	-1,085.07	1,314.50	1,183.21	131.29	10.012	
12,100.00	9,609.71	10,713.76	9,024.90	80.86	64.93	-63.56	2,933.25	-1,086.09	1,312.77	1,178.48	134.29	9.775	
12,200.00	9,605.63	10,813.68	9,024.74	82.54	66.36	-63.72	3,033.17	-1,087.10	1,311.06	1,173.70	137.36	9.545	
12,300.00	9,601.54	10,913.60	9,024.58	84.23	67.84	-63.87	3,133.09	-1,088.12	1,309.35	1,168.87	140.48	9.320	
12,400.00	9,597.46	11,013.53	9,024.43	85.95	69.35	-64.01	3,233.01	-1,089.14	1,307.76	1,164.14	143.62	9.106	
12,473.34	9,596.82	11,086.87	9,024.31	87.21	70.48	-64.04	3,306.34	-1,089.88	1,307.35	1,161.47	145.87	8.962	
12,500.00	9,596.68	11,113.53	9,024.27	87.68	70.89	-64.04	3,333.00	-1,090.15	1,307.40	1,160.72	146.68	8.913	
12,600.00	9,597.97	11,213.51	9,024.11	89.42	72.47	-63.98	3,432.99	-1,091.17	1,308.05	1,158.30	149.75	8.735	
12,700.00	9,599.31	11,313.50	9,023.96	91.19	74.07	-63.92	3,532.97	-1,092.19	1,308.73	1,155.86	152.87	8.561	
12,800.00	9,600.66	11,413.49	9,023.80	92.97	75.70	-63.86	3,632.95	-1,093.20	1,309.41	1,153.39	156.02	8.392	
12,900.00	9,602.00	11,513.48	9,023.64	94.77	77.36	-63.81	3,732.94	-1,094.22	1,310.09	1,150.88	159.21	8.229	
13,000.00	9,603.34	11,613.47	9,023.49	96.58	79.04	-63.75	3,832.92	-1,095.24	1,310.77	1,148.34	162.43	8.070	
13,100.00	9,604.68	11,713.46	9,023.33	98.40	80.75	-63.69	3,932.90	-1,096.26	1,311.46	1,145.77	165.68	7.915	
13,200.00	9,606.02	11,813.45	9,023.17	100.24	82.48	-63.63	4,032.89	-1,097.27	1,312.14	1,143.18	168.96	7.766	
13,300.00	9,607.37	11,913.44	9,023.01	102.09	84.22	-63.57	4,132.87	-1,098.29	1,312.83	1,140.55	172.27	7.621	
13,400.00	9,608.71	12,013.43	9,022.86	103.96	85.99	-63.51	4,232.85	-1,099.31	1,313.51	1,137.91	175.60	7.480	
13,500.00	9,610.05	12,113.41	9,022.70	105.83	87.77	-63.46	4,332.84	-1,100.33	1,314.20	1,135.24	178.96	7.344	
13,600.00	9,611.39	12,213.40	9,022.54	107.72	89.57	-63.40	4,432.82	-1,101.34	1,314.89	1,132.55	182.34	7.211	
13,700.00	9,612.73	12,313.39	9,022.39	109.61	91.39	-63.34	4,532.80	-1,102.36	1,315.58	1,129.85	185.74	7.083	
13,800.00	9,614.07	12,413.38	9,022.23	111.52	93.22	-63.28	4,632.79	-1,103.38	1,316.28	1,127.12	189.16	6.959	
13,900.00	9,615.42	12,513.37	9,022.07	113.43	95.06	-63.22	4,732.77	-1,104.40	1,316.97	1,124.38	192.59	6.838	
14,000.00	9,616.76	12,613.36	9,021.91	115.36	96.92	-63.17	4,832.75	-1,105.41	1,317.67	1,121.62	196.05	6.721	
14,100.00	9,618.10	12,713.35	9,021.76	117.29	98.79	-63.11	4,932.74	-1,106.43	1,318.36	1,118.85	199.51	6.608	
14,200.00	9,619.44	12,813.34	9,021.60	119.23	100.67	-63.05	5,032.72	-1,107.45	1,319.06	1,116.06	203.00	6.498	
14,300.00	9,620.78	12,913.32	9,021.44	121.18	102.56	-62.99	5,132.70	-1,108.46	1,319.76	1,113.26	206.50	6.391	
14,400.00	9,622.13	13,013.31	9,021.29	123.13	104.46	-62.94	5,232.69	-1,109.48	1,320.46	1,110.45	210.01	6.288	
14,500.00	9,623.47	13,113.30	9,021.13	125.09	106.37	-62.88	5,332.67	-1,110.50	1,321.16	1,107.63	213.53	6.187	
14,600.00	9,624.81	13,213.29	9,020.97	127.06	108.30	-62.82	5,432.65	-1,111.52	1,321.86	1,104.80	217.07	6.090	
14,700.00	9,626.15	13,313.28	9,020.82	129.03	110.23	-62.76	5,532.64	-1,112.53	1,322.57	1,101.96	220.61	5.995	
14,800.00	9,627.49	13,413.27	9,020.66	131.01	112.16	-62.71	5,632.62	-1,113.55	1,323.28	1,099.11	224.17	5.903	
14,900.00	9,628.84	13,513.26	9,020.50	132.99	114.11	-62.65	5,732.60	-1,114.57	1,323.98	1,096.25	227.73	5.814	
15,000.00	9,630.18	13,613.25	9,020.34	134.98	116.07	-62.59	5,832.59	-1,115.59	1,324.69	1,093.38	231.31	5.727	
15,100.00	9,631.55	13,729.21	9,020.34	136.98	118.34	-62.54	5,948.55	-1,116.61	1,325.52	1,090.43	235.09	5.638	
15,200.00	9,633.07	13,839.53	9,021.88	138.97	120.50	-62.54	6,058.86	-1,116.26	1,325.60	1,086.66	238.94	5.548	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 11H - OH - Plan 1 11-01-16													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
15,300.00	9,634.58	13,939.53	9,023.34	140.97	122.47	-62.54	6,158.84	-1,115.88	1,325.62	1,083.01	242.61	5.464	
15,400.00	9,636.09	14,039.53	9,024.80	142.98	124.45	-62.54	6,258.83	-1,115.50	1,325.65	1,079.35	246.30	5.382	
15,500.00	9,637.61	14,139.53	9,026.27	144.98	126.43	-62.54	6,358.82	-1,115.13	1,325.67	1,075.68	249.99	5.303	
15,600.00	9,639.12	14,239.53	9,027.73	147.00	128.42	-62.53	6,458.81	-1,114.75	1,325.69	1,072.01	253.69	5.226	
15,700.00	9,640.63	14,339.53	9,029.19	149.01	130.41	-62.53	6,558.80	-1,114.37	1,325.72	1,068.32	257.40	5.150	
15,800.00	9,642.15	14,439.53	9,030.65	151.03	132.41	-62.53	6,658.79	-1,113.99	1,325.74	1,064.63	261.11	5.077	
15,900.00	9,643.66	14,539.53	9,032.11	153.06	134.41	-62.53	6,758.78	-1,113.62	1,325.77	1,060.93	264.84	5.006	
16,000.00	9,645.17	14,639.53	9,033.57	155.08	136.41	-62.53	6,858.76	-1,113.24	1,325.79	1,057.23	268.57	4.937	
16,100.00	9,646.69	14,739.53	9,035.03	157.11	138.43	-62.52	6,958.75	-1,112.86	1,325.82	1,053.51	272.30	4.869	
16,200.00	9,648.20	14,839.53	9,036.50	159.15	140.44	-62.52	7,058.74	-1,112.49	1,325.84	1,049.80	276.05	4.803	
16,300.00	9,649.71	14,939.53	9,037.96	161.18	142.46	-62.52	7,158.73	-1,112.11	1,325.87	1,046.07	279.80	4.739	
16,400.00	9,651.23	15,039.53	9,039.42	163.22	144.48	-62.52	7,258.72	-1,111.73	1,325.89	1,042.34	283.55	4.676	
16,500.00	9,652.74	15,139.53	9,040.88	165.27	146.51	-62.52	7,358.71	-1,111.35	1,325.92	1,038.60	287.31	4.615	
16,600.00	9,654.25	15,239.53	9,042.34	167.31	148.54	-62.51	7,458.70	-1,110.98	1,325.94	1,034.86	291.08	4.555	
16,700.00	9,655.77	15,339.53	9,043.80	169.36	150.57	-62.51	7,558.68	-1,110.60	1,325.97	1,031.12	294.85	4.497	
16,800.00	9,657.28	15,439.53	9,045.27	171.41	152.61	-62.51	7,658.67	-1,110.22	1,325.99	1,027.36	298.63	4.440	
16,900.00	9,658.79	15,539.53	9,046.73	173.47	154.65	-62.51	7,758.66	-1,109.85	1,326.02	1,023.61	302.41	4.385	
17,000.00	9,660.31	15,639.53	9,048.19	175.52	156.69	-62.51	7,858.65	-1,109.47	1,326.04	1,019.85	306.19	4.331	
17,100.00	9,661.82	15,739.53	9,049.65	177.58	158.74	-62.50	7,958.64	-1,109.09	1,326.07	1,016.08	309.99	4.278	
17,200.00	9,663.33	15,839.53	9,051.11	179.64	160.79	-62.50	8,058.63	-1,108.71	1,326.09	1,012.31	313.78	4.226	
17,300.00	9,664.85	15,939.53	9,052.57	181.70	162.84	-62.50	8,158.62	-1,108.34	1,326.12	1,008.54	317.58	4.176	
17,400.00	9,666.36	16,039.53	9,054.04	183.77	164.89	-62.50	8,258.61	-1,107.96	1,326.14	1,004.76	321.38	4.126	
17,500.00	9,667.87	16,139.53	9,055.50	185.83	166.95	-62.50	8,358.59	-1,107.58	1,326.17	1,000.98	325.19	4.078	
17,600.00	9,669.39	16,239.53	9,056.96	187.90	169.01	-62.49	8,458.58	-1,107.21	1,326.19	997.19	329.00	4.031	
17,700.00	9,670.90	16,339.53	9,058.42	189.97	171.07	-62.49	8,558.57	-1,106.83	1,326.21	993.40	332.81	3.985	
17,800.00	9,672.44	16,439.53	9,059.88	192.04	173.13	-62.49	8,658.56	-1,106.45	1,326.25	989.62	336.62	3.940	
17,900.00	9,674.07	16,539.53	9,061.34	194.12	175.20	-62.48	8,758.55	-1,106.07	1,326.30	985.87	340.44	3.896	
18,000.00	9,675.70	16,639.53	9,062.80	196.19	177.27	-62.47	8,858.54	-1,105.70	1,326.36	982.11	344.25	3.853	
18,100.00	9,677.33	16,739.53	9,064.27	198.27	179.34	-62.47	8,958.52	-1,105.32	1,326.41	978.35	348.07	3.811	
18,200.00	9,678.96	16,839.53	9,065.73	200.35	181.41	-62.46	9,058.51	-1,104.94	1,326.47	974.58	351.89	3.770	
18,300.00	9,680.59	16,939.53	9,067.19	202.43	183.48	-62.45	9,158.50	-1,104.57	1,326.52	970.81	355.71	3.729	
18,400.00	9,682.22	17,039.53	9,068.65	204.51	185.56	-62.45	9,258.49	-1,104.19	1,326.58	967.04	359.53	3.690	
18,500.00	9,683.84	17,139.53	9,070.11	206.60	187.64	-62.44	9,358.48	-1,103.81	1,326.63	963.27	363.36	3.651	
18,600.00	9,685.47	17,239.53	9,071.57	208.68	189.72	-62.43	9,458.47	-1,103.43	1,326.69	959.50	367.19	3.613	
18,700.00	9,687.10	17,339.53	9,073.04	210.77	191.80	-62.43	9,558.46	-1,103.06	1,326.74	955.72	371.02	3.576	
18,800.00	9,688.73	17,439.53	9,074.50	212.86	193.88	-62.42	9,658.44	-1,102.68	1,326.80	951.94	374.86	3.539	
18,900.00	9,690.36	17,539.53	9,075.96	214.94	195.96	-62.41	9,758.43	-1,102.30	1,326.85	948.16	378.69	3.504	
19,000.00	9,691.99	17,639.53	9,077.42	217.03	198.05	-62.41	9,858.42	-1,101.93	1,326.91	944.38	382.53	3.469	
19,100.00	9,693.62	17,739.53	9,078.88	219.13	200.13	-62.40	9,958.41	-1,101.55	1,326.96	940.59	386.37	3.434	
19,200.00	9,695.25	17,839.53	9,080.34	221.22	202.22	-62.39	10,058.40	-1,101.17	1,327.02	936.80	390.21	3.401	
19,300.00	9,696.87	17,939.53	9,081.80	223.31	204.31	-62.38	10,158.39	-1,100.79	1,327.07	933.01	394.06	3.368	
19,400.00	9,698.50	18,039.53	9,083.27	225.41	206.40	-62.38	10,258.37	-1,100.42	1,327.13	929.22	397.90	3.335	
19,500.00	9,700.13	18,139.53	9,084.73	227.50	208.49	-62.37	10,358.36	-1,100.04	1,327.18	925.43	401.75	3.304	
19,600.00	9,701.76	18,239.53	9,086.19	229.60	210.59	-62.36	10,458.35	-1,099.66	1,327.24	921.64	405.60	3.272	
19,700.00	9,703.39	18,339.53	9,087.65	231.70	212.68	-62.36	10,558.34	-1,099.29	1,327.29	917.84	409.45	3.242	
19,800.00	9,705.02	18,439.53	9,089.11	233.80	214.78	-62.35	10,658.33	-1,098.91	1,327.35	914.04	413.30	3.212	
19,900.00	9,706.65	18,539.53	9,090.57	235.90	216.87	-62.34	10,758.32	-1,098.53	1,327.40	910.25	417.16	3.182	
20,000.00	9,708.28	18,639.53	9,092.04	238.00	218.97	-62.34	10,858.31	-1,098.16	1,327.46	906.44	421.01	3.153	
20,044.41	9,709.00	18,683.93	9,092.68	238.80	219.90	-62.33	10,902.71	-1,097.99	1,327.48	904.90	422.58	3.141 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 12H - OH - Plan 1 11-01-16													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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	9.00	0.00	0.00	-26.83	885.27	-447.86	992.15				
100.00	100.00	91.00	100.00	0.19	0.18	-26.83	885.27	-447.86	992.11	991.74	0.37	2,683.353	
200.00	200.00	191.00	200.00	0.73	0.68	-26.83	885.27	-447.86	992.11	990.70	1.41	701.550	
300.00	300.00	291.00	300.00	1.27	1.22	-26.83	885.27	-447.86	992.11	989.62	2.49	398.504	
400.00	400.00	391.00	400.00	1.81	1.76	-26.83	885.27	-447.86	992.11	988.55	3.56	278.292	
500.00	500.00	491.00	500.00	2.34	2.30	-26.83	885.27	-447.86	992.11	987.47	4.64	213.798	
600.00	600.00	591.00	600.00	2.88	2.83	-26.83	885.27	-447.86	992.11	986.40	5.72	173.573	
700.00	699.98	690.98	699.98	3.42	3.37	-47.16	885.27	-447.86	990.92	984.13	6.79	145.873	
800.00	799.84	790.84	799.84	3.96	3.91	-47.44	885.27	-447.86	987.37	979.50	7.87	125.443	
900.00	899.45	890.45	899.45	4.50	4.44	-47.90	885.27	-447.86	981.49	972.54	8.95	109.688	
1,000.00	998.90	989.90	998.90	5.05	4.98	-48.35	885.27	-447.86	974.49	964.47	10.02	97.224	
1,100.00	1,098.36	1,089.36	1,098.36	5.60	5.51	-48.81	885.27	-447.86	967.56	956.46	11.10	87.145	
1,200.00	1,197.81	1,188.81	1,197.81	6.15	6.05	-49.28	885.27	-447.86	960.69	948.51	12.19	78.835	
1,300.00	1,297.26	1,288.26	1,297.26	6.71	6.58	-49.75	885.27	-447.86	953.89	940.62	13.27	71.872	
1,400.00	1,396.72	1,387.72	1,396.72	7.27	7.12	-50.24	885.27	-447.86	947.15	932.79	14.36	65.957	
1,500.00	1,496.17	1,487.17	1,496.17	7.84	7.65	-50.72	885.27	-447.86	940.48	925.03	15.45	60.872	
1,600.00	1,595.62	1,572.49	1,581.48	8.40	8.10	-51.19	885.37	-448.77	934.54	918.08	16.46	56.786	
1,700.00	1,695.07	1,655.47	1,664.40	8.97	8.54	-51.77	885.70	-452.05	930.41	912.97	17.45	53.327	
1,800.00	1,794.53	1,738.08	1,748.80	9.53	8.97	-52.47	886.28	-457.69	928.20	909.76	18.44	50.344	
1,860.72	1,854.91	1,787.98	1,796.50	9.88	9.23	-52.94	886.75	-462.24	927.83	908.79	19.04	48.732 CC	
1,900.00	1,893.98	1,820.16	1,828.49	10.10	9.40	-53.27	887.10	-465.64	927.98	908.55	19.43	47.760 ES	
2,000.00	1,993.43	1,900.00	1,907.70	10.67	9.82	-54.16	888.12	-475.59	929.86	909.45	20.42	45.545	
2,100.00	2,092.89	1,982.26	1,988.99	11.24	10.27	-55.18	889.40	-488.14	933.93	912.50	21.42	43.592	
2,200.00	2,192.34	2,062.04	2,067.44	11.81	10.72	-56.26	890.88	-502.53	940.29	917.86	22.43	41.928	
2,300.00	2,291.79	2,140.83	2,144.50	12.38	11.17	-57.40	892.55	-518.86	949.03	925.60	23.43	40.504	
2,400.00	2,391.24	2,222.20	2,223.59	12.95	11.65	-58.66	894.50	-537.87	960.23	935.77	24.46	39.263	
2,500.00	2,490.70	2,318.04	2,316.55	13.52	12.23	-60.14	896.88	-561.05	972.70	947.13	25.57	38.037	
2,600.00	2,590.15	2,413.88	2,409.52	14.09	12.83	-61.59	899.26	-584.22	985.85	959.16	26.69	36.932	
2,700.00	2,689.60	2,509.72	2,502.49	14.66	13.44	-63.00	901.63	-607.39	999.64	971.82	27.82	35.934	
2,800.00	2,789.06	2,605.56	2,595.45	15.23	14.06	-64.37	904.01	-630.56	1,014.04	985.09	28.95	35.032	
2,900.00	2,888.51	2,701.40	2,688.42	15.80	14.68	-65.71	906.38	-653.73	1,029.03	998.96	30.07	34.216	
3,000.00	2,987.96	2,797.24	2,781.39	16.37	15.32	-67.00	908.76	-676.91	1,044.59	1,013.39	31.20	33.476	
3,100.00	3,087.41	2,893.08	2,874.35	16.94	15.96	-68.27	911.13	-700.08	1,060.69	1,028.36	32.33	32.804	
3,200.00	3,186.87	2,988.92	2,967.32	17.51	16.61	-69.49	913.51	-723.25	1,077.30	1,043.84	33.46	32.194	
3,300.00	3,286.32	3,084.76	3,060.28	18.08	17.27	-70.68	915.89	-746.42	1,094.41	1,059.82	34.59	31.639	
3,400.00	3,385.77	3,180.60	3,153.25	18.66	17.93	-71.84	918.26	-769.60	1,111.99	1,076.27	35.72	31.133	
3,500.00	3,485.23	3,276.44	3,246.22	19.23	18.59	-72.96	920.64	-792.77	1,130.01	1,093.17	36.84	30.672	
3,600.00	3,584.68	3,372.28	3,339.18	19.80	19.26	-74.05	923.01	-815.94	1,148.46	1,110.50	37.97	30.250	
3,700.00	3,684.13	3,468.12	3,432.15	20.37	19.93	-75.10	925.39	-839.11	1,167.32	1,128.23	39.09	29.864	
3,800.00	3,783.59	3,563.96	3,525.12	20.94	20.61	-76.17	927.77	-862.28	1,186.57	1,146.36	40.20	29.513	
3,900.00	3,883.24	3,660.13	3,618.40	21.50	21.29	-77.46	930.15	-885.54	1,206.66	1,165.37	41.29	29.223	
4,000.00	3,983.12	3,756.73	3,712.10	22.04	21.97	-78.60	932.55	-908.89	1,227.72	1,185.36	42.36	28.983	
4,100.00	4,083.11	3,853.64	3,806.11	22.56	22.66	-79.28	934.95	-932.32	1,249.60	1,206.17	43.43	28.773	
4,200.00	4,183.11	3,950.64	3,900.20	23.07	23.36	-79.74	937.35	-955.77	1,271.81	1,227.30	44.51	28.576	
4,300.00	4,283.11	4,047.64	3,994.29	23.58	24.05	-80.18	939.76	-979.23	1,294.09	1,248.51	45.58	28.390	
4,400.00	4,383.11	4,144.64	4,088.39	24.10	24.75	-80.61	942.16	-1,002.68	1,316.44	1,269.78	46.66	28.214	
4,500.00	4,483.11	4,241.64	4,182.48	24.61	25.45	-81.02	944.57	-1,026.13	1,338.86	1,291.13	47.74	28.047	
4,600.00	4,583.11	4,338.64	4,276.57	25.13	26.15	-81.42	946.97	-1,049.58	1,361.35	1,312.53	48.82	27.888	
4,700.00	4,683.11	4,435.65	4,370.67	25.64	26.85	-81.81	949.38	-1,073.04	1,383.90	1,334.00	49.89	27.736	
4,800.00	4,783.11	4,532.65	4,464.76	26.16	27.55	-82.18	951.78	-1,096.49	1,406.50	1,355.53	50.97	27.592	
4,900.00	4,883.11	4,629.65	4,558.85	26.68	28.26	-82.54	954.19	-1,119.94	1,429.16	1,377.11	52.05	27.455	
5,000.00	4,983.11	4,726.65	4,652.94	27.20	28.96	-82.90	956.59	-1,143.40	1,451.88	1,398.74	53.14	27.324	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 12H - OH - Plan 1 11-01-16												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				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)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	5,083.11	4,823.65	4,747.04	27.72	29.67	-63.24	959.00	-1,166.85	1,474.64	1,420.43	54.22	27.199	
5,200.00	5,183.11	4,920.65	4,841.13	28.24	30.38	-63.57	961.40	-1,190.30	1,497.46	1,442.16	55.30	27.079	
5,300.00	5,283.11	5,017.65	4,935.22	28.76	31.08	-63.89	963.81	-1,213.75	1,520.32	1,463.94	56.38	26.965	
5,400.00	5,383.11	5,114.66	5,029.32	29.28	31.79	-64.20	966.21	-1,237.21	1,543.22	1,485.76	57.47	26.855	
5,500.00	5,483.11	5,211.66	5,123.41	29.80	32.50	-64.50	968.62	-1,260.66	1,566.17	1,507.62	58.55	26.750	
5,600.00	5,583.11	5,308.66	5,217.50	30.32	33.21	-64.80	971.02	-1,284.11	1,589.15	1,529.52	59.63	26.649	
5,700.00	5,683.11	5,405.66	5,311.59	30.85	33.93	-65.08	973.42	-1,307.57	1,612.18	1,551.46	60.72	26.553	
5,800.00	5,783.11	5,502.66	5,405.69	31.37	34.64	-65.36	975.83	-1,331.02	1,635.24	1,573.44	61.80	26.460	
5,900.00	5,883.11	5,599.66	5,499.78	31.90	35.35	-65.63	978.23	-1,354.47	1,658.34	1,595.45	62.89	26.370	
6,000.00	5,983.11	5,696.66	5,593.87	32.42	36.06	-65.89	980.64	-1,377.92	1,681.47	1,617.50	63.97	26.285	
6,100.00	6,083.11	5,793.67	5,687.97	32.95	36.78	-66.14	983.04	-1,401.38	1,704.64	1,639.58	65.06	26.202	
6,200.00	6,183.11	5,890.67	5,782.06	33.47	37.49	-66.39	985.45	-1,424.83	1,727.83	1,661.69	66.14	26.122	
6,300.00	6,283.11	5,987.67	5,876.15	34.00	38.21	-66.64	987.85	-1,448.28	1,751.06	1,683.83	67.23	26.046	
6,400.00	6,383.11	6,084.67	5,970.24	34.52	38.92	-66.87	990.26	-1,471.74	1,774.31	1,706.00	68.32	25.972	
6,500.00	6,483.11	6,181.67	6,064.34	35.05	39.64	-67.10	992.66	-1,495.19	1,797.60	1,728.19	69.40	25.900	
6,600.00	6,583.11	6,278.67	6,158.43	35.58	40.36	-67.32	995.07	-1,518.64	1,820.91	1,750.41	70.49	25.831	
6,700.00	6,683.11	6,375.68	6,252.52	36.10	41.07	-67.54	997.47	-1,542.09	1,844.24	1,772.66	71.58	25.765	
6,800.00	6,783.11	6,472.68	6,346.62	36.63	41.79	-67.75	999.88	-1,565.55	1,867.60	1,794.93	72.67	25.700	
6,900.00	6,883.11	6,569.68	6,440.71	37.16	42.51	-67.96	1,002.28	-1,589.00	1,890.98	1,817.23	73.76	25.638	
7,000.00	6,983.11	6,666.68	6,534.80	37.69	43.22	-68.16	1,004.69	-1,612.45	1,914.39	1,839.55	74.85	25.578	
7,100.00	7,083.11	6,763.68	6,628.89	38.21	43.94	-68.36	1,007.09	-1,635.91	1,937.82	1,861.88	75.93	25.520	
7,200.00	7,183.11	6,860.68	6,722.99	38.74	44.66	-68.55	1,009.50	-1,659.36	1,961.27	1,884.25	77.02	25.463	
7,300.00	7,283.11	6,957.68	6,817.08	39.27	45.38	-68.74	1,011.90	-1,682.81	1,984.74	1,906.63	78.11	25.409	
7,400.00	7,383.11	7,054.69	6,911.17	39.80	46.10	-68.93	1,014.31	-1,706.26	2,008.23	1,929.03	79.20	25.355	
7,500.00	7,483.11	7,151.69	7,005.27	40.33	46.82	-69.11	1,016.71	-1,729.72	2,031.74	1,951.45	80.29	25.304	
7,600.00	7,583.11	7,248.69	7,099.36	40.86	47.54	-69.28	1,019.12	-1,753.17	2,055.27	1,973.88	81.38	25.254	
7,700.00	7,683.11	7,345.69	7,193.45	41.39	48.26	-69.45	1,021.52	-1,776.62	2,078.81	1,996.34	82.47	25.206	
7,800.00	7,783.11	7,442.69	7,287.54	41.92	48.98	-69.62	1,023.93	-1,800.08	2,102.38	2,018.81	83.57	25.158	
7,900.00	7,883.11	7,539.69	7,381.64	42.45	49.70	-69.78	1,026.33	-1,823.53	2,125.96	2,041.30	84.66	25.113	
8,000.00	7,983.11	7,636.69	7,475.73	42.98	50.42	-69.94	1,028.74	-1,846.98	2,149.55	2,063.80	85.75	25.068	
8,100.00	8,083.11	7,733.70	7,569.82	43.51	51.14	-70.10	1,031.14	-1,870.43	2,173.16	2,086.32	86.84	25.025	
8,200.00	8,183.11	7,830.70	7,663.92	44.04	51.86	-70.26	1,033.54	-1,893.89	2,196.79	2,108.86	87.93	24.983	
8,300.00	8,283.11	7,927.71	7,758.02	44.57	52.58	-70.59	1,036.99	-1,916.97	2,218.76	2,128.89	89.02	24.941	
8,400.00	8,383.11	8,024.72	7,852.12	45.10	53.30	-70.85	1,043.33	-1,939.28	2,228.97	2,136.40	90.11	24.900	
8,500.00	8,483.11	8,121.73	7,946.23	45.63	54.02	-70.86	1,043.49	-1,990.91	2,229.36	2,135.41	93.94	23.731	
8,554.65	8,537.76	8,173.02	8,537.76	45.92	56.84	-70.86	1,043.49	-1,990.91	2,229.36	2,134.86	94.49	23.593	
8,600.00	8,583.11	8,273.32	8,568.06	46.17	56.97	-70.85	1,043.61	-1,990.91	2,229.45	2,134.57	94.88	23.498	
8,700.00	8,683.11	8,370.00	8,624.58	46.70	57.21	-70.76	1,047.54	-1,990.95	2,231.49	2,135.81	95.68	23.322	
8,800.00	8,783.11	8,468.84	8,653.12	47.23	57.34	-70.66	1,051.68	-1,990.99	2,235.91	2,139.56	96.35	23.205	
8,900.00	8,883.11	8,570.25	8,693.65	47.76	57.51	-70.46	1,060.12	-1,991.08	2,243.04	2,145.95	97.09	23.103	
9,000.00	8,983.11	8,672.34	8,722.34	48.29	57.64	-70.27	1,067.98	-1,991.16	2,252.88	2,155.12	97.77	23.044	
9,100.00	9,083.11	8,775.00	8,769.51	48.82	57.86	-69.87	1,084.52	-1,991.32	2,265.35	2,166.81	98.54	22.989	
9,200.00	9,182.98	8,875.00	8,815.06	49.36	58.06	-68.06	1,105.09	-1,991.53	2,279.55	2,179.98	99.57	22.893	
9,300.00	9,280.93	8,972.65	8,835.07	49.93	58.15	-66.93	1,115.71	-1,991.64	2,290.30	2,189.96	100.35	22.824	
9,400.00	9,374.01	9,075.00	8,858.64	50.51	58.26	-66.18	1,129.56	-1,991.78	2,297.17	2,196.54	100.63	22.827	
9,500.00	9,459.39	9,170.00	8,899.93	51.11	58.46	-65.88	1,157.74	-1,992.07	2,299.60	2,199.01	100.58	22.862	
9,600.00	9,534.47	9,265.00	8,938.60	51.72	58.64	-66.13	1,189.41	-1,992.39	2,297.78	2,197.41	100.37	22.893	
9,700.00	9,596.97	9,363.63	8,955.88	52.35	58.73	-66.81	1,205.52	-1,992.56	2,291.39	2,191.21	100.18	22.873	
9,800.00	9,644.99	9,460.00	8,974.37	53.00	58.82	-67.92	1,224.32	-1,992.75	2,281.08	2,180.67	100.41	22.718	
9,900.00	9,677.08	9,550.00	9,006.95	53.67	58.99	-69.67	1,262.22	-1,993.13	2,266.93	2,165.51	101.42	22.351	
10,000.00	9,692.26	9,283.68	9,026.98	54.34	59.10	-71.70	1,289.29	-1,993.41	2,249.71	2,146.85	102.86	21.871	
10,100.00	9,691.40	9,318.89	9,046.18	55.05	59.21	-73.33	1,318.79	-1,993.71	2,230.43	2,126.07	104.35	21.374	



