

Well Name: BIG BULL FED COM	Well Location: T21S / R32E / SEC 1 / SESW /	County or Parish/State:
Well Number: 305H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM127892	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547758	Well Status: Approved Application for Permit to Drill	Operator: MATADOR PRODUCTION COMPANY

Notice of Intent

Sundry ID: 2699453

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 10/26/2022	Time Sundry Submitted: 01:39
Date proposed operation will begin: 08/01/2023	

Procedure Description: BLM Bond No: NMB001079 Surety Bond No RLB0015172 “Matador respectfully request the option to make the following changes to the Big Bull Fed Com #305H: - Change the SHL from 100’ FNL & 2080’ FWL (NENW) of Sec. 12-21S-32E to 110’ FSL & 2119’ FWL (SESW) of Sec. 1-21S-32E. SHL remains on previously approved pad site. - Change the BHL from 1271’ FNL of sec 13-21S-32E & 2310’ FWL to 1211’ FNL & 1370’ FWL sec 13-21S-32E - Revise casing program to 16”, 10-3/4”, 8-5/8” by 5.5” and deepen well to 3rd Bone Spring, attached is revised drill plan with updated casing depths.”

NOI Attachments

Procedure Description

- Big_Bull_Fed_Com_305H_Directional_AC_Report_v1_20230427162722.pdf
- Big_Bull_Fed_Com_305H_Directional_Well_Plan_v1_20230427162658.pdf
- Big_Bull_Fed_Com_305H_Directional_Wall_Plot_v1_20230427162649.pdf
- Big_Bull_Fed_Com_305H_Drill_Plan_Sundry_20230427162634.pdf
- 2022101651_MATADOR_BIG_BULL_FED_COM_LEA_305H_C_102_FINAL_04_20_2023_FINAL_signed_20230424160749.pdf
- Big_Bull_Fed_Com_305H_Casing_Specs_8.625in_32ppf_P110EC_SPRINT_FJ_20221024142954.pdf
- Big_Bull_Fed_Com_305H_Casing_Specs_5.5in_20lb_P110EC_VAM_SPRINT_SF_20221024142947.pdf
- Big_Bull_Fed_Com_305H_4_String_Wellhead_Diagram_with_16in_CRC_20221024142936.pdf

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2022101651_MATADOR_BIG_BULL_305H_WELL_SITE_20221024142929.pdf

Conditions of Approval

Additional

BIG_BULL_FED_COM_305H_APD_Change_COA_20230601141050.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: CASSIE HAHN

Signed on: JUN 01, 2023 03:36 PM

Name: MATADOR PRODUCTION COMPANY

Title: Senior Landman

Street Address: 5400 LBJ FREEWAY, SUITE 1500

City: DALLASState: TX

Phone: (972) 371-5440

Email address: CHAHN@MATADORRESOURCES.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: KEITH P IMMATTY

BLM POC Title: ENGINEER

BLM POC Phone: 5759884722

BLM POC Email Address: KIMMATTY@BLM.GOV

Disposition: Approved

Disposition Date: 06/09/2023

Signature: Chris Walls

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MATADOR PRODUCTION COMPANY
WELL NAME & NO.:	BIG BULL FED COM 305H
SURFACE HOLE FOOTAGE:	110'S & 2119'/W
BOTTOM HOLE FOOTAGE:	1211'/N & 1370'/W
LOCATION:	Section 1, T.21 S., R.32 E., NMP
COUNTY:	Lea County, New Mexico

COA

H2S	☒ Yes	☐ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Wellhead Variance	☐ Diverter		
Other	☒ 4 String	☒ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☒ Contingency Cement Squeeze	☐ EchoMeter	☐ Primary Cement Squeeze
Special Requirements	☐ Water Disposal	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☐ Casing Clearance

SEE ORIGINAL COA FOR ALL OTHER REQUIREMENTS.

A. CASING

Primary Casing Design:

1. The **16** inch surface casing shall be set at approximately **1,600 feet** (a minimum of 25 feet (Lea County) 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 psi 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 psi compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The **10-3/4** inch 1st intermediate casing shall be set at approximately **3,140** feet. The minimum required fill of cement behind the **10-3/4** inch intermediate casing is:

Option 1 (Single Stage):

- ❖ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2 (2-stage with DV tool):

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.
 - b. Second stage above DV tool:
 - ❖ Cement to surface. If cement does not circulate, contact the appropriate BLM office. Operator must run a CBL from TD of the 10-3/4" casing to surface. Submit results to BLM.
 - ❖ **In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing string must come to surface.**
3. The **8-5/8** inch 2nd intermediate casing shall be set at approximately **5,708** feet. The minimum required fill of cement behind the **8-5/8 inch** intermediate casing is:

Option 1 (Single Stage):

- ❖ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2 (2-stage with DV tool):

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.

- c. 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.
- d. Second stage above DV tool:
 - ❖ Cement to surface. If cement does not circulate, contact the appropriate BLM office. Operator must run a CBL from TD of the 10-3/4" casing to surface. Submit results to BLM.
- ❖ In Capitan Reef 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.
- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Ensure FW based mud used across the Capitan Reef interval)
 - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

Bradenhead cement squeeze option for this intermediate string is approved. In this case, operator must run a CBL or echometer from TD of the 8-5/8" casing to surface. Submit results to BLM.

- 4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least **50 feet** above top of Capitan reef formation. Operator shall provide method of verification.

Excess cement for production casing is below CFO's recommendation of 25%.

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)

☒ 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)
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing 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 NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

SA 06/01/2023

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Well Number: 305H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM127892	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547758	Well Status: Approved Application for Permit to Drill	Operator: MATADOR PRODUCTION COMPANY

Notice of Intent

Sundry ID: 2699453

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 10/26/2022	Time Sundry Submitted: 01:39
Date proposed operation will begin: 12/24/2022	

Procedure Description: BLM Bond No: NMB001079 Surety Bond No RLB0015172 “Matador respectfully request the option to make the following changes to the Big Bull Fed Com #305H: - Change the SHL from 100’ FNL & 2080’ FWL to 110’ FNL & 2119’ FWL. SHL remains on previously approved pad site. - Change the BHL from 1271’ FNL & 2310’ FWL to 1271’ FNL & 1370’ FWL. - Revise casing program to 16”, 10-3/4”, 8-5/8” by 5.5” and deepen well to 3rd Bone Spring, attached is revised drill plan with updated casing depths.”

NOI Attachments

Procedure Description

- Big_Bull_Fed_Com_305H_Drill_Plan_Sundry_20221024143016.pdf
- Big_Bull_Fed_Com_305H_Directional_Well_Plan_v1_20221024143011.pdf
- Big_Bull_Fed_Com_305H_Directional_Wall_Plot_v1_20221024143006.pdf
- Big_Bull_Fed_Com_305H_Directional_AC_Report_v1_20221024143000.pdf
- Big_Bull_Fed_Com_305H_Casing_Specs_8.625in_32ppf_P110EC_SPRINT_FJ_20221024142954.pdf
- Big_Bull_Fed_Com_305H_Casing_Specs_5.5in_20lb_P110EC_VAM_SPRINT_SF_20221024142947.pdf
- Big_Bull_Fed_Com_305H_4_String_Wellhead_Diagram_with_16in_CRC_20221024142936.pdf
- 2022101651_MATADOR_BIG_BULL_305H_WELL_SITE_20221024142929.pdf

Well Name: BIG BULL FED COM	Well Location: T21S / R32E / SEC 12 / NENW /	County or Parish/State:
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US Well Number: 3002547758	Well Status: Approved Application for Permit to Drill	Operator: MATADOR PRODUCTION COMPANY

Big_Bull_305_plat_001_20221024142852.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: CASSIE HAHN

Signed on: OCT 26, 2022 01:38 PM

Name: MATADOR PRODUCTION COMPANY

Title: Landman

Street Address: 5400 LBJ Freeway, Suite 1500

City: DallasState: TX

Phone: (972) 371-5440

Email address: chahn@matadorresources.com

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

Big Bull Fed Com 305H**SHL: 110' FSL & 2119' FWL Section 1****BHL: 1271' FNL & 1370' FWL Section 13****Township/Range: 21S 32E****Elevation Above Sea Level: 3776**

- Matador respectfully requests the option to amend the well design of the Big Bull Fed Com 305H to make the following changes to the current APD.

Casing & Cement

All casing will be API and new. See attached casing assumption worksheet.

String	Hole Size (in)	Set MD (ft)	Set TVD (ft)	Casing Size (in)	Wt. (lb/ft)	Grade	Joint	Collapse	Burst	Tension
Surface	20	0 - 1600	0 - 1600	16	75	J-55	BUTT	1.125	1.125	1.8
Intermediate 1	13.5	0 - 3140	0 - 3140	10.75	45.5	J-55	BUTT	1.125	1.125	1.8
Intermediate 2	9.875	0 - 5708	0 - 5708	8.625	32	P-110	VAM-Sprint FJ	1.125	1.125	1.8
Production	7.875	0 - 17357	0 - 11050	5.5	20	P-110	VAM Sprint SF	1.125	1.125	1.8

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

- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed

- All non-API joint connections will be of like or greater quality and as run specification sheets will be on location for review

String	Type	Sacks	Yield	Cu. Ft.	Weight	Percent Excess	Top of Cement (ft)	Class	Blend
Surface	Lead	900	1.78	1610	13.5	50%	0	C	5% NaCl + LCM
	Tail	1470	1.35	1987	14.8	50%	1280	C	5% NaCl + LCM
Intermediate 1	Lead	1070	1.78	1905	13.5	50%	0	C	5% NaCl + LCM
	Tail	270	1.35	364	14.8	50%	2512	C	5% NaCl + LCM
Intermediate 2	Lead	520	1.78	929	13.5	50%	0	C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
	Tail	160	1.35	217	14.8	50%	4708	C	5% NaCl + LCM
Production	Lead	370	3.66	1345	10.3	25%	3398	A/C	Fluid Loss + Dispersant + Retarder + LCM
	Tail	1090	1.35	1470	13.2	15%	10028	A/C	Fluid Loss + Dispersant + Retarder + LCM

-Matador requests the option to run a DV tool with annular packer as contingency in the intermediate 1 or 2 section on 10-3/4" or 8-5/8" casing if lost circulation is encountered. If losses occur, the DV tool with packer will be placed at least 100' above the loss zone to give the option to pump cement as either a single stage or two stage.

-Matador would also like to request a variance to perform a bradenhead squeeze on Intermediate 2 if needed.

Mud Program

An electronic Pason mud monitoring system complying with Onshore Order #2 will be used. All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.

Hole Section	Hole Size (in)	Mud Type	Interval MD (ft)	Density (lb/gal)	Viscosity	Fluid Loss
Surface	20	Spud Mud	0 - 1600	8.4 - 8.8	28-30	NC
Intermediate 1	13.5	Brine Water	1600 - 3140	9.5 - 10.2	28-32	NC
Intermediate 2	9.875	Fresh Water	3140 - 5708	8.4 - 8.6	28-30	NC
Production	7.875	OBM/Cut Brine	5708 - 17357	8.6 - 9.4	28-30	NC

Matador Production Company

Ranger/Arrowhead

Big Game

Big Bull Fed Com #305H

Wellbore #1

Plan: BLM Plan #1

Standard Planning Report

21 October, 2022

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Company:	Matador Production Company	TVD Reference:	KB @ 3804.5usft
Project:	Ranger/Arrowhead	MD Reference:	KB @ 3804.5usft
Site:	Big Game	North Reference:	Grid
Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

Project	Ranger/Arrowhead		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		Using geodetic scale factor

Site	Big Game				
Site Position:		Northing:	546,545.41 usft	Latitude:	32° 30' 2.084 N
From:	Lat/Long	Easting:	717,880.57 usft	Longitude:	103° 37' 35.839 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	Big Bull Fed Com #305H, Lea county, NM					
Well Position	+N/-S	97.0 usft	Northing:	546,642.40 usft	Latitude:	32° 30' 3.103 N
	+E/-W	-902.5 usft	Easting:	716,978.09 usft	Longitude:	103° 37' 46.369 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	3,776.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/16/2022	6.42	60.23	47,543.64911485

Design	BLM Plan #1				
Audit Notes:					
Version:	1	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)		+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0		0.0	0.0	179.64

Plan Survey Tool Program	Date	10/17/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	17,357.4	BLM Plan #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,300.0	8.00	257.44	2,297.4	-12.1	-54.4	1.00	1.00	0.00	257.44	
7,136.4	8.00	257.44	7,086.7	-158.5	-711.4	0.00	0.00	0.00	0.00	
7,669.7	0.00	0.00	7,618.3	-166.6	-747.7	1.50	-1.50	0.00	180.00	
10,528.4	0.00	0.00	10,477.0	-166.6	-747.7	0.00	0.00	0.00	0.00	VP - Big Bull Fed Con
11,428.4	90.00	179.64	11,050.0	-739.6	-744.1	10.00	10.00	0.00	179.64	
11,428.7	90.00	179.65	11,050.0	-739.8	-744.1	2.00	-0.15	1.99	94.32	
17,357.4	90.00	179.65	11,050.0	-6,668.5	-707.6	0.00	0.00	0.00	0.00	BHL - Big Bull Fed Cc

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Company:	Matador Production Company	TVD Reference:	KB @ 3804.5usft
Project:	Ranger/Arrowhead	MD Reference:	KB @ 3804.5usft
Site:	Big Game	North Reference:	Grid
Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 1.00									
1,600.0	1.00	257.44	1,600.0	-0.2	-0.9	0.2	1.00	1.00	0.00
1,700.0	2.00	257.44	1,700.0	-0.8	-3.4	0.7	1.00	1.00	0.00
1,800.0	3.00	257.44	1,799.9	-1.7	-7.7	1.7	1.00	1.00	0.00
1,900.0	4.00	257.44	1,899.7	-3.0	-13.6	3.0	1.00	1.00	0.00
2,000.0	5.00	257.44	1,999.4	-4.7	-21.3	4.6	1.00	1.00	0.00
2,100.0	6.00	257.44	2,098.9	-6.8	-30.6	6.6	1.00	1.00	0.00
2,200.0	7.00	257.44	2,198.3	-9.3	-41.7	9.0	1.00	1.00	0.00
2,300.0	8.00	257.44	2,297.4	-12.1	-54.4	11.8	1.00	1.00	0.00
Start 4836.4 hold at 2300.0 MD									
2,400.0	8.00	257.44	2,396.4	-15.2	-68.0	14.7	0.00	0.00	0.00
2,500.0	8.00	257.44	2,495.5	-18.2	-81.6	17.7	0.00	0.00	0.00
2,600.0	8.00	257.44	2,594.5	-21.2	-95.2	20.6	0.00	0.00	0.00
2,700.0	8.00	257.44	2,693.5	-24.2	-108.8	23.6	0.00	0.00	0.00
2,800.0	8.00	257.44	2,792.5	-27.3	-122.3	26.5	0.00	0.00	0.00
2,900.0	8.00	257.44	2,891.6	-30.3	-135.9	29.4	0.00	0.00	0.00
3,000.0	8.00	257.44	2,990.6	-33.3	-149.5	32.4	0.00	0.00	0.00
3,100.0	8.00	257.44	3,089.6	-36.3	-163.1	35.3	0.00	0.00	0.00
3,200.0	8.00	257.44	3,188.6	-39.4	-176.7	38.3	0.00	0.00	0.00
3,300.0	8.00	257.44	3,287.7	-42.4	-190.3	41.2	0.00	0.00	0.00
3,400.0	8.00	257.44	3,386.7	-45.4	-203.8	44.1	0.00	0.00	0.00
3,500.0	8.00	257.44	3,485.7	-48.5	-217.4	47.1	0.00	0.00	0.00
3,600.0	8.00	257.44	3,584.8	-51.5	-231.0	50.0	0.00	0.00	0.00
3,700.0	8.00	257.44	3,683.8	-54.5	-244.6	53.0	0.00	0.00	0.00
3,800.0	8.00	257.44	3,782.8	-57.5	-258.2	55.9	0.00	0.00	0.00
3,900.0	8.00	257.44	3,881.8	-60.6	-271.8	58.9	0.00	0.00	0.00
4,000.0	8.00	257.44	3,980.9	-63.6	-285.4	61.8	0.00	0.00	0.00
4,100.0	8.00	257.44	4,079.9	-66.6	-298.9	64.7	0.00	0.00	0.00
4,200.0	8.00	257.44	4,178.9	-69.6	-312.5	67.7	0.00	0.00	0.00
4,300.0	8.00	257.44	4,277.9	-72.7	-326.1	70.6	0.00	0.00	0.00
4,400.0	8.00	257.44	4,377.0	-75.7	-339.7	73.6	0.00	0.00	0.00
4,500.0	8.00	257.44	4,476.0	-78.7	-353.3	76.5	0.00	0.00	0.00
4,600.0	8.00	257.44	4,575.0	-81.8	-366.9	79.4	0.00	0.00	0.00
4,700.0	8.00	257.44	4,674.0	-84.8	-380.4	82.4	0.00	0.00	0.00
4,800.0	8.00	257.44	4,773.1	-87.8	-394.0	85.3	0.00	0.00	0.00
4,900.0	8.00	257.44	4,872.1	-90.8	-407.6	88.3	0.00	0.00	0.00
5,000.0	8.00	257.44	4,971.1	-93.9	-421.2	91.2	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Company:	Matador Production Company	TVD Reference:	KB @ 3804.5usft
Project:	Ranger/Arrowhead	MD Reference:	KB @ 3804.5usft
Site:	Big Game	North Reference:	Grid
Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

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)
5,100.0	8.00	257.44	5,070.2	-96.9	-434.8	94.2	0.00	0.00	0.00
5,200.0	8.00	257.44	5,169.2	-99.9	-448.4	97.1	0.00	0.00	0.00
5,300.0	8.00	257.44	5,268.2	-102.9	-461.9	100.0	0.00	0.00	0.00
5,400.0	8.00	257.44	5,367.2	-106.0	-475.5	103.0	0.00	0.00	0.00
5,500.0	8.00	257.44	5,466.3	-109.0	-489.1	105.9	0.00	0.00	0.00
5,600.0	8.00	257.44	5,565.3	-112.0	-502.7	108.9	0.00	0.00	0.00
5,700.0	8.00	257.44	5,664.3	-115.1	-516.3	111.8	0.00	0.00	0.00
5,800.0	8.00	257.44	5,763.3	-118.1	-529.9	114.7	0.00	0.00	0.00
5,900.0	8.00	257.44	5,862.4	-121.1	-543.5	117.7	0.00	0.00	0.00
6,000.0	8.00	257.44	5,961.4	-124.1	-557.0	120.6	0.00	0.00	0.00
6,100.0	8.00	257.44	6,060.4	-127.2	-570.6	123.6	0.00	0.00	0.00
6,200.0	8.00	257.44	6,159.4	-130.2	-584.2	126.5	0.00	0.00	0.00
6,300.0	8.00	257.44	6,258.5	-133.2	-597.8	129.5	0.00	0.00	0.00
6,400.0	8.00	257.44	6,357.5	-136.2	-611.4	132.4	0.00	0.00	0.00
6,500.0	8.00	257.44	6,456.5	-139.3	-625.0	135.3	0.00	0.00	0.00
6,600.0	8.00	257.44	6,555.6	-142.3	-638.5	138.3	0.00	0.00	0.00
6,700.0	8.00	257.44	6,654.6	-145.3	-652.1	141.2	0.00	0.00	0.00
6,800.0	8.00	257.44	6,753.6	-148.4	-665.7	144.2	0.00	0.00	0.00
6,900.0	8.00	257.44	6,852.6	-151.4	-679.3	147.1	0.00	0.00	0.00
7,000.0	8.00	257.44	6,951.7	-154.4	-692.9	150.0	0.00	0.00	0.00
7,100.0	8.00	257.44	7,050.7	-157.4	-706.5	153.0	0.00	0.00	0.00
7,136.4	8.00	257.44	7,086.7	-158.5	-711.4	154.1	0.00	0.00	0.00
Start Drop -1.50									
7,200.0	7.05	257.44	7,149.8	-160.3	-719.5	155.8	1.50	-1.50	0.00
7,300.0	5.55	257.44	7,249.2	-162.7	-730.2	158.1	1.50	-1.50	0.00
7,400.0	4.05	257.44	7,348.8	-164.5	-738.4	159.9	1.50	-1.50	0.00
7,500.0	2.55	257.44	7,448.7	-165.8	-744.0	161.1	1.50	-1.50	0.00
7,600.0	1.05	257.44	7,548.6	-166.5	-747.1	161.8	1.50	-1.50	0.00
7,669.7	0.00	0.00	7,618.3	-166.6	-747.7	161.9	1.50	-1.50	0.00
Start 2858.7 hold at 7669.7 MD									
7,700.0	0.00	0.00	7,648.6	-166.6	-747.7	161.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,748.6	-166.6	-747.7	161.9	0.00	0.00	0.00
7,900.0	0.00	0.00	7,848.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,000.0	0.00	0.00	7,948.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,100.0	0.00	0.00	8,048.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,200.0	0.00	0.00	8,148.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,300.0	0.00	0.00	8,248.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,400.0	0.00	0.00	8,348.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,500.0	0.00	0.00	8,448.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,600.0	0.00	0.00	8,548.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,700.0	0.00	0.00	8,648.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,800.0	0.00	0.00	8,748.6	-166.6	-747.7	161.9	0.00	0.00	0.00
8,900.0	0.00	0.00	8,848.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,000.0	0.00	0.00	8,948.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,100.0	0.00	0.00	9,048.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,200.0	0.00	0.00	9,148.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,300.0	0.00	0.00	9,248.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,400.0	0.00	0.00	9,348.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,500.0	0.00	0.00	9,448.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,600.0	0.00	0.00	9,548.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,700.0	0.00	0.00	9,648.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,800.0	0.00	0.00	9,748.6	-166.6	-747.7	161.9	0.00	0.00	0.00
9,900.0	0.00	0.00	9,848.6	-166.6	-747.7	161.9	0.00	0.00	0.00
10,000.0	0.00	0.00	9,948.6	-166.6	-747.7	161.9	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Company:	Matador Production Company	TVD Reference:	KB @ 3804.5usft
Project:	Ranger/Arrowhead	MD Reference:	KB @ 3804.5usft
Site:	Big Game	North Reference:	Grid
Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

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)
10,100.0	0.00	0.00	10,048.6	-166.6	-747.7	161.9	0.00	0.00	0.00
10,200.0	0.00	0.00	10,148.6	-166.6	-747.7	161.9	0.00	0.00	0.00
10,300.0	0.00	0.00	10,248.6	-166.6	-747.7	161.9	0.00	0.00	0.00
10,400.0	0.00	0.00	10,348.6	-166.6	-747.7	161.9	0.00	0.00	0.00
10,500.0	0.00	0.00	10,448.6	-166.6	-747.7	161.9	0.00	0.00	0.00
10,528.4	0.00	0.00	10,477.0	-166.6	-747.7	161.9	0.00	0.00	0.00
Start Build 10.00 - VP - Big Bull Fed Com #305H									
10,600.0	7.16	179.64	10,548.4	-171.1	-747.7	166.4	10.00	10.00	0.00
10,700.0	17.16	179.64	10,646.1	-192.1	-747.5	187.4	10.00	10.00	0.00
10,800.0	27.16	179.64	10,738.5	-229.8	-747.3	225.1	10.00	10.00	0.00
10,900.0	37.16	179.64	10,823.1	-283.0	-747.0	278.3	10.00	10.00	0.00
11,000.0	47.16	179.64	10,897.1	-350.0	-746.5	345.3	10.00	10.00	0.00
11,100.0	57.16	179.64	10,958.4	-428.9	-746.0	424.2	10.00	10.00	0.00
11,200.0	67.16	179.64	11,005.0	-517.2	-745.5	512.5	10.00	10.00	0.00
11,300.0	77.16	179.64	11,035.6	-612.2	-744.9	607.6	10.00	10.00	0.00
11,400.0	87.16	179.64	11,049.3	-711.2	-744.3	706.5	10.00	10.00	0.00
11,428.4	90.00	179.64	11,050.0	-739.6	-744.1	734.9	10.00	10.00	0.00
11,428.7	90.00	179.65	11,050.0	-739.8	-744.1	735.1	2.00	-0.15	1.99
Start 5928.8 hold at 11428.7 MD									
11,500.0	90.00	179.65	11,050.0	-811.2	-743.7	806.5	0.00	0.00	0.00
11,600.0	90.00	179.65	11,050.0	-911.2	-743.0	906.5	0.00	0.00	0.00
11,700.0	90.00	179.65	11,050.0	-1,011.2	-742.4	1,006.5	0.00	0.00	0.00
11,800.0	90.00	179.65	11,050.0	-1,111.2	-741.8	1,106.5	0.00	0.00	0.00
11,900.0	90.00	179.65	11,050.0	-1,211.2	-741.2	1,206.5	0.00	0.00	0.00
12,000.0	90.00	179.65	11,050.0	-1,311.2	-740.6	1,306.5	0.00	0.00	0.00
12,100.0	90.00	179.65	11,050.0	-1,411.2	-740.0	1,406.5	0.00	0.00	0.00
12,200.0	90.00	179.65	11,050.0	-1,511.2	-739.3	1,506.5	0.00	0.00	0.00
12,300.0	90.00	179.65	11,050.0	-1,611.2	-738.7	1,606.5	0.00	0.00	0.00
12,400.0	90.00	179.65	11,050.0	-1,711.2	-738.1	1,706.5	0.00	0.00	0.00
12,500.0	90.00	179.65	11,050.0	-1,811.1	-737.5	1,806.5	0.00	0.00	0.00
12,600.0	90.00	179.65	11,050.0	-1,911.1	-736.9	1,906.5	0.00	0.00	0.00
12,700.0	90.00	179.65	11,050.0	-2,011.1	-736.3	2,006.5	0.00	0.00	0.00
12,800.0	90.00	179.65	11,050.0	-2,111.1	-735.6	2,106.5	0.00	0.00	0.00
12,900.0	90.00	179.65	11,050.0	-2,211.1	-735.0	2,206.5	0.00	0.00	0.00
13,000.0	90.00	179.65	11,050.0	-2,311.1	-734.4	2,306.5	0.00	0.00	0.00
13,100.0	90.00	179.65	11,050.0	-2,411.1	-733.8	2,406.5	0.00	0.00	0.00
13,200.0	90.00	179.65	11,050.0	-2,511.1	-733.2	2,506.5	0.00	0.00	0.00
13,300.0	90.00	179.65	11,050.0	-2,611.1	-732.6	2,606.5	0.00	0.00	0.00
13,400.0	90.00	179.65	11,050.0	-2,711.1	-732.0	2,706.5	0.00	0.00	0.00
13,500.0	90.00	179.65	11,050.0	-2,811.1	-731.3	2,806.5	0.00	0.00	0.00
13,600.0	90.00	179.65	11,050.0	-2,911.1	-730.7	2,906.5	0.00	0.00	0.00
13,700.0	90.00	179.65	11,050.0	-3,011.1	-730.1	3,006.5	0.00	0.00	0.00
13,800.0	90.00	179.65	11,050.0	-3,111.1	-729.5	3,106.5	0.00	0.00	0.00
13,900.0	90.00	179.65	11,050.0	-3,211.1	-728.9	3,206.5	0.00	0.00	0.00
14,000.0	90.00	179.65	11,050.0	-3,311.1	-728.3	3,306.5	0.00	0.00	0.00
14,100.0	90.00	179.65	11,050.0	-3,411.1	-727.6	3,406.5	0.00	0.00	0.00
14,200.0	90.00	179.65	11,050.0	-3,511.1	-727.0	3,506.5	0.00	0.00	0.00
14,300.0	90.00	179.65	11,050.0	-3,611.1	-726.4	3,606.5	0.00	0.00	0.00
14,400.0	90.00	179.65	11,050.0	-3,711.1	-725.8	3,706.5	0.00	0.00	0.00
14,500.0	90.00	179.65	11,050.0	-3,811.1	-725.2	3,806.5	0.00	0.00	0.00
14,600.0	90.00	179.65	11,050.0	-3,911.1	-724.6	3,906.5	0.00	0.00	0.00
14,700.0	90.00	179.65	11,050.0	-4,011.1	-723.9	4,006.5	0.00	0.00	0.00
14,800.0	90.00	179.65	11,050.0	-4,111.1	-723.3	4,106.5	0.00	0.00	0.00
14,900.0	90.00	179.65	11,050.0	-4,211.1	-722.7	4,206.5	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Company:	Matador Production Company	TVD Reference:	KB @ 3804.5usft
Project:	Ranger/Arrowhead	MD Reference:	KB @ 3804.5usft
Site:	Big Game	North Reference:	Grid
Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

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)
15,000.0	90.00	179.65	11,050.0	-4,311.1	-722.1	4,306.5	0.00	0.00	0.00
15,100.0	90.00	179.65	11,050.0	-4,411.1	-721.5	4,406.5	0.00	0.00	0.00
15,200.0	90.00	179.65	11,050.0	-4,511.1	-720.9	4,506.5	0.00	0.00	0.00
15,300.0	90.00	179.65	11,050.0	-4,611.1	-720.2	4,606.5	0.00	0.00	0.00
15,400.0	90.00	179.65	11,050.0	-4,711.1	-719.6	4,706.5	0.00	0.00	0.00
15,500.0	90.00	179.65	11,050.0	-4,811.1	-719.0	4,806.5	0.00	0.00	0.00
15,600.0	90.00	179.65	11,050.0	-4,911.1	-718.4	4,906.5	0.00	0.00	0.00
15,700.0	90.00	179.65	11,050.0	-5,011.1	-717.8	5,006.5	0.00	0.00	0.00
15,800.0	90.00	179.65	11,050.0	-5,111.1	-717.2	5,106.5	0.00	0.00	0.00
15,900.0	90.00	179.65	11,050.0	-5,211.1	-716.5	5,206.5	0.00	0.00	0.00
16,000.0	90.00	179.65	11,050.0	-5,311.1	-715.9	5,306.5	0.00	0.00	0.00
16,085.1	90.00	179.65	11,050.0	-5,396.2	-715.4	5,391.6	0.00	0.00	0.00
Exit NMNM 127892 - Big Bull Fed Com #305H									
16,100.0	90.00	179.65	11,050.0	-5,411.1	-715.3	5,406.5	0.00	0.00	0.00
16,200.0	90.00	179.65	11,050.0	-5,511.1	-714.7	5,506.5	0.00	0.00	0.00
16,300.0	90.00	179.65	11,050.0	-5,611.1	-714.1	5,606.5	0.00	0.00	0.00
16,400.0	90.00	179.65	11,050.0	-5,711.1	-713.5	5,706.5	0.00	0.00	0.00
16,500.0	90.00	179.65	11,050.0	-5,811.1	-712.8	5,806.5	0.00	0.00	0.00
16,600.0	90.00	179.65	11,050.0	-5,911.1	-712.2	5,906.5	0.00	0.00	0.00
16,700.0	90.00	179.65	11,050.0	-6,011.1	-711.6	6,006.5	0.00	0.00	0.00
16,800.0	90.00	179.65	11,050.0	-6,111.1	-711.0	6,106.5	0.00	0.00	0.00
16,900.0	90.00	179.65	11,050.0	-6,211.1	-710.4	6,206.5	0.00	0.00	0.00
17,000.0	90.00	179.65	11,050.0	-6,311.1	-709.8	6,306.5	0.00	0.00	0.00
17,100.0	90.00	179.65	11,050.0	-6,411.1	-709.1	6,406.5	0.00	0.00	0.00
17,200.0	90.00	179.65	11,050.0	-6,511.1	-708.5	6,506.5	0.00	0.00	0.00
17,300.0	90.00	179.65	11,050.0	-6,611.1	-707.9	6,606.5	0.00	0.00	0.00
17,357.4	90.00	179.65	11,050.0	-6,668.5	-707.6	6,663.9	0.00	0.00	0.00
TD at 17357.4 - BHL - Big Bull Fed Com #305H									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
VP - Big Bull Fed Com # - plan hits target center - Point	0.00	0.00	10,477.0	-166.6	-747.7	546,475.80	716,230.50	32° 30' 1.503 N	103° 37' 55.111 W
Exit NMNM 127892 - Big - plan misses target center by 0.2usft at 16085.1usft MD (11050.0 TVD, -5396.2 N, -715.4 E) - Point	0.00	0.00	11,050.0	-5,396.2	-715.2	541,246.51	716,262.90	32° 29' 9.756 N	103° 37' 55.134 W
BHL - Big Bull Fed Com - plan hits target center - Point	0.00	0.00	11,050.0	-6,668.5	-707.6	539,974.15	716,270.56	32° 28' 57.166 N	103° 37' 55.142 W

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Company:	Matador Production Company	TVD Reference:	KB @ 3804.5usft
Project:	Ranger/Arrowhead	MD Reference:	KB @ 3804.5usft
Site:	Big Game	North Reference:	Grid
Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	BLM Plan #1		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,500.0	1,500.0	0.0	0.0	Start Build 1.00	
2,300.0	2,297.4	-12.1	-54.4	Start 4836.4 hold at 2300.0 MD	
7,136.4	7,086.7	-158.5	-711.4	Start Drop -1.50	
7,669.7	7,618.4	-166.6	-747.6	Start 2858.7 hold at 7669.7 MD	
10,528.4	10,477.0	-166.6	-747.6	Start Build 10.00	
11,428.7	11,050.0	-739.8	-744.0	Start 5928.8 hold at 11428.7 MD	
17,357.4				TD at 17357.4	



SURVEY PROGRAM

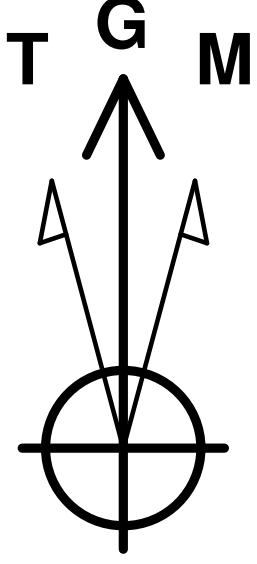
WELL DETAILS: Big Bull Fed Com #305H

Depth From	Depth To	Survey/Plan	Tool				GL @ 3776.0	KB @ 3804.5usft		
0.0	17357.4	BLM Plan #1 (Wellbore #1)	MWD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
				0.0	0.0	546642.40	716978.09	32° 30' 3.103 N	103° 37' 46.369 W	

Company: Matador Production Company
Well: Big Bull Fed Com #305H
County: Lea county, NM
Wellbore: Wellbore #1
Plan: BLM Plan #1
Date: 10/16/2022

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

To convert a Magnetic Direction to a Grid Direction, Add 6.04°
To convert a Magnetic Direction to a True Direction, Add 6.42° East
To convert a True Direction to a Grid Direction, Subtract 0.38°



Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.04°

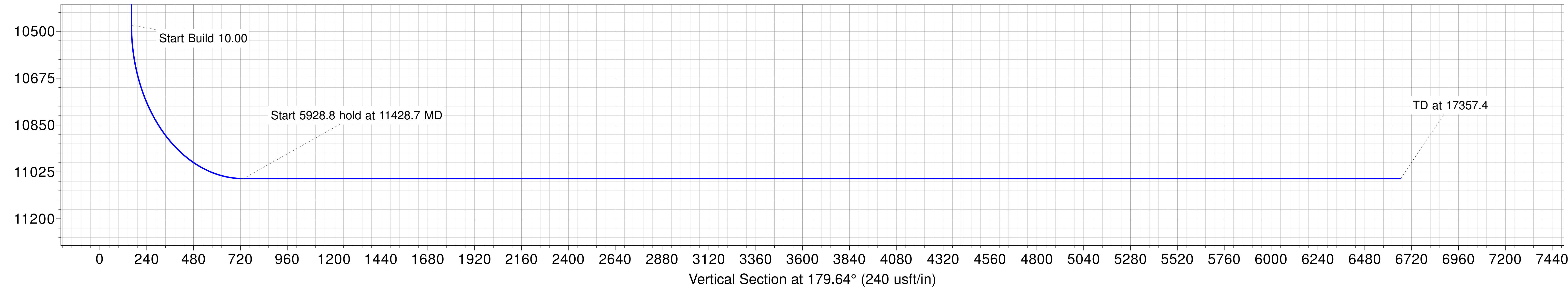
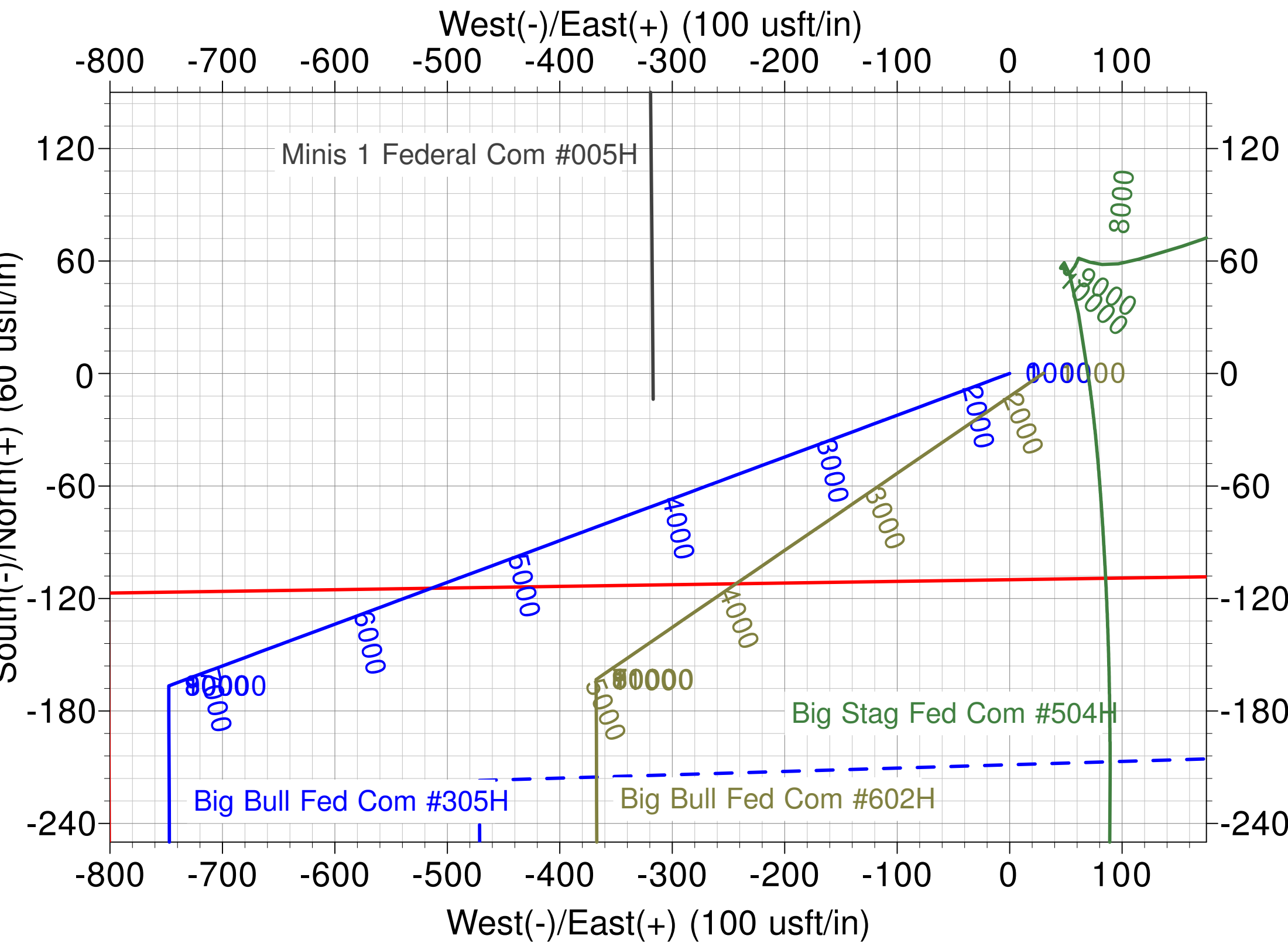
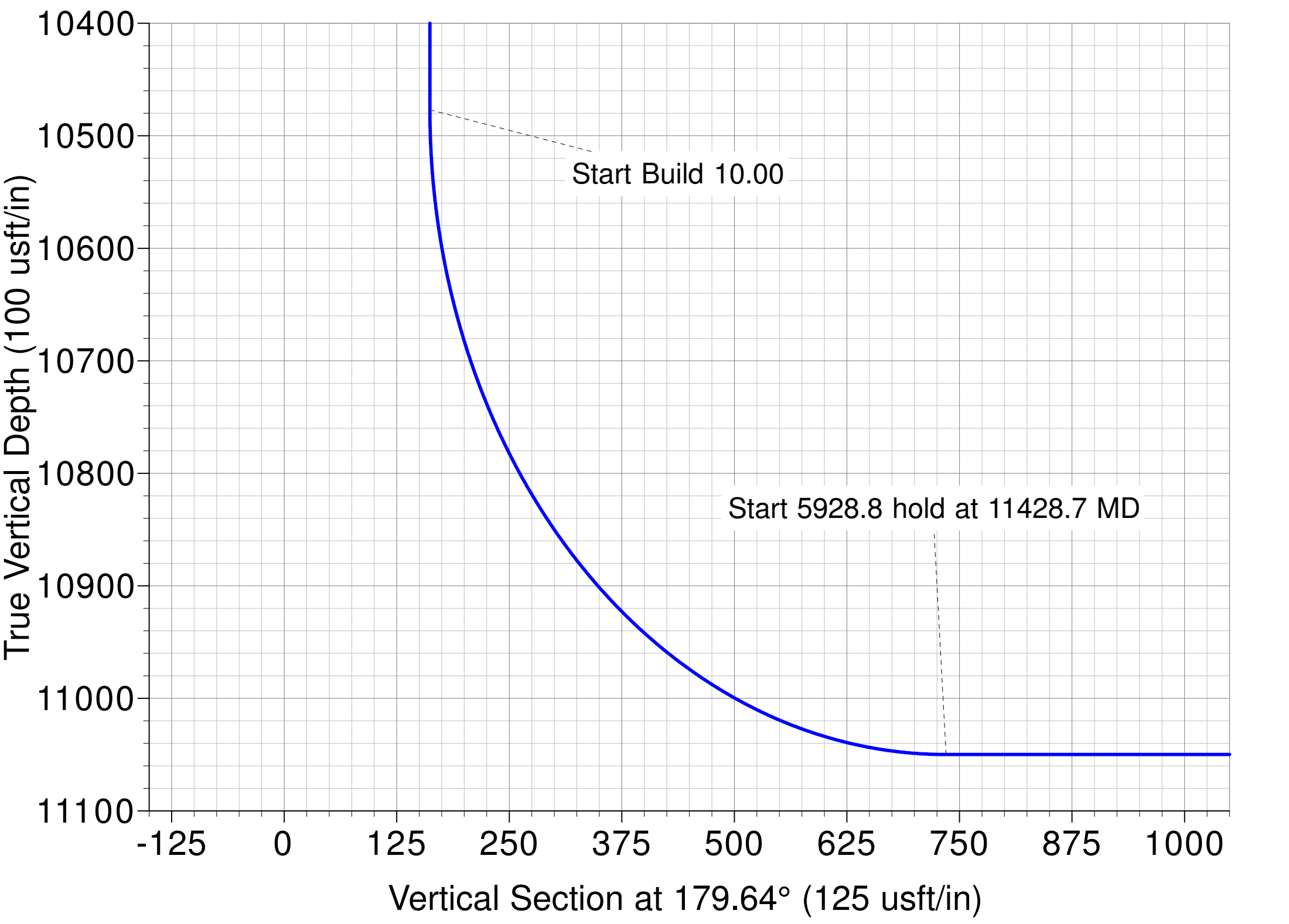
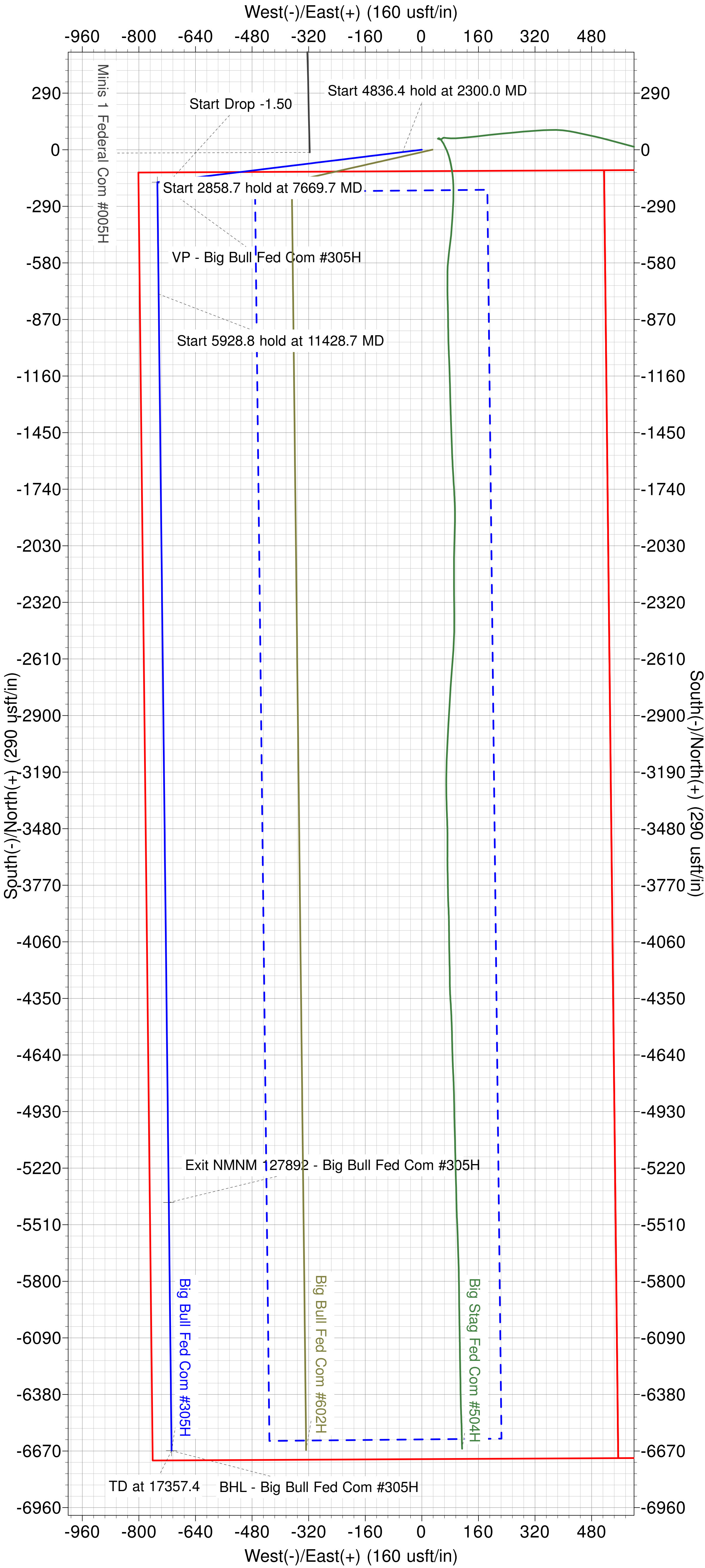
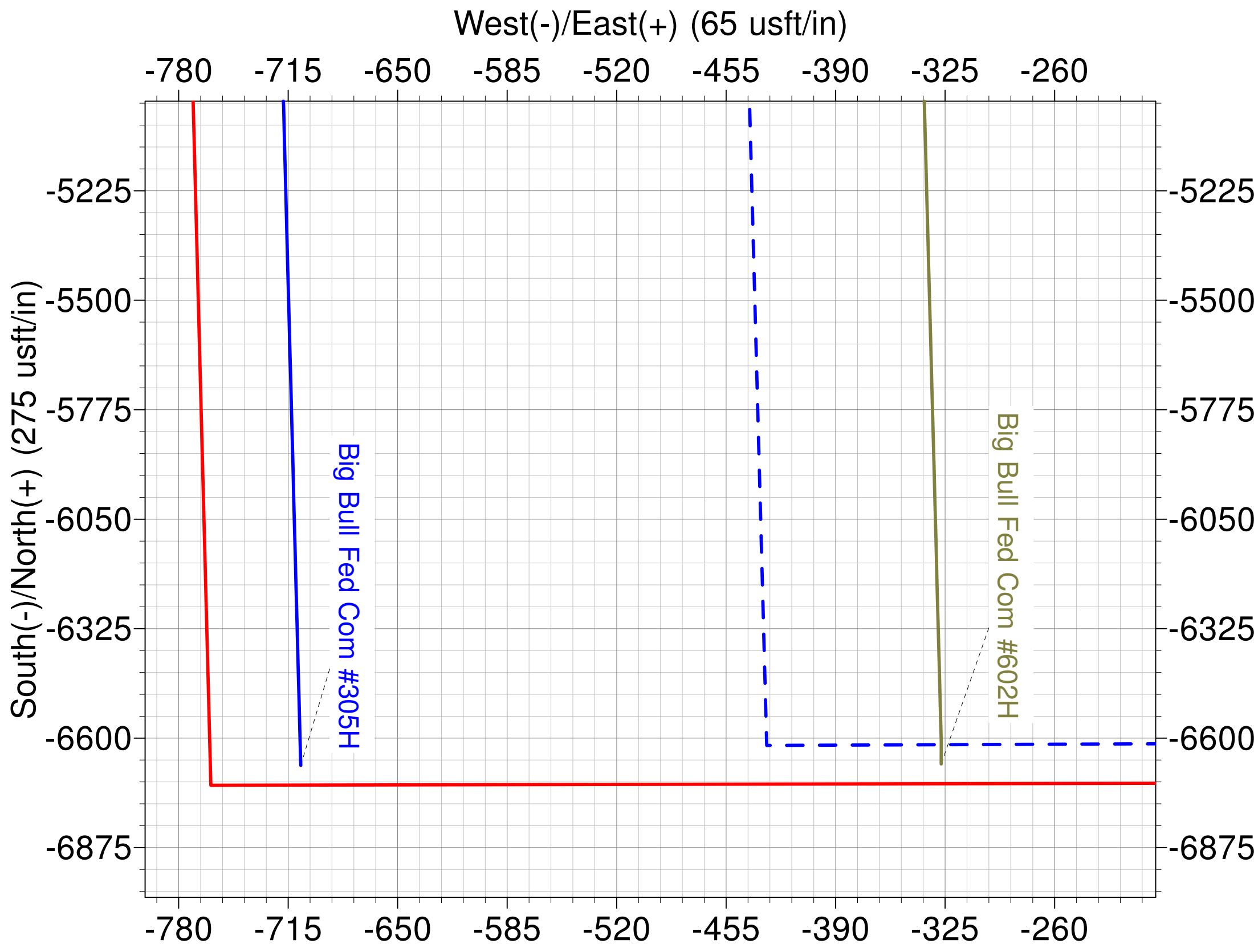
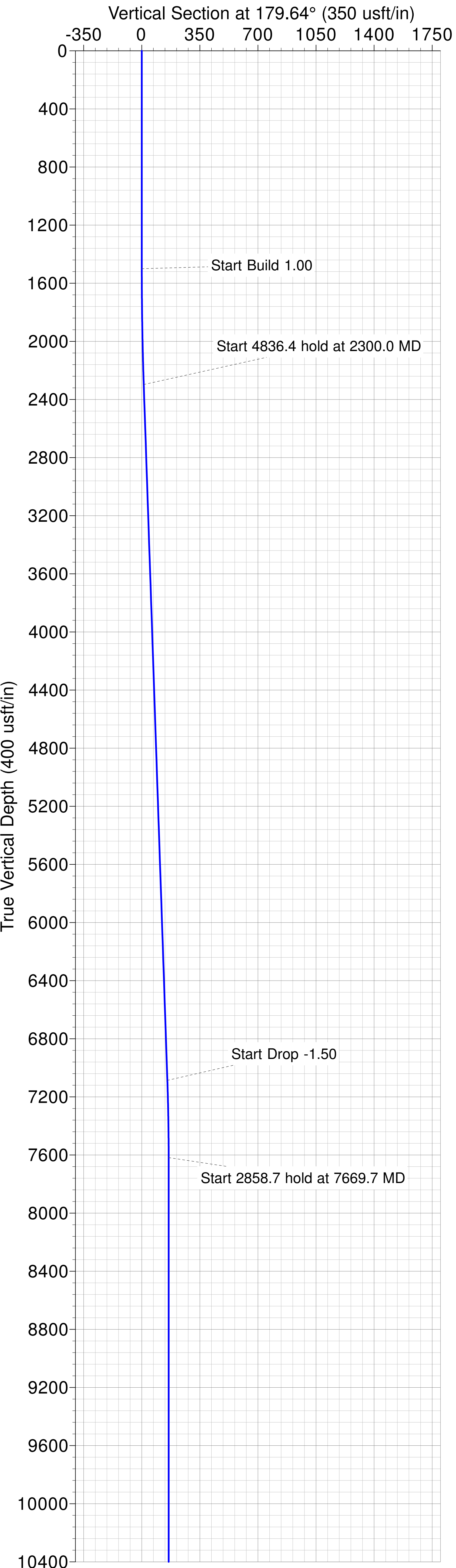
Magnetic Field
Strength: 47543.6snT
Dip Angle: 60.23°
Date: 10/16/2022
Model: IGRF2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
VP - Big Bull Fed Com #305H	10477.0	-166.6	-747.7	546475.80	716230.50	32° 30' 1.503 N	103° 37' 55.111 W
BHL - Big Bull Fed Com #305H	11050.0	-6668.5	-707.6	539974.15	716270.56	32° 28' 57.166 N	103° 37' 55.142 W
Exit NMNM 127892 - Big Bull Fed Com #305H	11050.0	-5396.2	-715.2	541246.51	716262.90	32° 29' 9.756 N	103° 37' 55.134 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	Start Build 1.00
2300.0	8.00	257.44	2297.4	-12.1	-54.4	1.00	257.44	11.8	Start 4836.4 hold at 2300.0 MD
7136.4	8.00	257.44	7086.7	-158.5	-711.4	0.00	0.00	154.1	Start Drop -1.50
7669.7	0.00	0.00	7618.3	-166.6	-747.7	1.50	180.00	161.9	Start 2858.7 hold at 7669.7 MD
10528.4	0.00	0.00	10477.0	-166.6	-747.7	0.00	0.00	161.9	Start Build 10.00
11428.4	90.00	179.64	11050.0	-739.6	-744.1	10.00	179.64	734.9	Start 5928.8 hold at 11428.7 MD
11428.7	90.00	179.65	11050.0	-739.8	-744.1	2.00	94.32	735.1	Start 5928.8 hold at 11428.7 MD
17357.4	90.00	179.65	11050.0	-6668.5	-707.6	0.00	0.00	6663.9	TD at 17357.4



Matador Production Company

Ranger/Arrowhead

Big Game

Big Bull Fed Com #305H

Wellbore #1

BLM Plan #1

Anticollision Report

17 October, 2022

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Reference	BLM Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/17/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	17,357.4	BLM Plan #1 (Wellbore #1)	MWD	OWSG MWD - Standard	

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						
Big Game						
Big Bucks Fed Com #501H - Wellbore #1 - Actual	999.6	1,037.6	2,753.1	2,746.7	432.183	CC
Big Bucks Fed Com #501H - Wellbore #1 - Actual	1,508.6	1,550.6	2,754.3	2,744.3	276.510	ES
Big Bucks Fed Com #501H - Wellbore #1 - Actual	17,357.4	16,949.5	3,566.3	3,337.3	15.578	SF
Big Bucks Fed Com #502H - Wellbore #1 - Actual	6,297.8	6,611.3	1,737.4	1,691.6	37.875	CC
Big Bucks Fed Com #502H - Wellbore #1 - Actual	17,357.4	17,180.8	1,801.6	1,573.3	7.889	ES, SF
Big Bucks Fed Com #601H - Wellbore #1 - BLM Plan #1	2,313.3	2,717.6	2,718.1	2,700.8	157.437	CC, ES
Big Bucks Fed Com #601H - Wellbore #1 - BLM Plan #1	17,357.4	17,834.0	3,379.8	3,149.6	14.687	SF
Big Bull Fed Com #602H - Wellbore #1 - BLM Plan #1	1,500.0	1,500.0	30.2	19.9	2.935	CC
Big Bull Fed Com #602H - Wellbore #1 - BLM Plan #1	2,100.0	2,102.9	32.1	17.7	2.230	ES
Big Bull Fed Com #602H - Wellbore #1 - BLM Plan #1	2,600.0	2,603.7	38.3	20.3	2.131	SF
Big Stag Fed Com #303H - Wellbore #1 - BLM Plan #1	409.8	426.8	907.7	905.2	357.562	CC
Big Stag Fed Com #303H - Wellbore #1 - BLM Plan #1	500.0	515.1	907.7	904.6	285.657	ES
Big Stag Fed Com #303H - Wellbore #1 - BLM Plan #1	17,357.4	18,428.0	2,324.3	2,096.5	10.201	SF
Big Stag Fed Com #304H - Wellbore #1 - BLM Plan #1	1,515.5	1,534.8	878.0	867.5	83.841	CC
Big Stag Fed Com #304H - Wellbore #1 - BLM Plan #1	1,600.0	1,625.1	878.3	867.2	79.211	ES
Big Stag Fed Com #304H - Wellbore #1 - BLM Plan #1	17,357.4	18,314.2	1,662.7	1,436.0	7.333	SF
Big Stag Fed Com #503H - Wellbore #1 - Actual	1,505.0	1,523.9	899.8	889.8	90.587	CC, ES
Big Stag Fed Com #503H - Wellbore #1 - Actual	17,357.4	17,003.0	1,717.4	1,491.3	7.597	SF
Big Stag Fed Com #504H - Wellbore #1 - Actual	9,982.8	10,049.9	823.7	753.3	11.709	CC
Big Stag Fed Com #504H - Wellbore #1 - Actual	17,357.4	17,329.1	852.9	628.9	3.808	ES, SF
Big Stag Fed Com #703H - Wellbore #1 - Actual	0.0	18.5	931.6			
Big Stag Fed Com #703H - Wellbore #1 - Actual	1,600.0	1,628.8	933.8	923.0	86.509	ES
Big Stag Fed Com #703H - Wellbore #1 - Actual	17,357.4	18,029.0	2,194.7	1,961.7	9.419	SF
Minis 1 Fed Com #011H - Wellbore #1 - Actual	10,750.0	18,273.0	1,742.8	1,575.8	10.435	SF
Minis 1 Fed Com #011H - Wellbore #1 - Actual	10,756.4	18,273.0	1,742.8	1,575.8	10.435	CC, ES
Minis 1 Federal Com #004H - Wellbore #1 - Actual	11,097.5	18,931.0	1,202.3	1,052.4	8.018	CC
Minis 1 Federal Com #004H - Wellbore #1 - Actual	11,100.0	18,931.0	1,202.3	1,052.3	8.016	ES
Minis 1 Federal Com #004H - Wellbore #1 - Actual	11,150.0	18,931.0	1,204.9	1,054.1	7.990	SF
Minis 1 Federal Com #005H - Wellbore #1 - Actual	11,089.7	18,876.0	843.4	727.4	7.267	CC
Minis 1 Federal Com #005H - Wellbore #1 - Actual	11,100.0	18,876.0	843.6	727.3	7.257	ES, SF
Minis 1 Federal Com #006H - Wellbore #1 - Actual	11,104.9	18,949.0	3,072.3	2,904.1	18.267	CC, ES
Minis 1 Federal Com #006H - Wellbore #1 - Actual	11,200.0	18,949.0	3,075.7	2,907.2	18.250	SF
Minis 1 Federal Com #007H - Wellbore #1 - Actual	11,070.1	19,030.0	3,544.4	3,376.2	21.065	CC, ES
Minis 1 Federal Com #007H - Wellbore #1 - Actual	11,200.0	19,030.0	3,550.4	3,381.5	21.020	SF
Minis 1 Federal Com #010H - Wellbore #1 - Actual	11,116.9	18,850.0	2,548.2	2,384.1	15.526	CC, ES
Minis 1 Federal Com #010H - Wellbore #1 - Actual	11,150.0	18,850.0	2,548.7	2,384.5	15.523	SF
Minis 1 Federal Com #016H - Wellbore #1 - Actual	11,111.7	19,030.0	3,593.6	3,424.6	21.271	CC, ES

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset 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						
Big Game						
Minis 1 Federal Com #016H - Wellbore #1 - Actual	11,250.0	19,030.0	3,599.9	3,430.3	21.220	SF

Offset Design Big Game - Big Bucks Fed Com #501H - Wellbore #1 - Actual														Offset Site Error:	0.0 usft
Survey Program: 339-MWD														Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning		
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
0.0	0.0	38.0	38.0	0.0	0.1	93.87	-185.8	2,748.8	2,755.1						
100.0	100.0	137.9	137.9	0.1	0.2	93.87	-185.8	2,748.8	2,755.1	2,754.7	0.35	7,769.809			
200.0	200.0	237.9	237.9	0.5	0.4	93.86	-185.7	2,748.8	2,755.1	2,754.2	0.88	3,140.975			
300.0	300.0	337.9	337.9	0.8	0.6	93.86	-185.5	2,748.8	2,755.1	2,753.7	1.40	1,968.345			
400.0	400.0	449.3	449.3	1.2	0.9	93.85	-185.2	2,748.6	2,754.8	2,752.7	2.15	1,280.695			
500.0	500.0	545.9	545.9	1.6	1.3	93.85	-185.0	2,748.3	2,754.5	2,751.6	2.85	966.201			
600.0	600.0	645.6	645.6	1.9	1.6	93.85	-184.9	2,748.0	2,754.2	2,750.6	3.56	773.119			
700.0	700.0	748.6	748.6	2.3	2.0	93.85	-184.9	2,747.7	2,753.9	2,749.6	4.28	642.988			
800.0	800.0	846.6	846.6	2.6	2.3	93.85	-185.1	2,747.2	2,753.5	2,748.5	4.99	552.256			
900.0	900.0	944.7	944.7	3.0	2.7	93.85	-185.1	2,747.0	2,753.3	2,747.6	5.69	483.724			
999.6	999.6	1,037.6	1,037.6	3.4	3.0	93.86	-185.2	2,746.8	2,753.1	2,746.7	6.37	432.183	CC		
1,000.0	1,000.0	1,038.0	1,038.0	3.4	3.0	93.86	-185.2	2,746.8	2,753.1	2,746.7	6.37	431.986			
1,100.0	1,100.0	1,130.1	1,130.1	3.7	3.3	93.86	-185.4	2,747.0	2,753.2	2,746.2	7.04	390.892			
1,200.0	1,200.0	1,219.6	1,219.6	4.1	3.6	93.87	-185.8	2,747.4	2,753.7	2,746.0	7.71	357.383			
1,300.0	1,300.0	1,330.2	1,330.2	4.4	4.0	93.88	-186.4	2,748.0	2,754.3	2,745.9	8.44	326.239			
1,400.0	1,400.0	1,437.9	1,437.9	4.8	4.4	93.89	-187.0	2,748.1	2,754.4	2,745.3	9.18	300.193			
1,500.0	1,500.0	1,542.5	1,542.5	5.1	4.8	93.90	-187.2	2,747.9	2,754.3	2,744.4	9.90	278.151			
1,508.6	1,508.6	1,550.6	1,550.6	5.2	4.8	-163.54	-187.2	2,747.9	2,754.3	2,744.3	9.96	276.510	ES		
1,600.0	1,600.0	1,634.6	1,634.6	5.5	5.1	-163.55	-187.0	2,747.9	2,755.1	2,744.6	10.57	260.612			
1,700.0	1,700.0	1,727.6	1,727.6	5.8	5.4	-163.57	-186.3	2,748.2	2,757.9	2,746.7	11.23	245.505			
1,800.0	1,799.9	1,820.1	1,820.1	6.2	5.7	-163.59	-185.7	2,748.7	2,762.6	2,750.7	11.89	232.272			
1,900.0	1,899.7	1,911.2	1,911.2	6.5	6.0	-163.62	-185.2	2,749.5	2,769.3	2,756.7	12.55	220.634			
2,000.0	1,999.4	2,012.0	2,012.0	6.9	6.4	-163.66	-184.4	2,750.6	2,777.8	2,764.5	13.25	209.707			
2,100.0	2,098.9	2,119.0	2,118.9	7.2	6.8	-163.70	-183.7	2,751.4	2,787.7	2,773.8	13.97	199.621			
2,200.0	2,198.3	2,215.8	2,215.8	7.6	7.1	-163.75	-183.0	2,752.1	2,799.2	2,784.6	14.65	191.057			
2,300.0	2,297.4	2,307.2	2,307.1	8.0	7.4	-163.80	-182.3	2,752.9	2,812.6	2,797.3	15.32	183.590			
2,400.0	2,396.4	2,397.7	2,397.6	8.3	7.7	-163.90	-180.9	2,754.0	2,827.1	2,811.2	15.99	176.835			
2,500.0	2,495.5	2,480.6	2,480.4	8.7	8.0	-164.03	-177.9	2,755.5	2,842.0	2,825.4	16.63	170.916			
2,600.0	2,594.5	2,555.6	2,555.3	9.1	8.3	-164.16	-174.1	2,757.4	2,857.7	2,840.5	17.24	165.753			
2,700.0	2,693.5	2,631.6	2,631.1	9.5	8.6	-164.33	-168.9	2,760.0	2,874.2	2,856.3	17.86	160.953			
2,800.0	2,792.5	2,699.1	2,698.3	9.9	8.8	-164.50	-163.0	2,763.0	2,891.6	2,873.1	18.44	156.800			
2,900.0	2,891.6	2,765.1	2,763.8	10.3	9.0	-164.70	-155.7	2,766.7	2,910.1	2,891.0	19.02	153.014			
3,000.0	2,990.6	2,823.0	2,821.1	10.7	9.3	-164.90	-148.2	2,770.6	2,929.7	2,910.1	19.56	149.783			
3,100.0	3,089.6	2,887.7	2,884.8	11.1	9.5	-165.13	-138.9	2,775.7	2,950.6	2,930.5	20.13	146.585			
3,200.0	3,188.6	2,944.6	2,940.9	11.5	9.7	-165.35	-130.2	2,781.0	2,972.8	2,952.2	20.66	143.879			
3,300.0	3,287.7	3,012.0	3,006.9	11.9	10.0	-165.62	-118.9	2,788.3	2,996.5	2,975.3	21.24	141.078			
3,400.0	3,386.7	3,070.1	3,063.7	12.3	10.2	-165.86	-108.6	2,795.2	3,021.3	2,999.5	21.78	138.748			
3,500.0	3,485.7	3,654.4	3,629.3	12.7	12.6	-168.78	25.3	2,811.5	3,031.7	3,007.0	24.71	122.676			
3,600.0	3,584.8	3,712.5	3,685.5	13.1	12.8	-169.09	40.2	2,809.6	3,042.6	3,017.3	25.33	120.118			
3,700.0	3,683.8	3,789.4	3,759.9	13.5	13.2	-169.50	59.5	2,807.7	3,054.7	3,028.7	26.03	117.358			
3,800.0	3,782.8	3,885.0	3,852.4	13.9	13.6	-169.99	83.2	2,805.7	3,067.3	3,040.5	26.81	114.395			

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 339-MWD												Offset Well Error:	0.0 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	
3,900.0	3,881.8	3,978.5	3,943.2	14.3	14.0	-170.46	106.0	2,803.7	3,080.1	3,052.5	27.59	111.633	
4,000.0	3,980.9	4,078.7	4,040.4	14.7	14.4	-170.95	130.1	2,801.6	3,093.1	3,064.7	28.40	108.899	
4,100.0	4,079.9	4,171.4	4,130.3	15.1	14.9	-171.40	152.4	2,799.7	3,106.3	3,077.2	29.18	106.439	
4,200.0	4,178.9	4,255.8	4,212.3	15.5	15.3	-171.80	172.1	2,798.1	3,120.0	3,090.1	29.92	104.261	
4,300.0	4,277.9	4,337.5	4,292.1	15.9	15.6	-172.16	190.2	2,797.0	3,134.2	3,103.6	30.65	102.264	
4,400.0	4,377.0	4,424.1	4,376.8	16.3	16.0	-172.52	207.8	2,796.3	3,149.0	3,117.6	31.39	100.326	
4,500.0	4,476.0	4,512.5	4,463.6	16.8	16.4	-172.85	224.2	2,796.0	3,164.2	3,132.1	32.13	98.490	
4,600.0	4,575.0	4,611.4	4,561.2	17.2	16.8	-173.17	240.3	2,796.1	3,179.7	3,146.8	32.91	96.629	
4,700.0	4,674.0	4,709.2	4,658.0	17.6	17.2	-173.45	254.4	2,796.2	3,195.1	3,161.4	33.67	94.894	
4,800.0	4,773.1	4,793.4	4,741.5	18.0	17.6	-173.68	265.7	2,796.5	3,210.8	3,176.4	34.37	93.429	
4,900.0	4,872.1	4,873.7	4,821.2	18.4	17.9	-173.87	275.5	2,797.4	3,227.1	3,192.0	35.04	92.106	
5,000.0	4,971.1	4,960.0	4,907.0	18.8	18.2	-174.05	284.4	2,798.9	3,243.9	3,208.2	35.72	90.803	
5,100.0	5,070.2	5,051.8	4,998.4	19.2	18.6	-174.21	291.9	2,801.0	3,260.9	3,224.5	36.43	89.522	
5,200.0	5,169.2	5,135.4	5,081.8	19.7	18.9	-174.32	297.3	2,803.4	3,278.3	3,241.2	37.08	88.413	
5,300.0	5,268.2	5,226.0	5,172.3	20.1	19.2	-174.40	301.3	2,806.5	3,296.1	3,258.3	37.75	87.305	
5,400.0	5,367.2	5,326.9	5,273.1	20.5	19.5	-174.47	304.2	2,810.2	3,313.9	3,275.4	38.46	86.161	
5,500.0	5,466.3	5,420.9	5,367.0	20.9	19.9	-174.52	306.2	2,813.8	3,331.8	3,292.6	39.14	85.130	
5,600.0	5,565.3	5,520.0	5,466.1	21.3	20.2	-174.57	308.2	2,817.7	3,349.7	3,309.9	39.83	84.094	
5,700.0	5,664.3	5,634.7	5,580.6	21.7	20.6	-174.62	310.2	2,822.0	3,367.4	3,326.8	40.59	82.954	
5,800.0	5,763.3	5,731.3	5,677.2	22.2	20.9	-174.65	311.5	2,825.3	3,384.8	3,343.5	41.28	81.999	
5,900.0	5,862.4	5,827.0	5,772.8	22.6	21.2	-174.69	312.6	2,828.7	3,402.3	3,360.4	41.96	81.089	
6,000.0	5,961.4	5,930.5	5,876.2	23.0	21.6	-174.70	312.4	2,832.6	3,419.9	3,377.2	42.66	80.162	
6,100.0	6,060.4	6,084.5	6,030.0	23.4	22.0	-174.62	306.2	2,838.0	3,436.7	3,393.2	43.54	78.938	
6,200.0	6,159.4	6,248.6	6,193.8	23.8	22.5	-174.48	296.4	2,840.6	3,451.3	3,406.9	44.43	77.686	
6,300.0	6,258.5	6,373.0	6,317.8	24.2	22.9	-174.36	287.3	2,841.7	3,465.2	3,420.0	45.17	76.717	
6,400.0	6,357.5	6,532.4	6,476.4	24.7	23.3	-174.13	271.1	2,841.2	3,477.4	3,431.4	46.01	75.585	
6,500.0	6,456.5	6,642.2	6,584.9	25.1	23.6	-173.89	254.7	2,840.2	3,488.6	3,442.0	46.68	74.738	
6,600.0	6,555.6	6,722.9	6,664.5	25.5	23.8	-173.69	241.5	2,839.8	3,500.2	3,452.9	47.26	74.057	
6,700.0	6,654.6	6,811.5	6,752.0	25.9	24.1	-173.48	227.3	2,839.7	3,512.2	3,464.3	47.88	73.361	
6,800.0	6,753.6	6,927.0	6,866.2	26.3	24.4	-173.23	209.8	2,839.6	3,524.4	3,475.8	48.58	72.550	
6,900.0	6,852.6	7,056.7	6,994.3	26.8	24.7	-172.94	190.0	2,838.1	3,535.4	3,486.1	49.33	71.668	
7,000.0	6,951.7	7,140.4	7,077.0	27.2	25.0	-172.76	177.3	2,837.0	3,546.5	3,496.6	49.94	71.009	
7,100.0	7,050.7	7,288.1	7,223.1	27.6	25.4	-172.46	155.7	2,834.5	3,557.3	3,506.6	50.76	70.075	
7,136.4	7,086.7	7,321.4	7,256.0	27.8	25.5	-172.39	150.7	2,833.7	3,561.0	3,510.0	51.00	69.824	
7,200.0	7,149.8	7,379.5	7,313.4	28.0	25.7	-172.27	141.8	2,832.4	3,567.0	3,515.6	51.41	69.382	
7,300.0	7,249.2	7,469.3	7,402.1	28.4	26.0	-172.09	128.0	2,830.5	3,574.5	3,522.4	52.05	68.672	
7,400.0	7,348.8	7,553.1	7,485.0	28.8	26.2	-171.92	115.5	2,829.1	3,579.8	3,527.1	52.67	67.964	
7,500.0	7,448.7	7,654.7	7,585.4	29.2	26.5	-171.70	100.4	2,827.4	3,582.7	3,529.4	53.35	67.155	
7,600.0	7,548.6	7,741.9	7,671.6	29.5	26.8	-171.50	87.3	2,826.2	3,583.2	3,529.3	53.98	66.383	
7,669.7	7,618.3	7,800.9	7,730.0	29.7	27.0	86.07	78.8	2,825.5	3,582.3	3,527.9	54.40	65.847	
7,700.0	7,648.6	7,826.5	7,755.4	29.8	27.1	86.13	75.3	2,825.2	3,581.7	3,527.1	54.59	65.616	
7,800.0	7,748.6	7,910.7	7,838.8	30.1	27.3	86.32	63.4	2,824.6	3,580.0	3,524.9	55.19	64.869	
7,900.0	7,848.6	8,002.4	7,929.4	30.5	27.6	86.54	49.4	2,824.3	3,578.7	3,522.9	55.82	64.113	
8,000.0	7,948.6	8,096.6	8,022.4	30.8	27.9	86.77	34.8	2,824.1	3,577.6	3,521.2	56.46	63.364	
8,100.0	8,048.6	8,198.8	8,123.6	31.1	28.3	87.01	19.7	2,823.9	3,576.6	3,519.5	57.14	62.595	
8,200.0	8,148.6	8,292.8	8,216.5	31.4	28.6	87.24	5.8	2,823.7	3,575.7	3,517.9	57.79	61.877	
8,300.0	8,248.6	8,382.1	8,304.9	31.7	28.9	87.44	-7.2	2,823.7	3,575.0	3,516.6	58.42	61.194	
8,400.0	8,348.6	8,476.0	8,397.8	32.0	29.2	87.66	-20.6	2,823.9	3,574.6	3,515.5	59.07	60.510	
8,500.0	8,448.6	8,645.7	8,565.9	32.4	29.8	88.03	-44.0	2,822.4	3,573.1	3,513.0	60.02	59.527	
8,600.0	8,548.6	8,736.8	8,656.2	32.7	30.1	88.22	-55.4	2,820.8	3,570.9	3,510.2	60.67	58.854	
8,700.0	8,648.6	8,829.8	8,748.6	33.0	30.4	88.38	-65.9	2,819.5	3,569.1	3,507.8	61.33	58.192	
8,800.0	8,748.6	8,908.4	8,826.8	33.3	30.7	88.52	-74.2	2,818.4	3,567.6	3,505.6	61.94	57.599	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 339-MWD												Offset Well Error:	0.0 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	
8,900.0	8,848.6	8,973.2	8,891.3	33.6	30.9	88.60	-79.6	2,818.2	3,566.9	3,504.5	62.49	57.085	
8,917.2	8,865.8	8,985.7	8,903.8	33.7	30.9	88.62	-80.5	2,818.2	3,566.9	3,504.3	62.58	56.994	
9,000.0	8,948.6	9,046.0	8,963.9	34.0	31.2	88.68	-84.5	2,818.5	3,567.2	3,504.1	63.06	56.567	
9,100.0	9,048.6	9,136.0	9,053.8	34.3	31.5	88.76	-89.7	2,819.3	3,568.0	3,504.3	63.71	56.004	
9,200.0	9,148.6	9,228.2	9,145.9	34.6	31.8	88.84	-94.1	2,820.4	3,569.0	3,504.7	64.37	55.448	
9,300.0	9,248.6	9,300.0	9,318.4	34.9	32.0	88.94	-100.8	2,820.7	3,569.1	3,504.1	65.01	54.904	
9,400.0	9,348.6	9,492.0	9,409.6	35.3	32.7	88.97	-102.8	2,819.6	3,568.0	3,501.9	66.01	54.053	
9,500.0	9,448.6	9,574.6	9,492.1	35.6	33.0	88.98	-103.3	2,819.5	3,567.7	3,501.1	66.63	53.548	
9,599.6	9,548.2	9,668.7	9,586.2	35.9	33.3	88.94	-100.8	2,819.3	3,567.6	3,500.3	67.29	53.019	
9,600.0	9,548.6	9,669.1	9,586.6	35.9	33.3	88.94	-100.8	2,819.3	3,567.6	3,500.3	67.29	53.017	
9,700.0	9,648.6	9,758.0	9,675.4	36.3	33.6	88.90	-98.3	2,819.4	3,567.8	3,499.8	67.93	52.519	
9,800.0	9,748.6	9,854.9	9,772.3	36.6	34.0	88.84	-94.2	2,819.7	3,568.2	3,499.6	68.61	52.008	
9,900.0	9,848.6	10,054.8	9,972.0	36.9	34.6	88.73	-87.4	2,817.8	3,567.4	3,497.7	69.68	51.194	
10,000.0	9,948.6	10,137.8	10,055.0	37.2	34.9	88.70	-85.8	2,815.9	3,565.2	3,494.9	70.31	50.706	
10,100.0	10,048.6	10,177.0	10,094.2	37.6	35.1	88.72	-87.0	2,815.3	3,563.8	3,493.1	70.77	50.362	
10,151.6	10,100.2	10,221.2	10,138.2	37.7	35.2	88.79	-91.1	2,815.0	3,563.5	3,492.4	71.09	50.124	
10,200.0	10,148.6	10,241.9	10,158.6	37.9	35.3	88.84	-94.3	2,815.1	3,563.7	3,492.4	71.31	49.972	
10,300.0	10,248.6	10,271.0	10,187.0	38.2	35.4	88.94	-100.4	2,815.6	3,565.3	3,493.6	71.69	49.729	
10,400.0	10,348.6	10,323.6	10,237.5	38.6	35.6	89.17	-115.0	2,817.4	3,568.6	3,496.4	72.17	49.450	
10,500.0	10,448.6	10,365.0	10,276.3	38.9	35.7	89.40	-129.3	2,819.6	3,573.7	3,501.1	72.57	49.246	
10,528.4	10,477.0	10,365.0	10,276.3	39.0	35.7	89.40	-129.3	2,819.6	3,575.4	3,502.8	72.62	49.237	
10,550.0	10,498.6	10,365.0	10,276.3	39.1	35.7	-90.09	-129.3	2,819.6	3,576.9	3,504.3	72.65	49.235	
10,600.0	10,548.4	10,394.1	10,303.1	39.2	35.8	-89.56	-140.6	2,821.6	3,580.6	3,507.7	72.88	49.129	
10,650.0	10,597.7	10,410.3	10,317.7	39.4	35.9	-89.08	-147.2	2,822.9	3,584.7	3,511.7	73.04	49.081	
10,700.0	10,646.1	10,426.6	10,332.4	39.6	35.9	-88.57	-154.2	2,824.3	3,589.3	3,516.1	73.19	49.040	
10,750.0	10,693.1	10,705.7	10,546.2	39.7	36.9	-86.78	-328.7	2,839.4	3,593.6	3,518.8	74.75	48.077	
10,800.0	10,738.5	10,742.0	10,567.3	39.9	37.1	-86.33	-358.2	2,839.7	3,595.3	3,520.3	75.03	47.920	
10,850.0	10,782.0	10,742.0	10,567.3	40.0	37.1	-86.15	-358.2	2,839.7	3,597.2	3,522.1	75.13	47.881	
10,900.0	10,823.1	10,776.5	10,585.3	40.2	37.2	-85.73	-387.6	2,840.0	3,599.1	3,523.7	75.40	47.731	
10,950.0	10,861.6	10,801.1	10,596.7	40.4	37.3	-85.38	-409.5	2,840.4	3,601.1	3,525.5	75.63	47.614	
11,000.0	10,897.1	11,075.3	10,654.8	40.5	38.5	-82.96	-674.5	2,828.1	3,600.3	3,523.2	77.12	46.685	
11,050.0	10,929.5	11,086.2	10,655.2	40.7	38.5	-82.93	-685.3	2,827.2	3,599.4	3,522.1	77.30	46.567	
11,100.0	10,958.4	11,120.0	10,656.0	40.8	38.7	-82.73	-719.1	2,824.9	3,598.8	3,521.2	77.59	46.381	
11,150.0	10,983.6	11,120.0	10,656.0	41.0	38.7	-82.83	-719.1	2,824.9	3,597.8	3,520.1	77.73	46.288	
11,200.0	11,005.0	11,127.0	10,656.1	41.2	38.7	-82.87	-726.1	2,824.5	3,596.9	3,519.0	77.91	46.169	
11,250.0	11,022.4	11,162.9	10,656.9	41.4	38.9	-82.78	-761.9	2,822.5	3,595.9	3,517.7	78.26	45.948	
11,300.0	11,035.6	11,202.2	10,657.7	41.5	39.1	-82.77	-801.1	2,820.5	3,594.5	3,515.9	78.66	45.699	
11,350.0	11,044.6	11,245.7	10,658.5	41.8	39.4	-82.83	-844.5	2,818.3	3,592.7	3,513.6	79.10	45.418	
11,400.0	11,049.3	11,518.7	10,662.8	42.0	41.1	-82.83	-1,116.5	2,796.1	3,588.7	3,507.5	81.21	44.190	
11,428.4	11,050.0	11,529.0	10,663.0	42.1	41.2	-83.15	-1,126.8	2,795.0	3,585.5	3,504.1	81.41	44.040	
11,428.7	11,050.0	11,529.1	10,663.0	42.1	41.2	-83.15	-1,126.9	2,795.0	3,585.4	3,504.0	81.42	44.039	
11,500.0	11,050.0	11,561.0	10,663.6	42.4	41.4	-83.15	-1,158.6	2,791.8	3,577.8	3,495.8	81.99	43.638	
11,600.0	11,050.0	11,561.0	10,663.6	43.0	41.4	-83.15	-1,158.6	2,791.8	3,568.8	3,486.4	82.48	43.269	
11,700.0	11,050.0	11,618.4	10,664.2	43.5	41.9	-83.15	-1,215.8	2,787.6	3,561.2	3,477.7	83.50	42.651	
11,800.0	11,050.0	11,655.0	10,664.3	44.2	42.1	-83.15	-1,252.4	2,785.9	3,555.8	3,471.5	84.38	42.142	
11,900.0	11,050.0	11,721.8	10,664.3	44.9	42.7	-83.15	-1,319.1	2,783.7	3,551.9	3,466.3	85.59	41.497	
12,000.0	11,050.0	11,860.7	10,664.7	45.6	43.8	-83.14	-1,458.0	2,779.0	3,548.0	3,460.4	87.58	40.513	
12,100.0	11,050.0	11,844.0	10,664.7	46.4	43.7	-83.14	-1,441.3	2,779.7	3,545.1	3,457.0	88.09	40.244	
12,200.0	11,050.0	11,900.0	10,664.5	47.2	44.2	-83.14	-1,497.2	2,778.6	3,543.4	3,454.0	89.37	39.647	
12,210.6	11,050.0	11,902.8	10,664.5	47.3	44.2	-83.14	-1,500.1	2,778.7	3,543.4	3,453.9	89.48	39.599	
12,300.0	11,050.0	11,938.0	10,663.9	48.1	44.6	-83.13	-1,535.2	2,779.3	3,544.3	3,453.8	90.50	39.165	
12,400.0	11,050.0	11,938.0	10,663.9	49.0	44.6	-83.13	-1,535.2	2,779.3	3,547.2	3,456.0	91.22	38.884	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Bucks Fed Com #501H - Wellbore #1 - Actual												Offset Site Error:	0.0 usft
Survey Program: 339-MWD												Offset Well Error:	0.0 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	
12,500.0	11,050.0	11,991.1	10,662.8	50.0	45.1	-83.11	-1,588.2	2,781.7	3,551.8	3,459.2	92.58	38.367	
12,600.0	11,050.0	12,033.0	10,661.8	51.0	45.5	-83.10	-1,630.0	2,784.7	3,558.4	3,464.6	93.82	37.929	
12,700.0	11,050.0	12,556.1	10,679.1	52.0	51.0	-83.41	-2,151.6	2,801.0	3,563.6	3,462.3	101.29	35.180	
12,800.0	11,050.0	12,632.9	10,681.0	53.1	51.9	-83.43	-2,228.3	2,798.3	3,559.3	3,456.0	103.23	34.481	
12,900.0	11,050.0	12,693.0	10,682.3	54.2	52.6	-83.45	-2,288.3	2,796.7	3,555.8	3,450.9	104.97	33.874	
13,000.0	11,050.0	12,745.0	10,682.7	55.3	53.2	-83.45	-2,340.3	2,795.9	3,553.6	3,447.0	106.64	33.324	
13,100.0	11,050.0	12,797.4	10,681.4	56.4	53.8	-83.43	-2,392.7	2,795.8	3,552.9	3,444.6	108.32	32.799	
13,191.5	11,050.0	12,895.9	10,677.5	57.5	55.0	-83.37	-2,491.1	2,795.7	3,552.8	3,442.2	110.60	32.124	
13,200.0	11,050.0	12,882.0	10,678.1	57.6	54.9	-83.38	-2,477.3	2,795.7	3,552.8	3,442.3	110.48	32.157	
13,300.0	11,050.0	12,942.9	10,675.4	58.8	55.6	-83.33	-2,538.0	2,796.2	3,553.5	3,441.2	112.34	31.633	
13,400.0	11,050.0	13,006.9	10,672.6	60.0	56.4	-83.29	-2,602.1	2,797.6	3,555.6	3,441.4	114.26	31.120	
13,500.0	11,050.0	13,099.4	10,669.9	61.2	57.6	-83.25	-2,694.4	2,800.3	3,558.2	3,441.5	116.63	30.508	
13,600.0	11,050.0	13,199.9	10,668.3	62.5	58.9	-83.23	-2,794.8	2,803.5	3,560.9	3,441.7	119.17	29.880	
13,700.0	11,050.0	13,301.0	10,668.1	63.8	60.2	-83.23	-2,895.9	2,806.6	3,563.4	3,441.7	121.77	29.265	
13,800.0	11,050.0	13,385.2	10,668.8	65.1	61.3	-83.25	-2,980.0	2,809.6	3,566.3	3,442.1	124.12	28.731	
13,900.0	11,050.0	13,479.5	10,669.3	66.4	62.6	-83.26	-3,074.3	2,813.4	3,569.6	3,442.9	126.68	28.179	
14,000.0	11,050.0	13,642.9	10,669.8	67.7	64.8	-83.28	-3,237.6	2,818.3	3,571.9	3,441.5	130.38	27.396	
14,100.0	11,050.0	13,727.1	10,670.2	69.0	65.9	-83.29	-3,321.8	2,820.4	3,573.6	3,440.8	132.83	26.903	
14,200.0	11,050.0	13,855.0	10,671.2	70.4	67.7	-83.30	-3,449.7	2,823.2	3,575.1	3,439.1	136.03	26.282	
14,300.0	11,050.0	13,965.7	10,671.3	71.7	69.2	-83.31	-3,560.3	2,824.9	3,576.0	3,437.0	138.97	25.733	
14,400.0	11,050.0	14,054.2	10,671.8	73.1	70.5	-83.32	-3,648.8	2,826.3	3,576.9	3,435.3	141.56	25.268	
14,500.0	11,050.0	14,145.7	10,671.8	74.5	71.8	-83.32	-3,740.3	2,828.1	3,578.3	3,434.0	144.22	24.811	
14,600.0	11,050.0	14,263.4	10,672.6	75.9	73.4	-83.34	-3,857.9	2,830.2	3,579.4	3,432.0	147.35	24.292	
14,700.0	11,050.0	14,346.7	10,674.5	77.3	74.6	-83.37	-3,941.2	2,831.8	3,580.4	3,430.4	149.92	23.882	
14,800.0	11,050.0	14,418.2	10,675.1	78.7	75.7	-83.38	-4,012.7	2,833.6	3,582.1	3,429.8	152.29	23.521	
14,900.0	11,050.0	14,494.6	10,675.6	80.1	76.8	-83.39	-4,089.1	2,836.0	3,584.6	3,429.8	154.76	23.163	
15,000.0	11,050.0	14,575.3	10,676.0	81.6	78.0	-83.40	-4,169.7	2,839.0	3,587.6	3,430.3	157.31	22.807	
15,100.0	11,050.0	14,769.4	10,675.0	83.0	80.8	-83.39	-4,363.7	2,844.4	3,590.0	3,428.2	161.88	22.177	
15,200.0	11,050.0	14,804.4	10,674.7	84.5	81.3	-83.39	-4,398.7	2,845.3	3,591.8	3,428.1	163.66	21.947	
15,300.0	11,050.0	15,337.9	10,691.9	85.9	89.3	-83.64	-4,931.0	2,832.7	3,589.2	3,415.7	173.58	20.678	
15,400.0	11,050.0	15,427.0	10,691.3	87.4	90.6	-83.61	-5,019.7	2,824.8	3,579.8	3,403.5	176.37	20.297	
15,500.0	11,050.0	15,508.2	10,690.9	88.9	91.8	-83.59	-5,100.7	2,817.9	3,570.9	3,391.8	179.06	19.942	
15,600.0	11,050.0	15,555.7	10,690.9	90.4	92.5	-83.58	-5,148.0	2,814.3	3,562.9	3,381.6	181.29	19.653	
15,700.0	11,050.0	15,607.0	10,690.8	91.8	93.3	-83.58	-5,199.2	2,811.3	3,556.4	3,372.8	183.55	19.376	
15,800.0	11,050.0	15,637.4	10,690.6	93.3	93.7	-83.57	-5,229.5	2,810.1	3,551.5	3,366.0	185.46	19.150	
15,900.0	11,050.0	15,672.3	10,690.5	94.8	94.3	-83.57	-5,264.5	2,809.2	3,548.5	3,361.1	187.40	18.935	
16,000.0	11,050.0	15,701.0	10,690.5	96.3	94.7	-83.57	-5,293.2	2,809.0	3,547.3	3,358.1	189.18	18.751	
16,034.4	11,050.0	15,731.6	10,690.5	96.9	95.2	-83.57	-5,323.8	2,809.1	3,547.2	3,357.0	190.15	18.654	
16,100.0	11,050.0	15,769.8	10,690.7	97.8	95.8	-83.57	-5,362.0	2,809.5	3,547.4	3,355.8	191.65	18.510	
16,200.0	11,050.0	15,825.3	10,691.1	99.4	96.6	-83.58	-5,417.4	2,810.6	3,548.8	3,355.0	193.86	18.306	
16,300.0	11,050.0	15,890.0	10,691.0	100.9	97.6	-83.58	-5,482.1	2,812.9	3,551.5	3,355.3	196.23	18.099	
16,400.0	11,050.0	16,076.0	10,691.6	102.4	100.5	-83.60	-5,668.1	2,818.0	3,553.9	3,353.0	200.92	17.688	
16,494.8	11,050.0	16,192.1	10,691.9	103.8	102.3	-83.60	-5,784.1	2,818.8	3,553.9	3,349.7	204.21	17.403	
16,500.0	11,050.0	16,195.1	10,691.9	103.9	102.3	-83.60	-5,787.1	2,818.8	3,553.9	3,349.5	204.33	17.393	
16,600.0	11,050.0	16,267.0	10,692.3	105.5	103.4	-83.61	-5,859.0	2,819.9	3,554.6	3,347.7	206.89	17.181	
16,700.0	11,050.0	16,326.0	10,692.8	107.0	104.3	-83.62	-5,918.0	2,821.4	3,556.2	3,347.0	209.20	16.999	
16,800.0	11,050.0	16,480.6	10,693.8	108.5	106.7	-83.64	-6,072.6	2,824.3	3,557.4	3,344.1	213.32	16.676	
16,900.0	11,050.0	16,550.0	10,693.9	110.1	107.8	-83.64	-6,142.0	2,825.6	3,558.6	3,342.7	215.84	16.487	
17,000.0	11,050.0	16,651.6	10,693.6	111.6	109.4	-83.64	-6,243.5	2,828.0	3,560.3	3,341.3	218.96	16.260	
17,100.0	11,050.0	16,759.4	10,693.6	113.2	111.1	-83.64	-6,351.3	2,829.9	3,561.5	3,339.3	222.22	16.027	
17,200.0	11,050.0	16,833.0	10,693.8	114.7	112.2	-83.65	-6,424.9	2,831.2	3,562.6	3,337.8	224.82	15.846	
17,300.0	11,050.0	16,903.0	10,693.6	116.3	113.3	-83.64	-6,494.9	2,832.9	3,564.6	3,337.2	227.35	15.679	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Bucks Fed Com #501H - Wellbore #1 - Actual												Offset Site Error:	0.0 usft
Survey Program: 339-MWD												Offset Well Error:	0.0 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
17,357.4	11,050.0	16,949.5	10,693.2	117.1	114.1	-83.64	-6,541.3	2,834.5	3,566.3	3,337.3	228.92	15.578 SF	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 241-MWD												Offset Well Error:	0.0 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	
0.0	0.0	37.7	37.7	0.0	0.1	95.02	-166.4	1,895.2	1,902.5				
100.0	100.0	137.1	137.1	0.1	0.2	95.01	-166.0	1,895.3	1,902.5	1,902.2	0.34	5,517.346	
200.0	200.0	236.4	236.4	0.5	0.4	94.98	-165.3	1,895.4	1,902.6	1,901.7	0.86	2,211.616	
300.0	300.0	337.7	337.7	0.8	0.7	94.94	-164.0	1,895.6	1,902.6	1,901.1	1.57	1,209.713	
400.0	400.0	433.6	433.6	1.2	1.1	94.89	-162.3	1,895.9	1,902.8	1,900.5	2.28	836.147	
500.0	500.0	540.2	540.1	1.6	1.5	94.83	-160.2	1,896.2	1,902.9	1,899.9	3.02	630.787	
600.0	600.0	644.5	644.4	1.9	1.8	94.76	-157.7	1,896.0	1,902.6	1,898.8	3.75	507.359	
700.0	700.0	744.0	743.9	2.3	2.2	94.66	-154.4	1,896.0	1,902.3	1,897.8	4.47	425.842	
800.0	800.0	850.3	850.1	2.6	2.6	94.52	-150.0	1,895.9	1,901.9	1,896.7	5.21	365.044	
887.1	887.1	925.4	925.1	2.9	2.8	94.43	-146.9	1,895.8	1,901.5	1,895.7	5.79	328.233	
900.0	900.0	935.4	935.1	3.0	2.9	94.42	-146.6	1,895.8	1,901.5	1,895.6	5.88	323.617	
1,000.0	1,000.0	1,014.9	1,014.6	3.4	3.2	94.35	-144.4	1,896.6	1,902.2	1,895.7	6.52	291.768	
1,100.0	1,100.0	1,097.7	1,097.3	3.7	3.5	94.30	-142.6	1,898.1	1,903.9	1,896.7	7.17	265.396	
1,200.0	1,200.0	1,188.0	1,187.6	4.1	3.8	94.21	-139.8	1,900.6	1,906.4	1,898.5	7.86	242.673	
1,300.0	1,300.0	1,286.7	1,286.2	4.4	4.1	94.09	-136.0	1,903.5	1,909.1	1,900.5	8.57	222.783	
1,400.0	1,400.0	1,401.0	1,400.3	4.8	4.6	93.96	-132.0	1,906.6	1,911.5	1,902.2	9.34	204.669	
1,500.0	1,500.0	1,495.0	1,494.2	5.1	4.9	93.87	-129.0	1,908.8	1,913.6	1,903.6	10.04	190.668	
1,600.0	1,600.0	1,589.9	1,589.1	5.5	5.2	-163.68	-125.5	1,911.3	1,916.9	1,906.1	10.73	178.701	
1,700.0	1,700.0	1,693.3	1,692.4	5.8	5.6	-163.81	-121.4	1,914.1	1,921.8	1,910.4	11.44	167.995	
1,800.0	1,799.9	1,790.2	1,789.1	6.2	6.0	-163.94	-117.9	1,916.7	1,928.5	1,916.4	12.13	158.980	
1,900.0	1,899.7	1,925.3	1,924.2	6.5	6.5	-164.12	-113.7	1,919.0	1,935.8	1,922.9	12.96	149.345	
2,000.0	1,999.4	2,051.9	2,050.7	6.9	6.9	-164.25	-111.1	1,919.2	1,943.5	1,929.7	13.76	141.277	
2,100.0	2,098.9	2,212.8	2,211.5	7.2	7.4	-164.36	-110.8	1,915.7	1,950.5	1,935.9	14.64	133.243	
2,200.0	2,198.3	2,376.3	2,374.8	7.6	8.0	-164.43	-112.4	1,906.6	1,955.9	1,940.4	15.51	126.117	
2,300.0	2,297.4	2,527.0	2,525.0	8.0	8.5	-164.54	-112.8	1,894.2	1,960.4	1,944.1	16.34	119.978	
2,400.0	2,396.4	2,697.7	2,694.5	8.3	9.1	-164.69	-113.0	1,874.5	1,962.3	1,945.1	17.22	113.976	
2,500.0	2,495.5	2,500.0	2,888.9	8.7	8.4	-164.83	-114.0	1,842.9	1,959.4	1,942.6	16.79	116.681	
2,600.0	2,594.5	3,078.1	3,068.2	9.1	10.5	-164.99	-113.6	1,804.2	1,950.9	1,931.9	18.99	102.707	
2,700.0	2,693.5	3,169.5	3,157.3	9.5	10.9	-165.07	-113.2	1,783.9	1,942.0	1,922.3	19.69	98.642	
2,800.0	2,792.5	3,281.7	3,266.7	9.9	11.3	-165.17	-112.8	1,759.1	1,933.2	1,912.8	20.42	94.674	
2,900.0	2,891.6	3,386.2	3,368.5	10.3	11.8	-165.25	-112.9	1,735.3	1,923.8	1,902.6	21.14	90.994	
3,000.0	2,990.6	3,483.5	3,463.2	10.7	12.2	-165.31	-113.6	1,713.1	1,914.3	1,892.5	21.86	87.591	
3,100.0	3,089.6	3,590.1	3,567.0	11.1	12.7	-165.36	-114.5	1,688.6	1,904.7	1,882.1	22.59	84.331	
3,200.0	3,188.6	3,690.3	3,664.4	11.5	13.1	-165.41	-115.6	1,665.5	1,895.0	1,871.7	23.31	81.296	
3,300.0	3,287.7	3,804.4	3,775.3	11.9	13.6	-165.44	-117.5	1,638.6	1,884.9	1,860.8	24.06	78.347	
3,400.0	3,386.7	3,920.0	3,887.5	12.3	14.1	-165.46	-120.1	1,610.4	1,873.9	1,849.1	24.81	75.534	
3,500.0	3,485.7	4,032.5	3,996.3	12.7	14.7	-165.45	-123.2	1,582.1	1,862.1	1,836.5	25.56	72.864	
3,600.0	3,584.8	4,128.1	4,088.6	13.1	15.1	-165.45	-125.5	1,557.8	1,850.0	1,823.7	26.28	70.385	
3,700.0	3,683.8	4,206.4	4,164.5	13.5	15.5	-165.48	-126.7	1,538.4	1,838.6	1,811.6	26.99	68.116	
3,800.0	3,782.8	4,282.1	4,238.1	13.9	15.9	-165.53	-127.1	1,520.6	1,828.4	1,800.7	27.69	66.021	
3,900.0	3,881.8	4,355.1	4,309.3	14.3	16.2	-165.59	-127.2	1,504.4	1,819.6	1,791.2	28.39	64.093	
4,000.0	3,980.9	4,429.0	4,381.6	14.7	16.6	-165.66	-126.9	1,489.3	1,812.5	1,783.4	29.08	62.324	
4,100.0	4,079.9	4,508.5	4,459.7	15.1	16.9	-165.75	-126.3	1,474.1	1,806.7	1,776.9	29.78	60.668	
4,200.0	4,178.9	4,601.2	4,550.7	15.5	17.3	-165.87	-125.4	1,456.8	1,801.4	1,770.9	30.50	59.053	
4,300.0	4,277.9	4,695.4	4,643.3	15.9	17.8	-166.01	-123.8	1,439.5	1,796.5	1,765.2	31.23	57.519	
4,400.0	4,377.0	4,793.0	4,739.2	16.3	18.2	-166.20	-120.4	1,421.9	1,791.8	1,759.8	31.97	56.049	
4,500.0	4,476.0	4,899.7	4,844.1	16.8	18.7	-166.43	-116.5	1,402.5	1,787.0	1,754.2	32.72	54.607	
4,600.0	4,575.0	4,994.6	4,937.4	17.2	19.1	-166.62	-113.2	1,385.2	1,782.1	1,748.6	33.46	53.267	
4,700.0	4,674.0	5,089.6	5,030.8	17.6	19.5	-166.82	-110.0	1,368.1	1,777.5	1,743.3	34.19	51.993	
4,800.0	4,773.1	5,189.9	5,129.4	18.0	20.0	-167.01	-107.0	1,350.1	1,773.1	1,738.1	34.93	50.759	
4,900.0	4,872.1	5,279.7	5,217.7	18.4	20.4	-167.18	-104.4	1,334.3	1,768.9	1,733.3	35.65	49.616	
5,000.0	4,971.1	5,367.4	5,304.1	18.8	20.8	-167.34	-102.1	1,319.4	1,765.4	1,729.1	36.37	48.544	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 241-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	5,474.7	5,409.9	19.2	21.2	-167.53	-99.5	1,301.3	1,762.1	1,725.0	37.13	47.461	
5,200.0	5,169.2	5,576.3	5,509.9	19.7	21.7	-167.71	-97.2	1,283.8	1,758.4	1,720.6	37.87	46.428	
5,300.0	5,268.2	5,668.5	5,600.7	20.1	22.1	-167.86	-95.5	1,268.1	1,755.0	1,716.4	38.60	45.465	
5,400.0	5,367.2	5,759.3	5,690.3	20.5	22.5	-168.00	-93.8	1,253.1	1,752.0	1,712.7	39.32	44.555	
5,500.0	5,466.3	5,855.6	5,785.3	20.9	22.9	-168.16	-92.0	1,237.5	1,749.4	1,709.4	40.06	43.674	
5,600.0	5,565.3	5,950.6	5,879.1	21.3	23.3	-168.31	-90.0	1,222.3	1,747.1	1,706.3	40.79	42.834	
5,700.0	5,664.3	6,040.6	5,967.9	21.7	23.7	-168.47	-88.2	1,208.4	1,745.2	1,703.7	41.50	42.049	
5,800.0	5,763.3	6,141.7	6,067.8	22.2	24.2	-168.64	-86.1	1,193.0	1,743.6	1,701.4	42.25	41.268	
5,900.0	5,862.4	6,244.4	6,169.3	22.6	24.6	-168.81	-83.8	1,177.1	1,741.9	1,698.9	43.00	40.507	
6,000.0	5,961.4	6,341.0	6,264.7	23.0	25.0	-168.98	-81.6	1,162.2	1,740.1	1,696.4	43.74	39.787	
6,100.0	6,060.4	6,433.9	6,356.5	23.4	25.4	-169.15	-79.5	1,148.2	1,738.7	1,694.2	44.46	39.106	
6,200.0	6,159.4	6,524.4	6,446.0	23.8	25.8	-169.31	-77.4	1,134.9	1,737.8	1,692.6	45.18	38.466	
6,297.8	6,256.3	6,611.3	6,532.0	24.2	26.2	-169.45	-75.7	1,122.6	1,737.4	1,691.6	45.87	37.875 CC	
6,300.0	6,258.5	6,613.0	6,533.7	24.2	26.2	-169.45	-75.6	1,122.4	1,737.4	1,691.5	45.89	37.863	
6,400.0	6,357.5	6,689.0	6,609.0	24.7	26.5	-169.60	-73.6	1,112.5	1,738.1	1,691.6	46.55	37.337	
6,500.0	6,456.5	6,759.9	6,679.4	25.1	26.8	-169.76	-70.9	1,104.2	1,740.4	1,693.2	47.19	36.880	
6,600.0	6,555.6	6,822.8	6,741.9	25.5	27.0	-169.92	-67.8	1,098.0	1,744.5	1,696.7	47.78	36.511	
6,700.0	6,654.6	6,877.0	6,795.9	25.9	27.2	-170.06	-65.0	1,093.8	1,750.9	1,702.6	48.30	36.247	
6,800.0	6,753.6	6,950.5	6,869.2	26.3	27.5	-170.25	-61.0	1,089.7	1,759.3	1,710.4	48.90	35.979	
6,900.0	6,852.6	7,015.9	6,934.4	26.8	27.7	-170.41	-57.8	1,087.3	1,769.6	1,720.1	49.43	35.798	
7,000.0	6,951.7	7,085.1	7,003.6	27.2	28.0	-170.51	-56.3	1,086.2	1,781.8	1,731.8	49.97	35.659	
7,100.0	7,050.7	7,173.5	7,092.0	27.6	28.2	-170.59	-56.1	1,085.8	1,795.1	1,744.5	50.61	35.472	
7,136.4	7,086.7	7,209.5	7,128.0	27.8	28.3	-170.61	-56.3	1,085.7	1,800.0	1,749.2	50.86	35.393	
7,200.0	7,149.8	7,272.0	7,190.5	28.0	28.5	-170.65	-56.7	1,085.6	1,808.1	1,756.8	51.30	35.249	
7,300.0	7,249.2	7,368.8	7,287.2	28.4	28.8	-170.71	-57.6	1,085.6	1,818.9	1,766.9	51.97	34.999	
7,400.0	7,348.8	7,466.3	7,384.8	28.8	29.1	-170.74	-58.6	1,085.7	1,827.2	1,774.5	52.64	34.708	
7,500.0	7,448.7	7,562.4	7,480.9	29.2	29.4	-170.75	-59.7	1,086.0	1,833.1	1,779.8	53.30	34.389	
7,600.0	7,548.6	7,658.1	7,576.6	29.5	29.6	-170.74	-60.6	1,086.5	1,836.6	1,782.7	53.95	34.040	
7,669.7	7,618.3	7,729.0	7,647.5	29.7	29.9	86.71	-61.2	1,086.9	1,837.6	1,783.2	54.43	33.763	
7,700.0	7,648.6	7,756.7	7,675.1	29.8	29.9	86.72	-61.4	1,087.0	1,837.8	1,783.2	54.61	33.653	
7,800.0	7,748.6	7,850.1	7,768.6	30.1	30.2	86.74	-61.9	1,087.9	1,838.6	1,783.4	55.23	33.293	
7,900.0	7,848.6	7,946.2	7,864.6	30.5	30.5	86.76	-62.5	1,088.9	1,839.7	1,783.8	55.86	32.935	
8,000.0	7,948.6	8,045.3	7,963.7	30.8	30.8	86.78	-63.2	1,090.2	1,841.0	1,784.5	56.51	32.576	
8,100.0	8,048.6	8,149.7	8,068.1	31.1	31.1	86.81	-64.2	1,091.4	1,842.1	1,784.9	57.20	32.203	
8,200.0	8,148.6	8,252.8	8,171.2	31.4	31.4	86.86	-65.7	1,092.5	1,843.0	1,785.1	57.89	31.839	
8,300.0	8,248.6	8,354.7	8,273.1	31.7	31.7	86.92	-67.4	1,093.4	1,843.8	1,785.2	58.56	31.483	
8,400.0	8,348.6	8,459.7	8,378.1	32.0	32.0	86.98	-69.4	1,094.1	1,844.4	1,785.1	59.26	31.123	
8,500.0	8,448.6	8,560.5	8,478.8	32.4	32.3	87.05	-71.6	1,094.7	1,844.8	1,784.9	59.94	30.779	
8,600.0	8,548.6	8,662.1	8,567.2	32.7	32.8	87.26	-78.6	1,092.5	1,843.1	1,782.1	60.98	30.224	
8,700.0	8,648.6	8,764.7	8,672.6	33.0	33.2	87.43	-84.3	1,088.5	1,839.6	1,777.8	61.77	29.781	
8,800.0	8,748.6	8,864.8	8,772.5	33.3	33.6	87.56	-88.6	1,083.1	1,834.9	1,772.4	62.56	29.332	
8,900.0	8,848.6	8,964.8	8,872.3	33.6	33.9	87.64	-91.2	1,079.2	1,830.2	1,767.1	63.17	28.973	
9,000.0	8,948.6	9,064.8	8,976.3	34.0	34.3	87.70	-93.3	1,075.5	1,826.1	1,762.3	63.82	28.613	
9,100.0	9,048.6	9,164.8	9,077.8	34.3	34.6	87.70	-93.4	1,072.1	1,822.4	1,757.9	64.47	28.265	
9,200.0	9,148.6	9,264.8	9,177.8	34.6	34.9	87.62	-91.0	1,069.2	1,819.2	1,754.1	65.10	27.945	
9,300.0	9,248.6	9,364.8	9,277.8	34.9	35.2	87.52	-87.9	1,067.0	1,816.8	1,751.1	65.70	27.651	
9,400.0	9,348.6	9,464.8	9,377.8	35.3	35.5	87.42	-85.1	1,064.6	1,814.7	1,748.2	66.46	27.307	
9,500.0	9,448.6	9,564.8	9,477.8	35.6	35.9	87.39	-84.2	1,061.5	1,811.9	1,744.7	67.20	26.962	
9,600.0	9,548.6	9,664.8	9,577.8	35.9	36.3	87.46	-86.5	1,057.3	1,808.3	1,740.3	67.99	26.597	
9,700.0	9,648.6	9,764.8	9,677.8	36.3	36.7	87.54	-89.3	1,052.3	1,803.8	1,735.0	68.75	26.237	
9,800.0	9,748.6	9,864.8	9,777.8	36.6	37.1	87.61	-91.8	1,047.8	1,798.9	1,729.5	69.42	25.914	
9,900.0	9,848.6	9,964.8	9,877.8	36.9	37.3	87.67	-93.6	1,044.7	1,794.9	1,724.9	70.00	25.641	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 241-MWD												Offset Well Error:	0.0 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	
10,000.0	9,948.6	10,104.4	10,021.0	37.2	37.6	87.73	-95.5	1,042.9	1,792.4	1,721.8	70.56	25.403	
10,100.0	10,048.6	10,192.5	10,109.1	37.6	37.9	87.80	-98.0	1,041.6	1,790.8	1,719.6	71.18	25.159	
10,200.0	10,148.6	10,288.9	10,205.5	37.9	38.2	87.89	-100.7	1,040.7	1,789.7	1,717.9	71.84	24.912	
10,290.1	10,238.7	10,360.6	10,276.7	38.2	38.4	88.14	-108.5	1,040.6	1,789.3	1,716.9	72.34	24.733	
10,300.0	10,248.6	10,368.1	10,284.1	38.2	38.4	88.18	-109.8	1,040.7	1,789.3	1,716.9	72.40	24.715	
10,400.0	10,348.6	10,440.7	10,354.7	38.6	38.7	88.71	-126.4	1,041.8	1,790.2	1,717.3	72.88	24.563	
10,500.0	10,448.6	10,513.0	10,423.0	38.9	38.8	89.47	-150.0	1,044.0	1,792.9	1,719.5	73.34	24.445	
10,528.4	10,477.0	10,533.0	10,441.4	39.0	38.9	89.71	-157.7	1,044.7	1,793.9	1,720.5	73.47	24.419	
10,550.0	10,498.6	10,551.0	10,457.9	39.1	38.9	-89.61	-164.9	1,045.5	1,794.9	1,721.3	73.58	24.395	
10,600.0	10,548.4	10,625.3	10,524.1	39.2	39.1	-88.53	-198.4	1,047.9	1,796.9	1,722.8	74.07	24.259	
10,650.0	10,597.7	10,668.0	10,560.8	39.4	39.2	-87.87	-220.3	1,048.8	1,798.4	1,724.1	74.34	24.193	
10,700.0	10,646.1	10,698.5	10,586.1	39.6	39.3	-87.36	-237.2	1,049.6	1,800.3	1,725.8	74.51	24.164	
10,750.0	10,693.1	10,740.0	10,619.3	39.7	39.4	-86.76	-262.1	1,051.0	1,802.7	1,727.9	74.76	24.115	
10,800.0	10,738.5	10,775.8	10,646.5	39.9	39.5	-86.22	-285.4	1,052.3	1,805.2	1,730.2	74.96	24.083	
10,850.0	10,782.0	10,830.5	10,684.8	40.0	39.6	-85.53	-324.4	1,053.8	1,807.3	1,732.0	75.31	24.000	
10,900.0	10,823.1	10,862.7	10,705.3	40.2	39.6	-85.05	-349.2	1,054.5	1,809.4	1,733.9	75.47	23.973	
10,950.0	10,861.6	10,892.7	10,722.9	40.4	39.7	-84.60	-373.5	1,055.2	1,811.6	1,736.0	75.62	23.956	
11,000.0	10,897.1	10,929.0	10,742.0	40.5	39.8	-84.10	-404.3	1,056.3	1,814.0	1,738.2	75.82	23.926	
11,050.0	10,929.5	10,929.0	10,742.0	40.7	39.8	-83.83	-404.3	1,056.3	1,816.8	1,741.0	75.72	23.993	
11,100.0	10,958.4	10,969.1	10,760.3	40.8	39.8	-83.35	-439.9	1,058.0	1,819.4	1,743.5	75.96	23.952	
11,150.0	10,983.6	10,991.6	10,769.2	41.0	39.9	-82.95	-460.5	1,059.2	1,822.6	1,746.5	76.07	23.959	
11,200.0	11,005.0	11,023.0	10,779.9	41.2	39.9	-82.55	-490.0	1,061.2	1,826.0	1,749.7	76.26	23.944	
11,250.0	11,022.4	11,156.1	10,801.4	41.4	40.3	-81.58	-620.8	1,062.9	1,827.4	1,750.3	77.15	23.687	
11,300.0	11,035.6	11,205.7	10,803.7	41.5	40.4	-81.23	-670.3	1,061.6	1,827.5	1,750.0	77.47	23.591	
11,350.0	11,044.6	11,266.0	10,805.3	41.8	40.6	-81.00	-730.6	1,059.8	1,826.8	1,748.9	77.91	23.449	
11,400.0	11,049.3	11,321.8	10,806.3	42.0	40.8	-81.01	-786.4	1,057.6	1,825.2	1,746.9	78.37	23.291	
11,428.4	11,050.0	11,347.0	10,806.6	42.1	41.0	-81.12	-811.6	1,056.6	1,824.0	1,745.4	78.60	23.206	
11,428.7	11,050.0	11,347.3	10,806.6	42.1	41.0	-81.12	-811.8	1,056.6	1,824.0	1,745.4	78.60	23.205	
11,500.0	11,050.0	11,415.2	10,807.1	42.4	41.3	-81.12	-879.7	1,054.1	1,820.8	1,741.6	79.29	22.966	
11,600.0	11,050.0	11,520.6	10,808.6	43.0	41.8	-81.14	-985.0	1,050.2	1,816.4	1,736.0	80.44	22.581	
11,700.0	11,050.0	11,679.7	10,811.5	43.5	42.8	-81.18	-1,143.8	1,040.7	1,809.3	1,727.0	82.32	21.978	
11,800.0	11,050.0	11,754.0	10,811.9	44.2	43.3	-81.17	-1,218.0	1,036.0	1,802.3	1,718.9	83.38	21.614	
11,900.0	11,050.0	11,834.0	10,812.9	44.9	43.9	-81.17	-1,297.8	1,030.9	1,795.4	1,710.8	84.59	21.226	
12,000.0	11,050.0	11,900.3	10,813.9	45.6	44.4	-81.19	-1,364.0	1,027.7	1,790.2	1,704.5	85.68	20.893	
12,100.0	11,050.0	11,983.4	10,814.8	46.4	45.1	-81.21	-1,447.1	1,026.4	1,787.7	1,700.6	87.07	20.532	
12,200.0	11,050.0	12,077.2	10,816.9	47.2	45.8	-81.26	-1,540.8	1,024.6	1,784.9	1,696.2	88.69	20.126	
12,300.0	11,050.0	12,166.0	10,818.4	48.1	46.6	-81.30	-1,629.6	1,023.8	1,783.1	1,692.8	90.30	19.746	
12,400.0	11,050.0	12,240.7	10,819.7	49.0	47.3	-81.34	-1,704.3	1,023.4	1,781.9	1,690.1	91.76	19.419	
12,408.5	11,050.0	12,245.2	10,819.8	49.1	47.3	-81.34	-1,708.8	1,023.4	1,781.8	1,690.0	91.85	19.399	
12,500.0	11,050.0	12,306.0	10,820.6	50.0	47.9	-81.38	-1,769.6	1,024.9	1,783.0	1,689.9	93.09	19.154	
12,600.0	11,050.0	12,360.2	10,821.7	51.0	48.4	-81.42	-1,823.7	1,027.4	1,786.4	1,692.1	94.26	18.951	
12,700.0	11,050.0	12,548.7	10,828.0	52.0	50.2	-81.64	-2,011.9	1,033.3	1,788.5	1,690.5	97.98	18.253	
12,800.0	11,050.0	12,648.2	10,830.4	53.1	51.3	-81.72	-2,111.4	1,033.5	1,787.8	1,687.7	100.14	17.854	
12,900.0	11,050.0	12,743.6	10,832.9	54.2	52.3	-81.79	-2,206.8	1,034.0	1,787.3	1,685.1	102.27	17.476	
13,000.0	11,050.0	12,837.8	10,835.7	55.3	53.4	-81.89	-2,300.9	1,034.8	1,787.1	1,682.7	104.44	17.112	
13,011.0	11,050.0	12,848.1	10,836.0	55.4	53.5	-81.90	-2,311.2	1,034.9	1,787.1	1,682.4	104.68	17.072	
13,100.0	11,050.0	12,934.2	10,838.0	56.4	54.4	-81.96	-2,397.3	1,035.8	1,787.2	1,680.5	106.69	16.751	
13,200.0	11,050.0	13,000.5	10,839.0	57.6	55.2	-81.99	-2,463.6	1,036.8	1,788.0	1,679.7	108.35	16.502	
13,300.0	11,050.0	13,061.0	10,839.3	58.8	55.9	-82.01	-2,524.0	1,039.4	1,791.5	1,681.6	109.88	16.304	
13,400.0	11,050.0	13,183.9	10,838.9	60.0	57.4	-82.02	-2,646.8	1,043.9	1,794.4	1,681.5	112.81	15.906	
13,500.0	11,050.0	13,250.0	10,838.8	61.2	58.1	-82.03	-2,712.8	1,047.6	1,798.9	1,684.4	114.51	15.710	
13,600.0	11,050.0	13,451.4	10,839.2	62.5	60.6	-82.07	-2,914.0	1,055.9	1,803.9	1,684.5	119.32	15.118	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Bucks Fed Com #502H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 241-MWD													Offset Well Error:	0.0 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		
13,650.2	11,050.0	13,487.7	10,839.0	63.1	61.1	-82.07	-2,950.3	1,056.0	1,803.7	1,683.4	120.30	14.993		
13,700.0	11,050.0	13,523.8	10,838.7	63.8	61.5	-82.06	-2,986.4	1,056.3	1,803.9	1,682.6	121.26	14.876		
13,800.0	11,050.0	13,608.4	10,837.6	65.1	62.6	-82.03	-3,071.0	1,057.7	1,805.1	1,681.6	123.49	14.617		
13,900.0	11,050.0	13,732.7	10,835.7	66.4	64.2	-81.97	-3,195.2	1,059.4	1,806.1	1,679.4	126.66	14.260		
14,000.0	11,050.0	13,802.6	10,834.6	67.7	65.2	-81.94	-3,265.1	1,060.5	1,807.2	1,678.6	128.59	14.053		
14,100.0	11,050.0	13,880.5	10,833.6	69.0	66.2	-81.92	-3,343.0	1,062.9	1,809.7	1,679.0	130.73	13.844		
14,200.0	11,050.0	13,976.5	10,833.8	70.4	67.5	-81.94	-3,438.9	1,066.8	1,813.2	1,679.8	133.34	13.598		
14,300.0	11,050.0	14,111.4	10,834.8	71.7	69.3	-81.98	-3,573.7	1,071.1	1,815.6	1,678.7	136.95	13.257		
14,400.0	11,050.0	14,195.7	10,836.0	73.1	70.5	-82.03	-3,658.0	1,073.4	1,817.5	1,678.2	139.34	13.043		
14,500.0	11,050.0	14,289.3	10,837.4	74.5	71.7	-82.08	-3,751.5	1,076.5	1,820.0	1,678.0	141.99	12.818		
14,600.0	11,050.0	14,446.4	10,838.3	75.9	73.9	-82.12	-3,908.5	1,080.0	1,821.7	1,675.5	146.22	12.459		
14,700.0	11,050.0	14,576.0	10,838.2	77.3	75.8	-82.11	-4,038.2	1,078.7	1,820.0	1,670.3	149.74	12.155		
14,800.0	11,050.0	14,672.0	10,837.4	78.7	77.1	-82.08	-4,134.2	1,077.3	1,818.1	1,665.6	152.48	11.923		
14,900.0	11,050.0	14,771.7	10,836.0	80.1	78.6	-82.02	-4,233.8	1,075.8	1,816.2	1,660.9	155.31	11.694		
15,000.0	11,050.0	14,869.6	10,834.3	81.6	80.0	-81.96	-4,331.7	1,074.5	1,814.5	1,656.4	158.12	11.476		
15,100.0	11,050.0	14,987.1	10,833.3	83.0	81.7	-81.92	-4,449.2	1,072.2	1,812.0	1,650.6	161.41	11.227		
15,200.0	11,050.0	15,079.5	10,833.3	84.5	83.0	-81.91	-4,541.5	1,070.3	1,809.5	1,645.3	164.13	11.025		
15,300.0	11,050.0	15,174.6	10,833.6	85.9	84.4	-81.91	-4,636.6	1,069.0	1,807.5	1,640.5	166.94	10.827		
15,400.0	11,050.0	15,281.5	10,836.3	87.4	86.0	-81.98	-4,743.5	1,067.6	1,805.2	1,635.1	170.08	10.614		
15,500.0	11,050.0	15,388.8	10,838.9	88.9	87.6	-82.05	-4,850.7	1,065.9	1,802.6	1,629.4	173.24	10.406		
15,600.0	11,050.0	15,486.0	10,841.5	90.4	89.0	-82.13	-4,947.9	1,064.1	1,799.8	1,623.6	176.17	10.216		
15,700.0	11,050.0	15,594.2	10,843.8	91.8	90.6	-82.19	-5,056.0	1,062.0	1,797.1	1,617.7	179.37	10.019		
15,800.0	11,050.0	15,683.1	10,845.4	93.3	92.0	-82.23	-5,144.9	1,060.2	1,794.2	1,612.1	182.11	9.852		
15,900.0	11,050.0	15,800.1	10,848.2	94.8	93.7	-82.30	-5,261.9	1,058.0	1,791.4	1,605.8	185.55	9.654		
16,000.0	11,050.0	15,877.5	10,848.5	96.3	94.9	-82.30	-5,339.3	1,056.4	1,788.6	1,600.6	188.02	9.513		
16,100.0	11,050.0	15,988.7	10,848.1	97.8	96.6	-82.28	-5,450.5	1,054.3	1,786.3	1,595.0	191.29	9.338		
16,200.0	11,050.0	16,065.2	10,847.8	99.4	97.7	-82.26	-5,526.9	1,053.2	1,784.2	1,590.4	193.73	9.210		
16,268.1	11,050.0	16,106.5	10,847.8	100.4	98.3	-82.26	-5,568.3	1,053.0	1,783.6	1,588.5	195.10	9.142		
16,300.0	11,050.0	16,124.0	10,847.7	100.9	98.6	-82.26	-5,585.7	1,053.2	1,783.7	1,588.0	195.68	9.116		
16,400.0	11,050.0	16,186.6	10,847.4	102.4	99.6	-82.25	-5,648.3	1,054.9	1,785.8	1,588.1	197.65	9.035		
16,500.0	11,050.0	16,305.6	10,846.6	103.9	101.4	-82.24	-5,767.3	1,058.2	1,788.0	1,586.7	201.25	8.884		
16,600.0	11,050.0	16,413.1	10,846.2	105.5	103.0	-82.24	-5,874.7	1,060.7	1,789.7	1,585.2	204.52	8.751		
16,700.0	11,050.0	16,513.6	10,847.4	107.0	104.6	-82.28	-5,975.2	1,062.7	1,790.9	1,583.3	207.62	8.626		
16,800.0	11,050.0	16,601.6	10,848.6	108.5	105.9	-82.32	-6,063.1	1,064.9	1,792.6	1,582.2	210.38	8.521		
16,900.0	11,050.0	16,697.7	10,849.6	110.1	107.4	-82.37	-6,159.2	1,067.9	1,794.9	1,581.6	213.36	8.413		
17,000.0	11,050.0	16,812.2	10,851.1	111.6	109.2	-82.42	-6,273.7	1,071.1	1,796.9	1,580.0	216.90	8.284		
17,100.0	11,050.0	16,913.5	10,852.5	113.2	110.7	-82.47	-6,374.9	1,073.2	1,798.2	1,578.2	220.06	8.172		
17,200.0	11,050.0	17,007.9	10,853.6	114.7	112.2	-82.51	-6,469.3	1,075.4	1,799.8	1,576.8	223.02	8.070		
17,300.0	11,050.0	17,123.8	10,854.7	116.3	114.0	-82.56	-6,585.2	1,077.9	1,801.1	1,574.5	226.60	7.949		
17,357.4	11,050.0	17,180.8	10,855.3	117.1	114.9	-82.58	-6,642.1	1,078.8	1,801.6	1,573.3	228.38	7.889 ES, SF		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
0.0	0.0	35.0	35.0	0.0	0.0	92.73	-130.9	2,748.1	2,751.2				
100.0	100.0	135.0	135.0	0.1	0.3	92.73	-130.9	2,748.1	2,751.2	2,750.9	0.38	7,206.484	
200.0	200.0	235.0	235.0	0.5	0.6	92.73	-130.9	2,748.1	2,751.2	2,750.1	1.10	2,504.049	
300.0	300.0	335.0	335.0	0.8	1.0	92.73	-130.9	2,748.1	2,751.2	2,749.4	1.82	1,515.284	
400.0	400.0	435.0	435.0	1.2	1.3	92.73	-130.9	2,748.1	2,751.2	2,748.7	2.53	1,086.329	
500.0	500.0	535.0	535.0	1.6	1.7	92.73	-130.9	2,748.1	2,751.2	2,748.0	3.25	846.653	
600.0	600.0	635.0	635.0	1.9	2.0	92.73	-130.9	2,748.1	2,751.2	2,747.3	3.97	693.621	
700.0	700.0	735.0	735.0	2.3	2.4	92.73	-130.9	2,748.1	2,751.2	2,746.6	4.68	587.441	
800.0	800.0	835.0	835.0	2.6	2.8	92.73	-130.9	2,748.1	2,751.2	2,745.8	5.40	509.453	
900.0	900.0	935.0	935.0	3.0	3.1	92.73	-130.9	2,748.1	2,751.2	2,745.1	6.12	449.746	
1,000.0	1,000.0	1,035.0	1,035.0	3.4	3.5	92.73	-130.9	2,748.1	2,751.2	2,744.4	6.83	402.566	
1,100.0	1,100.0	1,135.0	1,135.0	3.7	3.8	92.73	-130.9	2,748.1	2,751.2	2,743.7	7.55	364.344	
1,200.0	1,200.0	1,235.0	1,235.0	4.1	4.2	92.73	-130.9	2,748.1	2,751.2	2,743.0	8.27	332.751	
1,300.0	1,300.0	1,335.0	1,335.0	4.4	4.6	92.73	-130.9	2,748.1	2,751.2	2,742.3	8.99	306.200	
1,400.0	1,400.0	1,435.0	1,435.0	4.8	4.9	92.73	-130.9	2,748.1	2,751.2	2,741.5	9.70	283.573	
1,500.0	1,500.0	1,567.1	1,567.1	5.1	5.4	92.73	-130.9	2,747.7	2,751.0	2,740.5	10.53	261.324	
1,600.0	1,600.0	1,758.7	1,758.6	5.5	6.0	-164.71	-131.2	2,742.3	2,749.0	2,737.5	11.53	238.526	
1,700.0	1,700.0	1,950.0	1,949.5	5.8	6.7	-164.73	-131.6	2,730.5	2,745.4	2,732.9	12.50	219.550	
1,800.0	1,799.9	2,140.8	2,139.5	6.2	7.4	-164.76	-132.4	2,712.3	2,740.1	2,726.7	13.48	203.310	
1,900.0	1,899.7	2,316.4	2,313.6	6.5	8.0	-164.79	-133.3	2,690.1	2,733.3	2,718.9	14.40	189.845	
2,000.0	1,999.4	2,416.1	2,412.4	6.9	8.4	-164.82	-133.9	2,676.3	2,727.0	2,711.9	15.09	180.682	
2,100.0	2,098.9	2,516.0	2,511.3	7.2	8.8	-164.86	-134.4	2,662.4	2,722.3	2,706.5	15.79	172.381	
2,200.0	2,198.3	2,616.0	2,610.3	7.6	9.2	-164.91	-135.0	2,648.5	2,719.4	2,702.9	16.50	164.844	
2,300.0	2,297.4	2,701.1	2,694.6	8.0	9.5	-164.95	-135.5	2,636.6	2,718.1	2,701.0	17.16	158.394	
2,313.3	2,310.6	2,717.6	2,710.9	8.0	9.6	-164.96	-135.6	2,634.4	2,718.1	2,700.8	17.26	157.437 CC, ES	
2,400.0	2,396.4	2,768.3	2,761.2	8.3	9.8	-164.99	-135.8	2,627.9	2,718.7	2,700.9	17.77	152.971	
2,500.0	2,495.5	2,826.7	2,819.3	8.7	10.0	-165.02	-136.1	2,621.2	2,720.7	2,702.4	18.36	148.218	
2,600.0	2,594.5	2,900.0	2,892.2	9.1	10.3	-165.06	-136.4	2,614.1	2,724.4	2,705.4	18.99	143.499	
2,700.0	2,693.5	2,943.5	2,935.5	9.5	10.4	-165.09	-136.5	2,610.6	2,729.5	2,710.0	19.51	139.867	
2,800.0	2,792.5	3,000.0	2,991.9	9.9	10.6	-165.13	-136.7	2,606.7	2,736.2	2,716.1	20.08	136.247	
2,900.0	2,891.6	3,059.8	3,051.6	10.3	10.9	-165.16	-136.8	2,603.5	2,744.3	2,723.7	20.66	132.858	
3,000.0	2,990.6	3,117.7	3,109.5	10.7	11.1	-165.20	-136.9	2,601.3	2,754.0	2,732.8	21.22	129.793	
3,100.0	3,089.6	3,175.4	3,167.2	11.1	11.3	-165.25	-137.0	2,599.9	2,765.2	2,743.4	21.77	126.991	
3,200.0	3,188.6	3,237.0	3,223.6	11.5	11.5	-165.29	-137.0	2,599.5	2,777.9	2,755.5	22.34	124.356	
3,300.0	3,287.7	3,330.9	3,322.7	11.9	11.8	-165.36	-137.0	2,599.5	2,791.4	2,768.3	23.03	121.210	
3,400.0	3,386.7	3,429.9	3,421.7	12.3	12.2	-165.43	-137.0	2,599.5	2,804.8	2,781.1	23.74	118.152	
3,500.0	3,485.7	3,529.0	3,520.7	12.7	12.5	-165.50	-137.0	2,599.5	2,818.3	2,793.9	24.45	115.267	
3,600.0	3,584.8	3,628.0	3,619.8	13.1	12.8	-165.57	-137.0	2,599.5	2,831.8	2,806.6	25.16	112.541	
3,700.0	3,683.8	3,727.0	3,718.8	13.5	13.2	-165.64	-137.0	2,599.5	2,845.3	2,819.4	25.88	109.962	
3,800.0	3,782.8	3,826.0	3,817.8	13.9	13.5	-165.71	-137.0	2,599.5	2,858.8	2,832.2	26.59	107.518	
3,900.0	3,881.8	3,925.1	3,916.8	14.3	13.9	-165.78	-137.0	2,599.5	2,872.3	2,845.0	27.30	105.200	
4,000.0	3,980.9	4,024.1	4,015.9	14.7	14.2	-165.85	-137.0	2,599.5	2,885.8	2,857.8	28.02	102.997	
4,100.0	4,079.9	4,123.1	4,114.9	15.1	14.6	-165.91	-137.0	2,599.5	2,899.3	2,870.5	28.73	100.902	
4,200.0	4,178.9	4,222.1	4,213.9	15.5	14.9	-165.98	-137.0	2,599.5	2,912.8	2,883.3	29.45	98.907	
4,300.0	4,277.9	4,321.2	4,312.9	15.9	15.3	-166.05	-137.0	2,599.5	2,926.3	2,896.1	30.17	97.006	
4,400.0	4,377.0	4,420.2	4,412.0	16.3	15.6	-166.11	-137.0	2,599.5	2,939.8	2,908.9	30.88	95.191	
4,500.0	4,476.0	4,519.2	4,511.0	16.8	16.0	-166.18	-137.0	2,599.5	2,953.3	2,921.7	31.60	93.458	
4,600.0	4,575.0	4,618.3	4,610.0	17.2	16.3	-166.24	-137.0	2,599.5	2,966.9	2,934.5	32.32	91.800	
4,700.0	4,674.0	4,717.3	4,709.0	17.6	16.7	-166.30	-137.0	2,599.5	2,980.4	2,947.4	33.04	90.214	
4,800.0	4,773.1	4,816.3	4,808.1	18.0	17.0	-166.37	-137.0	2,599.5	2,993.9	2,960.2	33.76	88.694	
4,900.0	4,872.1	4,915.3	4,907.1	18.4	17.4	-166.43	-137.0	2,599.5	3,007.5	2,973.0	34.47	87.237	
5,000.0	4,971.1	5,014.4	5,006.1	18.8	17.7	-166.49	-137.0	2,599.5	3,021.0	2,985.8	35.19	85.839	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	5,113.4	5,105.2	19.2	18.1	-166.55	-137.0	2,599.5	3,034.5	2,998.6	35.91	84.496	
5,200.0	5,169.2	5,212.4	5,204.2	19.7	18.4	-166.61	-137.0	2,599.5	3,048.1	3,011.4	36.63	83.206	
5,300.0	5,268.2	5,311.4	5,303.2	20.1	18.8	-166.67	-137.0	2,599.5	3,061.6	3,024.3	37.35	81.964	
5,400.0	5,367.2	5,410.5	5,402.2	20.5	19.1	-166.73	-137.0	2,599.5	3,075.2	3,037.1	38.07	80.770	
5,500.0	5,466.3	5,509.5	5,501.3	20.9	19.5	-166.79	-137.0	2,599.5	3,088.7	3,049.9	38.79	79.619	
5,600.0	5,565.3	5,608.5	5,600.3	21.3	19.8	-166.85	-137.0	2,599.5	3,102.3	3,062.8	39.51	78.510	
5,700.0	5,664.3	5,707.5	5,699.3	21.7	20.2	-166.91	-137.0	2,599.5	3,115.9	3,075.6	40.24	77.441	
5,800.0	5,763.3	5,806.6	5,798.3	22.2	20.5	-166.97	-137.0	2,599.5	3,129.4	3,088.5	40.96	76.408	
5,900.0	5,862.4	5,905.6	5,897.4	22.6	20.9	-167.03	-137.0	2,599.5	3,143.0	3,101.3	41.68	75.412	
6,000.0	5,961.4	6,004.6	5,996.4	23.0	21.2	-167.08	-137.0	2,599.5	3,156.6	3,114.2	42.40	74.449	
6,100.0	6,060.4	6,103.7	6,095.4	23.4	21.6	-167.14	-137.0	2,599.5	3,170.1	3,127.0	43.12	73.518	
6,200.0	6,159.4	6,202.7	6,194.4	23.8	21.9	-167.19	-137.0	2,599.5	3,183.7	3,139.9	43.84	72.617	
6,300.0	6,258.5	6,301.7	6,293.5	24.2	22.3	-167.25	-137.0	2,599.5	3,197.3	3,152.7	44.56	71.746	
6,400.0	6,357.5	6,400.7	6,392.5	24.7	22.6	-167.30	-137.0	2,599.5	3,210.9	3,165.6	45.29	70.902	
6,500.0	6,456.5	6,500.2	6,491.5	25.1	23.0	-167.36	-137.0	2,599.5	3,224.4	3,178.4	46.01	70.082	
6,600.0	6,555.6	6,601.2	6,590.6	25.5	23.3	-167.41	-137.0	2,599.5	3,238.0	3,191.3	46.74	69.279	
6,700.0	6,654.6	6,702.2	6,689.6	25.9	23.7	-167.47	-137.0	2,599.5	3,251.6	3,204.2	47.47	68.501	
6,800.0	6,753.6	6,803.2	6,788.6	26.3	24.0	-167.52	-137.0	2,599.5	3,265.2	3,217.0	48.20	67.747	
6,900.0	6,852.6	6,904.1	6,887.6	26.8	24.4	-167.57	-137.0	2,599.5	3,278.8	3,229.9	48.93	67.015	
7,000.0	6,951.7	7,005.1	6,986.7	27.2	24.8	-167.62	-137.0	2,599.5	3,292.4	3,242.8	49.66	66.304	
7,100.0	7,050.7	7,106.1	7,085.7	27.6	25.1	-167.67	-137.0	2,599.5	3,306.0	3,255.6	50.39	65.614	
7,136.4	7,086.7	7,130.0	7,121.7	27.8	25.2	-167.69	-137.0	2,599.5	3,311.0	3,260.4	50.61	65.427	