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 12H - OH - Plan 1 11-01-16													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	
10,200.00	9,687.32	9,350.00	9,061.62	55.83	59.32	-73.74	1,345.80	-1,993.98	2,213.20	2,107.76	105.44	20.991	
10,300.00	9,683.23	9,400.00	9,083.28	56.69	59.48	-74.33	1,390.84	-1,994.44	2,198.81	2,092.05	106.77	20.595	
10,400.00	9,679.15	9,450.00	9,100.94	57.61	59.64	-74.83	1,437.60	-1,994.92	2,187.23	2,079.10	108.13	20.227	
10,500.00	9,675.07	9,486.39	9,111.19	58.59	59.76	-75.13	1,472.51	-1,995.27	2,178.19	2,068.77	109.42	19.906	
10,600.00	9,670.98	9,534.94	9,121.38	59.64	59.93	-75.44	1,519.97	-1,995.75	2,171.66	2,060.81	110.86	19.590	
10,700.00	9,666.90	9,585.31	9,127.67	60.75	60.12	-75.65	1,569.92	-1,996.26	2,167.50	2,055.17	112.33	19.295	
10,800.00	9,662.81	9,640.07	9,129.54	61.92	60.34	-75.75	1,624.62	-1,996.82	2,165.61	2,051.74	113.87	19.018	
10,900.00	9,658.73	9,739.99	9,129.30	63.13	60.80	-75.85	1,724.54	-1,997.84	2,164.70	2,048.89	115.81	18.691	
11,000.00	9,654.64	9,839.92	9,129.06	64.40	61.33	-75.95	1,824.46	-1,998.85	2,163.79	2,045.92	117.87	18.357	
11,100.00	9,650.56	9,939.85	9,128.81	65.71	61.95	-76.05	1,924.39	-1,999.87	2,162.89	2,042.85	120.04	18.017	
11,200.00	9,646.47	10,039.77	9,128.57	67.07	62.64	-76.15	2,024.31	-2,000.89	2,162.00	2,039.67	122.32	17.674	
11,300.00	9,642.39	10,139.70	9,128.32	68.46	63.40	-76.25	2,124.23	-2,001.90	2,161.11	2,036.40	124.71	17.329	
11,400.00	9,638.30	10,239.63	9,128.08	69.90	64.24	-76.35	2,224.15	-2,002.92	2,160.23	2,033.04	127.19	16.984	
11,500.00	9,634.22	10,339.55	9,127.84	71.37	65.15	-76.45	2,324.07	-2,003.93	2,159.35	2,029.59	129.76	16.641	
11,600.00	9,630.13	10,439.48	9,127.59	72.88	66.12	-76.55	2,423.99	-2,004.95	2,158.49	2,026.06	132.43	16.300	
11,700.00	9,626.05	10,539.40	9,127.35	74.42	67.15	-76.64	2,523.91	-2,005.97	2,157.62	2,022.45	135.17	15.962	
11,800.00	9,621.96	10,639.33	9,127.10	75.99	68.25	-76.74	2,623.83	-2,006.98	2,156.77	2,018.78	137.99	15.630	
11,900.00	9,617.88	10,739.26	9,126.86	77.59	69.40	-76.84	2,723.75	-2,008.00	2,155.92	2,015.03	140.89	15.302	
12,000.00	9,613.79	10,839.18	9,126.61	79.21	70.60	-76.94	2,823.67	-2,009.02	2,155.08	2,011.22	143.85	14.981	
12,100.00	9,609.71	10,939.11	9,126.37	80.86	71.85	-77.04	2,923.59	-2,010.03	2,154.24	2,007.36	146.88	14.666	
12,200.00	9,605.63	11,039.03	9,126.13	82.54	73.15	-77.14	3,023.51	-2,011.05	2,153.41	2,003.44	149.97	14.359	
12,300.00	9,601.54	11,138.96	9,125.88	84.23	74.49	-77.24	3,123.43	-2,012.07	2,152.59	1,999.46	153.12	14.058	
12,400.00	9,597.71	11,238.90	9,125.64	85.95	75.87	-77.33	3,223.36	-2,013.08	2,151.83	1,995.54	156.28	13.769	
12,469.18	9,596.63	11,308.07	9,125.47	87.14	76.84	-77.35	3,292.54	-2,013.79	2,151.64	1,993.21	158.43	13.581	
12,500.00	9,596.68	11,338.89	9,125.39	87.68	77.28	-77.35	3,323.35	-2,014.10	2,151.68	1,992.29	159.39	13.499	
12,600.00	9,597.97	11,438.88	9,125.15	89.42	78.74	-77.31	3,423.33	-2,015.12	2,152.04	1,989.41	162.62	13.233	
12,700.00	9,599.31	11,538.86	9,124.90	91.19	80.23	-77.27	3,523.32	-2,016.14	2,152.41	1,986.49	165.92	12.973	
12,800.00	9,600.66	11,638.85	9,124.66	92.97	81.74	-77.23	3,623.30	-2,017.15	2,152.78	1,983.52	169.25	12.719	
12,900.00	9,602.00	11,738.84	9,124.42	94.77	83.29	-77.19	3,723.28	-2,018.17	2,153.15	1,980.52	172.63	12.473	
13,000.00	9,603.34	11,838.83	9,124.17	96.58	84.87	-77.15	3,823.26	-2,019.19	2,153.52	1,977.48	176.04	12.233	
13,100.00	9,604.68	11,938.81	9,123.93	98.40	86.47	-77.10	3,923.24	-2,020.20	2,153.90	1,974.41	179.49	12.000	
13,200.00	9,606.02	12,038.80	9,123.68	100.24	88.10	-77.06	4,023.22	-2,021.22	2,154.27	1,971.31	182.97	11.774	
13,300.00	9,607.37	12,138.79	9,123.44	102.09	89.75	-77.02	4,123.21	-2,022.24	2,154.65	1,968.17	186.48	11.555	
13,400.00	9,608.71	12,238.78	9,123.19	103.96	91.42	-76.98	4,223.19	-2,023.26	2,155.03	1,965.01	190.01	11.341	
13,500.00	9,610.05	12,338.76	9,122.95	105.83	93.11	-76.94	4,323.17	-2,024.27	2,155.41	1,961.83	193.58	11.134	
13,600.00	9,611.39	12,438.75	9,122.71	107.72	94.82	-76.90	4,423.15	-2,025.29	2,155.79	1,958.62	197.17	10.934	
13,700.00	9,612.73	12,538.74	9,122.46	109.61	96.55	-76.86	4,523.13	-2,026.31	2,156.17	1,955.38	200.79	10.739	
13,800.00	9,614.07	12,638.72	9,122.22	111.52	98.30	-76.82	4,623.12	-2,027.32	2,156.55	1,952.12	204.42	10.549	
13,900.00	9,615.42	12,738.71	9,121.97	113.43	100.06	-76.78	4,723.10	-2,028.34	2,156.93	1,948.85	208.08	10.366	
14,000.00	9,616.76	12,838.70	9,121.73	115.36	101.84	-76.74	4,823.08	-2,029.36	2,157.32	1,945.55	211.77	10.187	
14,100.00	9,618.10	12,938.69	9,121.48	117.29	103.64	-76.70	4,923.06	-2,030.38	2,157.70	1,942.24	215.46	10.014	
14,200.00	9,619.44	13,038.67	9,121.24	119.23	105.44	-76.65	5,023.04	-2,031.39	2,158.09	1,938.91	219.18	9.846	
14,300.00	9,620.78	13,138.66	9,121.00	121.18	107.26	-76.61	5,123.03	-2,032.41	2,158.48	1,935.56	222.92	9.683	
14,400.00	9,622.13	13,238.65	9,120.75	123.13	109.10	-76.57	5,223.01	-2,033.43	2,158.86	1,932.20	226.67	9.524	
14,500.00	9,623.47	13,338.64	9,120.51	125.09	110.94	-76.53	5,322.99	-2,034.44	2,159.25	1,928.82	230.43	9.370	
14,600.00	9,624.81	13,438.62	9,120.26	127.06	112.80	-76.49	5,422.97	-2,035.46	2,159.65	1,925.43	234.22	9.221	
14,700.00	9,626.15	13,538.61	9,120.02	129.03	114.67	-76.45	5,522.95	-2,036.48	2,160.04	1,922.03	238.01	9.075	
14,800.00	9,627.49	13,638.60	9,119.77	131.01	116.55	-76.41	5,622.94	-2,037.50	2,160.43	1,918.61	241.82	8.934	
14,900.00	9,628.84	13,738.59	9,119.53	132.99	118.43	-76.37	5,722.92	-2,038.51	2,160.82	1,915.19	245.64	8.797	
15,000.00	9,630.18	13,838.57	9,119.29	134.98	120.33	-76.33	5,822.90	-2,039.53	2,161.22	1,911.75	249.47	8.663	
15,100.00	9,631.55	13,950.10	9,119.06	136.98	122.45	-76.30	5,934.43	-2,040.62	2,161.85	1,908.61	253.24	8.537	
15,200.00	9,633.07	14,076.93	9,120.71	138.97	124.87	-76.29	6,061.23	-2,040.36	2,161.96	1,904.35	257.62	8.392	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 12H - OH - Plan 1 11-01-16													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)					
15,300.00	9,634.58	14,176.93	9,122.23	140.97	126.78	-76.29	6,161.22	-2,039.98	2,161.96	1,900.46	261.50	8.268	
15,400.00	9,636.09	14,276.93	9,123.75	142.98	128.70	-76.29	6,261.21	-2,039.60	2,161.96	1,896.57	265.39	8.146	
15,500.00	9,637.61	14,376.93	9,125.26	144.98	130.63	-76.29	6,361.20	-2,039.22	2,161.96	1,892.66	269.29	8.028	
15,600.00	9,639.12	14,476.93	9,126.78	147.00	132.57	-76.29	6,461.18	-2,038.84	2,161.96	1,888.75	273.21	7.913	
15,700.00	9,640.63	14,576.93	9,128.30	149.01	134.51	-76.29	6,561.17	-2,038.46	2,161.95	1,884.83	277.13	7.801	
15,800.00	9,642.15	14,676.93	9,129.82	151.03	136.46	-76.29	6,661.16	-2,038.08	2,161.95	1,880.89	281.06	7.692	
15,900.00	9,643.66	14,776.93	9,131.33	153.06	138.41	-76.29	6,761.15	-2,037.71	2,161.95	1,876.95	284.99	7.586	
16,000.00	9,645.17	14,876.93	9,132.85	155.08	140.37	-76.29	6,861.14	-2,037.33	2,161.95	1,873.01	288.94	7.482	
16,100.00	9,646.69	14,976.93	9,134.37	157.11	142.33	-76.29	6,961.12	-2,036.95	2,161.94	1,869.05	292.90	7.381	
16,200.00	9,648.20	15,076.93	9,135.88	159.15	144.31	-76.29	7,061.11	-2,036.57	2,161.94	1,865.08	296.86	7.283	
16,300.00	9,649.71	15,176.93	9,137.40	161.18	146.28	-76.29	7,161.10	-2,036.19	2,161.94	1,861.11	300.83	7.187	
16,400.00	9,651.23	15,276.93	9,138.92	163.22	148.26	-76.29	7,261.09	-2,035.81	2,161.94	1,857.14	304.80	7.093	
16,500.00	9,652.74	15,376.93	9,140.44	165.27	150.25	-76.29	7,361.07	-2,035.43	2,161.93	1,853.15	308.78	7.001	
16,600.00	9,654.25	15,476.93	9,141.95	167.31	152.24	-76.29	7,461.06	-2,035.05	2,161.93	1,849.16	312.77	6.912	
16,700.00	9,655.77	15,576.93	9,143.47	169.36	154.23	-76.29	7,561.05	-2,034.67	2,161.93	1,845.17	316.76	6.825	
16,800.00	9,657.28	15,676.93	9,144.99	171.41	156.23	-76.29	7,661.04	-2,034.29	2,161.93	1,841.16	320.76	6.740	
16,900.00	9,658.79	15,776.93	9,146.51	173.47	158.24	-76.29	7,761.03	-2,033.91	2,161.93	1,837.15	324.77	6.657	
17,000.00	9,660.31	15,876.93	9,148.02	175.52	160.24	-76.29	7,861.01	-2,033.53	2,161.92	1,833.14	328.78	6.576	
17,100.00	9,661.82	15,976.93	9,149.54	177.58	162.25	-76.29	7,961.00	-2,033.15	2,161.92	1,829.12	332.80	6.496	
17,200.00	9,663.33	16,076.93	9,151.06	179.64	164.27	-76.29	8,060.99	-2,032.77	2,161.92	1,825.10	336.82	6.419	
17,300.00	9,664.85	16,176.93	9,152.57	181.70	166.29	-76.29	8,160.98	-2,032.39	2,161.92	1,821.07	340.85	6.343	
17,400.00	9,666.36	16,276.93	9,154.09	183.77	168.31	-76.29	8,260.96	-2,032.01	2,161.91	1,817.04	344.88	6.269	
17,500.00	9,667.87	16,376.93	9,155.61	185.83	170.33	-76.29	8,360.95	-2,031.63	2,161.91	1,813.00	348.91	6.196	
17,600.00	9,669.39	16,476.93	9,157.13	187.90	172.36	-76.29	8,460.94	-2,031.25	2,161.91	1,808.96	352.95	6.125	
17,700.00	9,670.90	16,576.93	9,158.64	189.97	174.39	-76.29	8,560.93	-2,030.87	2,161.91	1,804.91	356.99	6.056	
17,800.00	9,672.44	16,676.93	9,160.16	192.04	176.42	-76.29	8,660.92	-2,030.49	2,161.90	1,800.86	361.04	5.988	
17,900.00	9,674.07	16,776.93	9,161.68	194.12	178.46	-76.29	8,760.90	-2,030.11	2,161.90	1,796.81	365.09	5.922	
18,000.00	9,675.70	16,876.93	9,163.20	196.19	180.50	-76.28	8,860.89	-2,029.74	2,161.90	1,792.76	369.14	5.857	
18,100.00	9,677.33	16,976.93	9,164.71	198.27	182.54	-76.28	8,960.88	-2,029.36	2,161.90	1,788.70	373.20	5.793	
18,200.00	9,678.96	17,076.92	9,166.23	200.35	184.58	-76.28	9,060.87	-2,028.98	2,161.90	1,784.64	377.26	5.731	
18,300.00	9,680.59	17,176.92	9,167.75	202.43	186.63	-76.28	9,160.85	-2,028.60	2,161.90	1,780.58	381.32	5.669	
18,400.00	9,682.22	17,276.92	9,169.27	204.51	188.68	-76.27	9,260.84	-2,028.22	2,161.90	1,776.51	385.39	5.610	
18,500.00	9,683.84	17,376.92	9,170.78	206.60	190.73	-76.27	9,360.83	-2,027.84	2,161.90	1,772.44	389.46	5.551	
18,600.00	9,685.47	17,476.92	9,172.30	208.68	192.79	-76.27	9,460.82	-2,027.46	2,161.90	1,768.37	393.53	5.494	
18,700.00	9,687.10	17,576.92	9,173.82	210.77	194.84	-76.26	9,560.80	-2,027.08	2,161.90	1,764.29	397.61	5.437	
18,800.00	9,688.73	17,676.92	9,175.33	212.86	196.90	-76.26	9,660.79	-2,026.70	2,161.90	1,760.21	401.68	5.382	
18,900.00	9,690.36	17,776.92	9,176.85	214.94	198.96	-76.26	9,760.78	-2,026.32	2,161.90	1,756.13	405.77	5.328	
19,000.00	9,691.99	17,876.92	9,178.37	217.03	201.02	-76.25	9,860.77	-2,025.94	2,161.90	1,752.05	409.85	5.275	
19,100.00	9,693.62	17,976.92	9,179.89	219.13	203.08	-76.25	9,960.76	-2,025.56	2,161.90	1,747.96	413.94	5.223	
19,200.00	9,695.25	18,076.92	9,181.40	221.22	205.15	-76.25	10,060.74	-2,025.18	2,161.90	1,743.87	418.03	5.172	
19,300.00	9,696.87	18,176.92	9,182.92	223.31	207.22	-76.25	10,160.73	-2,024.80	2,161.90	1,739.78	422.12	5.122	
19,400.00	9,698.50	18,276.92	9,184.44	225.41	209.29	-76.24	10,260.72	-2,024.42	2,161.90	1,735.69	426.21	5.072	
19,500.00	9,700.13	18,376.92	9,185.96	227.50	211.36	-76.24	10,360.71	-2,024.04	2,161.90	1,731.59	430.31	5.024	
19,600.00	9,701.76	18,476.92	9,187.47	229.60	213.43	-76.24	10,460.69	-2,023.66	2,161.90	1,727.49	434.40	4.977	
19,700.00	9,703.39	18,576.92	9,188.99	231.70	215.50	-76.23	10,560.68	-2,023.28	2,161.89	1,723.39	438.51	4.930	
19,800.00	9,705.02	18,676.92	9,190.51	233.80	217.58	-76.23	10,660.67	-2,022.90	2,161.89	1,719.29	442.61	4.884	
19,900.00	9,706.65	18,776.92	9,192.03	235.90	219.66	-76.23	10,760.66	-2,022.52	2,161.89	1,715.18	446.71	4.840	
20,000.00	9,708.28	18,876.92	9,193.54	238.00	221.73	-76.22	10,860.64	-2,022.14	2,161.89	1,711.07	450.82	4.795	
20,044.41	9,709.00	18,921.33	9,194.22	238.80	222.66	-76.22	10,905.05	-2,021.98	2,161.89	1,709.39	452.50	4.778 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 19H - OH - Plan 2 11-17-16												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		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	0.00	8.00	0.00	0.00	-27.50	860.27	-447.86	969.90				
100.00	100.00	92.00	100.00	0.19	0.18	-27.50	860.27	-447.86	969.87	0.37	2,609.532		
200.00	200.00	192.00	200.00	0.73	0.69	-27.50	860.27	-447.86	969.87	1.42	683.224		
300.00	300.00	292.00	300.00	1.27	1.23	-27.50	860.27	-447.86	969.87	2.49	388.731		
400.00	400.00	392.00	400.00	1.81	1.76	-27.50	860.27	-447.86	969.87	3.57	271.643		
500.00	500.00	492.00	500.00	2.34	2.30	-27.50	860.27	-447.86	969.87	4.65	208.763		
600.00	600.00	592.00	600.00	2.88	2.84	-27.50	860.27	-447.86	969.87	5.72	169.522		
700.00	699.98	691.98	699.98	3.42	3.38	-47.83	860.27	-447.86	968.70	6.80	142.490		
800.00	799.84	791.84	799.84	3.96	3.91	-48.11	860.27	-447.86	965.19	7.88	122.544		
900.00	899.45	891.45	899.45	4.50	4.45	-48.59	860.27	-447.86	959.38	8.95	107.156		
1,000.00	998.90	990.90	998.90	5.05	4.98	-49.06	860.27	-447.86	952.48	10.03	94.977		
1,100.00	1,098.36	1,090.36	1,098.36	5.60	5.52	-49.53	860.27	-447.86	945.65	11.11	85.128		
1,200.00	1,197.81	1,189.81	1,197.81	6.15	6.05	-50.02	860.27	-447.86	938.88	12.19	77.008		
1,300.00	1,297.26	1,289.26	1,297.26	6.71	6.59	-50.51	860.27	-447.86	932.18	13.28	70.204		
1,400.00	1,396.72	1,388.72	1,396.72	7.27	7.12	-51.00	860.27	-447.86	925.55	14.37	64.423		
1,500.00	1,496.17	1,488.17	1,496.17	7.84	7.66	-51.51	860.27	-447.86	918.99	15.46	59.455		
1,600.00	1,595.62	1,587.62	1,595.62	8.40	8.19	-52.02	860.27	-447.86	912.50	16.55	55.140		
1,700.00	1,695.07	1,687.07	1,695.07	8.97	8.73	-52.54	860.27	-447.86	906.09	17.64	51.359		
1,800.00	1,794.53	1,772.43	1,780.43	9.53	9.18	-53.04	860.36	-448.77	900.43	18.65	48.274		
1,900.00	1,893.98	1,855.45	1,863.37	10.10	9.61	-53.64	860.68	-452.05	896.66	19.65	45.643		
2,000.00	1,993.43	1,945.67	1,953.40	10.67	10.08	-54.43	861.26	-457.98	894.68	20.68	43.270		
2,100.00	2,092.89	2,044.70	2,052.18	11.24	10.60	-55.30	861.92	-464.86	893.18	21.76	41.050		
2,200.00	2,192.34	2,143.72	2,150.97	11.81	11.12	-56.19	862.59	-471.73	891.89	22.84	39.042		
2,300.00	2,291.79	2,242.75	2,249.75	12.38	11.64	-57.07	863.26	-478.61	890.81	23.93	37.221		
2,400.00	2,391.24	2,341.77	2,348.53	12.95	12.17	-57.96	863.93	-485.49	889.96	25.03	35.563		
2,500.00	2,490.70	2,440.80	2,447.32	13.52	12.70	-58.84	864.59	-492.37	889.32	26.12	34.048		
2,600.00	2,590.15	2,539.82	2,546.10	14.09	13.23	-59.73	865.26	-499.25	888.90	27.22	32.661		
2,700.00	2,689.60	2,638.85	2,644.89	14.66	13.76	-60.62	865.93	-506.13	888.70	28.31	31.387		
2,742.98	2,732.35	2,681.41	2,687.34	14.90	13.99	-61.00	866.22	-509.09	888.68	28.79	30.871		
2,800.00	2,789.06	2,737.88	2,743.67	15.23	14.30	-61.51	866.60	-513.01	888.71	29.41	30.214		
2,900.00	2,888.51	2,836.90	2,842.45	15.80	14.83	-62.40	867.27	-519.89	888.94	30.52	29.131		
3,000.00	2,987.96	2,935.93	2,941.24	16.37	15.37	-63.29	867.93	-526.77	889.40	31.62	28.130		
3,100.00	3,087.41	3,034.95	3,040.02	16.94	15.91	-64.17	868.60	-533.65	890.07	32.72	27.201		
3,200.00	3,186.87	3,133.98	3,138.80	17.51	16.44	-65.06	869.27	-540.53	890.95	33.83	26.339		
3,300.00	3,286.32	3,233.00	3,237.59	18.08	16.98	-65.94	869.94	-547.41	892.06	34.93	25.537		
3,400.00	3,385.77	3,332.03	3,336.37	18.66	17.52	-66.83	870.61	-554.29	893.37	36.04	24.790		
3,500.00	3,485.23	3,431.05	3,435.16	19.23	18.06	-67.70	871.27	-561.17	894.91	37.14	24.093		
3,600.00	3,584.68	3,530.08	3,533.94	19.80	18.60	-68.58	871.94	-568.05	896.66	38.25	23.441		
3,700.00	3,684.13	3,629.10	3,632.72	20.37	19.14	-69.45	872.61	-574.93	898.62	39.36	22.831		
3,800.00	3,783.59	3,728.13	3,731.51	20.94	19.69	-70.32	873.28	-581.81	900.80	40.47	22.260		
3,900.00	3,883.24	3,827.40	3,830.53	21.50	20.23	-71.12	873.95	-588.70	903.89	41.56	21.747		
4,000.00	3,983.12	3,926.95	3,929.84	22.04	20.78	-71.73	874.62	-595.62	908.22	42.64	21.302		
4,100.00	4,083.11	4,026.67	4,029.32	22.56	21.32	-71.89	875.29	-602.55	913.69	43.69	20.915		
4,200.00	4,183.11	4,126.42	4,128.83	23.07	21.87	-72.13	875.96	-609.48	919.58	44.74	20.555		
4,300.00	4,283.11	4,226.18	4,228.34	23.58	22.42	-72.36	876.64	-616.41	925.49	45.79	20.210		
4,400.00	4,383.11	4,325.94	4,327.86	24.10	22.97	-72.59	877.31	-623.34	931.42	46.85	19.881		
4,500.00	4,483.11	4,425.69	4,427.37	24.61	23.52	-72.81	877.98	-630.27	937.36	47.91	19.567		
4,600.00	4,583.11	4,525.45	4,526.88	25.13	24.07	-73.04	878.65	-637.20	943.31	48.96	19.266		
4,700.00	4,683.11	4,625.20	4,626.40	25.64	24.62	-73.25	879.33	-644.13	949.28	50.02	18.977		
4,800.00	4,783.11	4,724.96	4,725.91	26.16	25.17	-73.47	880.00	-651.06	955.26	51.08	18.701		
4,900.00	4,883.11	4,824.72	4,825.42	26.68	25.72	-73.69	880.67	-657.99	961.25	52.14	18.435		
5,000.00	4,983.11	4,924.47	4,924.93	27.20	26.27	-73.90	881.34	-664.92	967.26	53.20	18.181		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 19H - OH - Plan 2 11-17-16												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	
5,100.00	5,083.11	5,024.23	5,024.45	27.72	26.82	-54.11	882.02	-671.85	973.28	919.02	54.26	17.936	
5,200.00	5,183.11	5,123.99	5,123.96	28.24	27.37	-54.31	882.69	-678.78	979.31	923.99	55.33	17.700	
5,300.00	5,283.11	5,223.74	5,223.47	28.76	27.92	-54.52	883.36	-685.71	985.36	928.97	56.39	17.474	
5,400.00	5,383.11	5,323.50	5,322.99	29.28	28.47	-54.72	884.04	-692.64	991.42	933.96	57.45	17.256	
5,500.00	5,483.11	5,423.25	5,422.50	29.80	29.02	-54.92	884.71	-699.57	997.49	938.97	58.52	17.046	
5,600.00	5,583.11	5,523.01	5,522.01	30.32	29.57	-55.11	885.38	-706.50	1,003.57	943.99	59.58	16.843	
5,700.00	5,683.11	5,622.77	5,621.52	30.85	30.12	-55.31	886.05	-713.43	1,009.66	949.02	60.65	16.648	
5,800.00	5,783.11	5,722.52	5,721.04	31.37	30.67	-55.50	886.73	-720.36	1,015.77	954.06	61.71	16.459	
5,900.00	5,883.11	5,846.22	5,844.50	31.90	31.35	-55.70	887.46	-727.94	1,021.27	958.36	62.91	16.255	
6,000.00	5,983.11	5,984.87	5,983.11	32.42	32.09	-55.78	887.72	-730.59	1,022.87	958.71	64.17	15.940	
6,100.00	6,083.11	6,084.87	6,083.11	32.95	32.61	-55.78	887.72	-730.59	1,022.87	957.66	65.21	15.685	
6,200.00	6,183.11	6,184.87	6,183.11	33.47	33.12	-55.78	887.72	-730.59	1,022.87	956.61	66.26	15.437	
6,300.00	6,283.11	6,284.87	6,283.11	34.00	33.64	-55.78	887.72	-730.59	1,022.87	955.56	67.31	15.197	
6,400.00	6,383.11	6,384.87	6,383.11	34.52	34.16	-55.78	887.72	-730.59	1,022.87	954.52	68.36	14.963	
6,500.00	6,483.11	6,484.87	6,483.11	35.05	34.68	-55.78	887.72	-730.59	1,022.87	953.47	69.41	14.737	
6,600.00	6,583.11	6,584.87	6,583.11	35.58	35.20	-55.78	887.72	-730.59	1,022.87	952.42	70.46	14.518	
6,700.00	6,683.11	6,684.87	6,683.11	36.10	35.72	-55.78	887.72	-730.59	1,022.87	951.37	71.51	14.304	
6,800.00	6,783.11	6,784.87	6,783.11	36.63	36.25	-55.78	887.72	-730.59	1,022.87	950.31	72.56	14.097	
6,900.00	6,883.11	6,884.87	6,883.11	37.16	36.77	-55.78	887.72	-730.59	1,022.87	949.26	73.61	13.895	
7,000.00	6,983.11	6,984.87	6,983.11	37.69	37.29	-55.78	887.72	-730.59	1,022.87	948.21	74.67	13.699	
7,100.00	7,083.11	7,084.87	7,083.11	38.21	37.81	-55.78	887.72	-730.59	1,022.87	947.15	75.72	13.509	
7,200.00	7,183.11	7,184.87	7,183.11	38.74	38.34	-55.78	887.72	-730.59	1,022.87	946.10	76.77	13.323	
7,300.00	7,283.11	7,284.87	7,283.11	39.27	38.86	-55.78	887.72	-730.59	1,022.87	945.04	77.83	13.142	
7,400.00	7,383.11	7,384.87	7,383.11	39.80	39.38	-55.78	887.72	-730.59	1,022.87	943.99	78.89	12.967	
7,500.00	7,483.11	7,484.87	7,483.11	40.33	39.91	-55.78	887.72	-730.59	1,022.87	942.93	79.94	12.795	
7,600.00	7,583.11	7,584.87	7,583.11	40.86	40.43	-55.78	887.72	-730.59	1,022.87	941.88	81.00	12.628	
7,700.00	7,683.11	7,684.87	7,683.11	41.39	40.96	-55.78	887.72	-730.59	1,022.87	940.82	82.05	12.466	
7,800.00	7,783.11	7,784.87	7,783.11	41.92	41.48	-55.78	887.72	-730.59	1,022.87	939.76	83.11	12.307	
7,900.00	7,883.11	7,884.87	7,883.11	42.45	42.01	-55.78	887.72	-730.59	1,022.87	938.70	84.17	12.152	
8,000.00	7,983.11	7,984.87	7,983.11	42.98	42.53	-55.78	887.72	-730.59	1,022.87	937.65	85.23	12.002	
8,100.00	8,083.11	8,084.87	8,083.11	43.51	43.06	-55.78	887.72	-730.59	1,022.87	936.59	86.29	11.854	
8,200.00	8,183.11	8,184.87	8,183.11	44.04	43.59	-55.78	887.72	-730.59	1,022.87	935.53	87.35	11.711	
8,300.00	8,283.11	8,284.87	8,283.11	44.57	44.11	-55.78	887.72	-730.59	1,022.87	934.47	88.41	11.570	
8,400.00	8,383.11	8,384.87	8,383.11	45.10	44.64	-55.78	887.72	-730.59	1,022.87	933.41	89.47	11.433	
8,500.00	8,483.11	8,484.87	8,483.11	45.63	45.17	-55.78	887.72	-730.59	1,022.87	932.35	90.53	11.299	
8,600.00	8,583.11	8,584.87	8,583.11	46.17	45.70	-55.78	887.72	-730.59	1,022.87	931.29	91.59	11.168	
8,700.00	8,683.11	8,684.87	8,683.11	46.70	46.22	-55.78	887.72	-730.59	1,022.87	930.23	92.65	11.040	
8,800.00	8,783.11	8,784.87	8,783.11	47.23	46.75	-55.78	887.72	-730.59	1,022.87	929.16	93.71	10.915	
8,900.00	8,883.11	8,884.87	8,883.11	47.76	47.28	-55.78	887.72	-730.59	1,022.87	928.10	94.77	10.793	
9,000.00	8,983.11	8,984.87	8,983.11	48.29	47.81	-55.78	887.72	-730.59	1,022.87	927.04	95.83	10.673	
9,000.32	8,983.43	8,985.19	8,983.43	48.29	47.81	-55.78	887.72	-730.59	1,022.87	927.04	95.84	10.673	
9,100.00	9,083.11	9,050.00	9,048.22	48.82	48.15	-55.73	888.66	-730.60	1,024.01	927.30	96.71	10.588	
9,200.00	9,182.98	9,100.00	9,097.95	49.36	48.42	-54.83	893.71	-730.65	1,027.87	930.43	97.44	10.549	
9,300.00	9,280.93	9,150.00	9,147.05	49.93	48.68	-54.89	903.07	-730.74	1,027.34	929.89	97.45	10.543	
9,400.00	9,374.01	9,200.00	9,195.15	50.51	48.93	-55.59	916.67	-730.88	1,021.74	924.98	96.76	10.559	
9,500.00	9,459.39	9,250.00	9,241.88	51.11	49.17	-56.91	934.41	-731.05	1,011.29	915.54	95.76	10.561	
9,600.00	9,534.47	9,300.00	9,286.88	51.72	49.40	-58.86	956.16	-731.27	996.41	901.46	94.95	10.494	
9,700.00	9,596.97	9,350.00	9,329.82	52.35	49.62	-61.45	981.74	-731.52	977.71	882.85	94.86	10.307	
9,800.00	9,644.99	9,400.00	9,370.36	53.00	49.83	-64.64	1,010.97	-731.81	956.05	860.24	95.81	9.979	
9,900.00	9,677.08	9,450.00	9,408.21	53.67	50.02	-68.37	1,043.63	-732.14	932.52	834.75	97.77	9.538	
10,000.00	9,692.26	9,500.00	9,443.06	54.34	50.21	-72.53	1,079.45	-732.50	908.45	808.09	100.36	9.052	
10,100.00	9,691.40	9,540.83	9,469.12	55.05	50.37	-75.64	1,110.87	-732.81	885.69	783.18	102.50	8.641	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 19H - OH - Plan 2 11-17-16												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
10,200.00	9,687.32	9,600.00	9,502.76	55.83	50.62	-77.94	1,159.52	-733.29	868.42	764.05	104.37	8.321	
10,300.00	9,683.23	9,660.18	9,531.65	56.69	50.89	-79.98	1,212.28	-733.82	856.73	750.62	106.11	8.074	
10,400.00	9,679.15	9,732.65	9,558.85	57.61	51.23	-81.97	1,279.39	-734.48	849.58	741.71	107.87	7.876	
10,500.00	9,675.07	9,812.76	9,578.81	58.59	51.63	-83.52	1,356.91	-735.26	845.75	736.20	109.55	7.720	
10,600.00	9,670.98	9,900.00	9,588.03	59.64	52.06	-84.38	1,443.57	-736.12	844.18	733.00	111.17	7.593	
10,700.00	9,666.90	9,995.59	9,588.42	60.75	52.58	-84.67	1,539.14	-737.07	843.74	730.91	112.83	7.478	
10,800.00	9,662.81	10,095.50	9,588.59	61.92	53.19	-84.96	1,639.05	-738.06	843.36	728.73	114.64	7.357	
10,900.00	9,658.73	10,195.41	9,588.77	63.13	53.88	-85.24	1,738.95	-739.06	843.01	726.43	116.58	7.231	
11,000.00	9,654.64	10,295.31	9,588.94	64.40	54.64	-85.53	1,838.86	-740.05	842.67	724.03	118.64	7.103	
11,100.00	9,650.56	10,395.22	9,589.12	65.71	55.48	-85.82	1,938.76	-741.05	842.36	721.53	120.83	6.972	
11,200.00	9,646.47	10,495.13	9,589.29	67.07	56.39	-86.11	2,038.67	-742.04	842.07	718.95	123.12	6.839	
11,300.00	9,642.39	10,595.04	9,589.47	68.46	57.37	-86.40	2,138.57	-743.03	841.80	716.27	125.52	6.706	
11,400.00	9,638.30	10,694.95	9,589.64	69.90	58.40	-86.69	2,238.47	-744.03	841.55	713.52	128.02	6.573	
11,500.00	9,634.22	10,794.86	9,589.82	71.37	59.50	-86.98	2,338.38	-745.02	841.32	710.70	130.62	6.441	
11,600.00	9,630.13	10,894.77	9,589.99	72.88	60.66	-87.27	2,438.28	-746.02	841.11	707.81	133.30	6.310	
11,700.00	9,626.05	10,994.68	9,590.16	74.42	61.87	-87.56	2,538.19	-747.01	840.93	704.85	136.07	6.180	
11,800.00	9,621.96	11,094.59	9,590.34	75.99	63.12	-87.85	2,638.09	-748.00	840.76	701.84	138.92	6.052	
11,900.00	9,617.88	11,194.50	9,590.51	77.59	64.43	-88.14	2,737.99	-749.00	840.62	698.78	141.84	5.927	
12,000.00	9,613.79	11,294.41	9,590.69	79.21	65.78	-88.43	2,837.90	-749.99	840.50	695.67	144.83	5.803	
12,100.00	9,609.71	11,394.32	9,590.86	80.86	67.18	-88.72	2,937.80	-750.99	840.40	692.52	147.88	5.683	
12,200.00	9,605.63	11,494.23	9,591.04	82.54	68.61	-89.01	3,037.71	-751.98	840.32	689.33	151.00	5.565	
12,300.00	9,601.54	11,594.14	9,591.21	84.23	70.08	-89.30	3,137.61	-752.97	840.27	686.10	154.17	5.450	
12,400.00	9,597.71	11,694.05	9,591.38	85.95	71.58	-89.57	3,237.53	-753.97	840.24	682.85	157.39	5.339	
12,478.33	9,596.61	11,772.37	9,591.52	87.30	72.79	-89.65	3,315.84	-754.75	840.23	680.28	159.95	5.253 CC	
12,500.00	9,596.68	11,794.04	9,591.56	87.68	73.12	-89.65	3,337.51	-754.96	840.23	679.57	160.66	5.230	
12,600.00	9,597.97	11,894.04	9,591.73	89.42	74.69	-89.57	3,437.50	-755.96	840.24	676.26	163.98	5.124	
12,700.00	9,599.31	11,994.03	9,591.91	91.19	76.29	-89.50	3,537.48	-756.95	840.25	672.90	167.35	5.021	
12,800.00	9,600.66	12,094.02	9,592.08	92.97	77.92	-89.42	3,637.47	-757.95	840.26	669.50	170.76	4.921	
12,900.00	9,602.00	12,194.01	9,592.26	94.77	79.57	-89.34	3,737.46	-758.94	840.27	666.06	174.21	4.823	
13,000.00	9,603.34	12,294.01	9,592.43	96.58	81.24	-89.26	3,837.45	-759.94	840.28	662.59	177.69	4.729	
13,100.00	9,604.68	12,394.00	9,592.61	98.40	82.94	-89.18	3,937.44	-760.93	840.30	659.08	181.22	4.637	
13,200.00	9,606.02	12,493.99	9,592.78	100.24	84.66	-89.10	4,037.42	-761.93	840.31	655.54	184.78	4.548	
13,300.00	9,607.37	12,593.99	9,592.96	102.09	86.40	-89.02	4,137.41	-762.92	840.33	651.96	188.37	4.461	
13,400.00	9,608.71	12,693.98	9,593.13	103.96	88.15	-88.94	4,237.40	-763.92	840.35	648.36	191.99	4.377	
13,500.00	9,610.05	12,793.97	9,593.30	105.83	89.93	-88.86	4,337.39	-764.91	840.37	644.74	195.64	4.296	
13,600.00	9,611.39	12,893.97	9,593.48	107.72	91.72	-88.78	4,437.38	-765.91	840.40	641.08	199.31	4.216	
13,700.00	9,612.73	12,993.96	9,593.65	109.61	93.53	-88.70	4,537.37	-766.90	840.42	637.41	203.01	4.140	
13,800.00	9,614.07	13,093.95	9,593.83	111.52	95.35	-88.62	4,637.35	-767.90	840.45	633.71	206.74	4.065	
13,900.00	9,615.42	13,193.95	9,594.00	113.43	97.18	-88.54	4,737.34	-768.89	840.48	629.99	210.49	3.993	
14,000.00	9,616.76	13,293.94	9,594.18	115.36	99.03	-88.46	4,837.33	-769.89	840.51	626.25	214.25	3.923	
14,100.00	9,618.10	13,393.93	9,594.35	117.29	100.89	-88.38	4,937.32	-770.88	840.54	622.49	218.04	3.855	
14,200.00	9,619.44	13,493.93	9,594.53	119.23	102.77	-88.30	5,037.31	-771.88	840.57	618.72	221.85	3.789	
14,300.00	9,620.78	13,593.92	9,594.70	121.18	104.65	-88.22	5,137.29	-772.87	840.60	614.93	225.67	3.725	
14,400.00	9,622.13	13,693.91	9,594.88	123.13	106.54	-88.14	5,237.28	-773.87	840.64	611.12	229.52	3.663	
14,500.00	9,623.47	13,793.91	9,595.05	125.09	108.45	-88.06	5,337.27	-774.86	840.68	607.30	233.38	3.602	
14,600.00	9,624.81	13,893.90	9,595.22	127.06	110.36	-87.98	5,437.26	-775.86	840.72	603.47	237.25	3.544	
14,700.00	9,626.15	13,993.89	9,595.40	129.03	112.28	-87.90	5,537.25	-776.85	840.76	599.62	241.14	3.487	
14,800.00	9,627.49	14,093.89	9,595.57	131.01	114.21	-87.82	5,637.23	-777.85	840.80	595.76	245.04	3.431	
14,900.00	9,628.84	14,193.88	9,595.75	132.99	116.15	-87.74	5,737.22	-778.84	840.85	591.89	248.95	3.378	
15,000.00	9,630.18	14,293.87	9,595.92	134.98	118.10	-87.67	5,837.21	-779.84	840.89	588.01	252.88	3.325	
15,100.00	9,631.55	14,402.03	9,596.25	136.98	120.21	-87.60	5,945.37	-780.75	841.07	584.14	256.93	3.274	
15,200.00	9,633.07	14,505.78	9,597.57	138.97	122.24	-87.58	6,049.10	-780.40	841.11	580.16	260.95	3.223	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 19H - OH - Plan 2 11-17-16													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)					
15,300.00	9,634.58	14,605.78	9,598.87	140.97	124.20	-87.57	6,149.09	-780.02	841.12	576.21	264.91	3.175	
15,400.00	9,636.09	14,705.78	9,600.17	142.98	126.17	-87.55	6,249.08	-779.64	841.13	572.25	268.88	3.128	
15,500.00	9,637.61	14,805.78	9,601.47	144.98	128.15	-87.54	6,349.07	-779.27	841.14	568.28	272.86	3.083	
15,600.00	9,639.12	14,905.78	9,602.77	147.00	130.13	-87.52	6,449.07	-778.89	841.16	564.30	276.85	3.038	
15,700.00	9,640.63	15,005.78	9,604.07	149.01	132.12	-87.51	6,549.06	-778.52	841.17	560.31	280.85	2.995	
15,800.00	9,642.15	15,105.78	9,605.38	151.03	134.11	-87.49	6,649.05	-778.14	841.18	556.32	284.86	2.953	
15,900.00	9,643.66	15,205.78	9,606.68	153.06	136.10	-87.48	6,749.04	-777.77	841.19	552.31	288.88	2.912	
16,000.00	9,645.17	15,305.78	9,607.98	155.08	138.10	-87.47	6,849.03	-777.39	841.20	548.30	292.90	2.872	
16,100.00	9,646.69	15,405.78	9,609.28	157.11	140.11	-87.45	6,949.02	-777.02	841.21	544.28	296.94	2.833	
16,200.00	9,648.20	15,505.78	9,610.58	159.15	142.12	-87.44	7,049.01	-776.64	841.23	540.25	300.98	2.795	
16,300.00	9,649.71	15,605.78	9,611.88	161.18	144.13	-87.42	7,149.00	-776.26	841.24	536.22	305.02	2.758	
16,400.00	9,651.23	15,705.78	9,613.18	163.22	146.15	-87.41	7,248.99	-775.89	841.25	532.17	309.08	2.722	
16,500.00	9,652.74	15,805.78	9,614.48	165.27	148.17	-87.39	7,348.98	-775.51	841.26	528.13	313.14	2.687	
16,600.00	9,654.25	15,905.78	9,615.79	167.31	150.20	-87.38	7,448.97	-775.14	841.28	524.07	317.21	2.652	
16,700.00	9,655.77	16,005.78	9,617.09	169.36	152.23	-87.36	7,548.96	-774.76	841.29	520.01	321.28	2.619	
16,800.00	9,657.28	16,105.78	9,618.39	171.41	154.26	-87.35	7,648.95	-774.39	841.30	515.94	325.36	2.586	
16,900.00	9,658.79	16,205.77	9,619.69	173.47	156.30	-87.34	7,748.94	-774.01	841.31	511.87	329.44	2.554	
17,000.00	9,660.31	16,305.77	9,620.99	175.52	158.33	-87.32	7,848.93	-773.64	841.33	507.79	333.53	2.522	
17,100.00	9,661.82	16,405.77	9,622.29	177.58	160.38	-87.31	7,948.92	-773.26	841.34	503.71	337.63	2.492	
17,200.00	9,663.33	16,505.77	9,623.59	179.64	162.42	-87.29	8,048.92	-772.89	841.35	499.62	341.73	2.462	
17,300.00	9,664.85	16,605.77	9,624.89	181.70	164.47	-87.28	8,148.91	-772.51	841.36	495.53	345.83	2.433	
17,400.00	9,666.36	16,705.77	9,626.20	183.77	166.52	-87.26	8,248.90	-772.13	841.38	491.44	349.94	2.404	
17,500.00	9,667.87	16,805.77	9,627.50	185.83	168.57	-87.25	8,348.89	-771.76	841.39	487.33	354.05	2.376	
17,600.00	9,669.39	16,905.77	9,628.80	187.90	170.63	-87.23	8,448.88	-771.38	841.40	483.23	358.17	2.349	
17,700.00	9,670.90	17,005.77	9,630.10	189.97	172.68	-87.22	8,548.87	-771.01	841.41	479.12	362.30	2.322	
17,800.00	9,672.44	17,105.77	9,631.40	192.04	174.74	-87.20	8,648.86	-770.63	841.42	475.00	366.42	2.296	
17,900.00	9,674.07	17,205.77	9,632.70	194.12	176.80	-87.18	8,748.85	-770.26	841.41	470.86	370.55	2.271	
18,000.00	9,675.70	17,305.77	9,634.00	196.19	178.87	-87.16	8,848.84	-769.88	841.41	466.72	374.68	2.246	
18,100.00	9,677.33	17,405.77	9,635.30	198.27	180.93	-87.14	8,948.83	-769.51	841.40	462.58	378.82	2.221	
18,200.00	9,678.96	17,505.77	9,636.61	200.35	183.00	-87.11	9,048.82	-769.13	841.39	458.43	382.96	2.197	
18,300.00	9,680.59	17,605.77	9,637.91	202.43	185.07	-87.09	9,148.81	-768.76	841.39	454.28	387.10	2.174	
18,400.00	9,682.22	17,705.77	9,639.21	204.51	187.15	-87.07	9,248.80	-768.38	841.38	450.13	391.25	2.151	
18,500.00	9,683.84	17,805.77	9,640.51	206.60	189.22	-87.05	9,348.79	-768.00	841.37	445.98	395.40	2.128	
18,600.00	9,685.47	17,905.77	9,641.81	208.68	191.29	-87.02	9,448.78	-767.63	841.36	441.82	399.55	2.106	
18,700.00	9,687.10	18,005.77	9,643.11	210.77	193.37	-87.00	9,548.77	-767.25	841.36	437.65	403.70	2.084	
18,800.00	9,688.73	18,105.77	9,644.41	212.86	195.45	-86.98	9,648.76	-766.88	841.35	433.49	407.86	2.063	
18,900.00	9,690.36	18,205.77	9,645.71	214.94	197.53	-86.96	9,748.75	-766.50	841.35	429.32	412.02	2.042	
19,000.00	9,691.99	18,305.77	9,647.02	217.03	199.61	-86.94	9,848.74	-766.13	841.34	425.15	416.18	2.022	
19,100.00	9,693.62	18,405.77	9,648.32	219.13	201.70	-86.91	9,948.73	-765.75	841.33	420.98	420.35	2.002	
19,200.00	9,695.25	18,505.77	9,649.62	221.22	203.78	-86.89	10,048.72	-765.38	841.33	416.81	424.52	1.982	
19,300.00	9,696.87	18,605.76	9,650.92	223.31	205.87	-86.87	10,148.71	-765.00	841.32	412.63	428.69	1.963	
19,400.00	9,698.50	18,705.76	9,652.22	225.41	207.96	-86.85	10,248.70	-764.63	841.32	408.45	432.86	1.944	
19,500.00	9,700.13	18,805.76	9,653.52	227.50	210.05	-86.82	10,348.69	-764.25	841.31	404.27	437.04	1.925	
19,600.00	9,701.76	18,905.76	9,654.82	229.60	212.14	-86.80	10,448.68	-763.87	841.30	400.09	441.21	1.907	
19,700.00	9,703.39	19,005.76	9,656.13	231.70	214.23	-86.78	10,548.67	-763.50	841.30	395.91	445.39	1.889	
19,800.00	9,705.02	19,105.76	9,657.43	233.80	216.32	-86.76	10,648.66	-763.12	841.29	391.72	449.57	1.871	
19,900.00	9,706.65	19,205.76	9,658.73	235.90	218.42	-86.73	10,748.65	-762.75	841.29	387.53	453.76	1.854	
20,000.00	9,708.28	19,305.76	9,660.03	238.00	220.51	-86.71	10,848.65	-762.37	841.28	383.34	457.94	1.837	
20,044.41	9,709.00	19,350.17	9,660.61	238.80	221.44	-86.70	10,893.05	-762.21	841.28	381.62	459.66	1.830 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 20H - OH - Plan 2 11-17-16													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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	8.00	0.00	0.00	-28.20	835.27	-447.86	947.80				
100.00	100.00	92.00	100.00	0.19	0.18	-28.20	835.27	-447.86	947.76	947.39	0.37	2,550.058	
200.00	200.00	192.00	200.00	0.73	0.69	-28.20	835.27	-447.86	947.76	946.34	1.42	667.652	
300.00	300.00	292.00	300.00	1.27	1.23	-28.20	835.27	-447.86	947.76	945.27	2.49	379.871	
400.00	400.00	392.00	400.00	1.81	1.76	-28.20	835.27	-447.86	947.76	944.19	3.57	265.452	
500.00	500.00	492.00	500.00	2.34	2.30	-28.20	835.27	-447.86	947.76	943.12	4.65	204.005	
600.00	600.00	592.00	600.00	2.88	2.84	-28.20	835.27	-447.86	947.76	942.04	5.72	165.658	
700.00	699.98	691.98	699.98	3.42	3.38	-48.53	835.27	-447.86	946.61	939.81	6.80	139.243	
800.00	799.84	791.84	799.84	3.96	3.91	-48.82	835.27	-447.86	943.15	935.27	7.88	119.749	
900.00	899.45	891.45	899.45	4.50	4.45	-49.31	835.27	-447.86	937.43	928.47	8.95	104.705	
1,000.00	998.90	990.90	998.90	5.05	4.98	-49.79	835.27	-447.86	930.63	920.60	10.03	92.797	
1,100.00	1,098.36	1,090.36	1,098.36	5.60	5.52	-50.29	835.27	-447.86	923.90	912.79	11.11	83.168	
1,200.00	1,197.81	1,189.81	1,197.81	6.15	6.05	-50.79	835.27	-447.86	917.23	905.04	12.19	75.229	
1,300.00	1,297.26	1,289.26	1,297.26	6.71	6.59	-51.30	835.27	-447.86	910.64	897.36	13.28	68.577	
1,400.00	1,396.72	1,388.72	1,396.72	7.27	7.12	-51.81	835.27	-447.86	904.13	889.76	14.37	62.927	
1,500.00	1,496.17	1,488.17	1,496.17	7.84	7.66	-52.33	835.27	-447.86	897.68	882.22	15.46	58.070	
1,600.00	1,595.62	1,573.95	1,581.94	8.40	8.11	-52.84	835.34	-448.81	891.99	875.52	16.47	54.164	
1,700.00	1,695.07	1,657.62	1,665.54	8.97	8.55	-53.46	835.57	-452.18	888.13	870.67	17.46	50.860	
1,800.00	1,794.53	1,740.87	1,748.59	9.53	8.98	-54.21	835.97	-457.95	886.20	867.75	18.46	48.018	
1,845.47	1,839.75	1,778.56	1,786.12	9.79	9.18	-54.59	836.20	-461.36	885.99	867.08	18.91	46.858 CC	
1,900.00	1,893.98	1,823.58	1,830.90	10.10	9.41	-55.08	836.53	-466.07	886.30	866.85	19.45	45.563 ES	
2,000.00	1,993.43	1,900.00	1,906.70	10.67	9.82	-55.98	837.19	-475.67	888.55	868.13	20.42	43.513	
2,100.00	2,092.89	1,986.84	1,992.50	11.24	10.29	-57.12	838.11	-489.03	892.98	871.53	21.45	41.625	
2,200.00	2,192.34	2,067.15	2,071.45	11.81	10.74	-58.27	839.12	-503.68	899.78	877.32	22.46	40.064	
2,300.00	2,291.79	2,149.80	2,152.24	12.38	11.21	-59.54	840.31	-521.06	909.03	885.54	23.48	38.708	
2,400.00	2,391.24	2,241.92	2,242.01	12.95	11.76	-60.99	841.73	-541.73	919.93	895.36	24.57	37.440	
2,500.00	2,490.70	2,338.17	2,335.79	13.52	12.34	-62.48	843.22	-563.32	931.51	905.83	25.69	36.266	
2,600.00	2,590.15	2,434.41	2,429.57	14.09	12.93	-63.92	844.71	-584.92	943.73	916.92	26.80	35.207	
2,700.00	2,689.60	2,530.66	2,523.35	14.66	13.53	-65.33	846.19	-606.51	956.56	928.63	27.93	34.252	
2,800.00	2,789.06	2,626.91	2,617.13	15.23	14.14	-66.71	847.68	-628.10	969.98	940.93	29.05	33.389	
2,900.00	2,888.51	2,723.15	2,710.91	15.80	14.76	-68.05	849.17	-649.70	983.97	953.79	30.18	32.608	
3,000.00	2,987.96	2,819.40	2,804.69	16.37	15.38	-69.35	850.65	-671.29	998.50	967.20	31.30	31.900	
3,100.00	3,087.41	2,915.65	2,898.47	16.94	16.01	-70.62	852.14	-692.88	1,013.55	981.12	32.43	31.258	
3,200.00	3,186.87	3,011.89	2,992.25	17.51	16.65	-71.85	853.62	-714.47	1,029.09	995.54	33.55	30.674	
3,300.00	3,286.32	3,108.14	3,086.03	18.08	17.29	-73.05	855.11	-736.07	1,045.11	1,010.43	34.67	30.142	
3,400.00	3,385.77	3,204.38	3,179.81	18.66	17.93	-74.21	856.60	-757.66	1,061.58	1,025.78	35.79	29.658	
3,500.00	3,485.23	3,300.63	3,273.59	19.23	18.58	-75.33	858.08	-779.25	1,078.48	1,041.56	36.91	29.215	
3,600.00	3,584.68	3,396.88	3,367.38	19.80	19.23	-76.43	859.57	-800.85	1,095.79	1,057.76	38.03	28.811	
3,700.00	3,684.13	3,493.12	3,461.16	20.37	19.88	-77.49	861.06	-822.44	1,113.50	1,074.35	39.15	28.441	
3,800.00	3,783.59	3,589.37	3,554.94	20.94	20.54	-78.56	862.54	-844.03	1,131.58	1,091.32	40.26	28.104	
3,900.00	3,883.24	3,685.95	3,649.05	21.50	21.20	-79.83	864.03	-865.70	1,150.41	1,109.06	41.35	27.820	
4,000.00	3,983.12	3,782.97	3,743.58	22.04	21.86	-80.93	865.53	-887.47	1,170.06	1,127.64	42.42	27.582	
4,100.00	4,083.11	3,880.32	3,838.43	22.56	22.53	-81.57	867.03	-909.31	1,190.38	1,146.89	43.49	27.371	
4,200.00	4,183.11	3,977.75	3,933.38	23.07	23.21	-82.01	868.54	-931.17	1,210.97	1,166.41	44.56	27.175	
4,300.00	4,283.11	4,075.19	4,028.32	23.58	23.88	-82.43	870.04	-953.03	1,231.63	1,185.99	45.64	26.989	
4,400.00	4,383.11	4,172.63	4,123.26	24.10	24.56	-82.85	871.55	-974.89	1,252.35	1,205.64	46.71	26.812	
4,500.00	4,483.11	4,270.07	4,218.20	24.61	25.23	-83.24	873.05	-996.75	1,273.12	1,225.34	47.78	26.644	
4,600.00	4,583.11	4,367.51	4,313.15	25.13	25.91	-83.63	874.56	-1,018.61	1,293.96	1,245.10	48.86	26.484	
4,700.00	4,683.11	4,464.95	4,408.09	25.64	26.59	-84.00	876.06	-1,040.47	1,314.85	1,264.92	49.93	26.332	
4,800.00	4,783.11	4,562.39	4,503.03	26.16	27.27	-84.36	877.57	-1,062.33	1,335.79	1,284.78	51.01	26.187	
4,900.00	4,883.11	4,659.82	4,597.97	26.68	27.95	-84.71	879.07	-1,084.19	1,356.78	1,304.70	52.09	26.048	
5,000.00	4,983.11	4,757.26	4,692.92	27.20	28.64	-85.05	880.58	-1,106.05	1,377.82	1,324.66	53.17	25.916	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 20H - OH - Plan 2 11-17-16												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		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	5,083.11	4,854.70	4,787.86	27.72	29.32	-65.38	882.08	-1,127.91	1,398.91	1,344.66	54.24	25.789	
5,200.00	5,183.11	4,952.14	4,882.80	28.24	30.01	-65.70	883.59	-1,149.77	1,420.03	1,364.71	55.32	25.668	
5,300.00	5,283.11	5,049.58	4,977.75	28.76	30.69	-66.01	885.09	-1,171.63	1,441.20	1,384.80	56.40	25.552	
5,400.00	5,383.11	5,147.02	5,072.69	29.28	31.38	-66.31	886.59	-1,193.49	1,462.41	1,404.93	57.48	25.441	
5,500.00	5,483.11	5,244.46	5,167.63	29.80	32.07	-66.60	888.10	-1,215.35	1,483.65	1,425.09	58.56	25.334	
5,600.00	5,583.11	5,341.89	5,262.57	30.32	32.75	-66.89	889.60	-1,237.21	1,504.93	1,445.29	59.64	25.232	
5,700.00	5,683.11	5,439.33	5,357.52	30.85	33.44	-67.16	891.11	-1,259.08	1,526.25	1,465.52	60.73	25.134	
5,800.00	5,783.11	5,536.77	5,452.46	31.37	34.13	-67.43	892.61	-1,280.94	1,547.60	1,485.79	61.81	25.039	
5,900.00	5,883.11	5,634.21	5,547.40	31.90	34.82	-67.70	894.12	-1,302.80	1,568.98	1,506.09	62.89	24.948	
6,000.00	5,983.11	5,731.65	5,642.35	32.42	35.51	-67.95	895.62	-1,324.66	1,590.39	1,526.42	63.97	24.861	
6,100.00	6,083.11	5,829.09	5,737.29	32.95	36.20	-68.20	897.13	-1,346.52	1,611.83	1,546.78	65.06	24.776	
6,200.00	6,183.11	5,926.53	5,832.23	33.47	36.89	-68.44	898.63	-1,368.38	1,633.30	1,567.16	66.14	24.695	
6,300.00	6,283.11	6,023.96	5,927.17	34.00	37.58	-68.67	900.14	-1,390.24	1,654.80	1,587.57	67.22	24.617	
6,400.00	6,383.11	6,121.40	6,022.12	34.52	38.28	-68.90	901.64	-1,412.10	1,676.32	1,608.01	68.31	24.541	
6,500.00	6,483.11	6,218.84	6,117.06	35.05	38.97	-69.13	903.15	-1,433.96	1,697.87	1,628.47	69.39	24.468	
6,600.00	6,583.11	6,316.28	6,212.00	35.58	39.66	-69.34	904.65	-1,455.82	1,719.44	1,648.96	70.48	24.397	
6,700.00	6,683.11	6,413.72	6,306.94	36.10	40.35	-69.56	906.16	-1,477.68	1,741.03	1,669.47	71.56	24.329	
6,800.00	6,783.11	6,523.25	6,413.68	36.63	41.13	-69.79	907.67	-1,502.18	1,762.62	1,689.90	72.71	24.240	
6,900.00	6,883.11	6,626.25	6,522.80	37.16	42.71	-70.18	910.78	-1,544.92	1,779.60	1,705.00	74.60	23.855	
7,000.00	6,983.11	7,014.96	6,900.40	37.69	44.08	-70.38	912.34	-1,567.58	1,788.40	1,711.95	76.45	23.392	
7,100.00	7,083.11	7,197.72	7,083.11	38.21	44.93	-70.41	912.57	-1,570.88	1,789.67	1,711.78	77.90	22.975	
7,200.00	7,183.11	7,297.72	7,183.11	38.74	45.37	-70.41	912.57	-1,570.88	1,789.67	1,710.76	78.91	22.680	
7,300.00	7,283.11	7,397.72	7,283.11	39.27	45.81	-70.41	912.57	-1,570.88	1,789.67	1,709.75	79.92	22.392	
7,400.00	7,383.11	7,497.72	7,383.11	39.80	46.26	-70.41	912.57	-1,570.88	1,789.67	1,708.73	80.94	22.111	
7,500.00	7,483.11	7,597.72	7,483.11	40.33	46.70	-70.41	912.57	-1,570.88	1,789.67	1,707.71	81.96	21.836	
7,600.00	7,583.11	7,697.72	7,583.11	40.86	47.15	-70.41	912.57	-1,570.88	1,789.67	1,706.69	82.98	21.568	
7,700.00	7,683.11	7,797.72	7,683.11	41.39	47.60	-70.41	912.57	-1,570.88	1,789.67	1,705.67	84.00	21.306	
7,800.00	7,783.11	7,897.72	7,783.11	41.92	48.06	-70.41	912.57	-1,570.88	1,789.67	1,704.65	85.02	21.050	
7,900.00	7,883.11	7,997.72	7,883.11	42.45	48.51	-70.41	912.57	-1,570.88	1,789.67	1,703.63	86.05	20.799	
8,000.00	7,983.11	8,097.72	7,983.11	42.98	48.97	-70.41	912.57	-1,570.88	1,789.67	1,702.60	87.07	20.554	
8,100.00	8,083.11	8,197.72	8,083.11	43.51	49.43	-70.41	912.57	-1,570.88	1,789.67	1,701.58	88.10	20.315	
8,200.00	8,183.11	8,297.72	8,183.11	44.04	49.89	-70.41	912.57	-1,570.88	1,789.67	1,700.55	89.12	20.081	
8,300.00	8,283.11	8,397.72	8,283.11	44.57	50.35	-70.41	912.57	-1,570.88	1,789.67	1,699.52	90.15	19.852	
8,400.00	8,383.11	8,497.72	8,383.11	45.10	50.81	-70.41	912.57	-1,570.88	1,789.67	1,698.49	91.18	19.628	
8,500.00	8,483.11	8,597.72	8,483.11	45.63	51.28	-70.41	912.57	-1,570.88	1,789.67	1,697.46	92.21	19.408	
8,600.00	8,583.11	8,697.72	8,583.11	46.17	51.74	-70.41	912.57	-1,570.88	1,789.67	1,696.43	93.24	19.194	
8,700.00	8,683.11	8,797.72	8,683.11	46.70	52.21	-70.41	912.57	-1,570.88	1,789.67	1,695.40	94.27	18.984	
8,800.00	8,783.11	8,897.72	8,783.11	47.23	52.68	-70.41	912.57	-1,570.88	1,789.67	1,694.36	95.31	18.778	
8,900.00	8,883.11	8,997.72	8,883.11	47.76	53.15	-70.41	912.57	-1,570.88	1,789.67	1,693.33	96.34	18.576	
9,000.00	8,983.11	9,097.72	8,983.11	48.29	53.62	-70.41	912.57	-1,570.88	1,789.67	1,692.30	97.38	18.379	
9,056.49	9,039.60	9,154.21	9,039.60	48.59	53.88	-70.41	912.57	-1,570.88	1,789.67	1,691.71	97.96	18.269	
9,100.00	9,083.11	9,185.59	9,070.98	48.82	54.03	-70.40	912.68	-1,570.88	1,789.75	1,691.40	98.35	18.197	
9,200.00	9,182.98	9,233.65	9,118.93	49.36	54.26	-69.75	915.64	-1,570.91	1,790.70	1,691.46	99.24	18.044	
9,300.00	9,280.93	9,281.68	9,166.44	49.93	54.49	-69.99	922.60	-1,570.97	1,788.94	1,688.97	99.97	17.895	
9,400.00	9,374.01	9,329.68	9,213.17	50.51	54.71	-70.65	933.50	-1,571.08	1,784.14	1,683.71	100.43	17.765	
9,500.00	9,459.39	9,377.61	9,258.76	51.11	54.93	-71.71	948.25	-1,571.23	1,776.52	1,675.74	100.77	17.629	
9,600.00	9,534.47	9,425.44	9,302.86	51.72	55.14	-73.15	966.72	-1,571.41	1,766.44	1,665.24	101.20	17.455	
9,700.00	9,596.97	9,473.12	9,345.15	52.35	55.35	-74.92	988.72	-1,571.63	1,754.42	1,652.55	101.87	17.223	
9,800.00	9,644.99	9,520.61	9,385.30	53.00	55.54	-76.96	1,014.06	-1,571.88	1,741.08	1,638.26	102.82	16.934	
9,900.00	9,677.08	9,567.83	9,423.00	53.67	55.72	-79.20	1,042.46	-1,572.16	1,727.16	1,623.17	103.99	16.608	
10,000.00	9,692.26	9,614.67	9,457.97	54.34	55.89	-81.55	1,073.61	-1,572.47	1,713.51	1,608.26	105.25	16.280	
10,100.00	9,691.40	9,661.66	9,490.38	55.05	56.05	-83.42	1,107.61	-1,572.81	1,701.19	1,594.78	106.42	15.986	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 20H - OH - Plan 2 11-17-16													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	
10,200.00	9,687.32	9,715.29	9,523.81	55.83	56.22	-84.61	1,149.51	-1,573.23	1,692.13	1,584.57	107.56	15.732	
10,300.00	9,683.23	9,778.15	9,557.81	56.69	56.41	-85.83	1,202.35	-1,573.75	1,686.23	1,577.45	108.79	15.500	
10,400.00	9,679.15	9,850.00	9,589.32	57.61	56.62	-86.99	1,266.87	-1,574.39	1,682.84	1,572.75	110.09	15.286	
10,500.00	9,675.07	9,933.27	9,615.40	58.59	56.87	-87.99	1,345.87	-1,575.17	1,681.18	1,569.69	111.49	15.079	
10,600.00	9,670.98	10,023.18	9,630.39	59.64	57.18	-88.62	1,434.42	-1,576.05	1,680.56	1,567.57	112.99	14.874	
10,700.00	9,666.90	10,119.43	9,632.55	60.75	57.56	-88.83	1,530.59	-1,577.01	1,680.42	1,565.81	114.61	14.662	
10,800.00	9,662.81	10,219.36	9,632.25	61.92	58.04	-88.96	1,630.52	-1,578.00	1,680.35	1,563.97	116.38	14.439	
10,900.00	9,658.73	10,319.29	9,631.95	63.13	58.60	-89.09	1,730.44	-1,578.99	1,680.29	1,562.01	118.28	14.206	
11,000.00	9,654.64	10,419.21	9,631.66	64.40	59.25	-89.22	1,830.36	-1,579.98	1,680.24	1,559.94	120.30	13.967	
11,100.00	9,650.56	10,519.14	9,631.36	65.71	59.99	-89.35	1,930.28	-1,580.97	1,680.20	1,557.76	122.44	13.723	
11,200.00	9,646.47	10,619.07	9,631.06	67.07	60.80	-89.47	2,030.21	-1,581.97	1,680.16	1,555.48	124.68	13.475	
11,300.00	9,642.39	10,719.00	9,630.77	68.46	61.68	-89.60	2,130.13	-1,582.96	1,680.14	1,553.10	127.04	13.225	
11,400.00	9,638.30	10,818.93	9,630.47	69.90	62.63	-89.73	2,230.05	-1,583.95	1,680.12	1,550.62	129.50	12.974	
11,500.00	9,634.22	10,918.85	9,630.17	71.37	63.65	-89.86	2,329.98	-1,584.94	1,680.11	1,548.07	132.05	12.724	
11,550.80	9,632.14	10,969.62	9,630.02	72.14	64.19	-89.93	2,380.74	-1,585.44	1,680.11	1,546.73	133.38	12.596	
11,600.00	9,630.13	11,018.78	9,629.88	72.88	64.73	-89.99	2,429.90	-1,585.93	1,680.11	1,545.43	134.69	12.474	
11,700.00	9,626.05	11,118.71	9,629.58	74.42	65.86	-90.12	2,529.82	-1,586.92	1,680.12	1,542.71	137.41	12.227	
11,800.00	9,621.96	11,218.64	9,629.28	75.99	67.05	-90.25	2,629.74	-1,587.92	1,680.14	1,539.92	140.21	11.983	
11,900.00	9,617.88	11,318.57	9,628.99	77.59	68.28	-90.38	2,729.67	-1,588.91	1,680.16	1,537.07	143.09	11.742	
12,000.00	9,613.79	11,418.50	9,628.69	79.21	69.57	-90.51	2,829.59	-1,589.90	1,680.20	1,534.16	146.04	11.505	
12,100.00	9,609.71	11,518.42	9,628.39	80.86	70.90	-90.64	2,929.51	-1,590.89	1,680.24	1,531.19	149.05	11.273	
12,200.00	9,605.63	11,618.35	9,628.10	82.54	72.26	-90.77	3,029.44	-1,591.88	1,680.29	1,528.16	152.13	11.045	
12,300.00	9,601.54	11,718.28	9,627.80	84.23	73.67	-90.89	3,129.36	-1,592.87	1,680.35	1,525.09	155.26	10.823	
12,400.00	9,597.46	11,818.22	9,627.51	85.95	75.12	-91.02	3,229.29	-1,593.87	1,680.41	1,521.96	158.45	10.605	
12,500.00	9,593.38	11,918.15	9,627.21	87.68	76.60	-91.14	3,329.22	-1,594.86	1,680.43	1,518.71	161.72	10.391	
12,600.00	9,589.29	12,018.08	9,626.91	89.42	78.11	-91.26	3,429.16	-1,595.85	1,680.49	1,515.36	165.03	10.182	
12,700.00	9,585.21	12,118.01	9,626.62	91.19	79.65	-91.38	3,529.10	-1,596.84	1,680.56	1,511.97	168.40	9.979	
12,800.00	9,581.13	12,218.00	9,626.32	92.97	81.22	-91.50	3,629.04	-1,597.83	1,680.63	1,508.53	171.81	9.780	
12,900.00	9,577.05	12,318.00	9,626.02	94.77	82.82	-91.62	3,728.98	-1,598.83	1,680.71	1,505.05	175.25	9.588	
13,000.00	9,572.97	12,418.00	9,625.73	96.58	84.44	-91.74	3,828.92	-1,599.82	1,680.78	1,501.54	178.74	9.401	
13,100.00	9,568.89	12,518.00	9,625.43	98.40	86.08	-91.86	3,928.86	-1,600.81	1,680.86	1,497.99	182.27	9.219	
13,200.00	9,564.81	12,618.00	9,625.13	100.24	87.75	-91.98	4,028.80	-1,601.80	1,680.94	1,494.41	185.82	9.042	
13,300.00	9,560.73	12,718.00	9,624.84	102.09	89.44	-92.10	4,128.74	-1,602.79	1,681.02	1,490.80	189.41	8.871	
13,400.00	9,556.65	12,818.00	9,624.54	103.96	91.15	-92.22	4,228.68	-1,603.79	1,681.10	1,487.16	193.04	8.704	
13,500.00	9,552.57	12,918.00	9,624.24	105.83	92.88	-92.34	4,328.62	-1,604.78	1,681.18	1,483.49	196.69	8.542	
13,600.00	9,548.49	13,018.00	9,623.95	107.72	94.63	-92.46	4,428.56	-1,605.77	1,681.26	1,479.79	200.36	8.386	
13,700.00	9,544.41	13,118.00	9,623.65	109.61	96.39	-92.58	4,528.50	-1,606.76	1,681.34	1,476.07	204.07	8.233	
13,800.00	9,540.33	13,218.00	9,623.35	111.52	98.17	-92.70	4,628.44	-1,607.76	1,681.42	1,472.33	207.79	8.086	
13,900.00	9,536.25	13,318.00	9,623.06	113.43	99.97	-92.82	4,728.38	-1,608.75	1,681.50	1,468.57	211.54	7.942	
14,000.00	9,532.17	13,418.00	9,622.76	115.36	101.77	-92.94	4,828.32	-1,609.74	1,681.58	1,464.79	215.32	7.803	
14,100.00	9,528.09	13,518.00	9,622.46	117.29	103.60	-93.06	4,928.26	-1,610.73	1,681.66	1,460.99	219.11	7.668	
14,200.00	9,524.01	13,618.00	9,622.17	119.23	105.43	-93.18	5,028.20	-1,611.72	1,681.74	1,457.17	222.92	7.537	
14,300.00	9,519.93	13,718.00	9,621.87	121.18	107.28	-93.30	5,128.14	-1,612.72	1,681.82	1,453.33	226.75	7.409	
14,400.00	9,515.85	13,818.00	9,621.57	123.13	109.14	-93.42	5,228.08	-1,613.71	1,681.90	1,449.48	230.60	7.286	
14,500.00	9,511.77	13,918.00	9,621.28	125.09	111.01	-93.54	5,328.02	-1,614.70	1,681.98	1,445.61	234.47	7.165	
14,589.66	9,507.69	14,017.93	9,621.01	126.85	112.69	-93.66	5,418.55	-1,615.59	1,682.06	1,442.13	237.95	7.061	
14,600.00	9,503.61	14,117.92	9,620.71	128.70	114.38	-93.78	5,518.49	-1,616.59	1,682.14	1,438.25	241.82	6.935	
14,700.00	9,503.61	14,217.90	9,620.39	131.01	116.68	-93.90	5,618.43	-1,617.58	1,682.22	1,433.93	246.16	6.825	
14,800.00	9,503.61	14,317.89	9,620.09	133.29	118.58	-94.02	5,718.37	-1,618.57	1,682.30	1,430.01	250.08	6.718	
14,900.00	9,503.61	14,417.87	9,619.79	135.54	120.50	-94.14	5,818.31	-1,619.56	1,682.38	1,426.07	254.02	6.614	
15,000.00	9,503.61	14,517.86	9,619.49	137.79	122.42	-94.26	5,918.25	-1,620.55	1,682.46	1,422.15	258.00	6.514	
15,027.96	9,503.61	14,545.83	9,619.71	135.54	121.04	-89.63	5,856.77	-1,619.94	1,680.15	1,425.08	255.06	6.587	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 20H - OH - Plan 2 11-17-16													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)					
15,100.00	9,631.55	14,524.60	9,619.55	136.98	122.55	-89.60	5,935.53	-1,620.68	1,680.33	1,422.45	257.88	6.516	
15,200.00	9,633.07	14,641.15	9,621.40	138.97	124.80	-89.60	6,052.06	-1,620.50	1,680.51	1,418.37	262.14	6.411	
15,300.00	9,634.58	14,741.15	9,623.37	140.97	126.73	-89.62	6,152.04	-1,620.12	1,680.51	1,414.41	266.10	6.315	
15,400.00	9,636.09	14,841.15	9,625.33	142.98	128.67	-89.63	6,252.02	-1,619.74	1,680.50	1,410.44	270.06	6.223	
15,500.00	9,637.61	14,941.15	9,627.29	144.98	130.62	-89.65	6,352.00	-1,619.37	1,680.50	1,406.46	274.04	6.132	
15,600.00	9,639.12	15,041.15	9,629.26	147.00	132.57	-89.66	6,451.98	-1,618.99	1,680.50	1,402.47	278.03	6.044	
15,700.00	9,640.63	15,141.15	9,631.22	149.01	134.53	-89.68	6,551.96	-1,618.61	1,680.50	1,398.47	282.03	5.959	
15,800.00	9,642.15	15,241.14	9,633.18	151.03	136.50	-89.69	6,651.94	-1,618.23	1,680.49	1,394.46	286.03	5.875	
15,900.00	9,643.66	15,341.14	9,635.15	153.06	138.47	-89.71	6,751.92	-1,617.86	1,680.49	1,390.45	290.05	5.794	
16,000.00	9,645.17	15,441.14	9,637.11	155.08	140.44	-89.73	6,851.89	-1,617.48	1,680.49	1,386.42	294.07	5.715	
16,100.00	9,646.69	15,541.14	9,639.07	157.11	142.42	-89.74	6,951.87	-1,617.10	1,680.49	1,382.39	298.10	5.637	
16,200.00	9,648.20	15,641.14	9,641.04	159.15	144.41	-89.76	7,051.85	-1,616.72	1,680.49	1,378.35	302.14	5.562	
16,300.00	9,649.71	15,741.14	9,643.00	161.18	146.40	-89.77	7,151.83	-1,616.34	1,680.49	1,374.30	306.18	5.489	
16,400.00	9,651.23	15,841.14	9,644.96	163.22	148.39	-89.79	7,251.81	-1,615.97	1,680.48	1,370.25	310.24	5.417	
16,500.00	9,652.74	15,941.14	9,646.93	165.27	150.39	-89.80	7,351.79	-1,615.59	1,680.48	1,366.19	314.29	5.347	
16,600.00	9,654.25	16,041.14	9,648.89	167.31	152.40	-89.82	7,451.77	-1,615.21	1,680.48	1,362.12	318.36	5.279	
16,700.00	9,655.77	16,141.14	9,650.86	169.36	154.40	-89.83	7,551.75	-1,614.83	1,680.48	1,358.05	322.43	5.212	
16,800.00	9,657.28	16,241.13	9,652.82	171.41	156.42	-89.85	7,651.73	-1,614.46	1,680.48	1,353.97	326.51	5.147	
16,900.00	9,658.79	16,341.13	9,654.78	173.47	158.43	-89.86	7,751.71	-1,614.08	1,680.48	1,349.88	330.59	5.083	
17,000.00	9,660.31	16,441.13	9,656.75	175.52	160.45	-89.88	7,851.68	-1,613.70	1,680.48	1,345.79	334.68	5.021	
17,100.00	9,661.82	16,541.13	9,658.71	177.58	162.47	-89.89	7,951.66	-1,613.32	1,680.48	1,341.70	338.78	4.960	
17,200.00	9,663.33	16,641.13	9,660.67	179.64	164.50	-89.91	8,051.64	-1,612.95	1,680.48	1,337.60	342.88	4.901	
17,300.00	9,664.85	16,741.13	9,662.64	181.70	166.53	-89.92	8,151.62	-1,612.57	1,680.48	1,333.49	346.98	4.843	
17,400.00	9,666.36	16,841.13	9,664.60	183.77	168.56	-89.94	8,251.60	-1,612.19	1,680.48	1,329.38	351.09	4.786	
17,467.84	9,667.39	16,908.97	9,665.93	185.17	169.94	-89.95	8,319.43	-1,611.93	1,680.48	1,326.59	353.88	4.749	
17,500.00	9,667.87	16,941.13	9,666.56	185.83	170.59	-89.96	8,351.58	-1,611.81	1,680.48	1,325.27	355.21	4.731	
17,600.00	9,669.39	17,041.13	9,668.53	187.90	172.63	-89.97	8,451.56	-1,611.43	1,680.48	1,321.15	359.33	4.677	
17,700.00	9,670.90	17,141.13	9,670.49	189.97	174.67	-89.99	8,551.54	-1,611.06	1,680.48	1,317.03	363.45	4.624	
17,800.00	9,672.44	17,241.12	9,672.45	192.04	176.71	-90.00	8,651.52	-1,610.68	1,680.47	1,312.89	367.58	4.572	
17,900.00	9,674.07	17,341.12	9,674.42	194.12	178.76	-90.01	8,751.50	-1,610.30	1,680.45	1,308.73	371.71	4.521	
18,000.00	9,675.70	17,441.12	9,676.38	196.19	180.81	-90.02	8,851.48	-1,609.92	1,680.42	1,304.57	375.85	4.471	
18,100.00	9,677.33	17,541.12	9,678.34	198.27	182.86	-90.03	8,951.45	-1,609.55	1,680.39	1,300.40	379.99	4.422	
18,200.00	9,678.96	17,641.12	9,680.31	200.35	184.91	-90.05	9,051.43	-1,609.17	1,680.37	1,296.24	384.13	4.374	
18,300.00	9,680.59	17,741.12	9,682.27	202.43	186.97	-90.06	9,151.41	-1,608.79	1,680.34	1,292.06	388.28	4.328	
18,400.00	9,682.22	17,841.12	9,684.23	204.51	189.02	-90.07	9,251.39	-1,608.41	1,680.32	1,287.89	392.43	4.282	
18,500.00	9,683.84	17,941.12	9,686.20	206.60	191.08	-90.08	9,351.37	-1,608.04	1,680.29	1,283.71	396.58	4.237	
18,600.00	9,685.47	18,041.12	9,688.16	208.68	193.14	-90.09	9,451.35	-1,607.66	1,680.27	1,279.53	400.74	4.193	
18,700.00	9,687.10	18,141.12	9,690.12	210.77	195.21	-90.10	9,551.33	-1,607.28	1,680.24	1,275.34	404.90	4.150	
18,800.00	9,688.73	18,241.12	9,692.09	212.86	197.27	-90.11	9,651.31	-1,606.90	1,680.22	1,271.15	409.06	4.107	
18,900.00	9,690.36	18,341.12	9,694.05	214.94	199.34	-90.13	9,751.29	-1,606.52	1,680.19	1,266.96	413.23	4.066	
19,000.00	9,691.99	18,441.12	9,696.01	217.03	201.41	-90.14	9,851.27	-1,606.15	1,680.16	1,262.77	417.40	4.025	
19,100.00	9,693.62	18,541.12	9,697.98	219.13	203.48	-90.15	9,951.25	-1,605.77	1,680.14	1,258.57	421.57	3.985	
19,200.00	9,695.25	18,641.12	9,699.94	221.22	205.55	-90.16	10,051.23	-1,605.39	1,680.11	1,254.37	425.74	3.946	
19,300.00	9,696.87	18,741.12	9,701.90	223.31	207.63	-90.17	10,151.21	-1,605.01	1,680.09	1,250.17	429.92	3.908	
19,400.00	9,698.50	18,841.12	9,703.87	225.41	209.70	-90.18	10,251.19	-1,604.64	1,680.06	1,245.97	434.10	3.870	
19,500.00	9,700.13	18,941.12	9,705.83	227.50	211.78	-90.19	10,351.17	-1,604.26	1,680.04	1,241.76	438.28	3.833	
19,600.00	9,701.76	19,041.11	9,707.80	229.60	213.86	-90.21	10,451.15	-1,603.88	1,680.02	1,237.55	442.46	3.797	
19,700.00	9,703.39	19,141.11	9,709.76	231.70	215.94	-90.22	10,551.13	-1,603.50	1,679.99	1,233.34	446.65	3.761	
19,800.00	9,705.02	19,241.11	9,711.72	233.80	218.02	-90.23	10,651.11	-1,603.13	1,679.97	1,229.13	450.84	3.726	
19,900.00	9,706.65	19,341.11	9,713.69	235.90	220.10	-90.24	10,751.08	-1,602.75	1,679.94	1,224.91	455.03	3.692	
20,000.00	9,708.28	19,441.11	9,715.65	238.00	222.19	-90.25	10,851.06	-1,602.37	1,679.92	1,220.70	459.22	3.658	
20,044.41	9,709.00	19,485.52	9,716.52	238.80	223.11	-90.26	10,895.46	-1,602.20	1,679.91	1,218.96	460.95	3.644 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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 27H - OH - Plan 2 11-17-16												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						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)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	8.00	0.00	0.00	-28.93	810.27	-447.86	925.84				
100.00	100.00	92.00	100.00	0.19	0.18	-28.93	810.27	-447.86	925.81	925.44	0.37	2,490.979	
200.00	200.00	192.00	200.00	0.73	0.69	-28.93	810.27	-447.86	925.81	924.39	1.42	652.184	
300.00	300.00	292.00	300.00	1.27	1.23	-28.93	810.27	-447.86	925.81	923.31	2.49	371.070	
400.00	400.00	392.00	400.00	1.81	1.76	-28.93	810.27	-447.86	925.81	922.24	3.57	259.302	
500.00	500.00	492.00	500.00	2.34	2.30	-28.93	810.27	-447.86	925.81	921.16	4.65	199.279	
600.00	600.00	592.00	600.00	2.88	2.84	-28.93	810.27	-447.86	925.81	920.09	5.72	161.820	
700.00	699.98	691.98	699.98	3.42	3.38	-49.27	810.27	-447.86	924.67	917.87	6.80	136.017	
800.00	799.84	791.84	799.84	3.96	3.91	-49.56	810.27	-447.86	921.26	913.38	7.88	116.973	
900.00	899.45	891.45	899.45	4.50	4.45	-50.06	810.27	-447.86	915.62	906.67	8.95	102.272	
1,000.00	998.90	990.90	998.90	5.05	4.98	-50.57	810.27	-447.86	908.93	898.90	10.03	90.634	
1,100.00	1,098.36	1,090.36	1,098.36	5.60	5.52	-51.08	810.27	-447.86	902.31	891.20	11.11	81.222	
1,200.00	1,197.81	1,189.81	1,197.81	6.15	6.05	-51.60	810.27	-447.86	895.76	883.57	12.19	73.464	
1,300.00	1,297.26	1,289.26	1,297.26	6.71	6.59	-52.12	810.27	-447.86	889.29	876.01	13.28	66.964	
1,400.00	1,396.72	1,388.72	1,396.72	7.27	7.12	-52.66	810.27	-447.86	882.89	868.52	14.37	61.443	
1,500.00	1,496.17	1,488.17	1,496.17	7.84	7.66	-53.20	810.27	-447.86	876.57	861.11	15.46	56.698	
1,600.00	1,595.62	1,575.03	1,583.02	8.40	8.12	-53.73	810.27	-448.84	870.96	854.49	16.48	52.865	
1,700.00	1,695.07	1,659.89	1,667.80	8.97	8.56	-54.39	810.28	-452.32	867.10	849.63	17.47	49.621	
1,800.00	1,794.53	1,744.28	1,751.99	9.53	8.99	-55.19	810.29	-458.27	865.09	846.62	18.47	46.830	
1,853.04	1,847.28	1,788.81	1,796.32	9.84	9.23	-55.67	810.30	-462.40	864.81	845.81	19.00	45.508 CC	
1,900.00	1,893.98	1,828.08	1,835.36	10.10	9.43	-56.12	810.31	-466.62	865.04	845.56	19.48	44.417 ES	
2,000.00	1,993.43	1,911.13	1,917.72	10.67	9.88	-57.16	810.33	-477.31	867.05	846.57	20.48	42.338	
2,100.00	2,092.89	2,000.00	2,005.47	11.24	10.36	-58.40	810.36	-491.38	871.28	849.76	21.52	40.481	
2,200.00	2,192.34	2,074.53	2,078.69	11.81	10.78	-59.54	810.39	-505.28	877.76	855.26	22.50	39.014	
2,300.00	2,291.79	2,162.52	2,164.71	12.38	11.28	-60.97	810.43	-523.77	886.50	862.95	23.56	37.634	
2,400.00	2,391.24	2,258.91	2,258.87	12.95	11.85	-62.52	810.47	-544.36	896.19	871.52	24.67	36.331	
2,500.00	2,490.70	2,355.30	2,353.04	13.52	12.43	-64.04	810.52	-564.95	906.56	880.77	25.78	35.161	
2,600.00	2,590.15	2,451.69	2,447.20	14.09	13.01	-65.53	810.56	-585.54	917.58	890.67	26.90	34.107	
2,700.00	2,689.60	2,548.07	2,541.36	14.66	13.61	-66.98	810.60	-606.13	929.23	901.21	28.03	33.156	
2,800.00	2,789.06	2,644.46	2,635.53	15.23	14.21	-68.40	810.65	-626.72	941.49	912.34	29.15	32.298	
2,900.00	2,888.51	2,740.85	2,729.69	15.80	14.82	-69.78	810.69	-647.31	954.34	924.07	30.27	31.523	
3,000.00	2,987.96	2,837.24	2,823.86	16.37	15.44	-71.13	810.73	-667.91	967.75	936.35	31.40	30.821	
3,100.00	3,087.41	2,933.63	2,918.02	16.94	16.06	-72.44	810.78	-688.50	981.70	949.18	32.52	30.184	
3,200.00	3,186.87	3,030.02	3,012.19	17.51	16.68	-73.71	810.82	-709.09	996.17	962.52	33.65	29.607	
3,300.00	3,286.32	3,126.41	3,106.35	18.08	17.31	-74.95	810.86	-729.68	1,011.13	976.36	34.77	29.081	
3,400.00	3,385.77	3,222.80	3,200.51	18.66	17.94	-76.16	810.90	-750.27	1,026.57	990.68	35.89	28.603	
3,500.00	3,485.23	3,319.19	3,294.68	19.23	18.58	-77.33	810.95	-770.86	1,042.45	1,005.44	37.01	28.168	
3,600.00	3,584.68	3,415.58	3,388.84	19.80	19.22	-78.46	810.99	-791.45	1,058.77	1,020.64	38.13	27.770	
3,700.00	3,684.13	3,511.97	3,483.01	20.37	19.86	-79.57	811.03	-812.05	1,075.50	1,036.25	39.24	27.407	
3,800.00	3,783.59	3,608.36	3,577.18	20.94	20.51	-80.68	811.08	-832.64	1,092.62	1,052.27	40.35	27.076	
3,900.00	3,883.24	3,705.11	3,671.69	21.50	21.15	-81.97	811.12	-853.31	1,110.43	1,068.99	41.44	26.795	
4,000.00	3,983.12	3,802.33	3,766.67	22.04	21.81	-83.08	811.16	-874.07	1,128.95	1,086.44	42.51	26.555	
4,100.00	4,083.11	3,899.92	3,862.00	22.56	22.47	-83.72	811.21	-894.92	1,148.02	1,104.44	43.59	26.339	
4,200.00	4,183.11	3,997.61	3,957.43	23.07	23.13	-84.18	811.25	-915.79	1,167.32	1,122.66	44.66	26.139	
4,300.00	4,283.11	4,095.30	4,052.87	23.58	23.79	-84.63	811.29	-936.66	1,186.69	1,140.96	45.73	25.950	
4,400.00	4,383.11	4,192.99	4,148.31	24.10	24.45	-85.06	811.34	-957.53	1,206.12	1,159.32	46.80	25.771	
4,500.00	4,483.11	4,290.68	4,243.74	24.61	25.12	-85.47	811.38	-978.40	1,225.62	1,177.75	47.87	25.600	
4,600.00	4,583.11	4,388.37	4,339.18	25.13	25.78	-85.88	811.42	-999.27	1,245.18	1,196.23	48.95	25.438	
4,700.00	4,683.11	4,486.06	4,434.62	25.64	26.45	-86.27	811.47	-1,020.14	1,264.80	1,214.78	50.02	25.284	
4,800.00	4,783.11	4,583.76	4,530.05	26.16	27.12	-86.65	811.51	-1,041.01	1,284.47	1,233.37	51.10	25.137	
4,900.00	4,883.11	4,681.45	4,625.49	26.68	27.79	-87.02	811.55	-1,061.88	1,304.20	1,252.03	52.18	24.996	
5,000.00	4,983.11	4,779.14	4,720.93	27.20	28.46	-87.38	811.60	-1,082.75	1,323.98	1,270.73	53.25	24.862	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 P5 - 27H - OH - Plan 2 11-17-16													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		
5,100.00	5,083.11	4,876.83	4,816.36	27.72	29.13	-67.73	811.64	-1,103.62	1,343.81	1,289.48	54.33	24.734		
5,200.00	5,183.11	4,974.52	4,911.80	28.24	29.80	-68.06	811.69	-1,124.49	1,363.68	1,308.27	55.41	24.612		
5,300.00	5,283.11	5,072.21	5,007.23	28.76	30.47	-68.39	811.73	-1,145.35	1,383.60	1,327.11	56.49	24.495		
5,400.00	5,383.11	5,169.91	5,102.67	29.28	31.15	-68.71	811.77	-1,166.22	1,403.56	1,345.99	57.56	24.382		
5,500.00	5,483.11	5,267.60	5,198.11	29.80	31.82	-69.02	811.82	-1,187.09	1,423.56	1,364.91	58.64	24.275		
5,600.00	5,583.11	5,365.29	5,293.54	30.32	32.50	-69.32	811.86	-1,207.96	1,443.60	1,383.87	59.72	24.171		
5,700.00	5,683.11	5,462.98	5,388.98	30.85	33.17	-69.61	811.90	-1,228.83	1,463.67	1,402.87	60.80	24.072		
5,800.00	5,783.11	5,560.67	5,484.42	31.37	33.85	-69.90	811.95	-1,249.70	1,483.79	1,421.90	61.88	23.977		
5,900.00	5,883.11	5,658.36	5,579.85	31.90	34.52	-70.18	811.99	-1,270.57	1,503.93	1,440.97	62.96	23.885		
6,000.00	5,983.11	5,756.05	5,675.29	32.42	35.20	-70.45	812.03	-1,291.44	1,524.11	1,460.07	64.05	23.797		
6,100.00	6,083.11	5,853.75	5,770.73	32.95	35.87	-70.71	812.08	-1,312.31	1,544.33	1,479.20	65.13	23.712		
6,200.00	6,183.11	5,951.44	5,866.16	33.47	36.55	-70.97	812.12	-1,333.18	1,564.57	1,498.36	66.21	23.630		
6,300.00	6,283.11	6,049.13	5,961.60	34.00	37.23	-71.21	812.16	-1,354.05	1,584.84	1,517.55	67.29	23.552		
6,400.00	6,383.11	6,146.82	6,057.03	34.52	37.91	-71.46	812.21	-1,374.92	1,605.14	1,536.77	68.38	23.476		
6,500.00	6,483.11	6,244.51	6,152.47	35.05	38.59	-71.70	812.25	-1,395.79	1,625.47	1,556.01	69.46	23.402		
6,600.00	6,583.11	6,342.20	6,247.91	35.58	39.27	-71.93	812.30	-1,416.66	1,645.82	1,575.28	70.54	23.331		
6,700.00	6,683.11	6,439.90	6,343.34	36.10	39.94	-72.15	812.34	-1,437.53	1,666.20	1,594.58	71.63	23.263		
6,800.00	6,783.11	6,537.59	6,438.78	36.63	40.62	-72.37	812.38	-1,458.40	1,686.61	1,613.90	72.71	23.197		
6,900.00	6,883.11	6,635.28	6,534.22	37.16	41.30	-72.59	812.43	-1,479.27	1,707.03	1,633.24	73.79	23.133		
7,000.00	6,983.11	6,732.97	6,629.65	37.69	41.98	-72.80	812.47	-1,500.14	1,727.48	1,652.60	74.88	23.071		
7,100.00	7,083.11	6,830.66	6,725.09	38.21	42.66	-73.00	812.51	-1,521.01	1,747.95	1,671.99	75.96	23.011		
7,200.00	7,183.11	6,928.35	6,820.53	38.74	43.34	-73.21	812.56	-1,541.87	1,768.45	1,691.40	77.05	22.952		
7,300.00	7,283.11	7,026.04	6,915.96	39.27	44.02	-73.40	812.60	-1,562.74	1,788.96	1,710.82	78.13	22.896		
7,400.00	7,383.11	7,123.74	7,011.40	39.80	44.71	-73.59	812.64	-1,583.61	1,809.49	1,730.27	79.22	22.842		
7,500.00	7,483.11	7,221.43	7,106.83	40.33	45.39	-73.78	812.69	-1,604.48	1,830.04	1,749.74	80.31	22.789		
7,600.00	7,583.11	7,319.12	7,202.27	40.86	46.07	-73.96	812.73	-1,625.35	1,850.61	1,769.22	81.39	22.737		
7,700.00	7,683.11	7,416.81	7,297.71	41.39	46.75	-74.14	812.77	-1,646.22	1,871.20	1,788.72	82.48	22.687		
7,800.00	7,783.11	7,514.50	7,393.14	41.92	47.43	-74.32	812.82	-1,667.09	1,891.81	1,808.24	83.56	22.639		
7,900.00	7,883.11	7,612.19	7,488.58	42.45	48.11	-74.49	812.86	-1,687.96	1,912.43	1,827.78	84.65	22.592		
8,000.00	7,983.11	7,709.89	7,584.02	42.98	48.80	-74.66	812.90	-1,708.83	1,933.06	1,847.33	85.74	22.546		
8,100.00	8,083.11	7,807.58	7,679.45	43.51	49.48	-74.82	812.95	-1,729.70	1,953.72	1,866.89	86.83	22.501		
8,200.00	8,183.11	7,905.27	7,774.89	44.04	50.16	-74.98	812.99	-1,750.57	1,974.39	1,886.47	87.91	22.458		
8,300.00	8,283.11	8,002.96	7,870.33	44.57	50.84	-75.14	813.04	-1,771.44	1,995.07	1,906.07	89.00	22.416		
8,400.00	8,383.11	8,100.65	7,965.76	45.10	51.53	-75.29	813.08	-1,792.31	2,015.77	1,925.68	90.09	22.375		
8,500.00	8,483.11	8,198.34	8,061.20	45.63	52.21	-75.44	813.12	-1,813.18	2,036.48	1,945.30	91.18	22.335		
8,600.00	8,583.11	8,296.03	8,156.63	46.17	52.89	-75.59	813.17	-1,834.05	2,057.20	1,964.93	92.27	22.296		
8,700.00	8,683.11	8,393.73	8,252.07	46.70	53.57	-75.74	813.21	-1,854.92	2,077.94	1,984.58	93.36	22.258		
8,800.00	8,783.11	8,491.42	8,347.51	47.23	54.26	-75.88	813.25	-1,875.79	2,098.69	2,004.24	94.45	22.221		
8,900.00	8,883.11	8,589.11	8,442.94	47.76	54.94	-76.02	813.30	-1,896.66	2,119.45	2,023.92	95.53	22.185		
9,000.00	8,983.11	8,686.80	8,538.38	48.29	55.62	-76.16	813.34	-1,917.53	2,140.22	2,043.60	96.62	22.150		
9,100.00	9,083.11	8,777.35	8,624.44	48.82	57.50	-76.48	813.45	-1,967.73	2,157.87	2,059.10	98.78	21.846		
9,200.00	9,182.98	9,336.79	9,182.98	49.36	59.34	-76.21	813.49	-1,989.55	2,162.72	2,061.44	101.28	21.353		
9,300.00	9,280.93	9,434.74	9,280.93	49.93	59.76	-77.15	813.49	-1,989.55	2,158.13	2,055.79	102.34	21.088		
9,400.00	9,374.01	9,500.00	9,346.19	50.51	60.05	-78.49	813.80	-1,989.55	2,150.30	2,047.18	103.12	20.853		
9,500.00	9,459.39	9,550.00	9,396.02	51.11	60.26	-79.95	817.63	-1,989.59	2,141.23	2,037.42	103.81	20.627		
9,600.00	9,534.47	9,600.00	9,445.34	51.72	60.48	-81.56	825.78	-1,989.67	2,131.72	2,027.17	104.55	20.390		
9,700.00	9,596.97	9,659.03	9,502.38	52.35	60.72	-83.42	840.89	-1,989.82	2,122.34	2,016.94	105.40	20.137		
9,800.00	9,644.99	9,709.93	9,550.09	53.00	60.93	-85.17	858.57	-1,990.00	2,113.79	2,007.54	106.25	19.894		
9,900.00	9,677.08	9,760.99	9,596.18	53.67	61.12	-86.87	880.49	-1,990.22	2,106.73	1,999.62	107.10	19.670		
10,000.00	9,692.26	9,812.29	9,640.34	54.34	61.30	-88.45	906.55	-1,990.48	2,101.82	1,993.90	107.92	19.476		
10,100.00	9,691.40	9,865.02	9,683.12	55.05	61.47	-89.79	937.35	-1,990.79	2,099.73	1,991.00	108.73	19.312		
10,116.18	9,690.74	9,874.53	9,690.53	55.18	61.50	-89.99	943.32	-1,990.85	2,099.69	1,990.82	108.87	19.286		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 27H - OH - Plan 2 11-17-16												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		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	9,687.32	9,931.42	9,732.67	55.83	61.67	-91.19	981.51	-1,991.23	2,100.68	1,991.07	109.60	19.166	
10,300.00	9,683.23	10,019.94	9,790.15	56.69	61.90	-92.83	1,048.71	-1,991.90	2,103.88	1,993.35	110.53	19.034	
10,400.00	9,679.15	10,136.86	9,848.99	57.61	62.16	-94.53	1,149.50	-1,992.91	2,107.99	1,996.45	111.54	18.899	
10,500.00	9,675.07	10,283.42	9,891.96	58.59	62.47	-95.85	1,289.20	-1,994.31	2,111.24	1,998.48	112.76	18.723	