7,200.0	7,149.8	7,207.0	7,184.8	28.0	25.5	-167.75	-137.0	2,599.5	3,319.1	3,268.0	51.11	64.935	
7,300.0	7,249.2	7,307.6	7,284.2	28.4	25.8	-167.82	-137.0	2,599.5	3,329.8	3,278.0	51.84	64.234	
7,400.0	7,348.8	7,407.9	7,383.8	28.8	26.2	-167.88	-137.0	2,599.5	3,338.0	3,285.4	52.56	63.510	
7,500.0	7,448.7	7,508.1	7,483.7	29.2	26.6	-167.92	-137.0	2,599.5	3,343.6	3,290.3	53.27	62.763	
7,600.0	7,548.6	7,608.2	7,583.6	29.5	26.9	-167.94	-137.0	2,599.5	3,346.7	3,292.7	53.98	61.994	
7,669.7	7,618.3	7,661.6	7,653.3	29.7	27.1	89.49	-137.0	2,599.5	3,347.3	3,292.9	54.41	61.516	
7,700.0	7,648.6	7,708.2	7,683.6	29.8	27.3	89.49	-137.0	2,599.5	3,347.3	3,292.6	54.68	61.215	
7,800.0	7,748.6	7,808.2	7,783.6	30.1	27.6	89.49	-137.0	2,599.5	3,347.3	3,291.9	55.37	60.451	
7,900.0	7,848.6	7,908.2	7,883.6	30.5	28.0	89.49	-137.0	2,599.5	3,347.3	3,291.2	56.06	59.705	
8,000.0	7,948.6	8,008.2	7,983.6	30.8	28.3	89.49	-137.0	2,599.5	3,347.3	3,290.6	56.76	58.977	
8,100.0	8,048.6	8,108.2	8,083.6	31.1	28.7	89.49	-137.0	2,599.5	3,347.3	3,289.9	57.45	58.266	
8,200.0	8,148.6	8,208.2	8,183.6	31.4	29.1	89.49	-137.0	2,599.5	3,347.3	3,289.2	58.14	57.571	
8,300.0	8,248.6	8,308.2	8,283.6	31.7	29.4	89.49	-137.0	2,599.5	3,347.3	3,288.5	58.84	56.892	
8,400.0	8,348.6	8,408.2	8,383.6	32.0	29.8	89.49	-137.0	2,599.5	3,347.3	3,287.8	59.53	56.228	
8,500.0	8,448.6	8,508.2	8,483.6	32.4	30.1	89.49	-137.0	2,599.5	3,347.3	3,287.1	60.23	55.579	
8,600.0	8,548.6	8,608.2	8,583.6	32.7	30.5	89.49	-137.0	2,599.5	3,347.3	3,286.4	60.92	54.945	
8,700.0	8,648.6	8,708.2	8,683.6	33.0	30.8	89.49	-137.0	2,599.5	3,347.3	3,285.7	61.62	54.324	
8,800.0	8,748.6	8,808.2	8,783.6	33.3	31.2	89.49	-137.0	2,599.5	3,347.3	3,285.0	62.31	53.717	
8,900.0	8,848.6	8,908.2	8,883.6	33.6	31.5	89.49	-137.0	2,599.5	3,347.3	3,284.3	63.01	53.123	
9,000.0	8,948.6	9,008.2	8,983.6	34.0	31.9	89.49	-137.0	2,599.5	3,347.3	3,283.6	63.71	52.541	
9,100.0	9,048.6	9,108.2	9,083.6	34.3	32.3	89.49	-137.0	2,599.5	3,347.3	3,282.9	64.41	51.972	
9,200.0	9,148.6	9,208.2	9,183.6	34.6	32.6	89.49	-137.0	2,599.5	3,347.3	3,282.2	65.10	51.415	
9,300.0	9,248.6	9,308.2	9,283.6	34.9	33.0	89.49	-137.0	2,599.5	3,347.3	3,281.5	65.80	50.869	
9,400.0	9,348.6	9,408.2	9,383.6	35.3	33.3	89.49	-137.0	2,599.5	3,347.3	3,280.8	66.50	50.334	
9,500.0	9,448.6	9,508.2	9,483.6	35.6	33.7	89.49	-137.0	2,599.5	3,347.3	3,280.1	67.20	49.810	
9,600.0	9,548.6	9,608.2	9,583.6	35.9	34.0	89.49	-137.0	2,599.5	3,347.3	3,279.4	67.90	49.297	
9,700.0	9,648.6	9,708.2	9,683.6	36.3	34.4	89.49	-137.0	2,599.5	3,347.3	3,278.7	68.60	48.794	
9,800.0	9,748.6	9,808.2	9,783.6	36.6	34.8	89.49	-137.0	2,599.5	3,347.3	3,278.0	69.30	48.301	
9,900.0	9,848.6	9,908.2	9,883.6	36.9	35.1	89.49	-137.0	2,599.5	3,347.3	3,277.3	70.00	47.817	
10,000.0	9,948.6	10,008.2	9,983.6	37.2	35.5	89.49	-137.0	2,599.5	3,347.3	3,276.6	70.70	47.343	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Bucks Fed Com #601H - Wellbore #1 - BLM Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
10,100.0	10,048.6	10,108.2	10,083.6	37.6	35.8	89.49	-137.0	2,599.5	3,347.3	3,275.9	71.40	46.878	
10,200.0	10,148.6	10,208.2	10,183.6	37.9	36.2	89.49	-137.0	2,599.5	3,347.3	3,275.2	72.11	46.422	
10,300.0	10,248.6	10,308.2	10,283.6	38.2	36.5	89.49	-137.0	2,599.5	3,347.3	3,274.5	72.81	45.974	
10,400.0	10,348.6	10,408.2	10,383.6	38.6	36.9	89.49	-137.0	2,599.5	3,347.3	3,273.8	73.51	45.535	
10,500.0	10,448.6	10,508.2	10,483.6	38.9	37.3	89.49	-137.0	2,599.5	3,347.3	3,273.1	74.21	45.104	
10,528.4	10,477.0	10,520.2	10,512.0	39.0	37.3	89.49	-137.0	2,599.5	3,347.3	3,273.0	74.35	45.018	
10,550.0	10,498.6	10,541.8	10,533.6	39.1	37.4	-90.16	-137.0	2,599.5	3,347.3	3,272.8	74.51	44.927	
10,600.0	10,548.4	10,608.4	10,583.4	39.2	37.6	-90.22	-137.0	2,599.5	3,347.3	3,272.4	74.91	44.683	
10,650.0	10,597.7	10,640.9	10,632.7	39.4	37.7	-90.36	-137.0	2,599.5	3,347.4	3,272.2	75.20	44.513	
10,700.0	10,646.1	10,689.3	10,681.1	39.6	37.9	-90.56	-137.0	2,599.5	3,347.5	3,271.9	75.54	44.312	
10,750.0	10,693.1	10,736.4	10,728.1	39.7	38.1	-90.81	-137.0	2,599.5	3,347.7	3,271.8	75.88	44.117	
10,800.0	10,738.5	10,781.8	10,773.5	39.9	38.2	-91.09	-137.0	2,599.5	3,348.1	3,271.9	76.21	43.929	
10,850.0	10,782.0	10,825.2	10,817.0	40.0	38.4	-91.40	-137.0	2,599.5	3,348.7	3,272.2	76.54	43.751	
10,900.0	10,823.1	10,866.3	10,858.1	40.2	38.5	-91.70	-137.0	2,599.5	3,349.6	3,272.8	76.86	43.582	
10,950.0	10,861.6	10,904.8	10,896.6	40.4	38.7	-91.99	-137.0	2,599.5	3,351.0	3,273.8	77.17	43.426	
11,000.0	10,897.1	10,940.4	10,932.1	40.5	38.8	-92.23	-137.0	2,599.5	3,352.8	3,275.3	77.46	43.283	
11,050.0	10,929.5	10,972.7	10,964.5	40.7	38.9	-92.42	-137.0	2,599.5	3,355.2	3,277.5	77.75	43.155	
11,100.0	10,958.4	11,001.6	10,993.4	40.8	39.0	-92.51	-137.0	2,599.5	3,358.2	3,280.2	78.02	43.042	
11,150.0	10,983.6	11,054.8	11,046.5	41.0	39.2	-92.91	-139.1	2,599.5	3,361.9	3,283.5	78.40	42.883	
11,200.0	11,005.0	11,124.1	11,115.0	41.2	39.4	-93.48	-149.3	2,599.5	3,366.0	3,287.2	78.83	42.702	
11,250.0	11,022.4	11,125.0	11,175.4	41.4	39.8	-93.89	-165.9	2,599.6	3,370.5	3,291.1	79.41	42.442	
11,300.0	11,035.6	11,344.7	11,316.9	41.5	40.1	-95.45	-234.6	2,599.8	3,375.0	3,295.1	79.89	42.244	
11,350.0	11,044.6	11,544.3	11,460.0	41.8	40.6	-97.04	-372.4	2,600.3	3,378.8	3,298.2	80.64	41.902	
11,400.0	11,049.3	11,836.9	11,565.9	42.0	41.6	-98.22	-641.8	2,601.3	3,380.7	3,298.9	81.83	41.315	
11,428.4	11,050.0	11,914.7	11,570.0	42.1	41.8	-98.25	-719.5	2,601.5	3,380.7	3,298.4	82.28	41.089	
11,428.7	11,050.0	11,915.0	11,570.0	42.1	41.8	-98.25	-719.7	2,601.5	3,380.7	3,298.4	82.28	41.088	
11,500.0	11,050.0	11,986.3	11,570.0	42.4	42.1	-98.25	-791.1	2,602.0	3,380.7	3,297.7	82.91	40.773	
11,600.0	11,050.0	12,086.3	11,570.0	43.0	42.6	-98.25	-891.1	2,602.6	3,380.6	3,296.7	83.90	40.292	
11,700.0	11,050.0	12,186.3	11,570.0	43.5	43.1	-98.25	-991.1	2,603.2	3,380.6	3,295.6	85.01	39.767	
11,800.0	11,050.0	12,286.3	11,570.0	44.2	43.6	-98.25	-1,091.1	2,603.8	3,380.6	3,294.4	86.23	39.205	
11,900.0	11,050.0	12,386.3	11,570.0	44.9	44.2	-98.25	-1,191.1	2,604.4	3,380.6	3,293.0	87.55	38.612	
12,000.0	11,050.0	12,486.3	11,570.0	45.6	44.9	-98.25	-1,291.1	2,605.0	3,380.6	3,291.6	88.98	37.993	
12,100.0	11,050.0	12,586.3	11,570.0	46.4	45.6	-98.25	-1,391.1	2,605.6	3,380.6	3,290.1	90.50	37.354	
12,200.0	11,050.0	12,686.3	11,570.0	47.2	46.4	-98.25	-1,491.1	2,606.2	3,380.6	3,288.4	92.12	36.698	
12,300.0	11,050.0	12,786.3	11,570.0	48.1	47.2	-98.25	-1,591.0	2,606.8	3,380.5	3,286.7	93.82	36.032	
12,400.0	11,050.0	12,886.3	11,570.0	49.0	48.0	-98.25	-1,691.0	2,607.4	3,380.5	3,284.9	95.61	35.359	
12,500.0	11,050.0	12,986.3	11,570.0	50.0	48.9	-98.25	-1,791.0	2,608.0	3,380.5	3,283.0	97.47	34.683	
12,600.0	11,050.0	13,086.3	11,570.0	51.0	49.9	-98.25	-1,891.0	2,608.6	3,380.5	3,281.1	99.41	34.006	
12,700.0	11,050.0	13,186.3	11,570.0	52.0	50.8	-98.25	-1,991.0	2,609.2	3,380.5	3,279.1	101.41	33.333	
12,800.0	11,050.0	13,286.3	11,570.0	53.1	51.8	-98.25	-2,091.0	2,609.8	3,380.5	3,277.0	103.49	32.665	
12,900.0	11,050.0	13,386.3	11,570.0	54.2	52.9	-98.25	-2,191.0	2,610.4	3,380.4	3,274.8	105.62	32.005	
13,000.0	11,050.0	13,486.3	11,570.0	55.3	53.9	-98.25	-2,291.0	2,611.0	3,380.4	3,272.6	107.82	31.354	
13,100.0	11,050.0	13,586.3	11,570.0	56.4	55.0	-98.25	-2,391.0	2,611.6	3,380.4	3,270.4	110.06	30.713	
13,200.0	11,050.0	13,686.3	11,570.0	57.6	56.2	-98.25	-2,491.0	2,612.2	3,380.4	3,268.0	112.36	30.085	
13,300.0	11,050.0	13,786.3	11,570.0	58.8	57.3	-98.25	-2,591.0	2,612.8	3,380.4	3,265.7	114.71	29.469	
13,400.0	11,050.0	13,886.3	11,570.0	60.0	58.5	-98.25	-2,691.0	2,613.4	3,380.4	3,263.3	117.10	28.867	
13,500.0	11,050.0	13,986.3	11,570.0	61.2	59.7	-98.25	-2,791.0	2,614.0	3,380.4	3,260.8	119.54	28.279	
13,600.0	11,050.0	14,086.3	11,570.0	62.5	60.9	-98.25	-2,891.0	2,614.6	3,380.3	3,258.3	122.01	27.705	
13,700.0	11,050.0	14,186.3	11,570.0	63.8	62.2	-98.25	-2,991.0	2,615.2	3,380.3	3,255.8	124.53	27.146	
13,800.0	11,050.0	14,286.3	11,570.0	65.1	63.4	-98.25	-3,091.0	2,615.8	3,380.3	3,253.2	127.07	26.601	
13,900.0	11,050.0	14,386.3	11,570.0	66.4	64.7	-98.25	-3,191.0	2,616.4	3,380.3	3,250.6	129.66	26.071	
14,000.0	11,050.0	14,486.3	11,570.0	67.7	66.0	-98.25	-3,291.0	2,617.0	3,380.3	3,248.0	132.27	25.556	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
14,100.0	11,050.0	14,586.3	11,570.0	69.0	67.3	-98.25	-3,391.0	2,617.6	3,380.3	3,245.3	134.91	25.055	
14,200.0	11,050.0	14,686.3	11,570.0	70.4	68.6	-98.25	-3,491.0	2,618.2	3,380.2	3,242.7	137.58	24.569	
14,300.0	11,050.0	14,786.3	11,570.0	71.7	70.0	-98.25	-3,591.0	2,618.8	3,380.2	3,239.9	140.28	24.096	
14,400.0	11,050.0	14,886.3	11,570.0	73.1	71.3	-98.25	-3,691.0	2,619.4	3,380.2	3,237.2	143.00	23.637	
14,500.0	11,050.0	14,986.3	11,570.0	74.5	72.7	-98.25	-3,791.0	2,620.0	3,380.2	3,234.5	145.75	23.192	
14,600.0	11,050.0	15,086.3	11,570.0	75.9	74.1	-98.25	-3,891.0	2,620.6	3,380.2	3,231.7	148.52	22.760	
14,700.0	11,050.0	15,186.3	11,570.0	77.3	75.4	-98.25	-3,991.0	2,621.2	3,380.2	3,228.9	151.30	22.340	
14,800.0	11,050.0	15,286.3	11,570.0	78.7	76.8	-98.25	-4,091.0	2,621.8	3,380.2	3,226.0	154.11	21.933	
14,900.0	11,050.0	15,386.3	11,570.0	80.1	78.3	-98.25	-4,191.0	2,622.4	3,380.1	3,223.2	156.94	21.538	
15,000.0	11,050.0	15,486.3	11,570.0	81.6	79.7	-98.25	-4,291.0	2,623.0	3,380.1	3,220.3	159.78	21.154	
15,100.0	11,050.0	15,586.3	11,570.0	83.0	81.1	-98.25	-4,391.0	2,623.6	3,380.1	3,217.5	162.65	20.782	
15,200.0	11,050.0	15,686.3	11,570.0	84.5	82.5	-98.25	-4,491.0	2,624.2	3,380.1	3,214.6	165.52	20.421	
15,300.0	11,050.0	15,786.3	11,570.0	85.9	84.0	-98.25	-4,591.0	2,624.8	3,380.1	3,211.7	168.42	20.070	
15,400.0	11,050.0	15,886.3	11,570.0	87.4	85.4	-98.25	-4,691.0	2,625.4	3,380.1	3,208.7	171.32	19.729	
15,500.0	11,050.0	15,986.3	11,570.0	88.9	86.9	-98.25	-4,791.0	2,626.0	3,380.0	3,205.8	174.24	19.398	
15,600.0	11,050.0	16,086.3	11,570.0	90.4	88.4	-98.25	-4,891.0	2,626.6	3,380.0	3,202.9	177.18	19.077	
15,700.0	11,050.0	16,186.3	11,570.0	91.8	89.8	-98.25	-4,991.0	2,627.2	3,380.0	3,199.9	180.12	18.765	
15,800.0	11,050.0	16,286.3	11,570.0	93.3	91.3	-98.25	-5,091.0	2,627.8	3,380.0	3,196.9	183.08	18.462	
15,900.0	11,050.0	16,386.3	11,570.0	94.8	92.8	-98.25	-5,191.0	2,628.4	3,380.0	3,193.9	186.05	18.167	
16,000.0	11,050.0	16,486.3	11,570.0	96.3	94.3	-98.25	-5,291.0	2,629.0	3,380.0	3,190.9	189.03	17.881	
16,100.0	11,050.0	16,586.3	11,570.0	97.8	95.8	-98.25	-5,391.0	2,629.6	3,380.0	3,187.9	192.02	17.602	
16,200.0	11,050.0	16,686.3	11,570.0	99.4	97.3	-98.25	-5,491.0	2,630.2	3,379.9	3,184.9	195.02	17.332	
16,300.0	11,050.0	16,786.3	11,570.0	100.9	98.8	-98.25	-5,591.0	2,630.8	3,379.9	3,181.9	198.02	17.068	
16,400.0	11,050.0	16,886.3	11,570.0	102.4	100.3	-98.25	-5,691.0	2,631.4	3,379.9	3,178.9	201.04	16.812	
16,500.0	11,050.0	16,986.3	11,570.0	103.9	101.8	-98.25	-5,791.0	2,632.0	3,379.9	3,175.8	204.07	16.563	
16,600.0	11,050.0	17,086.3	11,570.0	105.5	103.4	-98.25	-5,891.0	2,632.6	3,379.9	3,172.8	207.10	16.320	
16,700.0	11,050.0	17,186.3	11,570.0	107.0	104.9	-98.25	-5,991.0	2,633.2	3,379.9	3,169.7	210.14	16.084	
16,800.0	11,050.0	17,286.3	11,570.0	108.5	106.4	-98.25	-6,091.0	2,633.8	3,379.8	3,166.7	213.19	15.854	
16,900.0	11,050.0	17,386.3	11,570.0	110.1	107.9	-98.25	-6,191.0	2,634.4	3,379.8	3,163.6	216.25	15.630	
17,000.0	11,050.0	17,486.3	11,570.0	111.6	109.5	-98.25	-6,291.0	2,635.0	3,379.8	3,160.5	219.31	15.411	
17,100.0	11,050.0	17,586.3	11,570.0	113.2	111.0	-98.25	-6,391.0	2,635.6	3,379.8	3,157.4	222.38	15.198	
17,200.0	11,050.0	17,686.3	11,570.0	114.7	112.6	-98.25	-6,491.0	2,636.2	3,379.8	3,154.3	225.45	14.991	
17,300.0	11,050.0	17,786.3	11,570.0	116.3	114.1	-98.25	-6,591.0	2,636.8	3,379.8	3,151.2	228.53	14.789	
17,350.7	11,050.0	17,837.1	11,570.0	117.0	114.9	-98.25	-6,641.7	2,637.1	3,379.8	3,149.7	230.10	14.688	
17,357.4	11,050.0	17,834.0	11,570.0	117.1	114.8	-98.25	-6,638.7	2,637.1	3,379.8	3,149.6	230.12	14.687 SF	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Bull Fed Com #602H - Wellbore #1 - BLM Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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
0.0	0.0	0.0	0.0	0.0	0.0	89.62	0.2	30.2	30.2				
100.0	100.0	100.0	100.0	0.1	0.1	89.62	0.2	30.2	30.2	30.0	0.26	117.889	
200.0	200.0	200.0	200.0	0.5	0.5	89.62	0.2	30.2	30.2	29.2	0.97	31.046	
300.0	300.0	300.0	300.0	0.8	0.8	89.62	0.2	30.2	30.2	28.5	1.69	17.877	
400.0	400.0	400.0	400.0	1.2	1.2	89.62	0.2	30.2	30.2	27.8	2.41	12.553	
500.0	500.0	500.0	500.0	1.6	1.6	89.62	0.2	30.2	30.2	27.1	3.12	9.672	
600.0	600.0	600.0	600.0	1.9	1.9	89.62	0.2	30.2	30.2	26.4	3.84	7.867	
700.0	700.0	700.0	700.0	2.3	2.3	89.62	0.2	30.2	30.2	25.7	4.56	6.629	
800.0	800.0	800.0	800.0	2.6	2.6	89.62	0.2	30.2	30.2	24.9	5.27	5.728	
900.0	900.0	900.0	900.0	3.0	3.0	89.62	0.2	30.2	30.2	24.2	5.99	5.043	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	89.62	0.2	30.2	30.2	23.5	6.71	4.504	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	89.62	0.2	30.2	30.2	22.8	7.43	4.069	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	89.62	0.2	30.2	30.2	22.1	8.14	3.711	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	89.62	0.2	30.2	30.2	21.4	8.86	3.411	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	89.62	0.2	30.2	30.2	20.6	9.58	3.155	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	89.62	0.2	30.2	30.2	19.9	10.29	2.935 CC	
1,600.0	1,600.0	1,600.5	1,600.5	5.5	5.5	-167.54	-0.1	29.4	30.3	19.3	10.99	2.754	
1,700.0	1,700.0	1,701.0	1,700.9	5.8	5.8	-166.73	-1.1	27.0	30.4	18.7	11.66	2.605	
1,800.0	1,799.9	1,801.5	1,801.3	6.2	6.2	-165.38	-2.8	22.9	30.6	18.3	12.34	2.481	
1,900.0	1,899.7	1,902.0	1,901.6	6.5	6.5	-163.53	-5.2	17.2	30.9	17.9	13.01	2.377	
2,000.0	1,999.4	2,002.4	2,001.8	6.9	6.9	-161.22	-8.2	9.9	31.4	17.7	13.69	2.294	
2,100.0	2,098.9	2,102.9	2,101.8	7.2	7.2	-158.49	-11.8	0.9	32.1	17.7	14.38	2.230 ES	
2,200.0	2,198.3	2,203.4	2,201.6	7.6	7.6	-155.42	-16.2	-9.7	32.9	17.8	15.07	2.184	
2,300.0	2,297.4	2,303.8	2,301.2	8.0	8.0	-152.08	-21.2	-21.9	34.0	18.2	15.77	2.157	
2,400.0	2,396.4	2,403.8	2,400.2	8.3	8.3	-148.85	-26.5	-34.7	35.4	18.9	16.50	2.143	
2,500.0	2,495.5	2,503.7	2,499.2	8.7	8.7	-145.86	-31.8	-47.6	36.8	19.6	17.24	2.134	
2,600.0	2,594.5	2,603.7	2,598.2	9.1	9.1	-143.11	-37.0	-60.5	38.3	20.3	17.99	2.131 SF	
2,700.0	2,693.5	2,703.7	2,697.2	9.5	9.5	-140.57	-42.3	-73.3	39.9	21.2	18.75	2.131	
2,800.0	2,792.5	2,803.6	2,796.1	9.9	9.9	-138.24	-47.6	-86.2	41.6	22.1	19.52	2.134	
2,900.0	2,891.6	2,903.6	2,895.1	10.3	10.3	-136.09	-52.9	-99.1	43.4	23.1	20.29	2.138	
3,000.0	2,990.6	3,003.6	2,994.1	10.7	10.6	-134.11	-58.2	-111.9	45.2	24.1	21.07	2.145	
3,100.0	3,089.6	3,103.6	3,093.1	11.1	11.0	-132.28	-63.5	-124.8	47.1	25.2	21.86	2.153	
3,200.0	3,188.6	3,203.5	3,192.1	11.5	11.4	-130.60	-68.8	-137.7	49.0	26.3	22.65	2.161	
3,300.0	3,287.7	3,303.5	3,291.1	11.9	11.8	-129.04	-74.0	-150.6	50.9	27.5	23.45	2.171	
3,400.0	3,386.7	3,403.5	3,390.1	12.3	12.2	-127.59	-79.3	-163.4	52.9	28.6	24.25	2.180	
3,500.0	3,485.7	3,503.5	3,489.1	12.7	12.6	-126.26	-84.6	-176.3	54.9	29.8	25.06	2.190	
3,600.0	3,584.8	3,603.4	3,588.1	13.1	13.1	-125.01	-89.9	-189.2	56.9	31.1	25.87	2.201	
3,700.0	3,683.8	3,703.4	3,687.1	13.5	13.5	-123.85	-95.2	-202.0	59.0	32.3	26.68	2.211	
3,800.0	3,782.8	3,803.4	3,786.1	13.9	13.9	-122.78	-100.5	-214.9	61.1	33.6	27.49	2.221	
3,900.0	3,881.8	3,903.3	3,885.1	14.3	14.3	-121.77	-105.8	-227.8	63.2	34.9	28.31	2.231	
4,000.0	3,980.9	4,003.3	3,984.1	14.7	14.7	-120.83	-111.1	-240.6	65.3	36.2	29.13	2.241	
4,100.0	4,079.9	4,103.3	4,083.1	15.1	15.1	-119.95	-116.3	-253.5	67.4	37.5	29.95	2.251	
4,200.0	4,178.9	4,203.3	4,182.1	15.5	15.5	-119.12	-121.6	-266.4	69.6	38.8	30.78	2.261	
4,300.0	4,277.9	4,303.2	4,281.1	15.9	15.9	-118.34	-126.9	-279.3	71.7	40.1	31.60	2.270	
4,400.0	4,377.0	4,403.2	4,380.1	16.3	16.3	-117.61	-132.2	-292.1	73.9	41.5	32.43	2.280	
4,500.0	4,476.0	4,503.2	4,479.1	16.8	16.7	-116.92	-137.5	-305.0	76.1	42.9	33.26	2.289	
4,600.0	4,575.0	4,603.1	4,578.1	17.2	17.2	-116.27	-142.8	-317.9	78.3	44.2	34.08	2.298	
4,700.0	4,674.0	4,703.1	4,677.1	17.6	17.6	-115.65	-148.1	-330.7	80.5	45.6	34.92	2.306	
4,800.0	4,773.1	4,802.6	4,775.8	18.0	18.0	-115.63	-153.0	-342.8	83.0	47.2	35.73	2.322	
4,900.0	4,872.1	4,901.9	4,874.5	18.4	18.4	-117.22	-157.0	-352.5	86.2	49.7	36.49	2.361	
5,000.0	4,971.1	5,001.0	4,973.2	18.8	18.7	-120.25	-160.0	-359.8	90.3	53.1	37.18	2.428	
5,100.0	5,070.2	5,099.7	5,071.8	19.2	19.1	-124.40	-162.0	-364.7	95.7	57.9	37.80	2.531	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.0	5,169.2	5,197.9	5,170.0	19.7	19.4	-129.32	-163.0	-367.2	102.8	64.5	38.35	2.680	
5,300.0	5,268.2	5,303.9	5,268.2	20.1	19.8	-134.57	-163.2	-367.6	111.9	73.1	38.87	2.879	
5,400.0	5,367.2	5,404.9	5,367.2	20.5	20.1	-139.21	-163.2	-367.6	122.1	82.7	39.39	3.101	
5,500.0	5,466.3	5,505.8	5,466.3	20.9	20.4	-143.11	-163.2	-367.6	133.0	93.1	39.94	3.331	
5,600.0	5,565.3	5,606.8	5,565.3	21.3	20.8	-146.42	-163.2	-367.6	144.4	103.9	40.51	3.566	
5,700.0	5,664.3	5,707.8	5,664.3	21.7	21.1	-149.24	-163.2	-367.6	156.3	115.2	41.10	3.802	
5,800.0	5,763.3	5,808.8	5,763.3	22.2	21.4	-151.65	-163.2	-367.6	168.4	126.7	41.71	4.037	
5,900.0	5,862.4	5,909.7	5,862.4	22.6	21.8	-153.75	-163.2	-367.6	180.8	138.4	42.34	4.270	
6,000.0	5,961.4	5,989.3	5,961.4	23.0	22.0	-155.57	-163.2	-367.6	193.4	150.5	42.91	4.507	
6,100.0	6,060.4	6,088.3	6,060.4	23.4	22.4	-157.16	-163.2	-367.6	206.2	162.6	43.56	4.733	
6,200.0	6,159.4	6,187.4	6,159.4	23.8	22.7	-158.58	-163.2	-367.6	219.1	174.9	44.21	4.955	
6,300.0	6,258.5	6,286.4	6,258.5	24.2	23.0	-159.83	-163.2	-367.6	232.1	187.2	44.87	5.172	
6,400.0	6,357.5	6,385.4	6,357.5	24.7	23.3	-160.95	-163.2	-367.6	245.2	199.7	45.54	5.385	
6,500.0	6,456.5	6,484.4	6,456.5	25.1	23.7	-161.96	-163.2	-367.6	258.4	212.2	46.21	5.592	
6,600.0	6,555.6	6,583.5	6,555.6	25.5	24.0	-162.86	-163.2	-367.6	271.7	224.8	46.89	5.794	
6,700.0	6,654.6	6,682.5	6,654.6	25.9	24.3	-163.69	-163.2	-367.6	285.0	237.5	47.58	5.991	
6,800.0	6,753.6	6,781.5	6,753.6	26.3	24.7	-164.44	-163.2	-367.6	298.4	250.2	48.26	6.184	
6,900.0	6,852.6	6,880.5	6,852.6	26.8	25.0	-165.12	-163.2	-367.6	311.9	262.9	48.95	6.371	
7,000.0	6,951.7	6,979.6	6,951.7	27.2	25.3	-165.75	-163.2	-367.6	325.4	275.7	49.64	6.554	
7,100.0	7,050.7	7,078.6	7,050.7	27.6	25.7	-166.33	-163.2	-367.6	338.9	288.5	50.33	6.732	
7,136.4	7,086.7	7,114.7	7,086.7	27.8	25.8	-166.53	-163.2	-367.6	343.8	293.2	50.59	6.796	
7,200.0	7,149.8	7,177.7	7,149.8	28.0	26.0	-166.87	-163.2	-367.6	351.9	300.9	51.03	6.896	
7,300.0	7,249.2	7,277.1	7,249.2	28.4	26.3	-167.30	-163.2	-367.6	362.6	310.9	51.73	7.010	
7,400.0	7,348.8	7,376.7	7,348.8	28.8	26.7	-167.61	-163.2	-367.6	370.8	318.3	52.43	7.072	
7,500.0	7,448.7	7,476.6	7,448.7	29.2	27.0	-167.82	-163.2	-367.6	376.4	323.3	53.13	7.085	
7,600.0	7,548.6	7,576.5	7,548.6	29.5	27.4	-167.93	-163.2	-367.6	379.4	325.6	53.82	7.050	
7,669.7	7,618.3	7,646.3	7,618.3	29.7	27.6	89.49	-163.2	-367.6	380.1	325.8	54.30	6.999	
7,700.0	7,648.6	7,676.5	7,648.6	29.8	27.7	89.49	-163.2	-367.6	380.1	325.6	54.51	6.973	
7,800.0	7,748.6	7,776.5	7,748.6	30.1	28.0	89.49	-163.2	-367.6	380.1	324.9	55.19	6.886	
7,900.0	7,848.6	7,876.5	7,848.6	30.5	28.4	89.49	-163.2	-367.6	380.1	324.2	55.87	6.802	
8,000.0	7,948.6	7,976.5	7,948.6	30.8	28.7	89.49	-163.2	-367.6	380.1	323.5	56.56	6.720	
8,100.0	8,048.6	8,076.5	8,048.6	31.1	29.1	89.49	-163.2	-367.6	380.1	322.8	57.24	6.640	
8,200.0	8,148.6	8,176.5	8,148.6	31.4	29.4	89.49	-163.2	-367.6	380.1	322.1	57.93	6.561	
8,300.0	8,248.6	8,276.5	8,248.6	31.7	29.8	89.49	-163.2	-367.6	380.1	321.5	58.61	6.484	
8,400.0	8,348.6	8,376.5	8,348.6	32.0	30.1	89.49	-163.2	-367.6	380.1	320.8	59.30	6.409	
8,500.0	8,448.6	8,476.5	8,448.6	32.4	30.4	89.49	-163.2	-367.6	380.1	320.1	59.99	6.336	
8,600.0	8,548.6	8,576.5	8,548.6	32.7	30.8	89.49	-163.2	-367.6	380.1	319.4	60.67	6.264	
8,700.0	8,648.6	8,676.5	8,648.6	33.0	31.1	89.49	-163.2	-367.6	380.1	318.7	61.36	6.194	
8,800.0	8,748.6	8,776.5	8,748.6	33.3	31.5	89.49	-163.2	-367.6	380.1	318.0	62.05	6.125	
8,900.0	8,848.6	8,876.5	8,848.6	33.6	31.8	89.49	-163.2	-367.6	380.1	317.3	62.74	6.058	
9,000.0	8,948.6	8,976.5	8,948.6	34.0	32.2	89.49	-163.2	-367.6	380.1	316.6	63.43	5.992	
9,100.0	9,048.6	9,076.5	9,048.6	34.3	32.5	89.49	-163.2	-367.6	380.1	315.9	64.12	5.927	
9,200.0	9,148.6	9,176.5	9,148.6	34.6	32.9	89.49	-163.2	-367.6	380.1	315.3	64.81	5.864	
9,300.0	9,248.6	9,276.5	9,248.6	34.9	33.2	89.49	-163.2	-367.6	380.1	314.6	65.51	5.802	
9,400.0	9,348.6	9,376.5	9,348.6	35.3	33.5	89.49	-163.2	-367.6	380.1	313.9	66.20	5.741	
9,500.0	9,448.6	9,476.5	9,448.6	35.6	33.9	89.49	-163.2	-367.6	380.1	313.2	66.89	5.682	
9,600.0	9,548.6	9,576.5	9,548.6	35.9	34.2	89.49	-163.2	-367.6	380.1	312.5	67.59	5.623	
9,700.0	9,648.6	9,676.5	9,648.6	36.3	34.6	89.49	-163.2	-367.6	380.1	311.8	68.28	5.566	
9,800.0	9,748.6	9,776.5	9,748.6	36.6	34.9	89.49	-163.2	-367.6	380.1	311.1	68.97	5.510	
9,900.0	9,848.6	9,876.5	9,848.6	36.9	35.3	89.49	-163.2	-367.6	380.1	310.4	69.67	5.455	
10,000.0	9,948.6	9,976.5	9,948.6	37.2	35.6	89.49	-163.2	-367.6	380.1	309.7	70.37	5.401	
10,100.0	10,048.6	10,076.5	10,048.6	37.6	36.0	89.49	-163.2	-367.6	380.1	309.0	71.06	5.348	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Bull Fed Com #602H - Wellbore #1 - BLM Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWMD												Offset Well Error:	0.0 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	
10,200.0	10,148.6	10,176.5	10,148.6	37.9	36.3	89.49	-163.2	-367.6	380.1	308.3	71.76	5.297	
10,300.0	10,248.6	10,276.5	10,248.6	38.2	36.7	89.49	-163.2	-367.6	380.1	307.6	72.45	5.246	
10,400.0	10,348.6	10,376.5	10,348.6	38.6	37.0	89.49	-163.2	-367.6	380.1	306.9	73.15	5.196	
10,500.0	10,448.6	10,476.5	10,448.6	38.9	37.4	89.49	-163.2	-367.6	380.1	306.2	73.85	5.147	
10,528.4	10,477.0	10,504.9	10,477.0	39.0	37.5	89.49	-163.2	-367.6	380.1	306.0	74.05	5.133	
10,550.0	10,498.6	10,526.5	10,498.6	39.1	37.5	-90.22	-163.2	-367.6	380.1	305.9	74.20	5.122	
10,600.0	10,548.4	10,576.3	10,548.4	39.2	37.7	-90.82	-163.2	-367.6	380.1	305.6	74.53	5.100	
10,650.0	10,597.7	10,625.6	10,597.7	39.4	37.9	-92.04	-163.2	-367.6	380.3	305.5	74.85	5.081	
10,700.0	10,646.1	10,674.0	10,646.1	39.6	38.1	-93.82	-163.2	-367.6	381.0	305.8	75.15	5.070	
10,750.0	10,693.1	10,721.0	10,693.1	39.7	38.2	-96.03	-163.2	-367.6	382.5	307.1	75.44	5.070	
10,800.0	10,738.5	10,766.5	10,738.5	39.9	38.4	-98.55	-163.2	-367.6	385.4	309.7	75.73	5.090	
10,850.0	10,782.0	10,809.9	10,782.0	40.0	38.5	-101.21	-163.2	-367.6	390.3	314.3	76.00	5.136	
10,900.0	10,823.1	10,851.0	10,823.1	40.2	38.7	-103.83	-163.2	-367.6	397.8	321.5	76.27	5.215	
10,950.0	10,861.6	10,889.5	10,861.6	40.4	38.8	-106.23	-163.2	-367.6	408.3	331.8	76.54	5.334	
11,000.0	10,897.1	10,925.0	10,897.1	40.5	38.9	-108.26	-163.2	-367.6	422.4	345.6	76.81	5.500	
11,050.0	10,929.5	10,957.4	10,929.5	40.7	39.1	-109.75	-163.2	-367.6	440.4	363.3	77.07	5.714	
11,100.0	10,958.4	10,986.3	10,958.4	40.8	39.2	-110.59	-163.2	-367.6	462.3	385.0	77.31	5.980	
11,150.0	10,983.6	11,011.5	10,983.6	41.0	39.2	-110.63	-163.2	-367.6	488.2	410.7	77.54	6.296	
11,200.0	11,005.0	11,045.7	11,017.8	41.2	39.4	-111.29	-163.6	-367.6	517.6	439.8	77.86	6.648	
11,250.0	11,022.4	11,107.7	11,079.6	41.4	39.6	-114.68	-169.2	-367.6	549.3	471.2	78.13	7.031	
11,300.0	11,035.6	11,195.0	11,164.6	41.5	39.9	-120.00	-188.3	-367.5	582.1	504.4	77.64	7.497	
11,350.0	11,044.6	11,341.7	11,297.9	41.8	40.4	-128.92	-248.6	-367.1	614.1	539.5	74.59	8.232	
11,400.0	11,049.3	11,648.5	11,504.6	42.0	41.4	-140.83	-470.4	-365.7	639.2	575.8	63.41	10.082	
11,428.4	11,050.0	11,428.4	11,569.7	42.1	41.0	-143.83	-725.9	-364.1	644.0	587.3	56.75	11.349	
11,428.7	11,050.0	11,428.7	11,569.7	42.1	41.0	-143.83	-726.2	-364.1	644.0	587.3	56.75	11.349	
11,500.0	11,050.0	12,002.5	11,570.0	42.4	42.9	-143.84	-808.8	-363.6	644.1	585.1	58.94	10.928	
11,600.0	11,050.0	12,102.5	11,570.0	43.0	43.4	-143.84	-908.8	-363.0	644.1	584.3	59.76	10.778	
11,700.0	11,050.0	12,197.5	11,570.0	43.5	44.0	-143.84	-1,008.8	-362.4	644.1	583.5	60.64	10.622	
11,800.0	11,050.0	12,302.5	11,570.0	44.2	44.6	-143.83	-1,108.8	-361.7	644.1	582.5	61.63	10.451	
11,900.0	11,050.0	12,402.5	11,570.0	44.9	45.3	-143.83	-1,208.8	-361.1	644.1	581.4	62.68	10.277	
12,000.0	11,050.0	12,502.5	11,570.0	45.6	46.1	-143.83	-1,308.8	-360.5	644.1	580.3	63.79	10.097	
12,100.0	11,050.0	12,597.5	11,570.0	46.4	46.8	-143.83	-1,408.8	-359.8	644.1	579.2	64.94	9.919	
12,200.0	11,050.0	12,702.5	11,570.0	47.2	47.7	-143.83	-1,508.8	-359.2	644.1	577.9	66.21	9.729	
12,300.0	11,050.0	12,802.5	11,570.0	48.1	48.5	-143.83	-1,608.8	-358.6	644.1	576.6	67.50	9.542	
12,400.0	11,050.0	12,902.5	11,570.0	49.0	49.5	-143.83	-1,708.8	-358.0	644.1	575.3	68.85	9.355	
12,500.0	11,050.0	13,002.5	11,570.0	50.0	50.4	-143.83	-1,808.8	-357.3	644.1	573.9	70.26	9.169	
12,600.0	11,050.0	13,102.5	11,570.0	51.0	51.4	-143.83	-1,908.8	-356.7	644.1	572.4	71.71	8.983	
12,700.0	11,050.0	13,202.5	11,570.0	52.0	52.4	-143.83	-2,008.8	-356.1	644.1	570.9	73.20	8.800	
12,800.0	11,050.0	13,302.5	11,570.0	53.1	53.5	-143.83	-2,108.8	-355.5	644.2	569.4	74.74	8.618	
12,900.0	11,050.0	13,402.5	11,570.0	54.2	54.5	-143.83	-2,208.8	-354.8	644.2	567.8	76.32	8.440	
13,000.0	11,050.0	13,502.5	11,570.0	55.3	55.6	-143.83	-2,308.8	-354.2	644.2	566.2	77.94	8.265	
13,100.0	11,050.0	13,602.5	11,570.0	56.4	56.8	-143.83	-2,408.8	-353.6	644.2	564.6	79.59	8.094	
13,200.0	11,050.0	13,702.5	11,570.0	57.6	57.9	-143.82	-2,508.8	-353.0	644.2	562.9	81.28	7.926	
13,300.0	11,050.0	13,802.5	11,570.0	58.8	59.1	-143.82	-2,608.8	-352.3	644.2	561.2	82.99	7.762	
13,400.0	11,050.0	13,902.5	11,570.0	60.0	60.3	-143.82	-2,708.8	-351.7	644.2	559.4	84.74	7.602	
13,500.0	11,050.0	14,002.5	11,570.0	61.2	61.6	-143.82	-2,808.8	-351.1	644.2	557.7	86.51	7.446	
13,600.0	11,050.0	14,102.5	11,570.0	62.5	62.8	-143.82	-2,908.7	-350.5	644.2	555.9	88.31	7.294	
13,700.0	11,050.0	14,202.5	11,570.0	63.8	64.1	-143.82	-3,008.7	-349.8	644.2	554.1	90.14	7.147	
13,800.0	11,050.0	14,302.5	11,570.0	65.1	65.4	-143.82	-3,108.7	-349.2	644.2	552.2	91.99	7.003	
13,900.0	11,050.0	14,402.5	11,570.0	66.4	66.7	-143.82	-3,208.7	-348.6	644.2	550.4	93.85	6.864	
14,000.0	11,050.0	14,502.5	11,570.0	67.7	68.0	-143.82	-3,308.7	-348.0	644.2	548.5	95.74	6.729	
14,100.0	11,050.0	14,602.5	11,570.0	69.0	69.3	-143.82	-3,408.7	-347.3	644.2	546.6	97.65	6.597	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
14,200.0	11,050.0	14,702.5	11,570.0	70.4	70.6	-143.82	-3,508.7	-346.7	644.2	544.6	99.58	6.469	
14,300.0	11,050.0	14,802.5	11,570.0	71.7	72.0	-143.82	-3,608.7	-346.1	644.2	542.7	101.52	6.346	
14,400.0	11,050.0	14,902.5	11,570.0	73.1	73.4	-143.82	-3,708.7	-345.5	644.2	540.8	103.48	6.226	
14,500.0	11,050.0	15,002.5	11,570.0	74.5	74.8	-143.82	-3,808.7	-344.8	644.2	538.8	105.46	6.109	
14,600.0	11,050.0	15,097.5	11,570.0	75.9	76.1	-143.81	-3,908.7	-344.2	644.2	536.8	107.40	5.999	
14,700.0	11,050.0	15,202.5	11,570.0	77.3	77.5	-143.81	-4,008.7	-343.6	644.2	534.8	109.45	5.886	
14,800.0	11,050.0	15,302.5	11,570.0	78.7	79.0	-143.81	-4,108.7	-342.9	644.3	532.8	111.46	5.780	
14,900.0	11,050.0	15,402.5	11,570.0	80.1	80.4	-143.81	-4,208.7	-342.3	644.3	530.8	113.49	5.677	
15,000.0	11,050.0	15,502.5	11,570.0	81.6	81.8	-143.81	-4,308.7	-341.7	644.3	528.7	115.53	5.577	
15,100.0	11,050.0	15,602.5	11,570.0	83.0	83.3	-143.81	-4,408.7	-341.1	644.3	526.7	117.58	5.479	
15,200.0	11,050.0	15,702.5	11,570.0	84.5	84.7	-143.81	-4,508.7	-340.4	644.3	524.6	119.64	5.385	
15,300.0	11,050.0	15,802.5	11,570.0	85.9	86.2	-143.81	-4,608.7	-339.8	644.3	522.6	121.71	5.293	
15,400.0	11,050.0	15,902.5	11,570.0	87.4	87.6	-143.81	-4,708.7	-339.2	644.3	520.5	123.79	5.205	
15,500.0	11,050.0	16,002.5	11,570.0	88.9	89.1	-143.81	-4,808.7	-338.6	644.3	518.4	125.88	5.118	
15,600.0	11,050.0	16,102.5	11,570.0	90.4	90.6	-143.81	-4,908.7	-337.9	644.3	516.3	127.98	5.034	
15,700.0	11,050.0	16,202.5	11,570.0	91.8	92.0	-143.81	-5,008.7	-337.3	644.3	514.2	130.08	4.953	
15,800.0	11,050.0	16,302.5	11,570.0	93.3	93.5	-143.81	-5,108.7	-336.7	644.3	512.1	132.20	4.874	
15,900.0	11,050.0	16,402.5	11,570.0	94.8	95.0	-143.81	-5,208.7	-336.1	644.3	510.0	134.32	4.797	
16,000.0	11,050.0	16,502.5	11,570.0	96.3	96.5	-143.80	-5,308.7	-335.4	644.3	507.9	136.44	4.722	
16,100.0	11,050.0	16,602.5	11,570.0	97.8	98.0	-143.80	-5,408.7	-334.8	644.3	505.7	138.58	4.650	
16,200.0	11,050.0	16,702.5	11,570.0	99.4	99.5	-143.80	-5,508.7	-334.2	644.3	503.6	140.72	4.579	
16,300.0	11,050.0	16,802.5	11,570.0	100.9	101.1	-143.80	-5,608.7	-333.6	644.3	501.5	142.86	4.510	
16,400.0	11,050.0	16,902.5	11,570.0	102.4	102.6	-143.80	-5,708.7	-332.9	644.3	499.3	145.02	4.443	
16,500.0	11,050.0	17,002.5	11,570.0	103.9	104.1	-143.80	-5,808.7	-332.3	644.3	497.2	147.17	4.378	
16,600.0	11,050.0	17,102.5	11,570.0	105.5	105.6	-143.80	-5,908.7	-331.7	644.3	495.0	149.34	4.315	
16,700.0	11,050.0	17,202.5	11,570.0	107.0	107.1	-143.80	-6,008.7	-331.1	644.3	492.8	151.50	4.253	
16,800.0	11,050.0	17,302.5	11,570.0	108.5	108.7	-143.80	-6,108.7	-330.4	644.4	490.7	153.68	4.193	
16,900.0	11,050.0	17,402.5	11,570.0	110.1	110.2	-143.80	-6,208.7	-329.8	644.4	488.5	155.85	4.134	
17,000.0	11,050.0	17,502.5	11,570.0	111.6	111.8	-143.80	-6,308.7	-329.2	644.4	486.3	158.04	4.077	
17,100.0	11,050.0	17,602.5	11,570.0	113.2	113.3	-143.80	-6,408.7	-328.6	644.4	484.1	160.22	4.022	
17,200.0	11,050.0	17,702.5	11,570.0	114.7	114.9	-143.80	-6,508.7	-327.9	644.4	482.0	162.41	3.967	
17,300.0	11,050.0	17,797.5	11,570.0	116.3	116.3	-143.80	-6,608.7	-327.3	644.4	479.8	164.55	3.916	
17,357.4	11,050.0	17,857.2	11,570.0	117.1	117.3	-143.83	-6,668.3	-327.3	644.2	478.4	165.81	3.885	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
0.0	0.0	17.0	17.0	0.0	0.0	96.13	-97.0	902.5	907.7				
100.0	100.0	117.0	117.0	0.1	0.2	96.13	-97.0	902.5	907.7	907.4	0.32	2,861.212	
200.0	200.0	217.0	217.0	0.5	0.5	96.13	-97.0	902.5	907.7	906.7	1.03	877.704	
300.0	300.0	317.0	317.0	0.8	0.9	96.13	-97.0	902.5	907.7	906.0	1.75	518.357	
400.0	400.0	417.0	417.0	1.2	1.3	96.13	-97.0	902.5	907.7	905.2	2.47	367.781	
409.8	409.8	426.8	426.8	1.2	1.3	96.13	-97.0	902.5	907.7	905.2	2.54	357.562 CC	
500.0	500.0	515.1	515.1	1.6	1.6	96.13	-97.0	902.5	907.7	904.6	3.18	285.657 ES	
600.0	600.0	604.0	604.0	1.9	1.9	96.10	-96.5	903.3	908.6	904.7	3.85	235.838	
700.0	700.0	692.8	692.8	2.3	2.2	96.01	-95.3	905.3	910.6	906.1	4.53	201.193	
800.0	800.0	781.5	781.4	2.6	2.6	95.87	-93.4	908.4	913.9	908.7	5.20	175.723	
900.0	900.0	870.1	869.9	3.0	2.9	95.68	-90.7	912.7	918.4	912.5	5.88	156.305	
1,000.0	1,000.0	958.6	958.1	3.4	3.2	95.43	-87.3	918.1	924.1	917.6	6.55	141.080	
1,100.0	1,100.0	1,046.8	1,045.9	3.7	3.5	95.15	-83.3	924.7	931.1	923.9	7.23	128.872	
1,200.0	1,200.0	1,134.7	1,133.4	4.1	3.9	94.81	-78.5	932.4	939.4	931.5	7.90	118.939	
1,300.0	1,300.0	1,222.3	1,220.4	4.4	4.2	94.44	-73.1	941.2	948.9	940.4	8.57	110.711	
1,400.0	1,400.0	1,311.0	1,308.3	4.8	4.5	94.02	-66.8	951.2	959.8	950.5	9.25	103.774	
1,500.0	1,500.0	1,410.0	1,406.3	5.1	4.9	93.54	-59.6	962.9	971.1	961.1	9.97	97.411	
1,600.0	1,600.0	1,508.9	1,504.3	5.5	5.3	-164.34	-52.4	974.7	983.4	972.7	10.68	92.065	
1,700.0	1,700.0	1,607.6	1,602.0	5.8	5.7	-164.80	-45.1	986.3	997.4	986.0	11.39	87.605	
1,800.0	1,799.9	1,705.9	1,699.4	6.2	6.1	-165.27	-37.9	998.0	1,013.1	1,001.0	12.09	83.799	
1,900.0	1,899.7	1,803.9	1,796.4	6.5	6.5	-165.74	-30.7	1,009.6	1,030.6	1,017.8	12.80	80.546	
2,000.0	1,999.4	1,901.6	1,893.2	6.9	6.9	-166.21	-23.6	1,021.1	1,049.8	1,036.3	13.50	77.764	
2,100.0	2,098.9	2,001.1	1,989.5	7.2	7.3	-166.68	-16.5	1,032.6	1,070.8	1,056.6	14.21	75.341	
2,200.0	2,198.3	2,104.2	2,085.5	7.6	7.7	-167.16	-9.4	1,044.1	1,093.5	1,078.6	14.94	73.195	
2,300.0	2,297.4	2,207.7	2,181.0	8.0	8.2	-167.62	-2.3	1,055.5	1,118.0	1,102.3	15.67	71.350	
2,400.0	2,396.4	2,288.5	2,276.3	8.3	8.5	-168.13	4.7	1,066.9	1,143.4	1,127.0	16.31	70.093	
2,500.0	2,495.5	2,384.8	2,371.6	8.7	8.9	-168.62	11.8	1,078.3	1,168.8	1,151.8	17.01	68.699	
2,600.0	2,594.5	2,481.0	2,466.9	9.1	9.3	-169.09	18.8	1,089.7	1,194.3	1,176.6	17.72	67.414	
2,700.0	2,693.5	2,577.2	2,562.2	9.5	9.7	-169.53	25.9	1,101.1	1,219.9	1,201.5	18.42	66.227	
2,800.0	2,792.5	2,673.5	2,657.5	9.9	10.1	-169.96	32.9	1,112.5	1,245.6	1,226.5	19.13	65.127	
2,900.0	2,891.6	2,769.7	2,752.8	10.3	10.5	-170.37	40.0	1,123.9	1,271.3	1,251.5	19.83	64.105	
3,000.0	2,990.6	2,865.9	2,848.1	10.7	10.9	-170.77	47.0	1,135.3	1,297.1	1,276.6	20.54	63.154	
3,100.0	3,089.6	2,962.2	2,943.4	11.1	11.3	-171.15	54.1	1,146.6	1,323.0	1,301.7	21.25	62.267	
3,200.0	3,188.6	3,058.4	3,038.7	11.5	11.7	-171.52	61.1	1,158.0	1,348.9	1,326.9	21.95	61.438	
3,300.0	3,287.7	3,154.6	3,134.0	11.9	12.1	-171.87	68.2	1,169.4	1,374.8	1,352.1	22.66	60.661	
3,400.0	3,386.7	3,250.9	3,229.3	12.3	12.5	-172.21	75.2	1,180.8	1,400.8	1,377.4	23.37	59.932	
3,500.0	3,485.7	3,347.1	3,324.6	12.7	12.9	-172.53	82.3	1,192.2	1,426.8	1,402.8	24.08	59.247	
3,600.0	3,584.8	3,443.3	3,419.9	13.1	13.3	-172.85	89.3	1,203.6	1,452.9	1,428.1	24.79	58.601	
3,700.0	3,683.8	3,539.6	3,515.2	13.5	13.7	-173.15	96.4	1,215.0	1,479.0	1,453.5	25.50	57.993	
3,800.0	3,782.8	3,635.8	3,610.5	13.9	14.1	-173.45	103.4	1,226.4	1,505.2	1,479.0	26.21	57.418	
3,900.0	3,881.8	3,732.0	3,705.8	14.3	14.5	-173.73	110.5	1,237.7	1,531.4	1,504.5	26.93	56.874	
4,000.0	3,980.9	3,828.3	3,801.1	14.7	14.9	-174.00	117.5	1,249.1	1,557.6	1,530.0	27.64	56.358	
4,100.0	4,079.9	3,924.5	3,896.4	15.1	15.3	-174.27	124.6	1,260.5	1,583.9	1,555.5	28.35	55.870	
4,200.0	4,178.9	4,020.8	3,991.7	15.5	15.7	-174.53	131.6	1,271.9	1,610.2	1,581.1	29.06	55.405	
4,300.0	4,277.9	4,117.0	4,087.0	15.9	16.1	-174.77	138.7	1,283.3	1,636.5	1,606.7	29.77	54.964	
4,400.0	4,377.0	4,213.2	4,182.3	16.3	16.5	-175.01	145.7	1,294.7	1,662.8	1,632.4	30.49	54.543	
4,500.0	4,476.0	4,309.5	4,277.6	16.8	16.9	-175.25	152.8	1,306.1	1,689.2	1,658.0	31.20	54.143	
4,600.0	4,575.0	4,405.7	4,372.9	17.2	17.3	-175.47	159.8	1,317.5	1,715.6	1,683.7	31.91	53.760	
4,700.0	4,674.0	4,501.9	4,468.2	17.6	17.7	-175.69	166.9	1,328.9	1,742.0	1,709.4	32.63	53.395	
4,800.0	4,773.1	4,598.2	4,563.5	18.0	18.1	-175.91	173.9	1,340.2	1,768.5	1,735.2	33.34	53.046	
4,900.0	4,872.1	4,705.6	4,658.8	18.4	18.6	-176.11	180.9	1,351.6	1,795.0	1,760.9	34.09	52.646	
5,000.0	4,971.1	4,809.4	4,754.1	18.8	19.0	-176.31	188.0	1,363.0	1,821.4	1,786.6	34.84	52.285	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	4,886.9	4,849.4	19.2	19.3	-176.51	195.0	1,374.4	1,848.0	1,812.5	35.48	52.085	
5,200.0	5,169.2	4,983.1	4,944.6	19.7	19.7	-176.70	202.1	1,385.8	1,874.5	1,838.3	36.19	51.790	
5,300.0	5,268.2	5,079.3	5,039.9	20.1	20.1	-176.88	209.1	1,397.2	1,901.0	1,864.1	36.91	51.507	
5,400.0	5,367.2	5,175.6	5,135.2	20.5	20.5	-177.06	216.2	1,408.6	1,927.6	1,890.0	37.62	51.235	
5,500.0	5,466.3	5,271.8	5,230.5	20.9	20.9	-177.23	223.2	1,420.0	1,954.2	1,915.9	38.34	50.974	
5,600.0	5,565.3	5,368.0	5,325.8	21.3	21.3	-177.40	230.3	1,431.4	1,980.8	1,941.7	39.05	50.722	
5,700.0	5,664.3	5,464.3	5,421.1	21.7	21.7	-177.57	237.3	1,442.7	2,007.4	1,967.6	39.77	50.480	
5,800.0	5,763.3	5,560.5	5,516.4	22.2	22.1	-177.73	244.4	1,454.1	2,034.0	1,993.6	40.48	50.246	
5,900.0	5,862.4	5,656.7	5,611.7	22.6	22.5	-177.88	251.4	1,465.5	2,060.7	2,019.5	41.20	50.021	
6,000.0	5,961.4	5,753.0	5,707.0	23.0	22.9	-178.04	258.5	1,476.9	2,087.3	2,045.4	41.91	49.803	
6,100.0	6,060.4	5,849.2	5,802.3	23.4	23.3	-178.18	265.5	1,488.3	2,114.0	2,071.4	42.63	49.593	
6,200.0	6,159.4	5,945.4	5,897.6	23.8	23.7	-178.33	272.6	1,499.7	2,140.7	2,097.4	43.34	49.390	
6,300.0	6,258.5	6,041.7	5,992.9	24.2	24.1	-178.47	279.6	1,511.1	2,167.4	2,123.3	44.06	49.194	
6,400.0	6,357.5	6,183.8	6,133.8	24.7	24.7	-178.66	289.5	1,527.1	2,193.7	2,148.6	45.05	48.698	
6,500.0	6,456.5	6,396.3	6,345.4	25.1	25.5	-178.86	299.5	1,543.2	2,215.9	2,169.5	46.36	47.799	
6,600.0	6,555.6	6,613.5	6,562.5	25.5	26.3	-178.94	303.3	1,549.4	2,232.9	2,185.3	47.55	46.963	
6,700.0	6,654.6	6,722.6	6,671.6	25.9	26.6	-178.95	303.3	1,549.4	2,246.8	2,198.5	48.28	46.539	
6,800.0	6,753.6	6,821.6	6,770.6	26.3	26.9	-178.95	303.3	1,549.4	2,260.7	2,211.7	48.98	46.159	
6,900.0	6,852.6	6,920.7	6,869.6	26.8	27.2	-178.96	303.3	1,549.4	2,274.6	2,225.0	49.68	45.788	
7,000.0	6,951.7	7,019.7	6,968.7	27.2	27.6	-178.97	303.3	1,549.4	2,288.5	2,238.2	50.38	45.427	
7,100.0	7,050.7	7,118.7	7,067.7	27.6	27.9	-178.97	303.3	1,549.4	2,302.5	2,251.4	51.08	45.075	
7,136.4	7,086.7	7,154.8	7,103.7	27.8	28.0	-178.97	303.3	1,549.4	2,307.5	2,256.2	51.34	44.950	
7,200.0	7,149.8	7,217.8	7,166.8	28.0	28.2	-178.98	303.3	1,549.4	2,315.9	2,264.1	51.78	44.723	
7,300.0	7,249.2	7,317.2	7,266.2	28.4	28.5	-178.99	303.3	1,549.4	2,326.8	2,274.3	52.48	44.335	
7,400.0	7,348.8	7,416.9	7,365.8	28.8	28.8	-178.99	303.3	1,549.4	2,335.2	2,282.0	53.18	43.909	
7,500.0	7,448.7	7,516.7	7,465.7	29.2	29.1	-179.00	303.3	1,549.4	2,340.9	2,287.0	53.88	43.448	
7,600.0	7,548.6	7,616.6	7,565.6	29.5	29.5	-179.00	303.3	1,549.4	2,344.1	2,289.5	54.57	42.953	
7,669.7	7,618.3	7,686.4	7,635.3	29.7	29.7	78.44	303.3	1,549.4	2,344.7	2,289.6	55.05	42.592	
7,700.0	7,648.6	7,716.6	7,665.6	29.8	29.8	78.44	303.3	1,549.4	2,344.7	2,289.4	55.25	42.434	
7,800.0	7,748.6	7,816.6	7,765.6	30.1	30.1	78.44	303.3	1,549.4	2,344.7	2,288.8	55.93	41.921	
7,900.0	7,848.6	7,916.6	7,865.6	30.5	30.4	78.44	303.3	1,549.4	2,344.7	2,288.1	56.61	41.418	
8,000.0	7,948.6	8,016.6	7,965.6	30.8	30.8	78.44	303.3	1,549.4	2,344.7	2,287.4	57.29	40.927	
8,100.0	8,048.6	8,116.6	8,065.6	31.1	31.1	78.44	303.3	1,549.4	2,344.7	2,286.7	57.97	40.447	
8,200.0	8,148.6	8,216.6	8,165.6	31.4	31.4	78.44	303.3	1,549.4	2,344.7	2,286.0	58.65	39.978	
8,300.0	8,248.6	8,316.6	8,265.6	31.7	31.7	78.44	303.3	1,549.4	2,344.7	2,285.4	59.33	39.519	
8,400.0	8,348.6	8,416.6	8,365.6	32.0	32.1	78.44	303.3	1,549.4	2,344.7	2,284.7	60.01	39.069	
8,500.0	8,448.6	8,516.6	8,465.6	32.4	32.4	78.44	303.3	1,549.4	2,344.7	2,284.0	60.70	38.629	
8,600.0	8,548.6	8,616.6	8,565.6	32.7	32.7	78.44	303.3	1,549.4	2,344.7	2,283.3	61.38	38.199	
8,700.0	8,648.6	8,716.6	8,665.6	33.0	33.0	78.44	303.3	1,549.4	2,344.7	2,282.6	62.07	37.777	
8,800.0	8,748.6	8,816.6	8,765.6	33.3	33.4	78.44	303.3	1,549.4	2,344.7	2,281.9	62.75	37.365	
8,900.0	8,848.6	8,916.6	8,865.6	33.6	33.7	78.44	303.3	1,549.4	2,344.7	2,281.3	63.44	36.960	
9,000.0	8,948.6	9,016.6	8,965.6	34.0	34.0	78.44	303.3	1,549.4	2,344.7	2,280.6	64.13	36.564	
9,100.0	9,048.6	9,116.6	9,065.6	34.3	34.4	78.44	303.3	1,549.4	2,344.7	2,279.9	64.81	36.176	
9,200.0	9,148.6	9,216.6	9,165.6	34.6	34.7	78.44	303.3	1,549.4	2,344.7	2,279.2	65.50	35.796	
9,300.0	9,248.6	9,316.6	9,265.6	34.9	35.0	78.44	303.3	1,549.4	2,344.7	2,278.5	66.19	35.424	
9,400.0	9,348.6	9,416.6	9,365.6	35.3	35.4	78.44	303.3	1,549.4	2,344.7	2,277.8	66.88	35.059	
9,500.0	9,448.6	9,516.6	9,465.6	35.6	35.7	78.44	303.3	1,549.4	2,344.7	2,277.1	67.57	34.701	
9,600.0	9,548.6	9,616.6	9,565.6	35.9	36.0	78.44	303.3	1,549.4	2,344.7	2,276.4	68.26	34.350	
9,700.0	9,648.6	9,716.6	9,665.6	36.3	36.4	78.44	303.3	1,549.4	2,344.7	2,275.7	68.95	34.005	
9,800.0	9,748.6	9,816.6	9,765.6	36.6	36.7	78.44	303.3	1,549.4	2,344.7	2,275.1	69.64	33.668	
9,900.0	9,848.6	9,916.6	9,865.6	36.9	37.0	78.44	303.3	1,549.4	2,344.7	2,274.4	70.33	33.336	
10,000.0	9,948.6	10,016.6	9,965.6	37.2	37.4	78.44	303.3	1,549.4	2,344.7	2,273.7	71.03	33.011	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
10,100.0	10,048.6	10,116.6	10,065.6	37.6	37.7	78.44	303.3	1,549.4	2,344.7	2,273.0	71.72	32.692	
10,200.0	10,148.6	10,216.6	10,165.6	37.9	38.1	78.44	303.3	1,549.4	2,344.7	2,272.3	72.41	32.379	
10,300.0	10,248.6	10,316.6	10,265.6	38.2	38.4	78.44	303.3	1,549.4	2,344.7	2,271.6	73.11	32.072	
10,400.0	10,348.6	10,416.6	10,365.6	38.6	38.7	78.44	303.3	1,549.4	2,344.7	2,270.9	73.80	31.770	
10,500.0	10,448.6	10,516.6	10,465.6	38.9	39.1	78.44	303.3	1,549.4	2,344.7	2,270.2	74.50	31.474	
10,528.4	10,477.0	10,545.0	10,494.0	39.0	39.2	78.44	303.3	1,549.4	2,344.7	2,270.0	74.69	31.391	
10,550.0	10,498.6	10,566.6	10,515.6	39.1	39.2	-101.21	303.3	1,549.4	2,344.8	2,269.9	74.84	31.329	
10,600.0	10,548.4	10,616.4	10,565.4	39.2	39.4	-101.23	303.3	1,549.4	2,345.6	2,270.4	75.18	31.198	
10,650.0	10,597.7	10,665.7	10,614.7	39.4	39.6	-101.26	303.3	1,549.4	2,347.2	2,271.7	75.52	31.081	
10,700.0	10,646.1	10,714.1	10,663.1	39.6	39.7	-101.30	303.3	1,549.4	2,349.8	2,273.9	75.85	30.980	
10,750.0	10,693.1	10,761.1	10,710.1	39.7	39.9	-101.34	303.3	1,549.4	2,353.3	2,277.1	76.17	30.896	
10,800.0	10,738.5	10,806.6	10,755.5	39.9	40.0	-101.35	303.3	1,549.4	2,357.8	2,281.3	76.48	30.829	
10,850.0	10,782.0	10,850.0	10,799.0	40.0	40.2	-101.31	303.3	1,549.4	2,363.4	2,286.6	76.78	30.781	
10,900.0	10,823.1	10,908.9	10,840.1	40.2	40.4	-101.21	303.3	1,549.4	2,370.0	2,292.9	77.13	30.728	
10,950.0	10,861.6	10,929.6	10,878.6	40.4	40.5	-101.01	303.3	1,549.4	2,377.9	2,300.6	77.34	30.746	
11,000.0	10,897.1	12,200.0	11,670.0	40.5	42.3	-102.48	-419.9	1,501.0	2,372.3	2,295.0	77.27	30.700	
11,050.0	10,929.5	12,200.0	11,670.0	40.7	42.3	-103.59	-419.9	1,501.0	2,361.1	2,283.4	77.73	30.377	
11,100.0	10,958.4	12,229.5	11,670.0	40.8	42.4	-104.11	-449.3	1,500.6	2,351.6	2,273.4	78.24	30.058	
11,150.0	10,983.6	12,253.6	11,670.0	41.0	42.5	-104.59	-473.5	1,500.4	2,343.8	2,265.1	78.70	29.781	
11,200.0	11,005.0	12,284.0	11,670.0	41.2	42.6	-104.88	-503.8	1,500.6	2,337.7	2,258.5	79.16	29.531	
11,250.0	11,022.4	12,330.8	11,670.0	41.4	42.7	-104.96	-550.7	1,500.8	2,332.9	2,253.3	79.67	29.284	
11,300.0	11,035.6	12,379.0	11,670.0	41.5	42.9	-105.00	-598.9	1,501.1	2,329.4	2,249.2	80.15	29.061	
11,350.0	11,044.6	12,428.2	11,670.0	41.8	43.1	-105.02	-648.1	1,501.4	2,327.0	2,246.4	80.63	28.859	
11,400.0	11,049.3	12,478.0	11,670.0	42.0	43.3	-105.03	-697.8	1,501.7	2,325.8	2,244.7	81.10	28.678	
11,428.4	11,050.0	12,506.4	11,670.0	42.1	43.4	-105.03	-726.2	1,501.9	2,325.6	2,244.2	81.36	28.585	
11,428.7	11,050.0	12,506.6	11,670.0	42.1	43.4	-105.03	-726.5	1,501.9	2,325.6	2,244.2	81.36	28.584	
11,500.0	11,050.0	12,578.0	11,670.0	42.4	43.8	-105.03	-797.8	1,502.3	2,325.6	2,243.5	82.04	28.348	
11,600.0	11,050.0	12,678.0	11,670.0	43.0	44.3	-105.03	-897.8	1,502.9	2,325.5	2,242.5	83.08	27.991	
11,700.0	11,050.0	12,778.0	11,670.0	43.5	44.9	-105.03	-997.8	1,503.5	2,325.5	2,241.3	84.24	27.607	
11,800.0	11,050.0	12,878.0	11,670.0	44.2	45.5	-105.03	-1,097.8	1,504.1	2,325.5	2,240.0	85.50	27.199	
11,900.0	11,050.0	12,978.0	11,670.0	44.9	46.2	-105.03	-1,197.8	1,504.7	2,325.5	2,238.6	86.86	26.772	
12,000.0	11,050.0	13,078.0	11,670.0	45.6	46.9	-105.03	-1,297.8	1,505.3	2,325.5	2,237.1	88.32	26.329	
12,100.0	11,050.0	13,178.0	11,670.0	46.4	47.7	-105.03	-1,397.8	1,505.9	2,325.4	2,235.6	89.87	25.874	
12,200.0	11,050.0	13,278.0	11,670.0	47.2	48.5	-105.03	-1,497.8	1,506.5	2,325.4	2,233.9	91.51	25.410	
12,300.0	11,050.0	13,378.0	11,670.0	48.1	49.4	-105.03	-1,597.8	1,507.1	2,325.4	2,232.2	93.24	24.940	
12,400.0	11,050.0	13,478.0	11,670.0	49.0	50.3	-105.03	-1,697.8	1,507.7	2,325.4	2,230.3	95.04	24.467	
12,500.0	11,050.0	13,578.0	11,670.0	50.0	51.2	-105.03	-1,797.8	1,508.3	2,325.4	2,228.4	96.92	23.994	
12,600.0	11,050.0	13,678.0	11,670.0	51.0	52.2	-105.03	-1,897.8	1,508.9	2,325.3	2,226.5	98.86	23.521	
12,700.0	11,050.0	13,778.0	11,670.0	52.0	53.2	-105.03	-1,997.8	1,509.4	2,325.3	2,224.4	100.87	23.052	