10,600.00	9,670.98	10,419.40	9,900.58	59.64	62.83	-96.23	1,424.69	-1,995.66	2,112.27	1,997.98	114.28	18.483	
10,700.00	9,666.90	10,519.28	9,901.35	60.75	63.17	-96.36	1,524.57	-1,996.66	2,112.81	1,996.96	115.85	18.238	
10,800.00	9,662.81	10,619.16	9,902.12	61.92	63.59	-96.49	1,624.44	-1,997.66	2,113.37	1,995.82	117.55	17.979	
10,900.00	9,658.73	10,719.05	9,902.89	63.13	64.09	-96.62	1,724.31	-1,998.66	2,113.94	1,994.56	119.37	17.709	
11,000.00	9,654.64	10,818.93	9,903.65	64.40	64.67	-96.76	1,824.19	-1,999.66	2,114.51	1,993.20	121.31	17.430	
11,100.00	9,650.56	10,918.81	9,904.42	65.71	65.32	-96.89	1,924.06	-2,000.66	2,115.10	1,991.73	123.37	17.144	
11,200.00	9,646.47	11,018.69	9,905.19	67.07	66.06	-97.02	2,023.94	-2,001.66	2,115.70	1,990.16	125.54	16.853	
11,300.00	9,642.39	11,118.58	9,905.95	68.46	66.86	-97.15	2,123.81	-2,002.66	2,116.31	1,988.50	127.81	16.558	
11,400.00	9,638.30	11,218.46	9,906.72	69.90	67.74	-97.28	2,223.69	-2,003.66	2,116.94	1,986.76	130.18	16.262	
11,500.00	9,634.22	11,318.34	9,907.49	71.37	68.68	-97.41	2,323.56	-2,004.65	2,117.57	1,984.93	132.64	15.965	
11,600.00	9,630.13	11,418.22	9,908.25	72.88	69.68	-97.54	2,423.43	-2,005.65	2,118.21	1,983.03	135.19	15.669	
11,700.00	9,626.05	11,518.10	9,909.02	74.42	70.74	-97.67	2,523.31	-2,006.65	2,118.87	1,981.05	137.82	15.374	
11,800.00	9,621.96	11,617.99	9,909.79	75.99	71.86	-97.80	2,623.18	-2,007.65	2,119.54	1,979.01	140.53	15.082	
11,900.00	9,617.88	11,717.87	9,910.56	77.59	73.03	-97.93	2,723.06	-2,008.65	2,120.21	1,976.90	143.31	14.794	
12,000.00	9,613.79	11,817.75	9,911.32	79.21	74.24	-98.05	2,822.93	-2,009.65	2,120.90	1,974.73	146.17	14.510	
12,100.00	9,609.71	11,917.63	9,912.09	80.86	75.51	-98.18	2,922.81	-2,010.65	2,121.60	1,972.52	149.08	14.231	
12,200.00	9,605.63	12,017.52	9,912.86	82.54	76.81	-98.31	3,022.68	-2,011.65	2,122.31	1,970.25	152.06	13.957	
12,300.00	9,601.54	12,117.40	9,913.62	84.23	78.16	-98.44	3,122.55	-2,012.65	2,123.03	1,967.93	155.10	13.688	
12,400.00	9,597.46	12,217.29	9,914.39	85.95	79.54	-98.57	3,222.44	-2,013.65	2,123.72	1,965.51	158.21	13.423	
12,500.00	9,593.38	12,317.17	9,915.16	87.68	80.96	-98.62	3,322.31	-2,014.65	2,124.40	1,962.52	161.48	13.154	
12,600.00	9,589.29	12,417.06	9,915.93	89.42	82.41	-98.67	3,422.20	-2,015.65	2,125.09	1,959.17	164.75	12.892	
12,700.00	9,585.21	12,516.94	9,916.69	91.19	83.90	-98.72	3,522.09	-2,016.65	2,125.78	1,955.78	168.07	12.637	
12,800.00	9,581.13	12,616.83	9,917.46	92.97	85.42	-98.77	3,622.00	-2,017.65	2,126.47	1,952.34	171.42	12.389	
12,900.00	9,577.05	12,716.71	9,918.23	94.77	86.96	-98.82	3,722.37	-2,018.65	2,127.16	1,948.86	174.82	12.148	
13,000.00	9,572.97	12,816.60	9,919.00	96.58	88.53	-98.87	3,822.36	-2,019.65	2,127.85	1,945.34	178.26	11.913	
13,100.00	9,568.89	12,916.48	9,919.77	98.40	90.12	-98.92	3,922.35	-2,020.65	2,128.54	1,941.79	181.73	11.685	
13,200.00	9,564.81	13,016.37	9,920.53	100.24	91.74	-98.97	4,022.34	-2,021.65	2,129.23	1,938.20	185.24	11.463	
13,300.00	9,560.73	13,116.25	9,921.30	102.09	93.38	-99.02	4,122.33	-2,022.65	2,129.92	1,934.57	188.78	11.248	
13,400.00	9,556.65	13,216.14	9,922.07	103.96	95.04	-99.07	4,222.32	-2,023.65	2,130.61	1,930.92	192.36	11.038	
13,500.00	9,552.57	13,316.02	9,922.84	105.83	96.73	-99.12	4,322.31	-2,024.65	2,131.30	1,927.24	195.96	10.835	
13,600.00	9,548.49	13,415.91	9,923.61	107.72	98.43	-99.17	4,422.30	-2,025.65	2,131.99	1,923.53	199.59	10.637	
13,700.00	9,544.41	13,515.79	9,924.37	109.61	100.15	-99.22	4,522.29	-2,026.65	2,132.68	1,919.79	203.25	10.446	
13,800.00	9,540.33	13,615.68	9,925.14	111.52	101.88	-99.27	4,622.28	-2,027.65	2,133.37	1,916.03	206.93	10.259	
13,900.00	9,536.25	13,715.56	9,925.91	113.43	103.63	-99.32	4,722.27	-2,028.65	2,134.06	1,912.24	210.64	10.078	
14,000.00	9,532.17	13,815.45	9,926.68	115.36	105.40	-99.37	4,822.26	-2,029.65	2,134.75	1,908.43	214.36	9.903	
14,100.00	9,528.09	13,915.33	9,927.45	117.29	107.18	-99.42	4,922.25	-2,030.65	2,135.44	1,904.60	218.11	9.732	
14,200.00	9,524.01	14,015.22	9,928.21	119.23	108.98	-99.47	5,022.25	-2,031.65	2,136.13	1,900.75	221.88	9.566	
14,300.00	9,519.93	14,115.10	9,928.98	121.18	110.78	-99.52	5,122.24	-2,032.65	2,136.82	1,896.88	225.67	9.405	
14,400.00	9,515.85	14,215.00	9,929.75	123.13	112.61	-99.57	5,222.23	-2,033.65	2,137.51	1,893.00	229.48	9.249	
14,500.00	9,511.77	14,314.88	9,930.52	125.09	114.44	-99.62	5,322.22	-2,034.65	2,138.20	1,889.09	233.31	9.097	
14,600.00	9,507.69	14,414.77	9,931.29	127.06	116.28	-99.67	5,422.21	-2,035.65	2,138.89	1,885.17	237.15	8.949	
14,700.00	9,503.61	14,514.65	9,932.05	129.03	118.14	-99.72	5,522.20	-2,036.65	2,139.58	1,881.24	241.01	8.806	
14,800.00	9,499.53	14,614.54	9,932.82	131.01	120.00	-99.77	5,622.19	-2,037.65	2,140.27	1,877.28	244.88	8.666	
14,900.00	9,495.45	14,714.42	9,933.59	132.99	121.88	-99.82	5,722.18	-2,038.65	2,140.96	1,873.32	248.77	8.530	
15,000.00	9,491.37	14,814.31	9,934.36	134.98	123.76	-99.87	5,822.17	-2,039.65	2,141.65	1,869.34	252.67	8.398	
15,100.00	9,487.29	14,914.20	9,935.13	136.98	125.78	-99.92	5,922.16	-2,040.65	2,142.34	1,865.36	256.54	8.276	
15,200.00	9,483.21	15,014.08	9,935.90	138.97	128.02	-99.97	6,022.15	-2,041.65	2,143.03	1,861.37	260.46	8.162	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 P5 - 27H - OH - Plan 2 11-17-16														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)							
15,300.00	9,634.58	15,142.47	9,939.39	140.97	129.92	-98.26	6,147.36	-2,040.06	2,122.40	1,857.82	264.57	8.022			
15,400.00	9,636.09	15,242.47	9,941.39	142.98	131.83	-98.27	6,247.34	-2,039.68	2,122.46	1,853.97	268.49	7.905			
15,500.00	9,637.61	15,342.47	9,943.39	144.98	133.75	-98.28	6,347.32	-2,039.30	2,122.53	1,850.11	272.42	7.791			
15,600.00	9,639.12	15,442.47	9,945.38	147.00	135.67	-98.30	6,447.30	-2,038.92	2,122.60	1,846.24	276.36	7.680			
15,700.00	9,640.63	15,542.47	9,947.38	149.01	137.60	-98.31	6,547.28	-2,038.54	2,122.67	1,842.36	280.31	7.573			
15,800.00	9,642.15	15,642.47	9,949.38	151.03	139.54	-98.32	6,647.25	-2,038.16	2,122.74	1,838.47	284.27	7.467			
15,900.00	9,643.66	15,742.47	9,951.38	153.06	141.48	-98.34	6,747.23	-2,037.78	2,122.81	1,834.57	288.24	7.365			
16,000.00	9,645.17	15,842.46	9,953.38	155.08	143.43	-98.35	6,847.21	-2,037.40	2,122.87	1,830.66	292.21	7.265			
16,100.00	9,646.69	15,942.46	9,955.38	157.11	145.38	-98.36	6,947.19	-2,037.02	2,122.94	1,826.75	296.20	7.167			
16,200.00	9,648.20	16,042.46	9,957.38	159.15	147.34	-98.38	7,047.17	-2,036.64	2,123.01	1,822.82	300.19	7.072			
16,300.00	9,649.71	16,142.46	9,959.37	161.18	149.31	-98.39	7,147.14	-2,036.26	2,123.08	1,818.89	304.19	6.980			
16,400.00	9,651.23	16,242.46	9,961.37	163.22	151.28	-98.40	7,247.12	-2,035.88	2,123.15	1,814.96	308.19	6.889			
16,500.00	9,652.74	16,342.46	9,963.37	165.27	153.25	-98.41	7,347.10	-2,035.50	2,123.22	1,811.01	312.20	6.801			
16,600.00	9,654.25	16,442.46	9,965.37	167.31	155.23	-98.43	7,447.08	-2,035.12	2,123.29	1,807.06	316.22	6.715			
16,700.00	9,655.77	16,542.46	9,967.37	169.36	157.22	-98.44	7,547.06	-2,034.74	2,123.36	1,803.11	320.25	6.630			
16,800.00	9,657.28	16,642.46	9,969.37	171.41	159.21	-98.45	7,647.04	-2,034.36	2,123.43	1,799.15	324.28	6.548			
16,900.00	9,658.79	16,742.45	9,971.37	173.47	161.20	-98.47	7,747.01	-2,033.98	2,123.50	1,795.18	328.32	6.468			
17,000.00	9,660.31	16,842.45	9,973.36	175.52	163.20	-98.48	7,846.99	-2,033.60	2,123.56	1,791.21	332.36	6.389			
17,100.00	9,661.82	16,942.45	9,975.36	177.58	165.20	-98.49	7,946.97	-2,033.22	2,123.63	1,787.23	336.41	6.313			
17,200.00	9,663.33	17,042.45	9,977.36	179.64	167.20	-98.51	8,046.95	-2,032.84	2,123.70	1,783.24	340.46	6.238			
17,300.00	9,664.85	17,142.45	9,979.36	181.70	169.21	-98.52	8,146.93	-2,032.46	2,123.77	1,779.26	344.52	6.164			
17,400.00	9,666.36	17,242.45	9,981.36	183.77	171.22	-98.53	8,246.90	-2,032.08	2,123.84	1,775.26	348.58	6.093			
17,500.00	9,667.87	17,342.45	9,983.36	185.83	173.24	-98.54	8,346.88	-2,031.70	2,123.91	1,771.27	352.65	6.023			
17,600.00	9,669.39	17,442.45	9,985.36	187.90	175.26	-98.56	8,446.86	-2,031.32	2,123.98	1,767.27	356.72	5.954			
17,700.00	9,670.90	17,542.44	9,987.35	189.97	177.28	-98.57	8,546.84	-2,030.94	2,124.05	1,763.26	360.79	5.887			
17,800.00	9,672.44	17,642.44	9,989.35	192.04	179.30	-98.58	8,646.82	-2,030.56	2,124.11	1,759.23	364.88	5.821			
17,900.00	9,674.07	17,742.44	9,991.35	194.12	181.33	-98.59	8,746.80	-2,030.18	2,124.14	1,755.17	368.97	5.757			
18,000.00	9,675.70	17,842.44	9,993.35	196.19	183.36	-98.60	8,846.77	-2,029.80	2,124.17	1,751.11	373.06	5.694			
18,100.00	9,677.33	17,942.44	9,995.35	198.27	185.40	-98.61	8,946.75	-2,029.42	2,124.20	1,747.04	377.16	5.632			
18,200.00	9,678.96	18,042.44	9,997.35	200.35	187.43	-98.62	9,046.73	-2,029.04	2,124.22	1,742.97	381.25	5.572			
18,300.00	9,680.59	18,142.44	9,999.35	202.43	189.47	-98.63	9,146.71	-2,028.66	2,124.25	1,738.90	385.35	5.512			
18,400.00	9,682.22	18,242.44	10,001.34	204.51	191.51	-98.64	9,246.69	-2,028.28	2,124.28	1,734.82	389.46	5.454			
18,500.00	9,683.84	18,342.44	10,003.34	206.60	193.56	-98.65	9,346.67	-2,027.90	2,124.31	1,730.74	393.57	5.398			
18,600.00	9,685.47	18,442.44	10,005.34	208.68	195.60	-98.66	9,446.65	-2,027.52	2,124.33	1,726.66	397.68	5.342			
18,700.00	9,687.10	18,542.44	10,007.34	210.77	197.65	-98.67	9,546.62	-2,027.14	2,124.36	1,722.57	401.79	5.287			
18,800.00	9,688.73	18,642.44	10,009.34	212.86	199.70	-98.68	9,646.60	-2,026.76	2,124.39	1,718.48	405.91	5.234			
18,900.00	9,690.36	18,742.44	10,011.34	214.94	201.75	-98.69	9,746.58	-2,026.38	2,124.42	1,714.39	410.03	5.181			
19,000.00	9,691.99	18,842.44	10,013.34	217.03	203.81	-98.70	9,846.56	-2,026.00	2,124.45	1,710.29	414.15	5.130			
19,100.00	9,693.62	18,942.44	10,015.34	219.13	205.86	-98.71	9,946.54	-2,025.62	2,124.47	1,706.20	418.28	5.079			
19,200.00	9,695.25	19,042.43	10,017.33	221.22	207.92	-98.72	10,046.52	-2,025.24	2,124.50	1,702.10	422.40	5.030			
19,300.00	9,696.87	19,142.43	10,019.33	223.31	209.98	-98.73	10,146.50	-2,024.86	2,124.53	1,697.99	426.53	4.981			
19,400.00	9,698.50	19,242.43	10,021.33	225.41	212.05	-98.74	10,246.47	-2,024.48	2,124.56	1,693.89	430.67	4.933			
19,500.00	9,700.13	19,342.43	10,023.33	227.50	214.11	-98.75	10,346.45	-2,024.10	2,124.59	1,689.78	434.80	4.886			
19,600.00	9,701.76	19,442.43	10,025.33	229.60	216.17	-98.76	10,446.43	-2,023.72	2,124.61	1,685.67	438.94	4.840			
19,700.00	9,703.39	19,542.43	10,027.33	231.70	218.24	-98.77	10,546.41	-2,023.34	2,124.64	1,681.56	443.08	4.795			
19,800.00	9,705.02	19,642.43	10,029.33	233.80	220.31	-98.78	10,646.39	-2,022.96	2,124.67	1,677.45	447.22	4.751			
19,900.00	9,706.65	19,742.43	10,031.32	235.90	222.38	-98.79	10,746.37	-2,022.58	2,124.70	1,673.33	451.37	4.707			
20,000.00	9,708.28	19,842.43	10,033.32	238.00	224.45	-98.80	10,846.35	-2,022.20	2,124.73	1,669.22	455.51	4.664			
20,044.41	9,709.00	19,886.83	10,034.21	238.80	225.37	-98.81	10,890.74	-2,022.03	2,124.74	1,667.53	457.21	4.647 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 28H - OH - Plan 2 11-17-16												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	8.00	0.00	0.00	-29.70	785.27	-447.86	904.04				
100.00	100.00	92.00	100.00	0.19	0.18	-29.70	785.27	-447.86	904.01	903.64	0.37	2,432.326	
200.00	200.00	192.00	200.00	0.73	0.69	-29.70	785.27	-447.86	904.01	902.59	1.42	636.828	
300.00	300.00	292.00	300.00	1.27	1.23	-29.70	785.27	-447.86	904.01	901.51	2.49	362.333	
400.00	400.00	392.00	400.00	1.81	1.76	-29.70	785.27	-447.86	904.01	900.44	3.57	253.197	
500.00	500.00	492.00	500.00	2.34	2.30	-29.70	785.27	-447.86	904.01	899.36	4.65	194.586	
600.00	600.00	592.00	600.00	2.88	2.84	-29.70	785.27	-447.86	904.01	898.29	5.72	158.010	
700.00	699.98	691.98	699.98	3.42	3.38	-50.03	785.27	-447.86	902.89	896.09	6.80	132.815	
800.00	799.84	791.84	799.84	3.96	3.91	-50.34	785.27	-447.86	899.53	891.66	7.88	114.217	
900.00	899.45	891.45	899.45	4.50	4.45	-50.86	785.27	-447.86	893.99	885.03	8.95	99.858	
1,000.00	998.90	990.90	998.90	5.05	4.98	-51.38	785.27	-447.86	887.41	877.38	10.03	88.487	
1,100.00	1,098.36	1,090.36	1,098.36	5.60	5.52	-51.91	785.27	-447.86	880.90	869.79	11.11	79.293	
1,200.00	1,197.81	1,189.81	1,197.81	6.15	6.05	-52.44	785.27	-447.86	874.47	862.28	12.19	71.714	
1,300.00	1,297.26	1,289.26	1,297.26	6.71	6.59	-52.99	785.27	-447.86	868.12	854.84	13.28	65.366	
1,400.00	1,396.72	1,388.72	1,396.72	7.27	7.12	-53.54	785.27	-447.86	861.85	847.48	14.37	59.974	
1,500.00	1,496.17	1,488.17	1,496.17	7.84	7.66	-54.10	785.27	-447.86	855.66	840.20	15.46	55.340	
1,600.00	1,595.62	1,575.14	1,583.14	8.40	8.12	-54.65	785.27	-448.84	850.20	833.72	16.48	51.596	
1,700.00	1,695.07	1,660.13	1,668.04	8.97	8.56	-55.34	785.25	-452.33	846.52	829.04	17.48	48.434	
1,800.00	1,794.53	1,744.65	1,752.35	9.53	9.00	-56.16	785.22	-458.30	844.71	826.23	18.48	45.716	
1,841.20	1,835.51	1,779.30	1,786.86	9.77	9.18	-56.54	785.20	-461.46	844.54	825.65	18.89	44.708 CC	
1,900.00	1,893.98	1,828.56	1,835.84	10.10	9.44	-57.11	785.18	-466.68	844.90	825.42	19.48	43.372 ES	
2,000.00	1,993.43	1,911.72	1,918.31	10.67	9.88	-58.18	785.12	-477.39	847.19	826.70	20.49	41.356	
2,100.00	2,092.89	1,997.33	2,002.83	11.24	10.34	-59.41	785.05	-490.92	851.71	830.20	21.51	39.593	
2,200.00	2,192.34	2,090.71	2,094.82	11.81	10.86	-60.80	784.97	-507.05	857.73	835.14	22.59	37.973	
2,300.00	2,291.79	2,188.04	2,190.68	12.38	11.41	-62.23	784.88	-523.86	864.33	840.64	23.69	36.483	
2,400.00	2,391.24	2,285.36	2,286.54	12.95	11.97	-63.64	784.79	-540.67	871.49	846.69	24.80	35.141	
2,500.00	2,490.70	2,382.69	2,382.40	13.52	12.54	-65.03	784.71	-557.48	879.19	853.28	25.91	33.930	
2,600.00	2,590.15	2,480.01	2,478.26	14.09	13.11	-66.39	784.62	-574.29	887.42	860.39	27.03	32.835	
2,700.00	2,689.60	2,577.34	2,574.13	14.66	13.68	-67.73	784.53	-591.10	896.16	868.01	28.14	31.843	
2,800.00	2,789.06	2,674.66	2,669.99	15.23	14.27	-69.05	784.44	-607.91	905.40	876.14	29.26	30.943	
2,900.00	2,888.51	2,771.99	2,765.85	15.80	14.85	-70.33	784.36	-624.72	915.12	884.74	30.38	30.124	
3,000.00	2,987.96	2,869.31	2,861.71	16.37	15.44	-71.60	784.27	-641.53	925.31	893.81	31.50	29.378	
3,100.00	3,087.41	2,966.64	2,957.58	16.94	16.03	-72.83	784.18	-658.34	935.95	903.34	32.61	28.697	
3,200.00	3,186.87	3,063.96	3,053.44	17.51	16.63	-74.04	784.10	-675.15	947.04	913.30	33.73	28.075	
3,300.00	3,286.32	3,161.29	3,149.30	18.08	17.22	-75.22	784.01	-691.96	958.54	923.69	34.85	27.506	
3,400.00	3,385.77	3,258.61	3,245.16	18.66	17.82	-76.37	783.92	-708.77	970.45	934.49	35.96	26.984	
3,500.00	3,485.23	3,355.94	3,341.02	19.23	18.43	-77.49	783.84	-725.59	982.76	945.68	37.08	26.504	
3,600.00	3,584.68	3,453.26	3,436.89	19.80	19.03	-78.59	783.75	-742.40	995.44	957.25	38.19	26.064	
3,700.00	3,684.13	3,550.59	3,532.75	20.37	19.63	-79.66	783.66	-759.21	1,008.49	969.19	39.31	25.658	
3,800.00	3,783.59	3,647.92	3,628.62	20.94	20.24	-80.74	783.57	-776.02	1,021.89	981.48	40.41	25.285	
3,900.00	3,883.24	3,745.57	3,724.80	21.50	20.85	-81.92	783.49	-792.89	1,035.94	994.43	41.50	24.959	
4,000.00	3,983.12	3,843.66	3,821.42	22.04	21.47	-82.91	783.40	-809.83	1,050.67	1,008.09	42.58	24.676	
4,100.00	4,083.11	3,942.07	3,918.34	22.56	22.08	-83.44	783.31	-826.83	1,065.95	1,022.30	43.65	24.422	
4,200.00	4,183.11	4,040.57	4,015.36	23.07	22.70	-83.85	783.22	-843.84	1,081.43	1,036.72	44.71	24.187	
4,300.00	4,283.11	4,139.06	4,112.38	23.58	23.32	-84.25	783.14	-860.85	1,096.97	1,051.19	45.78	23.963	
4,400.00	4,383.11	4,237.56	4,209.39	24.10	23.95	-84.64	783.05	-877.86	1,112.56	1,065.71	46.84	23.750	
4,500.00	4,483.11	4,336.06	4,306.41	24.61	24.57	-85.02	782.96	-894.88	1,128.20	1,080.28	47.91	23.547	
4,600.00	4,583.11	4,434.55	4,403.43	25.13	25.19	-85.39	782.87	-911.89	1,143.88	1,094.90	48.98	23.353	
4,700.00	4,683.11	4,533.05	4,500.44	25.64	25.82	-85.75	782.78	-928.90	1,159.61	1,109.56	50.05	23.168	
4,800.00	4,783.11	4,631.55	4,597.46	26.16	26.44	-86.10	782.70	-945.92	1,175.38	1,124.26	51.12	22.992	
4,900.00	4,883.11	4,730.04	4,694.48	26.68	27.07	-86.44	782.61	-962.93	1,191.20	1,139.01	52.19	22.823	
5,000.00	4,983.11	4,828.54	4,791.49	27.20	27.69	-86.77	782.52	-979.94	1,207.05	1,153.79	53.26	22.662	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 28H - OH - Plan 2 11-17-16													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)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,083.11	4,927.04	4,888.51	27.72	28.32	-67.09	782.43	-996.96	1,222.95	1,168.61	54.34	22.507	
5,200.00	5,183.11	5,025.53	4,985.52	28.24	28.95	-67.40	782.34	-1,013.97	1,238.88	1,183.47	55.41	22.359	
5,300.00	5,283.11	5,124.03	5,082.54	28.76	29.57	-67.71	782.26	-1,030.98	1,254.85	1,198.36	56.48	22.216	
5,400.00	5,383.11	5,222.53	5,179.56	29.28	30.20	-68.01	782.17	-1,048.00	1,270.85	1,213.29	57.56	22.080	
5,500.00	5,483.11	5,321.03	5,276.57	29.80	30.83	-68.30	782.08	-1,065.01	1,286.88	1,228.25	58.63	21.949	
5,600.00	5,583.11	5,419.52	5,373.59	30.32	31.46	-68.58	781.99	-1,082.02	1,302.94	1,243.24	59.71	21.823	
5,700.00	5,683.11	5,518.02	5,470.61	30.85	32.09	-68.86	781.90	-1,099.03	1,319.04	1,258.26	60.78	21.701	
5,800.00	5,783.11	5,659.13	5,609.86	31.37	32.97	-69.22	781.79	-1,121.76	1,334.28	1,272.19	62.09	21.490	
5,900.00	5,883.11	5,835.74	5,785.41	31.90	34.00	-69.51	781.69	-1,140.90	1,344.42	1,280.84	63.57	21.147	
6,000.00	5,983.11	6,014.06	5,963.50	32.42	34.93	-69.64	781.64	-1,149.21	1,348.78	1,283.74	65.04	20.738	
6,100.00	6,083.11	6,133.66	6,083.11	32.95	35.51	-69.65	781.64	-1,149.56	1,348.96	1,282.80	66.17	20.388	
6,200.00	6,183.11	6,233.66	6,183.11	33.47	35.98	-69.65	781.64	-1,149.56	1,348.96	1,281.77	67.19	20.077	
6,300.00	6,283.11	6,333.66	6,283.11	34.00	36.46	-69.65	781.64	-1,149.56	1,348.96	1,280.75	68.22	19.774	
6,400.00	6,383.11	6,433.66	6,383.11	34.52	36.94	-69.65	781.64	-1,149.56	1,348.96	1,279.72	69.25	19.481	
6,500.00	6,483.11	6,533.66	6,483.11	35.05	37.42	-69.65	781.64	-1,149.56	1,348.96	1,278.69	70.28	19.195	
6,600.00	6,583.11	6,633.66	6,583.11	35.58	37.90	-69.65	781.64	-1,149.56	1,348.96	1,277.66	71.31	18.918	
6,700.00	6,683.11	6,733.66	6,683.11	36.10	38.39	-69.65	781.64	-1,149.56	1,348.96	1,276.63	72.34	18.648	
6,800.00	6,783.11	6,833.66	6,783.11	36.63	38.87	-69.65	781.64	-1,149.56	1,348.96	1,275.59	73.37	18.385	
6,900.00	6,883.11	6,933.66	6,883.11	37.16	39.36	-69.65	781.64	-1,149.56	1,348.96	1,274.56	74.41	18.130	
7,000.00	6,983.11	7,033.66	6,983.11	37.69	39.85	-69.65	781.64	-1,149.56	1,348.96	1,273.52	75.44	17.881	
7,100.00	7,083.11	7,133.66	7,083.11	38.21	40.34	-69.65	781.64	-1,149.56	1,348.96	1,272.48	76.48	17.638	
7,200.00	7,183.11	7,233.66	7,183.11	38.74	40.83	-69.65	781.64	-1,149.56	1,348.96	1,271.45	77.52	17.402	
7,300.00	7,283.11	7,333.66	7,283.11	39.27	41.32	-69.65	781.64	-1,149.56	1,348.96	1,270.41	78.56	17.172	
7,400.00	7,383.11	7,433.66	7,383.11	39.80	41.82	-69.65	781.64	-1,149.56	1,348.96	1,269.37	79.60	16.948	
7,500.00	7,483.11	7,533.66	7,483.11	40.33	42.31	-69.65	781.64	-1,149.56	1,348.96	1,268.33	80.64	16.729	
7,600.00	7,583.11	7,633.66	7,583.11	40.86	42.81	-69.65	781.64	-1,149.56	1,348.96	1,267.28	81.68	16.515	
7,700.00	7,683.11	7,733.66	7,683.11	41.39	43.30	-69.65	781.64	-1,149.56	1,348.96	1,266.24	82.72	16.307	
7,800.00	7,783.11	7,833.66	7,783.11	41.92	43.80	-69.65	781.64	-1,149.56	1,348.96	1,265.20	83.77	16.104	
7,900.00	7,883.11	7,933.66	7,883.11	42.45	44.30	-69.65	781.64	-1,149.56	1,348.96	1,264.15	84.81	15.906	
8,000.00	7,983.11	8,033.66	7,983.11	42.98	44.80	-69.65	781.64	-1,149.56	1,348.96	1,263.11	85.85	15.712	
8,100.00	8,083.11	8,133.66	8,083.11	43.51	45.30	-69.65	781.64	-1,149.56	1,348.96	1,262.06	86.90	15.523	
8,200.00	8,183.11	8,233.66	8,183.11	44.04	45.80	-69.65	781.64	-1,149.56	1,348.96	1,261.02	87.95	15.338	
8,300.00	8,283.11	8,333.66	8,283.11	44.57	46.30	-69.65	781.64	-1,149.56	1,348.96	1,259.97	88.99	15.158	
8,400.00	8,383.11	8,433.66	8,383.11	45.10	46.80	-69.65	781.64	-1,149.56	1,348.96	1,258.92	90.04	14.982	
8,500.00	8,483.11	8,533.66	8,483.11	45.63	47.31	-69.65	781.64	-1,149.56	1,348.96	1,257.87	91.09	14.809	
8,600.00	8,583.11	8,633.66	8,583.11	46.17	47.81	-69.65	781.64	-1,149.56	1,348.96	1,256.82	92.14	14.641	
8,700.00	8,683.11	8,733.66	8,683.11	46.70	48.31	-69.65	781.64	-1,149.56	1,348.96	1,255.78	93.19	14.476	
8,800.00	8,783.11	8,833.66	8,783.11	47.23	48.82	-69.65	781.64	-1,149.56	1,348.96	1,254.72	94.24	14.314	
8,900.00	8,883.11	8,933.66	8,883.11	47.76	49.33	-69.65	781.64	-1,149.56	1,348.96	1,253.67	95.29	14.156	
9,000.00	8,983.11	9,033.66	8,983.11	48.29	49.83	-69.65	781.64	-1,149.56	1,348.96	1,252.62	96.34	14.002	
9,100.00	9,083.11	9,133.66	9,083.11	48.82	50.34	-69.65	781.64	-1,149.56	1,348.96	1,251.57	97.39	13.851	
9,200.00	9,182.98	9,233.54	9,182.98	49.36	50.85	-69.33	781.64	-1,149.56	1,347.75	1,249.26	98.49	13.685	
9,300.00	9,280.93	9,331.49	9,280.93	49.93	51.35	-70.73	781.64	-1,149.56	1,340.95	1,241.58	99.37	13.494	
9,400.00	9,374.01	9,424.57	9,374.01	50.51	51.82	-73.26	781.64	-1,149.56	1,329.00	1,228.87	100.13	13.273	
9,500.00	9,459.39	9,482.72	9,432.13	51.11	52.12	-75.91	783.17	-1,149.57	1,314.16	1,213.36	100.80	13.037	
9,600.00	9,534.47	9,534.11	9,483.14	51.72	52.38	-78.64	789.21	-1,149.63	1,299.21	1,197.58	101.62	12.784	
9,700.00	9,596.97	9,585.70	9,533.61	52.35	52.63	-81.47	799.85	-1,149.74	1,285.23	1,182.60	102.64	12.522	
9,800.00	9,644.99	9,637.57	9,583.17	53.00	52.88	-84.28	815.08	-1,149.89	1,273.34	1,169.61	103.73	12.276	
9,900.00	9,677.08	9,689.84	9,631.52	53.67	53.12	-86.93	834.90	-1,150.09	1,264.67	1,159.89	104.78	12.070	
10,000.00	9,692.26	9,742.70	9,678.37	54.34	53.34	-89.30	859.33	-1,150.33	1,260.34	1,154.63	105.71	11.923	
10,033.14	9,693.84	9,760.71	9,693.80	54.58	53.42	-90.00	868.63	-1,150.42	1,260.04	1,154.04	106.00	11.887	
10,100.00	9,691.40	9,797.74	9,724.55	55.05	53.56	-91.42	889.24	-1,150.63	1,261.32	1,154.78	106.54	11.838	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 28H - OH - Plan 2 11-17-16													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		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
10,200.00	9,687.32	9,870.16	9,780.54	55.83	53.82	-94.04	935.09	-1,151.08	1,267.46	1,160.14	107.32	11.810	
10,300.00	9,683.23	9,972.57	9,848.91	56.69	54.14	-97.26	1,011.14	-1,151.84	1,276.94	1,169.00	107.94	11.830	
10,400.00	9,679.15	10,116.17	9,919.76	57.61	54.53	-100.62	1,135.62	-1,153.07	1,286.68	1,178.26	108.42	11.868	
10,500.00	9,675.07	10,301.59	9,961.91	58.59	55.12	-102.78	1,315.35	-1,154.86	1,292.45	1,183.13	109.32	11.823	
10,600.00	9,670.98	10,421.43	9,963.20	59.64	55.64	-103.05	1,435.15	-1,156.05	1,293.51	1,182.74	110.77	11.677	
10,700.00	9,666.90	10,521.35	9,963.13	60.75	56.17	-103.22	1,535.06	-1,157.04	1,294.43	1,182.12	112.31	11.525	
10,800.00	9,662.81	10,621.27	9,963.06	61.92	56.79	-103.39	1,634.98	-1,158.03	1,295.36	1,181.37	113.98	11.364	
10,900.00	9,658.73	10,721.19	9,962.99	63.13	57.50	-103.56	1,734.89	-1,159.02	1,296.30	1,180.52	115.78	11.196	
11,000.00	9,654.64	10,821.11	9,962.92	64.40	58.27	-103.74	1,834.80	-1,160.02	1,297.25	1,179.56	117.69	11.022	
11,100.00	9,650.56	10,921.03	9,962.85	65.71	59.12	-103.91	1,934.72	-1,161.01	1,298.22	1,178.50	119.72	10.844	
11,200.00	9,646.47	11,020.95	9,962.78	67.07	60.03	-104.08	2,034.63	-1,162.00	1,299.19	1,177.34	121.86	10.662	
11,300.00	9,642.39	11,120.87	9,962.71	68.46	61.01	-104.25	2,134.55	-1,162.99	1,300.18	1,176.09	124.09	10.477	
11,400.00	9,638.30	11,220.78	9,962.64	69.90	62.05	-104.42	2,234.46	-1,163.98	1,301.18	1,174.76	126.43	10.292	
11,500.00	9,634.22	11,320.70	9,962.57	71.37	63.15	-104.59	2,334.38	-1,164.98	1,302.20	1,173.35	128.85	10.106	
11,600.00	9,630.13	11,420.62	9,962.50	72.88	64.30	-104.76	2,434.29	-1,165.97	1,303.22	1,171.86	131.35	9.921	
11,700.00	9,626.05	11,520.54	9,962.43	74.42	65.50	-104.93	2,534.21	-1,166.96	1,304.25	1,170.31	133.94	9.738	
11,800.00	9,621.96	11,620.46	9,962.36	75.99	66.74	-105.10	2,634.12	-1,167.95	1,305.30	1,168.70	136.60	9.555	
11,900.00	9,617.88	11,720.38	9,962.29	77.59	68.04	-105.27	2,734.03	-1,168.95	1,306.36	1,167.03	139.33	9.376	
12,000.00	9,613.79	11,820.30	9,962.22	79.21	69.38	-105.44	2,833.95	-1,169.94	1,307.43	1,165.30	142.13	9.199	
12,100.00	9,609.71	11,920.22	9,962.15	80.86	70.75	-105.61	2,933.86	-1,170.93	1,308.51	1,163.52	144.99	9.025	
12,200.00	9,605.63	12,020.14	9,962.08	82.54	72.17	-105.78	3,033.78	-1,171.92	1,309.60	1,161.70	147.90	8.855	
12,300.00	9,601.54	12,120.06	9,962.01	84.23	73.62	-105.95	3,133.69	-1,172.91	1,310.71	1,159.83	150.87	8.688	
12,400.00	9,597.46	12,219.99	9,961.94	85.95	75.11	-106.12	3,233.61	-1,173.91	1,311.75	1,157.84	153.91	8.523	
12,500.00	9,593.38	12,319.91	9,961.87	87.68	76.63	-106.29	3,333.53	-1,174.90	1,312.80	1,155.85	157.03	8.350	
12,600.00	9,589.29	12,419.84	9,961.80	89.42	78.18	-106.46	3,433.45	-1,175.89	1,313.84	1,153.86	160.21	8.177	
12,700.00	9,585.21	12,519.76	9,961.73	91.19	79.75	-106.63	3,533.37	-1,176.89	1,314.88	1,151.87	163.44	8.009	
12,800.00	9,581.13	12,619.69	9,961.66	92.97	81.36	-106.80	3,633.29	-1,177.88	1,315.92	1,149.88	166.71	7.846	
12,900.00	9,577.05	12,719.61	9,961.59	94.77	82.99	-106.97	3,733.21	-1,178.87	1,316.96	1,147.89	170.03	7.687	
13,000.00	9,572.97	12,819.54	9,961.52	96.58	84.64	-107.14	3,833.13	-1,179.86	1,318.00	1,145.90	173.39	7.533	
13,100.00	9,568.89	12,919.46	9,961.45	98.40	86.32	-107.31	3,933.05	-1,180.86	1,319.04	1,143.91	176.79	7.383	
13,200.00	9,564.81	13,019.39	9,961.38	100.24	88.01	-107.48	4,033.00	-1,181.85	1,320.08	1,141.92	180.24	7.238	
13,300.00	9,560.73	13,119.31	9,961.31	102.09	89.73	-107.65	4,133.48	-1,182.84	1,321.12	1,139.93	183.75	7.097	
13,400.00	9,556.65	13,219.24	9,961.24	103.96	91.47	-107.82	4,233.47	-1,183.84	1,322.16	1,137.94	187.31	6.960	
13,500.00	9,552.57	13,319.16	9,961.17	105.83	93.22	-107.99	4,333.45	-1,184.83	1,323.20	1,135.95	190.91	6.827	
13,600.00	9,548.49	13,419.09	9,961.10	107.72	94.99	-108.16	4,433.44	-1,185.82	1,324.24	1,133.96	194.56	6.698	
13,700.00	9,544.41	13,519.01	9,961.03	109.61	96.77	-108.33	4,533.42	-1,186.81	1,325.28	1,131.97	198.26	6.573	
13,800.00	9,540.33	13,618.94	9,960.96	111.52	98.58	-108.50	4,633.41	-1,187.81	1,326.32	1,129.98	202.01	6.452	
13,900.00	9,536.25	13,718.86	9,960.89	113.43	100.39	-108.67	4,733.39	-1,188.80	1,327.36	1,127.99	205.81	6.334	
14,000.00	9,532.17	13,818.79	9,960.82	115.36	102.22	-108.84	4,833.38	-1,189.79	1,328.40	1,125.99	209.66	6.220	
14,100.00	9,528.09	13,918.71	9,960.75	117.29	104.06	-109.01	4,933.36	-1,190.79	1,329.44	1,123.99	213.56	6.109	
14,200.00	9,524.01	14,018.64	9,960.68	119.23	105.91	-109.18	5,033.35	-1,191.78	1,330.48	1,121.99	217.51	6.002	
14,300.00	9,519.93	14,118.56	9,960.61	121.18	107.78	-109.35	5,133.33	-1,192.77	1,331.52	1,119.99	221.51	5.897	
14,400.00	9,515.85	14,218.49	9,960.54	123.13	109.65	-109.52	5,233.32	-1,193.76	1,332.56	1,117.99	225.51	5.796	
14,500.00	9,511.77	14,318.41	9,960.47	125.09	111.54	-109.69	5,333.30	-1,194.76	1,333.60	1,115.99	229.56	5.698	
14,600.00	9,507.69	14,418.34	9,960.40	127.06	113.43	-109.86	5,433.29	-1,195.75	1,334.64	1,113.99	233.61	5.602	
14,700.00	9,503.61	14,518.26	9,960.33	129.03	115.34	-110.03	5,533.27	-1,196.74	1,335.68	1,111.99	237.66	5.509	
14,800.00	9,499.53	14,618.19	9,960.26	131.01	117.25	-110.20	5,633.26	-1,197.74	1,336.72	1,109.99	241.71	5.419	
14,900.00	9,495.45	14,718.11	9,960.19	132.99	119.17	-110.37	5,733.24	-1,198.73	1,337.76	1,107.99	245.76	5.332	
15,000.00	9,491.37	14,818.04	9,960.13	134.98	121.10	-110.54	5,833.23	-1,199.72	1,338.80	1,105.99	249.81	5.246	
15,100.00	9,487.29	14,917.96	9,960.06	136.99	123.07	-110.71	5,933.21	-1,200.71	1,339.84	1,103.99	253.86	5.161	
15,200.00	9,483.21	15,017.89	9,959.99	138.97	125.17	-110.88	6,033.20	-1,201.70	1,340.88	1,101.99	257.91	5.087	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 3H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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 8 P5 - 28H - OH - Plan 2 11-17-16													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)					
15,300.00	9,634.58	15,129.23	9,964.43	140.97	127.11	-104.67	6,142.67	-1,200.17	1,302.95	1,043.02	259.93	5.013	
15,400.00	9,636.09	15,229.23	9,966.73	142.98	129.07	-104.70	6,242.64	-1,199.79	1,303.15	1,039.36	263.79	4.940	
15,500.00	9,637.61	15,329.22	9,969.02	144.98	131.03	-104.73	6,342.61	-1,199.41	1,303.35	1,035.70	267.65	4.870	
15,600.00	9,639.12	15,429.22	9,971.31	147.00	132.99	-104.77	6,442.58	-1,199.04	1,303.55	1,032.03	271.51	4.801	
15,700.00	9,640.63	15,529.22	9,973.60	149.01	134.96	-104.80	6,542.55	-1,198.66	1,303.75	1,028.35	275.39	4.734	
15,800.00	9,642.15	15,629.21	9,975.90	151.03	136.94	-104.83	6,642.52	-1,198.28	1,303.94	1,024.67	279.28	4.669	
15,900.00	9,643.66	15,729.21	9,978.19	153.06	138.92	-104.87	6,742.49	-1,197.90	1,304.14	1,020.97	283.17	4.606	
16,000.00	9,645.17	15,829.21	9,980.48	155.08	140.91	-104.90	6,842.46	-1,197.52	1,304.34	1,017.28	287.07	4.544	
16,100.00	9,646.69	15,929.20	9,982.78	157.11	142.90	-104.93	6,942.43	-1,197.15	1,304.55	1,013.57	290.98	4.483	
16,200.00	9,648.20	16,029.20	9,985.07	159.15	144.90	-104.97	7,042.40	-1,196.77	1,304.75	1,009.86	294.89	4.425	
16,300.00	9,649.71	16,129.20	9,987.36	161.18	146.90	-105.00	7,142.37	-1,196.39	1,304.95	1,006.14	298.81	4.367	
16,400.00	9,651.23	16,229.19	9,989.65	163.22	148.90	-105.03	7,242.34	-1,196.01	1,305.15	1,002.42	302.73	4.311	
16,500.00	9,652.74	16,329.19	9,991.95	165.27	150.91	-105.07	7,342.31	-1,195.63	1,305.35	998.69	306.66	4.257	
16,600.00	9,654.25	16,429.19	9,994.24	167.31	152.92	-105.10	7,442.28	-1,195.26	1,305.56	994.96	310.60	4.203	
16,700.00	9,655.77	16,529.19	9,996.53	169.36	154.94	-105.13	7,542.25	-1,194.88	1,305.76	991.22	314.54	4.151	
16,800.00	9,657.28	16,629.18	9,998.82	171.41	156.96	-105.16	7,642.22	-1,194.50	1,305.96	987.48	318.49	4.101	
16,900.00	9,658.79	16,729.18	10,001.12	173.47	158.98	-105.20	7,742.19	-1,194.12	1,306.17	983.73	322.44	4.051	
17,000.00	9,660.31	16,829.18	10,003.41	175.52	161.01	-105.23	7,842.16	-1,193.74	1,306.37	979.98	326.39	4.002	
17,100.00	9,661.82	16,929.17	10,005.70	177.58	163.04	-105.26	7,942.13	-1,193.37	1,306.58	976.22	330.35	3.955	
17,200.00	9,663.33	17,029.17	10,007.99	179.64	165.08	-105.30	8,042.10	-1,192.99	1,306.78	972.46	334.32	3.909	
17,300.00	9,664.85	17,129.17	10,010.29	181.70	167.11	-105.33	8,142.07	-1,192.61	1,306.99	968.70	338.28	3.864	
17,400.00	9,666.36	17,229.16	10,012.58	183.77	169.15	-105.36	8,242.04	-1,192.23	1,307.19	964.94	342.26	3.819	
17,500.00	9,667.87	17,329.16	10,014.87	185.83	171.19	-105.40	8,342.01	-1,191.85	1,307.40	961.17	346.23	3.776	
17,600.00	9,669.39	17,429.16	10,017.16	187.90	173.24	-105.43	8,441.98	-1,191.48	1,307.61	957.40	350.21	3.734	
17,700.00	9,670.90	17,529.16	10,019.46	189.97	175.28	-105.46	8,541.95	-1,191.10	1,307.82	953.62	354.19	3.692	
17,800.00	9,672.44	17,629.15	10,021.75	192.04	177.33	-105.49	8,641.92	-1,190.72	1,308.01	949.83	358.18	3.652	
17,900.00	9,674.07	17,729.15	10,024.04	194.12	179.39	-105.52	8,741.89	-1,190.34	1,308.16	945.98	362.18	3.612	
18,000.00	9,675.70	17,829.15	10,026.34	196.19	181.44	-105.55	8,841.87	-1,189.96	1,308.31	942.14	366.17	3.573	
18,100.00	9,677.33	17,929.15	10,028.63	198.27	183.50	-105.58	8,941.84	-1,189.59	1,308.47	938.29	370.17	3.535	
18,200.00	9,678.96	18,029.14	10,030.92	200.35	185.56	-105.61	9,041.81	-1,189.21	1,308.62	934.44	374.18	3.497	
18,300.00	9,680.59	18,129.14	10,033.21	202.43	187.62	-105.63	9,141.78	-1,188.83	1,308.77	930.59	378.18	3.461	
18,400.00	9,682.22	18,229.14	10,035.51	204.51	189.68	-105.66	9,241.75	-1,188.45	1,308.93	926.74	382.19	3.425	
18,500.00	9,683.84	18,329.14	10,037.80	206.60	191.75	-105.69	9,341.72	-1,188.07	1,309.08	922.88	386.20	3.390	
18,600.00	9,685.47	18,429.13	10,040.09	208.68	193.81	-105.72	9,441.69	-1,187.70	1,309.24	919.02	390.21	3.355	
18,700.00	9,687.10	18,529.13	10,042.38	210.77	195.88	-105.75	9,541.66	-1,187.32	1,309.39	915.17	394.23	3.321	
18,800.00	9,688.73	18,629.13	10,044.68	212.86	197.95	-105.78	9,641.63	-1,186.94	1,309.55	911.30	398.24	3.288	
18,900.00	9,690.36	18,729.13	10,046.97	214.94	200.02	-105.80	9,741.60	-1,186.56	1,309.70	907.44	402.26	3.256	
19,000.00	9,691.99	18,829.13	10,049.26	217.03	202.10	-105.83	9,841.57	-1,186.18	1,309.86	903.58	406.28	3.224	
19,100.00	9,693.62	18,929.12	10,051.55	219.13	204.17	-105.86	9,941.54	-1,185.81	1,310.01	899.71	410.30	3.193	
19,200.00	9,695.25	19,029.12	10,053.85	221.22	206.25	-105.89	10,041.51	-1,185.43	1,310.17	895.84	414.33	3.162	
19,300.00	9,696.87	19,129.12	10,056.14	223.31	208.33	-105.92	10,141.49	-1,185.05	1,310.33	891.97	418.35	3.132	
19,400.00	9,698.50	19,229.12	10,058.43	225.41	210.41	-105.95	10,241.46	-1,184.67	1,310.48	888.10	422.38	3.103	
19,500.00	9,700.13	19,329.11	10,060.73	227.50	212.49	-105.97	10,341.43	-1,184.29	1,310.64	884.23	426.41	3.074	
19,600.00	9,701.76	19,429.11	10,063.02	229.60	214.57	-106.00	10,441.40	-1,183.92	1,310.80	880.36	430.44	3.045	
19,700.00	9,703.39	19,529.11	10,065.31	231.70	216.66	-106.03	10,541.37	-1,183.54	1,310.96	876.49	434.47	3.017	
19,800.00	9,705.02	19,629.11	10,067.60	233.80	218.74	-106.06	10,641.34	-1,183.16	1,311.11	872.61	438.50	2.990	
19,900.00	9,706.65	19,729.11	10,069.90	235.90	220.83	-106.09	10,741.31	-1,182.78	1,311.27	868.74	442.54	2.963	
20,000.00	9,708.28	19,829.10	10,072.19	238.00	222.92	-106.11	10,841.28	-1,182.41	1,311.43	864.86	446.57	2.937	
20,044.41	9,709.00	19,873.51	10,073.21	238.80	223.85	-106.13	10,885.67	-1,182.24	1,311.50	863.28	448.22	2.926 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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

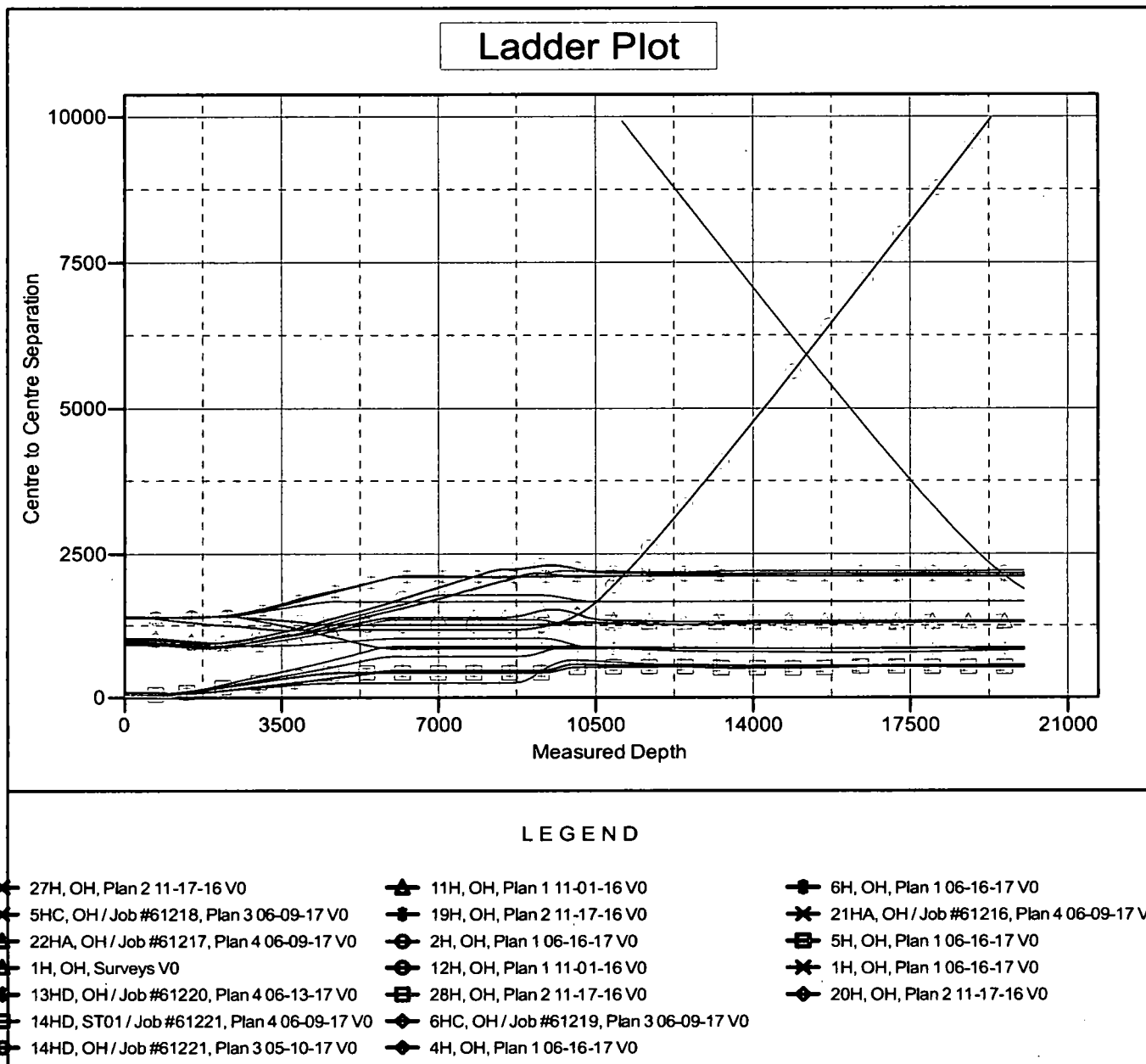
Reference Depths are relative to GL + KB @ 3294.00usft (Patterson 815) Coordinates are relative to: 3H