12,800.0	11,050.0	13,878.0	11,670.0	53.1	54.3	-105.03	-2,097.8	1,510.0	2,325.3	2,222.3	102.95	22.588	
12,900.0	11,050.0	13,978.0	11,670.0	54.2	55.3	-105.03	-2,197.8	1,510.6	2,325.3	2,220.2	105.08	22.129	
13,000.0	11,050.0	14,078.0	11,670.0	55.3	56.4	-105.03	-2,297.8	1,511.2	2,325.2	2,218.0	107.26	21.678	
13,100.0	11,050.0	14,178.0	11,670.0	56.4	57.5	-105.03	-2,397.8	1,511.8	2,325.2	2,215.7	109.50	21.235	
13,200.0	11,050.0	14,278.0	11,670.0	57.6	58.7	-105.03	-2,497.8	1,512.4	2,325.2	2,213.4	111.79	20.800	
13,300.0	11,050.0	14,378.0	11,670.0	58.8	59.9	-105.03	-2,597.8	1,513.0	2,325.2	2,211.1	114.12	20.375	
13,400.0	11,050.0	14,478.0	11,670.0	60.0	61.1	-105.03	-2,697.8	1,513.6	2,325.2	2,208.7	116.49	19.960	
13,500.0	11,050.0	14,578.0	11,670.0	61.2	62.3	-105.03	-2,797.8	1,514.2	2,325.1	2,206.2	118.91	19.554	
13,600.0	11,050.0	14,678.0	11,670.0	62.5	63.5	-105.03	-2,897.8	1,514.8	2,325.1	2,203.8	121.36	19.159	
13,700.0	11,050.0	14,778.0	11,670.0	63.8	64.8	-105.03	-2,997.8	1,515.4	2,325.1	2,201.2	123.85	18.774	
13,800.0	11,050.0	14,878.0	11,670.0	65.1	66.0	-105.03	-3,097.8	1,516.0	2,325.1	2,198.7	126.37	18.399	
13,900.0	11,050.0	14,978.0	11,670.0	66.4	67.3	-105.03	-3,197.8	1,516.6	2,325.1	2,196.1	128.92	18.034	
14,000.0	11,050.0	15,078.0	11,670.0	67.7	68.6	-105.03	-3,297.8	1,517.2	2,325.0	2,193.5	131.51	17.680	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Stag Fed Com #303H - Wellbore #1 - BLM Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 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		
14,100.0	11,050.0	15,178.0	11,670.0	69.0	70.0	-105.03	-3,397.8	1,517.8	2,325.0	2,190.9	134.12	17.335		
14,200.0	11,050.0	15,278.0	11,670.0	70.4	71.3	-105.03	-3,497.8	1,518.4	2,325.0	2,188.2	136.76	17.001		
14,300.0	11,050.0	15,378.0	11,670.0	71.7	72.6	-105.03	-3,597.8	1,519.0	2,325.0	2,185.6	139.42	16.676		
14,400.0	11,050.0	15,478.0	11,670.0	73.1	74.0	-105.03	-3,697.8	1,519.6	2,325.0	2,182.8	142.10	16.361		
14,500.0	11,050.0	15,578.0	11,670.0	74.5	75.4	-105.03	-3,797.8	1,520.2	2,324.9	2,180.1	144.81	16.055		
14,600.0	11,050.0	15,678.0	11,670.0	75.9	76.7	-105.03	-3,897.8	1,520.8	2,324.9	2,177.4	147.54	15.758		
14,700.0	11,050.0	15,778.0	11,670.0	77.3	78.1	-105.03	-3,997.8	1,521.3	2,324.9	2,174.6	150.29	15.469		
14,800.0	11,050.0	15,878.0	11,670.0	78.7	79.5	-105.03	-4,097.8	1,521.9	2,324.9	2,171.8	153.06	15.190		
14,900.0	11,050.0	15,978.0	11,670.0	80.1	81.0	-105.03	-4,197.7	1,522.5	2,324.8	2,169.0	155.84	14.918		
15,000.0	11,050.0	16,078.0	11,670.0	81.6	82.4	-105.03	-4,297.7	1,523.1	2,324.8	2,166.2	158.64	14.654		
15,100.0	11,050.0	16,178.0	11,670.0	83.0	83.8	-105.03	-4,397.7	1,523.7	2,324.8	2,163.3	161.46	14.399		
15,200.0	11,050.0	16,278.0	11,670.0	84.5	85.3	-105.03	-4,497.7	1,524.3	2,324.8	2,160.5	164.29	14.150		
15,300.0	11,050.0	16,378.0	11,670.0	85.9	86.7	-105.03	-4,597.7	1,524.9	2,324.8	2,157.6	167.14	13.909		
15,400.0	11,050.0	16,478.0	11,670.0	87.4	88.2	-105.03	-4,697.7	1,525.5	2,324.7	2,154.7	170.00	13.675		
15,500.0	11,050.0	16,578.0	11,670.0	88.9	89.6	-105.03	-4,797.7	1,526.1	2,324.7	2,151.8	172.88	13.447		
15,600.0	11,050.0	16,678.0	11,670.0	90.4	91.1	-105.03	-4,897.7	1,526.7	2,324.7	2,148.9	175.76	13.226		
15,700.0	11,050.0	16,778.0	11,670.0	91.8	92.6	-105.03	-4,997.7	1,527.3	2,324.7	2,146.0	178.66	13.012		
15,800.0	11,050.0	16,878.0	11,670.0	93.3	94.0	-105.03	-5,097.7	1,527.9	2,324.7	2,143.1	181.57	12.803		
15,900.0	11,050.0	16,978.0	11,670.0	94.8	95.5	-105.03	-5,197.7	1,528.5	2,324.6	2,140.1	184.49	12.600		
16,000.0	11,050.0	17,078.0	11,670.0	96.3	97.0	-105.03	-5,297.7	1,529.1	2,324.6	2,137.2	187.42	12.403		
16,100.0	11,050.0	17,178.0	11,670.0	97.8	98.5	-105.03	-5,397.7	1,529.7	2,324.6	2,134.2	190.36	12.212		
16,200.0	11,050.0	17,278.0	11,670.0	99.4	100.0	-105.03	-5,497.7	1,530.3	2,324.6	2,131.3	193.31	12.025		
16,300.0	11,050.0	17,378.0	11,670.0	100.9	101.5	-105.03	-5,597.7	1,530.9	2,324.6	2,128.3	196.26	11.844		
16,400.0	11,050.0	17,478.0	11,670.0	102.4	103.0	-105.04	-5,697.7	1,531.5	2,324.5	2,125.3	199.23	11.668		
16,500.0	11,050.0	17,578.0	11,670.0	103.9	104.6	-105.04	-5,797.7	1,532.1	2,324.5	2,122.3	202.20	11.496		
16,600.0	11,050.0	17,678.0	11,670.0	105.5	106.1	-105.04	-5,897.7	1,532.6	2,324.5	2,119.3	205.18	11.329		
16,700.0	11,050.0	17,778.0	11,670.0	107.0	107.6	-105.04	-5,997.7	1,533.2	2,324.5	2,116.3	208.17	11.166		
16,800.0	11,050.0	17,878.0	11,670.0	108.5	109.1	-105.04	-6,097.7	1,533.8	2,324.4	2,113.3	211.17	11.008		
16,900.0	11,050.0	17,978.0	11,670.0	110.1	110.7	-105.04	-6,197.7	1,534.4	2,324.4	2,110.3	214.17	10.853		
17,000.0	11,050.0	18,078.0	11,670.0	111.6	112.2	-105.04	-6,297.7	1,535.0	2,324.4	2,107.2	217.18	10.703		
17,100.0	11,050.0	18,178.0	11,670.0	113.2	113.7	-105.04	-6,397.7	1,535.6	2,324.4	2,104.2	220.20	10.556		
17,200.0	11,050.0	18,278.0	11,670.0	114.7	115.3	-105.04	-6,497.7	1,536.2	2,324.4	2,101.1	223.22	10.413		
17,300.0	11,050.0	18,378.0	11,670.0	116.3	116.8	-105.04	-6,597.7	1,536.8	2,324.3	2,098.1	226.24	10.274		
17,352.1	11,050.0	18,430.0	11,670.0	117.1	117.6	-105.04	-6,649.8	1,537.1	2,324.3	2,096.5	227.82	10.202		
17,357.4	11,050.0	18,428.0	11,670.0	117.1	117.6	-105.04	-6,647.8	1,537.1	2,324.3	2,096.5	227.86	10.201 SF		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
0.0	0.0	17.0	17.0	0.0	0.0	96.36	-97.2	872.6	878.0				
100.0	100.0	117.0	117.0	0.1	0.2	96.36	-97.2	872.6	878.0	877.7	0.32	2,767.569	
200.0	200.0	217.0	217.0	0.5	0.5	96.36	-97.2	872.6	878.0	877.0	1.03	848.978	
300.0	300.0	317.0	317.0	0.8	0.9	96.36	-97.2	872.6	878.0	876.3	1.75	501.392	
400.0	400.0	417.0	417.0	1.2	1.3	96.36	-97.2	872.6	878.0	875.5	2.47	355.745	
500.0	500.0	517.0	517.0	1.6	1.6	96.36	-97.2	872.6	878.0	874.8	3.19	275.667	
600.0	600.0	617.0	617.0	1.9	2.0	96.36	-97.2	872.6	878.0	874.1	3.90	225.016	
700.0	700.0	717.0	717.0	2.3	2.3	96.36	-97.2	872.6	878.0	873.4	4.62	190.089	
800.0	800.0	817.0	817.0	2.6	2.7	96.36	-97.2	872.6	878.0	872.7	5.34	164.548	
900.0	900.0	917.0	917.0	3.0	3.1	96.36	-97.2	872.6	878.0	872.0	6.05	145.058	
1,000.0	1,000.0	1,017.0	1,017.0	3.4	3.4	96.36	-97.2	872.6	878.0	871.2	6.77	129.696	
1,100.0	1,100.0	1,117.0	1,117.0	3.7	3.8	96.36	-97.2	872.6	878.0	870.5	7.49	117.276	
1,200.0	1,200.0	1,217.0	1,217.0	4.1	4.1	96.36	-97.2	872.6	878.0	869.8	8.20	107.026	
1,300.0	1,300.0	1,317.0	1,317.0	4.4	4.5	96.36	-97.2	872.6	878.0	869.1	8.92	98.425	
1,400.0	1,400.0	1,417.0	1,417.0	4.8	4.8	96.36	-97.2	872.6	878.0	868.4	9.64	91.103	
1,500.0	1,500.0	1,518.2	1,518.2	5.1	5.2	96.35	-97.2	872.6	878.0	867.6	10.36	84.760	
1,515.5	1,515.5	1,534.8	1,534.8	5.2	5.3	-161.09	-97.1	872.6	878.0	867.5	10.47	83.841 CC	
1,600.0	1,600.0	1,625.1	1,625.1	5.5	5.6	-161.18	-95.9	872.2	878.3	867.2	11.09	79.211 ES	
1,700.0	1,700.0	1,731.9	1,731.8	5.8	6.0	-161.43	-92.7	871.1	879.5	867.7	11.81	74.487	
1,800.0	1,799.9	1,838.5	1,838.3	6.2	6.4	-161.84	-87.7	869.4	881.5	869.0	12.53	70.369	
1,900.0	1,899.7	1,944.8	1,944.3	6.5	6.7	-162.39	-80.8	867.1	884.6	871.3	13.25	66.763	
2,000.0	1,999.4	2,050.7	2,049.8	6.9	7.1	-163.08	-72.1	864.2	888.6	874.7	13.97	63.592	
2,100.0	2,098.9	2,156.1	2,154.6	7.2	7.5	-163.91	-61.6	860.6	893.8	879.1	14.70	60.795	
2,200.0	2,198.3	2,260.9	2,258.7	7.6	7.9	-164.86	-49.4	856.5	900.1	884.7	15.43	58.323	
2,300.0	2,297.4	2,361.5	2,358.3	8.0	8.3	-165.88	-36.2	852.0	907.9	891.7	16.16	56.185	
2,400.0	2,396.4	2,459.8	2,455.7	8.3	8.6	-166.89	-23.3	847.7	916.7	899.8	16.88	54.303	
2,500.0	2,495.5	2,558.1	2,553.0	8.7	9.0	-167.88	-10.3	843.3	925.8	908.2	17.61	52.578	
2,600.0	2,594.5	2,656.3	2,650.3	9.1	9.4	-168.86	2.6	838.9	935.2	916.9	18.34	50.994	
2,700.0	2,693.5	2,754.6	2,747.6	9.5	9.8	-169.81	15.6	834.6	944.9	925.8	19.07	49.536	
2,800.0	2,792.5	2,852.9	2,844.9	9.9	10.2	-170.75	28.5	830.2	954.8	935.0	19.81	48.191	
2,900.0	2,891.6	2,951.1	2,942.2	10.3	10.5	-171.67	41.5	825.8	965.0	944.4	20.55	46.949	
3,000.0	2,990.6	3,049.4	3,039.5	10.7	10.9	-172.57	54.5	821.4	975.4	954.1	21.30	45.799	
3,100.0	3,089.6	3,147.7	3,136.8	11.1	11.3	-173.45	67.4	817.1	986.1	964.1	22.04	44.732	
3,200.0	3,188.6	3,246.0	3,234.1	11.5	11.7	-174.31	80.4	812.7	997.0	974.2	22.79	43.741	
3,300.0	3,287.7	3,344.2	3,331.5	11.9	12.1	-175.15	93.3	808.3	1,008.1	984.6	23.54	42.820	
3,400.0	3,386.7	3,442.5	3,428.8	12.3	12.5	-175.97	106.3	804.0	1,019.5	995.2	24.30	41.961	
3,500.0	3,485.7	3,540.8	3,526.1	12.7	12.9	-176.78	119.3	799.6	1,031.0	1,006.0	25.05	41.159	
3,600.0	3,584.8	3,639.0	3,623.4	13.1	13.3	-177.57	132.2	795.2	1,042.8	1,017.0	25.80	40.409	
3,700.0	3,683.8	3,737.3	3,720.7	13.5	13.7	-178.34	145.2	790.8	1,054.7	1,028.1	26.56	39.708	
3,800.0	3,782.8	3,835.6	3,818.0	13.9	14.1	-179.10	158.1	786.5	1,066.8	1,039.5	27.32	39.050	
3,900.0	3,881.8	3,933.8	3,915.3	14.3	14.5	-179.83	171.1	782.1	1,079.1	1,051.1	28.08	38.433	
4,000.0	3,980.9	4,032.1	4,012.6	14.7	14.9	179.45	184.1	777.7	1,091.6	1,062.8	28.84	37.853	
4,100.0	4,079.9	4,130.4	4,110.0	15.1	15.3	178.74	197.0	773.3	1,104.3	1,074.7	29.60	37.307	
4,200.0	4,178.9	4,228.6	4,207.3	15.5	15.7	178.05	210.0	769.0	1,117.1	1,086.8	30.36	36.793	
4,300.0	4,277.9	4,326.9	4,304.6	15.9	16.1	177.38	222.9	764.6	1,130.1	1,099.0	31.13	36.308	
4,400.0	4,377.0	4,425.2	4,401.9	16.3	16.5	176.72	235.9	760.2	1,143.2	1,111.3	31.89	35.850	
4,500.0	4,476.0	4,523.4	4,499.2	16.8	16.9	176.07	248.8	755.9	1,156.5	1,123.9	32.65	35.417	
4,600.0	4,575.0	4,621.7	4,596.5	17.2	17.3	175.44	261.8	751.5	1,169.9	1,136.5	33.42	35.008	
4,700.0	4,674.0	4,719.5	4,693.5	17.6	17.7	174.89	273.6	747.5	1,183.5	1,149.3	34.18	34.630	
4,800.0	4,773.1	4,817.7	4,791.2	18.0	18.1	174.46	283.1	744.3	1,197.2	1,162.3	34.92	34.282	
4,900.0	4,872.1	4,916.3	4,889.5	18.4	18.4	174.17	290.2	741.9	1,211.0	1,175.4	35.66	33.962	
5,000.0	4,971.1	5,015.2	4,988.2	18.8	18.8	174.00	295.0	740.3	1,224.8	1,188.5	36.38	33.667	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Stag Fed Com #304H - Wellbore #1 - BLM Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 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		
5,100.0	5,070.2	5,114.1	5,087.2	19.2	19.1	173.95	297.3	739.5	1,238.7	1,201.6	37.09	33.396		
5,200.0	5,169.2	5,213.1	5,186.2	19.7	19.5	174.00	297.6	739.4	1,252.5	1,214.7	37.79	33.145		
5,300.0	5,268.2	5,312.2	5,285.2	20.1	19.8	174.07	297.6	739.4	1,266.4	1,227.9	38.49	32.904		
5,400.0	5,367.2	5,411.2	5,384.2	20.5	20.1	174.13	297.6	739.4	1,280.2	1,241.0	39.19	32.671		
5,500.0	5,466.3	5,510.2	5,483.3	20.9	20.5	174.20	297.6	739.4	1,294.1	1,254.2	39.88	32.445		
5,600.0	5,565.3	5,609.2	5,582.3	21.3	20.8	174.26	297.6	739.4	1,307.9	1,267.3	40.59	32.226		
5,700.0	5,664.3	5,708.3	5,681.3	21.7	21.1	174.32	297.6	739.4	1,321.8	1,280.5	41.29	32.015		
5,800.0	5,763.3	5,807.3	5,780.3	22.2	21.5	174.38	297.6	739.4	1,335.6	1,293.6	41.99	31.809		
5,900.0	5,862.4	5,906.3	5,879.4	22.6	21.8	174.44	297.6	739.4	1,349.5	1,306.8	42.69	31.610		
6,000.0	5,961.4	6,005.4	5,978.4	23.0	22.1	174.49	297.6	739.4	1,363.3	1,319.9	43.39	31.417		
6,100.0	6,060.4	6,104.4	6,077.4	23.4	22.5	174.55	297.6	739.4	1,377.2	1,333.1	44.10	31.230		
6,200.0	6,159.4	6,203.4	6,176.4	23.8	22.8	174.60	297.6	739.4	1,391.0	1,346.2	44.80	31.049		
6,300.0	6,258.5	6,302.4	6,275.5	24.2	23.2	174.66	297.6	739.4	1,404.9	1,359.4	45.51	30.872		
6,400.0	6,357.5	6,401.5	6,374.5	24.7	23.5	174.71	297.6	739.4	1,418.7	1,372.5	46.21	30.701		
6,500.0	6,456.5	6,500.5	6,473.5	25.1	23.8	174.76	297.6	739.4	1,432.6	1,385.7	46.92	30.534		
6,600.0	6,555.6	6,600.5	6,572.6	25.5	24.2	174.81	297.6	739.4	1,446.5	1,398.8	47.63	30.370		
6,700.0	6,654.6	6,701.5	6,671.6	25.9	24.5	174.86	297.6	739.4	1,460.3	1,412.0	48.34	30.208		
6,800.0	6,753.6	6,802.4	6,770.6	26.3	24.9	174.91	297.6	739.4	1,474.2	1,425.1	49.06	30.051		
6,900.0	6,852.6	6,903.4	6,869.6	26.8	25.2	174.95	297.6	739.4	1,488.1	1,438.3	49.77	29.898		
7,000.0	6,951.7	7,004.4	6,968.7	27.2	25.6	175.00	297.6	739.4	1,501.9	1,451.4	50.49	29.749		
7,100.0	7,050.7	7,105.3	7,067.7	27.6	25.9	175.05	297.6	739.4	1,515.8	1,464.6	51.20	29.604		
7,136.4	7,086.7	7,130.7	7,103.7	27.8	26.0	175.06	297.6	739.4	1,520.8	1,469.4	51.42	29.575		
7,200.0	7,149.8	7,206.3	7,166.8	28.0	26.3	175.10	297.6	739.4	1,529.1	1,477.2	51.92	29.453		
7,300.0	7,249.2	7,306.9	7,266.2	28.4	26.6	175.15	297.6	739.4	1,540.1	1,487.4	52.63	29.262		
7,400.0	7,348.8	7,407.2	7,365.8	28.8	27.0	175.19	297.6	739.4	1,548.4	1,495.0	53.34	29.030		
7,500.0	7,448.7	7,507.4	7,465.7	29.2	27.3	175.21	297.6	739.4	1,554.1	1,500.1	54.04	28.757		
7,600.0	7,548.6	7,607.4	7,565.6	29.5	27.7	175.23	297.6	739.4	1,557.2	1,502.5	54.74	28.446		
7,669.7	7,618.3	7,662.3	7,635.3	29.7	27.9	72.67	297.6	739.4	1,557.9	1,502.7	55.17	28.236		
7,700.0	7,648.6	7,707.4	7,665.6	29.8	28.0	72.67	297.6	739.4	1,557.9	1,502.4	55.43	28.105		
7,800.0	7,748.6	7,807.4	7,765.6	30.1	28.4	72.67	297.6	739.4	1,557.9	1,501.8	56.11	27.762		
7,900.0	7,848.6	7,907.4	7,865.6	30.5	28.7	72.67	297.6	739.4	1,557.9	1,501.1	56.80	27.428		
8,000.0	7,948.6	8,007.4	7,965.6	30.8	29.1	72.67	297.6	739.4	1,557.9	1,500.4	57.48	27.101		
8,100.0	8,048.6	8,107.4	8,065.6	31.1	29.4	72.67	297.6	739.4	1,557.9	1,499.7	58.17	26.781		
8,200.0	8,148.6	8,207.4	8,165.6	31.4	29.8	72.67	297.6	739.4	1,557.9	1,499.0	58.86	26.469		
8,300.0	8,248.6	8,307.4	8,265.6	31.7	30.1	72.67	297.6	739.4	1,557.9	1,498.3	59.54	26.163		
8,400.0	8,348.6	8,407.4	8,365.6	32.0	30.5	72.67	297.6	739.4	1,557.9	1,497.6	60.23	25.864		
8,500.0	8,448.6	8,507.4	8,465.6	32.4	30.8	72.67	297.6	739.4	1,557.9	1,496.9	60.92	25.572		
8,600.0	8,548.6	8,607.4	8,565.6	32.7	31.2	72.67	297.6	739.4	1,557.9	1,496.3	61.61	25.285		
8,700.0	8,648.6	8,707.4	8,665.6	33.0	31.5	72.67	297.6	739.4	1,557.9	1,495.6	62.30	25.005		
8,800.0	8,748.6	8,807.4	8,765.6	33.3	31.9	72.67	297.6	739.4	1,557.9	1,494.9	62.99	24.731		
8,900.0	8,848.6	8,907.4	8,865.6	33.6	32.2	72.67	297.6	739.4	1,557.9	1,494.2	63.68	24.463		
9,000.0	8,948.6	9,007.4	8,965.6	34.0	32.6	72.67	297.6	739.4	1,557.9	1,493.5	64.38	24.200		
9,100.0	9,048.6	9,107.4	9,065.6	34.3	32.9	72.67	297.6	739.4	1,557.9	1,492.8	65.07	23.942		
9,200.0	9,148.6	9,207.4	9,165.6	34.6	33.3	72.67	297.6	739.4	1,557.9	1,492.1	65.76	23.690		
9,300.0	9,248.6	9,307.4	9,265.6	34.9	33.6	72.67	297.6	739.4	1,557.9	1,491.4	66.45	23.443		
9,400.0	9,348.6	9,407.4	9,365.6	35.3	34.0	72.67	297.6	739.4	1,557.9	1,490.7	67.15	23.201		
9,500.0	9,448.6	9,507.4	9,465.6	35.6	34.3	72.67	297.6	739.4	1,557.9	1,490.0	67.84	22.963		
9,600.0	9,548.6	9,607.4	9,565.6	35.9	34.7	72.67	297.6	739.4	1,557.9	1,489.3	68.54	22.730		
9,700.0	9,648.6	9,707.4	9,665.6	36.3	35.0	72.67	297.6	739.4	1,557.9	1,488.6	69.23	22.502		
9,800.0	9,748.6	9,807.4	9,765.6	36.6	35.4	72.67	297.6	739.4	1,557.9	1,487.9	69.93	22.278		
9,900.0	9,848.6	9,907.4	9,865.6	36.9	35.7	72.67	297.6	739.4	1,557.9	1,487.2	70.62	22.059		
10,000.0	9,948.6	10,007.4	9,965.6	37.2	36.1	72.67	297.6	739.4	1,557.9	1,486.6	71.32	21.843		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
10,100.0	10,048.6	10,107.4	10,065.6	37.6	36.4	72.67	297.6	739.4	1,557.9	1,485.9	72.02	21.632	
10,200.0	10,148.6	10,207.4	10,165.6	37.9	36.8	72.67	297.6	739.4	1,557.9	1,485.2	72.72	21.424	
10,300.0	10,248.6	10,307.4	10,265.6	38.2	37.1	72.67	297.6	739.4	1,557.9	1,484.5	73.41	21.221	
10,400.0	10,348.6	10,407.4	10,365.6	38.6	37.5	72.67	297.6	739.4	1,557.9	1,483.8	74.11	21.021	
10,500.0	10,448.6	10,507.4	10,465.6	38.9	37.8	72.67	297.6	739.4	1,557.9	1,483.1	74.81	20.825	
10,528.4	10,477.0	10,521.0	10,494.0	39.0	37.9	72.67	297.6	739.4	1,557.9	1,482.9	74.96	20.784	
10,550.0	10,498.6	10,542.6	10,515.6	39.1	38.0	-106.98	297.6	739.4	1,558.0	1,482.9	75.11	20.744	
10,600.0	10,548.4	10,607.6	10,565.4	39.2	38.2	-107.01	297.6	739.4	1,559.2	1,483.7	75.50	20.651	
10,650.0	10,597.7	10,641.7	10,614.7	39.4	38.3	-107.06	297.6	739.4	1,561.7	1,485.9	75.79	20.606	
10,700.0	10,646.1	10,710.0	10,663.1	39.6	38.5	-107.12	297.6	739.4	1,565.5	1,489.3	76.19	20.547	
10,750.0	10,693.1	10,737.1	10,710.1	39.7	38.6	-107.17	297.6	739.4	1,570.8	1,494.3	76.45	20.547	
10,800.0	10,738.5	10,782.5	10,755.5	39.9	38.8	-107.19	297.6	739.4	1,577.5	1,500.7	76.76	20.549	
10,850.0	10,782.0	10,825.9	10,799.0	40.0	39.0	-107.14	297.6	739.4	1,585.8	1,508.7	77.07	20.576	
10,900.0	10,823.1	10,867.1	10,840.1	40.2	39.1	-106.99	297.6	739.4	1,595.7	1,518.4	77.36	20.627	
10,950.0	10,861.6	10,905.5	10,878.6	40.4	39.2	-106.70	297.6	739.4	1,607.4	1,529.8	77.64	20.704	
11,000.0	10,897.1	10,941.1	10,914.1	40.5	39.4	-106.24	297.6	739.4	1,620.9	1,543.0	77.89	20.809	
11,050.0	10,929.5	10,973.4	10,946.5	40.7	39.5	-105.56	297.6	739.4	1,636.3	1,558.2	78.13	20.943	
11,100.0	10,958.4	11,002.4	10,975.4	40.8	39.6	-104.63	297.6	739.4	1,653.6	1,575.2	78.35	21.105	
11,150.0	10,983.6	11,250.0	11,217.2	41.0	40.3	-109.38	253.9	745.3	1,672.5	1,593.6	78.93	21.190	
11,200.0	11,005.0	12,003.1	11,570.0	41.2	41.5	-109.82	-348.8	825.7	1,672.5	1,594.3	78.21	21.384	
11,250.0	11,022.4	12,107.4	11,570.0	41.4	41.8	-108.73	-452.7	834.9	1,670.5	1,591.6	78.97	21.154	
11,300.0	11,035.6	12,215.2	11,570.0	41.5	42.2	-107.95	-560.3	840.5	1,668.5	1,588.7	79.76	20.918	
11,350.0	11,044.6	12,307.0	11,570.0	41.8	42.5	-107.61	-652.1	842.1	1,666.1	1,585.6	80.51	20.696	
11,400.0	11,049.3	12,356.8	11,570.0	42.0	42.7	-107.59	-701.9	842.4	1,664.7	1,583.7	81.01	20.550	
11,428.4	11,050.0	12,385.2	11,570.0	42.1	42.9	-107.59	-730.3	842.5	1,664.5	1,583.2	81.27	20.480	
11,428.7	11,050.0	12,385.4	11,570.0	42.1	42.9	-107.59	-730.5	842.5	1,664.5	1,583.2	81.27	20.480	
11,500.0	11,050.0	12,456.8	11,570.0	42.4	43.2	-107.59	-801.9	842.9	1,664.5	1,582.5	81.97	20.305	
11,600.0	11,050.0	12,556.8	11,570.0	43.0	43.7	-107.59	-901.9	843.5	1,664.4	1,581.4	83.04	20.043	
11,700.0	11,050.0	12,656.8	11,570.0	43.5	44.3	-107.59	-1,001.9	844.1	1,664.4	1,580.2	84.22	19.763	
11,800.0	11,050.0	12,756.8	11,570.0	44.2	45.0	-107.59	-1,101.9	844.7	1,664.4	1,578.9	85.50	19.466	
11,900.0	11,050.0	12,856.8	11,570.0	44.9	45.7	-107.59	-1,201.9	845.3	1,664.3	1,577.5	86.88	19.157	
12,000.0	11,050.0	12,956.8	11,570.0	45.6	46.4	-107.59	-1,301.9	845.9	1,664.3	1,575.9	88.35	18.837	
12,100.0	11,050.0	13,056.8	11,570.0	46.4	47.2	-107.59	-1,401.9	846.4	1,664.3	1,574.4	89.92	18.509	
12,200.0	11,050.0	13,156.8	11,570.0	47.2	48.0	-107.59	-1,501.9	847.0	1,664.2	1,572.7	91.57	18.175	
12,300.0	11,050.0	13,256.8	11,570.0	48.1	48.9	-107.59	-1,601.9	847.6	1,664.2	1,570.9	93.30	17.838	
12,400.0	11,050.0	13,356.8	11,570.0	49.0	49.8	-107.59	-1,701.9	848.2	1,664.2	1,569.1	95.10	17.499	
12,500.0	11,050.0	13,456.8	11,570.0	50.0	50.8	-107.59	-1,801.9	848.8	1,664.2	1,567.2	96.98	17.160	
12,600.0	11,050.0	13,556.8	11,570.0	51.0	51.8	-107.59	-1,901.9	849.4	1,664.1	1,565.2	98.92	16.823	
12,700.0	11,050.0	13,656.8	11,570.0	52.0	52.8	-107.59	-2,001.9	850.0	1,664.1	1,563.2	100.93	16.488	
12,800.0	11,050.0	13,756.8	11,570.0	53.1	53.8	-107.59	-2,101.9	850.5	1,664.1	1,561.1	103.00	16.156	
12,900.0	11,050.0	13,856.8	11,570.0	54.2	54.9	-107.59	-2,201.9	851.1	1,664.0	1,558.9	105.12	15.830	
13,000.0	11,050.0	13,956.8	11,570.0	55.3	56.0	-107.59	-2,301.9	851.7	1,664.0	1,556.7	107.30	15.508	
13,100.0	11,050.0	14,056.8	11,570.0	56.4	57.2	-107.60	-2,401.9	852.3	1,664.0	1,554.4	109.53	15.192	
13,200.0	11,050.0	14,156.8	11,570.0	57.6	58.3	-107.60	-2,501.8	852.9	1,663.9	1,552.1	111.80	14.883	
13,300.0	11,050.0	14,256.8	11,570.0	58.8	59.5	-107.60	-2,601.8	853.5	1,663.9	1,549.8	114.12	14.580	
13,400.0	11,050.0	14,356.8	11,570.0	60.0	60.7	-107.60	-2,701.8	854.1	1,663.9	1,547.4	116.48	14.285	
13,500.0	11,050.0	14,456.8	11,570.0	61.2	62.0	-107.60	-2,801.8	854.6	1,663.9	1,545.0	118.88	13.996	
13,600.0	11,050.0	14,556.8	11,570.0	62.5	63.2	-107.60	-2,901.8	855.2	1,663.8	1,542.5	121.32	13.715	
13,700.0	11,050.0	14,656.8	11,570.0	63.8	64.5	-107.60	-3,001.8	855.8	1,663.8	1,540.0	123.79	13.441	
13,800.0	11,050.0	14,756.8	11,570.0	65.1	65.8	-107.60	-3,101.8	856.4	1,663.8	1,537.5	126.29	13.174	
13,900.0	11,050.0	14,856.8	11,570.0	66.4	67.1	-107.60	-3,201.8	857.0	1,663.7	1,534.9	128.82	12.915	
14,000.0	11,050.0	14,956.8	11,570.0	67.7	68.4	-107.60	-3,301.8	857.6	1,663.7	1,532.3	131.39	12.663	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 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	
14,100.0	11,050.0	15,056.8	11,570.0	69.0	69.7	-107.60	-3,401.8	858.2	1,663.7	1,529.7	133.98	12.418	
14,200.0	11,050.0	15,156.8	11,570.0	70.4	71.1	-107.60	-3,501.8	858.7	1,663.6	1,527.1	136.59	12.180	
14,300.0	11,050.0	15,256.8	11,570.0	71.7	72.4	-107.60	-3,601.8	859.3	1,663.6	1,524.4	139.23	11.948	
14,400.0	11,050.0	15,356.8	11,570.0	73.1	73.8	-107.60	-3,701.8	859.9	1,663.6	1,521.7	141.90	11.724	
14,500.0	11,050.0	15,456.8	11,570.0	74.5	75.2	-107.60	-3,801.8	860.5	1,663.6	1,519.0	144.58	11.506	
14,600.0	11,050.0	15,556.8	11,570.0	75.9	76.6	-107.60	-3,901.8	861.1	1,663.5	1,516.2	147.29	11.295	
14,700.0	11,050.0	15,656.8	11,570.0	77.3	78.0	-107.60	-4,001.8	861.7	1,663.5	1,513.5	150.01	11.089	
14,800.0	11,050.0	15,756.8	11,570.0	78.7	79.4	-107.60	-4,101.8	862.3	1,663.5	1,510.7	152.75	10.890	
14,900.0	11,050.0	15,856.8	11,570.0	80.1	80.8	-107.60	-4,201.8	862.8	1,663.4	1,507.9	155.51	10.697	
15,000.0	11,050.0	15,956.8	11,570.0	81.6	82.3	-107.60	-4,301.8	863.4	1,663.4	1,505.1	158.29	10.509	
15,100.0	11,050.0	16,056.8	11,570.0	83.0	83.7	-107.60	-4,401.8	864.0	1,663.4	1,502.3	161.08	10.326	
15,200.0	11,050.0	16,156.8	11,570.0	84.5	85.1	-107.60	-4,501.8	864.6	1,663.4	1,499.5	163.89	10.149	
15,300.0	11,050.0	16,256.8	11,570.0	85.9	86.6	-107.60	-4,601.8	865.2	1,663.3	1,496.6	166.71	9.978	
15,400.0	11,050.0	16,356.8	11,570.0	87.4	88.1	-107.60	-4,701.8	865.8	1,663.3	1,493.8	169.54	9.811	
15,500.0	11,050.0	16,456.8	11,570.0	88.9	89.5	-107.60	-4,801.8	866.3	1,663.3	1,490.9	172.39	9.648	
15,600.0	11,050.0	16,556.8	11,570.0	90.4	91.0	-107.60	-4,901.8	866.9	1,663.2	1,488.0	175.25	9.491	
15,700.0	11,050.0	16,656.8	11,570.0	91.8	92.5	-107.60	-5,001.8	867.5	1,663.2	1,485.1	178.12	9.338	
15,800.0	11,050.0	16,756.8	11,570.0	93.3	94.0	-107.60	-5,101.8	868.1	1,663.2	1,482.2	181.00	9.189	
15,900.0	11,050.0	16,856.8	11,570.0	94.8	95.5	-107.60	-5,201.8	868.7	1,663.1	1,479.3	183.89	9.044	
16,000.0	11,050.0	16,956.8	11,570.0	96.3	97.0	-107.60	-5,301.8	869.3	1,663.1	1,476.3	186.79	8.904	
16,100.0	11,050.0	17,056.8	11,570.0	97.8	98.5	-107.60	-5,401.8	869.9	1,663.1	1,473.4	189.70	8.767	
16,200.0	11,050.0	17,156.8	11,570.0	99.4	100.0	-107.61	-5,501.8	870.4	1,663.1	1,470.4	192.62	8.634	
16,300.0	11,050.0	17,256.8	11,570.0	100.9	101.5	-107.61	-5,601.8	871.0	1,663.0	1,467.5	195.55	8.504	
16,400.0	11,050.0	17,356.8	11,570.0	102.4	103.0	-107.61	-5,701.8	871.6	1,663.0	1,464.5	198.48	8.378	
16,500.0	11,050.0	17,456.8	11,570.0	103.9	104.5	-107.61	-5,801.8	872.2	1,663.0	1,461.5	201.43	8.256	
16,600.0	11,050.0	17,556.8	11,570.0	105.5	106.1	-107.61	-5,901.8	872.8	1,662.9	1,458.6	204.38	8.136	
16,700.0	11,050.0	17,656.8	11,570.0	107.0	107.6	-107.61	-6,001.8	873.4	1,662.9	1,455.6	207.34	8.020	
16,800.0	11,050.0	17,756.8	11,570.0	108.5	109.1	-107.61	-6,101.8	874.0	1,662.9	1,452.6	210.31	7.907	
16,900.0	11,050.0	17,856.8	11,570.0	110.1	110.7	-107.61	-6,201.8	874.5	1,662.8	1,449.6	213.28	7.797	
17,000.0	11,050.0	17,956.8	11,570.0	111.6	112.2	-107.61	-6,301.8	875.1	1,662.8	1,446.6	216.26	7.689	
17,100.0	11,050.0	18,056.8	11,570.0	113.2	113.7	-107.61	-6,401.8	875.7	1,662.8	1,443.5	219.24	7.584	
17,200.0	11,050.0	18,156.8	11,570.0	114.7	115.3	-107.61	-6,501.8	876.3	1,662.8	1,440.5	222.23	7.482	
17,300.0	11,050.0	18,256.8	11,570.0	116.3	116.7	-107.61	-6,601.8	876.9	1,662.7	1,437.6	225.12	7.386	
17,357.4	11,050.0	18,314.2	11,570.0	117.1	117.5	-107.61	-6,659.2	877.2	1,662.7	1,436.0	226.74	7.333 SF	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 333-MWD												Offset Well Error:	0.0 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	
0.0	0.0	18.2	18.2	0.0	0.0	94.68	-73.6	898.8	901.8				
100.0	100.0	118.5	118.5	0.1	0.2	94.69	-73.7	898.8	901.8	901.5	0.32	2,795.512	
200.0	200.0	218.8	218.8	0.5	0.4	94.71	-74.0	898.7	901.7	900.9	0.85	1,066.295	
300.0	300.0	319.2	319.2	0.8	0.5	94.74	-74.5	898.5	901.6	900.3	1.37	658.726	
400.0	400.0	418.2	418.1	1.2	0.9	94.79	-75.2	898.4	901.6	899.5	2.06	438.626	
500.0	500.0	519.1	519.1	1.6	1.2	94.84	-76.0	898.3	901.5	898.7	2.78	324.737	
600.0	600.0	618.5	618.5	1.9	1.6	94.88	-76.7	898.2	901.4	897.9	3.49	258.195	
700.0	700.0	719.6	719.6	2.3	1.9	94.93	-77.5	898.0	901.4	897.1	4.21	213.973	
800.0	800.0	821.5	821.5	2.6	2.3	94.97	-78.1	897.6	901.0	896.1	4.94	182.554	
900.0	900.0	921.0	921.0	3.0	2.7	95.01	-78.7	897.3	900.7	895.1	5.65	159.417	
1,000.0	1,000.0	1,020.0	1,020.0	3.4	3.0	95.05	-79.3	896.9	900.4	894.0	6.36	141.497	
1,100.0	1,100.0	1,118.6	1,118.6	3.7	3.4	95.09	-79.8	896.8	900.3	893.2	7.08	127.250	
1,200.0	1,200.0	1,218.6	1,218.5	4.1	3.7	95.11	-80.1	896.7	900.2	892.5	7.78	115.674	
1,300.0	1,300.0	1,319.8	1,319.8	4.4	4.1	95.10	-80.1	896.6	900.1	891.7	8.48	106.099	
1,400.0	1,400.0	1,420.0	1,419.9	4.8	4.4	95.10	-80.0	896.4	899.9	890.7	9.19	97.934	
1,500.0	1,500.0	1,519.2	1,519.2	5.1	4.8	95.11	-80.2	896.2	899.8	889.9	9.90	90.883	
1,505.0	1,505.0	1,523.9	1,523.8	5.2	4.8	-162.32	-80.2	896.2	899.8	889.8	9.93	90.587 CC, ES	
1,600.0	1,600.0	1,617.1	1,617.0	5.5	5.1	-162.35	-80.0	896.3	900.6	890.1	10.58	85.158	
1,700.0	1,700.0	1,714.5	1,714.5	5.8	5.4	-162.42	-79.5	896.5	903.3	892.1	11.24	80.374	
1,800.0	1,799.9	1,805.5	1,805.4	6.2	5.7	-162.52	-79.0	897.3	908.4	896.5	11.89	76.427	
1,900.0	1,899.7	1,897.4	1,897.4	6.5	6.0	-162.65	-78.5	899.1	916.0	903.5	12.54	73.050	
2,000.0	1,999.4	1,991.7	1,991.6	6.9	6.3	-162.79	-78.1	901.5	926.0	912.8	13.21	70.124	
2,100.0	2,098.9	2,088.9	2,088.8	7.2	6.7	-162.96	-77.7	904.3	938.1	924.2	13.89	67.559	
2,200.0	2,198.3	2,187.2	2,187.0	7.6	7.0	-163.16	-77.3	907.5	952.0	937.5	14.57	65.333	
2,300.0	2,297.4	2,294.4	2,294.1	8.0	7.4	-163.37	-77.3	910.2	967.1	951.8	15.30	63.217	
2,400.0	2,396.4	2,393.2	2,393.0	8.3	7.7	-163.59	-77.7	912.3	982.5	966.5	15.99	61.435	
2,500.0	2,495.5	2,491.1	2,490.8	8.7	8.1	-163.78	-78.3	914.5	998.2	981.5	16.69	59.815	
2,600.0	2,594.5	2,589.6	2,589.3	9.1	8.4	-163.95	-79.4	916.6	1,013.8	996.4	17.39	58.303	
2,700.0	2,693.5	2,691.1	2,690.7	9.5	8.8	-164.10	-80.7	918.9	1,029.4	1,011.3	18.10	56.869	
2,800.0	2,792.5	2,799.3	2,799.0	9.9	9.2	-164.31	-81.2	920.6	1,044.4	1,025.6	18.84	55.424	
2,900.0	2,891.6	2,897.4	2,897.1	10.3	9.5	-164.53	-80.9	921.6	1,058.8	1,039.3	19.54	54.176	
3,000.0	2,990.6	2,994.9	2,994.6	10.7	9.9	-164.76	-80.4	922.9	1,073.5	1,053.3	20.24	53.034	
3,100.0	3,089.6	3,085.5	3,085.1	11.1	10.2	-164.97	-79.8	924.4	1,088.6	1,067.7	20.91	52.053	
3,200.0	3,188.6	3,178.6	3,178.2	11.5	10.5	-165.18	-79.1	926.6	1,104.4	1,082.8	21.59	51.145	
3,300.0	3,287.7	3,275.7	3,275.3	11.9	10.9	-165.41	-78.4	929.2	1,120.5	1,098.2	22.29	50.261	
3,400.0	3,386.7	3,378.0	3,377.5	12.3	11.2	-165.62	-77.8	931.9	1,136.6	1,113.6	23.02	49.378	
3,500.0	3,485.7	3,475.6	3,475.1	12.7	11.6	-165.78	-78.1	934.3	1,152.4	1,128.7	23.72	48.577	
3,600.0	3,584.8	3,577.1	3,576.5	13.1	11.9	-165.89	-79.5	936.7	1,168.3	1,143.9	24.45	47.786	
3,700.0	3,683.8	3,674.9	3,674.3	13.5	12.3	-165.97	-81.1	938.9	1,184.1	1,158.9	25.16	47.065	
3,800.0	3,782.8	3,772.3	3,771.7	13.9	12.6	-166.06	-82.6	941.2	1,200.0	1,174.1	25.87	46.391	
3,900.0	3,881.8	3,870.7	3,870.0	14.3	13.0	-166.16	-84.0	943.6	1,215.9	1,189.3	26.58	45.747	
4,000.0	3,980.9	3,989.2	3,988.6	14.7	13.4	-166.29	-85.1	945.5	1,231.1	1,203.7	27.38	44.970	
4,100.0	4,079.9	4,099.4	4,098.8	15.1	13.8	-166.46	-85.1	945.7	1,244.8	1,216.7	28.13	44.252	
4,200.0	4,178.9	4,199.2	4,198.6	15.5	14.1	-166.63	-84.6	945.7	1,258.3	1,229.4	28.84	43.635	
4,300.0	4,277.9	4,299.9	4,299.2	15.9	14.5	-166.80	-84.2	945.5	1,271.6	1,242.1	29.55	43.039	
4,400.0	4,377.0	4,401.3	4,400.6	16.3	14.8	-166.96	-83.8	945.2	1,284.9	1,254.6	30.26	42.461	
4,500.0	4,476.0	4,503.1	4,502.4	16.8	15.1	-167.12	-83.4	944.6	1,297.9	1,266.9	30.98	41.902	
4,600.0	4,575.0	4,604.2	4,603.5	17.2	15.5	-167.28	-82.9	943.9	1,310.8	1,279.1	31.69	41.364	
4,700.0	4,674.0	4,705.1	4,704.4	17.6	15.8	-167.44	-82.4	943.0	1,323.5	1,291.1	32.40	40.847	
4,800.0	4,773.1	4,802.9	4,802.2	18.0	16.2	-167.59	-81.7	942.1	1,336.2	1,303.1	33.10	40.366	
4,900.0	4,872.1	4,900.3	4,899.6	18.4	16.5	-167.75	-80.9	941.4	1,349.1	1,315.3	33.80	39.910	
5,000.0	4,971.1	5,004.9	5,004.2	18.8	16.9	-167.93	-79.9	940.5	1,361.8	1,327.3	34.53	39.433	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Stag Fed Com #503H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 333-MWD													Offset Well Error:	0.0 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		
5,100.0	5,070.2	5,104.9	5,104.2	19.2	17.2	-168.10	-78.8	939.3	1,374.3	1,339.1	35.25	38.991		
5,200.0	5,169.2	5,204.7	5,204.0	19.7	17.6	-168.27	-77.5	938.1	1,386.8	1,350.8	35.96	38.565		
5,300.0	5,268.2	5,304.4	5,303.7	20.1	17.9	-168.44	-76.3	936.9	1,399.2	1,362.6	36.67	38.155		
5,400.0	5,367.2	5,406.1	5,405.3	20.5	18.3	-168.61	-75.0	935.5	1,411.5	1,374.1	37.39	37.747		
5,500.0	5,466.3	5,503.1	5,502.3	20.9	18.6	-168.77	-73.7	934.2	1,423.9	1,385.8	38.10	37.376		
5,600.0	5,565.3	5,601.9	5,601.1	21.3	18.9	-168.93	-72.4	932.9	1,436.2	1,397.4	38.81	37.011		
5,700.0	5,664.3	5,699.9	5,699.1	21.7	19.3	-169.08	-71.4	931.7	1,448.8	1,409.3	39.51	36.666		
5,800.0	5,763.3	5,795.2	5,794.4	22.2	19.6	-169.21	-70.6	930.7	1,461.4	1,421.2	40.21	36.346		
5,900.0	5,862.4	5,893.6	5,892.8	22.6	20.0	-169.35	-69.6	929.9	1,474.3	1,433.4	40.92	36.030		
6,000.0	5,961.4	5,994.4	5,993.5	23.0	20.3	-169.49	-68.7	928.9	1,487.1	1,445.4	41.64	35.714		
6,100.0	6,060.4	6,095.0	6,094.2	23.4	20.7	-169.63	-67.6	927.9	1,499.8	1,457.4	42.36	35.407		
6,200.0	6,159.4	6,224.7	6,223.7	23.8	21.1	-169.91	-63.5	925.2	1,511.6	1,468.4	43.20	34.991		
6,300.0	6,258.5	6,369.5	6,367.9	24.2	21.6	-170.50	-51.7	918.2	1,521.0	1,476.9	44.07	34.511		
6,400.0	6,357.5	6,477.6	6,475.2	24.7	22.0	-170.98	-41.9	910.7	1,528.2	1,483.4	44.81	34.103		
6,500.0	6,456.5	6,558.6	6,555.6	25.1	22.3	-171.36	-33.7	905.3	1,536.1	1,490.6	45.47	33.782		
6,600.0	6,555.6	6,635.5	6,631.8	25.5	22.6	-171.79	-24.0	901.2	1,545.3	1,499.2	46.10	33.518		
6,700.0	6,654.6	6,706.3	6,701.9	25.9	22.8	-172.20	-14.5	898.3	1,556.2	1,509.5	46.70	33.322		
6,800.0	6,753.6	6,771.9	6,767.0	26.3	23.0	-172.53	-7.0	897.2	1,569.3	1,522.0	47.26	33.205		
6,900.0	6,852.6	6,863.0	6,857.8	26.8	23.4	-172.89	1.2	896.9	1,583.6	1,535.7	47.94	33.037		
7,000.0	6,951.7	6,941.5	6,936.2	27.2	23.6	-173.11	5.9	897.6	1,598.9	1,550.4	48.54	32.940		
7,100.0	7,050.7	7,034.0	7,028.6	27.6	24.0	-173.26	8.8	899.5	1,615.1	1,565.9	49.22	32.815		
7,136.4	7,086.7	7,071.4	7,066.0	27.8	24.1	-173.30	9.6	900.4	1,621.0	1,571.5	49.49	32.757		
7,200.0	7,149.8	7,141.7	7,136.2	28.0	24.3	-173.37	10.2	901.9	1,630.6	1,580.7	49.98	32.626		
7,300.0	7,249.2	7,244.1	7,238.6	28.4	24.7	-173.42	9.6	903.8	1,643.4	1,592.6	50.71	32.409		
7,400.0	7,348.8	7,344.1	7,338.6	28.8	25.0	-173.42	8.6	905.7	1,653.4	1,602.0	51.41	32.158		
7,500.0	7,448.7	7,445.6	7,440.1	29.2	25.4	-173.41	7.4	907.5	1,660.7	1,608.6	52.13	31.860		
7,600.0	7,548.6	7,545.0	7,539.5	29.5	25.7	-173.39	6.3	909.2	1,665.5	1,612.7	52.82	31.529		
7,669.7	7,618.3	7,614.4	7,608.8	29.7	26.0	84.07	5.5	910.4	1,667.3	1,614.0	53.30	31.278		
7,700.0	7,648.6	7,644.1	7,638.6	29.8	26.1	84.09	5.1	911.0	1,667.8	1,614.3	53.51	31.169		
7,800.0	7,748.6	7,743.0	7,737.4	30.1	26.4	84.14	3.9	912.8	1,669.5	1,615.3	54.18	30.811		
7,900.0	7,848.6	7,842.5	7,836.9	30.5	26.8	84.18	2.8	914.7	1,671.2	1,616.4	54.87	30.461		
8,000.0	7,948.6	7,951.0	7,945.4	30.8	27.2	84.23	1.6	916.7	1,673.0	1,617.4	55.60	30.091		
8,100.0	8,048.6	8,071.0	8,065.4	31.1	27.6	84.25	1.2	917.5	1,673.6	1,617.2	56.38	29.682		
8,200.0	8,148.6	8,172.4	8,166.8	31.4	27.9	84.26	0.9	917.4	1,673.5	1,616.5	57.08	29.322		
8,203.8	8,152.4	8,176.1	8,170.5	31.4	27.9	84.26	0.9	917.4	1,673.5	1,616.4	57.10	29.309		
8,300.0	8,248.6	8,271.1	8,265.4	31.7	28.3	84.27	0.6	917.5	1,673.6	1,615.8	57.75	28.978		
8,400.0	8,348.6	8,371.4	8,365.8	32.0	28.6	84.28	0.2	917.6	1,673.6	1,615.2	58.44	28.639		
8,500.0	8,448.6	8,472.2	8,466.6	32.4	29.0	84.30	-0.3	917.7	1,673.7	1,614.5	59.13	28.305		
8,600.0	8,548.6	8,568.5	8,562.9	32.7	29.3	84.32	-0.9	917.9	1,673.8	1,614.0	59.80	27.990		
8,700.0	8,648.6	8,672.5	8,666.9	33.0	29.7	84.34	-1.7	918.1	1,673.9	1,613.4	60.51	27.665		
8,800.0	8,748.6	8,777.2	8,771.5	33.3	30.0	84.38	-2.6	918.0	1,673.8	1,612.6	61.22	27.342		
8,900.0	8,848.6	8,886.9	8,881.3	33.6	30.4	84.41	-3.7	917.6	1,673.3	1,611.3	61.95	27.010		
9,000.0	8,948.6	9,012.2	9,006.5	34.0	30.8	84.49	-6.0	915.8	1,671.7	1,609.0	62.75	26.642		
9,100.0	9,048.6	9,108.7	9,102.9	34.3	31.2	84.55	-8.2	913.7	1,669.3	1,605.9	63.42	26.320		
9,200.0	9,148.6	9,201.8	9,196.0	34.6	31.5	84.58	-9.3	912.0	1,667.4	1,603.3	64.08	26.019		
9,300.0	9,248.6	9,297.0	9,291.3	34.9	31.8	84.63	-10.8	910.6	1,665.8	1,601.0	64.75	25.726		
9,400.0	9,348.6	9,379.6	9,373.8	35.3	32.1	84.68	-12.2	909.8	1,664.7	1,599.4	65.36	25.470		
9,433.4	9,382.1	9,405.9	9,400.2	35.4	32.2	84.69	-12.5	909.8	1,664.6	1,599.1	65.56	25.392		
9,500.0	9,448.6	9,469.7	9,463.9	35.6	32.4	84.70	-12.7	909.9	1,664.7	1,598.7	66.00	25.221		
9,600.0	9,548.6	9,560.3	9,554.5	35.9	32.7	84.70	-12.8	910.2	1,665.1	1,598.4	66.65	24.983		
9,700.0	9,648.6	9,645.3	9,639.5	36.3	33.0	84.68	-12.1	911.2	1,666.3	1,599.0	67.26	24.773		
9,800.0	9,748.6	9,735.5	9,729.7	36.6	33.4	84.65	-11.2	912.9	1,668.3	1,600.4	67.90	24.570		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Stag Fed Com #503H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 333-MWD													Offset Well Error:	0.0 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		
9,900.0	9,848.6	9,836.8	9,831.0	36.9	33.7	84.62	-9.9	915.1	1,670.5	1,601.9	68.60	24.351		
10,000.0	9,948.6	9,940.3	9,934.4	37.2	34.1	84.57	-8.4	917.0	1,672.5	1,603.2	69.32	24.129		
10,100.0	10,048.6	10,044.5	10,038.6	37.6	34.4	84.52	-6.8	918.8	1,674.4	1,604.3	70.03	23.908		
10,200.0	10,148.6	10,166.5	10,160.3	37.9	34.9	84.72	-12.5	920.7	1,675.5	1,604.6	70.84	23.651		
10,300.0	10,248.6	10,275.5	10,267.1	38.2	35.2	85.45	-33.7	922.8	1,675.8	1,604.2	71.57	23.413		
10,400.0	10,348.6	10,382.6	10,367.0	38.6	35.6	86.76	-71.9	924.9	1,675.3	1,603.0	72.28	23.177		
10,400.7	10,349.4	10,383.2	10,367.5	38.6	35.6	86.77	-72.2	925.0	1,675.3	1,603.0	72.29	23.175		
10,500.0	10,448.6	10,460.9	10,433.9	38.9	35.8	88.15	-112.4	927.6	1,676.5	1,603.6	72.84	23.016		
10,528.4	10,477.0	10,507.0	10,470.2	39.0	36.0	89.11	-140.6	928.9	1,676.9	1,603.8	73.11	22.937		
10,550.0	10,498.6	10,538.8	10,493.9	39.1	36.1	-89.79	-161.8	929.4	1,677.2	1,603.9	73.30	22.882		
10,600.0	10,548.4	10,586.6	10,526.9	39.2	36.2	-88.62	-196.4	929.8	1,678.1	1,604.5	73.60	22.799		
10,650.0	10,597.7	10,630.3	10,553.9	39.4	36.4	-87.49	-230.8	929.8	1,679.3	1,605.5	73.87	22.732		
10,700.0	10,646.1	10,667.7	10,574.5	39.6	36.5	-86.47	-262.0	929.6	1,681.0	1,606.9	74.10	22.686		
10,750.0	10,693.1	10,702.7	10,591.3	39.7	36.6	-85.48	-292.7	929.2	1,683.0	1,608.7	74.28	22.656		
10,800.0	10,738.5	10,751.0	10,610.6	39.9	36.8	-84.16	-336.9	928.3	1,685.4	1,610.9	74.52	22.615		
10,850.0	10,782.0	10,827.8	10,632.1	40.0	37.0	-82.15	-410.4	924.5	1,687.3	1,612.4	74.89	22.529		
10,900.0	10,823.1	10,821.0	10,630.7	40.2	37.0	-82.10	-403.8	925.0	1,689.5	1,614.7	74.79	22.589		
10,950.0	10,861.6	10,851.2	10,636.4	40.4	37.1	-81.18	-433.4	923.3	1,691.8	1,616.9	74.87	22.597		
11,000.0	10,897.1	10,866.2	10,638.6	40.5	37.1	-80.58	-448.2	922.6	1,694.8	1,619.9	74.85	22.642		
11,050.0	10,929.5	10,881.6	10,640.5	40.7	37.2	-79.97	-463.5	922.2	1,698.2	1,623.3	74.83	22.693		
11,100.0	10,958.4	10,915.0	10,643.1	40.8	37.3	-79.05	-496.8	921.7	1,702.1	1,627.2	74.91	22.722		
11,150.0	10,983.6	10,915.0	10,643.1	41.0	37.3	-78.68	-496.8	921.7	1,705.8	1,631.0	74.83	22.796		
11,200.0	11,005.0	10,956.0	10,645.0	41.2	37.5	-77.80	-537.8	921.7	1,709.6	1,634.6	74.99	22.798		
11,250.0	11,022.4	11,002.6	10,647.4	41.4	37.7	-77.04	-584.3	921.6	1,712.7	1,637.5	75.23	22.765		
11,300.0	11,035.6	11,049.3	10,649.6	41.5	37.9	-76.48	-631.0	921.6	1,714.9	1,639.4	75.53	22.707		
11,350.0	11,044.6	11,092.2	10,651.4	41.8	38.0	-76.16	-673.8	921.6	1,716.3	1,640.4	75.85	22.628		
11,400.0	11,049.3	11,131.9	10,652.9	42.0	38.2	-76.03	-713.5	921.8	1,716.9	1,640.7	76.20	22.530		
11,428.4	11,050.0	11,154.5	10,653.6	42.1	38.4	-76.03	-736.1	922.0	1,716.9	1,640.5	76.43	22.464		
11,428.7	11,050.0	11,154.7	10,653.6	42.1	38.4	-76.03	-736.3	922.0	1,716.9	1,640.5	76.43	22.464		
11,500.0	11,050.0	11,221.1	10,655.8	42.4	38.7	-76.11	-802.6	922.8	1,716.7	1,639.6	77.13	22.259		
11,538.7	11,050.0	11,258.1	10,657.2	42.6	38.9	-76.15	-839.6	923.4	1,716.7	1,639.2	77.54	22.141		
11,600.0	11,050.0	11,295.7	10,658.5	43.0	39.1	-76.20	-877.1	924.2	1,717.1	1,639.1	78.04	22.004		
11,700.0	11,050.0	11,357.3	10,660.7	43.5	39.5	-76.29	-938.7	926.7	1,719.7	1,640.8	78.91	21.793		
11,800.0	11,050.0	11,434.4	10,663.3	44.2	40.0	-76.40	-1,015.6	931.2	1,724.0	1,643.9	80.01	21.547		
11,900.0	11,050.0	11,730.5	10,673.5	44.9	42.3	-76.74	-1,311.3	933.4	1,723.4	1,639.9	83.52	20.634		
12,000.0	11,050.0	11,920.5	10,676.5	45.6	43.9	-76.69	-1,500.4	916.2	1,712.9	1,626.8	86.06	19.903		
12,100.0	11,050.0	11,980.9	10,676.8	46.4	44.5	-76.65	-1,560.5	910.1	1,702.4	1,615.1	87.32	19.496		
12,200.0	11,050.0	12,014.0	10,676.7	47.2	44.8	-76.63	-1,593.5	907.3	1,694.5	1,606.2	88.30	19.192		
12,300.0	11,050.0	12,071.2	10,676.3	48.1	45.3	-76.59	-1,650.6	904.3	1,689.6	1,600.0	89.58	18.861		
12,386.4	11,050.0	12,108.0	10,676.0	48.9	45.7	-76.57	-1,687.4	904.0	1,688.4	1,597.8	90.54	18.647		
12,400.0	11,050.0	12,108.0	10,676.0	49.0	45.7	-76.57	-1,687.4	904.0	1,688.4	1,597.8	90.62	18.633		
12,500.0	11,050.0	12,156.4	10,675.6	50.0	46.2	-76.57	-1,735.8	905.3	1,690.7	1,598.8	91.82	18.413		
12,600.0	11,050.0	12,201.0	10,675.4	51.0	46.6	-76.58	-1,780.3	908.0	1,696.1	1,603.2	92.97	18.244		
12,700.0	11,050.0	12,267.4	10,675.2	52.0	47.3	-76.61	-1,846.4	913.8	1,704.2	1,609.7	94.48	18.037		
12,800.0	11,050.0	12,476.7	10,674.8	53.1	49.6	-76.72	-2,055.1	929.8	1,712.1	1,613.8	98.38	17.404		
12,900.0	11,050.0	12,603.1	10,676.1	54.2	51.0	-76.78	-2,181.4	932.9	1,713.7	1,612.6	101.02	16.964		
13,000.0	11,050.0	12,702.1	10,678.9	55.3	52.2	-76.88	-2,280.4	935.5	1,715.0	1,611.6	103.32	16.599		
13,100.0	11,050.0	12,812.0	10,681.8	56.4	53.5	-76.99	-2,390.2	937.9	1,715.9	1,610.0	105.84	16.211		
13,200.0	11,050.0	12,914.1	10,684.4	57.6	54.8	-77.08	-2,492.3	939.6	1,716.3	1,608.0	108.28	15.851		
13,300.0	11,050.0	13,010.0	10,687.1	58.8	56.0	-77.18	-2,588.2	941.4	1,716.9	1,606.3	110.67	15.515		
13,400.0	11,050.0	13,123.6	10,690.2	60.0	57.4	-77.29	-2,701.7	943.4	1,717.5	1,604.1	113.40	15.145		
13,432.2	11,050.0	13,164.2	10,691.2	60.4	57.9	-77.32	-2,742.2	943.8	1,717.4	1,603.0	114.36	15.018		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 333-MWD													Offset Well Error:	0.0 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		
13,500.0	11,050.0	13,206.5	10,692.3	61.2	58.5	-77.36	-2,784.5	944.6	1,717.7	1,602.1	115.63	14.855		
13,600.0	11,050.0	13,319.2	10,694.7	62.5	60.0	-77.45	-2,897.2	947.0	1,718.8	1,600.4	118.43	14.513		
13,700.0	11,050.0	13,373.9	10,695.9	63.8	60.7	-77.50	-2,951.9	948.2	1,720.1	1,599.9	120.19	14.311		
13,800.0	11,050.0	13,427.0	10,696.8	65.1	61.4	-77.55	-3,004.8	951.3	1,724.6	1,602.7	121.88	14.149		
13,900.0	11,050.0	13,615.0	10,700.3	66.4	63.9	-77.69	-3,192.7	956.8	1,725.4	1,599.1	126.27	13.665		
14,000.0	11,050.0	13,662.3	10,701.0	67.7	64.6	-77.72	-3,240.0	958.2	1,727.4	1,599.5	127.94	13.502		
14,100.0	11,050.0	13,711.0	10,701.6	69.0	65.2	-77.76	-3,288.6	961.2	1,732.4	1,602.9	129.57	13.371		
14,200.0	11,050.0	13,978.7	10,704.2	70.4	69.0	-77.86	-3,556.0	964.4	1,730.7	1,595.2	135.54	12.769		
14,300.0	11,050.0	14,090.8	10,704.3	71.7	70.5	-77.83	-3,668.1	961.1	1,727.2	1,588.8	138.46	12.474		
14,400.0	11,050.0	14,180.1	10,703.3	73.1	71.8	-77.78	-3,757.3	958.2	1,723.7	1,582.6	141.02	12.223		
14,500.0	11,050.0	14,247.4	10,702.4	74.5	72.8	-77.73	-3,824.6	956.8	1,721.3	1,578.1	143.20	12.020		
14,600.0	11,050.0	14,372.3	10,702.1	75.9	74.5	-77.71	-3,949.5	955.6	1,719.9	1,573.5	146.43	11.746		
14,700.0	11,050.0	14,454.6	10,702.9	77.3	75.7	-77.72	-4,031.8	954.3	1,717.6	1,568.7	148.94	11.532		
14,800.0	11,050.0	14,537.2	10,703.6	78.7	76.9	-77.74	-4,114.4	953.8	1,716.3	1,564.9	151.46	11.332		
14,900.0	11,050.0	14,674.4	10,705.4	80.1	78.9	-77.78	-4,251.6	952.7	1,714.6	1,559.6	155.02	11.061		
15,000.0	11,050.0	14,779.8	10,706.8	81.6	80.5	-77.81	-4,357.0	950.3	1,711.6	1,553.6	157.99	10.833		
15,100.0	11,050.0	14,909.4	10,709.7	83.0	82.4	-77.87	-4,486.5	946.4	1,707.6	1,546.2	161.41	10.580		
15,200.0	11,050.0	15,029.1	10,713.2	84.5	84.2	-77.94	-4,605.9	940.9	1,701.9	1,537.3	164.65	10.336		
15,300.0	11,050.0	15,139.5	10,716.0	85.9	85.8	-77.98	-4,716.2	934.9	1,695.4	1,527.7	167.74	10.107		
15,400.0	11,050.0	15,221.1	10,717.3	87.4	87.0	-78.00	-4,797.6	930.5	1,689.2	1,518.9	170.38	9.914		
15,500.0	11,050.0	15,298.4	10,718.0	88.9	88.2	-77.99	-4,874.9	927.1	1,684.2	1,511.2	172.94	9.738		
15,600.0	11,050.0	15,367.2	10,718.2	90.4	89.2	-77.98	-4,943.7	925.1	1,680.6	1,505.3	175.33	9.585		
15,700.0	11,050.0	15,435.6	10,718.2	91.8	90.2	-77.97	-5,012.0	924.5	1,679.1	1,501.4	177.68	9.450		
15,740.7	11,050.0	15,465.3	10,718.2	92.5	90.7	-77.97	-5,041.7	924.5	1,679.0	1,500.3	178.66	9.397		
15,800.0	11,050.0	15,508.6	10,718.2	93.3	91.3	-77.97	-5,085.1	925.0	1,679.2	1,499.2	180.09	9.325		
15,900.0	11,050.0	15,587.4	10,718.4	94.8	92.5	-77.99	-5,163.8	926.8	1,680.8	1,498.2	182.61	9.205		
16,000.0	11,050.0	15,664.6	10,718.3	96.3	93.7	-78.00	-5,240.9	929.5	1,683.7	1,498.6	185.07	9.098		
16,100.0	11,050.0	15,738.2	10,717.8	97.8	94.8	-78.01	-5,314.4	933.1	1,688.0	1,500.6	187.42	9.006		
16,200.0	11,050.0	15,808.2	10,717.4	99.4	95.9	-78.02	-5,384.3	937.7	1,694.0	1,504.3	189.65	8.932		
16,300.0	11,050.0	15,883.0	10,717.0	100.9	97.1	-78.05	-5,458.8	944.2	1,701.9	1,509.9	191.98	8.865		
16,400.0	11,050.0	15,949.7	10,716.5	102.4	98.1	-78.08	-5,525.2	951.1	1,711.4	1,517.4	194.04	8.820		
16,500.0	11,050.0	16,157.1	10,716.1	103.9	101.3	-78.16	-5,731.9	966.3	1,717.4	1,517.3	200.10	8.583		
16,600.0	11,050.0	16,275.5	10,716.2	105.5	103.2	-78.20	-5,850.2	971.2	1,720.9	1,517.3	203.60	8.452		
16,700.0	11,050.0	16,379.1	10,716.5	107.0	104.8	-78.23	-5,953.8	975.1	1,723.9	1,517.1	206.76	8.338		
16,800.0	11,050.0	16,800.0	10,717.4	108.5	111.3	-78.27	-6,095.6	978.0	1,725.1	1,510.1	215.04	8.022		
16,900.0	11,050.0	16,664.4	10,717.9	110.1	109.2	-78.27	-6,239.0	976.7	1,723.3	1,508.6	214.68	8.027		
17,000.0	11,050.0	16,762.1	10,718.1	111.6	110.7	-78.27	-6,336.7	975.2	1,721.1	1,503.4	217.69	7.906		
17,100.0	11,050.0	16,859.3	10,718.5	113.2	112.3	-78.26	-6,433.9	973.9	1,719.2	1,498.5	220.71	7.789		
17,200.0	11,050.0	16,970.4	10,718.9	114.7	114.0	-78.26	-6,545.0	972.2	1,716.9	1,493.0	223.98	7.666		
17,276.9	11,050.0	17,003.0	10,719.1	115.9	114.5	-78.26	-6,577.6	971.5	1,715.5	1,490.0	225.48	7.608		
17,300.0	11,050.0	17,003.0	10,719.1	116.3	114.5	-78.26	-6,577.6	971.5	1,715.6	1,489.9	225.69	7.602		
17,357.4	11,050.0	17,003.0	10,719.1	117.1	114.5	-78.26	-6,577.6	971.5	1,717.4	1,491.3	226.06	7.597 SF		

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

Anticollision Report

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Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 364-MWD												Offset Well Error:	0.0 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	
0.0	0.0	19.0	19.0	0.0	0.0	95.93	-96.8	932.4	937.4				
100.0	100.0	119.1	119.1	0.1	0.2	95.94	-97.1	932.4	937.4	937.1	0.33	2,879.040	
200.0	200.0	219.2	219.2	0.5	0.4	95.98	-97.7	932.3	937.4	936.6	0.85	1,102.845	
300.0	300.0	319.3	319.3	0.8	0.5	96.05	-98.7	932.2	937.4	936.0	1.37	682.046	
380.7	380.7	400.0	400.0	1.1	0.7	96.11	-99.8	932.0	937.4	935.6	1.80	521.475	
400.0	400.0	418.9	418.9	1.2	0.8	96.13	-100.1	932.0	937.4	935.4	2.00	467.671	
500.0	500.0	518.7	518.7	1.6	1.2	96.22	-101.5	931.9	937.4	934.7	2.72	344.409	
600.0	600.0	619.9	619.9	1.9	1.5	96.30	-102.8	931.7	937.4	933.9	3.44	272.169	
700.0	700.0	719.8	719.8	2.3	1.9	96.37	-104.0	931.5	937.3	933.1	4.16	225.235	
800.0	800.0	821.3	821.3	2.6	2.2	96.45	-105.3	931.2	937.1	932.2	4.88	191.849	
900.0	900.0	919.9	919.8	3.0	2.6	96.52	-106.3	930.9	936.9	931.3	5.60	167.399	
1,000.0	1,000.0	1,020.1	1,020.0	3.4	3.0	96.57	-107.2	930.7	936.9	930.6	6.31	148.364	
1,100.0	1,100.0	1,122.2	1,122.1	3.7	3.3	96.62	-107.9	930.4	936.7	929.6	7.04	133.073	
1,200.0	1,200.0	1,221.4	1,221.3	4.1	3.7	96.65	-108.5	930.0	936.3	928.6	7.75	120.797	
1,300.0	1,300.0	1,319.8	1,319.7	4.4	4.0	96.69	-109.0	929.8	936.2	927.7	8.46	110.631	
1,400.0	1,400.0	1,422.3	1,422.3	4.8	4.4	96.71	-109.4	929.6	936.0	926.8	9.19	101.895	
1,500.0	1,500.0	1,521.8	1,521.8	5.1	4.7	96.73	-109.6	929.2	935.7	925.8	9.90	94.543	
1,514.3	1,514.3	1,535.6	1,535.5	5.2	4.8	-160.71	-109.6	929.2	935.6	925.6	10.00	93.610	
1,600.0	1,600.0	1,620.4	1,620.3	5.5	5.1	-160.72	-109.7	929.0	936.3	925.7	10.59	88.452	
1,700.0	1,700.0	1,718.4	1,718.3	5.8	5.4	-160.77	-109.5	928.9	938.7	927.4	11.26	83.386	
1,800.0	1,799.9	1,811.8	1,811.8	6.2	5.7	-160.86	-109.2	929.4	943.3	931.3	11.91	79.219	
1,900.0	1,899.7	1,911.2	1,911.1	6.5	6.1	-161.00	-108.6	930.3	949.8	937.2	12.58	75.497	
2,000.0	1,999.4	2,010.7	2,010.6	6.9	6.4	-161.18	-107.9	931.1	958.0	944.8	13.26	72.257	
2,100.0	2,098.9	2,109.7	2,109.6	7.2	6.7	-161.38	-107.1	932.0	967.9	954.0	13.94	69.442	
2,200.0	2,198.3	2,208.0	2,207.9	7.6	7.1	-161.62	-106.1	933.0	979.6	965.0	14.62	67.005	
2,300.0	2,297.4	2,305.8	2,305.6	8.0	7.4	-161.90	-104.7	934.2	993.0	977.7	15.30	64.895	
2,400.0	2,396.4	2,403.3	2,403.2	8.3	7.7	-162.24	-103.0	935.5	1,007.4	991.4	15.98	63.023	
2,500.0	2,495.5	2,501.1	2,501.0	8.7	8.1	-162.58	-101.2	936.8	1,021.9	1,005.2	16.67	61.297	
2,600.0	2,594.5	2,597.8	2,597.6	9.1	8.4	-162.93	-99.2	938.4	1,036.6	1,019.3	17.36	59.725	
2,700.0	2,693.5	2,692.3	2,692.0	9.5	8.7	-163.26	-97.1	940.1	1,051.6	1,033.6	18.04	58.310	
2,800.0	2,792.5	2,784.5	2,784.2	9.9	9.0	-163.58	-95.1	942.3	1,067.2	1,048.5	18.71	57.050	
2,900.0	2,891.6	2,877.1	2,876.8	10.3	9.4	-163.90	-92.9	945.1	1,083.4	1,064.0	19.38	55.904	
3,000.0	2,990.6	2,970.7	2,970.3	10.7	9.7	-164.23	-90.5	948.4	1,100.1	1,080.0	20.06	54.845	
3,100.0	3,089.6	3,063.1	3,062.6	11.1	10.0	-164.55	-88.0	952.1	1,117.3	1,096.6	20.73	53.892	
3,200.0	3,188.6	3,158.7	3,158.1	11.5	10.4	-164.89	-85.3	956.3	1,135.0	1,113.6	21.42	52.986	
3,300.0	3,287.7	3,257.9	3,257.0	11.9	10.7	-165.23	-82.3	960.7	1,152.8	1,130.6	22.13	52.092	
3,400.0	3,386.7	3,369.4	3,368.4	12.3	11.1	-165.59	-79.1	965.3	1,170.2	1,147.3	22.90	51.110	
3,500.0	3,485.7	3,517.4	3,516.4	12.7	11.6	-165.94	-77.2	967.1	1,185.0	1,161.2	23.81	49.769	
3,600.0	3,584.8	3,728.8	3,727.4	13.1	12.3	-166.43	-73.7	956.1	1,193.8	1,169.0	24.84	48.067	
3,700.0	3,683.8	3,934.2	3,930.5	13.5	13.0	-166.95	-69.2	926.0	1,192.6	1,167.0	25.65	46.500	
3,800.0	3,782.8	4,071.8	4,064.9	13.9	13.5	-167.30	-65.9	897.0	1,184.8	1,158.5	26.34	44.979	
3,900.0	3,881.8	4,168.6	4,159.3	14.3	13.9	-167.57	-63.3	875.7	1,176.2	1,149.2	27.05	43.478	
4,000.0	3,980.9	4,267.7	4,255.9	14.7	14.3	-167.87	-60.2	854.0	1,167.7	1,140.0	27.77	42.057	
4,100.0	4,079.9	4,368.9	4,354.6	15.1	14.7	-168.17	-57.3	831.7	1,159.3	1,130.8	28.48	40.706	
4,200.0	4,178.9	4,471.5	4,454.6	15.5	15.1	-168.45	-54.9	808.9	1,150.5	1,121.3	29.19	39.411	
4,300.0	4,277.9	4,566.2	4,547.0	15.9	15.4	-168.69	-53.0	787.8	1,141.8	1,111.9	29.92	38.166	
4,400.0	4,377.0	4,655.9	4,634.5	16.3	15.8	-168.93	-51.2	768.6	1,133.9	1,103.3	30.64	37.003	
4,500.0	4,476.0	4,749.1	4,725.7	16.8	16.2	-169.21	-48.6	749.1	1,126.7	1,095.3	31.37	35.915	
4,600.0	4,575.0	4,845.0	4,819.4	17.2	16.6	-169.64	-43.4	729.7	1,120.1	1,088.0	32.10	34.895	
4,700.0	4,674.0	4,947.8	4,919.7	17.6	17.0	-170.21	-35.6	708.5	1,113.4	1,080.6	32.83	33.913	
4,800.0	4,773.1	5,046.0	5,015.3	18.0	17.4	-170.85	-26.6	688.3	1,106.8	1,073.2	33.57	32.973	
4,900.0	4,872.1	5,144.0	5,110.8	18.4	17.8	-171.51	-17.3	668.1	1,100.4	1,066.0	34.31	32.073	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 364-MWD												Offset Well Error:	0.0 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	
5,000.0	4,971.1	5,242.7	5,206.9	18.8	18.3	-172.18	-7.9	647.9	1,094.2	1,059.2	35.05	31.217	
5,100.0	5,070.2	5,342.4	5,304.0	19.2	18.7	-172.88	1.9	627.3	1,088.1	1,052.3	35.80	30.395	
5,200.0	5,169.2	5,441.6	5,400.6	19.7	19.1	-173.59	11.8	606.9	1,082.2	1,045.6	36.55	29.607	
5,300.0	5,268.2	5,540.9	5,497.3	20.1	19.6	-174.32	21.7	586.3	1,076.4	1,039.1	37.31	28.851	
5,400.0	5,367.2	5,640.0	5,593.7	20.5	20.0	-175.05	31.6	565.8	1,070.7	1,032.6	38.07	28.125	
5,500.0	5,466.3	5,736.0	5,687.2	20.9	20.4	-175.77	41.3	546.1	1,065.4	1,026.6	38.84	27.434	
5,600.0	5,565.3	5,835.1	5,783.6	21.3	20.9	-176.51	51.2	525.9	1,060.3	1,020.7	39.60	26.773	
5,700.0	5,664.3	5,928.4	5,874.6	21.7	21.3	-177.18	59.8	507.2	1,055.8	1,015.4	40.37	26.150	
5,800.0	5,763.3	6,024.8	5,968.8	22.2	21.8	-177.81	67.7	488.4	1,051.7	1,010.6	41.14	25.563	
5,900.0	5,862.4	6,124.7	6,066.6	22.6	22.2	-178.44	75.3	469.0	1,047.9	1,005.9	41.91	25.001	
6,000.0	5,961.4	6,223.1	6,162.8	23.0	22.6	-179.06	82.7	450.1	1,044.2	1,001.5	42.69	24.461	
6,100.0	6,060.4	6,323.5	6,261.1	23.4	23.1	-179.69	90.2	430.7	1,040.6	997.2	43.46	23.943	
6,200.0	6,159.4	6,422.7	6,367.9	23.8	23.6	-179.69	96.9	409.4	1,036.7	992.5	44.24	23.435	
6,300.0	6,258.5	6,536.8	6,469.9	24.2	24.1	-179.23	100.8	388.6	1,031.9	986.9	45.00	22.930	
6,400.0	6,357.5	6,637.1	6,568.3	24.7	24.5	-178.96	101.4	369.4	1,027.2	981.4	45.75	22.450	
6,500.0	6,456.5	6,734.7	6,664.1	25.1	24.9	-178.79	100.3	350.9	1,022.4	975.9	46.50	21.987	
6,600.0	6,555.6	6,856.8	6,783.9	25.5	25.5	-178.61	98.1	327.4	1,017.2	970.0	47.22	21.543	
6,700.0	6,654.6	6,959.4	6,884.2	25.9	25.9	-178.49	95.4	306.1	1,010.2	962.3	47.95	21.066	
6,800.0	6,753.6	7,051.8	6,974.7	26.3	26.3	-178.40	92.6	287.3	1,003.5	954.8	48.70	20.605	
6,900.0	6,852.6	7,149.2	7,070.1	26.8	26.8	-178.34	89.3	268.0	997.4	947.9	49.44	20.171	
7,000.0	6,951.7	7,264.2	7,182.6	27.2	27.3	-178.25	85.3	244.4	990.4	940.2	50.16	19.746	
7,100.0	7,050.7	7,363.9	7,279.9	27.6	27.7	-178.16	81.9	223.2	982.7	931.8	50.90	19.308	
7,136.4	7,086.7	7,398.7	7,313.9	27.8	27.9	-178.14	80.7	215.9	980.0	928.8	51.17	19.152	
7,200.0	7,149.8	7,458.6	7,372.5	28.0	28.2	-178.10	78.3	203.4	974.8	923.2	51.65	18.875	
7,300.0	7,249.2	7,549.9	7,461.9	28.4	28.6	-178.06	74.5	185.0	965.1	912.7	52.39	18.421	
7,400.0	7,348.8	7,644.8	7,554.9	28.8	29.0	-178.03	70.5	166.9	953.8	900.7	53.13	17.954	
7,500.0	7,448.7	7,755.9	7,663.6	29.2	29.5	-177.94	66.3	144.6	939.0	885.2	53.82	17.447	
7,600.0	7,548.6	7,855.0	7,760.5	29.5	30.0	-177.84	62.6	124.1	921.2	866.6	54.54	16.890	
7,669.7	7,618.3	7,916.9	7,821.1	29.7	30.3	-177.80	60.4	111.3	907.3	852.2	55.05	16.482	
7,700.0	7,648.6	7,938.2	7,841.9	29.8	30.3	-177.75	59.7	107.1	901.3	846.0	55.28	16.305	
7,800.0	7,748.6	8,009.1	7,911.6	30.1	30.7	-177.65	58.3	94.4	883.5	827.5	56.01	15.774	
7,900.0	7,848.6	8,080.6	7,982.3	30.5	31.0	-177.57	58.1	83.6	868.7	812.0	56.69	15.322	
8,000.0	7,948.6	8,151.5	8,052.7	30.8	31.3	-177.47	58.9	74.9	857.1	799.8	57.33	14.950	
8,100.0	8,048.6	8,223.7	8,124.5	31.1	31.5	-177.48	60.0	68.4	848.8	790.9	57.91	14.657	
8,200.0	8,148.6	8,297.8	8,198.6	31.4	31.8	-177.45	60.9	64.1	843.7	785.2	58.45	14.434	
8,300.0	8,248.6	8,374.5	8,275.2	31.7	32.1	-177.42	61.3	62.2	841.4	782.4	58.95	14.273	
8,400.0	8,348.6	8,469.7	8,370.4	32.0	32.4	-177.42	61.5	61.6	840.8	781.2	59.59	14.110	
8,500.0	8,448.6	8,569.1	8,469.8	32.4	32.7	-177.42	61.4	61.3	840.5	780.2	60.26	13.948	
8,600.0	8,548.6	8,671.0	8,571.7	32.7	33.0	-177.42	61.2	60.9	840.1	779.2	60.95	13.784	
8,700.0	8,648.6	8,771.6	8,672.4	33.0	33.3	-177.42	60.7	60.5	839.6	777.9	61.63	13.623	
8,800.0	8,748.6	8,872.7	8,773.4	33.3	33.6	-177.42	59.8	60.1	839.0	776.7	62.31	13.464	
8,900.0	8,848.6	8,974.7	8,875.4	33.6	33.9	-177.43	58.9	59.5	838.1	775.1	63.00	13.303	
9,000.0	8,948.6	9,073.6	8,974.3	34.0	34.3	-177.42	58.2	58.7	837.2	773.5	63.67	13.149	
9,100.0	9,048.6	9,172.3	9,073.0	34.3	34.6	-177.46	57.6	58.3	836.6	772.2	64.34	13.003	
9,200.0	9,148.6	9,280.1	9,180.8	34.6	34.9	-177.45	56.6	57.5	835.6	770.5	65.08	12.839	
9,300.0	9,248.6	9,387.8	9,288.5	34.9	35.3	-177.45	55.2	55.5	833.5	767.6	65.83	12.662	
9,400.0	9,348.6	9,485.2	9,385.9	35.3	35.6	-177.45	53.4	53.5	831.0	764.5	66.49	12.499	
9,500.0	9,448.6	9,591.1	9,491.7	35.6	35.9	-177.44	52.8	51.0	828.6	761.4	67.22	12.326	
9,600.0	9,548.6	9,672.9	9,573.4	35.9	36.2	-177.45	53.3	49.1	826.7	758.9	67.76	12.199	
9,628.0	9,576.6	9,695.0	9,595.6	36.0	36.3	-177.45	53.7	49.0	826.6	758.7	67.90	12.173	
9,700.0	9,648.6	9,763.3	9,663.8	36.3	36.5	-177.46	54.9	48.8	826.7	758.4	68.36	12.093	
9,800.0	9,748.6	9,878.0	9,778.6	36.6	36.9	-177.46	56.2	48.2	826.6	757.4	69.19	11.948	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Big Stag Fed Com #504H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 364-MWD													Offset Well Error:	0.0 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	
9,900.0	9,848.6	9,989.5	9,890.0	36.9	37.3	74.34	55.9	46.0	824.6	754.6	69.97	11.785		
9,982.8	9,931.4	10,049.9	9,950.4	37.2	37.5	74.32	55.9	45.3	823.7	753.3	70.35	11.709	CC	
10,000.0	9,948.6	10,063.2	9,963.7	37.2	37.5	74.32	56.0	45.3	823.7	753.3	70.43	11.696		
10,100.0	10,048.6	10,149.2	10,049.7	37.6	37.8	74.25	57.2	46.2	825.1	754.1	70.96	11.627		
10,200.0	10,148.6	10,243.5	10,143.9	37.9	38.1	74.19	58.8	48.3	827.6	756.1	71.57	11.563		
10,300.0	10,248.6	10,339.5	10,239.7	38.2	38.3	74.57	54.3	52.6	830.7	758.6	72.17	11.511		
10,400.0	10,348.6	10,457.2	10,353.6	38.6	38.6	76.53	27.4	62.5	833.2	760.4	72.88	11.433		
10,500.0	10,448.6	10,576.3	10,461.2	38.9	38.9	80.01	-21.9	74.4	834.8	761.3	73.49	11.359		
10,528.4	10,477.0	10,616.8	10,495.5	39.0	38.9	81.48	-43.0	78.0	834.9	761.2	73.70	11.328		
10,550.0	10,498.6	10,646.1	10,519.7	39.1	39.0	-97.04	-59.5	80.2	834.9	761.0	73.85	11.305		
10,600.0	10,548.4	10,705.4	10,564.8	39.2	39.1	-94.64	-97.5	84.4	835.3	761.2	74.12	11.269		
10,650.0	10,597.7	10,768.8	10,608.1	39.4	39.2	-91.92	-143.7	87.7	836.1	761.7	74.43	11.234		
10,700.0	10,646.1	10,835.5	10,650.4	39.6	39.3	-89.15	-195.4	89.3	836.9	762.2	74.78	11.192		
10,750.0	10,693.1	10,882.9	10,676.2	39.7	39.3	-87.09	-235.0	89.4	838.0	763.0	74.95	11.181		
10,800.0	10,738.5	10,928.7	10,697.3	39.9	39.4	-85.01	-275.6	88.8	839.5	764.5	75.05	11.186		
10,850.0	10,782.0	10,973.6	10,715.6	40.0	39.4	-83.00	-316.7	87.7	841.5	766.4	75.10	11.206		
10,900.0	10,823.1	11,018.3	10,731.7	40.2	39.5	-81.07	-358.3	86.2	843.8	768.7	75.10	11.236		
10,950.0	10,861.6	11,057.1	10,744.4	40.4	39.6	-79.46	-395.0	84.7	846.3	771.3	75.00	11.285		
11,000.0	10,897.1	11,097.4	10,756.2	40.5	39.7	-77.91	-433.5	83.0	848.9	774.0	74.88	11.336		
11,050.0	10,929.5	11,143.5	10,767.3	40.7	39.8	-76.30	-478.1	80.6	851.3	776.4	74.83	11.377		
11,100.0	10,958.4	11,188.5	10,774.6	40.8	39.9	-74.77	-522.4	77.3	853.1	778.4	74.71	11.420		
11,150.0	10,983.6	11,215.7	10,777.3	41.0	40.0	-73.84	-549.3	75.1	854.8	780.4	74.35	11.497		
11,200.0	11,005.0	11,238.7	10,779.2	41.2	40.1	-73.09	-572.3	73.8	856.9	782.9	73.98	11.582		
11,250.0	11,022.4	11,263.0	10,780.9	41.4	40.1	-72.40	-596.5	73.1	859.3	785.6	73.70	11.660		
11,300.0	11,035.6	11,304.4	10,783.7	41.5	40.3	-71.65	-637.8	72.5	861.5	787.8	73.72	11.686		
11,350.0	11,044.6	11,341.7	10,785.6	41.8	40.4	-71.21	-675.1	72.2	862.9	789.1	73.80	11.693		
11,400.0	11,049.3	11,379.3	10,786.9	42.0	40.6	-70.99	-712.6	72.3	863.7	789.7	73.98	11.675		
11,428.4	11,050.0	11,403.8	10,787.5	42.1	40.7	-70.98	-737.1	72.6	863.8	789.6	74.18	11.645		
11,428.7	11,050.0	11,404.1	10,787.5	42.1	40.7	-70.98	-737.4	72.6	863.8	789.6	74.18	11.645		
11,500.0	11,050.0	11,478.6	10,789.7	42.4	41.0	-71.13	-811.8	73.6	863.7	788.7	74.96	11.522		
11,600.0	11,050.0	11,585.2	10,795.0	43.0	41.6	-71.47	-918.3	74.5	862.3	786.0	76.26	11.307		
11,700.0	11,050.0	11,676.8	10,799.8	43.5	42.1	-71.79	-1,009.7	75.7	861.3	783.8	77.44	11.121		
11,733.9	11,050.0	11,707.1	10,801.3	43.8	42.3	-71.89	-1,040.1	76.3	861.2	783.4	77.86	11.061		
11,800.0	11,050.0	11,774.1	10,804.6	44.2	42.8	-72.12	-1,106.9	77.9	861.3	782.4	78.83	10.925		
11,900.0	11,050.0	11,876.8	10,809.2	44.9	43.5	-72.44	-1,209.5	79.6	860.9	780.5	80.41	10.707		
11,995.4	11,050.0	11,968.8	10,812.1	45.6	44.2	-72.64	-1,301.5	80.8	860.7	778.8	81.85	10.515		
12,000.0	11,050.0	11,973.2	10,812.2	45.6	44.2	-72.64	-1,305.8	80.9	860.7	778.8	81.92	10.506		
12,100.0	11,050.0	12,068.0	10,814.5	46.4	45.0	-72.81	-1,400.6	82.5	861.0	777.6	83.46	10.316		
12,200.0	11,050.0	12,166.5	10,816.1	47.2	45.8	-72.94	-1,499.1	84.5	861.8	776.7	85.15	10.121		
12,300.0	11,050.0	12,260.1	10,817.5	48.1	46.7	-73.05	-1,592.6	86.5	862.9	776.1	86.80	9.941		
12,400.0	11,050.0	12,355.8	10,818.9	49.0	47.5	-73.19	-1,688.3	89.4	864.8	776.2	88.59	9.762		
12,500.0	11,050.0	12,462.4	10,820.7	50.0	48.6	-73.35	-1,794.8	92.6	866.6	775.9	90.73	9.552		
12,600.0	11,050.0	12,589.9	10,821.7	51.0	49.9	-73.42	-1,922.3	93.5	866.5	773.0	93.43	9.274		
12,700.0	11,050.0	12,694.0	10,822.1	52.0	51.0	-73.40	-2,026.4	91.7	864.1	768.5	95.58	9.040		
12,800.0	11,050.0	12,780.5	10,822.2	53.1	51.9	-73.38	-2,112.9	90.9	862.6	765.3	97.33	8.863		
12,900.0	11,050.0	12,877.6	10,822.2	54.2	53.0	-73.37	-2,210.0	90.9	862.0	762.6	99.41	8.671		
13,000.0	11,050.0	12,975.7	10,822.7	55.3	54.1	-73.39	-2,308.1	91.3	861.6	760.0	101.60	8.481		
13,100.0	11,050.0	13,077.6	10,822.7	56.4	55.3	-73.39	-2,410.0	91.8	861.6	757.6	103.93	8.290		
13,200.0	11,050.0	13,202.8	10,822.8	57.6	56.8	-73.35	-2,535.2	90.3	859.8	752.8	106.95	8.039		
13,300.0	11,050.0	13,320.2	10,823.1	58.8	58.2	-73.27	-2,652.5	85.5	855.2	745.4	109.77	7.791		
13,400.0	11,050.0	13,407.6	10,823.7	60.0	59.3	-73.23	-2,739.8	81.8	850.4	738.6	111.81	7.606		
13,500.0	11,050.0	13,504.5	10,824.0	61.2	60.6	-73.17	-2,836.6	78.8	846.7	732.6	114.14	7.419		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 364-MWD												Offset Well Error:	0.0 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	
13,600.0	11,050.0	13,607.5	10,824.2	62.5	61.9	-73.11	-2,939.5	75.5	843.0	726.3	116.68	7.225	
13,700.0	11,050.0	13,700.3	10,824.5	63.8	63.1	-73.06	-3,032.3	72.6	839.4	720.5	118.95	7.057	
13,800.0	11,050.0	13,798.8	10,824.5	65.1	64.4	-73.00	-3,130.8	70.2	836.4	715.0	121.42	6.889	
13,900.0	11,050.0	13,879.9	10,824.2	66.4	65.5	-72.94	-3,211.9	69.0	834.6	711.2	123.36	6.766	
13,954.8	11,050.0	13,929.1	10,823.9	67.1	66.1	-72.92	-3,261.1	69.1	834.5	709.9	124.58	6.698	
14,000.0	11,050.0	13,971.4	10,823.7	67.7	66.7	-72.91	-3,303.4	69.4	834.5	708.9	125.65	6.642	
14,100.0	11,050.0	14,063.1	10,823.6	69.0	67.9	-72.92	-3,395.1	70.7	835.4	707.4	127.99	6.526	
14,200.0	11,050.0	14,178.0	10,824.7	70.4	69.5	-73.01	-3,510.0	72.6	836.1	704.8	131.25	6.370	
14,300.0	11,050.0	14,285.3	10,826.4	71.7	71.0	-73.11	-3,617.2	72.5	834.9	700.7	134.25	6.219	
14,366.0	11,050.0	14,340.2	10,826.8	72.6	71.7	-73.13	-3,672.2	72.6	834.5	698.8	135.67	6.151	
14,400.0	11,050.0	14,369.3	10,826.9	73.1	72.1	-73.14	-3,701.3	72.9	834.6	698.2	136.42	6.118	
14,500.0	11,050.0	14,473.4	10,827.5	74.5	73.6	-73.19	-3,805.4	73.9	834.8	695.4	139.33	5.991	
14,600.0	11,050.0	14,558.6	10,827.8	75.9	74.8	-73.23	-3,890.5	75.5	835.8	694.3	141.56	5.905	
14,700.0	11,050.0	14,676.0	10,828.0	77.3	76.5	-73.25	-4,008.0	76.9	836.3	691.3	145.00	5.768	
14,772.7	11,050.0	14,747.2	10,828.5	78.3	77.5	-73.28	-4,079.1	77.4	836.3	689.3	146.99	5.689	
14,800.0	11,050.0	14,772.7	10,828.6	78.7	77.8	-73.30	-4,104.6	77.7	836.3	688.6	147.70	5.662	
14,900.0	11,050.0	14,871.0	10,828.8	80.1	79.2	-73.32	-4,202.9	78.8	836.7	686.3	150.46	5.561	
15,000.0	11,050.0	14,964.2	10,828.0	81.6	80.6	-73.26	-4,296.1	79.4	837.1	684.1	152.98	5.472	
15,100.0	11,050.0	15,047.4	10,826.4	83.0	81.8	-73.20	-4,379.2	81.7	839.6	684.5	155.09	5.414	
15,200.0	11,050.0	15,162.9	10,824.4	84.5	83.5	-73.11	-4,494.7	84.7	842.0	683.5	158.50	5.312	
15,300.0	11,050.0	15,267.4	10,824.0	85.9	85.0	-73.10	-4,599.2	86.0	842.7	681.2	161.53	5.217	
15,400.0	11,050.0	15,361.4	10,823.7	87.4	86.4	-73.10	-4,693.2	87.6	843.9	679.7	164.16	5.141	
15,500.0	11,050.0	15,466.1	10,824.4	88.9	88.0	-73.18	-4,797.8	90.1	845.4	678.1	167.30	5.053	
15,600.0	11,050.0	15,575.8	10,825.6	90.4	89.6	-73.28	-4,907.5	91.6	845.8	675.1	170.65	4.956	
15,645.3	11,050.0	15,619.7	10,826.2	91.0	90.3	-73.32	-4,951.4	92.0	845.7	673.7	171.95	4.918	
15,700.0	11,050.0	15,669.8	10,826.8	91.8	91.0	-73.36	-5,001.5	92.6	845.8	672.4	173.41	4.878	
15,800.0	11,050.0	15,769.9	10,827.5	93.3	92.5	-73.43	-5,101.6	94.1	846.5	670.1	176.39	4.799	
15,900.0	11,050.0	15,873.1	10,828.4	94.8	94.1	-73.49	-5,204.8	95.3	846.8	667.3	179.50	4.718	
16,000.0	11,050.0	15,967.9	10,829.3	96.3	95.5	-73.57	-5,299.6	96.7	847.3	665.0	182.31	4.647	
16,100.0	11,050.0	16,075.7	10,830.4	97.8	97.1	-73.65	-5,407.3	98.0	847.6	661.9	185.64	4.566	
16,100.6	11,050.0	16,076.3	10,830.5	97.9	97.1	-73.65	-5,408.0	98.0	847.6	661.9	185.66	4.565	
16,200.0	11,050.0	16,160.2	10,831.3	99.4	98.4	-73.73	-5,491.8	99.7	848.5	660.5	188.05	4.512	
16,300.0	11,050.0	16,267.7	10,832.3	100.9	100.1	-73.83	-5,599.3	101.9	849.7	658.3	191.42	4.439	
16,400.0	11,050.0	16,367.7	10,833.3	102.4	101.6	-73.91	-5,699.3	103.7	850.6	656.1	194.47	4.374	
16,500.0	11,050.0	16,476.0	10,834.2	103.9	103.2	-73.98	-5,807.6	104.9	850.8	653.0	197.84	4.300	
16,600.0	11,050.0	16,577.5	10,835.5	105.5	104.8	-74.06	-5,909.0	105.6	850.5	649.5	200.97	4.232	
16,673.2	11,050.0	16,647.7	10,836.6	106.6	105.9	-74.14	-5,979.3	106.1	850.3	647.2	203.12	4.186	
16,700.0	11,050.0	16,671.5	10,836.6	107.0	106.3	-74.14	-6,003.0	106.3	850.3	646.5	203.82	4.172	
16,800.0	11,050.0	16,770.8	10,835.2	108.5	107.8	-74.06	-6,102.3	107.3	851.1	644.3	206.72	4.117	
16,900.0	11,050.0	16,873.6	10,835.7	110.1	109.4	-74.09	-6,205.2	108.1	851.1	641.2	209.88	4.055	
17,000.0	11,050.0	16,975.8	10,836.5	111.6	111.0	-74.15	-6,307.3	109.1	851.2	638.2	213.05	3.995	
17,064.2	11,050.0	17,038.7	10,837.3	112.6	111.9	-74.20	-6,370.2	109.6	851.1	636.1	214.99	3.959	
17,100.0	11,050.0	17,071.4	10,837.6	113.2	112.5	-74.23	-6,402.9	109.9	851.1	635.2	215.98	3.941	
17,200.0	11,050.0	17,166.0	10,838.6	114.7	113.9	-74.31	-6,497.5	111.5	851.9	633.0	218.88	3.892	
17,300.0	11,050.0	17,270.7	10,839.0	116.3	115.6	-74.35	-6,602.2	113.1	852.7	630.5	222.15	3.838	
17,357.4	11,050.0	17,329.1	10,839.4	117.1	116.5	-74.38	-6,660.6	113.8	852.9	628.9	223.96	3.808 ES, SF	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 200-MWD												Offset Well Error:	0.0 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	
0.0	0.0	18.5	18.5	0.0	0.0	94.51	-73.3	928.8	931.6				
100.0	100.0	115.8	115.8	0.1	0.2	94.48	-72.9	929.0	931.8	931.5	0.31	3,030.448	
200.0	200.0	213.3	213.3	0.5	0.4	94.41	-71.8	929.5	932.3	931.5	0.84	1,106.023	
300.0	300.0	311.7	311.7	0.8	0.7	94.34	-70.6	930.3	933.0	931.5	1.55	600.375	
400.0	400.0	409.2	409.2	1.2	1.1	94.28	-69.7	931.3	933.9	931.7	2.26	413.030	
500.0	500.0	508.9	508.9	1.6	1.4	94.25	-69.3	932.4	935.0	932.0	2.97	314.333	
600.0	600.0	609.7	609.6	1.9	1.8	94.22	-68.8	933.5	936.1	932.4	3.69	253.500	
700.0	700.0	715.7	715.7	2.3	2.1	94.20	-68.6	934.2	936.8	932.3	4.43	211.660	
800.0	800.0	820.5	820.4	2.6	2.5	94.21	-68.8	934.2	936.8	931.6	5.14	182.299	
900.0	900.0	923.2	923.2	3.0	2.8	94.21	-68.8	934.1	936.6	930.8	5.84	160.335	
1,000.0	1,000.0	1,023.2	1,023.2	3.4	3.2	94.22	-68.9	933.4	935.9	929.4	6.54	143.088	
1,100.0	1,100.0	1,124.2	1,124.2	3.7	3.5	94.22	-68.9	933.1	935.6	928.4	7.25	129.096	
1,200.0	1,200.0	1,226.9	1,226.8	4.1	3.9	94.22	-68.8	932.3	934.9	926.9	7.96	117.401	
1,300.0	1,300.0	1,324.6	1,324.5	4.4	4.2	94.22	-68.7	931.6	934.1	925.5	8.66	107.839	
1,400.0	1,400.0	1,421.9	1,421.9	4.8	4.6	94.22	-68.7	931.1	933.7	924.3	9.36	99.735	
1,500.0	1,500.0	1,521.1	1,521.0	5.1	4.9	94.22	-68.7	930.8	933.4	923.3	10.07	92.706	
1,509.4	1,509.4	1,529.9	1,529.8	5.2	5.0	-163.22	-68.7	930.8	933.4	923.2	10.13	92.123	
1,600.0	1,600.0	1,628.8	1,628.7	5.5	5.3	-163.24	-68.6	930.4	933.8	923.0	10.79	86.509 ES	
1,700.0	1,700.0	1,729.3	1,729.3	5.8	5.7	-163.27	-68.6	928.9	934.8	923.4	11.49	81.386	
1,800.0	1,799.9	1,816.8	1,816.7	6.2	6.0	-163.34	-68.3	928.7	938.8	926.6	12.14	77.359	
1,900.0	1,899.7	1,912.6	1,912.5	6.5	6.3	-163.46	-67.8	929.1	945.0	932.2	12.81	73.748	
2,000.0	1,999.4	2,002.7	2,002.6	6.9	6.6	-163.62	-66.9	930.2	953.6	940.1	13.47	70.784	
2,100.0	2,098.9	2,089.7	2,089.6	7.2	6.9	-163.86	-64.8	932.3	965.1	951.0	14.12	68.352	
2,200.0	2,198.3	2,174.4	2,174.1	7.6	7.2	-164.20	-61.3	935.6	979.6	964.8	14.76	66.384	
2,300.0	2,297.4	2,254.2	2,253.6	8.0	7.5	-164.61	-56.5	940.1	997.5	982.1	15.37	64.895	
2,400.0	2,396.4	2,335.6	2,334.6	8.3	7.8	-165.14	-50.5	946.1	1,017.9	1,001.9	15.99	63.671	
2,500.0	2,495.5	2,428.7	2,427.0	8.7	8.1	-165.77	-42.9	954.0	1,039.6	1,022.9	16.66	62.404	
2,600.0	2,594.5	2,522.0	2,519.7	9.1	8.5	-166.39	-35.2	962.1	1,061.6	1,044.2	17.33	61.241	
2,700.0	2,693.5	2,613.6	2,610.5	9.5	8.8	-166.99	-27.1	970.5	1,084.1	1,066.1	18.00	60.217	
2,800.0	2,792.5	2,704.3	2,700.4	9.9	9.2	-167.57	-19.1	979.3	1,107.3	1,088.6	18.67	59.311	
2,900.0	2,891.6	2,797.0	2,792.4	10.3	9.5	-168.10	-11.7	988.7	1,131.0	1,111.6	19.35	58.462	
3,000.0	2,990.6	2,888.3	2,882.9	10.7	9.8	-168.59	-4.6	998.3	1,155.1	1,135.1	20.02	57.712	
3,100.0	3,089.6	2,984.9	2,978.7	11.1	10.2	-169.08	2.9	1,008.7	1,179.7	1,159.0	20.72	56.946	
3,200.0	3,188.6	3,080.9	3,073.9	11.5	10.6	-169.53	9.8	1,019.0	1,204.2	1,182.8	21.41	56.234	
3,300.0	3,287.7	3,177.0	3,169.2	11.9	11.0	-169.95	16.4	1,029.5	1,228.9	1,206.8	22.11	55.572	
3,400.0	3,386.7	3,272.4	3,263.7	12.3	11.3	-170.35	23.1	1,039.8	1,253.6	1,230.8	22.81	54.961	
3,500.0	3,485.7	3,367.8	3,358.3	12.7	11.7	-170.75	30.1	1,050.3	1,278.6	1,255.1	23.51	54.390	
3,600.0	3,584.8	3,491.5	3,481.1	13.1	12.2	-171.22	38.5	1,062.9	1,302.8	1,278.5	24.37	53.461	
3,700.0	3,683.8	3,596.9	3,585.9	13.5	12.6	-171.57	45.0	1,072.0	1,325.5	1,300.4	25.12	52.759	
3,800.0	3,782.8	3,690.7	3,679.1	13.9	12.9	-171.88	50.7	1,080.0	1,348.2	1,322.3	25.81	52.225	
3,900.0	3,881.8	3,791.6	3,779.5	14.3	13.3	-172.22	57.4	1,088.5	1,370.8	1,344.2	26.55	51.636	
4,000.0	3,980.9	3,888.8	3,876.1	14.7	13.7	-172.55	64.0	1,096.5	1,393.3	1,366.0	27.26	51.114	
4,100.0	4,079.9	3,983.2	3,970.0	15.1	14.1	-172.87	70.7	1,104.4	1,415.9	1,388.0	27.95	50.650	
4,200.0	4,178.9	4,078.4	4,064.6	15.5	14.4	-173.18	77.4	1,112.5	1,438.8	1,410.2	28.66	50.209	
4,300.0	4,277.9	4,177.8	4,163.4	15.9	14.8	-173.50	84.7	1,120.9	1,461.7	1,432.3	29.38	49.746	
4,400.0	4,377.0	4,275.2	4,260.1	16.3	15.2	-173.82	92.1	1,129.0	1,484.5	1,454.4	30.10	49.322	
4,500.0	4,476.0	4,373.1	4,357.4	16.8	15.6	-174.14	99.9	1,137.1	1,507.4	1,476.5	30.82	48.912	
4,600.0	4,575.0	4,472.3	4,455.9	17.2	16.0	-174.47	108.1	1,145.1	1,530.1	1,498.6	31.55	48.505	
4,700.0	4,674.0	4,569.7	4,552.6	17.6	16.4	-174.80	116.5	1,152.9	1,552.9	1,520.6	32.26	48.130	
4,800.0	4,773.1	4,675.6	4,657.8	18.0	16.8	-175.15	125.7	1,161.2	1,575.5	1,542.5	33.03	47.697	
4,900.0	4,872.1	4,779.3	4,760.9	18.4	17.2	-175.46	133.9	1,168.6	1,597.5	1,563.7	33.79	47.282	
5,000.0	4,971.1	4,874.3	4,855.4	18.8	17.5	-175.72	141.3	1,175.4	1,619.4	1,584.9	34.49	46.953	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 200-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	4,968.3	4,948.9	19.2	17.9	-175.99	148.8	1,182.3	1,641.6	1,606.4	35.19	46.652	
5,200.0	5,169.2	5,090.9	5,070.7	19.7	18.4	-176.31	158.0	1,190.8	1,663.4	1,627.4	36.05	46.143	
5,300.0	5,268.2	5,200.1	5,179.6	20.1	18.8	-176.54	164.7	1,197.1	1,684.0	1,647.1	36.83	45.723	
5,400.0	5,367.2	5,296.3	5,275.4	20.5	19.2	-176.72	170.2	1,202.6	1,704.3	1,666.7	37.54	45.403	
5,500.0	5,466.3	5,395.6	5,374.4	20.9	19.5	-176.91	175.8	1,208.1	1,724.5	1,686.3	38.26	45.072	
5,600.0	5,565.3	5,494.8	5,473.3	21.3	19.9	-177.08	181.4	1,213.6	1,744.7	1,705.8	38.99	44.752	
5,700.0	5,664.3	5,591.7	5,570.0	21.7	20.3	-177.25	186.8	1,218.9	1,764.9	1,725.2	39.70	44.458	
5,800.0	5,763.3	5,690.6	5,668.5	22.2	20.6	-177.42	192.3	1,224.4	1,785.2	1,744.8	40.42	44.163	
5,900.0	5,862.4	5,771.8	5,749.5	22.6	21.0	-177.56	196.8	1,229.1	1,805.6	1,764.6	41.05	43.988	
6,000.0	5,961.4	5,844.6	5,821.9	23.0	21.2	-177.70	201.7	1,234.2	1,827.5	1,785.8	41.62	43.908	
6,100.0	6,060.4	5,932.2	5,909.0	23.4	21.6	-177.87	208.0	1,241.0	1,850.2	1,807.9	42.28	43.762	
6,200.0	6,159.4	6,032.7	6,008.9	23.8	22.0	-178.07	215.5	1,248.9	1,873.1	1,830.1	43.02	43.542	
6,300.0	6,258.5	6,125.4	6,101.1	24.2	22.3	-178.26	222.5	1,256.2	1,896.0	1,852.3	43.71	43.378	
6,400.0	6,357.5	6,223.6	6,198.7	24.7	22.7	-178.46	230.2	1,264.0	1,919.1	1,874.6	44.43	43.189	
6,500.0	6,456.5	6,323.1	6,297.6	25.1	23.1	-178.66	238.1	1,271.8	1,942.1	1,896.9	45.17	42.997	
6,600.0	6,555.6	6,426.3	6,400.2	25.5	23.5	-178.86	246.2	1,279.6	1,964.9	1,918.9	45.92	42.785	
6,700.0	6,654.6	6,532.1	6,505.3	25.9	23.9	-179.06	254.2	1,287.4	1,987.3	1,940.7	46.69	42.560	
6,800.0	6,753.6	6,615.8	6,588.6	26.3	24.3	-179.21	260.5	1,293.3	2,009.7	1,962.3	47.33	42.459	
6,900.0	6,852.6	6,683.0	6,655.3	26.8	24.5	-179.33	265.7	1,299.1	2,033.4	1,985.5	47.86	42.487	
7,000.0	6,951.7	6,771.3	6,743.0	27.2	24.9	-179.48	272.7	1,307.4	2,058.0	2,009.5	48.52	42.414	
7,100.0	7,050.7	6,878.2	6,849.1	27.6	25.3	-179.65	280.9	1,317.5	2,082.6	2,033.3	49.31	42.239	
7,136.4	7,086.7	6,922.1	6,892.7	27.8	25.5	-179.72	284.1	1,321.4	2,091.4	2,041.7	49.62	42.145	
7,200.0	7,149.8	6,994.2	6,964.4	28.0	25.8	-179.82	289.1	1,327.6	2,105.9	2,055.7	50.14	41.997	
7,300.0	7,249.2	7,106.3	7,075.9	28.4	26.2	-179.95	296.2	1,336.9	2,126.2	2,075.2	50.95	41.731	
7,400.0	7,348.8	7,222.9	7,191.9	28.8	26.6	-179.92	302.8	1,345.7	2,143.1	2,091.3	51.78	41.392	
7,500.0	7,448.7	7,312.2	7,280.9	29.2	27.0	-179.83	308.0	1,352.1	2,157.1	2,104.7	52.43	41.140	
7,600.0	7,548.6	7,406.4	7,374.6	29.5	27.4	-179.69	314.8	1,359.1	2,169.1	2,116.0	53.12	40.835	
7,669.7	7,618.3	7,480.1	7,447.9	29.7	27.6	-179.02	320.2	1,364.6	2,175.9	2,122.3	53.64	40.566	
7,700.0	7,648.6	7,513.4	7,480.9	29.8	27.8	-176.98	322.5	1,367.0	2,178.5	2,124.6	53.87	40.441	
7,800.0	7,748.6	7,623.7	7,590.7	30.1	28.2	-176.83	330.0	1,374.7	2,186.8	2,132.2	54.63	40.027	
7,900.0	7,848.6	7,726.4	7,693.0	30.5	28.6	-176.70	336.6	1,381.4	2,194.8	2,139.4	55.35	39.650	
8,000.0	7,948.6	7,802.4	7,768.6	30.8	28.9	-176.60	341.8	1,386.8	2,203.3	2,147.3	55.91	39.405	
8,100.0	8,048.6	7,878.1	7,843.9	31.1	29.2	-176.49	347.6	1,392.9	2,212.8	2,156.4	56.47	39.189	
8,200.0	8,148.6	7,955.9	7,921.1	31.4	29.5	-176.37	354.3	1,399.8	2,223.4	2,166.4	57.03	38.989	
8,300.0	8,248.6	8,051.2	8,015.5	31.7	29.9	-176.21	362.9	1,408.8	2,234.8	2,177.1	57.71	38.727	
8,400.0	8,348.6	8,163.6	8,127.1	32.0	30.3	-176.03	372.3	1,419.2	2,245.8	2,187.3	58.50	38.389	
8,500.0	8,448.6	8,222.6	8,385.0	32.4	31.3	-175.76	387.5	1,436.2	2,254.6	2,194.5	60.11	37.510	
8,600.0	8,548.6	8,565.9	8,528.2	32.7	31.8	-175.68	391.6	1,438.3	2,256.5	2,195.5	60.99	36.995	
8,700.0	8,648.6	8,666.3	8,628.6	33.0	32.2	-175.62	394.2	1,439.5	2,258.2	2,196.6	61.69	36.606	
8,800.0	8,748.6	8,767.0	8,729.2	33.3	32.5	-175.57	396.7	1,440.6	2,260.0	2,197.6	62.39	36.225	
8,900.0	8,848.6	8,872.2	8,834.4	33.6	32.9	-175.51	399.1	1,441.8	2,261.6	2,198.5	63.10	35.840	
9,000.0	8,948.6	9,004.3	8,966.5	34.0	33.3	-175.47	401.2	1,442.4	2,262.6	2,198.6	63.92	35.397	
9,100.0	9,048.6	9,125.3	9,087.5	34.3	33.7	-175.44	402.1	1,441.6	2,262.0	2,197.3	64.67	34.976	
9,200.0	9,148.6	9,252.5	9,214.7	34.6	34.1	-175.40	403.1	1,439.3	2,260.5	2,195.0	65.43	34.546	
9,300.0	9,248.6	9,352.1	9,314.2	34.9	34.5	-175.36	404.1	1,436.7	2,258.2	2,192.1	66.11	34.159	
9,400.0	9,348.6	9,432.3	9,394.4	35.3	34.7	-175.32	405.0	1,435.1	2,256.6	2,189.8	66.72	33.819	
9,500.0	9,448.6	9,516.4	9,478.5	35.6	35.0	-175.29	406.2	1,434.2	2,255.8	2,188.5	67.35	33.493	
9,600.0	9,548.6	9,635.5	9,597.5	35.9	35.4	-175.23	408.1	1,432.5	2,254.9	2,186.8	68.10	33.110	
9,700.0	9,648.6	9,729.2	9,691.2	36.3	35.7	-175.17	410.2	1,430.6	2,253.5	2,184.7	68.77	32.769	
9,800.0	9,748.6	9,810.1	9,772.1	36.6	36.0	-175.11	412.5	1,429.6	2,253.0	2,183.6	69.39	32.468	
9,900.0	9,848.6	9,907.4	9,869.3	36.9	36.3	-175.02	415.5	1,428.4	2,252.6	2,182.5	70.07	32.146	
9,905.0	9,853.6	9,910.7	9,872.6	36.9	36.3	-175.02	415.6	1,428.3	2,252.6	2,182.5	70.10	32.133	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 200-MWD												Offset Well Error:	0.0 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	
10,000.0	9,948.6	9,978.0	9,939.9	37.2	36.6	74.99	417.0	1,428.5	2,253.3	2,182.6	70.66	31.891	
10,100.0	10,048.6	10,053.9	10,015.8	37.6	36.8	74.98	417.7	1,429.8	2,255.1	2,183.9	71.25	31.652	
10,200.0	10,148.6	10,157.5	10,119.4	37.9	37.2	75.00	417.5	1,432.4	2,257.5	2,185.5	71.95	31.374	
10,300.0	10,248.6	10,264.0	10,225.9	38.2	37.5	75.04	416.7	1,434.8	2,259.5	2,186.8	72.67	31.093	
10,400.0	10,348.6	10,364.8	10,326.7	38.6	37.9	75.08	415.5	1,437.0	2,261.3	2,187.9	73.36	30.826	
10,500.0	10,448.6	10,458.2	10,420.0	38.9	38.2	75.13	413.9	1,439.3	2,263.3	2,189.3	74.01	30.580	
10,528.4	10,477.0	10,488.2	10,450.0	39.0	38.3	75.15	413.4	1,440.1	2,263.9	2,189.7	74.21	30.505	
10,550.0	10,498.6	10,511.1	10,472.8	39.1	38.3	-104.44	413.0	1,440.7	2,264.4	2,190.0	74.36	30.450	
10,600.0	10,548.4	10,565.5	10,527.2	39.2	38.5	-104.32	412.1	1,442.0	2,266.4	2,191.7	74.72	30.333	
10,650.0	10,597.7	10,622.0	10,583.6	39.4	38.7	-104.22	410.5	1,443.4	2,269.3	2,194.2	75.07	30.229	
10,700.0	10,646.1	10,880.2	10,831.5	39.6	39.4	-104.01	346.0	1,453.2	2,271.7	2,195.8	75.84	29.952	
10,750.0	10,693.1	11,707.0	11,259.1	39.7	40.2	-93.29	-281.2	1,453.7	2,269.2	2,193.0	76.14	29.801	
10,800.0	10,738.5	11,718.7	11,259.1	39.9	40.2	-94.17	-292.8	1,453.3	2,257.9	2,181.3	76.63	29.464	
10,850.0	10,782.0	11,734.0	11,259.1	40.0	40.3	-94.86	-308.1	1,452.9	2,247.9	2,170.8	77.10	29.154	
10,900.0	10,823.1	11,782.6	11,259.3	40.2	40.4	-94.74	-356.7	1,451.5	2,238.9	2,161.2	77.64	28.836	
10,950.0	10,861.6	11,837.4	11,259.8	40.4	40.6	-94.50	-411.5	1,449.3	2,230.6	2,152.4	78.17	28.535	
11,000.0	10,897.1	11,881.3	11,259.9	40.5	40.7	-94.46	-455.4	1,447.2	2,223.1	2,144.4	78.68	28.255	
11,050.0	10,929.5	11,930.9	11,259.8	40.7	40.9	-94.33	-504.9	1,444.7	2,216.1	2,137.0	79.18	27.990	
11,100.0	10,958.4	11,951.3	11,259.8	40.8	41.0	-94.64	-525.2	1,443.8	2,210.1	2,130.5	79.57	27.775	
11,150.0	10,983.6	11,978.3	11,259.7	41.0	41.1	-94.79	-552.3	1,442.7	2,205.0	2,125.0	79.97	27.572	
11,200.0	11,005.0	12,016.0	11,259.6	41.2	41.3	-94.80	-589.9	1,441.6	2,200.9	2,120.5	80.40	27.374	
11,250.0	11,022.4	12,043.9	11,259.6	41.4	41.4	-94.89	-617.8	1,440.8	2,197.6	2,116.8	80.79	27.200	
11,300.0	11,035.6	12,085.8	11,259.5	41.5	41.6	-94.87	-659.7	1,439.9	2,194.9	2,113.6	81.24	27.016	
11,350.0	11,044.6	12,140.0	11,259.4	41.8	41.9	-94.84	-713.8	1,438.7	2,192.7	2,110.9	81.76	26.818	
11,400.0	11,049.3	12,209.8	11,259.2	42.0	42.2	-94.89	-783.7	1,436.7	2,190.6	2,108.2	82.37	26.594	
11,428.4	11,050.0	12,224.9	11,259.1	42.1	42.3	-94.99	-798.8	1,436.3	2,189.5	2,106.9	82.59	26.510	
11,428.7	11,050.0	12,225.1	11,259.1	42.1	42.3	-94.99	-798.9	1,436.3	2,189.5	2,106.9	82.59	26.509	
11,500.0	11,050.0	12,271.0	11,258.9	42.4	42.6	-94.98	-844.8	1,435.4	2,187.5	2,104.3	83.19	26.294	
11,600.0	11,050.0	12,337.3	11,258.6	43.0	43.0	-94.98	-911.1	1,434.9	2,186.2	2,102.1	84.12	25.990	
11,641.6	11,050.0	12,365.5	11,258.5	43.2	43.2	-94.97	-939.3	1,435.0	2,186.1	2,101.5	84.53	25.861	
11,700.0	11,050.0	12,408.3	11,258.4	43.5	43.4	-94.97	-982.2	1,435.4	2,186.3	2,101.1	85.14	25.678	
11,800.0	11,050.0	12,499.2	11,257.5	44.2	44.1	-94.95	-1,073.0	1,437.0	2,187.3	2,100.9	86.41	25.313	
11,900.0	11,050.0	12,627.9	11,256.1	44.9	45.0	-94.91	-1,201.7	1,438.3	2,187.6	2,099.5	88.10	24.830	
11,954.4	11,050.0	12,685.7	11,255.4	45.3	45.5	-94.89	-1,259.5	1,438.6	2,187.4	2,098.5	88.96	24.588	
12,000.0	11,050.0	12,706.4	11,255.1	45.6	45.6	-94.88	-1,280.2	1,438.9	2,187.6	2,098.1	89.46	24.454	
12,100.0	11,050.0	12,770.0	11,254.6	46.4	46.2	-94.87	-1,343.8	1,440.5	2,189.4	2,098.7	90.74	24.129	
12,200.0	11,050.0	12,902.1	11,253.4	47.2	47.3	-94.83	-1,475.8	1,444.2	2,191.6	2,098.8	92.78	23.621	
12,300.0	11,050.0	13,026.9	11,252.1	48.1	48.5	-94.79	-1,600.6	1,445.4	2,191.8	2,096.9	94.85	23.107	
12,359.7	11,050.0	13,083.7	11,251.5	48.7	49.0	-94.78	-1,657.4	1,445.7	2,191.7	2,095.8	95.95	22.842	
12,400.0	11,050.0	13,118.8	11,251.1	49.0	49.3	-94.77	-1,692.5	1,446.0	2,191.8	2,095.1	96.66	22.674	
12,500.0	11,050.0	13,205.0	11,250.0	50.0	50.2	-94.74	-1,778.7	1,447.1	2,192.3	2,093.8	98.48	22.262	
12,600.0	11,050.0	13,313.8	11,248.8	51.0	51.3	-94.70	-1,887.5	1,448.8	2,193.2	2,092.6	100.62	21.797	
12,700.0	11,050.0	13,421.5	11,247.8	52.0	52.4	-94.68	-1,995.1	1,449.8	2,193.4	2,090.6	102.82	21.333	
12,800.0	11,050.0	13,524.2	11,246.7	53.1	53.6	-94.65	-2,097.8	1,450.5	2,193.5	2,088.4	105.02	20.886	
12,805.7	11,050.0	13,530.0	11,246.7	53.1	53.6	-94.65	-2,103.7	1,450.6	2,193.5	2,088.3	105.15	20.861	
12,900.0	11,050.0	13,612.7	11,245.7	54.2	54.5	-94.62	-2,186.3	1,451.4	2,193.7	2,086.6	107.10	20.482	
13,000.0	11,050.0	13,725.3	11,244.4	55.3	55.8	-94.59	-2,299.0	1,452.5	2,194.0	2,084.4	109.55	20.028	
13,004.6	11,050.0	13,730.6	11,244.3	55.3	55.9	-94.58	-2,304.2	1,452.5	2,194.0	2,084.3	109.66	20.007	
13,100.0	11,050.0	13,797.3	11,243.8	56.4	56.7	-94.57	-2,370.9	1,453.5	2,194.7	2,083.1	111.51	19.682	
13,200.0	11,050.0	13,909.3	11,243.3	57.6	58.0	-94.56	-2,482.9	1,455.4	2,195.7	2,081.7	114.05	19.253	
13,300.0	11,050.0	13,984.7	11,243.0	58.8	58.9	-94.54	-2,558.3	1,456.9	2,197.0	2,080.9	116.13	18.919	
13,400.0	11,050.0	14,108.4	11,243.1	60.0	60.4	-94.54	-2,681.9	1,459.1	2,198.1	2,079.2	118.93	18.483	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 200-MWD												Offset Well Error:	0.0 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	
13,500.0	11,050.0	14,185.0	11,243.3	61.2	61.4	-94.55	-2,758.5	1,460.6	2,199.5	2,078.4	121.09	18.164	
13,600.0	11,050.0	14,306.3	11,243.7	62.5	62.9	-94.55	-2,879.8	1,462.9	2,200.8	2,076.9	123.94	17.756	
13,700.0	11,050.0	14,403.8	11,244.4	63.8	64.2	-94.57	-2,977.3	1,464.2	2,201.6	2,075.1	126.48	17.406	
13,800.0	11,050.0	14,488.5	11,245.1	65.1	65.3	-94.59	-3,062.0	1,465.8	2,202.9	2,074.0	128.86	17.095	
13,900.0	11,050.0	14,581.8	11,245.8	66.4	66.5	-94.60	-3,155.2	1,468.0	2,204.6	2,073.3	131.40	16.779	
14,000.0	11,050.0	14,689.9	11,246.8	67.7	68.0	-94.62	-3,263.3	1,470.6	2,206.6	2,072.4	134.19	16.443	
14,100.0	11,050.0	14,818.5	11,247.7	69.0	69.7	-94.64	-3,391.9	1,472.4	2,207.3	2,070.0	137.33	16.073	
14,200.0	11,050.0	14,927.9	11,248.2	70.4	71.2	-94.66	-3,501.3	1,473.0	2,207.3	2,067.1	140.20	15.744	
14,255.1	11,050.0	14,979.2	11,248.5	71.1	71.9	-94.66	-3,552.6	1,473.2	2,207.3	2,065.6	141.66	15.582	
14,300.0	11,050.0	15,019.6	11,248.7	71.7	72.5	-94.67	-3,593.0	1,473.5	2,207.3	2,064.5	142.82	15.455	
14,400.0	11,050.0	15,104.0	11,249.3	73.1	73.7	-94.68	-3,677.4	1,474.4	2,207.9	2,062.5	145.35	15.190	
14,500.0	11,050.0	15,193.8	11,249.9	74.5	74.9	-94.70	-3,767.2	1,476.0	2,209.0	2,061.1	147.98	14.928	
14,600.0	11,050.0	15,328.4	11,250.2	75.9	76.8	-94.70	-3,901.8	1,477.9	2,209.9	2,058.6	151.35	14.601	
14,604.6	11,050.0	15,335.4	11,250.2	76.0	76.9	-94.70	-3,908.8	1,477.9	2,209.9	2,058.4	151.52	14.585	
14,700.0	11,050.0	15,383.9	11,250.4	77.3	77.6	-94.71	-3,957.2	1,478.9	2,210.9	2,057.5	153.46	14.407	
14,800.0	11,050.0	15,477.5	11,251.3	78.7	78.9	-94.73	-4,050.8	1,481.5	2,213.2	2,057.0	156.21	14.168	
14,900.0	11,050.0	15,568.4	11,252.0	80.1	80.2	-94.74	-4,141.7	1,484.0	2,215.4	2,056.4	158.92	13.940	
15,000.0	11,050.0	15,756.9	11,253.6	81.6	83.0	-94.78	-4,330.1	1,487.2	2,217.1	2,053.8	163.26	13.580	
15,100.0	11,050.0	15,888.4	11,254.6	83.0	84.9	-94.81	-4,461.6	1,484.6	2,214.4	2,047.8	166.62	13.290	
15,200.0	11,050.0	15,970.2	11,255.3	84.5	86.1	-94.83	-4,543.4	1,483.0	2,212.0	2,042.7	169.27	13.068	
15,300.0	11,050.0	16,071.7	11,256.0	85.9	87.5	-94.86	-4,644.8	1,481.5	2,209.9	2,037.7	172.22	12.832	
15,400.0	11,050.0	16,169.6	11,256.7	87.4	89.0	-94.88	-4,742.7	1,480.0	2,207.8	2,032.7	175.13	12.607	
15,500.0	11,050.0	16,279.5	11,257.5	88.9	90.6	-94.91	-4,852.6	1,478.0	2,205.4	2,027.2	178.23	12.374	
15,600.0	11,050.0	16,371.1	11,257.5	90.4	92.0	-94.91	-4,944.2	1,476.5	2,203.2	2,022.1	181.07	12.167	
15,700.0	11,050.0	16,486.3	11,258.1	91.8	93.7	-94.93	-5,059.4	1,474.4	2,200.8	2,016.6	184.28	11.943	
15,800.0	11,050.0	16,592.9	11,258.5	93.3	95.3	-94.95	-5,166.0	1,471.6	2,197.6	2,010.3	187.36	11.729	
15,900.0	11,050.0	16,676.2	11,258.5	94.8	96.5	-94.95	-5,249.2	1,469.8	2,194.8	2,004.7	190.11	11.545	
16,000.0	11,050.0	16,755.4	11,258.0	96.3	97.7	-94.95	-5,328.4	1,468.8	2,193.0	2,000.2	192.80	11.374	
16,100.0	11,050.0	16,844.3	11,257.8	97.8	99.0	-94.94	-5,417.3	1,468.5	2,192.0	1,996.3	195.64	11.204	
16,200.0	11,050.0	16,970.1	11,258.3	99.4	101.0	-94.96	-5,543.1	1,467.2	2,190.3	1,991.2	199.08	11.002	
16,300.0	11,050.0	17,059.6	11,258.2	100.9	102.3	-94.96	-5,632.6	1,465.9	2,188.3	1,986.3	201.95	10.836	
16,400.0	11,050.0	17,155.7	11,258.2	102.4	103.8	-94.96	-5,728.7	1,465.3	2,187.1	1,982.1	204.94	10.672	
16,500.0	11,050.0	17,276.4	11,257.8	103.9	105.6	-94.96	-5,849.3	1,463.8	2,185.1	1,976.8	208.32	10.489	
16,600.0	11,050.0	17,345.7	11,257.5	105.5	106.7	-94.95	-5,918.6	1,462.9	2,183.2	1,972.4	210.89	10.352	
16,651.5	11,050.0	17,376.2	11,257.5	106.2	107.1	-94.95	-5,949.2	1,462.9	2,183.0	1,970.9	212.12	10.291	
16,700.0	11,050.0	17,409.2	11,257.6	107.0	107.6	-94.96	-5,982.1	1,463.2	2,183.2	1,969.9	213.33	10.234	
16,800.0	11,050.0	17,488.7	11,257.7	108.5	108.9	-94.96	-6,061.6	1,464.7	2,184.4	1,968.4	216.03	10.111	
16,900.0	11,050.0	17,604.1	11,257.3	110.1	110.7	-94.94	-6,177.0	1,466.7	2,185.5	1,966.1	219.41	9.961	
17,000.0	11,050.0	17,688.5	11,257.4	111.6	112.0	-94.94	-6,261.4	1,468.3	2,186.8	1,964.6	222.21	9.841	
17,100.0	11,050.0	17,765.0	11,257.6	113.2	113.2	-94.94	-6,337.9	1,470.5	2,189.0	1,964.1	224.86	9.735	
17,200.0	11,050.0	17,880.3	11,257.7	114.7	115.0	-94.94	-6,453.2	1,474.0	2,191.4	1,963.1	228.26	9.600	
17,300.0	11,050.0	17,982.3	11,257.7	116.3	116.5	-94.94	-6,555.1	1,476.8	2,193.6	1,962.2	231.42	9.479	
17,357.4	11,050.0	18,029.0	11,257.5	117.1	117.3	-94.93	-6,601.8	1,478.0	2,194.7	1,961.7	233.00	9.419 SF	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 325-MWD												Offset Well Error:	0.0 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	
0.0	0.0	0.0	0.0	0.0	0.0	12.92	7,634.2	1,750.6	7,832.6				
100.0	100.0	46.0	46.0	0.1	0.1	12.92	7,634.2	1,750.6	7,832.3	7,832.1	0.21	N/A	
200.0	200.0	168.6	168.6	0.5	0.3	12.91	7,633.9	1,750.3	7,832.1	7,831.3	0.77	N/A	
300.0	300.0	291.2	291.2	0.8	0.5	12.91	7,633.4	1,749.7	7,831.6	7,830.2	1.33	5,877.936	