Offset Depths are relative to Offset Datum

Central Meridian is 104° 19' 60.00000 W

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.06°



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



Phoenix Technology Services LP

Anticollision Report

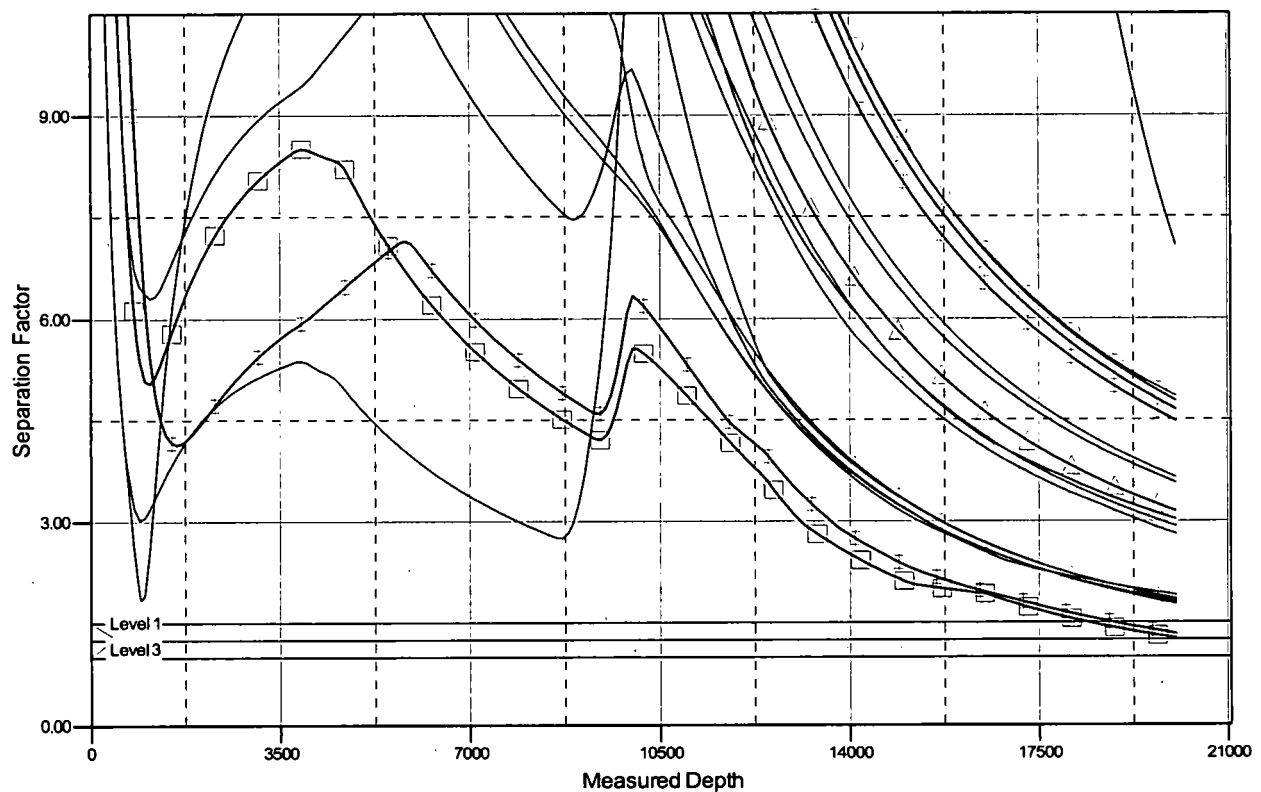


Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 3H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 GL + KB @ 3294.00usft (Patterson 815) Coordinates are relative to: 3H
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 19' 60.00000 W
Grid Convergence at Surface is: 0.06°

Separation Factor Plot



LEGEND

- | | | |
|---|--|---|
| ✱ 27H, OH, Plan 2 11-17-16 V0 | ✱ 11H, OH, Plan 1 11-01-16 V0 | ✱ 6H, OH, Plan 1 06-16-17 V0 |
| ✱ 5HC, OH / Job #61218, Plan 3 06-09-17 V0 | ✱ 19H, OH, Plan 2 11-17-16 V0 | ✱ 21HA, OH / Job #61216, Plan 4 06-09-17 V0 |
| ✱ 22HA, OH / Job #61217, Plan 4 06-09-17 V0 | ✱ 2H, OH, Plan 1 06-16-17 V0 | ✱ 5H, OH, Plan 1 06-16-17 V0 |
| ✱ 1H, OH, Surveys V0 | ✱ 12H, OH, Plan 1 11-01-16 V0 | ✱ 1H, OH, Plan 1 06-16-17 V0 |
| ✱ 13HD, OH / Job #61220, Plan 4 06-13-17 V0 | ✱ 28H, OH, Plan 2 11-17-16 V0 | ✱ 20H, OH, Plan 2 11-17-16 V0 |
| ✱ 14HD, ST01 / Job #61221, Plan 4 06-09-17 V0 | ✱ 6HC, OH / Job #61219, Plan 3 06-09-17 V0 | |
| ✱ 14HD, OH / Job #61221, Plan 3 05-10-17 V0 | ✱ 4H, OH, Plan 1 06-16-17 V0 | |

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



Project: Eddy County, NM (NAD27 NME)

Site: HH SO 8.5 Fed 003

Well: 3H

Wellbore: OH

Design: Plan 1 06-16-17

Rig: Patterson 815

WELL DETAILS

Well Name: HH SO 8.5 Fed 003
Well Depth: 3565.00
Wellbore: OH
Design: Plan 1 06-16-17
Rig: Patterson 815

SECTION DETAILS

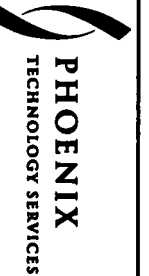
Sec	MD	Inc	Ad	T/O	N/S	E/W	Chg	T/H	V/S	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP1, Begin 2,007'100" Build
2	600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP1, Begin 2,007'100" Build
3	699.63	6.00	20.24	699.28	14.71	5.42	2.00	20.24	14.75	14.75	Begin 2,007'100" Drop
4	3782.06	6.00	20.24	3770.72	297.72	109.75	0.00	0.00	298.49	298.49	Begin 2,007'100" Drop
5	9137.43	0.00	0.00	9137.43	312.43	113.17	2.00	180.00	312.24	312.24	Begin 2,007'100" Build
6	9137.43	0.00	0.00	9137.43	312.43	113.17	2.00	180.00	312.24	312.24	Begin 2,007'100" Build
7	10062.83	92.24	359.43	9999.00	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
8	12362.26	89.23	359.43	12362.26	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
9	15046.10	89.23	359.43	15046.10	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
10	15046.10	89.23	359.43	15046.10	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
11	15108.97	89.13	0.22	15108.97	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
12	15108.97	89.13	0.22	15108.97	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
13	15108.97	89.13	0.22	15108.97	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build
14	20944.41	89.07	0.20	20944.41	308.10	109.28	10.00	359.43	309.51	309.51	Begin 2,007'100" Build

DESIGN TARGET DETAILS

Name	T/O	N/S	E/W	Chg	T/H	V/S	Target	Annotation
PT - HH SO 8.5 Fed 003 3H	9590.00	3208.10	86.58	3444.42	53793.43	327.34	7240.00	104° 12' 45.0800 W
MP - HH SO 8.5 Fed 003 3H	9631.00	5065.81	55.70	38173.33	53075.56	327.34	51.6800 W	104° 12' 45.6800 W
PT - HH SO 8.5 Fed 003 3H	9631.00	8617.93	109.28	38984.66	53075.54	327.34	18.2670 N	104° 12' 45.6800 W
PT - HH SO 8.5 Fed 003 3H	9631.00	8617.93	109.28	38984.66	53075.54	327.34	18.2670 N	104° 12' 45.6800 W
LTP - HH SO 8.5 Fed 003 3H	9705.00	10889.26	77.67	38215.99	53075.53	327.34	42.74600 N	104° 12' 45.9320 W

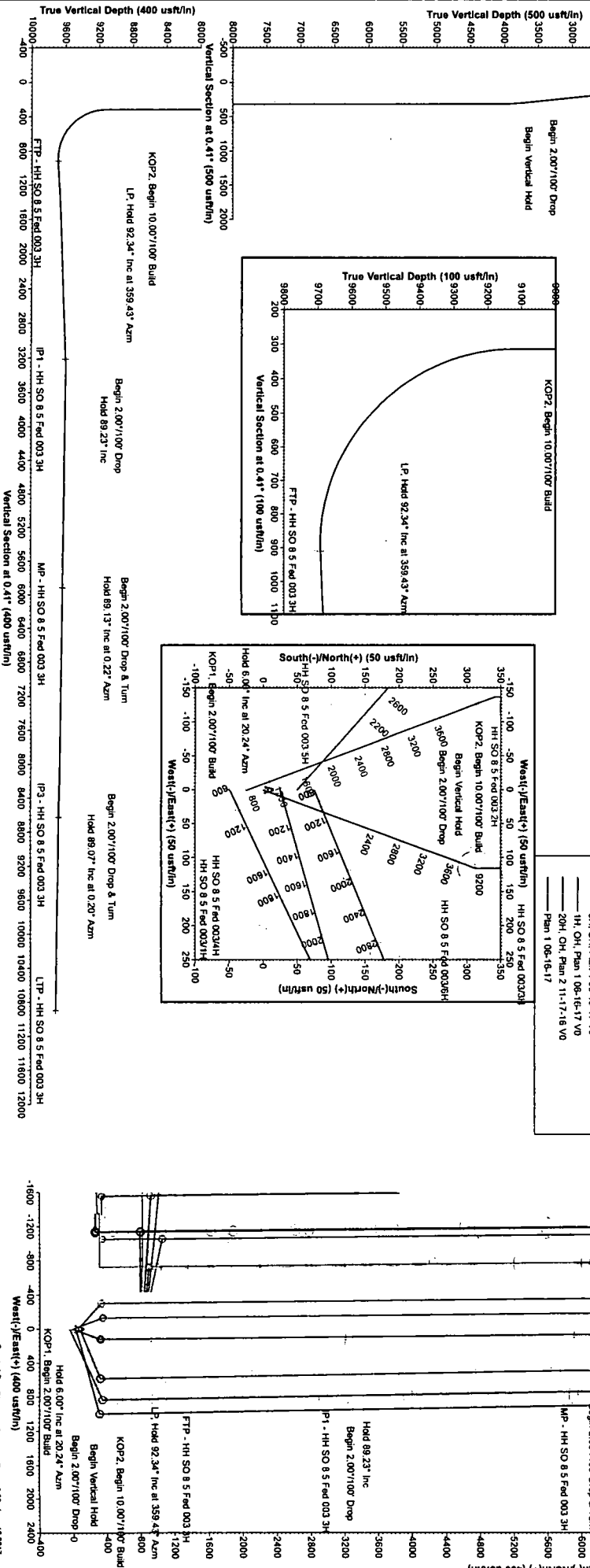
LEGEND

- 2TH, OH, Plan 11-17-16 VO
- 5HC, OH, Job #61218, Plan 3 06-09-17 VO
- 2TH, OH, Job #61218, Plan 3 06-09-17 VO
- 1H, OH, Surveys VO
- 13HD, OH, Job #61220, Plan 4 05-13-17 VO
- 14HD, ST01 / Job #61221, Plan 3 05-10-17 VO
- 14HD, OH, Job #61221, Plan 3 05-10-17 VO
- 11H, OH, Plan 11-01-16 VO
- 11H, OH, Plan 11-01-16 VO
- 11H, OH, Plan 11-01-16 VO
- 2H, OH, Plan 11-17-16 VO
- 12H, OH, Plan 11-01-16 VO
- 28H, OH, Plan 11-17-16 VO
- 6HC, OH, Job #61219, Plan 3 06-09-17 VO
- 4H, OH, Plan 10-16-17 VO
- 6H, OH, Plan 10-16-17 VO
- 21HA, OH, Job #61216, Plan 4 06-09-17 VO
- 5H, OH, Plan 10-16-17 VO
- 1H, OH, Plan 10-16-17 VO
- 20H, OH, Plan 11-17-16 VO
- Plan 1 06-16-17



Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Zone Name: New Mexico East 3001
Local Origin: Well 3H, Grid North
Latitude: 32° 52' 58.000 N
Longitude: 104° 12' 46.53720 W
Grid East: 537305.86
Grid North: 15356.75
Scale Factor: 1.000
Sample Date: 15-Jun-17
Magnetic Declination: 7.42°
Dip Angle from Horizontal: 59.77°
Magnetic Field Strength: 47992
To convert a Magnetic Direction to a Grid Direction, Add 7.35°
To convert a Magnetic Direction to a True Direction, Add 7.42° East
To convert a True Direction to a Grid Direction, Subtract 0.05°

Asimuths to Grid North
True North: -0.06°
Magnetic North: 7.35°
Magnetic Field
Strength: 47992
Dip Angle: 59.77°
Date: 6/15/2017
Model: HOGM





NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 17 2018

RECEIVED

Chevron

**Eddy County, NM (NAD27 NME)
HH SO 8 5 Fed 003
3H**

OH

Plan: Plan 1 06-16-17

Standard Planning Report

16 June, 2017





Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 8 5 Fed 003
Well: 3H
Wellbore: OH
Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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 8 5 Fed 003			
Site Position:		Northing:	381,176.89 usft	Latitude:	32° 2' 52.48680 N
From:	Lat/Long	Easting:	537,305.60 usft	Longitude:	104° 12' 46.54080 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.06 °

Well	3H					
Well Position	+N/-S	49.84 usft	Northing:	381,226.73 usft	Latitude:	32° 2' 52.98000 N
	+E/-W	0.25 usft	Easting:	537,305.86 usft	Longitude:	104° 12' 46.53720 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,266.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/15/2017	7.42	59.77	47,992

Design	Plan 1 06-16-17			
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	0.41

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
899.83	6.00	20.24	899.28	14.71	5.42	2.00	2.00	0.00	20.24	
3,787.06	6.00	20.24	3,770.72	297.72	109.75	0.00	0.00	0.00	0.00	
4,086.89	0.00	0.00	4,070.00	312.43	115.17	2.00	-2.00	0.00	180.00	
9,137.42	0.00	0.00	9,120.52	312.43	115.17	0.00	0.00	0.00	0.00	
10,060.83	92.34	359.43	9,693.00	908.76	109.28	10.00	10.00	0.00	359.43	
12,362.20	92.34	359.43	9,599.00	3,208.10	86.58	0.00	0.00	0.00	0.00	IP1 - HH SO 8 5 Fe
12,517.69	89.23	359.43	9,596.87	3,363.55	85.03	2.00	-2.00	0.00	-179.91	
15,061.30	89.23	359.43	9,631.00	5,906.81	59.70	0.00	0.00	0.00	0.00	MP - HH SO 8 5 Fe
15,100.97	89.13	0.22	9,631.57	5,946.47	59.58	2.00	-0.25	1.98	97.12	
17,772.76	89.13	0.22	9,672.00	8,617.93	69.68	0.00	0.00	0.00	0.00	IP3 - HH SO 8 5 Fe
17,776.15	89.07	0.20	9,672.05	8,621.32	69.70	2.00	-1.95	-0.44	-167.15	
20,044.41	89.07	0.20	9,709.00	10,889.26	77.67	0.00	0.00	0.00	0.00	LTP - HH SO 8 5 Fe



Phoenix Technology Services LP Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 8 5 Fed 003
Well: 3H
Wellbore: OH
Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP1, Begin 2.00°/100' Build									
700.00	2.00	20.24	699.98	1.64	0.60	1.64	2.00	2.00	0.00
800.00	4.00	20.24	799.84	6.55	2.41	6.56	2.00	2.00	0.00
899.83	6.00	20.24	899.28	14.71	5.42	14.75	2.00	2.00	0.00
Hold 6.00° Inc at 20.24° Azm									
900.00	6.00	20.24	899.45	14.72	5.43	14.76	0.00	0.00	0.00
1,000.00	6.00	20.24	998.90	24.53	9.04	24.59	0.00	0.00	0.00
1,100.00	6.00	20.24	1,098.36	34.33	12.66	34.42	0.00	0.00	0.00
1,200.00	6.00	20.24	1,197.81	44.13	16.27	44.25	0.00	0.00	0.00
1,300.00	6.00	20.24	1,297.26	53.93	19.88	54.07	0.00	0.00	0.00
1,400.00	6.00	20.24	1,396.72	63.74	23.50	63.90	0.00	0.00	0.00
1,500.00	6.00	20.24	1,496.17	73.54	27.11	73.73	0.00	0.00	0.00
1,600.00	6.00	20.24	1,595.62	83.34	30.72	83.56	0.00	0.00	0.00
1,700.00	6.00	20.24	1,695.07	93.14	34.34	93.38	0.00	0.00	0.00
1,800.00	6.00	20.24	1,794.53	102.94	37.95	103.21	0.00	0.00	0.00
1,900.00	6.00	20.24	1,893.98	112.75	41.56	113.04	0.00	0.00	0.00
2,000.00	6.00	20.24	1,993.43	122.55	45.18	122.87	0.00	0.00	0.00
2,100.00	6.00	20.24	2,092.89	132.35	48.79	132.69	0.00	0.00	0.00
2,200.00	6.00	20.24	2,192.34	142.15	52.40	142.52	0.00	0.00	0.00
2,300.00	6.00	20.24	2,291.79	151.95	56.02	152.35	0.00	0.00	0.00
2,400.00	6.00	20.24	2,391.24	161.76	59.63	162.18	0.00	0.00	0.00
2,500.00	6.00	20.24	2,490.70	171.56	63.24	172.01	0.00	0.00	0.00
2,600.00	6.00	20.24	2,590.15	181.36	66.86	181.83	0.00	0.00	0.00
2,700.00	6.00	20.24	2,689.60	191.16	70.47	191.66	0.00	0.00	0.00
2,800.00	6.00	20.24	2,789.06	200.96	74.08	201.49	0.00	0.00	0.00
2,900.00	6.00	20.24	2,888.51	210.77	77.70	211.32	0.00	0.00	0.00
3,000.00	6.00	20.24	2,987.96	220.57	81.31	221.14	0.00	0.00	0.00
3,100.00	6.00	20.24	3,087.41	230.37	84.92	230.97	0.00	0.00	0.00
3,200.00	6.00	20.24	3,186.87	240.17	88.54	240.80	0.00	0.00	0.00
3,300.00	6.00	20.24	3,286.32	249.98	92.15	250.63	0.00	0.00	0.00
3,400.00	6.00	20.24	3,385.77	259.78	95.76	260.45	0.00	0.00	0.00
3,500.00	6.00	20.24	3,485.23	269.58	99.38	270.28	0.00	0.00	0.00
3,600.00	6.00	20.24	3,584.68	279.38	102.99	280.11	0.00	0.00	0.00
3,700.00	6.00	20.24	3,684.13	289.18	106.60	289.94	0.00	0.00	0.00
3,787.06	6.00	20.24	3,770.72	297.72	109.75	298.49	0.00	0.00	0.00
Begin 2.00°/100' Drop									
3,800.00	5.74	20.24	3,783.59	298.96	110.21	299.74	2.00	-2.00	0.00
3,900.00	3.74	20.24	3,883.24	306.71	113.06	307.51	2.00	-2.00	0.00
4,000.00	1.74	20.24	3,983.12	311.19	114.72	312.00	2.00	-2.00	0.00
4,086.89	0.00	0.00	4,070.00	312.43	115.17	313.24	2.00	-2.00	-23.29
Begin Vertical Hold									
9,137.42	0.00	0.00	9,120.52	312.43	115.17	313.24	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
9,200.00	6.26	359.43	9,182.98	315.84	115.14	316.65	10.00	10.00	0.00
9,300.00	16.26	359.43	9,280.93	335.34	114.95	336.15	10.00	10.00	0.00
9,400.00	26.26	359.43	9,374.01	371.55	114.59	372.36	10.00	10.00	0.00
9,500.00	36.26	359.43	9,459.39	423.37	114.08	424.17	10.00	10.00	0.00
9,600.00	46.26	359.43	9,534.47	489.23	113.43	490.02	10.00	10.00	0.00
9,700.00	56.26	359.43	9,596.97	567.12	112.66	567.91	10.00	10.00	0.00
9,800.00	66.26	359.43	9,644.99	654.69	111.79	655.47	10.00	10.00	0.00
9,900.00	76.26	359.43	9,677.08	749.26	110.86	750.03	10.00	10.00	0.00