400.0	400.0	398.8	398.8	1.2	0.8	12.91	7,632.7	1,749.1	7,830.8	7,828.8	2.01	3,894.435	
500.0	500.0	517.2	517.2	1.6	1.2	12.91	7,631.7	1,748.9	7,830.0	7,827.2	2.79	2,804.300	
600.0	600.0	653.0	652.9	1.9	1.7	12.91	7,630.1	1,748.4	7,828.7	7,825.0	3.64	2,152.756	
700.0	700.0	772.6	772.6	2.3	2.1	12.91	7,628.2	1,747.8	7,827.1	7,822.6	4.42	1,769.384	
800.0	800.0	800.0	934.6	2.6	2.2	12.91	7,624.3	1,747.1	7,824.4	7,819.5	4.88	1,603.002	
900.0	900.0	1,031.5	1,031.3	3.0	3.1	12.91	7,621.6	1,746.8	7,821.6	7,815.6	6.07	1,289.353	
1,000.0	1,000.0	1,080.0	1,079.9	3.4	3.3	12.91	7,620.5	1,746.8	7,819.5	7,812.9	6.60	1,185.380	
1,100.0	1,100.0	1,160.0	1,159.9	3.7	3.5	12.91	7,619.4	1,747.1	7,818.1	7,810.9	7.24	1,080.005	
1,200.0	1,200.0	1,202.7	1,202.5	4.1	3.7	12.92	7,619.0	1,747.3	7,817.1	7,809.3	7.75	1,008.801	
1,300.0	1,300.0	1,323.1	1,322.9	4.4	4.1	12.92	7,617.7	1,747.7	7,816.1	7,807.6	8.54	915.772	
1,400.0	1,400.0	1,425.9	1,425.8	4.8	4.5	12.93	7,616.5	1,748.0	7,815.0	7,805.7	9.26	843.884	
1,500.0	1,500.0	1,526.6	1,526.4	5.1	4.8	12.93	7,615.3	1,747.9	7,813.9	7,803.9	9.98	782.999	
1,600.0	1,600.0	1,634.2	1,634.0	5.5	5.2	115.51	7,614.0	1,748.0	7,813.1	7,802.3	10.71	729.350	
1,647.8	1,647.8	1,657.9	1,657.7	5.7	5.3	115.51	7,613.7	1,748.2	7,813.0	7,802.0	10.96	713.080	
1,700.0	1,700.0	1,687.9	1,687.7	5.8	5.4	115.52	7,613.4	1,748.5	7,813.3	7,802.0	11.24	695.232	
1,800.0	1,799.9	1,745.3	1,745.1	6.2	5.6	115.53	7,613.0	1,749.5	7,814.8	7,803.0	11.78	663.338	
1,900.0	1,899.7	1,818.0	1,817.8	6.5	5.9	115.55	7,612.7	1,751.4	7,817.6	7,805.2	12.38	631.456	
2,000.0	1,999.4	1,865.2	1,864.9	6.9	6.0	115.55	7,612.7	1,752.9	7,821.7	7,808.8	12.89	606.853	
2,100.0	2,098.9	1,911.0	1,910.7	7.2	6.2	115.53	7,613.0	1,754.0	7,827.0	7,813.6	13.40	584.257	
2,200.0	2,198.3	1,977.3	1,977.1	7.6	6.4	115.53	7,613.8	1,755.0	7,833.6	7,819.6	13.97	560.552	
2,300.0	2,297.4	2,110.6	2,110.3	8.0	6.8	115.57	7,616.7	1,755.0	7,841.4	7,826.6	14.78	530.451	
2,400.0	2,396.4	2,199.0	2,198.7	8.3	7.1	115.64	7,618.5	1,753.8	7,849.2	7,833.7	15.45	508.140	
2,500.0	2,495.5	2,242.2	2,241.8	8.7	7.3	115.67	7,619.6	1,753.1	7,857.4	7,841.4	15.96	492.267	
2,600.0	2,594.5	2,291.0	2,290.6	9.1	7.5	115.71	7,621.1	1,752.5	7,866.2	7,849.7	16.50	476.809	
2,700.0	2,693.5	2,545.5	2,545.0	9.5	8.3	115.91	7,626.4	1,748.7	7,873.3	7,855.6	17.75	443.468	
2,800.0	2,792.5	2,604.4	2,603.9	9.9	8.5	115.96	7,627.3	1,748.5	7,880.9	7,862.5	18.34	429.820	
2,900.0	2,891.6	2,669.0	2,668.5	10.3	8.7	116.02	7,628.3	1,748.9	7,888.8	7,869.8	18.94	416.576	
3,000.0	2,990.6	18,245.5	10,720.3	10.7	131.3	-175.12	26.8	980.8	7,874.0	7,805.0	68.99	114.125	
3,100.0	3,089.6	18,249.4	10,720.3	11.1	131.3	-175.01	22.9	980.7	7,778.0	7,708.8	69.20	112.402	
3,200.0	3,188.6	18,253.4	10,720.4	11.5	131.4	-174.91	18.9	980.7	7,682.1	7,612.7	69.42	110.665	
3,300.0	3,287.7	18,257.3	10,720.4	11.9	131.5	-174.81	15.0	980.7	7,586.4	7,516.7	69.65	108.915	
3,400.0	3,386.7	18,261.3	10,720.4	12.3	131.5	-174.71	11.0	980.7	7,490.7	7,420.8	69.91	107.153	
3,500.0	3,485.7	18,265.2	10,720.5	12.7	131.6	-174.60	7.1	980.6	7,395.1	7,325.0	70.18	105.380	
3,600.0	3,584.8	18,269.2	10,720.5	13.1	131.6	-174.50	3.1	980.6	7,299.7	7,229.2	70.46	103.598	
3,700.0	3,683.8	18,273.1	10,720.5	13.5	131.7	-174.40	-0.8	980.6	7,204.4	7,133.6	70.77	101.807	
3,800.0	3,782.8	18,277.1	10,720.6	13.9	131.8	-174.30	-4.8	980.6	7,109.2	7,038.1	71.09	100.009	
3,900.0	3,881.8	18,281.0	10,720.6	14.3	131.8	-174.20	-8.8	980.6	7,014.2	6,942.7	71.42	98.206	
4,000.0	3,980.9	18,273.0	10,720.5	14.7	131.7	-174.40	-0.7	980.6	6,919.3	6,847.6	71.68	96.536	
4,100.0	4,079.9	18,273.0	10,720.5	15.1	131.7	-174.40	-0.7	980.6	6,824.5	6,752.5	72.01	94.767	
4,200.0	4,178.9	18,273.0	10,720.5	15.5	131.7	-174.40	-0.7	980.6	6,729.9	6,657.5	72.37	92.993	
4,300.0	4,277.9	18,273.0	10,720.5	15.9	131.7	-174.40	-0.7	980.6	6,635.4	6,562.7	72.74	91.217	
4,400.0	4,377.0	18,273.0	10,720.5	16.3	131.7	-174.40	-0.7	980.6	6,541.1	6,468.0	73.14	89.439	
4,500.0	4,476.0	18,273.0	10,720.5	16.8	131.7	-174.40	-0.7	980.6	6,447.0	6,373.5	73.55	87.660	
4,600.0	4,575.0	18,273.0	10,720.5	17.2	131.7	-174.40	-0.7	980.6	6,353.1	6,279.1	73.98	85.881	
4,700.0	4,674.0	18,273.0	10,720.5	17.6	131.7	-174.40	-0.7	980.6	6,259.3	6,184.9	74.42	84.103	
4,800.0	4,773.1	18,273.0	10,720.5	18.0	131.7	-174.40	-0.7	980.6	6,165.8	6,090.9	74.89	82.327	
4,900.0	4,872.1	18,273.0	10,720.5	18.4	131.7	-174.40	-0.7	980.6	6,072.4	5,997.0	75.38	80.553	
5,000.0	4,971.1	18,273.0	10,720.5	18.8	131.7	-174.40	-0.7	980.6	5,979.3	5,903.4	75.90	78.783	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 325-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	18,273.0	10,720.5	19.2	131.7	-174.40	-0.7	980.6	5,886.4	5,809.9	76.43	77.017	
5,200.0	5,169.2	18,273.0	10,720.5	19.7	131.7	-174.40	-0.7	980.6	5,793.7	5,716.7	76.99	75.255	
5,300.0	5,268.2	18,273.0	10,720.5	20.1	131.7	-174.40	-0.7	980.6	5,701.3	5,623.7	77.57	73.500	
5,400.0	5,367.2	18,273.0	10,720.5	20.5	131.7	-174.40	-0.7	980.6	5,609.1	5,530.9	78.18	71.750	
5,500.0	5,466.3	18,273.0	10,720.5	20.9	131.7	-174.40	-0.7	980.6	5,517.2	5,438.4	78.81	70.008	
5,600.0	5,565.3	18,273.0	10,720.5	21.3	131.7	-174.40	-0.7	980.6	5,425.6	5,346.2	79.47	68.273	
5,700.0	5,664.3	18,273.0	10,720.5	21.7	131.7	-174.40	-0.7	980.6	5,334.3	5,254.2	80.16	66.547	
5,800.0	5,763.3	18,273.0	10,720.5	22.2	131.7	-174.40	-0.7	980.6	5,243.3	5,162.5	80.88	64.831	
5,900.0	5,862.4	18,273.0	10,720.5	22.6	131.7	-174.40	-0.7	980.6	5,152.7	5,071.1	81.63	63.124	
6,000.0	5,961.4	18,273.0	10,720.5	23.0	131.7	-174.40	-0.7	980.6	5,062.4	4,980.0	82.41	61.428	
6,100.0	6,060.4	18,273.0	10,720.5	23.4	131.7	-174.40	-0.7	980.6	4,972.5	4,889.2	83.23	59.744	
6,200.0	6,159.4	18,273.0	10,720.5	23.8	131.7	-174.40	-0.7	980.6	4,882.9	4,798.8	84.08	58.073	
6,300.0	6,258.5	18,273.0	10,720.5	24.2	131.7	-174.40	-0.7	980.6	4,793.8	4,708.8	84.97	56.414	
6,400.0	6,357.5	18,273.0	10,720.5	24.7	131.7	-174.40	-0.7	980.6	4,705.1	4,619.2	85.91	54.770	
6,500.0	6,456.5	18,273.0	10,720.5	25.1	131.7	-174.40	-0.7	980.6	4,616.9	4,530.0	86.88	53.141	
6,600.0	6,555.6	18,273.0	10,720.5	25.5	131.7	-174.40	-0.7	980.6	4,529.1	4,441.2	87.90	51.528	
6,700.0	6,654.6	18,273.0	10,720.5	25.9	131.7	-174.40	-0.7	980.6	4,441.9	4,353.0	88.96	49.931	
6,800.0	6,753.6	18,273.0	10,720.5	26.3	131.7	-174.40	-0.7	980.6	4,355.3	4,265.2	90.07	48.353	
6,900.0	6,852.6	18,273.0	10,720.5	26.8	131.7	-174.40	-0.7	980.6	4,269.2	4,177.9	91.24	46.793	
7,000.0	6,951.7	18,273.0	10,720.5	27.2	131.7	-174.40	-0.7	980.6	4,183.7	4,091.3	92.45	45.253	
7,100.0	7,050.7	18,273.0	10,720.5	27.6	131.7	-174.40	-0.7	980.6	4,098.9	4,005.2	93.72	43.734	
7,136.4	7,086.7	18,273.0	10,720.5	27.8	131.7	-174.40	-0.7	980.6	4,068.2	3,974.0	94.20	43.187	
7,200.0	7,149.8	18,273.0	10,720.5	28.0	131.7	-174.26	-0.7	980.6	4,014.5	3,919.5	95.04	42.239	
7,300.0	7,249.2	18,273.0	10,720.5	28.4	131.7	-174.01	-0.7	980.6	3,929.5	3,833.2	96.38	40.773	
7,400.0	7,348.8	18,273.0	10,720.5	28.8	131.7	-173.74	-0.7	980.6	3,843.9	3,746.2	97.72	39.338	
7,500.0	7,448.7	18,273.0	10,720.5	29.2	131.7	-173.46	-0.7	980.6	3,757.6	3,658.5	99.06	37.933	
7,600.0	7,548.6	18,273.0	10,720.5	29.5	131.7	-173.15	-0.7	980.6	3,670.7	3,570.3	100.41	36.557	
7,669.7	7,618.3	18,273.0	10,720.5	29.7	131.7	84.52	-0.7	980.6	3,609.7	3,508.3	101.35	35.616	
7,700.0	7,648.6	18,273.0	10,720.5	29.8	131.7	84.52	-0.7	980.6	3,583.2	3,481.4	101.76	35.212	
7,800.0	7,748.6	18,273.0	10,720.5	30.1	131.7	84.52	-0.7	980.6	3,496.0	3,392.9	103.16	33.891	
7,900.0	7,848.6	18,273.0	10,720.5	30.5	131.7	84.52	-0.7	980.6	3,409.6	3,305.0	104.62	32.590	
8,000.0	7,948.6	18,273.0	10,720.5	30.8	131.7	84.52	-0.7	980.6	3,323.9	3,217.8	106.16	31.310	
8,100.0	8,048.6	18,273.0	10,720.5	31.1	131.7	84.52	-0.7	980.6	3,239.1	3,131.3	107.78	30.054	
8,200.0	8,148.6	18,273.0	10,720.5	31.4	131.7	84.52	-0.7	980.6	3,155.1	3,045.6	109.47	28.821	
8,300.0	8,248.6	18,273.0	10,720.5	31.7	131.7	84.52	-0.7	980.6	3,072.1	2,960.8	111.25	27.614	
8,400.0	8,348.6	18,273.0	10,720.5	32.0	131.7	84.52	-0.7	980.6	2,990.1	2,877.0	113.12	26.433	
8,500.0	8,448.6	18,273.0	10,720.5	32.4	131.7	84.52	-0.7	980.6	2,909.3	2,794.2	115.08	25.281	
8,600.0	8,548.6	18,273.0	10,720.5	32.7	131.7	84.52	-0.7	980.6	2,829.7	2,712.6	117.13	24.158	
8,700.0	8,648.6	18,273.0	10,720.5	33.0	131.7	84.52	-0.7	980.6	2,751.4	2,632.1	119.28	23.066	
8,800.0	8,748.6	18,273.0	10,720.5	33.3	131.7	84.52	-0.7	980.6	2,674.6	2,553.1	121.53	22.008	
8,900.0	8,848.6	18,273.0	10,720.5	33.6	131.7	84.52	-0.7	980.6	2,599.3	2,475.4	123.88	20.983	
9,000.0	8,948.6	18,273.0	10,720.5	34.0	131.7	84.52	-0.7	980.6	2,525.8	2,399.5	126.32	19.995	
9,100.0	9,048.6	18,273.0	10,720.5	34.3	131.7	84.52	-0.7	980.6	2,454.1	2,325.3	128.86	19.044	
9,200.0	9,148.6	18,273.0	10,720.5	34.6	131.7	84.52	-0.7	980.6	2,384.5	2,253.0	131.49	18.134	
9,300.0	9,248.6	18,273.0	10,720.5	34.9	131.7	84.52	-0.7	980.6	2,317.1	2,182.9	134.21	17.265	
9,400.0	9,348.6	18,273.0	10,720.5	35.3	131.7	84.52	-0.7	980.6	2,252.1	2,115.1	137.00	16.439	
9,500.0	9,448.6	18,273.0	10,720.5	35.6	131.7	84.52	-0.7	980.6	2,189.8	2,049.9	139.85	15.658	
9,600.0	9,548.6	18,273.0	10,720.5	35.9	131.7	84.52	-0.7	980.6	2,130.3	1,987.6	142.74	14.924	
9,700.0	9,648.6	18,273.0	10,720.5	36.3	131.7	84.52	-0.7	980.6	2,074.0	1,928.3	145.65	14.239	
9,800.0	9,748.6	18,273.0	10,720.5	36.6	131.7	84.52	-0.7	980.6	2,021.0	1,872.5	148.55	13.605	
9,900.0	9,848.6	18,273.0	10,720.5	36.9	131.7	84.52	-0.7	980.6	1,971.7	1,820.3	151.41	13.022	
10,000.0	9,948.6	18,273.0	10,720.5	37.2	131.7	84.52	-0.7	980.6	1,926.3	1,772.2	154.19	12.494	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 325-MWD												Offset Well Error:	0.0 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	
10,100.0	10,048.6	18,273.0	10,720.5	37.6	131.7	84.52	-0.7	980.6	1,885.2	1,728.3	156.83	12.020	
10,200.0	10,148.6	18,273.0	10,720.5	37.9	131.7	84.52	-0.7	980.6	1,848.5	1,689.2	159.31	11.604	
10,300.0	10,248.6	18,273.0	10,720.5	38.2	131.7	84.52	-0.7	980.6	1,816.6	1,655.1	161.55	11.245	
10,400.0	10,348.6	18,273.0	10,720.5	38.6	131.7	84.52	-0.7	980.6	1,789.8	1,626.2	163.53	10.945	
10,500.0	10,448.6	18,273.0	10,720.5	38.9	131.7	84.52	-0.7	980.6	1,768.1	1,603.0	165.17	10.705	
10,528.4	10,477.0	18,273.0	10,720.5	39.0	131.7	84.52	-0.7	980.6	1,763.0	1,597.4	165.58	10.648	
10,550.0	10,498.6	18,273.0	10,720.5	39.1	131.7	-95.49	-0.7	980.6	1,759.4	1,593.6	165.86	10.608	
10,600.0	10,548.4	18,273.0	10,720.5	39.2	131.7	-96.19	-0.7	980.6	1,752.4	1,586.0	166.39	10.532	
10,650.0	10,597.7	18,273.0	10,720.5	39.4	131.7	-96.70	-0.7	980.6	1,747.3	1,580.5	166.77	10.477	
10,700.0	10,646.1	18,273.0	10,720.5	39.6	131.7	-97.02	-0.7	980.6	1,744.1	1,577.1	166.98	10.445	
10,750.0	10,693.1	18,273.0	10,720.5	39.7	131.7	-97.14	-0.7	980.6	1,742.8	1,575.8	167.03	10.435 SF	
10,756.4	10,699.0	18,273.0	10,720.5	39.7	131.7	-97.15	-0.7	980.6	1,742.8	1,575.8	167.02	10.435 CC, ES	
10,800.0	10,738.5	18,273.0	10,720.5	39.9	131.7	-97.07	-0.7	980.6	1,743.6	1,576.7	166.90	10.447	
10,850.0	10,782.0	18,273.0	10,720.5	40.0	131.7	-96.80	-0.7	980.6	1,746.3	1,579.7	166.61	10.481	
10,900.0	10,823.1	18,273.0	10,720.5	40.2	131.7	-96.34	-0.7	980.6	1,750.9	1,584.8	166.17	10.537	
10,950.0	10,861.6	18,273.0	10,720.5	40.4	131.7	-95.68	-0.7	980.6	1,757.5	1,591.9	165.58	10.614	
11,000.0	10,897.1	18,273.0	10,720.5	40.5	131.7	-94.84	-0.7	980.6	1,765.8	1,600.9	164.85	10.712	
11,050.0	10,929.5	18,273.0	10,720.5	40.7	131.7	-93.82	-0.7	980.6	1,775.9	1,611.9	164.00	10.828	
11,100.0	10,958.4	18,273.0	10,720.5	40.8	131.7	-92.61	-0.7	980.6	1,787.6	1,624.5	163.05	10.963	
11,150.0	10,983.6	18,273.0	10,720.5	41.0	131.7	-91.25	-0.7	980.6	1,800.8	1,638.8	162.00	11.116	
11,200.0	11,005.0	18,273.0	10,720.5	41.2	131.7	-89.72	-0.7	980.6	1,815.3	1,654.4	160.89	11.283	
11,250.0	11,022.4	18,273.0	10,720.5	41.4	131.7	-88.06	-0.7	980.6	1,831.1	1,671.4	159.71	11.465	
11,300.0	11,035.6	18,273.0	10,720.5	41.5	131.7	-86.27	-0.7	980.6	1,848.0	1,689.5	158.49	11.660	
11,350.0	11,044.6	18,273.0	10,720.5	41.8	131.7	-84.37	-0.7	980.6	1,865.8	1,708.6	157.25	11.865	
11,400.0	11,049.3	18,273.0	10,720.5	42.0	131.7	-82.38	-0.7	980.6	1,884.4	1,728.4	156.00	12.080	
11,428.4	11,050.0	18,273.0	10,720.5	42.1	131.7	-81.23	-0.7	980.6	1,895.2	1,739.9	155.28	12.205	
11,428.7	11,050.0	18,273.0	10,720.5	42.1	131.7	-81.22	-0.7	980.6	1,895.3	1,740.0	155.27	12.206	
11,500.0	11,050.0	18,273.0	10,720.5	42.4	131.7	-81.22	-0.7	980.6	1,923.8	1,770.4	153.46	12.537	
11,600.0	11,050.0	18,273.0	10,720.5	43.0	131.7	-81.22	-0.7	980.6	1,967.5	1,816.7	150.84	13.044	
11,700.0	11,050.0	18,273.0	10,720.5	43.5	131.7	-81.22	-0.7	980.6	2,015.2	1,867.0	148.17	13.600	
11,800.0	11,050.0	18,273.0	10,720.5	44.2	131.7	-81.22	-0.7	980.6	2,066.7	1,921.2	145.49	14.205	
11,900.0	11,050.0	18,273.0	10,720.5	44.9	131.7	-81.22	-0.7	980.6	2,121.6	1,978.8	142.81	14.856	
12,000.0	11,050.0	18,273.0	10,720.5	45.6	131.7	-81.22	-0.7	980.6	2,179.7	2,039.5	140.17	15.550	
12,100.0	11,050.0	18,273.0	10,720.5	46.4	131.7	-81.22	-0.7	980.6	2,240.8	2,103.2	137.58	16.287	
12,200.0	11,050.0	18,273.0	10,720.5	47.2	131.7	-81.22	-0.7	980.6	2,304.5	2,169.5	135.05	17.065	
12,300.0	11,050.0	18,273.0	10,720.5	48.1	131.7	-81.22	-0.7	980.6	2,370.8	2,238.2	132.60	17.880	
12,400.0	11,050.0	18,273.0	10,720.5	49.0	131.7	-81.22	-0.7	980.6	2,439.4	2,309.2	130.23	18.731	
12,500.0	11,050.0	18,273.0	10,720.5	50.0	131.7	-81.22	-0.7	980.6	2,510.1	2,382.2	127.96	19.617	
12,600.0	11,050.0	18,273.0	10,720.5	51.0	131.7	-81.22	-0.7	980.6	2,582.8	2,457.0	125.78	20.534	
12,700.0	11,050.0	18,273.0	10,720.5	52.0	131.7	-81.22	-0.7	980.6	2,657.2	2,533.5	123.69	21.482	
12,800.0	11,050.0	18,273.0	10,720.5	53.1	131.7	-81.22	-0.7	980.6	2,733.3	2,611.6	121.71	22.458	
12,900.0	11,050.0	18,273.0	10,720.5	54.2	131.7	-81.22	-0.7	980.6	2,810.8	2,691.0	119.81	23.460	
13,000.0	11,050.0	18,273.0	10,720.5	55.3	131.7	-81.22	-0.7	980.6	2,889.7	2,771.7	118.02	24.486	
13,100.0	11,050.0	18,273.0	10,720.5	56.4	131.7	-81.22	-0.7	980.6	2,970.0	2,853.6	116.31	25.535	
13,200.0	11,050.0	18,273.0	10,720.5	57.6	131.7	-81.22	-0.7	980.6	3,051.3	2,936.6	114.69	26.605	
13,300.0	11,050.0	18,273.0	10,720.5	58.8	131.7	-81.22	-0.7	980.6	3,133.8	3,020.6	113.16	27.694	
13,400.0	11,050.0	18,273.0	10,720.5	60.0	131.7	-81.22	-0.7	980.6	3,217.2	3,105.5	111.70	28.801	
13,500.0	11,050.0	18,273.0	10,720.5	61.2	131.7	-81.22	-0.7	980.6	3,301.6	3,191.3	110.33	29.924	
13,600.0	11,050.0	18,273.0	10,720.5	62.5	131.7	-81.22	-0.7	980.6	3,386.8	3,277.8	109.03	31.062	
13,700.0	11,050.0	18,273.0	10,720.5	63.8	131.7	-81.22	-0.7	980.6	3,472.8	3,365.0	107.81	32.214	
13,800.0	11,050.0	18,273.0	10,720.5	65.1	131.7	-81.22	-0.7	980.6	3,559.5	3,452.9	106.65	33.377	
13,900.0	11,050.0	18,273.0	10,720.5	66.4	131.7	-81.22	-0.7	980.6	3,647.0	3,541.4	105.55	34.552	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 325-MWD													Offset Well Error:	0.0 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		
14,000.0	11,050.0	18,273.0	10,720.5	67.7	131.7	-81.22	-0.7	980.6	3,735.0	3,630.5	104.52	35.736		
14,100.0	11,050.0	18,273.0	10,720.5	69.0	131.7	-81.22	-0.7	980.6	3,823.6	3,720.1	103.54	36.930		
14,200.0	11,050.0	18,273.0	10,720.5	70.4	131.7	-81.22	-0.7	980.6	3,912.8	3,810.2	102.62	38.131		
14,300.0	11,050.0	18,273.0	10,720.5	71.7	131.7	-81.22	-0.7	980.6	4,002.5	3,900.8	101.75	39.339		
14,400.0	11,050.0	18,273.0	10,720.5	73.1	131.7	-81.22	-0.7	980.6	4,092.7	3,991.8	100.92	40.552		
14,500.0	11,050.0	18,273.0	10,720.5	74.5	131.7	-81.22	-0.7	980.6	4,183.3	4,083.2	100.15	41.771		
14,600.0	11,050.0	18,273.0	10,720.5	75.9	131.7	-81.22	-0.7	980.6	4,274.4	4,174.9	99.42	42.995		
14,700.0	11,050.0	18,273.0	10,720.5	77.3	131.7	-81.22	-0.7	980.6	4,365.8	4,267.1	98.73	44.222		
14,800.0	11,050.0	18,273.0	10,720.5	78.7	131.7	-81.22	-0.7	980.6	4,457.6	4,359.5	98.07	45.452		
14,900.0	11,050.0	18,273.0	10,720.5	80.1	131.7	-81.22	-0.7	980.6	4,549.7	4,452.3	97.46	46.684		
15,000.0	11,050.0	18,273.0	10,720.5	81.6	131.7	-81.22	-0.7	980.6	4,642.2	4,545.3	96.88	47.918		
15,100.0	11,050.0	18,273.0	10,720.5	83.0	131.7	-81.22	-0.7	980.6	4,735.0	4,638.6	96.33	49.153		
15,200.0	11,050.0	18,273.0	10,720.5	84.5	131.7	-81.22	-0.7	980.6	4,828.0	4,732.2	95.81	50.390		
15,300.0	11,050.0	18,273.0	10,720.5	85.9	131.7	-81.22	-0.7	980.6	4,921.4	4,826.0	95.33	51.626		
15,400.0	11,050.0	18,273.0	10,720.5	87.4	131.7	-81.22	-0.7	980.6	5,015.0	4,920.1	94.87	52.863		
15,500.0	11,050.0	18,273.0	10,720.5	88.9	131.7	-81.22	-0.7	980.6	5,108.8	5,014.4	94.43	54.099		
15,600.0	11,050.0	18,273.0	10,720.5	90.4	131.7	-81.22	-0.7	980.6	5,202.9	5,108.8	94.03	55.334		
15,700.0	11,050.0	18,273.0	10,720.5	91.8	131.7	-81.22	-0.7	980.6	5,297.1	5,203.5	93.64	56.568		
15,800.0	11,050.0	18,273.0	10,720.5	93.3	131.7	-81.22	-0.7	980.6	5,391.6	5,298.3	93.28	57.801		
15,900.0	11,050.0	18,273.0	10,720.5	94.8	131.7	-81.22	-0.7	980.6	5,486.3	5,393.4	92.94	59.032		
16,000.0	11,050.0	18,273.0	10,720.5	96.3	131.7	-81.22	-0.7	980.6	5,581.2	5,488.6	92.62	60.261		
16,100.0	11,050.0	18,273.0	10,720.5	97.8	131.7	-81.22	-0.7	980.6	5,676.2	5,583.9	92.31	61.488		
16,200.0	11,050.0	18,273.0	10,720.5	99.4	131.7	-81.22	-0.7	980.6	5,771.4	5,679.4	92.03	62.713		
16,300.0	11,050.0	18,273.0	10,720.5	100.9	131.7	-81.22	-0.7	980.6	5,866.8	5,775.0	91.76	63.935		
16,400.0	11,050.0	18,273.0	10,720.5	102.4	131.7	-81.22	-0.7	980.6	5,962.3	5,870.8	91.51	65.154		
16,500.0	11,050.0	18,273.0	10,720.5	103.9	131.7	-81.22	-0.7	980.6	6,058.0	5,966.7	91.28	66.371		
16,600.0	11,050.0	18,273.0	10,720.5	105.5	131.7	-81.22	-0.7	980.6	6,153.8	6,062.8	91.05	67.584		
16,700.0	11,050.0	18,273.0	10,720.5	107.0	131.7	-81.22	-0.7	980.6	6,249.7	6,158.9	90.85	68.795		
16,800.0	11,050.0	18,273.0	10,720.5	108.5	131.7	-81.22	-0.7	980.6	6,345.8	6,255.2	90.65	70.002		
16,900.0	11,050.0	18,273.0	10,720.5	110.1	131.7	-81.22	-0.7	980.6	6,442.0	6,351.5	90.47	71.206		
17,000.0	11,050.0	18,273.0	10,720.5	111.6	131.7	-81.22	-0.7	980.6	6,538.3	6,448.0	90.30	72.406		
17,100.0	11,050.0	18,273.0	10,720.5	113.2	131.7	-81.22	-0.7	980.6	6,634.7	6,544.6	90.14	73.603		
17,200.0	11,050.0	18,273.0	10,720.5	114.7	131.7	-81.22	-0.7	980.6	6,731.2	6,641.2	89.99	74.796		
17,300.0	11,050.0	18,273.0	10,720.5	116.3	131.7	-81.22	-0.7	980.6	6,827.8	6,738.0	89.86	75.986		
17,357.4	11,050.0	18,273.0	10,720.5	117.1	131.7	-81.22	-0.7	980.6	6,883.4	6,793.6	89.78	76.668		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 198-MWD												Offset Well Error:	0.0 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	
0.0	0.0	0.0	0.0	0.0	0.0	-7.09	7,633.5	-949.0	7,692.6				
100.0	100.0	24.8	24.8	0.1	0.0	-7.09	7,633.5	-949.0	7,692.3	7,692.1	0.17	N/A	
200.0	200.0	120.4	120.4	0.5	0.2	-7.09	7,633.6	-948.9	7,692.3	7,691.6	0.67	N/A	
300.0	300.0	229.5	229.5	0.8	0.4	-7.08	7,633.7	-948.5	7,692.4	7,691.1	1.26	6,098.188	
400.0	400.0	354.5	354.5	1.2	0.9	-7.08	7,633.3	-948.2	7,692.0	7,690.0	2.06	3,734.640	
500.0	500.0	439.4	439.4	1.6	1.2	-7.08	7,633.1	-947.9	7,691.8	7,689.1	2.72	2,827.909	
561.1	561.1	487.1	487.1	1.8	1.3	-7.08	7,633.1	-947.6	7,691.7	7,688.6	3.11	2,474.531	
600.0	600.0	510.6	510.6	1.9	1.4	-7.08	7,633.2	-947.5	7,691.8	7,688.4	3.33	2,309.043	
700.0	700.0	626.4	626.4	2.3	1.8	-7.07	7,633.4	-947.2	7,691.9	7,687.8	4.10	1,875.988	
707.4	707.4	633.4	633.4	2.3	1.8	-7.07	7,633.4	-947.2	7,691.9	7,687.7	4.15	1,852.609	
800.0	800.0	701.2	701.2	2.6	2.1	-7.07	7,633.5	-947.0	7,692.0	7,687.3	4.73	1,627.868	
900.0	900.0	816.7	816.7	3.0	2.5	-7.07	7,633.9	-946.5	7,692.3	7,686.8	5.49	1,400.031	
1,000.0	1,000.0	929.2	929.2	3.4	2.9	-7.07	7,633.8	-946.2	7,692.3	7,686.0	6.25	1,230.481	
1,008.6	1,008.6	934.6	934.6	3.4	2.9	-7.07	7,633.8	-946.2	7,692.3	7,686.0	6.30	1,220.856	
1,100.0	1,100.0	997.0	997.0	3.7	3.1	-7.06	7,634.0	-946.1	7,692.5	7,685.6	6.85	1,123.621	
1,200.0	1,200.0	1,133.1	1,133.1	4.1	3.6	-7.07	7,634.0	-946.3	7,692.4	7,684.7	7.67	1,003.190	
1,225.7	1,225.7	1,151.7	1,151.7	4.2	3.7	-7.07	7,633.9	-946.4	7,692.4	7,684.6	7.82	983.277	
1,300.0	1,300.0	1,231.0	1,231.0	4.4	3.9	-7.07	7,633.9	-946.7	7,692.4	7,684.1	8.36	920.390	
1,400.0	1,400.0	1,392.4	1,392.4	4.8	4.5	-7.07	7,633.1	-946.9	7,691.9	7,682.6	9.27	829.483	
1,500.0	1,500.0	1,473.4	1,473.4	5.1	4.8	-7.07	7,632.6	-946.5	7,691.2	7,681.3	9.92	775.517	
1,600.0	1,600.0	1,560.0	1,560.0	5.5	5.1	95.51	7,631.7	-946.0	7,690.3	7,679.7	10.57	727.426	
1,656.9	1,656.8	1,603.1	1,603.1	5.7	5.2	95.51	7,631.3	-946.0	7,690.0	7,679.1	10.91	704.584	
1,700.0	1,700.0	1,616.8	1,616.8	5.8	5.3	95.51	7,631.3	-946.3	7,690.1	7,679.0	11.11	692.293	
1,800.0	1,799.9	1,655.0	1,655.0	6.2	5.4	95.51	7,631.4	-947.3	7,691.1	7,679.5	11.58	664.017	
1,900.0	1,899.7	1,655.0	1,655.0	6.5	5.4	95.49	7,631.4	-947.3	7,693.2	7,681.3	11.93	645.025	
2,000.0	1,999.4	1,711.1	1,711.0	6.9	5.6	95.47	7,632.2	-949.9	7,696.2	7,683.7	12.47	617.322	
2,100.0	2,098.9	1,750.0	1,749.8	7.2	5.7	95.44	7,633.3	-952.3	7,700.4	7,687.4	12.95	594.533	
2,200.0	2,198.3	1,787.5	1,787.2	7.6	5.9	95.40	7,634.5	-955.1	7,705.5	7,692.1	13.44	573.398	
2,300.0	2,297.4	1,844.0	1,843.4	8.0	6.1	95.36	7,636.6	-960.0	7,711.5	7,697.5	14.00	550.933	
2,400.0	2,396.4	2,235.4	2,232.2	8.3	7.5	95.45	7,645.0	-1,003.3	7,717.5	7,701.7	15.78	488.985	
2,500.0	2,495.5	2,327.0	2,323.1	8.7	7.8	95.46	7,644.7	-1,015.1	7,720.1	7,703.6	16.50	467.859	
2,600.0	2,594.5	2,433.8	2,429.0	9.1	8.2	95.47	7,644.2	-1,028.8	7,722.6	7,705.3	17.28	446.813	
2,700.0	2,693.5	2,505.0	2,499.6	9.5	8.5	95.48	7,644.1	-1,037.8	7,725.4	7,707.4	17.94	430.675	
2,800.0	2,792.5	2,589.9	2,583.8	9.9	8.8	95.49	7,644.3	-1,048.2	7,728.4	7,709.8	18.65	414.437	
2,900.0	2,891.6	2,710.1	2,703.3	10.3	9.2	95.51	7,644.6	-1,061.8	7,731.4	7,711.9	19.50	396.568	
3,000.0	2,990.6	2,799.8	2,792.5	10.7	9.6	95.54	7,644.9	-1,070.8	7,734.3	7,714.1	20.23	382.374	
3,100.0	3,089.6	2,868.2	2,860.6	11.1	9.8	95.56	7,645.4	-1,077.1	7,737.5	7,716.6	20.88	370.593	
3,200.0	3,188.6	2,924.1	2,916.3	11.5	10.0	95.58	7,646.1	-1,082.3	7,741.1	7,719.7	21.49	360.303	
3,300.0	3,287.7	2,977.0	2,968.9	11.9	10.2	95.60	7,647.0	-1,087.6	7,745.4	7,723.3	22.08	350.775	
3,400.0	3,386.7	3,036.6	3,028.2	12.3	10.5	95.62	7,648.3	-1,093.6	7,750.2	7,727.5	22.70	341.357	
3,500.0	3,485.7	3,118.5	3,109.7	12.7	10.8	95.65	7,650.6	-1,101.5	7,755.5	7,732.1	23.41	331.234	
3,600.0	3,584.8	3,217.2	3,207.9	13.1	11.2	95.68	7,653.3	-1,110.8	7,760.8	7,736.6	24.19	320.800	
3,700.0	3,683.8	3,294.4	3,284.6	13.5	11.5	95.70	7,655.4	-1,119.8	7,766.2	7,741.3	24.89	311.993	
3,800.0	3,782.8	3,368.1	3,357.6	13.9	11.8	95.70	7,657.5	-1,129.6	7,772.1	7,746.5	25.58	303.788	
3,900.0	3,881.8	3,493.9	3,482.2	14.3	12.3	95.71	7,661.0	-1,146.4	7,777.7	7,751.2	26.49	293.587	
4,000.0	3,980.9	18,910.1	11,471.5	14.7	134.1	46.84	-24.1	-1,724.5	7,700.4	7,632.5	67.88	113.437	
4,100.0	4,079.9	18,909.5	11,471.5	15.1	134.1	46.48	-27.8	-1,724.4	7,600.6	7,532.7	67.93	111.883	
4,200.0	4,178.9	18,913.2	11,471.6	15.5	134.2	46.13	-31.4	-1,724.3	7,500.8	7,432.8	68.03	110.265	
4,300.0	4,277.9	18,916.8	11,471.6	15.9	134.2	45.77	-35.0	-1,724.3	7,401.0	7,332.9	68.12	108.640	
4,400.0	4,377.0	18,920.4	11,471.6	16.3	134.3	45.41	-38.6	-1,724.2	7,301.2	7,233.0	68.23	107.008	
4,500.0	4,476.0	18,924.0	11,471.7	16.8	134.3	45.04	-42.3	-1,724.2	7,201.5	7,133.1	68.34	105.371	
4,600.0	4,575.0	18,927.7	11,471.7	17.2	134.4	44.67	-45.9	-1,724.1	7,101.7	7,033.2	68.46	103.729	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 198-MWD													Offset Well Error:	0.0 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		
4,700.0	4,674.0	18,931.3	11,471.7	17.6	134.5	44.30	-49.5	-1,724.1	7,001.9	6,933.3	68.59	102.082		
4,800.0	4,773.1	18,931.0	11,471.7	18.0	134.5	44.33	-49.2	-1,724.1	6,902.1	6,833.4	68.70	100.472		
4,900.0	4,872.1	18,931.0	11,471.7	18.4	134.5	44.33	-49.2	-1,724.1	6,802.4	6,733.5	68.81	98.855		
5,000.0	4,971.1	18,931.0	11,471.7	18.8	134.5	44.33	-49.2	-1,724.1	6,702.6	6,633.7	68.93	97.233		
5,100.0	5,070.2	18,931.0	11,471.7	19.2	134.5	44.33	-49.2	-1,724.1	6,602.8	6,533.8	69.06	95.607		
5,200.0	5,169.2	18,931.0	11,471.7	19.7	134.5	44.33	-49.2	-1,724.1	6,503.1	6,433.9	69.20	93.978		
5,300.0	5,268.2	18,931.0	11,471.7	20.1	134.5	44.33	-49.2	-1,724.1	6,403.4	6,334.0	69.34	92.347		
5,400.0	5,367.2	18,931.0	11,471.7	20.5	134.5	44.33	-49.2	-1,724.1	6,303.6	6,234.1	69.49	90.714		
5,500.0	5,466.3	18,931.0	11,471.7	20.9	134.5	44.33	-49.2	-1,724.1	6,203.9	6,134.3	69.64	89.080		
5,600.0	5,565.3	18,931.0	11,471.7	21.3	134.5	44.33	-49.2	-1,724.1	6,104.2	6,034.4	69.81	87.445		
5,700.0	5,664.3	18,931.0	11,471.7	21.7	134.5	44.33	-49.2	-1,724.1	6,004.5	5,934.5	69.97	85.810		
5,800.0	5,763.3	18,931.0	11,471.7	22.2	134.5	44.33	-49.2	-1,724.1	5,904.8	5,834.7	70.15	84.175		
5,900.0	5,862.4	18,931.0	11,471.7	22.6	134.5	44.33	-49.2	-1,724.1	5,805.1	5,734.8	70.33	82.541		
6,000.0	5,961.4	18,931.0	11,471.7	23.0	134.5	44.33	-49.2	-1,724.1	5,705.5	5,634.9	70.52	80.907		
6,100.0	6,060.4	18,931.0	11,471.7	23.4	134.5	44.33	-49.2	-1,724.1	5,605.8	5,535.1	70.71	79.275		
6,200.0	6,159.4	18,931.0	11,471.7	23.8	134.5	44.33	-49.2	-1,724.1	5,506.2	5,435.2	70.91	77.645		
6,300.0	6,258.5	18,931.0	11,471.7	24.2	134.5	44.33	-49.2	-1,724.1	5,406.5	5,335.4	71.12	76.017		
6,400.0	6,357.5	18,931.0	11,471.7	24.7	134.5	44.33	-49.2	-1,724.1	5,306.9	5,235.6	71.34	74.392		
6,500.0	6,456.5	18,931.0	11,471.7	25.1	134.5	44.33	-49.2	-1,724.1	5,207.3	5,135.7	71.56	72.769		
6,600.0	6,555.6	18,931.0	11,471.7	25.5	134.5	44.33	-49.2	-1,724.1	5,107.7	5,035.9	71.79	71.150		
6,700.0	6,654.6	18,931.0	11,471.7	25.9	134.5	44.33	-49.2	-1,724.1	5,008.1	4,936.1	72.02	69.534		
6,800.0	6,753.6	18,931.0	11,471.7	26.3	134.5	44.33	-49.2	-1,724.1	4,908.6	4,836.3	72.27	67.922		
6,900.0	6,852.6	18,931.0	11,471.7	26.8	134.5	44.33	-49.2	-1,724.1	4,809.1	4,736.5	72.52	66.314		
7,000.0	6,951.7	18,931.0	11,471.7	27.2	134.5	44.33	-49.2	-1,724.1	4,709.5	4,636.8	72.78	64.710		
7,100.0	7,050.7	18,931.0	11,471.7	27.6	134.5	44.33	-49.2	-1,724.1	4,610.0	4,537.0	73.05	63.110		
7,136.4	7,086.7	18,931.0	11,471.7	27.8	134.5	44.33	-49.2	-1,724.1	4,573.8	4,500.7	73.15	62.529		
7,200.0	7,149.8	18,931.0	11,471.7	28.0	134.5	38.58	-49.2	-1,724.1	4,510.6	4,437.3	73.33	61.511		
7,300.0	7,249.2	18,931.0	11,471.7	28.4	134.5	31.88	-49.2	-1,724.1	4,411.4	4,337.8	73.65	59.897		
7,400.0	7,348.8	18,931.0	11,471.7	28.8	134.5	27.11	-49.2	-1,724.1	4,312.6	4,238.6	74.02	58.266		
7,500.0	7,448.7	18,931.0	11,471.7	29.2	134.5	23.60	-49.2	-1,724.1	4,214.3	4,139.8	74.43	56.620		
7,600.0	7,548.6	18,931.0	11,471.7	29.5	134.5	20.93	-49.2	-1,724.1	4,116.5	4,041.6	74.90	54.962		
7,669.7	7,618.3	18,931.0	11,471.7	29.7	134.5	-83.14	-49.2	-1,724.1	4,048.6	3,973.4	75.26	53.798		
7,700.0	7,648.6	18,931.0	11,471.7	29.8	134.5	-83.14	-49.2	-1,724.1	4,019.3	3,943.9	75.42	53.293		
7,800.0	7,748.6	18,931.0	11,471.7	30.1	134.5	-83.14	-49.2	-1,724.1	3,922.4	3,846.4	75.98	51.623		
7,900.0	7,848.6	18,931.0	11,471.7	30.5	134.5	-83.14	-49.2	-1,724.1	3,825.7	3,749.1	76.58	49.959		
8,000.0	7,948.6	18,931.0	11,471.7	30.8	134.5	-83.14	-49.2	-1,724.1	3,729.1	3,651.9	77.20	48.303		
8,100.0	8,048.6	18,931.0	11,471.7	31.1	134.5	-83.14	-49.2	-1,724.1	3,632.8	3,554.9	77.87	46.654		
8,200.0	8,148.6	18,931.0	11,471.7	31.4	134.5	-83.14	-49.2	-1,724.1	3,536.6	3,458.0	78.57	45.012		
8,300.0	8,248.6	18,931.0	11,471.7	31.7	134.5	-83.14	-49.2	-1,724.1	3,440.6	3,361.3	79.32	43.379		
8,400.0	8,348.6	18,931.0	11,471.7	32.0	134.5	-83.14	-49.2	-1,724.1	3,344.9	3,264.8	80.11	41.755		
8,500.0	8,448.6	18,931.0	11,471.7	32.4	134.5	-83.14	-49.2	-1,724.1	3,249.5	3,168.5	80.95	40.140		
8,600.0	8,548.6	18,931.0	11,471.7	32.7	134.5	-83.14	-49.2	-1,724.1	3,154.3	3,072.5	81.86	38.535		
8,700.0	8,648.6	18,931.0	11,471.7	33.0	134.5	-83.14	-49.2	-1,724.1	3,059.5	2,976.7	82.82	36.940		
8,800.0	8,748.6	18,931.0	11,471.7	33.3	134.5	-83.14	-49.2	-1,724.1	2,965.0	2,881.1	83.86	35.358		
8,900.0	8,848.6	18,931.0	11,471.7	33.6	134.5	-83.14	-49.2	-1,724.1	2,870.8	2,785.8	84.97	33.788		
9,000.0	8,948.6	18,931.0	11,471.7	34.0	134.5	-83.14	-49.2	-1,724.1	2,777.1	2,690.9	86.16	32.232		
9,100.0	9,048.6	18,931.0	11,471.7	34.3	134.5	-83.14	-49.2	-1,724.1	2,683.8	2,596.3	87.45	30.690		
9,200.0	9,148.6	18,931.0	11,471.7	34.6	134.5	-83.14	-49.2	-1,724.1	2,591.0	2,502.2	88.84	29.165		
9,300.0	9,248.6	18,931.0	11,471.7	34.9	134.5	-83.14	-49.2	-1,724.1	2,498.8	2,408.4	90.35	27.658		
9,400.0	9,348.6	18,931.0	11,471.7	35.3	134.5	-83.14	-49.2	-1,724.1	2,407.2	2,315.2	91.98	26.170		
9,500.0	9,448.6	18,931.0	11,471.7	35.6	134.5	-83.14	-49.2	-1,724.1	2,316.2	2,222.5	93.76	24.704		
9,600.0	9,548.6	18,931.0	11,471.7	35.9	134.5	-83.14	-49.2	-1,724.1	2,226.1	2,130.4	95.70	23.262		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 198-MWD													Offset Well Error:	0.0 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		
9,700.0	9,648.6	18,931.0	11,471.7	36.3	134.5	-83.14	-49.2	-1,724.1	2,136.9	2,039.0	97.82	21.846		
9,800.0	9,748.6	18,931.0	11,471.7	36.6	134.5	-83.14	-49.2	-1,724.1	2,048.6	1,948.5	100.13	20.459		
9,900.0	9,848.6	18,931.0	11,471.7	36.9	134.5	-83.14	-49.2	-1,724.1	1,961.5	1,858.8	102.66	19.105		
10,000.0	9,948.6	18,931.0	11,471.7	37.2	134.5	-83.14	-49.2	-1,724.1	1,875.6	1,770.2	105.44	17.788		
10,100.0	10,048.6	18,931.0	11,471.7	37.6	134.5	-83.14	-49.2	-1,724.1	1,791.2	1,682.7	108.49	16.510		
10,200.0	10,148.6	18,931.0	11,471.7	37.9	134.5	-83.14	-49.2	-1,724.1	1,708.5	1,596.7	111.83	15.277		
10,300.0	10,248.6	18,931.0	11,471.7	38.2	134.5	-83.14	-49.2	-1,724.1	1,627.8	1,512.3	115.50	14.093		
10,400.0	10,348.6	18,931.0	11,471.7	38.6	134.5	-83.14	-49.2	-1,724.1	1,549.3	1,429.7	119.51	12.964		
10,500.0	10,448.6	18,931.0	11,471.7	38.9	134.5	-83.14	-49.2	-1,724.1	1,473.3	1,349.5	123.87	11.894		
10,528.4	10,477.0	18,931.0	11,471.7	39.0	134.5	-83.14	-49.2	-1,724.1	1,452.3	1,327.1	125.18	11.602		
10,550.0	10,498.6	18,931.0	11,471.7	39.1	134.5	99.50	-49.2	-1,724.1	1,436.5	1,310.3	126.20	11.383		
10,600.0	10,548.4	18,931.0	11,471.7	39.2	134.5	104.44	-49.2	-1,724.1	1,401.0	1,272.4	128.62	10.893		
10,650.0	10,597.7	18,931.0	11,471.7	39.4	134.5	108.85	-49.2	-1,724.1	1,367.2	1,236.1	131.11	10.427		
10,700.0	10,646.1	18,931.0	11,471.7	39.6	134.5	112.69	-49.2	-1,724.1	1,335.5	1,201.8	133.66	9.992		
10,750.0	10,693.1	18,931.0	11,471.7	39.7	134.5	115.97	-49.2	-1,724.1	1,306.2	1,170.0	136.21	9.590		
10,800.0	10,738.5	18,931.0	11,471.7	39.9	134.5	118.72	-49.2	-1,724.1	1,279.9	1,141.2	138.73	9.226		
10,850.0	10,782.0	18,931.0	11,471.7	40.0	134.5	120.97	-49.2	-1,724.1	1,256.9	1,115.8	141.15	8.905		
10,900.0	10,823.1	18,931.0	11,471.7	40.2	134.5	122.75	-49.2	-1,724.1	1,237.6	1,094.1	143.43	8.628		
10,950.0	10,861.6	18,931.0	11,471.7	40.4	134.5	124.10	-49.2	-1,724.1	1,222.2	1,076.7	145.50	8.400		
11,000.0	10,897.1	18,931.0	11,471.7	40.5	134.5	125.04	-49.2	-1,724.1	1,211.1	1,063.7	147.32	8.221		
11,050.0	10,929.5	18,931.0	11,471.7	40.7	134.5	125.59	-49.2	-1,724.1	1,204.4	1,055.6	148.83	8.092		
11,097.5	10,957.0	18,931.0	11,471.7	40.8	134.5	125.76	-49.2	-1,724.1	1,202.3	1,052.4	149.95	8.018 CC		
11,100.0	10,958.4	18,931.0	11,471.7	40.8	134.5	125.76	-49.2	-1,724.1	1,202.3	1,052.3	150.00	8.016 ES		
11,150.0	10,983.6	18,931.0	11,471.7	41.0	134.5	125.55	-49.2	-1,724.1	1,204.9	1,054.1	150.80	7.990 SF		
11,200.0	11,005.0	18,931.0	11,471.7	41.2	134.5	124.97	-49.2	-1,724.1	1,212.0	1,060.8	151.22	8.015		
11,250.0	11,022.4	18,931.0	11,471.7	41.4	134.5	123.99	-49.2	-1,724.1	1,223.5	1,072.3	151.28	8.088		
11,300.0	11,035.6	18,931.0	11,471.7	41.5	134.5	122.59	-49.2	-1,724.1	1,239.3	1,088.4	150.98	8.209		
11,350.0	11,044.6	18,931.0	11,471.7	41.8	134.5	120.76	-49.2	-1,724.1	1,259.1	1,108.7	150.37	8.373		
11,400.0	11,049.3	18,931.0	11,471.7	42.0	134.5	118.47	-49.2	-1,724.1	1,282.4	1,133.0	149.48	8.579		
11,428.4	11,050.0	18,931.0	11,471.7	42.1	134.5	116.94	-49.2	-1,724.1	1,297.2	1,148.3	148.88	8.713		
11,428.7	11,050.0	18,931.0	11,471.7	42.1	134.5	116.94	-49.2	-1,724.1	1,297.3	1,148.5	148.87	8.715		
11,500.0	11,050.0	18,931.0	11,471.7	42.4	134.5	116.94	-49.2	-1,724.1	1,337.0	1,189.8	147.22	9.082		
11,600.0	11,050.0	18,931.0	11,471.7	43.0	134.5	116.94	-49.2	-1,724.1	1,396.8	1,252.0	144.82	9.645		
11,700.0	11,050.0	18,931.0	11,471.7	43.5	134.5	116.94	-49.2	-1,724.1	1,461.1	1,318.7	142.40	10.260		
11,800.0	11,050.0	18,931.0	11,471.7	44.2	134.5	116.94	-49.2	-1,724.1	1,529.2	1,389.2	139.99	10.923		
11,900.0	11,050.0	18,931.0	11,471.7	44.9	134.5	116.94	-49.2	-1,724.1	1,600.6	1,462.9	137.65	11.628		
12,000.0	11,050.0	18,931.0	11,471.7	45.6	134.5	116.94	-49.2	-1,724.1	1,675.0	1,539.6	135.39	12.371		
12,100.0	11,050.0	18,931.0	11,471.7	46.4	134.5	116.94	-49.2	-1,724.1	1,751.9	1,618.7	133.23	13.149		
12,200.0	11,050.0	18,931.0	11,471.7	47.2	134.5	116.94	-49.2	-1,724.1	1,831.0	1,699.8	131.19	13.957		
12,300.0	11,050.0	18,931.0	11,471.7	48.1	134.5	116.94	-49.2	-1,724.1	1,912.1	1,782.9	129.26	14.793		
12,400.0	11,050.0	18,931.0	11,471.7	49.0	134.5	116.94	-49.2	-1,724.1	1,995.0	1,867.5	127.45	15.653		
12,500.0	11,050.0	18,931.0	11,471.7	50.0	134.5	116.94	-49.2	-1,724.1	2,079.3	1,953.5	125.75	16.535		
12,600.0	11,050.0	18,931.0	11,471.7	51.0	134.5	116.94	-49.2	-1,724.1	2,165.0	2,040.8	124.16	17.437		
12,700.0	11,050.0	18,931.0	11,471.7	52.0	134.5	116.94	-49.2	-1,724.1	2,251.8	2,129.1	122.67	18.356		
12,800.0	11,050.0	18,931.0	11,471.7	53.1	134.5	116.94	-49.2	-1,724.1	2,339.7	2,218.4	121.29	19.291		
12,900.0	11,050.0	18,931.0	11,471.7	54.2	134.5	116.94	-49.2	-1,724.1	2,428.5	2,308.6	119.99	20.240		
13,000.0	11,050.0	18,931.0	11,471.7	55.3	134.5	116.94	-49.2	-1,724.1	2,518.2	2,399.4	118.78	21.200		
13,100.0	11,050.0	18,931.0	11,471.7	56.4	134.5	116.94	-49.2	-1,724.1	2,608.6	2,491.0	117.65	22.172		
13,200.0	11,050.0	18,931.0	11,471.7	57.6	134.5	116.94	-49.2	-1,724.1	2,699.7	2,583.1	116.60	23.154		
13,300.0	11,050.0	18,931.0	11,471.7	58.8	134.5	116.94	-49.2	-1,724.1	2,791.5	2,675.8	115.62	24.144		
13,400.0	11,050.0	18,931.0	11,471.7	60.0	134.5	116.94	-49.2	-1,724.1	2,883.7	2,769.0	114.70	25.142		
13,500.0	11,050.0	18,931.0	11,471.7	61.2	134.5	116.94	-49.2	-1,724.1	2,976.5	2,862.6	113.84	26.146		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #004H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 198-MWD													Offset Well Error:	0.0 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		
13,600.0	11,050.0	18,931.0	11,471.7	62.5	134.5	116.94	-49.2	-1,724.1	3,069.7	2,956.7	113.04	27.157		
13,700.0	11,050.0	18,931.0	11,471.7	63.8	134.5	116.94	-49.2	-1,724.1	3,163.3	3,051.0	112.28	28.173		
13,800.0	11,050.0	18,931.0	11,471.7	65.1	134.5	116.94	-49.2	-1,724.1	3,257.3	3,145.8	111.58	29.194		
13,900.0	11,050.0	18,931.0	11,471.7	66.4	134.5	116.94	-49.2	-1,724.1	3,351.7	3,240.8	110.91	30.219		
14,000.0	11,050.0	18,931.0	11,471.7	67.7	134.5	116.94	-49.2	-1,724.1	3,446.4	3,336.1	110.29	31.247		
14,100.0	11,050.0	18,931.0	11,471.7	69.0	134.5	116.94	-49.2	-1,724.1	3,541.3	3,431.6	109.71	32.279		
14,200.0	11,050.0	18,931.0	11,471.7	70.4	134.5	116.94	-49.2	-1,724.1	3,636.6	3,527.4	109.16	33.313		
14,300.0	11,050.0	18,931.0	11,471.7	71.7	134.5	116.94	-49.2	-1,724.1	3,732.0	3,623.4	108.65	34.350		
14,400.0	11,050.0	18,931.0	11,471.7	73.1	134.5	116.94	-49.2	-1,724.1	3,827.8	3,719.6	108.16	35.389		
14,500.0	11,050.0	18,931.0	11,471.7	74.5	134.5	116.94	-49.2	-1,724.1	3,923.7	3,816.0	107.71	36.429		
14,600.0	11,050.0	18,931.0	11,471.7	75.9	134.5	116.94	-49.2	-1,724.1	4,019.8	3,912.5	107.28	37.471		
14,700.0	11,050.0	18,931.0	11,471.7	77.3	134.5	116.94	-49.2	-1,724.1	4,116.1	4,009.3	106.87	38.514		
14,800.0	11,050.0	18,931.0	11,471.7	78.7	134.5	116.94	-49.2	-1,724.1	4,212.6	4,106.1	106.49	39.559		
14,900.0	11,050.0	18,931.0	11,471.7	80.1	134.5	116.94	-49.2	-1,724.1	4,309.3	4,203.1	106.13	40.603		
15,000.0	11,050.0	18,931.0	11,471.7	81.6	134.5	116.94	-49.2	-1,724.1	4,406.1	4,300.3	105.79	41.649		
15,100.0	11,050.0	18,931.0	11,471.7	83.0	134.5	116.94	-49.2	-1,724.1	4,503.0	4,397.5	105.47	42.695		
15,200.0	11,050.0	18,931.0	11,471.7	84.5	134.5	116.94	-49.2	-1,724.1	4,600.1	4,494.9	105.17	43.741		
15,300.0	11,050.0	18,931.0	11,471.7	85.9	134.5	116.94	-49.2	-1,724.1	4,697.2	4,592.4	104.88	44.787		
15,400.0	11,050.0	18,931.0	11,471.7	87.4	134.5	116.94	-49.2	-1,724.1	4,794.5	4,689.9	104.61	45.833		
15,500.0	11,050.0	18,931.0	11,471.7	88.9	134.5	116.94	-49.2	-1,724.1	4,892.0	4,787.6	104.35	46.878		
15,600.0	11,050.0	18,931.0	11,471.7	90.4	134.5	116.94	-49.2	-1,724.1	4,989.5	4,885.4	104.11	47.924		
15,700.0	11,050.0	18,931.0	11,471.7	91.8	134.5	116.94	-49.2	-1,724.1	5,087.1	4,983.2	103.88	48.969		
15,800.0	11,050.0	18,931.0	11,471.7	93.3	134.5	116.94	-49.2	-1,724.1	5,184.8	5,081.1	103.67	50.013		
15,900.0	11,050.0	18,931.0	11,471.7	94.8	134.5	116.94	-49.2	-1,724.1	5,282.6	5,179.1	103.46	51.057		
16,000.0	11,050.0	18,931.0	11,471.7	96.3	134.5	116.94	-49.2	-1,724.1	5,380.5	5,277.2	103.27	52.100		
16,100.0	11,050.0	18,931.0	11,471.7	97.8	134.5	116.94	-49.2	-1,724.1	5,478.4	5,375.3	103.09	53.142		
16,200.0	11,050.0	18,931.0	11,471.7	99.4	134.5	116.94	-49.2	-1,724.1	5,576.4	5,473.5	102.92	54.184		
16,300.0	11,050.0	18,931.0	11,471.7	100.9	134.5	116.94	-49.2	-1,724.1	5,674.5	5,571.8	102.75	55.224		
16,400.0	11,050.0	18,931.0	11,471.7	102.4	134.5	116.94	-49.2	-1,724.1	5,772.7	5,670.1	102.60	56.263		
16,500.0	11,050.0	18,931.0	11,471.7	103.9	134.5	116.94	-49.2	-1,724.1	5,870.9	5,768.4	102.46	57.302		
16,600.0	11,050.0	18,931.0	11,471.7	105.5	134.5	116.94	-49.2	-1,724.1	5,969.2	5,866.8	102.32	58.339		
16,700.0	11,050.0	18,931.0	11,471.7	107.0	134.5	116.94	-49.2	-1,724.1	6,067.5	5,965.3	102.19	59.375		
16,800.0	11,050.0	18,931.0	11,471.7	108.5	134.5	116.94	-49.2	-1,724.1	6,165.9	6,063.8	102.07	60.409		
16,900.0	11,050.0	18,931.0	11,471.7	110.1	134.5	116.94	-49.2	-1,724.1	6,264.3	6,162.4	101.95	61.443		
17,000.0	11,050.0	18,931.0	11,471.7	111.6	134.5	116.94	-49.2	-1,724.1	6,362.8	6,261.0	101.85	62.475		
17,100.0	11,050.0	18,931.0	11,471.7	113.2	134.5	116.94	-49.2	-1,724.1	6,461.3	6,359.6	101.75	63.505		
17,200.0	11,050.0	18,931.0	11,471.7	114.7	134.5	116.94	-49.2	-1,724.1	6,559.9	6,458.3	101.65	64.534		
17,300.0	11,050.0	18,931.0	11,471.7	116.3	134.5	116.94	-49.2	-1,724.1	6,658.5	6,557.0	101.56	65.562		
17,357.4	11,050.0	18,931.0	11,471.7	117.1	134.5	116.94	-49.2	-1,724.1	6,715.2	6,613.7	101.51	66.151		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 288-MWD												Offset Well Error:	0.0 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	
0.0	0.0	0.0	0.0	0.0	0.0	-6.87	7,633.7	-919.1	7,689.2				
100.0	100.0	19.2	19.2	0.1	0.0	-6.87	7,633.7	-919.2	7,688.8	7,688.7	0.16	N/A	
200.0	200.0	100.7	100.7	0.5	0.2	-6.87	7,633.8	-919.5	7,689.0	7,688.4	0.65	N/A	
300.0	300.0	182.3	182.3	0.8	0.3	-6.87	7,634.1	-920.2	7,689.4	7,688.3	1.14	6,721.408	
400.0	400.0	263.8	263.8	1.2	0.4	-6.88	7,634.4	-921.4	7,690.1	7,688.4	1.64	4,700.526	
500.0	500.0	403.5	403.4	1.6	0.9	-6.90	7,635.0	-923.9	7,690.7	7,688.3	2.45	3,141.250	
600.0	600.0	678.5	678.4	1.9	1.8	-6.91	7,631.9	-924.4	7,689.2	7,685.5	3.76	2,042.340	
700.0	700.0	750.0	749.9	2.3	2.1	-6.90	7,630.7	-923.5	7,687.4	7,683.0	4.37	1,760.564	
800.0	800.0	818.8	818.7	2.6	2.3	-6.90	7,629.8	-922.7	7,685.9	7,681.0	4.96	1,548.970	
900.0	900.0	885.8	885.7	3.0	2.6	-6.89	7,629.2	-922.0	7,684.9	7,679.4	5.55	1,384.184	
1,000.0	1,000.0	970.1	969.9	3.4	2.9	-6.88	7,628.8	-921.0	7,684.3	7,678.1	6.20	1,238.901	
1,100.0	1,100.0	1,091.9	1,091.7	3.7	3.3	-6.87	7,627.9	-919.3	7,683.4	7,676.4	6.99	1,099.619	
1,200.0	1,200.0	1,185.7	1,185.6	4.1	3.6	-6.86	7,627.3	-918.1	7,682.6	7,674.9	7.68	1,000.813	
1,300.0	1,300.0	1,272.3	1,272.1	4.4	3.9	-6.86	7,626.7	-917.1	7,681.8	7,673.5	8.34	921.063	
1,400.0	1,400.0	1,364.3	1,364.2	4.8	4.2	-6.85	7,626.4	-916.2	7,681.3	7,672.3	9.02	851.175	
1,500.0	1,500.0	1,464.8	1,464.6	5.1	4.6	-6.84	7,625.9	-915.3	7,680.8	7,671.0	9.74	788.669	
1,600.0	1,600.0	1,595.8	1,595.6	5.5	5.1	95.75	7,625.1	-913.6	7,680.1	7,669.6	10.55	727.836	
1,700.0	1,700.0	1,711.0	1,710.8	5.8	5.5	95.79	7,624.2	-911.6	7,679.3	7,668.0	11.30	679.497	
1,789.3	1,789.2	1,752.1	1,751.9	6.1	5.6	95.81	7,624.0	-910.4	7,679.0	7,667.3	11.75	653.345	
1,800.0	1,799.9	1,758.1	1,757.9	6.2	5.6	95.82	7,624.0	-910.2	7,679.0	7,667.2	11.81	650.140	
1,900.0	1,899.7	1,819.0	1,818.7	6.5	5.9	95.86	7,624.3	-907.5	7,679.5	7,667.1	12.37	620.639	
2,000.0	1,999.4	1,886.7	1,886.3	6.9	6.1	95.92	7,624.9	-903.7	7,680.6	7,667.6	12.96	592.449	
2,100.0	2,098.9	1,980.2	1,979.6	7.2	6.4	96.02	7,626.1	-897.7	7,682.1	7,668.4	13.65	562.691	
2,200.0	2,198.3	2,056.8	2,056.0	7.6	6.7	96.10	7,627.2	-892.6	7,684.0	7,669.7	14.29	537.821	
2,300.0	2,297.4	2,149.0	2,148.0	8.0	7.0	96.21	7,628.7	-886.3	7,686.3	7,671.4	14.99	512.881	
2,400.0	2,396.4	2,251.5	2,250.2	8.3	7.4	96.37	7,630.5	-879.1	7,688.8	7,673.1	15.73	488.776	
2,500.0	2,495.5	2,338.7	2,337.1	8.7	7.7	96.51	7,632.0	-872.6	7,691.4	7,675.0	16.43	468.253	
2,600.0	2,594.5	2,428.8	2,426.9	9.1	8.0	96.66	7,633.8	-865.2	7,694.1	7,677.0	17.14	448.978	
2,700.0	2,693.5	2,521.9	2,519.7	9.5	8.4	96.82	7,635.8	-856.6	7,697.0	7,679.2	17.87	430.822	
2,800.0	2,792.5	2,628.2	2,625.3	9.9	8.8	97.01	7,638.2	-845.3	7,700.0	7,681.3	18.65	412.846	
2,900.0	2,891.6	2,720.0	2,716.4	10.3	9.1	97.19	7,640.3	-834.2	7,702.9	7,683.6	19.39	397.289	
3,000.0	2,990.6	2,799.4	2,795.2	10.7	9.4	97.34	7,642.3	-824.3	7,706.1	7,686.1	20.08	383.698	
3,100.0	3,089.6	2,862.9	2,858.2	11.1	9.7	97.46	7,644.0	-816.8	7,709.7	7,689.0	20.72	372.106	
3,200.0	3,188.6	2,921.0	2,915.9	11.5	9.9	97.57	7,645.9	-810.5	7,713.9	7,692.5	21.33	361.568	
3,300.0	3,287.7	3,300.0	3,167.6	11.9	11.3	98.01	7,652.5	-786.0	7,718.0	7,694.9	23.17	333.133	
3,400.0	3,386.7	3,308.3	3,301.7	12.3	11.4	98.21	7,653.3	-777.5	7,720.0	7,696.4	23.60	327.182	
3,500.0	3,485.7	3,401.0	3,394.1	12.7	11.7	98.35	7,653.8	-772.1	7,722.2	7,697.9	24.34	317.285	
3,600.0	3,584.8	3,482.8	3,475.9	13.1	12.0	98.46	7,654.4	-767.5	7,724.6	7,699.5	25.04	308.461	
3,700.0	3,683.8	3,554.1	3,547.0	13.5	12.3	98.57	7,655.1	-763.5	7,727.3	7,701.6	25.71	300.577	
3,800.0	3,782.8	3,623.4	3,616.2	13.9	12.5	98.67	7,656.0	-759.3	7,730.3	7,704.0	26.37	293.178	
3,900.0	3,881.8	18,876.0	11,477.8	14.3	133.8	176.93	-13.7	-316.9	7,672.8	7,608.4	64.34	119.245	
4,000.0	3,980.9	18,876.0	11,477.8	14.7	133.8	176.93	-13.7	-316.9	7,573.7	7,509.3	64.37	117.657	
4,100.0	4,079.9	18,876.0	11,477.8	15.1	133.8	176.93	-13.7	-316.9	7,474.6	7,410.2	64.41	116.053	
4,200.0	4,178.9	18,876.0	11,477.8	15.5	133.8	176.93	-13.7	-316.9	7,375.6	7,311.2	64.45	114.435	
4,300.0	4,277.9	18,876.0	11,477.8	15.9	133.8	176.93	-13.7	-316.9	7,276.6	7,212.1	64.51	112.804	
4,400.0	4,377.0	18,876.0	11,477.8	16.3	133.8	176.93	-13.7	-316.9	7,177.7	7,113.1	64.57	111.160	
4,500.0	4,476.0	18,876.0	11,477.8	16.8	133.8	176.93	-13.7	-316.9	7,078.7	7,014.1	64.64	109.505	
4,600.0	4,575.0	18,876.0	11,477.8	17.2	133.8	176.93	-13.7	-316.9	6,979.8	6,915.1	64.72	107.839	
4,700.0	4,674.0	18,876.0	11,477.8	17.6	133.8	176.93	-13.7	-316.9	6,880.9	6,816.1	64.81	106.164	
4,800.0	4,773.1	18,876.0	11,477.8	18.0	133.8	176.93	-13.7	-316.9	6,782.1	6,717.2	64.91	104.480	
4,900.0	4,872.1	18,876.0	11,477.8	18.4	133.8	176.93	-13.7	-316.9	6,683.3	6,618.3	65.02	102.789	
5,000.0	4,971.1	18,876.0	11,477.8	18.8	133.8	176.93	-13.7	-316.9	6,584.5	6,519.4	65.13	101.092	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 288-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	18,876.0	11,477.8	19.2	133.8	176.93	-13.7	-316.9	6,485.8	6,420.5	65.26	99.388	
5,200.0	5,169.2	18,876.0	11,477.8	19.7	133.8	176.93	-13.7	-316.9	6,387.1	6,321.7	65.39	97.680	
5,300.0	5,268.2	18,876.0	11,477.8	20.1	133.8	176.93	-13.7	-316.9	6,288.4	6,222.9	65.53	95.967	
5,400.0	5,367.2	18,876.0	11,477.8	20.5	133.8	176.93	-13.7	-316.9	6,189.8	6,124.1	65.67	94.251	
5,500.0	5,466.3	18,876.0	11,477.8	20.9	133.8	176.93	-13.7	-316.9	6,091.2	6,025.4	65.83	92.532	
5,600.0	5,565.3	18,876.0	11,477.8	21.3	133.8	176.93	-13.7	-316.9	5,992.7	5,926.7	65.99	90.811	
5,700.0	5,664.3	18,876.0	11,477.8	21.7	133.8	176.93	-13.7	-316.9	5,894.2	5,828.1	66.16	89.088	
5,800.0	5,763.3	18,876.0	11,477.8	22.2	133.8	176.93	-13.7	-316.9	5,795.8	5,729.5	66.34	87.364	
5,900.0	5,862.4	18,876.0	11,477.8	22.6	133.8	176.93	-13.7	-316.9	5,697.5	5,630.9	66.53	85.639	
6,000.0	5,961.4	18,876.0	11,477.8	23.0	133.8	176.93	-13.7	-316.9	5,599.2	5,532.4	66.73	83.914	
6,100.0	6,060.4	18,876.0	11,477.8	23.4	133.8	176.93	-13.7	-316.9	5,500.9	5,434.0	66.93	82.188	
6,200.0	6,159.4	18,876.0	11,477.8	23.8	133.8	176.93	-13.7	-316.9	5,402.7	5,335.6	67.15	80.464	
6,300.0	6,258.5	18,876.0	11,477.8	24.2	133.8	176.93	-13.7	-316.9	5,304.6	5,237.3	67.37	78.739	
6,400.0	6,357.5	18,876.0	11,477.8	24.7	133.8	176.93	-13.7	-316.9	5,206.6	5,139.0	67.60	77.016	
6,500.0	6,456.5	18,876.0	11,477.8	25.1	133.8	176.93	-13.7	-316.9	5,108.6	5,040.8	67.85	75.294	
6,600.0	6,555.6	18,876.0	11,477.8	25.5	133.8	176.93	-13.7	-316.9	5,010.8	4,942.6	68.11	73.573	
6,700.0	6,654.6	18,876.0	11,477.8	25.9	133.8	176.93	-13.7	-316.9	4,913.0	4,844.6	68.37	71.854	
6,800.0	6,753.6	18,876.0	11,477.8	26.3	133.8	176.93	-13.7	-316.9	4,815.2	4,746.6	68.65	70.137	
6,900.0	6,852.6	18,876.0	11,477.8	26.8	133.8	176.93	-13.7	-316.9	4,717.6	4,648.7	68.95	68.422	
7,000.0	6,951.7	18,876.0	11,477.8	27.2	133.8	176.93	-13.7	-316.9	4,620.1	4,550.9	69.26	66.709	
7,100.0	7,050.7	18,876.0	11,477.8	27.6	133.8	176.93	-13.7	-316.9	4,522.7	4,453.1	69.58	64.999	
7,136.4	7,086.7	18,876.0	11,477.8	27.8	133.8	176.93	-13.7	-316.9	4,487.3	4,417.6	69.70	64.377	
7,200.0	7,149.8	18,876.0	11,477.8	28.0	133.8	176.70	-13.7	-316.9	4,425.3	4,355.4	69.92	63.293	
7,300.0	7,249.2	18,876.0	11,477.8	28.4	133.8	176.26	-13.7	-316.9	4,327.5	4,257.3	70.25	61.601	
7,400.0	7,348.8	18,876.0	11,477.8	28.8	133.8	175.71	-13.7	-316.9	4,229.3	4,158.7	70.57	59.928	
7,500.0	7,448.7	18,876.0	11,477.8	29.2	133.8	174.98	-13.7	-316.9	4,130.6	4,059.7	70.88	58.275	
7,600.0	7,548.6	18,876.0	11,477.8	29.5	133.8	173.97	-13.7	-316.9	4,031.6	3,960.5	71.17	56.645	
7,669.7	7,618.3	18,876.0	11,477.8	29.7	133.8	70.46	-13.7	-316.9	3,962.4	3,891.1	71.37	55.521	
7,700.0	7,648.6	18,876.0	11,477.8	29.8	133.8	70.46	-13.7	-316.9	3,932.4	3,860.9	71.45	55.037	
7,800.0	7,748.6	18,876.0	11,477.8	30.1	133.8	70.46	-13.7	-316.9	3,833.1	3,761.3	71.73	53.441	
7,900.0	7,848.6	18,876.0	11,477.8	30.5	133.8	70.46	-13.7	-316.9	3,733.8	3,661.8	72.01	51.849	
8,000.0	7,948.6	18,876.0	11,477.8	30.8	133.8	70.46	-13.7	-316.9	3,634.6	3,562.3	72.31	50.262	
8,100.0	8,048.6	18,876.0	11,477.8	31.1	133.8	70.46	-13.7	-316.9	3,535.4	3,462.8	72.63	48.679	
8,200.0	8,148.6	18,876.0	11,477.8	31.4	133.8	70.46	-13.7	-316.9	3,436.3	3,363.3	72.95	47.102	
8,300.0	8,248.6	18,876.0	11,477.8	31.7	133.8	70.46	-13.7	-316.9	3,337.2	3,263.9	73.30	45.530	
8,400.0	8,348.6	18,876.0	11,477.8	32.0	133.8	70.46	-13.7	-316.9	3,238.1	3,164.5	73.66	43.963	
8,500.0	8,448.6	18,876.0	11,477.8	32.4	133.8	70.46	-13.7	-316.9	3,139.2	3,065.1	74.03	42.402	
8,600.0	8,548.6	18,876.0	11,477.8	32.7	133.8	70.46	-13.7	-316.9	3,040.3	2,965.8	74.43	40.847	
8,700.0	8,648.6	18,876.0	11,477.8	33.0	133.8	70.46	-13.7	-316.9	2,941.5	2,866.6	74.85	39.297	
8,800.0	8,748.6	18,876.0	11,477.8	33.3	133.8	70.46	-13.7	-316.9	2,842.7	2,767.4	75.30	37.753	
8,900.0	8,848.6	18,876.0	11,477.8	33.6	133.8	70.46	-13.7	-316.9	2,744.1	2,668.3	75.77	36.215	
9,000.0	8,948.6	18,876.0	11,477.8	34.0	133.8	70.46	-13.7	-316.9	2,645.5	2,569.2	76.28	34.683	
9,100.0	9,048.6	18,876.0	11,477.8	34.3	133.8	70.46	-13.7	-316.9	2,547.1	2,470.3	76.82	33.157	
9,200.0	9,148.6	18,876.0	11,477.8	34.6	133.8	70.46	-13.7	-316.9	2,448.8	2,371.4	77.40	31.638	
9,300.0	9,248.6	18,876.0	11,477.8	34.9	133.8	70.46	-13.7	-316.9	2,350.6	2,272.6	78.03	30.125	
9,400.0	9,348.6	18,876.0	11,477.8	35.3	133.8	70.46	-13.7	-316.9	2,252.6	2,173.9	78.71	28.619	
9,500.0	9,448.6	18,876.0	11,477.8	35.6	133.8	70.46	-13.7	-316.9	2,154.8	2,075.3	79.45	27.120	
9,600.0	9,548.6	18,876.0	11,477.8	35.9	133.8	70.46	-13.7	-316.9	2,057.1	1,976.9	80.27	25.628	
9,700.0	9,648.6	18,876.0	11,477.8	36.3	133.8	70.46	-13.7	-316.9	1,959.8	1,878.6	81.17	24.144	
9,800.0	9,748.6	18,876.0	11,477.8	36.6	133.8	70.46	-13.7	-316.9	1,862.7	1,780.5	82.17	22.668	
9,900.0	9,848.6	18,876.0	11,477.8	36.9	133.8	70.46	-13.7	-316.9	1,765.9	1,682.6	83.29	21.201	
10,000.0	9,948.6	18,876.0	11,477.8	37.2	133.8	70.46	-13.7	-316.9	1,669.5	1,585.0	84.56	19.743	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #005H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 288-MWD													Offset Well Error:	0.0 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		
10,100.0	10,048.6	18,876.0	11,477.8	37.6	133.8	70.46	-13.7	-316.9	1,573.6	1,487.6	86.00	18.297		
10,200.0	10,148.6	18,876.0	11,477.8	37.9	133.8	70.46	-13.7	-316.9	1,478.2	1,390.5	87.65	16.864		
10,300.0	10,248.6	18,876.0	11,477.8	38.2	133.8	70.46	-13.7	-316.9	1,383.4	1,293.9	89.57	15.446		
10,400.0	10,348.6	18,876.0	11,477.8	38.6	133.8	70.46	-13.7	-316.9	1,289.5	1,197.7	91.81	14.046		
10,500.0	10,448.6	18,876.0	11,477.8	38.9	133.8	70.46	-13.7	-316.9	1,196.5	1,102.0	94.45	12.668		
10,528.4	10,477.0	18,876.0	11,477.8	39.0	133.8	70.46	-13.7	-316.9	1,170.3	1,075.0	95.28	12.282		
10,550.0	10,498.6	18,876.0	11,477.8	39.1	133.8	-113.79	-13.7	-316.9	1,150.5	1,054.5	95.95	11.990		
10,600.0	10,548.4	18,876.0	11,477.8	39.2	133.8	-122.86	-13.7	-316.9	1,105.5	1,007.9	97.60	11.327		
10,650.0	10,597.7	18,876.0	11,477.8	39.4	133.8	-129.89	-13.7	-316.9	1,062.1	962.7	99.41	10.685		
10,700.0	10,646.1	18,876.0	11,477.8	39.6	133.8	-135.27	-13.7	-316.9	1,020.9	919.5	101.35	10.073		
10,750.0	10,693.1	18,876.0	11,477.8	39.7	133.8	-139.37	-13.7	-316.9	982.4	879.0	103.43	9.499		
10,800.0	10,738.5	18,876.0	11,477.8	39.9	133.8	-142.48	-13.7	-316.9	947.3	841.7	105.59	8.972		
10,850.0	10,782.0	18,876.0	11,477.8	40.0	133.8	-144.83	-13.7	-316.9	916.3	808.5	107.78	8.502		
10,900.0	10,823.1	18,876.0	11,477.8	40.2	133.8	-146.57	-13.7	-316.9	890.0	780.1	109.93	8.096		
10,950.0	10,861.6	18,876.0	11,477.8	40.4	133.8	-147.82	-13.7	-316.9	869.1	757.2	111.96	7.763		
11,000.0	10,897.1	18,876.0	11,477.8	40.5	133.8	-148.65	-13.7	-316.9	854.1	740.4	113.75	7.509		
11,050.0	10,929.5	18,876.0	11,477.8	40.7	133.8	-149.10	-13.7	-316.9	845.6	730.3	115.21	7.339		
11,089.7	10,952.7	18,876.0	11,477.8	40.8	133.8	-149.21	-13.7	-316.9	843.4	727.4	116.07	7.267 CC		
11,100.0	10,958.4	18,876.0	11,477.8	40.8	133.8	-149.20	-13.7	-316.9	843.6	727.3	116.25	7.257 ES, SF		
11,150.0	10,983.6	18,876.0	11,477.8	41.0	133.8	-148.96	-13.7	-316.9	848.3	731.5	116.84	7.261		
11,200.0	11,005.0	18,876.0	11,477.8	41.2	133.8	-148.36	-13.7	-316.9	859.6	742.6	116.95	7.350		
11,250.0	11,022.4	18,876.0	11,477.8	41.4	133.8	-147.36	-13.7	-316.9	877.1	760.4	116.63	7.520		
11,300.0	11,035.6	18,876.0	11,477.8	41.5	133.8	-145.92	-13.7	-316.9	900.2	784.3	115.93	7.766		
11,350.0	11,044.6	18,876.0	11,477.8	41.8	133.8	-143.94	-13.7	-316.9	928.6	813.6	114.93	8.079		
11,400.0	11,049.3	18,876.0	11,477.8	42.0	133.8	-141.30	-13.7	-316.9	961.4	847.6	113.72	8.454		
11,428.4	11,050.0	18,876.0	11,477.8	42.1	133.8	-139.44	-13.7	-316.9	981.7	868.7	112.97	8.690		
11,428.7	11,050.0	18,876.0	11,477.8	42.1	133.8	-139.44	-13.7	-316.9	981.9	868.9	112.96	8.692		
11,500.0	11,050.0	18,876.0	11,477.8	42.4	133.8	-139.44	-13.7	-316.9	1,035.6	924.5	111.07	9.324		
11,600.0	11,050.0	18,876.0	11,477.8	43.0	133.8	-139.44	-13.7	-316.9	1,114.2	1,005.6	108.62	10.258		
11,700.0	11,050.0	18,876.0	11,477.8	43.5	133.8	-139.44	-13.7	-316.9	1,196.0	1,089.6	106.40	11.240		
11,800.0	11,050.0	18,876.0	11,477.8	44.2	133.8	-139.44	-13.7	-316.9	1,280.4	1,175.9	104.42	12.262		
11,900.0	11,050.0	18,876.0	11,477.8	44.9	133.8	-139.44	-13.7	-316.9	1,366.8	1,264.2	102.66	13.315		
12,000.0	11,050.0	18,876.0	11,477.8	45.6	133.8	-139.44	-13.7	-316.9	1,455.1	1,354.0	101.09	14.393		
12,100.0	11,050.0	18,876.0	11,477.8	46.4	133.8	-139.44	-13.7	-316.9	1,544.7	1,445.0	99.71	15.493		
12,200.0	11,050.0	18,876.0	11,477.8	47.2	133.8	-139.44	-13.7	-316.9	1,635.6	1,537.1	98.48	16.609		
12,300.0	11,050.0	18,876.0	11,477.8	48.1	133.8	-139.44	-13.7	-316.9	1,727.5	1,630.1	97.38	17.739		
12,400.0	11,050.0	18,876.0	11,477.8	49.0	133.8	-139.44	-13.7	-316.9	1,820.2	1,723.8	96.41	18.880		
12,500.0	11,050.0	18,876.0	11,477.8	50.0	133.8	-139.44	-13.7	-316.9	1,913.6	1,818.1	95.54	20.030		
12,600.0	11,050.0	18,876.0	11,477.8	51.0	133.8	-139.44	-13.7	-316.9	2,007.7	1,913.0	94.76	21.187		
12,700.0	11,050.0	18,876.0	11,477.8	52.0	133.8	-139.44	-13.7	-316.9	2,102.4	2,008.3	94.06	22.351		
12,800.0	11,050.0	18,876.0	11,477.8	53.1	133.8	-139.44	-13.7	-316.9	2,197.5	2,104.0	93.44	23.518		
12,900.0	11,050.0	18,876.0	11,477.8	54.2	133.8	-139.44	-13.7	-316.9	2,293.0	2,200.1	92.87	24.690		
13,000.0	11,050.0	18,876.0	11,477.8	55.3	133.8	-139.44	-13.7	-316.9	2,388.9	2,296.5	92.36	25.864		
13,100.0	11,050.0	18,876.0	11,477.8	56.4	133.8	-139.44	-13.7	-316.9	2,485.1	2,393.2	91.90	27.041		
13,200.0	11,050.0	18,876.0	11,477.8	57.6	133.8	-139.44	-13.7	-316.9	2,581.6	2,490.1	91.48	28.219		
13,300.0	11,050.0	18,876.0	11,477.8	58.8	133.8	-139.44	-13.7	-316.9	2,678.4	2,587.3	91.10	29.399		
13,400.0	11,050.0	18,876.0	11,477.8	60.0	133.8	-139.44	-13.7	-316.9	2,775.4	2,684.6	90.76	30.579		
13,500.0	11,050.0	18,876.0	11,477.8	61.2	133.8	-139.44	-13.7	-316.9	2,872.6	2,782.1	90.45	31.760		
13,600.0	11,050.0	18,876.0	11,477.8	62.5	133.8	-139.44	-13.7	-316.9	2,969.9	2,879.8	90.16	32.941		
13,700.0	11,050.0	18,876.0	11,477.8	63.8	133.8	-139.44	-13.7	-316.9	3,067.5	2,977.6	89.90	34.122		
13,800.0	11,050.0	18,876.0	11,477.8	65.1	133.8	-139.44	-13.7	-316.9	3,165.2	3,075.5	89.66	35.303		
13,900.0	11,050.0	18,876.0	11,477.8	66.4	133.8	-139.44	-13.7	-316.9	3,263.0	3,173.6	89.44	36.483		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #005H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 288-MWD													Offset Well Error:	0.0 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		
14,000.0	11,050.0	18,876.0	11,477.8	67.7	133.8	-139.44	-13.7	-316.9	3,361.0	3,271.8	89.24	37.663		
14,100.0	11,050.0	18,876.0	11,477.8	69.0	133.8	-139.44	-13.7	-316.9	3,459.1	3,370.0	89.06	38.842		
14,200.0	11,050.0	18,876.0	11,477.8	70.4	133.8	-139.44	-13.7	-316.9	3,557.3	3,468.4	88.89	40.020		
14,300.0	11,050.0	18,876.0	11,477.8	71.7	133.8	-139.44	-13.7	-316.9	3,655.6	3,566.8	88.73	41.197		
14,400.0	11,050.0	18,876.0	11,477.8	73.1	133.8	-139.44	-13.7	-316.9	3,754.0	3,665.4	88.59	42.373		
14,500.0	11,050.0	18,876.0	11,477.8	74.5	133.8	-139.44	-13.7	-316.9	3,852.4	3,764.0	88.47	43.547		
14,600.0	11,050.0	18,876.0	11,477.8	75.9	133.8	-139.44	-13.7	-316.9	3,951.0	3,862.6	88.35	44.720		
14,700.0	11,050.0	18,876.0	11,477.8	77.3	133.8	-139.44	-13.7	-316.9	4,049.6	3,961.3	88.24	45.892		
14,800.0	11,050.0	18,876.0	11,477.8	78.7	133.8	-139.44	-13.7	-316.9	4,148.3	4,060.1	88.14	47.063		
14,900.0	11,050.0	18,876.0	11,477.8	80.1	133.8	-139.44	-13.7	-316.9	4,247.0	4,159.0	88.05	48.231		
15,000.0	11,050.0	18,876.0	11,477.8	81.6	133.8	-139.44	-13.7	-316.9	4,345.8	4,257.8	87.97	49.399		
15,100.0	11,050.0	18,876.0	11,477.8	83.0	133.8	-139.44	-13.7	-316.9	4,444.7	4,356.8	87.90	50.564		
15,200.0	11,050.0	18,876.0	11,477.8	84.5	133.8	-139.44	-13.7	-316.9	4,543.6	4,455.7	87.84	51.728		
15,300.0	11,050.0	18,876.0	11,477.8	85.9	133.8	-139.44	-13.7	-316.9	4,642.5	4,554.7	87.78	52.890		
15,400.0	11,050.0	18,876.0	11,477.8	87.4	133.8	-139.44	-13.7	-316.9	4,741.5	4,653.8	87.72	54.050		
15,500.0	11,050.0	18,876.0	11,477.8	88.9	133.8	-139.44	-13.7	-316.9	4,840.5	4,752.9	87.68	55.209		
15,600.0	11,050.0	18,876.0	11,477.8	90.4	133.8	-139.44	-13.7	-316.9	4,939.6	4,852.0	87.64	56.365		
15,700.0	11,050.0	18,876.0	11,477.8	91.8	133.8	-139.44	-13.7	-316.9	5,038.7	4,951.1	87.60	57.520		
15,800.0	11,050.0	18,876.0	11,477.8	93.3	133.8	-139.44	-13.7	-316.9	5,137.9	5,050.3	87.57	58.672		
15,900.0	11,050.0	18,876.0	11,477.8	94.8	133.8	-139.44	-13.7	-316.9	5,237.0	5,149.5	87.54	59.823		
16,000.0	11,050.0	18,876.0	11,477.8	96.3	133.8	-139.44	-13.7	-316.9	5,336.3	5,248.7	87.52	60.971		
16,100.0	11,050.0	18,876.0	11,477.8	97.8	133.8	-139.44	-13.7	-316.9	5,435.5	5,348.0	87.50	62.118		
16,200.0	11,050.0	18,876.0	11,477.8	99.4	133.8	-139.44	-13.7	-316.9	5,534.8	5,447.3	87.49	63.262		
16,300.0	11,050.0	18,876.0	11,477.8	100.9	133.8	-139.44	-13.7	-316.9	5,634.0	5,546.6	87.48	64.404		
16,400.0	11,050.0	18,876.0	11,477.8	102.4	133.8	-139.44	-13.7	-316.9	5,733.4	5,645.9	87.47	65.544		
16,500.0	11,050.0	18,876.0	11,477.8	103.9	133.8	-139.44	-13.7	-316.9	5,832.7	5,745.2	87.47	66.681		
16,600.0	11,050.0	18,876.0	11,477.8	105.5	133.8	-139.44	-13.7	-316.9	5,932.1	5,844.6	87.47	67.816		
16,700.0	11,050.0	18,876.0	11,477.8	107.0	133.8	-139.44	-13.7	-316.9	6,031.4	5,944.0	87.48	68.949		
16,800.0	11,050.0	18,876.0	11,477.8	108.5	133.8	-139.44	-13.7	-316.9	6,130.8	6,043.4	87.48	70.080		
16,900.0	11,050.0	18,876.0	11,477.8	110.1	133.8	-139.44	-13.7	-316.9	6,230.3	6,142.8	87.49	71.208		
17,000.0	11,050.0	18,876.0	11,477.8	111.6	133.8	-139.44	-13.7	-316.9	6,329.7	6,242.2	87.51	72.334		
17,100.0	11,050.0	18,876.0	11,477.8	113.2	133.8	-139.44	-13.7	-316.9	6,429.2	6,341.6	87.52	73.457		
17,200.0	11,050.0	18,876.0	11,477.8	114.7	133.8	-139.44	-13.7	-316.9	6,528.6	6,441.1	87.54	74.578		
17,300.0	11,050.0	18,876.0	11,477.8	116.3	133.8	-139.44	-13.7	-316.9	6,628.1	6,540.6	87.56	75.697		
17,357.4	11,050.0	18,876.0	11,477.8	117.1	133.8	-139.44	-13.7	-316.9	6,685.3	6,597.7	87.57	76.338		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 290-MWD												Offset Well Error:	0.0 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	
0.0	0.0	0.0	0.0	0.0	0.0	13.86	7,505.0	1,851.4	7,730.2				
100.0	100.0	51.6	51.6	0.1	0.1	13.86	7,505.0	1,851.3	7,730.0	7,729.8	0.21	N/A	
200.0	200.0	157.9	157.9	0.5	0.3	13.85	7,505.0	1,851.0	7,729.9	7,729.2	0.74	N/A	
300.0	300.0	264.1	264.1	0.8	0.4	13.85	7,505.0	1,850.4	7,729.7	7,728.5	1.27	6,095.027	
400.0	400.0	394.3	394.3	1.2	0.8	13.84	7,504.7	1,849.4	7,729.3	7,727.3	2.04	3,785.558	
500.0	500.0	468.2	468.2	1.6	1.1	13.84	7,504.5	1,848.7	7,728.9	7,726.2	2.66	2,900.350	
600.0	600.0	562.4	562.4	1.9	1.4	13.83	7,504.6	1,847.7	7,728.7	7,725.3	3.36	2,299.714	
700.0	700.0	700.0	676.4	2.3	1.9	13.82	7,504.5	1,846.2	7,728.3	7,724.1	4.21	1,834.482	
761.4	761.4	692.0	692.0	2.5	1.9	13.82	7,504.6	1,846.1	7,728.3	7,723.9	4.40	1,755.997	
800.0	800.0	703.0	702.9	2.6	1.9	13.82	7,504.6	1,846.0	7,728.5	7,723.9	4.58	1,688.234	
900.0	900.0	737.0	737.0	3.0	2.1	13.82	7,505.0	1,846.1	7,729.5	7,724.5	5.05	1,529.186	
1,000.0	1,000.0	766.4	766.4	3.4	2.2	13.82	7,505.6	1,846.3	7,731.5	7,726.0	5.51	1,402.393	
1,100.0	1,100.0	802.9	802.9	3.7	2.3	13.82	7,506.5	1,846.8	7,734.2	7,728.2	6.00	1,290.094	
1,200.0	1,200.0	868.7	868.6	4.1	2.5	13.83	7,508.6	1,848.3	7,737.8	7,731.2	6.58	1,176.723	
1,300.0	1,300.0	1,021.5	1,021.3	4.4	3.0	13.84	7,512.9	1,851.4	7,741.0	7,733.5	7.46	1,038.075	
1,400.0	1,400.0	1,100.3	1,100.1	4.8	3.3	13.85	7,515.0	1,852.8	7,744.1	7,736.0	8.09	957.315	
1,500.0	1,500.0	1,266.1	1,265.8	5.1	3.9	13.86	7,519.1	1,855.9	7,746.9	7,737.9	9.03	858.135	
1,600.0	1,600.0	1,372.5	1,372.1	5.5	4.3	116.42	7,521.2	1,857.4	7,749.5	7,739.8	9.75	794.846	
1,700.0	1,700.0	1,457.3	1,457.0	5.8	4.6	116.40	7,523.0	1,858.5	7,753.0	7,742.7	10.39	746.304	
1,800.0	1,799.9	1,551.0	1,550.6	6.2	4.9	116.40	7,524.9	1,860.2	7,757.4	7,746.4	11.06	701.276	
1,900.0	1,899.7	1,604.8	1,604.4	6.5	5.1	116.38	7,526.1	1,861.4	7,762.9	7,751.3	11.60	669.386	
2,000.0	1,999.4	1,646.9	1,646.4	6.9	5.2	116.34	7,527.2	1,862.7	7,769.9	7,757.8	12.09	642.513	
2,100.0	2,098.9	1,683.0	1,682.5	7.2	5.4	116.30	7,528.5	1,864.1	7,778.4	7,765.8	12.57	618.768	
2,200.0	2,198.3	1,758.2	1,757.6	7.6	5.6	116.29	7,531.3	1,867.7	7,788.2	7,775.1	13.19	590.284	
2,300.0	2,297.4	1,876.9	1,876.0	8.0	6.1	116.33	7,535.7	1,874.2	7,799.1	7,785.1	13.98	557.837	
2,400.0	2,396.4	1,914.5	1,913.5	8.3	6.2	116.38	7,537.1	1,876.4	7,810.5	7,796.0	14.48	539.439	
2,500.0	2,495.5	1,955.4	1,954.3	8.7	6.3	116.43	7,538.9	1,879.0	7,822.6	7,807.6	14.99	521.827	
2,600.0	2,594.5	2,001.2	1,999.9	9.1	6.5	116.49	7,541.2	1,882.3	7,835.5	7,820.0	15.52	504.769	
2,700.0	2,693.5	2,065.6	2,064.0	9.5	6.8	116.58	7,544.6	1,887.4	7,849.0	7,832.8	16.13	486.701	
2,800.0	2,792.5	2,157.7	2,155.7	9.9	7.1	116.71	7,549.7	1,894.7	7,862.7	7,845.8	16.84	466.955	
2,900.0	2,891.6	2,155.0	2,153.0	10.3	7.1	116.70	7,549.6	1,894.5	7,877.1	7,859.9	17.19	458.174	
3,000.0	2,990.6	2,212.9	2,210.6	10.7	7.3	116.79	7,553.2	1,899.5	7,892.1	7,874.3	17.78	443.924	
3,100.0	3,089.6	2,250.0	2,247.4	11.1	7.4	116.84	7,556.0	1,903.2	7,908.1	7,889.8	18.28	432.529	
3,200.0	3,188.6	2,313.0	2,309.8	11.5	7.7	116.94	7,560.9	1,909.9	7,924.8	7,905.9	18.89	419.489	
3,300.0	3,287.7	2,404.6	2,400.6	11.9	8.0	117.07	7,568.1	1,919.7	7,941.7	7,922.1	19.61	404.908	
3,400.0	3,386.7	2,491.8	2,487.0	12.3	8.4	117.20	7,575.1	1,929.1	7,958.7	7,938.4	20.32	391.664	
3,500.0	3,485.7	2,577.5	2,571.9	12.7	8.7	117.33	7,582.0	1,938.3	7,975.9	7,954.8	21.02	379.383	
3,600.0	3,584.8	2,658.2	2,651.9	13.1	9.0	117.46	7,588.5	1,947.4	7,993.2	7,971.5	21.71	368.211	
3,700.0	3,683.8	2,732.0	2,724.9	13.5	9.3	117.57	7,594.6	1,955.9	8,010.9	7,988.6	22.37	358.163	
3,800.0	3,782.8	2,820.7	2,812.7	13.9	9.7	117.71	7,602.1	1,966.4	8,028.8	8,005.8	23.09	347.756	
3,900.0	3,881.8	2,918.2	2,909.1	14.3	10.1	117.86	7,610.2	1,978.1	8,046.8	8,023.0	23.85	337.446	
4,000.0	3,980.9	18,949.0	11,531.6	14.7	132.3	-171.78	-20.4	2,234.2	8,009.0	7,931.7	77.32	103.586	
4,100.0	4,079.9	18,949.0	11,531.6	15.1	132.3	-171.78	-20.4	2,234.2	7,919.5	7,841.6	77.85	101.732	
4,200.0	4,178.9	18,949.0	11,531.6	15.5	132.3	-171.78	-20.4	2,234.2	7,830.1	7,751.7	78.39	99.881	
4,300.0	4,277.9	18,949.0	11,531.6	15.9	132.3	-171.78	-20.4	2,234.2	7,741.1	7,662.1	78.96	98.037	
4,400.0	4,377.0	18,949.0	11,531.6	16.3	132.3	-171.78	-20.4	2,234.2	7,652.3	7,572.7	79.55	96.199	
4,500.0	4,476.0	18,949.0	11,531.6	16.8	132.3	-171.78	-20.4	2,234.2	7,563.7	7,483.6	80.15	94.368	
4,600.0	4,575.0	18,949.0	11,531.6	17.2	132.3	-171.78	-20.4	2,234.2	7,475.5	7,394.7	80.78	92.545	
4,700.0	4,674.0	18,949.0	11,531.6	17.6	132.3	-171.78	-20.4	2,234.2	7,387.6	7,306.2	81.42	90.731	
4,800.0	4,773.1	18,949.0	11,531.6	18.0	132.3	-171.78	-20.4	2,234.2	7,300.0	7,217.9	82.09	88.927	
4,900.0	4,872.1	18,949.0	11,531.6	18.4	132.3	-171.78	-20.4	2,234.2	7,212.7	7,129.9	82.78	87.133	
5,000.0	4,971.1	18,949.0	11,531.6	18.8	132.3	-171.78	-20.4	2,234.2	7,125.7	7,042.2	83.49	85.351	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 290-MWD													Offset Well Error:	0.0 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		
5,100.0	5,070.2	18,949.0	11,531.6	19.2	132.3	-171.78	-20.4	2,234.2	7,039.1	6,954.8	84.22	83.580		
5,200.0	5,169.2	18,949.0	11,531.6	19.7	132.3	-171.78	-20.4	2,234.2	6,952.8	6,867.8	84.97	81.823		
5,300.0	5,268.2	18,949.0	11,531.6	20.1	132.3	-171.78	-20.4	2,234.2	6,866.9	6,781.2	85.75	80.078		
5,400.0	5,367.2	18,949.0	11,531.6	20.5	132.3	-171.78	-20.4	2,234.2	6,781.4	6,694.9	86.56	78.348		
5,500.0	5,466.3	18,949.0	11,531.6	20.9	132.3	-171.78	-20.4	2,234.2	6,696.3	6,608.9	87.38	76.632		
5,600.0	5,565.3	18,949.0	11,531.6	21.3	132.3	-171.78	-20.4	2,234.2	6,611.6	6,523.4	88.24	74.932		
5,700.0	5,664.3	18,949.0	11,531.6	21.7	132.3	-171.78	-20.4	2,234.2	6,527.4	6,438.3	89.11	73.248		
5,800.0	5,763.3	18,949.0	11,531.6	22.2	132.3	-171.78	-20.4	2,234.2	6,443.6	6,353.6	90.02	71.580		
5,900.0	5,862.4	18,949.0	11,531.6	22.6	132.3	-171.78	-20.4	2,234.2	6,360.3	6,269.3	90.95	69.930		
6,000.0	5,961.4	18,949.0	11,531.6	23.0	132.3	-171.78	-20.4	2,234.2	6,277.4	6,185.5	91.91	68.297		
6,100.0	6,060.4	18,949.0	11,531.6	23.4	132.3	-171.78	-20.4	2,234.2	6,195.1	6,102.2	92.90	66.684		
6,200.0	6,159.4	18,949.0	11,531.6	23.8	132.3	-171.78	-20.4	2,234.2	6,113.3	6,019.3	93.92	65.089		
6,300.0	6,258.5	18,949.0	11,531.6	24.2	132.3	-171.78	-20.4	2,234.2	6,032.0	5,937.0	94.97	63.514		
6,400.0	6,357.5	18,949.0	11,531.6	24.7	132.3	-171.78	-20.4	2,234.2	5,951.3	5,855.3	96.05	61.960		
6,500.0	6,456.5	18,949.0	11,531.6	25.1	132.3	-171.78	-20.4	2,234.2	5,871.2	5,774.1	97.16	60.427		
6,600.0	6,555.6	18,949.0	11,531.6	25.5	132.3	-171.78	-20.4	2,234.2	5,791.7	5,693.4	98.31	58.915		
6,700.0	6,654.6	18,949.0	11,531.6	25.9	132.3	-171.78	-20.4	2,234.2	5,712.9	5,613.4	99.48	57.426		
6,800.0	6,753.6	18,949.0	11,531.6	26.3	132.3	-171.78	-20.4	2,234.2	5,634.8	5,534.1	100.69	55.959		
6,900.0	6,852.6	18,949.0	11,531.6	26.8	132.3	-171.78	-20.4	2,234.2	5,557.3	5,455.4	101.94	54.516		
7,000.0	6,951.7	18,949.0	11,531.6	27.2	132.3	-171.78	-20.4	2,234.2	5,480.6	5,377.3	103.22	53.097		
7,100.0	7,050.7	18,949.0	11,531.6	27.6	132.3	-171.78	-20.4	2,234.2	5,404.6	5,300.1	104.53	51.703		
7,136.4	7,086.7	18,949.0	11,531.6	27.8	132.3	-171.78	-20.4	2,234.2	5,377.1	5,272.1	105.02	51.201		
7,200.0	7,149.8	18,949.0	11,531.6	28.0	132.3	-171.62	-20.4	2,234.2	5,329.1	5,223.2	105.88	50.333		
7,300.0	7,249.2	18,949.0	11,531.6	28.4	132.3	-171.36	-20.4	2,234.2	5,252.8	5,145.5	107.22	48.991		
7,400.0	7,348.8	18,949.0	11,531.6	28.8	132.3	-171.08	-20.4	2,234.2	5,175.6	5,067.0	108.56	47.677		
7,500.0	7,448.7	18,949.0	11,531.6	29.2	132.3	-170.79	-20.4	2,234.2	5,097.5	4,987.7	109.89	46.390		
7,600.0	7,548.6	18,949.0	11,531.6	29.5	132.3	-170.48	-20.4	2,234.2	5,018.7	4,907.5	111.21	45.128		
7,669.7	7,618.3	18,949.0	11,531.6	29.7	132.3	87.19	-20.4	2,234.2	4,963.1	4,851.0	112.12	44.265		
7,700.0	7,648.6	18,949.0	11,531.6	29.8	132.3	87.19	-20.4	2,234.2	4,939.0	4,826.5	112.52	43.894		
7,800.0	7,748.6	18,949.0	11,531.6	30.1	132.3	87.19	-20.4	2,234.2	4,859.7	4,745.9	113.85	42.685		
7,900.0	7,848.6	18,949.0	11,531.6	30.5	132.3	87.19	-20.4	2,234.2	4,781.2	4,666.0	115.22	41.497		
8,000.0	7,948.6	18,949.0	11,531.6	30.8	132.3	87.19	-20.4	2,234.2	4,703.5	4,586.9	116.63	40.330		
8,100.0	8,048.6	18,949.0	11,531.6	31.1	132.3	87.19	-20.4	2,234.2	4,626.7	4,508.6	118.07	39.185		
8,200.0	8,148.6	18,949.0	11,531.6	31.4	132.3	87.19	-20.4	2,234.2	4,550.7	4,431.2	119.56	38.064		
8,300.0	8,248.6	18,949.0	11,531.6	31.7	132.3	87.19	-20.4	2,234.2	4,475.8	4,354.7	121.08	36.965		
8,400.0	8,348.6	18,949.0	11,531.6	32.0	132.3	87.19	-20.4	2,234.2	4,401.8	4,279.1	122.64	35.891		
8,500.0	8,448.6	18,949.0	11,531.6	32.4	132.3	87.19	-20.4	2,234.2	4,328.8	4,204.6	124.24	34.841		
8,600.0	8,548.6	18,949.0	11,531.6	32.7	132.3	87.19	-20.4	2,234.2	4,257.0	4,131.1	125.88	33.817		
8,700.0	8,648.6	18,949.0	11,531.6	33.0	132.3	87.19	-20.4	2,234.2	4,186.3	4,058.7	127.56	32.818		
8,800.0	8,748.6	18,949.0	11,531.6	33.3	132.3	87.19	-20.4	2,234.2	4,116.8	3,987.5	129.27	31.845		
8,900.0	8,848.6	18,949.0	11,531.6	33.6	132.3	87.19	-20.4	2,234.2	4,048.6	3,917.6	131.02	30.900		
9,000.0	8,948.6	18,949.0	11,531.6	34.0	132.3	87.19	-20.4	2,234.2	3,981.7	3,848.9	132.81	29.981		
9,100.0	9,048.6	18,949.0	11,531.6	34.3	132.3	87.19	-20.4	2,234.2	3,916.3	3,781.6	134.62	29.091		
9,200.0	9,148.6	18,949.0	11,531.6	34.6	132.3	87.19	-20.4	2,234.2	3,852.3	3,715.8	136.46	28.230		
9,300.0	9,248.6	18,949.0	11,531.6	34.9	132.3	87.19	-20.4	2,234.2	3,789.9	3,651.6	138.33	27.397		
9,400.0	9,348.6	18,949.0	11,531.6	35.3	132.3	87.19	-20.4	2,234.2	3,729.1	3,588.9	140.22	26.594		
9,500.0	9,448.6	18,949.0	11,531.6	35.6	132.3	87.19	-20.4	2,234.2	3,670.1	3,527.9	142.13	25.821		
9,600.0	9,548.6	18,949.0	11,531.6	35.9	132.3	87.19	-20.4	2,234.2	3,612.8	3,468.8	144.06	25.079		
9,700.0	9,648.6	18,949.0	11,531.6	36.3	132.3	87.19	-20.4	2,234.2	3,557.5	3,411.5	145.99	24.368		
9,800.0	9,748.6	18,949.0	11,531.6	36.6	132.3	87.19	-20.4	2,234.2	3,504.1	3,356.2	147.92	23.689		
9,900.0	9,848.6	18,949.0	11,531.6	36.9	132.3	87.19	-20.4	2,234.2	3,452.8	3,303.0	149.85	23.041		
10,000.0	9,948.6	18,949.0	11,531.6	37.2	132.3	87.19	-20.4	2,234.2	3,403.7	3,251.9	151.77	22.427		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 290-MWD													Offset Well Error:	0.0 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		
10,100.0	10,048.6	18,949.0	11,531.6	37.6	132.3	87.19	-20.4	2,234.2	3,356.8	3,203.1	153.67	21.845		
10,200.0	10,148.6	18,949.0	11,531.6	37.9	132.3	87.19	-20.4	2,234.2	3,312.3	3,156.7	155.53	21.296		
10,300.0	10,248.6	18,949.0	11,531.6	38.2	132.3	87.19	-20.4	2,234.2	3,270.2	3,112.8	157.36	20.781		
10,400.0	10,348.6	18,949.0	11,531.6	38.6	132.3	87.19	-20.4	2,234.2	3,230.7	3,071.5	159.15	20.300		
10,500.0	10,448.6	18,949.0	11,531.6	38.9	132.3	87.19	-20.4	2,234.2	3,193.8	3,032.9	160.87	19.853		
10,528.4	10,477.0	18,949.0	11,531.6	39.0	132.3	87.19	-20.4	2,234.2	3,183.8	3,022.5	161.35	19.733		
10,550.0	10,498.6	18,949.0	11,531.6	39.1	132.3	-93.24	-20.4	2,234.2	3,176.4	3,014.7	161.71	19.643		
10,600.0	10,548.4	18,949.0	11,531.6	39.2	132.3	-94.98	-20.4	2,234.2	3,159.9	2,997.4	162.52	19.443		
10,650.0	10,597.7	18,949.0	11,531.6	39.4	132.3	-96.60	-20.4	2,234.2	3,144.5	2,981.2	163.30	19.255		
10,700.0	10,646.1	18,949.0	11,531.6	39.6	132.3	-98.07	-20.4	2,234.2	3,130.3	2,966.2	164.06	19.080		
10,750.0	10,693.1	18,949.0	11,531.6	39.7	132.3	-99.39	-20.4	2,234.2	3,117.4	2,952.6	164.77	18.920		
10,800.0	10,738.5	18,949.0	11,531.6	39.9	132.3	-100.55	-20.4	2,234.2	3,105.9	2,940.5	165.43	18.775		
10,850.0	10,782.0	18,949.0	11,531.6	40.0	132.3	-101.54	-20.4	2,234.2	3,096.0	2,930.0	166.04	18.646		
10,900.0	10,823.1	18,949.0	11,531.6	40.2	132.3	-102.36	-20.4	2,234.2	3,087.7	2,921.1	166.60	18.534		
10,950.0	10,861.6	18,949.0	11,531.6	40.4	132.3	-103.00	-20.4	2,234.2	3,081.2	2,914.1	167.09	18.441		
11,000.0	10,897.1	18,949.0	11,531.6	40.5	132.3	-103.47	-20.4	2,234.2	3,076.4	2,908.9	167.52	18.365		
11,050.0	10,929.5	18,949.0	11,531.6	40.7	132.3	-103.76	-20.4	2,234.2	3,073.4	2,905.6	167.87	18.308		
11,100.0	10,958.4	18,949.0	11,531.6	40.8	132.3	-103.87	-20.4	2,234.2	3,072.3	2,904.2	168.16	18.270		
11,104.9	10,961.1	18,949.0	11,531.6	40.8	132.3	-103.87	-20.4	2,234.2	3,072.3	2,904.1	168.19	18.267 CC, ES		
11,150.0	10,983.6	18,949.0	11,531.6	41.0	132.3	-103.79	-20.4	2,234.2	3,073.1	2,904.7	168.38	18.251		
11,200.0	11,005.0	18,949.0	11,531.6	41.2	132.3	-103.54	-20.4	2,234.2	3,075.7	2,907.2	168.53	18.250 SF		
11,250.0	11,022.4	18,949.0	11,531.6	41.4	132.3	-103.11	-20.4	2,234.2	3,080.1	2,911.5	168.60	18.268		
11,300.0	11,035.6	18,949.0	11,531.6	41.5	132.3	-102.50	-20.4	2,234.2	3,086.3	2,917.7	168.61	18.305		
11,350.0	11,044.6	18,949.0	11,531.6	41.8	132.3	-101.71	-20.4	2,234.2	3,094.2	2,925.7	168.54	18.359		
11,400.0	11,049.3	18,949.0	11,531.6	42.0	132.3	-100.75	-20.4	2,234.2	3,103.8	2,935.4	168.40	18.431		
11,428.4	11,050.0	18,949.0	11,531.6	42.1	132.3	-100.13	-20.4	2,234.2	3,110.0	2,941.7	168.30	18.479		
11,428.7	11,050.0	18,949.0	11,531.6	42.1	132.3	-100.14	-20.4	2,234.2	3,110.0	2,941.8	168.30	18.480		
11,500.0	11,050.0	18,949.0	11,531.6	42.4	132.3	-100.14	-20.4	2,234.2	3,126.9	2,958.9	167.99	18.614		
11,600.0	11,050.0	18,949.0	11,531.6	43.0	132.3	-100.14	-20.4	2,234.2	3,153.1	2,985.6	167.49	18.826		
11,700.0	11,050.0	18,949.0	11,531.6	43.5	132.3	-100.14	-20.4	2,234.2	3,182.2	3,015.3	166.93	19.064		
11,800.0	11,050.0	18,949.0	11,531.6	44.2	132.3	-100.14	-20.4	2,234.2	3,214.2	3,047.9	166.30	19.328		
11,900.0	11,050.0	18,949.0	11,531.6	44.9	132.3	-100.14	-20.4	2,234.2	3,248.9	3,083.3	165.61	19.618		
12,000.0	11,050.0	18,949.0	11,531.6	45.6	132.3	-100.14	-20.4	2,234.2	3,286.3	3,121.5	164.87	19.933		
12,100.0	11,050.0	18,949.0	11,531.6	46.4	132.3	-100.14	-20.4	2,234.2	3,326.3	3,162.2	164.08	20.272		
12,200.0	11,050.0	18,949.0	11,531.6	47.2	132.3	-100.14	-20.4	2,234.2	3,368.8	3,205.6	163.25	20.636		
12,300.0	11,050.0	18,949.0	11,531.6	48.1	132.3	-100.14	-20.4	2,234.2	3,413.7	3,251.3	162.38	21.023		
12,400.0	11,050.0	18,949.0	11,531.6	49.0	132.3	-100.14	-20.4	2,234.2	3,460.9	3,299.4	161.47	21.434		
12,500.0	11,050.0	18,949.0	11,531.6	50.0	132.3	-100.14	-20.4	2,234.2	3,510.3	3,349.8	160.54	21.866		
12,600.0	11,050.0	18,949.0	11,531.6	51.0	132.3	-100.14	-20.4	2,234.2	3,561.9	3,402.3	159.58	22.321		
12,700.0	11,050.0	18,949.0	11,531.6	52.0	132.3	-100.14	-20.4	2,234.2	3,615.4	3,456.8	158.60	22.796		
12,800.0	11,050.0	18,949.0	11,531.6	53.1	132.3	-100.14	-20.4	2,234.2	3,670.9	3,513.3	157.60	23.292		
12,900.0	11,050.0	18,949.0	11,531.6	54.2	132.3	-100.14	-20.4	2,234.2	3,728.3	3,571.7	156.60	23.808		
13,000.0	11,050.0	18,949.0	11,531.6	55.3	132.3	-100.14	-20.4	2,234.2	3,787.4	3,631.9	155.59	24.343		
13,100.0	11,050.0	18,949.0	11,531.6	56.4	132.3	-100.14	-20.4	2,234.2	3,848.3	3,693.7	154.57	24.897		
13,200.0	11,050.0	18,949.0	11,531.6	57.6	132.3	-100.14	-20.4	2,234.2	3,910.7	3,757.2	153.55	25.469		
13,300.0	11,050.0	18,949.0	11,531.6	58.8	132.3	-100.14	-20.4	2,234.2	3,974.7	3,822.2	152.53	26.058		
13,400.0	11,050.0	18,949.0	11,531.6	60.0	132.3	-100.14	-20.4	2,234.2	4,040.1	3,888.6	151.52	26.664		
13,500.0	11,050.0	18,949.0	11,531.6	61.2	132.3	-100.14	-20.4	2,234.2	4,107.0	3,956.4	150.52	27.286		
13,600.0	11,050.0	18,949.0	11,531.6	62.5	132.3	-100.14	-20.4	2,234.2	4,175.1	4,025.6	149.52	27.923		
13,700.0	11,050.0	18,949.0	11,531.6	63.8	132.3	-100.14	-20.4	2,234.2	4,244.5	4,096.0	148.54	28.576		
13,800.0	11,050.0	18,949.0	11,531.6	65.1	132.3	-100.14	-20.4	2,234.2	4,315.2	4,167.6	147.56	29.243		
13,900.0	11,050.0	18,949.0	11,531.6	66.4	132.3	-100.14	-20.4	2,234.2	4,386.9	4,240.3	146.60	29.924		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #006H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 290-MWD													Offset Well Error:	0.0 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		
14,000.0	11,050.0	18,949.0	11,531.6	67.7	132.3	-100.14	-20.4	2,234.2	4,459.8	4,314.1	145.66	30.618		
14,100.0	11,050.0	18,949.0	11,531.6	69.0	132.3	-100.14	-20.4	2,234.2	4,533.7	4,388.9	144.73	31.325		
14,200.0	11,050.0	18,949.0	11,531.6	70.4	132.3	-100.14	-20.4	2,234.2	4,608.5	4,464.7	143.82	32.044		
14,300.0	11,050.0	18,949.0	11,531.6	71.7	132.3	-100.14	-20.4	2,234.2	4,684.3	4,541.4	142.92	32.776		
14,400.0	11,050.0	18,949.0	11,531.6	73.1	132.3	-100.14	-20.4	2,234.2	4,761.0	4,619.0	142.04	33.518		
14,500.0	11,050.0	18,949.0	11,531.6	74.5	132.3	-100.14	-20.4	2,234.2	4,838.6	4,697.4	141.19	34.271		
14,600.0	11,050.0	18,949.0	11,531.6	75.9	132.3	-100.14	-20.4	2,234.2	4,917.0	4,776.6	140.34	35.035		
14,700.0	11,050.0	18,949.0	11,531.6	77.3	132.3	-100.14	-20.4	2,234.2	4,996.1	4,856.6	139.52	35.808		
14,800.0	11,050.0	18,949.0	11,531.6	78.7	132.3	-100.14	-20.4	2,234.2	5,076.0	4,937.2	138.72	36.591		
14,900.0	11,050.0	18,949.0	11,531.6	80.1	132.3	-100.14	-20.4	2,234.2	5,156.5	5,018.6	137.94	37.384		
15,000.0	11,050.0	18,949.0	11,531.6	81.6	132.3	-100.14	-20.4	2,234.2	5,237.8	5,100.6	137.17	38.184		
15,100.0	11,050.0	18,949.0	11,531.6	83.0	132.3	-100.14	-20.4	2,234.2	5,319.7	5,183.2	136.42	38.993		
15,200.0	11,050.0	18,949.0	11,531.6	84.5	132.3	-100.14	-20.4	2,234.2	5,402.2	5,266.5	135.70	39.810		
15,300.0	11,050.0	18,949.0	11,531.6	85.9	132.3	-100.14	-20.4	2,234.2	5,485.2	5,350.3	134.99	40.635		
15,400.0	11,050.0	18,949.0	11,531.6	87.4	132.3	-100.14	-20.4	2,234.2	5,568.9	5,434.6	134.30	41.467		
15,500.0	11,050.0	18,949.0	11,531.6	88.9	132.3	-100.14	-20.4	2,234.2	5,653.0	5,519.4	133.62	42.305		
15,600.0	11,050.0	18,949.0	11,531.6	90.4	132.3	-100.14	-20.4	2,234.2	5,737.7	5,604.7	132.97	43.151		
15,700.0	11,050.0	18,949.0	11,531.6	91.8	132.3	-100.14	-20.4	2,234.2	5,822.9	5,690.5	132.33	44.002		
15,800.0	11,050.0	18,949.0	11,531.6	93.3	132.3	-100.14	-20.4	2,234.2	5,908.5	5,776.8	131.71	44.859		
15,900.0	11,050.0	18,949.0	11,531.6	94.8	132.3	-100.14	-20.4	2,234.2	5,994.6	5,863.5	131.11	45.722		
16,000.0	11,050.0	18,949.0	11,531.6	96.3	132.3	-100.14	-20.4	2,234.2	6,081.1	5,950.5	130.52	46.590		
16,100.0	11,050.0	18,949.0	11,531.6	97.8	132.3	-100.14	-20.4	2,234.2	6,168.0	6,038.0	129.95	47.464		
16,200.0	11,050.0	18,949.0	11,531.6	99.4	132.3	-100.14	-20.4	2,234.2	6,255.3	6,125.9	129.40	48.342		
16,300.0	11,050.0	18,949.0	11,531.6	100.9	132.3	-100.14	-20.4	2,234.2	6,342.9	6,214.1	128.86	49.224		
16,400.0	11,050.0	18,949.0	11,531.6	102.4	132.3	-100.14	-20.4	2,234.2	6,431.0	6,302.6	128.33	50.111		
16,500.0	11,050.0	18,949.0	11,531.6	103.9	132.3	-100.14	-20.4	2,234.2	6,519.3	6,391.5	127.82	51.002		
16,600.0	11,050.0	18,949.0	11,531.6	105.5	132.3	-100.14	-20.4	2,234.2	6,608.0	6,480.7	127.33	51.897		
16,700.0	11,050.0	18,949.0	11,531.6	107.0	132.3	-100.14	-20.4	2,234.2	6,697.1	6,570.2	126.85	52.795		
16,800.0	11,050.0	18,949.0	11,531.6	108.5	132.3	-100.14	-20.4	2,234.2	6,786.4	6,660.0	126.38	53.697		
16,900.0	11,050.0	18,949.0	11,531.6	110.1	132.3	-100.14	-20.4	2,234.2	6,876.0	6,750.1	125.93	54.602		
17,000.0	11,050.0	18,949.0	11,531.6	111.6	132.3	-100.14	-20.4	2,234.2	6,965.9	6,840.4	125.49	55.510		
17,100.0	11,050.0	18,949.0	11,531.6	113.2	132.3	-100.14	-20.4	2,234.2	7,056.1	6,931.0	125.06	56.421		
17,200.0	11,050.0	18,949.0	11,531.6	114.7	132.3	-100.14	-20.4	2,234.2	7,146.5	7,021.9	124.65	57.334		
17,300.0	11,050.0	18,949.0	11,531.6	116.3	132.3	-100.14	-20.4	2,234.2	7,237.2	7,113.0	124.24	58.250		
17,357.4	11,050.0	18,949.0	11,531.6	117.1	132.3	-100.14	-20.4	2,234.2	7,289.4	7,165.4	124.02	58.777		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 284-MWD												Offset Well Error:	0.0 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	
0.0	0.0	0.0	0.0	0.0	0.0	13.34	7,634.6	1,810.4	7,846.6				
100.0	100.0	55.2	55.2	0.1	0.1	13.34	7,634.6	1,810.4	7,846.3	7,846.1	0.22	N/A	
200.0	200.0	198.7	198.7	0.5	0.3	13.34	7,633.9	1,810.2	7,845.8	7,845.0	0.82	9,605.874	
300.0	300.0	342.2	342.2	0.8	0.6	13.34	7,632.5	1,809.7	7,844.8	7,843.3	1.41	5,550.724	
400.0	400.0	431.8	431.8	1.2	1.0	13.34	7,631.6	1,809.5	7,843.8	7,841.6	2.20	3,559.148	
500.0	500.0	562.9	562.9	1.6	1.5	13.34	7,629.7	1,809.7	7,842.4	7,839.3	3.03	2,587.056	
600.0	600.0	647.9	647.9	1.9	1.8	13.35	7,628.4	1,809.7	7,840.9	7,837.2	3.69	2,122.665	
700.0	700.0	788.8	788.8	2.3	2.3	13.35	7,626.1	1,809.7	7,839.4	7,834.8	4.56	1,719.998	
800.0	800.0	911.0	910.9	2.6	2.7	13.35	7,623.5	1,809.6	7,837.2	7,831.9	5.35	1,463.688	
900.0	900.0	1,001.0	1,000.9	3.0	3.0	13.36	7,621.5	1,809.8	7,835.1	7,829.0	6.04	1,298.257	
1,000.0	1,000.0	1,124.7	1,124.6	3.4	3.5	13.36	7,618.6	1,810.1	7,832.9	7,826.0	6.84	1,145.653	
1,100.0	1,100.0	1,171.4	1,171.3	3.7	3.7	13.37	7,617.6	1,810.4	7,830.9	7,823.6	7.36	1,063.786	
1,200.0	1,200.0	1,267.5	1,267.4	4.1	4.0	13.38	7,615.8	1,811.5	7,829.4	7,821.3	8.06	971.095	
1,300.0	1,300.0	1,372.1	1,371.9	4.4	4.4	13.39	7,613.8	1,812.4	7,827.7	7,818.9	8.79	890.041	
1,400.0	1,400.0	1,459.4	1,459.2	4.8	4.7	13.40	7,612.1	1,813.4	7,826.0	7,816.6	9.46	826.881	
1,500.0	1,500.0	1,539.4	1,539.2	5.1	5.0	13.41	7,610.5	1,815.1	7,824.6	7,814.5	10.11	774.184	
1,600.0	1,600.0	1,617.0	1,616.7	5.5	5.3	116.01	7,609.0	1,817.6	7,823.8	7,813.1	10.73	729.245	
1,622.2	1,622.2	1,634.1	1,633.8	5.6	5.3	116.02	7,608.7	1,818.2	7,823.8	7,812.9	10.86	720.122	
1,700.0	1,700.0	1,689.9	1,689.6	5.8	5.5	116.04	7,607.7	1,820.3	7,824.1	7,812.8	11.33	690.833	