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 8 5 Fed 003
 Well: 3H
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Local Co-ordinate Reference: Well 3H
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 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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)
10,000.00	86.26	359.43	9,692.26	847.97	109.88	848.73	10.00	10.00	0.00
10,060.83	92.34	359.43	9,693.00	908.76	109.28	909.51	10.00	10.00	0.00
LP, Hold 92.34° Inc at 359.43° Azm									
10,100.00	92.34	359.43	9,691.40	947.90	108.90	948.65	0.00	0.00	0.00
10,200.00	92.34	359.43	9,687.32	1,047.81	107.91	1,048.55	0.00	0.00	0.00
10,300.00	92.34	359.43	9,683.23	1,147.72	106.92	1,148.45	0.00	0.00	0.00
10,400.00	92.34	359.43	9,679.15	1,247.63	105.94	1,248.36	0.00	0.00	0.00
10,500.00	92.34	359.43	9,675.07	1,347.54	104.95	1,348.26	0.00	0.00	0.00
10,600.00	92.34	359.43	9,670.98	1,447.46	103.96	1,448.16	0.00	0.00	0.00
10,700.00	92.34	359.43	9,666.90	1,547.37	102.98	1,548.06	0.00	0.00	0.00
10,800.00	92.34	359.43	9,662.81	1,647.28	101.99	1,647.96	0.00	0.00	0.00
10,900.00	92.34	359.43	9,658.73	1,747.19	101.00	1,747.87	0.00	0.00	0.00
11,000.00	92.34	359.43	9,654.64	1,847.10	100.02	1,847.77	0.00	0.00	0.00
11,100.00	92.34	359.43	9,650.56	1,947.01	99.03	1,947.67	0.00	0.00	0.00
11,200.00	92.34	359.43	9,646.47	2,046.93	98.04	2,047.57	0.00	0.00	0.00
11,300.00	92.34	359.43	9,642.39	2,146.84	97.06	2,147.47	0.00	0.00	0.00
11,400.00	92.34	359.43	9,638.30	2,246.75	96.07	2,247.38	0.00	0.00	0.00
11,500.00	92.34	359.43	9,634.22	2,346.66	95.08	2,347.28	0.00	0.00	0.00
11,600.00	92.34	359.43	9,630.13	2,446.57	94.10	2,447.18	0.00	0.00	0.00
11,700.00	92.34	359.43	9,626.05	2,546.48	93.11	2,547.08	0.00	0.00	0.00
11,800.00	92.34	359.43	9,621.96	2,646.40	92.12	2,646.98	0.00	0.00	0.00
11,900.00	92.34	359.43	9,617.88	2,746.31	91.14	2,746.89	0.00	0.00	0.00
12,000.00	92.34	359.43	9,613.79	2,846.22	90.15	2,846.79	0.00	0.00	0.00
12,100.00	92.34	359.43	9,609.71	2,946.13	89.16	2,946.69	0.00	0.00	0.00
12,200.00	92.34	359.43	9,605.63	3,046.04	88.18	3,046.59	0.00	0.00	0.00
12,300.00	92.34	359.43	9,601.54	3,145.95	87.19	3,146.50	0.00	0.00	0.00
12,362.20	92.34	359.43	9,599.00	3,208.10	86.58	3,208.63	0.00	0.00	0.00
Begin 2.00°/100' Drop									
12,400.00	91.58	359.43	9,597.71	3,245.87	86.20	3,246.41	2.00	-2.00	0.00
12,500.00	89.58	359.43	9,596.68	3,345.86	85.21	3,346.38	2.00	-2.00	0.00
12,517.69	89.23	359.43	9,596.87	3,363.55	85.03	3,364.07	2.00	-2.00	0.00
Hold 89.23° Inc									
12,600.00	89.23	359.43	9,597.97	3,445.85	84.21	3,446.36	0.00	0.00	0.00
12,700.00	89.23	359.43	9,599.31	3,545.83	83.22	3,546.34	0.00	0.00	0.00
12,800.00	89.23	359.43	9,600.66	3,645.82	82.22	3,646.31	0.00	0.00	0.00
12,900.00	89.23	359.43	9,602.00	3,745.80	81.23	3,746.29	0.00	0.00	0.00
13,000.00	89.23	359.43	9,603.34	3,845.79	80.23	3,846.26	0.00	0.00	0.00
13,100.00	89.23	359.43	9,604.68	3,945.78	79.23	3,946.24	0.00	0.00	0.00
13,200.00	89.23	359.43	9,606.02	4,045.76	78.24	4,046.22	0.00	0.00	0.00
13,300.00	89.23	359.43	9,607.37	4,145.75	77.24	4,146.19	0.00	0.00	0.00
13,400.00	89.23	359.43	9,608.71	4,245.73	76.25	4,246.17	0.00	0.00	0.00
13,500.00	89.23	359.43	9,610.05	4,345.72	75.25	4,346.15	0.00	0.00	0.00
13,600.00	89.23	359.43	9,611.39	4,445.71	74.26	4,446.12	0.00	0.00	0.00
13,700.00	89.23	359.43	9,612.73	4,545.69	73.26	4,546.10	0.00	0.00	0.00
13,800.00	89.23	359.43	9,614.07	4,645.68	72.26	4,646.08	0.00	0.00	0.00
13,900.00	89.23	359.43	9,615.42	4,745.66	71.27	4,746.05	0.00	0.00	0.00
14,000.00	89.23	359.43	9,616.76	4,845.65	70.27	4,846.03	0.00	0.00	0.00
14,100.00	89.23	359.43	9,618.10	4,945.64	69.28	4,946.00	0.00	0.00	0.00
14,200.00	89.23	359.43	9,619.44	5,045.62	68.28	5,045.98	0.00	0.00	0.00
14,300.00	89.23	359.43	9,620.78	5,145.61	67.29	5,145.96	0.00	0.00	0.00
14,400.00	89.23	359.43	9,622.13	5,245.59	66.29	5,245.93	0.00	0.00	0.00
14,500.00	89.23	359.43	9,623.47	5,345.58	65.29	5,345.91	0.00	0.00	0.00
14,600.00	89.23	359.43	9,624.81	5,445.57	64.30	5,445.89	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 8 5 Fed 003
 Well: 3H
 Wellbore: OH
 Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
 TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
 MD Reference: GL + KB @ 3294.00usft (Patterson 815)
 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)
14,700.00	89.23	359.43	9,626.15	5,545.55	63.30	5,545.86	0.00	0.00	0.00
14,800.00	89.23	359.43	9,627.49	5,645.54	62.31	5,645.84	0.00	0.00	0.00
14,900.00	89.23	359.43	9,628.84	5,745.52	61.31	5,745.82	0.00	0.00	0.00
15,000.00	89.23	359.43	9,630.18	5,845.51	60.31	5,845.79	0.00	0.00	0.00
15,061.30	89.23	359.43	9,631.00	5,906.81	59.70	5,907.08	0.00	0.00	0.00
Begin 2.00°/100' Drop & Turn									
15,100.00	89.14	0.20	9,631.55	5,945.50	59.58	5,945.77	2.00	-0.25	1.98
15,100.97	89.13	0.22	9,631.57	5,946.47	59.58	5,946.74	2.00	-0.25	1.98
Hold 89.13° Inc at 0.22° Azm									
15,200.00	89.13	0.22	9,633.07	6,045.49	59.96	6,045.76	0.00	0.00	0.00
15,300.00	89.13	0.22	9,634.58	6,145.47	60.33	6,145.75	0.00	0.00	0.00
15,400.00	89.13	0.22	9,636.09	6,245.46	60.71	6,245.74	0.00	0.00	0.00
15,500.00	89.13	0.22	9,637.61	6,345.45	61.09	6,345.72	0.00	0.00	0.00
15,600.00	89.13	0.22	9,639.12	6,445.44	61.47	6,445.71	0.00	0.00	0.00
15,700.00	89.13	0.22	9,640.63	6,545.42	61.85	6,545.70	0.00	0.00	0.00
15,800.00	89.13	0.22	9,642.15	6,645.41	62.22	6,645.69	0.00	0.00	0.00
15,900.00	89.13	0.22	9,643.66	6,745.40	62.60	6,745.68	0.00	0.00	0.00
16,000.00	89.13	0.22	9,645.17	6,845.39	62.98	6,845.66	0.00	0.00	0.00
16,100.00	89.13	0.22	9,646.69	6,945.38	63.36	6,945.65	0.00	0.00	0.00
16,200.00	89.13	0.22	9,648.20	7,045.36	63.74	7,045.64	0.00	0.00	0.00
16,300.00	89.13	0.22	9,649.71	7,145.35	64.12	7,145.63	0.00	0.00	0.00
16,400.00	89.13	0.22	9,651.23	7,245.34	64.49	7,245.62	0.00	0.00	0.00
16,500.00	89.13	0.22	9,652.74	7,345.33	64.87	7,345.60	0.00	0.00	0.00
16,600.00	89.13	0.22	9,654.25	7,445.32	65.25	7,445.59	0.00	0.00	0.00
16,700.00	89.13	0.22	9,655.77	7,545.30	65.63	7,545.58	0.00	0.00	0.00
16,800.00	89.13	0.22	9,657.28	7,645.29	66.01	7,645.57	0.00	0.00	0.00
16,900.00	89.13	0.22	9,658.79	7,745.28	66.38	7,745.56	0.00	0.00	0.00
17,000.00	89.13	0.22	9,660.31	7,845.27	66.76	7,845.54	0.00	0.00	0.00
17,100.00	89.13	0.22	9,661.82	7,945.25	67.14	7,945.53	0.00	0.00	0.00
17,200.00	89.13	0.22	9,663.33	8,045.24	67.52	8,045.52	0.00	0.00	0.00
17,300.00	89.13	0.22	9,664.85	8,145.23	67.90	8,145.51	0.00	0.00	0.00
17,400.00	89.13	0.22	9,666.36	8,245.22	68.27	8,245.50	0.00	0.00	0.00
17,500.00	89.13	0.22	9,667.87	8,345.21	68.65	8,345.48	0.00	0.00	0.00
17,600.00	89.13	0.22	9,669.39	8,445.19	69.03	8,445.47	0.00	0.00	0.00
17,700.00	89.13	0.22	9,670.90	8,545.18	69.41	8,545.46	0.00	0.00	0.00
17,772.76	89.13	0.22	9,672.00	8,617.93	69.68	8,618.21	0.00	0.00	0.00
Begin 2.00°/100' Drop & Turn									
17,776.15	89.07	0.20	9,672.05	8,621.32	69.70	8,621.60	2.00	-1.95	-0.44
Hold 89.07° Inc at 0.20° Azm									
17,800.00	89.07	0.20	9,672.44	8,645.17	69.78	8,645.45	0.00	0.00	0.00
17,900.00	89.07	0.20	9,674.07	8,745.15	70.13	8,745.43	0.00	0.00	0.00
18,000.00	89.07	0.20	9,675.70	8,845.14	70.48	8,845.42	0.00	0.00	0.00
18,100.00	89.07	0.20	9,677.33	8,945.13	70.84	8,945.40	0.00	0.00	0.00
18,200.00	89.07	0.20	9,678.96	9,045.11	71.19	9,045.39	0.00	0.00	0.00
18,300.00	89.07	0.20	9,680.59	9,145.10	71.54	9,145.38	0.00	0.00	0.00
18,400.00	89.07	0.20	9,682.22	9,245.09	71.89	9,245.36	0.00	0.00	0.00
18,500.00	89.07	0.20	9,683.84	9,345.07	72.24	9,345.35	0.00	0.00	0.00
18,600.00	89.07	0.20	9,685.47	9,445.06	72.59	9,445.34	0.00	0.00	0.00
18,700.00	89.07	0.20	9,687.10	9,545.04	72.95	9,545.32	0.00	0.00	0.00
18,800.00	89.07	0.20	9,688.73	9,645.03	73.30	9,645.31	0.00	0.00	0.00
18,900.00	89.07	0.20	9,690.36	9,745.02	73.65	9,745.29	0.00	0.00	0.00
19,000.00	89.07	0.20	9,691.99	9,845.00	74.00	9,845.28	0.00	0.00	0.00
19,100.00	89.07	0.20	9,693.62	9,944.99	74.35	9,945.27	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 8 5 Fed 003
Well: 3H
Wellbore: OH
Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 3H
TVD Reference: GL + KB @ 3294.00usft (Patterson 815)
MD Reference: GL + KB @ 3294.00usft (Patterson 815)
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)
19,200.00	89.07	0.20	9,695.25	10,044.97	74.70	10,045.25	0.00	0.00	0.00
19,300.00	89.07	0.20	9,696.87	10,144.96	75.06	10,145.24	0.00	0.00	0.00
19,400.00	89.07	0.20	9,698.50	10,244.95	75.41	10,245.22	0.00	0.00	0.00
19,500.00	89.07	0.20	9,700.13	10,344.93	75.76	10,345.21	0.00	0.00	0.00
19,600.00	89.07	0.20	9,701.76	10,444.92	76.11	10,445.20	0.00	0.00	0.00
19,700.00	89.07	0.20	9,703.39	10,544.91	76.46	10,545.18	0.00	0.00	0.00
19,800.00	89.07	0.20	9,705.02	10,644.89	76.81	10,645.17	0.00	0.00	0.00
19,900.00	89.07	0.20	9,706.65	10,744.88	77.17	10,745.15	0.00	0.00	0.00
20,000.00	89.07	0.20	9,708.28	10,844.86	77.52	10,845.14	0.00	0.00	0.00
20,044.41	89.07	0.20	9,709.00	10,889.26	77.67	10,889.54	0.00	0.00	0.00
TD at 20044.41									

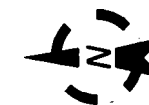
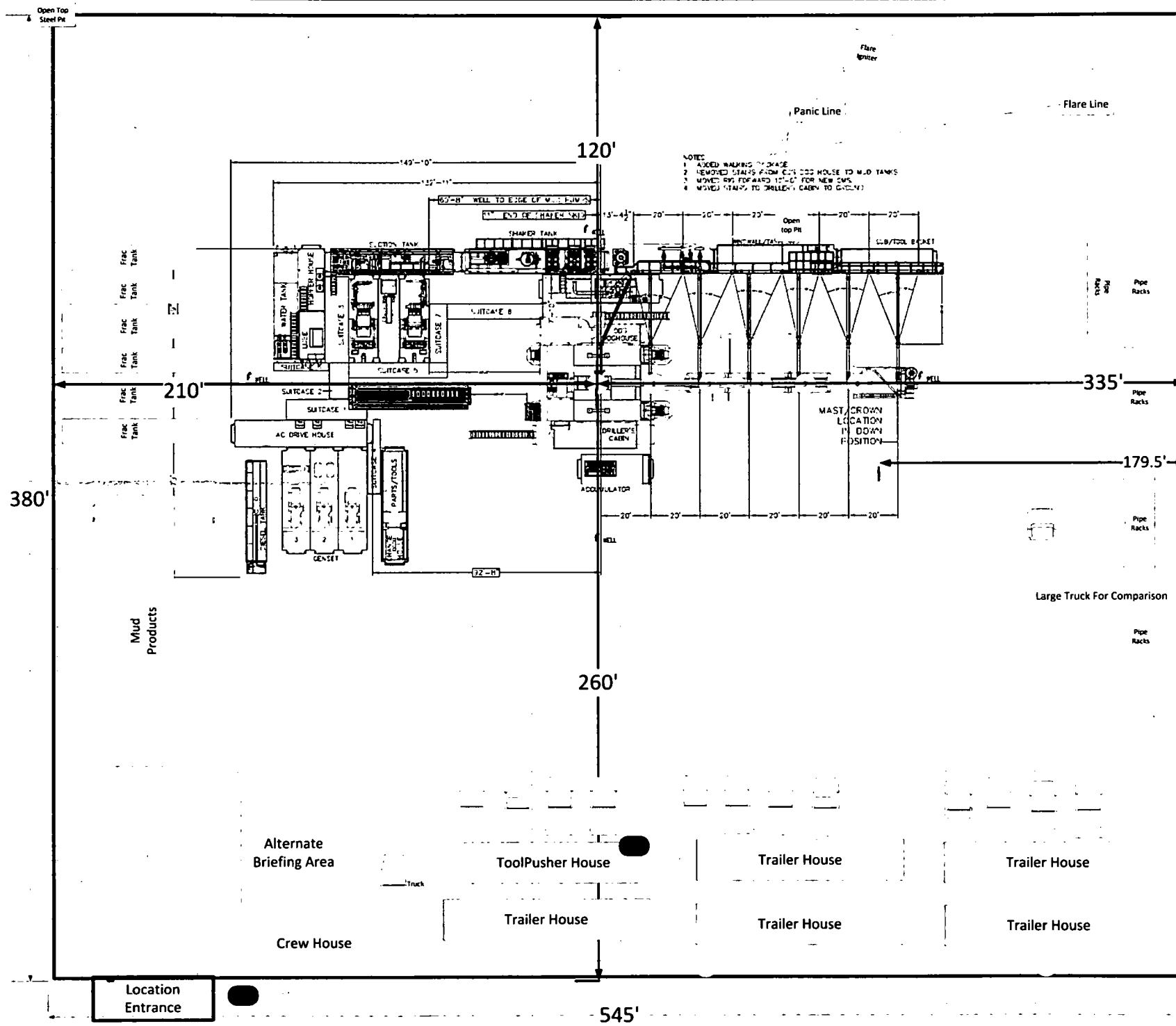
Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
IP1 - HH SO 8 5 Fed 1 - plan hits target center - Point	0.00	0.00	9,599.00	3,208.10	86.58	384,434.82	537,392.43	32° 3' 24.72840 N 04° 12' 45.48960 W	
MP - HH SO 8 5 Fed 1 - plan hits target center - Point	0.00	0.00	9,631.00	5,906.81	59.70	387,133.53	537,365.56	32° 3' 51.43680 N 04° 12' 45.76680 W	
IP3 - HH SO 8 5 Fed 1 - plan hits target center - Point	0.00	0.00	9,672.00	8,617.93	69.68	389,844.65	537,375.54	32° 4' 18.26760 N 04° 12' 45.61560 W	
FTP - HH SO 8 5 Fed - plan hits target center - Point	0.00	0.00	9,693.00	908.79	109.28	382,135.52	537,415.14	32° 3' 1.97280 N 04° 12' 45.25560 W	
LTP - HH SO 8 5 Fed - plan hits target center - Point	0.00	0.00	9,709.00	10,889.26	77.67	392,115.99	537,383.53	32° 4' 40.74600 N 04° 12' 45.49320 W	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
600.00	600.00	0.00	0.00	KOP1, Begin 2.00°/100' Build
899.83	899.28	14.71	5.42	Hold 6.00° Inc at 20.24° Azm
3,787.06	3,770.72	297.72	109.75	Begin 2.00°/100' Drop
4,086.89	4,070.00	312.43	115.17	Begin Vertical Hold
9,137.42	9,120.52	312.43	115.17	KOP2, Begin 10.00°/100' Build
10,060.83	9,693.00	908.76	109.28	LP, Hold 92.34° Inc at 359.43° Azm
12,362.20	9,599.00	3,208.10	86.58	Begin 2.00°/100' Drop
12,517.69	9,596.87	3,363.55	85.03	Hold 89.23° Inc
15,061.30	9,631.00	5,906.81	59.70	Begin 2.00°/100' Drop & Turn
15,100.97	9,631.57	5,946.47	59.58	Hold 89.13° Inc at 0.22° Azm
17,772.76	9,672.00	8,617.93	69.68	Begin 2.00°/100' Drop & Turn
17,776.15	9,672.05	8,621.32	69.70	Hold 89.07° Inc at 0.20° Azm
20,044.41	9,709.00	10,889.26	77.67	TD at 20044.41

6 well pad Bi-lateral Patterson Mock Pad



Rig layout shows rig in first and last well for illustration purposes.

H2S Monitor Locations

- Bop/Cellar
- Rig Floor
- Shaker Skid
- Bell 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

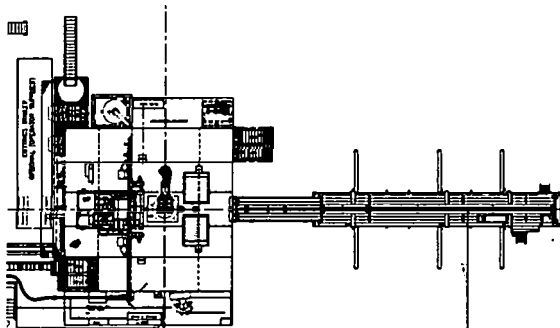
45 Minute Escape Packs

- 2 at Briefing Area
- 2 at Alternate Briefing Area

Legend

- H2S Monitor

- Flag**





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

SUPO Data Report

07/16/2018

APD ID: 10400014949

Submission Date: 07/12/2017

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Highlighted data
reflects the most
recent changes

[Show Final Text](#)

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

HH_SO_8_5_FED_003_3H_Road_Plat_07-12-2017.pdf

Existing Road Purpose: 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 improvement project, culverts, etc. will be properly repaired or replaced 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 Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HH_SO_8_5_FED_003_3H_New_Road_Plat_20180713064457.pdf

New road type: LOCAL

Length: 5148

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

New road access erosion control: see surface use plan included in the master development plan Hayhurst Development Area

New road access plan or profile prepared? NO

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

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: Exclosure 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: 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: Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditches, sidehill out-sloping and in-sloping, lead-off ditches, culvert installation, or low water crossings.

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_8_5_FED_003_3H_1_Mile_07-10-2017.pdf

Existing Wells description:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Existing production facilities located in the NE corner of section 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 determine prior to construction of any water transfer pipeline. Until permanent water takeaway is available, produced water will be hauled off location in trunks. Notification will be provided to BLM upon site selection and survey - plats (including SWD well information) will be provided. Pipelines Include: 4583 of flowlines carrying production (buried), 4600' Gas lift line carrying pressurized gas (buried), 4608' 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.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION 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): 775006.3

Source volume (acre-feet): 99.89297

Source volume (gal): 32550266

Water source and transportation map:

HH_SO_8_5_FED_003_3H_Aerial_detail_07-10-2017.pdf

Water source comments: private source with ponds located in SW4 Section 9 T26S R27E

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

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 pit in Section 13, T24S R27E in Eddy County, NM.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly in an NMOCD 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 in an State approved disposal facility.

Amount of waste: 200 pounds

Waste disposal frequency : Daily

Safe containment description: Drill fluids and produced oil and water from the well during drilling and completion operations will be stored safely, collected in a trash container and disposed of properly in an NMOCD approved 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.

Safe containmant attachment:

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

Disposal type description:

Disposal location description: State approved facility

Reserve Pit

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.)

Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location 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.

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_8_5_FED_003_3H_Well_Plat_07-10-2017.pdf

Comments: Exterior well pad dimensions are 380' x 545' Interior well pad dimensions from point of entry (well head) are N-285, S-260, E-120, W-260. The length to the west includes 25' spacing for next well on multi-well pad. Total disturbance area needed for construction of well pad will be 4.75 acres. Topsoil placement where reclamation is planned to be completed upon completion of well and evaluation of best management practices. cut and fill will be minimal.

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: HH SO 8 5 FED

Multiple Well Pad Number: 1H 2H 3H 4H 5H 6H

Recontouring attachment:

HH_SO_8_5_FED_003_3H_Cut_Fill_07-10-2017.pdf

HH_SO_8_5_FED_003_3H_Reclamation_07-10-2017.pdf

HH_SO_8_5_FED_003_3H_APD_SUP_07-12-2017.pdf

HH_SO_8_5_FED_003_3H_Fac_Layout_07-12-2017.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.

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. All disturbed areas will be re-contoured to the contour existing prior to initial construction. The areas will be seeded with the proper BLM seed mixture (BLM #2), free of noxious weeds.

Wellpad long term disturbance (acres): 1.49

Wellpad short term disturbance (acres): 3.26

Access road long term disturbance (acres): 0.06

Access road short term disturbance (acres): 0.06

Pipeline long term disturbance (acres): 0.08953168

Pipeline short term disturbance (acres): 0.08953168

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.6395317

Total short term disturbance: 3.4095316

Disturbance Comments: All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be re-contoured to the contour existing prior to initial construction.

Reconstruction method: reducing the pad size to approximately 1.5 acres from the proposed size of 4.75 acres. within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of all materials, trash, and equipment not required for production.

Topsoil redistribution: Topsoil will be evenly re-spread and aggressively re-vegetated over the entire disturbed area not needed for all-weather operations including cuts and fills.

Soil treatment: To seed the area, the proper BLM mixture free of noxious weeds, will be used.

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

Existing Vegetation at the well pad attachment:

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

Existing Vegetation Community at the road attachment:

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

Existing Vegetation Community at the pipeline attachment:

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

Existing Vegetation Community at other disturbances attachment:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

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

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Kevin

Last Name: Dickerson

Phone:

Email: lfuh@chevron.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

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

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

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 3H

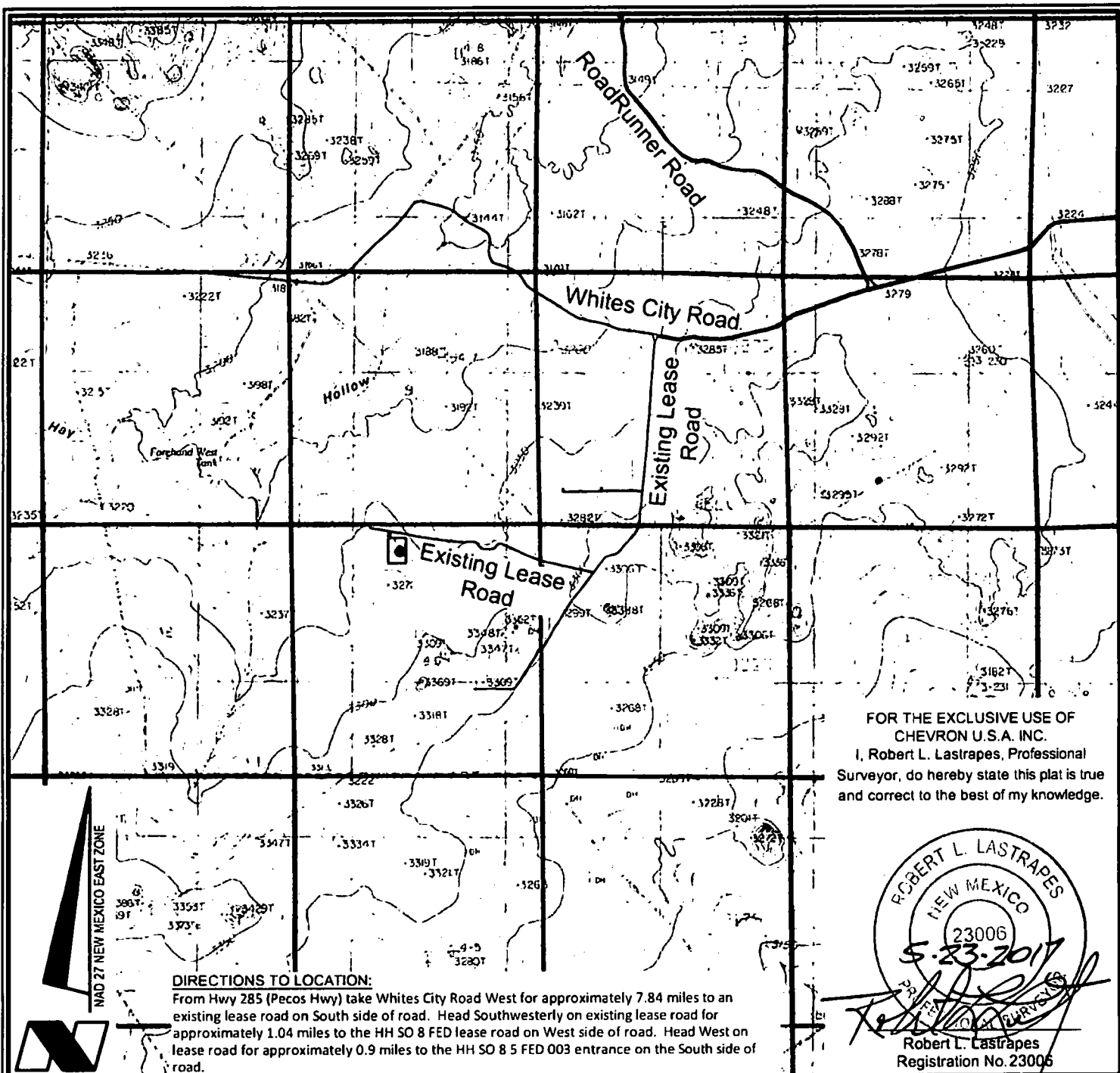
ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: On-site performed by BLM NRS Paul Murphy 01/06/2017

Other SUPO Attachment



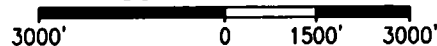
FOR THE EXCLUSIVE USE OF
 CHEVRON U.S.A. INC.
 I, Robert L. Lastrapes, Professional
 Surveyor, do hereby state this plat is true
 and correct to the best of my knowledge.



Robert L. Lastrapes
 Registration No. 23006

ROAD PLAT

SCALE: 1" = 3000'



LEGEND

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

CHEVRON U.S.A. INC.
 HH SO 8 5 FED 003 NO. 3H WELL
 LOCATED 579' FNL AND 2,309' FWL
 SECTION 17, 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: DBM

REVISIONS

PROJ. MGR.: GDG

No.

DATE:

REVISED BY:

DATE: 04/12/2017

No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 3H_Road Plat_041217.dwg

HH SO 8 5 FED 003 NO. 3H
WELL

X= 537,306 NAD 27
Y= 381,227
LAT. 32.048050
LONG. 104.212927

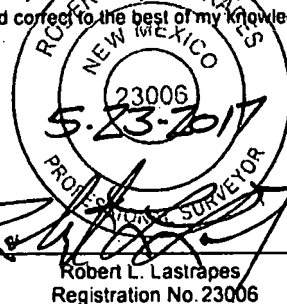
X= 537,490 NAD83
Y= 381,284
LAT. 32.048172
LONG. 104.213421

ELEVATION +3266' NAVD 88

NW PAD CORNER		NE PAD CORNER	
X= 537,046 NAD 27	Y= 381,512	X= 537,426 NAD 27	Y= 381,511
ELEVATION +3266' NAVD 88		ELEVATION +3257' NAVD 88	
SW PAD CORNER		SE PAD CORNER	
X= 537,045 NAD 27	Y= 380,967	X= 537,425 NAD 27	Y= 380,966
ELEVATION +3273' NAVD 88		ELEVATION +3269' NAVD 88	

LEGEND	
	Proposed Pad
	Centerline Access
	Section Line
	Existing Road/Pad
	Found Monument

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R 27 E

Sec. 8

Existing
HH SO 8 P5
Pad

S 85° 24' 31" E 2,096.26'
Point of
Commencement/
Fnd. 2" Iron Pipe
w/Cap @ the NW
Corner of Section 17

CENTERLINE
PROPOSED
ACCESS ROAD
20' x ±130.93'
±7.94 Rods
±0.06 Acres

Existing
HH SO 8 P5
Access Road

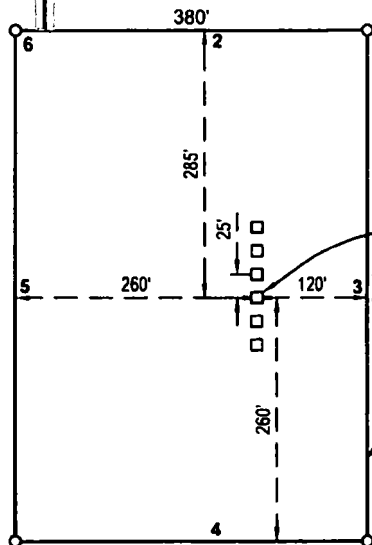
T
26
S

Sec. 17

Bureau of Land Management
Proposed Pad- ±4.75 Acres

HH SO 8 5 FED 003
No. 3H Well
579' FNL
2,309' FWL

PROPOSED PAD
±4.75 Acres



PAGE 1 OF 2

WELL PLAT

Scale: 1" = 200'

200' 0 100' 200'

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 3H WELL
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO



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FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 3H_Well Plat_041217.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.

CENTERLINE PROPOSED ACCESS ROAD		
COURSE	BEARING	DISTANCE
1	S 00° 16' 28" E	130.93'

NOTE:

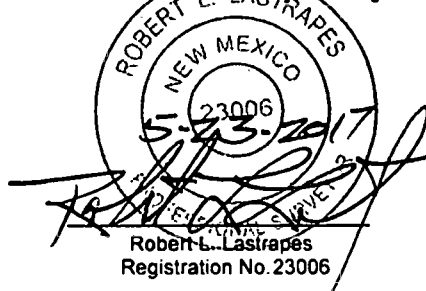
Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards,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

PROPOSED PAD		
COURSE	BEARING	DISTANCE
2	S 89° 52' 43" E	348.07'
3	S 00° 07' 17" W	545.00'
4	N 89° 52' 43" W	380.00'
5	N 00° 07' 17" E	545.00'
6	S 89° 52' 43" E	31.93'

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.nmonccall.org.

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Surveyor, do hereby state this plat is true
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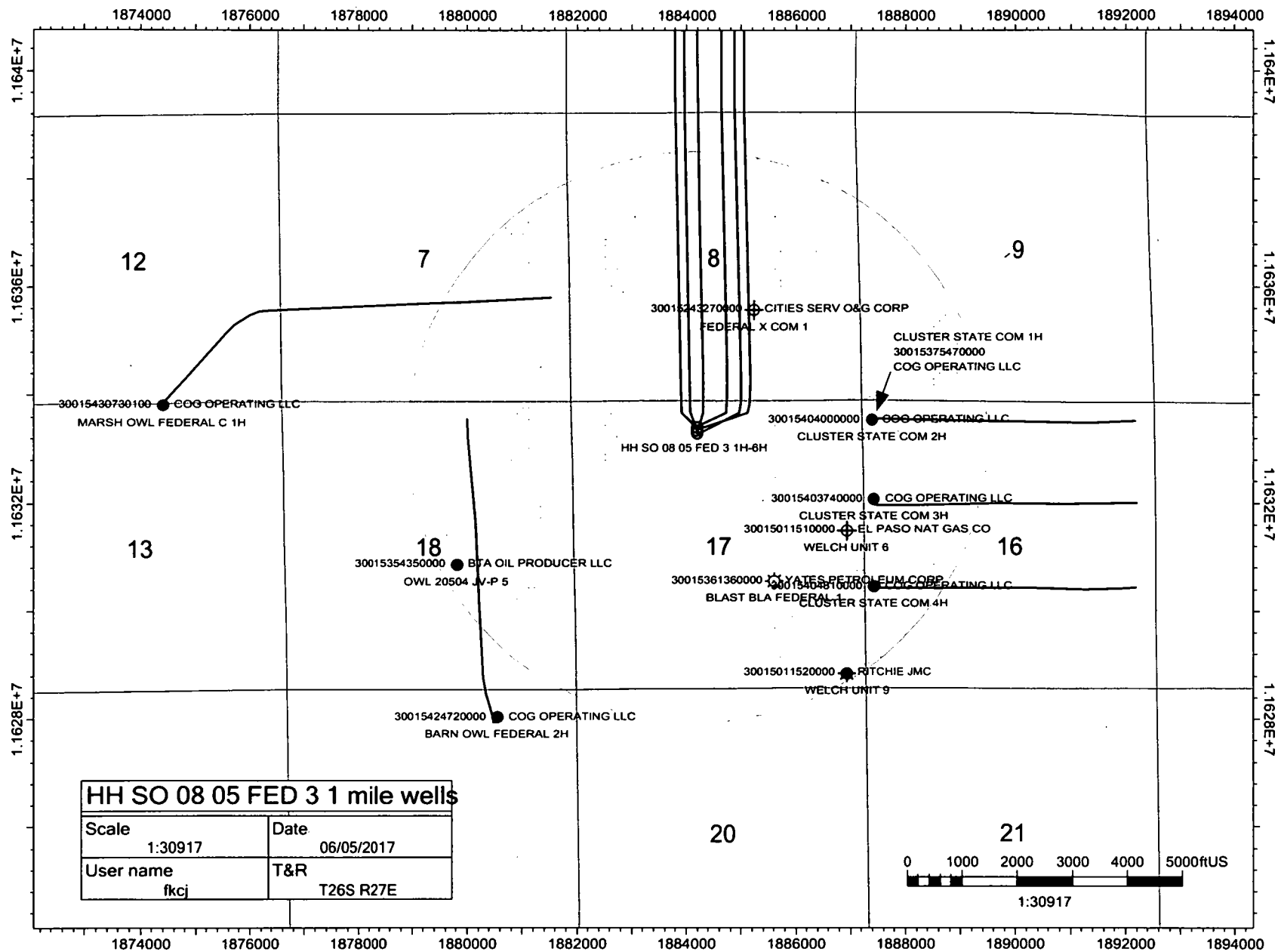
WELL PLAT

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 3H WELL
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO



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R 27 E

Sec. 8

Bureau of Land Management
Proposed WFMP Flowline(Cluster) ±931', ±56.42 Rods
Proposed Gas Lift Flowline ±914', ±55.39 Rods
Proposed Temporary Water Line ±911', ±55.21 Rods

Sec. 9

Bureau of Land Management
Proposed WFMP Flowline(Cluster) ±612', ±37.09 Rods
Proposed Gas Lift Flowline ±613', ±37.15 Rods
Proposed Temporary Water Line ±613', ±37.15 Rods

SEE INSET B

T
26
S

Sec. 16

State of New Mexico

Sec. 17

Bureau of Land Management
Proposed 65' ROW ±75.79', ±4.59 Rods, ±0.12 Acres
Proposed WFMP Flowline(Cluster) ±3,101' ±187.94 Rods
Proposed Gas Lift Flowline ±3,019', ±182.97 Rods
Proposed Temporary Water Line ±3,016', ±182.79 Rods
Proposed Utility Line ±87' ±5.27 Rods

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Surveyor, do hereby state this plat is true
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Not to be used for construction,
bedding, recordation, conveyance,
sales, or engineering design

PRELIMINARY

Robert L. Lastrapes
Registration No. 23006



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DETAIL

PAGE 1 OF 2

CHEVRON U.S.A. INC.