1,800.0	1,799.9	1,749.3	1,748.8	6.2	5.7	116.07	7,606.7	1,823.6	7,825.7	7,813.8	11.88	658.869	
1,900.0	1,899.7	1,812.9	1,812.3	6.5	5.9	116.11	7,605.6	1,828.5	7,828.5	7,816.0	12.45	628.873	
2,000.0	1,999.4	1,884.3	1,883.3	6.9	6.2	116.16	7,604.2	1,835.7	7,832.5	7,819.4	13.05	600.099	
2,100.0	2,098.9	1,958.0	1,956.5	7.2	6.5	116.22	7,602.9	1,843.4	7,837.5	7,823.8	13.67	573.339	
2,200.0	2,198.3	1,995.6	1,993.9	7.6	6.6	116.22	7,602.4	1,847.3	7,843.9	7,829.7	14.16	553.878	
2,300.0	2,297.4	2,052.0	2,050.0	8.0	6.8	116.24	7,602.4	1,853.6	7,852.1	7,837.4	14.73	533.157	
2,400.0	2,396.4	2,052.0	2,050.0	8.3	6.8	116.24	7,602.4	1,853.6	7,861.3	7,846.2	15.09	520.989	
2,500.0	2,495.5	2,088.6	2,086.3	8.7	6.9	116.30	7,602.7	1,857.9	7,871.5	7,855.9	15.59	504.981	
2,600.0	2,594.5	2,147.0	2,144.3	9.1	7.1	116.40	7,604.0	1,865.1	7,882.8	7,866.6	16.17	487.497	
2,700.0	2,693.5	2,156.6	2,153.8	9.5	7.2	116.42	7,604.3	1,866.4	7,894.6	7,878.0	16.57	476.423	
2,800.0	2,792.5	2,244.3	2,240.7	9.9	7.5	116.57	7,606.9	1,877.6	7,907.0	7,889.7	17.27	457.884	
2,900.0	2,891.6	2,291.5	2,287.4	10.3	7.7	116.65	7,608.5	1,883.6	7,919.8	7,902.0	17.81	444.563	
3,000.0	2,990.6	2,335.0	2,330.6	10.7	7.8	116.73	7,610.2	1,889.1	7,933.3	7,915.0	18.35	432.389	
3,100.0	3,089.6	2,388.1	2,383.2	11.1	8.0	116.82	7,612.6	1,895.8	7,947.5	7,928.5	18.92	420.102	
3,200.0	3,188.6	2,439.7	2,434.4	11.5	8.2	116.90	7,615.4	1,902.3	7,962.2	7,942.8	19.48	408.675	
3,300.0	3,287.7	2,519.9	2,513.7	11.9	8.5	117.04	7,619.9	1,912.6	7,977.4	7,957.3	20.16	395.672	
3,400.0	3,386.7	2,593.6	2,586.7	12.3	8.8	117.17	7,624.1	1,922.4	7,992.9	7,972.1	20.82	383.934	
3,500.0	3,485.7	2,674.3	2,666.5	12.7	9.1	117.31	7,628.8	1,933.4	8,008.8	7,987.2	21.51	372.393	
3,600.0	3,584.8	2,749.7	2,741.0	13.1	9.4	117.44	7,633.2	1,944.1	8,024.8	8,002.6	22.17	361.896	
3,700.0	3,683.8	2,825.9	2,816.3	13.5	9.7	117.57	7,637.9	1,955.0	8,041.2	8,018.4	22.85	351.918	
3,800.0	3,782.8	2,935.2	2,924.2	13.9	10.1	117.76	7,644.6	1,970.6	8,057.7	8,034.0	23.66	340.514	
3,900.0	3,881.8	3,048.9	3,036.5	14.3	10.6	117.96	7,651.5	1,987.1	8,074.2	8,049.7	24.50	329.575	
4,000.0	3,980.9	3,306.0	3,290.8	14.7	11.6	118.41	7,663.8	2,022.6	8,089.2	8,063.3	25.94	311.878	
4,100.0	4,079.9	3,443.5	3,427.3	15.1	12.1	118.63	7,669.6	2,039.2	8,103.4	8,076.5	26.87	301.573	
4,200.0	4,178.9	19,030.0	11,592.2	15.5	132.6	-173.47	131.5	2,684.4	8,055.7	7,974.9	80.79	99.707	
4,300.0	4,277.9	19,030.0	11,592.2	15.9	132.6	-173.47	131.5	2,684.4	7,969.1	7,887.7	81.42	97.872	
4,400.0	4,377.0	19,030.0	11,592.2	16.3	132.6	-173.47	131.5	2,684.4	7,882.8	7,800.7	82.07	96.047	
4,500.0	4,476.0	19,030.0	11,592.2	16.8	132.6	-173.47	131.5	2,684.4	7,796.8	7,714.1	82.74	94.232	
4,600.0	4,575.0	19,030.0	11,592.2	17.2	132.6	-173.47	131.5	2,684.4	7,711.2	7,627.8	83.43	92.427	
4,700.0	4,674.0	19,030.0	11,592.2	17.6	132.6	-173.47	131.5	2,684.4	7,626.0	7,541.8	84.14	90.634	
4,800.0	4,773.1	19,030.0	11,592.2	18.0	132.6	-173.47	131.5	2,684.4	7,541.1	7,456.2	84.87	88.854	
4,900.0	4,872.1	19,030.0	11,592.2	18.4	132.6	-173.47	131.5	2,684.4	7,456.5	7,370.9	85.62	87.086	
5,000.0	4,971.1	19,030.0	11,592.2	18.8	132.6	-173.47	131.5	2,684.4	7,372.4	7,286.0	86.40	85.332	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 284-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	19,030.0	11,592.2	19.2	132.6	-173.47	131.5	2,684.4	7,288.6	7,201.4	87.19	83.593	
5,200.0	5,169.2	19,030.0	11,592.2	19.7	132.6	-173.47	131.5	2,684.4	7,205.3	7,117.3	88.01	81.869	
5,300.0	5,268.2	19,030.0	11,592.2	20.1	132.6	-173.47	131.5	2,684.4	7,122.4	7,033.6	88.85	80.160	
5,400.0	5,367.2	19,030.0	11,592.2	20.5	132.6	-173.47	131.5	2,684.4	7,039.9	6,950.2	89.72	78.468	
5,500.0	5,466.3	19,030.0	11,592.2	20.9	132.6	-173.47	131.5	2,684.4	6,958.0	6,867.3	90.61	76.793	
5,600.0	5,565.3	19,030.0	11,592.2	21.3	132.6	-173.47	131.5	2,684.4	6,876.4	6,784.9	91.52	75.135	
5,700.0	5,664.3	19,030.0	11,592.2	21.7	132.6	-173.47	131.5	2,684.4	6,795.4	6,702.9	92.46	73.496	
5,800.0	5,763.3	19,030.0	11,592.2	22.2	132.6	-173.47	131.5	2,684.4	6,714.9	6,621.5	93.42	71.875	
5,900.0	5,862.4	19,030.0	11,592.2	22.6	132.6	-173.47	131.5	2,684.4	6,634.9	6,540.5	94.41	70.274	
6,000.0	5,961.4	19,030.0	11,592.2	23.0	132.6	-173.47	131.5	2,684.4	6,555.5	6,460.0	95.43	68.693	
6,100.0	6,060.4	19,030.0	11,592.2	23.4	132.6	-173.47	131.5	2,684.4	6,476.6	6,380.1	96.48	67.132	
6,200.0	6,159.4	19,030.0	11,592.2	23.8	132.6	-173.47	131.5	2,684.4	6,398.3	6,300.8	97.55	65.592	
6,300.0	6,258.5	19,030.0	11,592.2	24.2	132.6	-173.47	131.5	2,684.4	6,320.7	6,222.0	98.65	64.073	
6,400.0	6,357.5	19,030.0	11,592.2	24.7	132.6	-173.47	131.5	2,684.4	6,243.7	6,143.9	99.78	62.577	
6,500.0	6,456.5	19,030.0	11,592.2	25.1	132.6	-173.47	131.5	2,684.4	6,167.3	6,066.4	100.93	61.103	
6,600.0	6,555.6	19,030.0	11,592.2	25.5	132.6	-173.47	131.5	2,684.4	6,091.6	5,989.5	102.12	59.652	
6,700.0	6,654.6	19,030.0	11,592.2	25.9	132.6	-173.47	131.5	2,684.4	6,016.6	5,913.3	103.33	58.225	
6,800.0	6,753.6	19,030.0	11,592.2	26.3	132.6	-173.47	131.5	2,684.4	5,942.4	5,837.8	104.58	56.822	
6,900.0	6,852.6	19,030.0	11,592.2	26.8	132.6	-173.47	131.5	2,684.4	5,868.9	5,763.1	105.86	55.443	
7,000.0	6,951.7	19,030.0	11,592.2	27.2	132.6	-173.47	131.5	2,684.4	5,796.3	5,689.1	107.16	54.089	
7,100.0	7,050.7	19,030.0	11,592.2	27.6	132.6	-173.47	131.5	2,684.4	5,724.4	5,615.9	108.50	52.761	
7,136.4	7,086.7	19,030.0	11,592.2	27.8	132.6	-173.47	131.5	2,684.4	5,698.5	5,589.5	108.99	52.283	
7,200.0	7,149.8	19,030.0	11,592.2	28.0	132.6	-173.36	131.5	2,684.4	5,653.0	5,543.2	109.86	51.458	
7,300.0	7,249.2	19,030.0	11,592.2	28.4	132.6	-173.18	131.5	2,684.4	5,580.8	5,469.6	111.22	50.180	
7,400.0	7,348.8	19,030.0	11,592.2	28.8	132.6	-172.98	131.5	2,684.4	5,507.7	5,395.1	112.57	48.929	
7,500.0	7,448.7	19,030.0	11,592.2	29.2	132.6	-172.78	131.5	2,684.4	5,433.6	5,319.7	113.91	47.702	
7,600.0	7,548.6	19,030.0	11,592.2	29.5	132.6	-172.56	131.5	2,684.4	5,358.7	5,243.4	115.24	46.500	
7,669.7	7,618.3	19,030.0	11,592.2	29.7	132.6	85.04	131.5	2,684.4	5,305.8	5,189.7	116.16	45.677	
7,700.0	7,648.6	19,030.0	11,592.2	29.8	132.6	85.04	131.5	2,684.4	5,282.9	5,166.3	116.56	45.324	
7,800.0	7,748.6	19,030.0	11,592.2	30.1	132.6	85.04	131.5	2,684.4	5,207.5	5,089.6	117.89	44.172	
7,900.0	7,848.6	19,030.0	11,592.2	30.5	132.6	85.04	131.5	2,684.4	5,132.9	5,013.6	119.25	43.041	
8,000.0	7,948.6	19,030.0	11,592.2	30.8	132.6	85.04	131.5	2,684.4	5,059.2	4,938.6	120.65	41.933	
8,100.0	8,048.6	19,030.0	11,592.2	31.1	132.6	85.04	131.5	2,684.4	4,986.4	4,864.4	122.08	40.847	
8,200.0	8,148.6	19,030.0	11,592.2	31.4	132.6	85.04	131.5	2,684.4	4,914.6	4,791.1	123.53	39.784	
8,300.0	8,248.6	19,030.0	11,592.2	31.7	132.6	85.04	131.5	2,684.4	4,843.8	4,718.8	125.02	38.744	
8,400.0	8,348.6	19,030.0	11,592.2	32.0	132.6	85.04	131.5	2,684.4	4,774.0	4,647.5	126.54	37.728	
8,500.0	8,448.6	19,030.0	11,592.2	32.4	132.6	85.04	131.5	2,684.4	4,705.4	4,577.3	128.09	36.736	
8,600.0	8,548.6	19,030.0	11,592.2	32.7	132.6	85.04	131.5	2,684.4	4,637.8	4,508.2	129.66	35.769	
8,700.0	8,648.6	19,030.0	11,592.2	33.0	132.6	85.04	131.5	2,684.4	4,571.5	4,440.2	131.26	34.827	
8,800.0	8,748.6	19,030.0	11,592.2	33.3	132.6	85.04	131.5	2,684.4	4,506.4	4,373.5	132.89	33.910	
8,900.0	8,848.6	19,030.0	11,592.2	33.6	132.6	85.04	131.5	2,684.4	4,442.6	4,308.0	134.54	33.020	
9,000.0	8,948.6	19,030.0	11,592.2	34.0	132.6	85.04	131.5	2,684.4	4,380.1	4,243.9	136.22	32.156	
9,100.0	9,048.6	19,030.0	11,592.2	34.3	132.6	85.04	131.5	2,684.4	4,319.1	4,181.2	137.91	31.318	
9,200.0	9,148.6	19,030.0	11,592.2	34.6	132.6	85.04	131.5	2,684.4	4,259.5	4,119.9	139.62	30.508	
9,300.0	9,248.6	19,030.0	11,592.2	34.9	132.6	85.04	131.5	2,684.4	4,201.5	4,060.1	141.35	29.725	
9,400.0	9,348.6	19,030.0	11,592.2	35.3	132.6	85.04	131.5	2,684.4	4,145.0	4,002.0	143.08	28.970	
9,500.0	9,448.6	19,030.0	11,592.2	35.6	132.6	85.04	131.5	2,684.4	4,090.3	3,945.4	144.83	28.243	
9,600.0	9,548.6	19,030.0	11,592.2	35.9	132.6	85.04	131.5	2,684.4	4,037.2	3,890.7	146.57	27.544	
9,700.0	9,648.6	19,030.0	11,592.2	36.3	132.6	85.04	131.5	2,684.4	3,986.0	3,837.7	148.32	26.874	
9,800.0	9,748.6	19,030.0	11,592.2	36.6	132.6	85.04	131.5	2,684.4	3,936.7	3,786.6	150.06	26.234	
9,900.0	9,848.6	19,030.0	11,592.2	36.9	132.6	85.04	131.5	2,684.4	3,889.2	3,737.5	151.79	25.623	
10,000.0	9,948.6	19,030.0	11,592.2	37.2	132.6	85.04	131.5	2,684.4	3,843.9	3,690.3	153.50	25.041	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 284-MWD												Offset Well Error:	0.0 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	
10,100.0	10,048.6	19,030.0	11,592.2	37.6	132.6	85.04	131.5	2,684.4	3,800.5	3,645.4	155.19	24.489	
10,200.0	10,148.6	19,030.0	11,592.2	37.9	132.6	85.04	131.5	2,684.4	3,759.4	3,602.6	156.85	23.968	
10,300.0	10,248.6	19,030.0	11,592.2	38.2	132.6	85.04	131.5	2,684.4	3,720.5	3,562.0	158.48	23.476	
10,400.0	10,348.6	19,030.0	11,592.2	38.6	132.6	85.04	131.5	2,684.4	3,683.9	3,523.8	160.06	23.015	
10,500.0	10,448.6	19,030.0	11,592.2	38.9	132.6	85.04	131.5	2,684.4	3,649.7	3,488.1	161.60	22.585	
10,528.4	10,477.0	19,030.0	11,592.2	39.0	132.6	85.04	131.5	2,684.4	3,640.4	3,478.4	162.02	22.468	
10,550.0	10,498.6	19,030.0	11,592.2	39.1	132.6	-95.33	131.5	2,684.4	3,633.5	3,471.2	162.34	22.382	
10,600.0	10,548.4	19,030.0	11,592.2	39.2	132.6	-96.92	131.5	2,684.4	3,618.3	3,455.2	163.07	22.188	
10,650.0	10,597.7	19,030.0	11,592.2	39.4	132.6	-98.37	131.5	2,684.4	3,604.2	3,440.4	163.78	22.007	
10,700.0	10,646.1	19,030.0	11,592.2	39.6	132.6	-99.68	131.5	2,684.4	3,591.4	3,426.9	164.46	21.837	
10,750.0	10,693.1	19,030.0	11,592.2	39.7	132.6	-100.84	131.5	2,684.4	3,579.9	3,414.8	165.11	21.682	
10,800.0	10,738.5	19,030.0	11,592.2	39.9	132.6	-101.84	131.5	2,684.4	3,569.9	3,404.2	165.73	21.541	
10,850.0	10,782.0	19,030.0	11,592.2	40.0	132.6	-102.68	131.5	2,684.4	3,561.5	3,395.2	166.30	21.415	
10,900.0	10,823.1	19,030.0	11,592.2	40.2	132.6	-103.35	131.5	2,684.4	3,554.7	3,387.8	166.83	21.307	
10,950.0	10,861.6	19,030.0	11,592.2	40.4	132.6	-103.85	131.5	2,684.4	3,549.6	3,382.2	167.32	21.215	
11,000.0	10,897.1	19,030.0	11,592.2	40.5	132.6	-104.18	131.5	2,684.4	3,546.2	3,378.4	167.75	21.140	
11,050.0	10,929.5	19,030.0	11,592.2	40.7	132.6	-104.33	131.5	2,684.4	3,544.6	3,376.4	168.12	21.083	
11,070.1	10,941.5	19,030.0	11,592.2	40.7	132.6	-104.35	131.5	2,684.4	3,544.4	3,376.2	168.26	21.065 CC, ES	
11,100.0	10,958.4	19,030.0	11,592.2	40.8	132.6	-104.32	131.5	2,684.4	3,544.7	3,376.3	168.44	21.044	
11,150.0	10,983.6	19,030.0	11,592.2	41.0	132.6	-104.13	131.5	2,684.4	3,546.7	3,378.0	168.71	21.023	
11,200.0	11,005.0	19,030.0	11,592.2	41.2	132.6	-103.77	131.5	2,684.4	3,550.4	3,381.5	168.91	21.020 SF	
11,250.0	11,022.4	19,030.0	11,592.2	41.4	132.6	-103.23	131.5	2,684.4	3,555.9	3,386.8	169.06	21.034	
11,300.0	11,035.6	19,030.0	11,592.2	41.5	132.6	-102.53	131.5	2,684.4	3,563.0	3,393.9	169.14	21.065	
11,350.0	11,044.6	19,030.0	11,592.2	41.8	132.6	-101.66	131.5	2,684.4	3,571.8	3,402.6	169.17	21.113	
11,400.0	11,049.3	19,030.0	11,592.2	42.0	132.6	-100.63	131.5	2,684.4	3,582.0	3,412.9	169.14	21.178	
11,428.4	11,050.0	19,030.0	11,592.2	42.1	132.6	-99.97	131.5	2,684.4	3,588.5	3,419.4	169.10	21.221	
11,428.7	11,050.0	19,030.0	11,592.2	42.1	132.6	-99.97	131.5	2,684.4	3,588.6	3,419.5	169.10	21.222	
11,500.0	11,050.0	19,030.0	11,592.2	42.4	132.6	-99.97	131.5	2,684.4	3,606.2	3,437.2	168.96	21.343	
11,600.0	11,050.0	19,030.0	11,592.2	43.0	132.6	-99.97	131.5	2,684.4	3,633.0	3,464.3	168.73	21.531	
11,700.0	11,050.0	19,030.0	11,592.2	43.5	132.6	-99.97	131.5	2,684.4	3,662.4	3,493.9	168.46	21.741	
11,800.0	11,050.0	19,030.0	11,592.2	44.2	132.6	-99.97	131.5	2,684.4	3,694.2	3,526.1	168.14	21.972	
11,900.0	11,050.0	19,030.0	11,592.2	44.9	132.6	-99.97	131.5	2,684.4	3,728.5	3,560.7	167.78	22.223	
12,000.0	11,050.0	19,030.0	11,592.2	45.6	132.6	-99.97	131.5	2,684.4	3,765.1	3,597.7	167.38	22.494	
12,100.0	11,050.0	19,030.0	11,592.2	46.4	132.6	-99.97	131.5	2,684.4	3,804.0	3,637.0	166.94	22.786	
12,200.0	11,050.0	19,030.0	11,592.2	47.2	132.6	-99.97	131.5	2,684.4	3,845.1	3,678.6	166.48	23.097	
12,300.0	11,050.0	19,030.0	11,592.2	48.1	132.6	-99.97	131.5	2,684.4	3,888.3	3,722.3	165.97	23.427	
12,400.0	11,050.0	19,030.0	11,592.2	49.0	132.6	-99.97	131.5	2,684.4	3,933.6	3,768.2	165.44	23.776	
12,500.0	11,050.0	19,030.0	11,592.2	50.0	132.6	-99.97	131.5	2,684.4	3,980.9	3,816.0	164.88	24.144	
12,600.0	11,050.0	19,030.0	11,592.2	51.0	132.6	-99.97	131.5	2,684.4	4,030.1	3,865.8	164.30	24.529	
12,700.0	11,050.0	19,030.0	11,592.2	52.0	132.6	-99.97	131.5	2,684.4	4,081.2	3,917.5	163.69	24.932	
12,800.0	11,050.0	19,030.0	11,592.2	53.1	132.6	-99.97	131.5	2,684.4	4,134.1	3,971.0	163.07	25.352	
12,900.0	11,050.0	19,030.0	11,592.2	54.2	132.6	-99.97	131.5	2,684.4	4,188.6	4,026.2	162.42	25.788	
13,000.0	11,050.0	19,030.0	11,592.2	55.3	132.6	-99.97	131.5	2,684.4	4,244.9	4,083.1	161.76	26.241	
13,100.0	11,050.0	19,030.0	11,592.2	56.4	132.6	-99.97	131.5	2,684.4	4,302.7	4,141.6	161.09	26.709	
13,200.0	11,050.0	19,030.0	11,592.2	57.6	132.6	-99.97	131.5	2,684.4	4,362.1	4,201.7	160.41	27.193	
13,300.0	11,050.0	19,030.0	11,592.2	58.8	132.6	-99.97	131.5	2,684.4	4,422.9	4,263.2	159.72	27.691	
13,400.0	11,050.0	19,030.0	11,592.2	60.0	132.6	-99.97	131.5	2,684.4	4,485.1	4,326.1	159.03	28.203	
13,500.0	11,050.0	19,030.0	11,592.2	61.2	132.6	-99.97	131.5	2,684.4	4,548.7	4,390.4	158.33	28.730	
13,600.0	11,050.0	19,030.0	11,592.2	62.5	132.6	-99.97	131.5	2,684.4	4,613.6	4,455.9	157.62	29.270	
13,700.0	11,050.0	19,030.0	11,592.2	63.8	132.6	-99.97	131.5	2,684.4	4,679.7	4,522.7	156.92	29.822	
13,800.0	11,050.0	19,030.0	11,592.2	65.1	132.6	-99.97	131.5	2,684.4	4,746.9	4,590.7	156.21	30.388	
13,900.0	11,050.0	19,030.0	11,592.2	66.4	132.6	-99.97	131.5	2,684.4	4,815.4	4,659.9	155.51	30.965	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #007H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 284-MWD													Offset Well Error:	0.0 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		
14,000.0	11,050.0	19,030.0	11,592.2	67.7	132.6	-99.97	131.5	2,684.4	4,884.9	4,730.1	154.81	31.554		
14,100.0	11,050.0	19,030.0	11,592.2	69.0	132.6	-99.97	131.5	2,684.4	4,955.4	4,801.3	154.11	32.154		
14,200.0	11,050.0	19,030.0	11,592.2	70.4	132.6	-99.97	131.5	2,684.4	5,027.0	4,873.6	153.42	32.765		
14,300.0	11,050.0	19,030.0	11,592.2	71.7	132.6	-99.97	131.5	2,684.4	5,099.5	4,946.8	152.74	33.387		
14,400.0	11,050.0	19,030.0	11,592.2	73.1	132.6	-99.97	131.5	2,684.4	5,172.9	5,020.9	152.06	34.019		
14,500.0	11,050.0	19,030.0	11,592.2	74.5	132.6	-99.97	131.5	2,684.4	5,247.2	5,095.9	151.39	34.661		
14,600.0	11,050.0	19,030.0	11,592.2	75.9	132.6	-99.97	131.5	2,684.4	5,322.4	5,171.7	150.73	35.312		
14,700.0	11,050.0	19,030.0	11,592.2	77.3	132.6	-99.97	131.5	2,684.4	5,398.4	5,248.3	150.07	35.972		
14,800.0	11,050.0	19,030.0	11,592.2	78.7	132.6	-99.97	131.5	2,684.4	5,475.1	5,325.7	149.43	36.641		
14,900.0	11,050.0	19,030.0	11,592.2	80.1	132.6	-99.97	131.5	2,684.4	5,552.5	5,403.8	148.79	37.318		
15,000.0	11,050.0	19,030.0	11,592.2	81.6	132.6	-99.97	131.5	2,684.4	5,630.7	5,482.6	148.16	38.003		
15,100.0	11,050.0	19,030.0	11,592.2	83.0	132.6	-99.97	131.5	2,684.4	5,709.6	5,562.0	147.55	38.696		
15,200.0	11,050.0	19,030.0	11,592.2	84.5	132.6	-99.97	131.5	2,684.4	5,789.1	5,642.2	146.94	39.397		
15,300.0	11,050.0	19,030.0	11,592.2	85.9	132.6	-99.97	131.5	2,684.4	5,869.2	5,722.9	146.35	40.105		
15,400.0	11,050.0	19,030.0	11,592.2	87.4	132.6	-99.97	131.5	2,684.4	5,950.0	5,804.2	145.76	40.819		
15,500.0	11,050.0	19,030.0	11,592.2	88.9	132.6	-99.97	131.5	2,684.4	6,031.3	5,886.1	145.19	41.540		
15,600.0	11,050.0	19,030.0	11,592.2	90.4	132.6	-99.97	131.5	2,684.4	6,113.2	5,968.5	144.63	42.268		
15,700.0	11,050.0	19,030.0	11,592.2	91.8	132.6	-99.97	131.5	2,684.4	6,195.6	6,051.5	144.08	43.002		
15,800.0	11,050.0	19,030.0	11,592.2	93.3	132.6	-99.97	131.5	2,684.4	6,278.5	6,135.0	143.54	43.741		
15,900.0	11,050.0	19,030.0	11,592.2	94.8	132.6	-99.97	131.5	2,684.4	6,361.9	6,218.9	143.01	44.486		
16,000.0	11,050.0	19,030.0	11,592.2	96.3	132.6	-99.97	131.5	2,684.4	6,445.8	6,303.3	142.49	45.237		
16,100.0	11,050.0	19,030.0	11,592.2	97.8	132.6	-99.97	131.5	2,684.4	6,530.1	6,388.1	141.98	45.992		
16,200.0	11,050.0	19,030.0	11,592.2	99.4	132.6	-99.97	131.5	2,684.4	6,614.9	6,473.4	141.49	46.753		
16,300.0	11,050.0	19,030.0	11,592.2	100.9	132.6	-99.97	131.5	2,684.4	6,700.1	6,559.1	141.00	47.518		
16,400.0	11,050.0	19,030.0	11,592.2	102.4	132.6	-99.97	131.5	2,684.4	6,785.7	6,645.1	140.52	48.288		
16,500.0	11,050.0	19,030.0	11,592.2	103.9	132.6	-99.97	131.5	2,684.4	6,871.7	6,731.6	140.06	49.062		
16,600.0	11,050.0	19,030.0	11,592.2	105.5	132.6	-99.97	131.5	2,684.4	6,958.0	6,818.4	139.61	49.840		
16,700.0	11,050.0	19,030.0	11,592.2	107.0	132.6	-99.97	131.5	2,684.4	7,044.7	6,905.6	139.16	50.623		
16,800.0	11,050.0	19,030.0	11,592.2	108.5	132.6	-99.97	131.5	2,684.4	7,131.8	6,993.1	138.73	51.409		
16,900.0	11,050.0	19,030.0	11,592.2	110.1	132.6	-99.97	131.5	2,684.4	7,219.2	7,080.9	138.30	52.198		
17,000.0	11,050.0	19,030.0	11,592.2	111.6	132.6	-99.97	131.5	2,684.4	7,306.9	7,169.0	137.89	52.991		
17,100.0	11,050.0	19,030.0	11,592.2	113.2	132.6	-99.97	131.5	2,684.4	7,395.0	7,257.5	137.48	53.787		
17,200.0	11,050.0	19,030.0	11,592.2	114.7	132.6	-99.97	131.5	2,684.4	7,483.3	7,346.2	137.09	54.587		
17,300.0	11,050.0	19,030.0	11,592.2	116.3	132.6	-99.97	131.5	2,684.4	7,571.9	7,435.2	136.70	55.389		
17,357.4	11,050.0	19,030.0	11,592.2	117.1	132.6	-99.97	131.5	2,684.4	7,623.0	7,486.5	136.49	55.851		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 211-MWD												Offset Well Error:	0.0 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
0.0	0.0	0.0	0.0	0.0	0.0	13.64	7,504.8	1,821.5	7,722.9				
100.0	100.0	56.2	56.2	0.1	0.1	13.64	7,504.8	1,821.4	7,722.7	7,722.4	0.21	N/A	
200.0	200.0	172.0	172.0	0.5	0.3	13.64	7,504.5	1,821.4	7,722.5	7,721.7	0.75	N/A	
300.0	300.0	370.1	370.1	0.8	0.9	13.65	7,502.7	1,821.4	7,721.6	7,719.9	1.74	4,431.468	
400.0	400.0	472.3	472.2	1.2	1.3	13.65	7,501.0	1,821.2	7,719.9	7,717.5	2.47	3,130.925	
500.0	500.0	561.6	561.6	1.6	1.6	13.65	7,499.7	1,820.9	7,718.4	7,715.3	3.14	2,455.556	
600.0	600.0	660.4	660.4	1.9	1.9	13.65	7,498.3	1,820.6	7,716.9	7,713.1	3.86	2,001.584	
700.0	700.0	764.8	764.7	2.3	2.3	13.65	7,496.7	1,820.5	7,715.5	7,710.9	4.59	1,681.678	
800.0	800.0	852.5	852.4	2.6	2.6	13.65	7,495.4	1,820.4	7,714.0	7,708.7	5.26	1,466.395	
900.0	900.0	917.3	917.3	3.0	2.9	13.65	7,494.7	1,820.4	7,712.9	7,707.0	5.85	1,318.212	
1,000.0	1,000.0	1,000.2	1,000.1	3.4	3.2	13.65	7,494.0	1,820.4	7,712.1	7,705.6	6.51	1,185.299	
1,100.0	1,100.0	1,103.7	1,103.7	3.7	3.5	13.66	7,493.3	1,820.4	7,711.4	7,704.2	7.24	1,065.741	
1,200.0	1,200.0	1,199.3	1,199.2	4.1	3.9	13.66	7,492.6	1,820.5	7,710.7	7,702.8	7.94	971.573	
1,300.0	1,300.0	1,300.7	1,300.6	4.4	4.2	13.66	7,491.9	1,820.4	7,710.1	7,701.4	8.66	890.483	
1,400.0	1,400.0	1,390.6	1,390.5	4.8	4.6	13.66	7,491.3	1,820.3	7,709.4	7,700.1	9.34	825.510	
1,500.0	1,500.0	1,479.5	1,479.5	5.1	4.9	13.66	7,490.9	1,820.3	7,709.0	7,699.0	10.02	769.646	
1,587.5	1,587.5	1,588.2	1,588.1	5.5	5.3	116.23	7,490.4	1,820.2	7,708.8	7,698.1	10.71	719.820	
1,600.0	1,600.0	1,604.5	1,604.4	5.5	5.3	116.23	7,490.3	1,820.2	7,708.8	7,698.0	10.81	713.052	
1,700.0	1,700.0	1,746.5	1,746.4	5.8	5.8	116.26	7,488.7	1,820.6	7,709.0	7,697.4	11.66	661.291	
1,800.0	1,799.9	1,843.1	1,842.9	6.2	6.2	116.29	7,487.2	1,821.7	7,709.7	7,697.3	12.34	624.638	
1,900.0	1,899.7	1,906.7	1,906.6	6.5	6.4	116.31	7,486.3	1,822.3	7,711.3	7,698.4	12.91	597.153	
2,000.0	1,999.4	1,954.0	1,953.9	6.9	6.6	116.31	7,486.1	1,822.4	7,714.4	7,700.9	13.43	574.422	
2,100.0	2,098.9	1,998.8	1,998.7	7.2	6.7	116.29	7,486.2	1,822.0	7,718.8	7,704.9	13.94	553.908	
2,200.0	2,198.3	2,048.0	2,047.8	7.6	6.9	116.26	7,487.1	1,820.8	7,724.9	7,710.5	14.46	534.238	
2,300.0	2,297.4	2,077.5	2,077.3	8.0	7.0	116.21	7,487.9	1,819.8	7,732.5	7,717.6	14.92	518.342	
2,400.0	2,396.4	2,142.0	2,141.7	8.3	7.2	116.25	7,490.5	1,817.0	7,741.4	7,725.9	15.50	499.525	
2,500.0	2,495.5	2,221.3	2,220.8	8.7	7.5	116.28	7,494.3	1,811.9	7,750.6	7,734.5	16.13	480.422	
2,600.0	2,594.5	2,277.5	2,276.7	9.1	7.7	116.29	7,497.2	1,807.3	7,759.9	7,743.2	16.69	464.835	
2,700.0	2,693.5	2,331.0	2,329.9	9.5	7.8	116.30	7,500.4	1,802.9	7,770.0	7,752.7	17.25	450.473	
2,800.0	2,792.5	2,405.3	2,403.8	9.9	8.1	116.32	7,505.1	1,797.3	7,780.5	7,762.6	17.88	435.167	
2,900.0	2,891.6	2,482.1	2,480.3	10.3	8.3	116.35	7,510.0	1,791.9	7,791.2	7,772.6	18.52	420.626	
3,000.0	2,990.6	2,831.2	2,827.9	10.7	9.6	116.45	7,528.4	1,765.4	7,801.2	7,781.0	20.16	386.992	
3,100.0	3,089.6	3,047.1	3,043.1	11.1	10.3	116.52	7,533.7	1,749.0	7,807.8	7,786.5	21.33	366.109	
3,200.0	3,188.6	3,128.4	3,124.2	11.5	10.6	116.55	7,535.1	1,743.8	7,814.2	7,792.2	22.01	355.071	
3,300.0	3,287.7	3,233.8	3,229.4	11.9	11.0	116.61	7,536.7	1,738.3	7,820.6	7,797.8	22.78	343.365	
3,400.0	3,386.7	3,344.4	3,339.8	12.3	11.4	116.65	7,538.6	1,731.0	7,826.9	7,803.3	23.57	332.084	
3,500.0	3,485.7	3,481.2	3,476.0	12.7	11.9	116.69	7,541.2	1,719.2	7,833.0	7,808.5	24.46	320.170	
3,600.0	3,584.8	3,622.4	3,616.7	13.1	12.4	116.73	7,543.2	1,706.8	7,838.4	7,813.0	25.38	308.830	
3,700.0	3,683.8	3,755.4	3,749.2	13.5	12.9	116.77	7,544.2	1,695.8	7,843.4	7,817.2	26.27	298.603	
3,800.0	3,782.8	3,877.3	3,870.8	13.9	13.4	116.81	7,544.6	1,686.1	7,848.0	7,820.9	27.11	289.449	
3,900.0	3,881.8	3,956.0	3,949.3	14.3	13.7	116.84	7,544.7	1,680.1	7,852.7	7,824.9	27.80	282.455	
4,000.0	3,980.9	4,019.8	4,012.9	14.7	13.9	116.86	7,545.1	1,675.4	7,857.7	7,829.3	28.43	276.347	
4,100.0	4,079.9	18,664.0	11,618.1	15.1	128.5	-176.56	184.3	1,654.6	7,841.1	7,769.6	71.50	109.672	
4,200.0	4,178.9	18,664.0	11,618.1	15.5	128.5	-176.56	184.3	1,654.6	7,748.8	7,676.9	71.93	107.726	
4,300.0	4,277.9	18,666.8	11,618.1	15.9	128.6	-176.51	181.4	1,654.8	7,656.7	7,584.3	72.41	105.743	
4,400.0	4,377.0	18,670.0	11,618.2	16.3	128.6	-176.45	178.3	1,655.0	7,564.8	7,491.9	72.91	103.760	
4,500.0	4,476.0	18,673.2	11,618.2	16.8	128.7	-176.39	175.0	1,655.2	7,473.2	7,399.7	73.42	101.782	
4,600.0	4,575.0	18,676.5	11,618.3	17.2	128.7	-176.33	171.8	1,655.4	7,381.7	7,307.7	73.96	99.809	
4,700.0	4,674.0	18,679.7	11,618.3	17.6	128.8	-176.27	168.6	1,655.6	7,290.5	7,215.9	74.51	97.843	
4,800.0	4,773.1	18,683.0	11,618.4	18.0	128.8	-176.20	165.3	1,655.8	7,199.4	7,124.4	75.08	95.885	
4,900.0	4,872.1	18,686.3	11,618.5	18.4	128.9	-176.14	162.1	1,656.0	7,108.7	7,033.0	75.68	93.935	
5,000.0	4,971.1	18,689.6	11,618.5	18.8	128.9	-176.08	158.8	1,656.2	7,018.2	6,941.9	76.29	91.994	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 211-MWD												Offset Well Error:	0.0 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	
5,100.0	5,070.2	18,692.9	11,618.6	19.2	129.0	-176.02	155.5	1,656.4	6,927.9	6,851.0	76.92	90.063	
5,200.0	5,169.2	18,696.2	11,618.6	19.7	129.1	-175.95	152.1	1,656.6	6,837.9	6,760.3	77.58	88.142	
5,300.0	5,268.2	18,699.6	11,618.7	20.1	129.1	-175.89	148.8	1,656.8	6,748.2	6,669.9	78.25	86.233	
5,400.0	5,367.2	18,702.9	11,618.8	20.5	129.2	-175.82	145.4	1,657.0	6,658.8	6,579.8	78.95	84.337	
5,500.0	5,466.3	18,706.3	11,618.8	20.9	129.2	-175.76	142.1	1,657.2	6,569.7	6,490.0	79.68	82.453	
5,600.0	5,565.3	18,709.7	11,618.9	21.3	129.3	-175.70	138.7	1,657.5	6,480.9	6,400.4	80.42	80.583	
5,700.0	5,664.3	18,713.1	11,619.0	21.7	129.3	-175.63	135.2	1,657.7	6,392.4	6,311.2	81.20	78.727	
5,800.0	5,763.3	18,811.4	11,620.9	22.2	130.9	-173.76	37.1	1,661.6	6,304.2	6,221.3	82.90	76.048	
5,900.0	5,862.4	18,815.6	11,621.0	22.6	130.9	-173.68	32.9	1,661.7	6,216.4	6,132.7	83.73	74.240	
6,000.0	5,961.4	18,819.8	11,621.0	23.0	131.0	-173.60	28.7	1,661.8	6,128.9	6,044.3	84.60	72.447	
6,100.0	6,060.4	18,824.0	11,621.1	23.4	131.1	-173.52	24.5	1,661.9	6,041.8	5,956.4	85.49	70.672	
6,200.0	6,159.4	18,828.3	11,621.2	23.8	131.1	-173.44	20.2	1,662.0	5,955.2	5,868.7	86.41	68.914	
6,300.0	6,258.5	18,832.5	11,621.3	24.2	131.2	-173.36	16.0	1,662.0	5,868.9	5,781.5	87.37	67.175	
6,400.0	6,357.5	18,836.8	11,621.4	24.7	131.3	-173.27	11.7	1,662.1	5,783.1	5,694.7	88.35	65.455	
6,500.0	6,456.5	18,841.1	11,621.5	25.1	131.3	-173.19	7.4	1,662.2	5,697.7	5,608.3	89.37	63.754	
6,600.0	6,555.6	18,845.4	11,621.6	25.5	131.4	-173.11	3.1	1,662.3	5,612.8	5,522.4	90.42	62.074	
6,700.0	6,654.6	18,849.7	11,621.6	25.9	131.5	-173.03	-1.2	1,662.3	5,528.4	5,436.9	91.51	60.414	
6,800.0	6,753.6	18,850.0	11,621.7	26.3	131.5	-173.02	-1.5	1,662.3	5,444.6	5,352.0	92.59	58.802	
6,900.0	6,852.6	18,850.0	11,621.7	26.8	131.5	-173.02	-1.5	1,662.3	5,361.3	5,267.6	93.71	57.213	
7,000.0	6,951.7	18,850.0	11,621.7	27.2	131.5	-173.02	-1.5	1,662.3	5,278.5	5,183.7	94.86	55.646	
7,100.0	7,050.7	18,850.0	11,621.7	27.6	131.5	-173.02	-1.5	1,662.3	5,196.4	5,100.4	96.05	54.100	
7,136.4	7,086.7	18,850.0	11,621.7	27.8	131.5	-173.02	-1.5	1,662.3	5,166.7	5,070.2	96.50	53.543	
7,200.0	7,149.8	18,850.0	11,621.7	28.0	131.5	-172.86	-1.5	1,662.3	5,114.6	5,017.3	97.28	52.579	
7,300.0	7,249.2	18,850.0	11,621.7	28.4	131.5	-172.58	-1.5	1,662.3	5,032.1	4,933.6	98.50	51.088	
7,400.0	7,348.8	18,850.0	11,621.7	28.8	131.5	-172.28	-1.5	1,662.3	4,948.7	4,849.0	99.72	49.627	
7,500.0	7,448.7	18,850.0	11,621.7	29.2	131.5	-171.96	-1.5	1,662.3	4,864.5	4,763.6	100.93	48.197	
7,600.0	7,548.6	18,850.0	11,621.7	29.5	131.5	-171.61	-1.5	1,662.3	4,779.6	4,677.4	102.13	46.797	
7,669.7	7,618.3	18,850.0	11,621.7	29.7	131.5	86.08	-1.5	1,662.3	4,719.8	4,616.9	102.97	45.838	
7,700.0	7,648.6	18,850.0	11,621.7	29.8	131.5	86.08	-1.5	1,662.3	4,693.9	4,590.5	103.33	45.427	
7,800.0	7,748.6	18,850.0	11,621.7	30.1	131.5	86.08	-1.5	1,662.3	4,608.4	4,503.9	104.55	44.080	
7,900.0	7,848.6	18,850.0	11,621.7	30.5	131.5	86.08	-1.5	1,662.3	4,523.6	4,417.8	105.81	42.753	
8,000.0	7,948.6	18,850.0	11,621.7	30.8	131.5	86.08	-1.5	1,662.3	4,439.3	4,332.2	107.11	41.446	
8,100.0	8,048.6	18,850.0	11,621.7	31.1	131.5	86.08	-1.5	1,662.3	4,355.8	4,247.3	108.46	40.159	
8,200.0	8,148.6	18,850.0	11,621.7	31.4	131.5	86.08	-1.5	1,662.3	4,272.9	4,163.1	109.86	38.893	
8,300.0	8,248.6	18,850.0	11,621.7	31.7	131.5	86.08	-1.5	1,662.3	4,190.8	4,079.5	111.31	37.649	
8,400.0	8,348.6	18,850.0	11,621.7	32.0	131.5	86.08	-1.5	1,662.3	4,109.5	3,996.7	112.81	36.428	
8,500.0	8,448.6	18,850.0	11,621.7	32.4	131.5	86.08	-1.5	1,662.3	4,029.0	3,914.7	114.36	35.230	
8,600.0	8,548.6	18,850.0	11,621.7	32.7	131.5	86.08	-1.5	1,662.3	3,949.5	3,833.5	115.97	34.056	
8,700.0	8,648.6	18,850.0	11,621.7	33.0	131.5	86.08	-1.5	1,662.3	3,870.8	3,753.2	117.63	32.907	
8,800.0	8,748.6	18,850.0	11,621.7	33.3	131.5	86.08	-1.5	1,662.3	3,793.2	3,673.9	119.34	31.785	
8,900.0	8,848.6	18,850.0	11,621.7	33.6	131.5	86.08	-1.5	1,662.3	3,716.7	3,595.6	121.11	30.688	
9,000.0	8,948.6	18,850.0	11,621.7	34.0	131.5	86.08	-1.5	1,662.3	3,641.2	3,518.3	122.93	29.619	
9,100.0	9,048.6	18,850.0	11,621.7	34.3	131.5	86.08	-1.5	1,662.3	3,567.0	3,442.2	124.81	28.579	
9,200.0	9,148.6	18,850.0	11,621.7	34.6	131.5	86.08	-1.5	1,662.3	3,494.1	3,367.4	126.75	27.567	
9,300.0	9,248.6	18,850.0	11,621.7	34.9	131.5	86.08	-1.5	1,662.3	3,422.6	3,293.8	128.74	26.586	
9,400.0	9,348.6	18,850.0	11,621.7	35.3	131.5	86.08	-1.5	1,662.3	3,352.5	3,221.7	130.78	25.635	
9,500.0	9,448.6	18,850.0	11,621.7	35.6	131.5	86.08	-1.5	1,662.3	3,283.9	3,151.1	132.86	24.716	
9,600.0	9,548.6	18,850.0	11,621.7	35.9	131.5	86.08	-1.5	1,662.3	3,217.0	3,082.0	135.00	23.830	
9,700.0	9,648.6	18,850.0	11,621.7	36.3	131.5	86.08	-1.5	1,662.3	3,151.9	3,014.7	137.18	22.977	
9,800.0	9,748.6	18,850.0	11,621.7	36.6	131.5	86.08	-1.5	1,662.3	3,088.6	2,949.2	139.39	22.158	
9,900.0	9,848.6	18,850.0	11,621.7	36.9	131.5	86.08	-1.5	1,662.3	3,027.3	2,885.7	141.64	21.373	
10,000.0	9,948.6	18,850.0	11,621.7	37.2	131.5	86.08	-1.5	1,662.3	2,968.1	2,824.2	143.91	20.625	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #010H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 211-MWD													Offset Well Error:	0.0 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		
10,100.0	10,048.6	18,850.0	11,621.7	37.6	131.5	86.08	-1.5	1,662.3	2,911.1	2,764.9	146.19	19.914		
10,200.0	10,148.6	18,850.0	11,621.7	37.9	131.5	86.08	-1.5	1,662.3	2,856.5	2,708.1	148.47	19.240		
10,300.0	10,248.6	18,850.0	11,621.7	38.2	131.5	86.08	-1.5	1,662.3	2,804.4	2,653.7	150.75	18.603		
10,400.0	10,348.6	18,850.0	11,621.7	38.6	131.5	86.08	-1.5	1,662.3	2,755.0	2,602.0	153.00	18.006		
10,500.0	10,448.6	18,850.0	11,621.7	38.9	131.5	86.08	-1.5	1,662.3	2,708.3	2,553.1	155.22	17.449		
10,528.4	10,477.0	18,850.0	11,621.7	39.0	131.5	86.08	-1.5	1,662.3	2,695.6	2,539.8	155.84	17.297		
10,550.0	10,498.6	18,850.0	11,621.7	39.1	131.5	-94.62	-1.5	1,662.3	2,686.1	2,529.8	156.31	17.185		
10,600.0	10,548.4	18,850.0	11,621.7	39.2	131.5	-96.94	-1.5	1,662.3	2,664.9	2,507.6	157.36	16.935		
10,650.0	10,597.7	18,850.0	11,621.7	39.4	131.5	-99.09	-1.5	1,662.3	2,645.0	2,486.7	158.37	16.701		
10,700.0	10,646.1	18,850.0	11,621.7	39.6	131.5	-101.05	-1.5	1,662.3	2,626.6	2,467.2	159.33	16.484		
10,750.0	10,693.1	18,850.0	11,621.7	39.7	131.5	-102.80	-1.5	1,662.3	2,609.7	2,449.5	160.23	16.287		
10,800.0	10,738.5	18,850.0	11,621.7	39.9	131.5	-104.34	-1.5	1,662.3	2,594.6	2,433.5	161.06	16.109		
10,850.0	10,782.0	18,850.0	11,621.7	40.0	131.5	-105.66	-1.5	1,662.3	2,581.4	2,419.6	161.81	15.954		
10,900.0	10,823.1	18,850.0	11,621.7	40.2	131.5	-106.75	-1.5	1,662.3	2,570.3	2,407.9	162.46	15.821		
10,950.0	10,861.6	18,850.0	11,621.7	40.4	131.5	-107.62	-1.5	1,662.3	2,561.4	2,398.4	163.02	15.712		
11,000.0	10,897.1	18,850.0	11,621.7	40.5	131.5	-108.27	-1.5	1,662.3	2,554.7	2,391.2	163.48	15.627		
11,050.0	10,929.5	18,850.0	11,621.7	40.7	131.5	-108.68	-1.5	1,662.3	2,550.3	2,386.5	163.83	15.567		
11,100.0	10,958.4	18,850.0	11,621.7	40.8	131.5	-108.87	-1.5	1,662.3	2,548.3	2,384.2	164.06	15.532		
11,116.9	10,967.3	18,850.0	11,621.7	40.9	131.5	-108.88	-1.5	1,662.3	2,548.2	2,384.1	164.12	15.526 CC, ES		
11,150.0	10,983.6	18,850.0	11,621.7	41.0	131.5	-108.83	-1.5	1,662.3	2,548.7	2,384.5	164.19	15.523 SF		
11,200.0	11,005.0	18,850.0	11,621.7	41.2	131.5	-108.57	-1.5	1,662.3	2,551.5	2,387.3	164.21	15.538		
11,250.0	11,022.4	18,850.0	11,621.7	41.4	131.5	-108.08	-1.5	1,662.3	2,556.6	2,392.5	164.11	15.579		
11,300.0	11,035.6	18,850.0	11,621.7	41.5	131.5	-107.37	-1.5	1,662.3	2,564.0	2,400.1	163.91	15.643		
11,350.0	11,044.6	18,850.0	11,621.7	41.8	131.5	-106.42	-1.5	1,662.3	2,573.7	2,410.1	163.60	15.731		
11,400.0	11,049.3	18,850.0	11,621.7	42.0	131.5	-105.25	-1.5	1,662.3	2,585.5	2,422.3	163.20	15.842		
11,428.4	11,050.0	18,850.0	11,621.7	42.1	131.5	-104.49	-1.5	1,662.3	2,593.1	2,430.2	162.94	15.915		
11,428.7	11,050.0	18,850.0	11,621.7	42.1	131.5	-104.49	-1.5	1,662.3	2,593.2	2,430.2	162.93	15.915		
11,500.0	11,050.0	18,850.0	11,621.7	42.4	131.5	-104.49	-1.5	1,662.3	2,614.0	2,451.8	162.20	16.116		
11,600.0	11,050.0	18,850.0	11,621.7	43.0	131.5	-104.49	-1.5	1,662.3	2,646.1	2,485.0	161.10	16.426		
11,700.0	11,050.0	18,850.0	11,621.7	43.5	131.5	-104.49	-1.5	1,662.3	2,681.6	2,521.6	159.91	16.769		
11,800.0	11,050.0	18,850.0	11,621.7	44.2	131.5	-104.49	-1.5	1,662.3	2,720.2	2,561.6	158.65	17.146		
11,900.0	11,050.0	18,850.0	11,621.7	44.9	131.5	-104.49	-1.5	1,662.3	2,762.0	2,604.7	157.33	17.555		
12,000.0	11,050.0	18,850.0	11,621.7	45.6	131.5	-104.49	-1.5	1,662.3	2,806.7	2,650.7	155.96	17.996		
12,100.0	11,050.0	18,850.0	11,621.7	46.4	131.5	-104.49	-1.5	1,662.3	2,854.2	2,699.7	154.56	18.467		
12,200.0	11,050.0	18,850.0	11,621.7	47.2	131.5	-104.49	-1.5	1,662.3	2,904.4	2,751.3	153.13	18.968		
12,300.0	11,050.0	18,850.0	11,621.7	48.1	131.5	-104.49	-1.5	1,662.3	2,957.1	2,805.4	151.67	19.497		
12,400.0	11,050.0	18,850.0	11,621.7	49.0	131.5	-104.49	-1.5	1,662.3	3,012.2	2,862.0	150.21	20.054		
12,500.0	11,050.0	18,850.0	11,621.7	50.0	131.5	-104.49	-1.5	1,662.3	3,069.6	2,920.9	148.74	20.638		
12,600.0	11,050.0	18,850.0	11,621.7	51.0	131.5	-104.49	-1.5	1,662.3	3,129.1	2,981.9	147.27	21.247		
12,700.0	11,050.0	18,850.0	11,621.7	52.0	131.5	-104.49	-1.5	1,662.3	3,190.7	3,044.9	145.82	21.881		
12,800.0	11,050.0	18,850.0	11,621.7	53.1	131.5	-104.49	-1.5	1,662.3	3,254.1	3,109.8	144.38	22.539		
12,900.0	11,050.0	18,850.0	11,621.7	54.2	131.5	-104.49	-1.5	1,662.3	3,319.4	3,176.4	142.95	23.220		
13,000.0	11,050.0	18,850.0	11,621.7	55.3	131.5	-104.49	-1.5	1,662.3	3,386.3	3,244.8	141.55	23.923		
13,100.0	11,050.0	18,850.0	11,621.7	56.4	131.5	-104.49	-1.5	1,662.3	3,454.9	3,314.7	140.18	24.647		
13,200.0	11,050.0	18,850.0	11,621.7	57.6	131.5	-104.49	-1.5	1,662.3	3,524.9	3,386.1	138.83	25.390		
13,300.0	11,050.0	18,850.0	11,621.7	58.8	131.5	-104.49	-1.5	1,662.3	3,596.4	3,458.9	137.51	26.153		
13,400.0	11,050.0	18,850.0	11,621.7	60.0	131.5	-104.49	-1.5	1,662.3	3,669.2	3,533.0	136.23	26.934		
13,500.0	11,050.0	18,850.0	11,621.7	61.2	131.5	-104.49	-1.5	1,662.3	3,743.3	3,608.3	134.98	27.733		
13,600.0	11,050.0	18,850.0	11,621.7	62.5	131.5	-104.49	-1.5	1,662.3	3,818.5	3,684.8	133.76	28.547		
13,700.0	11,050.0	18,850.0	11,621.7	63.8	131.5	-104.49	-1.5	1,662.3	3,894.9	3,762.3	132.58	29.378		
13,800.0	11,050.0	18,850.0	11,621.7	65.1	131.5	-104.49	-1.5	1,662.3	3,972.3	3,840.9	131.43	30.224		
13,900.0	11,050.0	18,850.0	11,621.7	66.4	131.5	-104.49	-1.5	1,662.3	4,050.7	3,920.4	130.32	31.083		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 211-MWD												Offset Well Error:	0.0 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	
14,000.0	11,050.0	18,850.0	11,621.7	67.7	131.5	-104.49	-1.5	1,662.3	4,130.0	4,000.8	129.24	31.956	
14,100.0	11,050.0	18,850.0	11,621.7	69.0	131.5	-104.49	-1.5	1,662.3	4,210.2	4,082.0	128.20	32.842	
14,200.0	11,050.0	18,850.0	11,621.7	70.4	131.5	-104.49	-1.5	1,662.3	4,291.3	4,164.1	127.19	33.740	
14,300.0	11,050.0	18,850.0	11,621.7	71.7	131.5	-104.49	-1.5	1,662.3	4,373.1	4,246.9	126.21	34.649	
14,400.0	11,050.0	18,850.0	11,621.7	73.1	131.5	-104.49	-1.5	1,662.3	4,455.7	4,330.4	125.27	35.569	
14,500.0	11,050.0	18,850.0	11,621.7	74.5	131.5	-104.49	-1.5	1,662.3	4,538.9	4,414.6	124.36	36.499	
14,600.0	11,050.0	18,850.0	11,621.7	75.9	131.5	-104.49	-1.5	1,662.3	4,622.9	4,499.4	123.48	37.438	
14,700.0	11,050.0	18,850.0	11,621.7	77.3	131.5	-104.49	-1.5	1,662.3	4,707.4	4,584.8	122.63	38.387	
14,800.0	11,050.0	18,850.0	11,621.7	78.7	131.5	-104.49	-1.5	1,662.3	4,792.6	4,670.8	121.81	39.344	
14,900.0	11,050.0	18,850.0	11,621.7	80.1	131.5	-104.49	-1.5	1,662.3	4,878.3	4,757.3	121.02	40.308	
15,000.0	11,050.0	18,850.0	11,621.7	81.6	131.5	-104.49	-1.5	1,662.3	4,964.5	4,844.3	120.26	41.280	
15,100.0	11,050.0	18,850.0	11,621.7	83.0	131.5	-104.49	-1.5	1,662.3	5,051.3	4,931.8	119.53	42.259	
15,200.0	11,050.0	18,850.0	11,621.7	84.5	131.5	-104.49	-1.5	1,662.3	5,138.5	5,019.7	118.82	43.245	
15,300.0	11,050.0	18,850.0	11,621.7	85.9	131.5	-104.49	-1.5	1,662.3	5,226.2	5,108.1	118.14	44.236	
15,400.0	11,050.0	18,850.0	11,621.7	87.4	131.5	-104.49	-1.5	1,662.3	5,314.4	5,196.9	117.49	45.233	
15,500.0	11,050.0	18,850.0	11,621.7	88.9	131.5	-104.49	-1.5	1,662.3	5,402.9	5,286.1	116.86	46.236	
15,600.0	11,050.0	18,850.0	11,621.7	90.4	131.5	-104.49	-1.5	1,662.3	5,491.8	5,375.6	116.25	47.243	
15,700.0	11,050.0	18,850.0	11,621.7	91.8	131.5	-104.49	-1.5	1,662.3	5,581.2	5,465.5	115.66	48.254	
15,800.0	11,050.0	18,850.0	11,621.7	93.3	131.5	-104.49	-1.5	1,662.3	5,670.8	5,555.7	115.10	49.270	
15,900.0	11,050.0	18,850.0	11,621.7	94.8	131.5	-104.49	-1.5	1,662.3	5,760.8	5,646.3	114.55	50.289	
16,000.0	11,050.0	18,850.0	11,621.7	96.3	131.5	-104.49	-1.5	1,662.3	5,851.2	5,737.1	114.03	51.312	
16,100.0	11,050.0	18,850.0	11,621.7	97.8	131.5	-104.49	-1.5	1,662.3	5,941.8	5,828.3	113.53	52.338	
16,200.0	11,050.0	18,850.0	11,621.7	99.4	131.5	-104.49	-1.5	1,662.3	6,032.8	5,919.7	113.04	53.367	
16,300.0	11,050.0	18,850.0	11,621.7	100.9	131.5	-104.49	-1.5	1,662.3	6,124.0	6,011.4	112.58	54.399	
16,400.0	11,050.0	18,850.0	11,621.7	102.4	131.5	-104.49	-1.5	1,662.3	6,215.5	6,103.3	112.13	55.433	
16,500.0	11,050.0	18,850.0	11,621.7	103.9	131.5	-104.49	-1.5	1,662.3	6,307.2	6,195.5	111.69	56.469	
16,600.0	11,050.0	18,850.0	11,621.7	105.5	131.5	-104.49	-1.5	1,662.3	6,399.2	6,287.9	111.28	57.507	
16,700.0	11,050.0	18,850.0	11,621.7	107.0	131.5	-104.49	-1.5	1,662.3	6,491.5	6,380.6	110.88	58.546	
16,800.0	11,050.0	18,850.0	11,621.7	108.5	131.5	-104.49	-1.5	1,662.3	6,583.9	6,473.4	110.49	59.587	
16,900.0	11,050.0	18,850.0	11,621.7	110.1	131.5	-104.49	-1.5	1,662.3	6,676.6	6,566.5	110.12	60.629	
17,000.0	11,050.0	18,850.0	11,621.7	111.6	131.5	-104.49	-1.5	1,662.3	6,769.5	6,659.7	109.77	61.672	
17,100.0	11,050.0	18,850.0	11,621.7	113.2	131.5	-104.49	-1.5	1,662.3	6,862.6	6,753.1	109.42	62.716	
17,200.0	11,050.0	18,850.0	11,621.7	114.7	131.5	-104.49	-1.5	1,662.3	6,955.9	6,846.8	109.09	63.760	
17,300.0	11,050.0	18,850.0	11,621.7	116.3	131.5	-104.49	-1.5	1,662.3	7,049.3	6,940.5	108.78	64.805	
17,357.4	11,050.0	18,850.0	11,621.7	117.1	131.5	-104.49	-1.5	1,662.3	7,103.1	6,994.5	108.60	65.406	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 284-MWD												Offset Well Error:	0.0 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	
0.0	0.0	0.0	0.0	0.0	0.0	14.07	7,505.2	1,881.3	7,737.6				
100.0	100.0	69.2	69.2	0.1	0.1	14.07	7,505.1	1,881.2	7,737.3	7,737.1	0.24	N/A	
200.0	200.0	211.9	211.9	0.5	0.3	14.07	7,504.4	1,881.0	7,736.8	7,736.0	0.83	9,359.660	
300.0	300.0	329.9	329.9	0.8	0.6	14.07	7,503.2	1,880.6	7,735.8	7,734.3	1.46	5,281.348	
400.0	400.0	443.3	443.3	1.2	1.0	14.07	7,502.1	1,880.4	7,734.7	7,732.5	2.23	3,470.054	
500.0	500.0	572.8	572.8	1.6	1.5	14.08	7,500.1	1,880.6	7,733.3	7,730.2	3.05	2,534.894	
600.0	600.0	656.7	656.7	1.9	1.8	14.08	7,498.9	1,880.5	7,731.8	7,728.1	3.71	2,084.441	
700.0	700.0	806.8	806.7	2.3	2.3	14.08	7,496.4	1,880.6	7,730.3	7,725.7	4.61	1,678.215	
800.0	800.0	918.1	918.0	2.6	2.7	14.09	7,493.9	1,880.4	7,728.1	7,722.7	5.36	1,440.790	
900.0	900.0	1,007.3	1,007.1	3.0	3.1	14.09	7,491.9	1,880.6	7,726.0	7,719.9	6.04	1,278.831	
1,000.0	1,000.0	1,106.0	1,105.9	3.4	3.4	14.10	7,489.6	1,880.9	7,723.8	7,717.1	6.75	1,143.625	
1,100.0	1,100.0	1,175.3	1,175.1	3.7	3.7	14.10	7,488.1	1,881.3	7,721.9	7,714.5	7.36	1,049.311	
1,200.0	1,200.0	1,277.1	1,277.0	4.1	4.0	14.11	7,486.2	1,882.5	7,720.3	7,712.3	8.08	955.416	
1,300.0	1,300.0	1,378.6	1,378.4	4.4	4.4	14.12	7,484.2	1,883.3	7,718.6	7,709.8	8.80	876.914	
1,400.0	1,400.0	1,464.8	1,464.5	4.8	4.7	14.14	7,482.5	1,884.4	7,717.0	7,707.6	9.47	815.099	
1,500.0	1,500.0	1,543.6	1,543.4	5.1	5.0	14.15	7,481.0	1,886.1	7,715.7	7,705.6	10.11	763.474	
1,600.0	1,600.0	1,621.0	1,620.7	5.5	5.3	116.74	7,479.5	1,888.6	7,715.0	7,704.2	10.73	719.207	
1,613.9	1,613.9	1,631.8	1,631.4	5.5	5.3	116.75	7,479.3	1,888.9	7,715.0	7,704.2	10.81	713.536	
1,700.0	1,700.0	1,692.7	1,692.3	5.8	5.5	116.77	7,478.2	1,891.2	7,715.4	7,704.1	11.32	681.598	
1,800.0	1,799.9	1,751.1	1,750.6	6.2	5.7	116.80	7,477.2	1,894.5	7,717.0	7,705.2	11.87	650.248	
1,900.0	1,899.7	1,813.8	1,813.1	6.5	5.9	116.84	7,476.1	1,899.4	7,720.0	7,707.6	12.44	620.798	
2,000.0	1,999.4	1,884.4	1,883.4	6.9	6.2	116.89	7,474.8	1,906.5	7,724.3	7,711.2	13.04	592.518	
2,100.0	2,098.9	1,958.0	1,956.5	7.2	6.4	116.95	7,473.5	1,914.2	7,729.5	7,715.9	13.65	566.101	
2,200.0	2,198.3	1,996.0	1,994.3	7.6	6.6	116.94	7,473.0	1,918.2	7,736.2	7,722.1	14.15	546.843	
2,300.0	2,297.4	2,052.0	2,050.0	8.0	6.8	116.96	7,472.9	1,924.4	7,744.7	7,730.0	14.71	526.457	
2,400.0	2,396.4	2,052.0	2,050