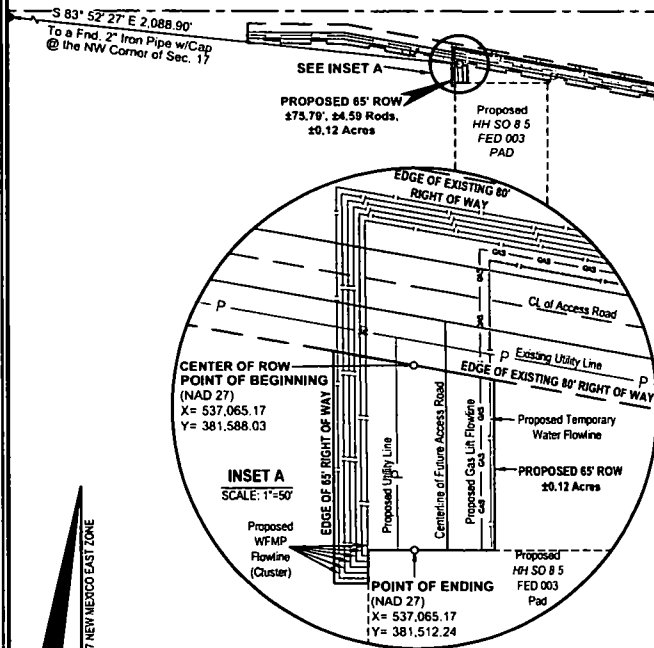
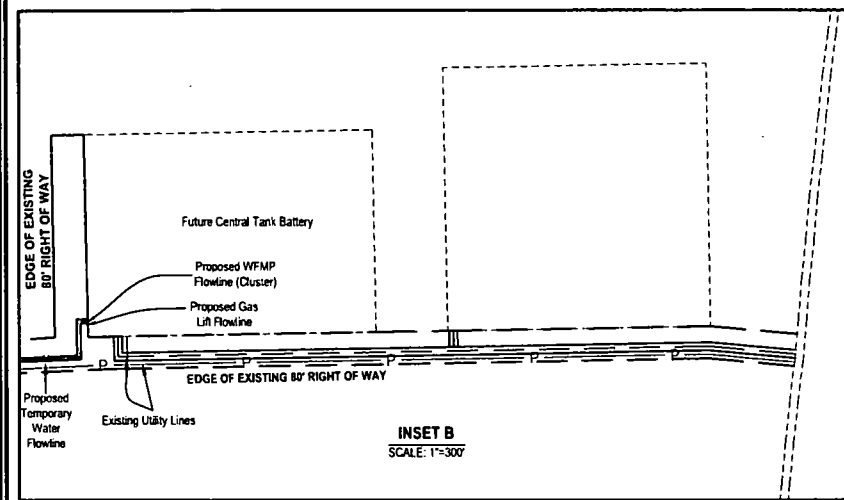
PROPOSED 65' RIGHT OF WAY EASEMENT & EXISTING 80' ROW TO BE USED FOR FLOWLINE
HH SO 8 5 FED 003 ROW
SECTIONS 8, 9 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR

REVISIONS

PROJ. MGR.: GDG	No. 1	DATE: 09/19/2016	REVISED BY: GDG
DATE: 09/01/2016	No. 2	DATE: 05/24/2017	REVISED BY: AMT

FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 ROW2.dwg



NOTE: No field work was performed by C.H. Fenstermaker & Associates, L.L.C. on the proposed pipelines depicted in these drawings. Pipelines shown are preliminary and are based on previous survey data and digitized client-furnished information. Pipeline positions and distances should be considered approximate. Following final staking, revised plats will reflect as-staked pipeline positions, bearings and distances.

LEGEND	
—	Section Line
- - -	Right of Way
- - -	WFMP Flowline
- - -	GAS — GAS Gas Lift Flowline
- - -	Centerline Access
- - -	Utility Line
- - -	Temporary Water Line
X	Fence Line
- - -	Lease Road/Pads
●	Found Monument



Scale: 1" = 500'

500' 0 250' 500'

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:

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2. 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
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I, Robert L. Lastrapes, Professional
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Not to be used for construction,
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sales, or engineering design



Robert L. Lastrapes
Registration No. 23006

**METES AND BOUNDS DESCRIPTION OF A
PROPOSED RIGHT OF WAY EASEMENT LOCATED IN
SECTIONS 8, 9 AND 17 OF T26S-R27E
EDDY COUNTY, NEW MEXICO**

HH SO 8 5 FED 003 RIGHT OF WAY

Description of the centerline of a proposed 65 feet wide by 75.79 feet or 4.59 rods right of way easement (40 feet each side of centerline) across Bureau of Land Management property located in section 17 of Township 26 South, Range 27 East, and described as follows:

Commencing at the Northwest corner of said section 17 Township 26 South Range 27 East at a found 2" Iron Pipe; Thence South 83 degrees 52 minutes 27 seconds East 2,088.90 feet to the Point of Beginning. Said Point of Beginning having the following coordinates: X = 537,065.17 Y = 381,588.03 (New Mexico State Plane Coordinate System, East Zone, NAD 27).

Thence South 75.79 feet to the Point of Ending, having the following coordinates X=537,065.17 and Y=381,512.24 (New Mexico State Plane Coordinate System, East Zone, NAD 27).

The bearings recited herein are oriented to New Mexico State Plane Coordinate System, East Zone, NAD 27.

This description represents a survey made on the ground for a right of way easement and intended solely for that purpose. This description does not represent a boundary survey.

DETAIL

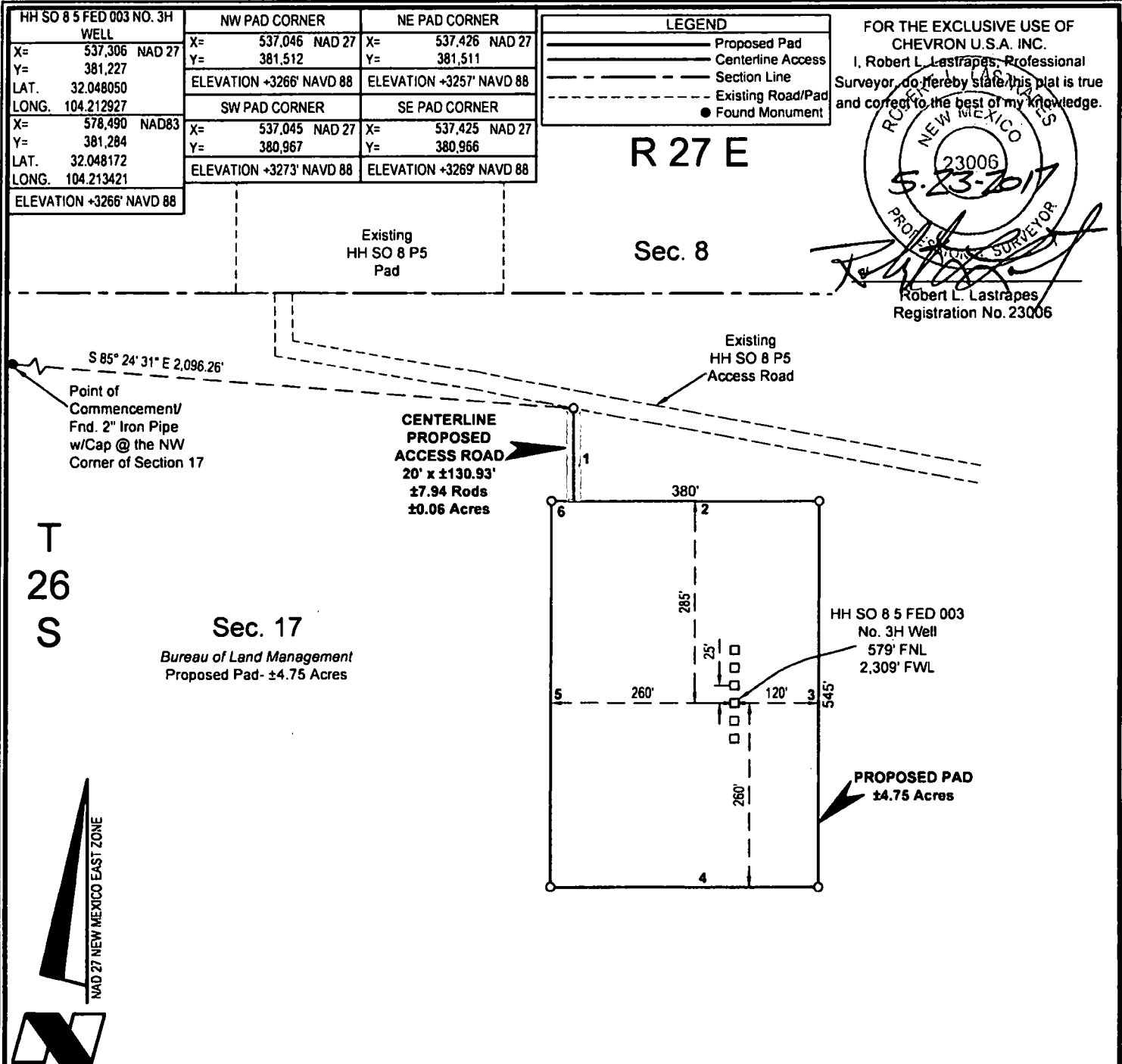
PAGE 2 OF 2

CHEVRON U.S.A. INC.
PROPOSED 65' RIGHT OF WAY EASEMENT & EXISTING 80' ROW TO BE USED FOR FLOWLINE
HH SO 8 5 FED 003 ROW
SECTIONS 8, 9 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO



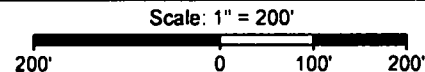
C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

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PAGE 1 OF 2

WELL PLAT



CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 3H WELL
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO



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PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 04/12/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 3H_Well Plat_041217.dwg			

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CENTERLINE PROPOSED ACCESS ROAD		
COURSE	BEARING	DISTANCE
1	S 00° 16' 28" E	130.93'

NOTE:

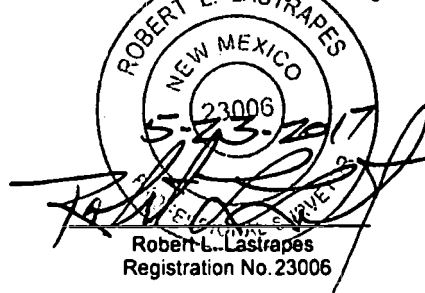
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PROPOSED PAD		
COURSE	BEARING	DISTANCE
2	S 89° 52' 43" E	348.07'
3	S 00° 07' 17" W	545.00'
4	N 89° 52' 43" W	380.00'
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6	S 89° 52' 43" E	31.93'

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.nmonccall.org.

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Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



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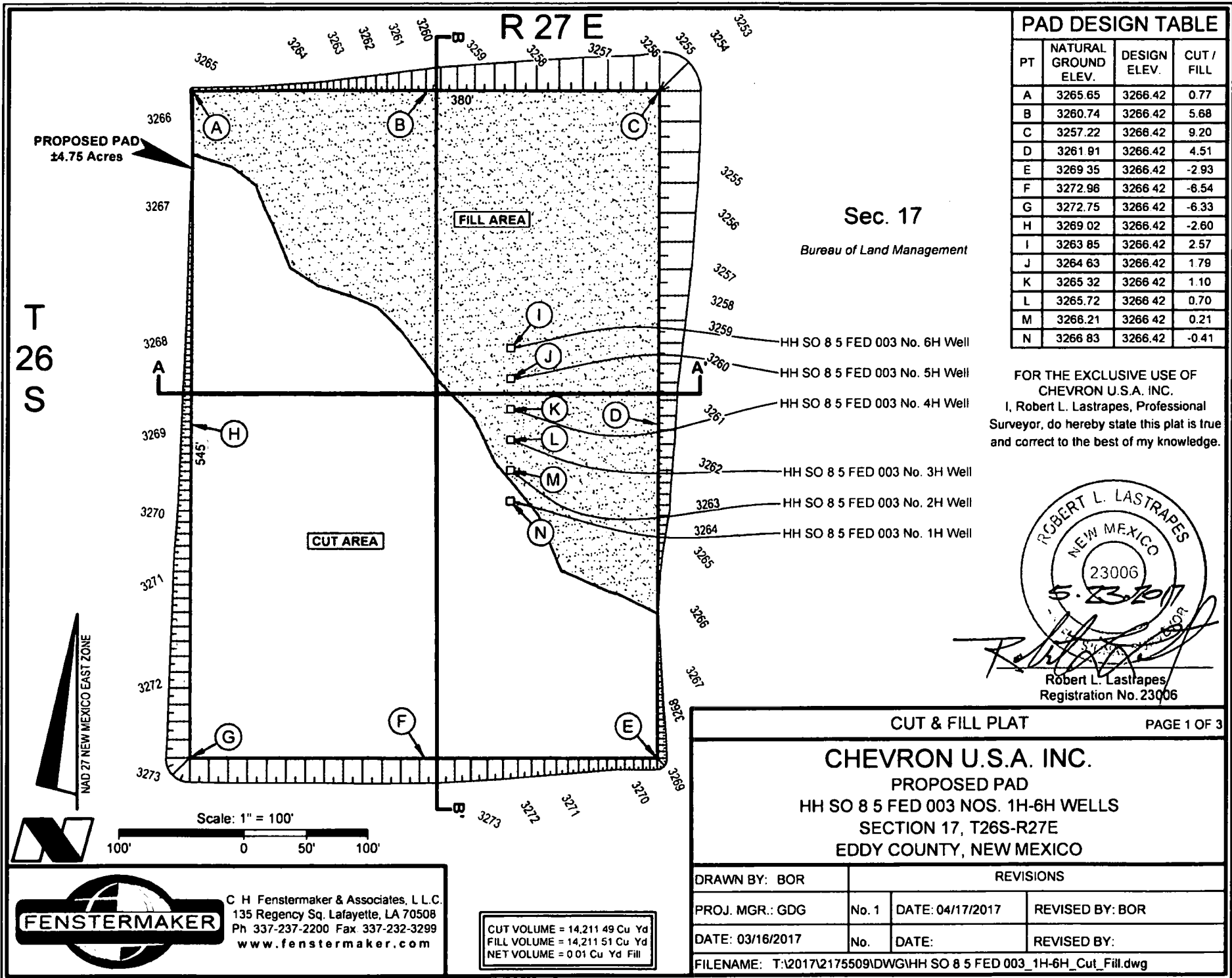
WELL PLAT

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 3H WELL
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO .

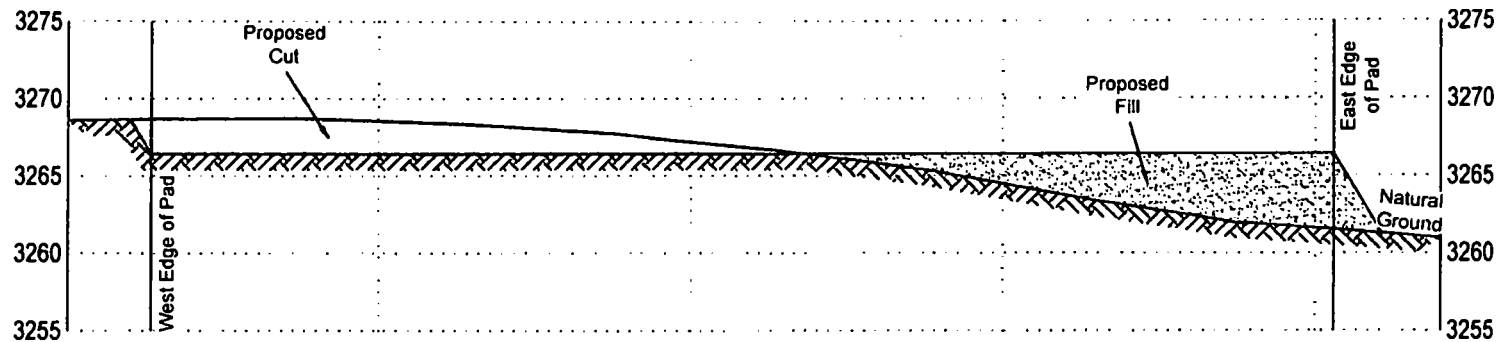


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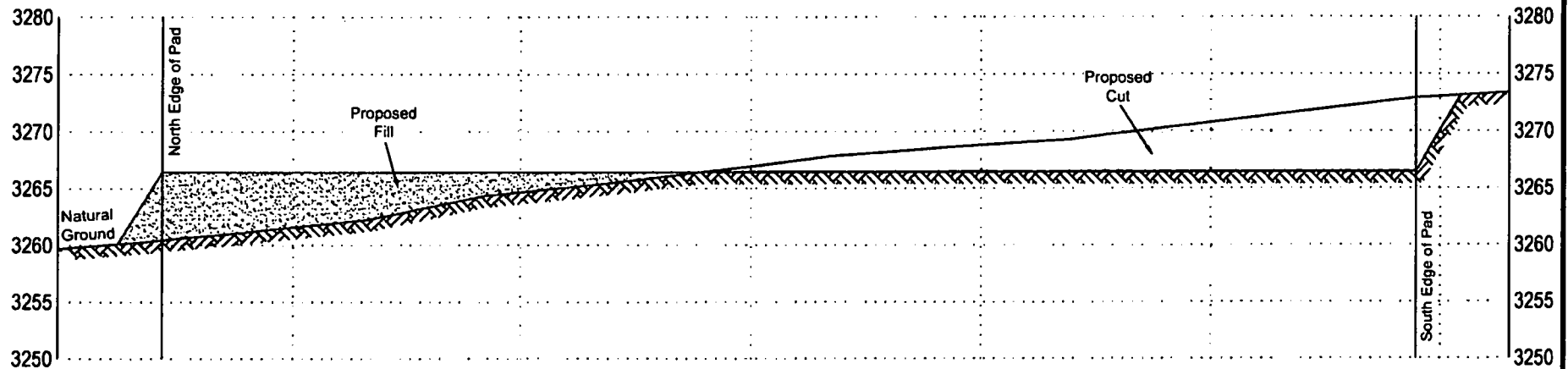
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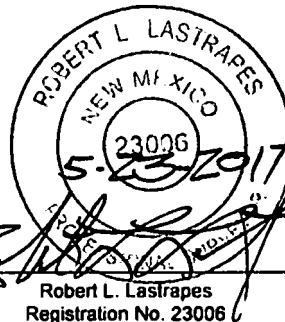
CROSS SECTION A-A'



CROSS SECTION B-B'



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CUT & FILL PLAT

PAGE 2 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD
HH SO 8 5 FED 003 NOS. 1H-6H WELLS
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

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REVISIONS

PROJ. MGR.: GDG

No. 1

DATE: 04/17/2017

REVISED BY: BOR

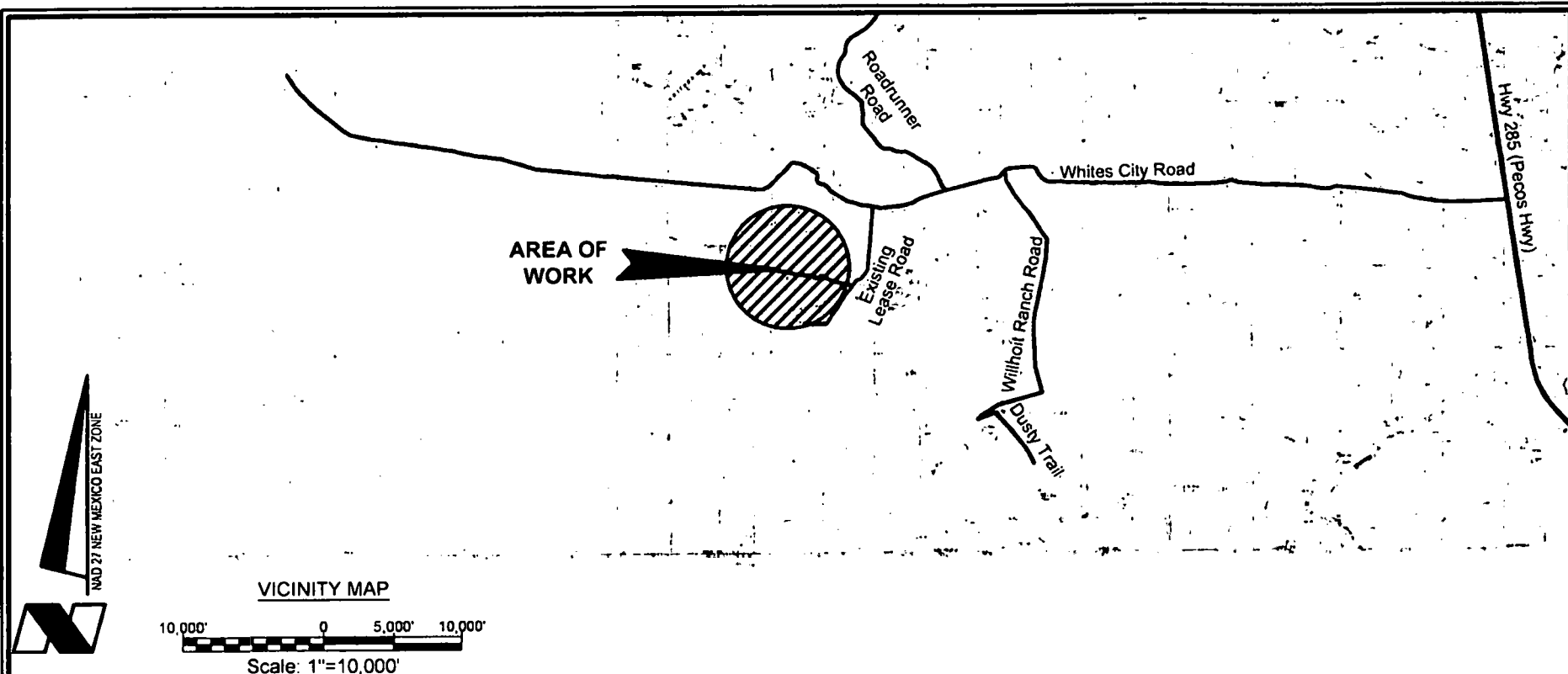
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No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003_1H-6H_Cut_Fill.dwg



NOTE:

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2. The design pad elevation recommendation is based solely on a cut and fill (1:1 ratio) balance of the pad and does not include material required for the access roads. A detailed soil test and slope stability analysis shall be performed prior to construction to ensure proper compaction and working performance of the pad under the anticipated loadings. This material balance sheet does not constitute a foundation design and C. H. Fenstermaker & Associates, L.L.C. makes no warranty to the structural integrity of the site layout as shown. Fenstermaker also makes no recommendation or warranty about the layout relative to flood hazards, erosion control, or soil stability issues. Elevations refer to the North American Vertical Datum of 1988.

3. 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.

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CUT & FILL PLAT

PAGE 3 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD

HH SO 8 5 FED 003 NOS. 1H-6H WELLS

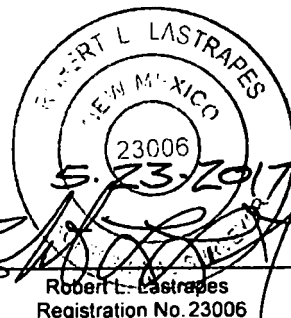
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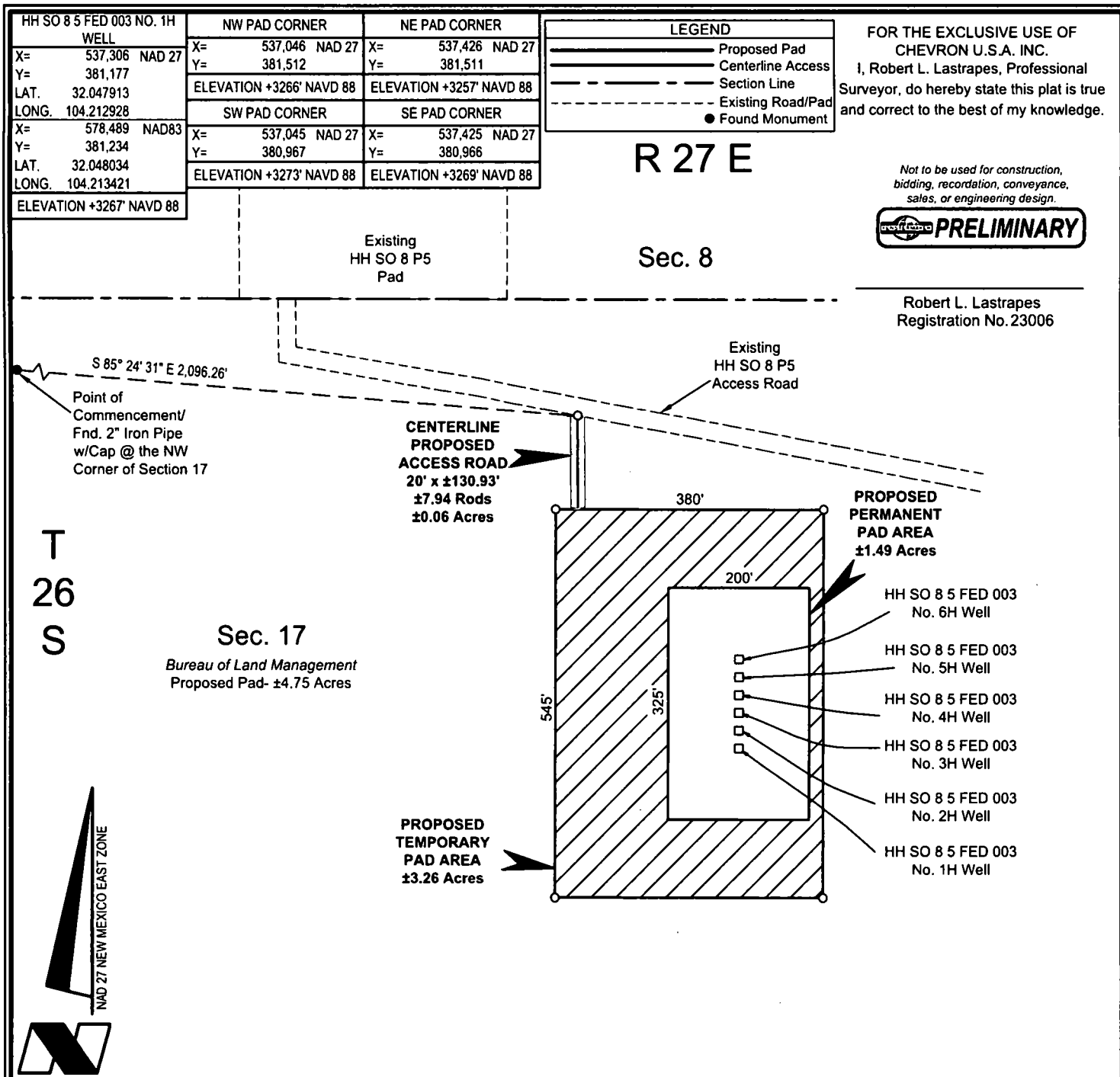
EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR	REVISIONS		
PROJ. MGR.: GDG	No. 1	DATE: 04/17/2017	REVISED BY: BOR
DATE: 03/16/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003_1H-6H_Cut_Fill.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





PAGE 1 OF 2

WELL PLAT

Scale: 1" = 200'

200' 0 100' 200'

CHEVRON U.S.A. INC.
 INTERIM RECLAMATION
 HH SO 8 5 FED 003 NOS. 1H-6H WELLS
 SECTION 17, T26S-R27E
 EDDY COUNTY, NEW MEXICO



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DRAWN BY: GDG

REVISIONS

PROJ. MGR.: GDG

No.

DATE:

REVISED BY:

DATE: 06/19/2017

No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 Reclamation.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.nmonccall.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.

*Not to be used for construction,
bidding, recordation, conveyance,
sales, or engineering design.*



Robert L. Lastrapes
Registration No. 23006

PAGE 2 OF 2

WELL PLAT

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APD Surface Use Plan of Operations

This Surface Use Plan of Operations has been designed to be reviewed in conjunction with Hayhurst 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.

HH SO 8 5 FED 003 3H

NMNM 118108

SECTION 17, T26S, R27E (Off Lease SHL) SECTION 5, T26S, R27E

SHL 579' FNL & 2309' FWL

BHL 280' FNL & 2430' FWL

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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NMNM 118108

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BHL 280' FNL & 2430' FWL

Construction Materials (MDP SUPO 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 380'
 - Interior well pad dimensions from point of entry (well head) of the well are N-285', S-260', E-120', 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 (MDP SUPA Pg. 8)

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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NMNM 118108

SECTION 17, T26S, R27E (Off Lease SHL) SECTION 5, T26S, R27E

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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 Representatives

Primary point of contact:

Jennifer Van Curen

Jennifer.VanCuren@arcadis-us.com

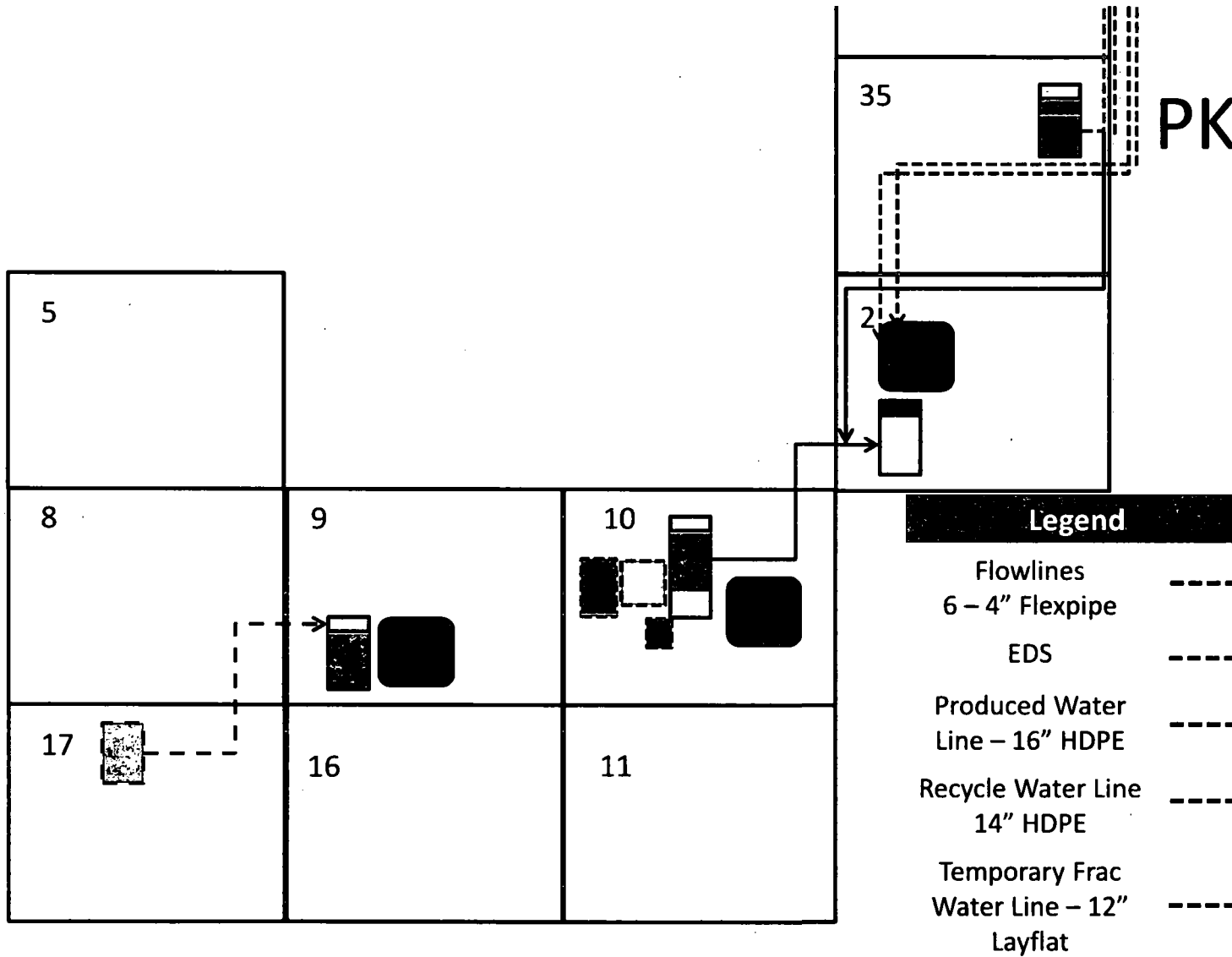
M- 432-270-8753

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SHL 579' FNL & 2309' FWL BHL 280' FNL & 2430' FWL

Chevron Functional Contacts

Project Manager Name: Justin Freeman Address: 1400 Smith Street Houston, TX 77002 Phone: 713-372-2151 Email: FreemJ@chevron.com	Drilling Engineer Name: Roderick Milligan Address: 1400 Smith Street Houston, TX 77002 Phone: (281) 413-9794 Email: RoderickMilligan@chevron.com
Surface Land Representative 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

PKG 5 DETAILS



HHNM Rig 2/3

Facilities Scope – 2017/8

HH SO 8/5 P3 (6 wells x 10,000 ft) PKG 6

- SPUD:
- CTB 9: *Upgrade Adding HP Header, LP Header VRU, LACT, LP Tester*
- New SWD Sec 26:
 - 2-Trains; 7 H-pumps
 - 10,000 BBL recycle Train ~ \$850,000
 - SWD WellPad
 - SWD Injection Line
 - Recycle Water P/L from SWD 26 to Pond 4
 - EDS from CTB 35 to SWD 26
 - P/L: 1.0 Mile (Produced Water from CTB 35 to SWD 26)
- Electrical Compressor
 - Sub-Station
 - Sub-Station Transformer Upgrade for EDS
 - Compressor Pad
- Well: Pad, 2.0 mi F/L x 6 well
- Gas Lift: 0.5 mi
- IT Towers (2)
 - Pad Locations
 - Fiber Optic Cable ROW ~ 1.5 miles





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

PWD Data Report

07/16/2018

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

07/16/2018

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: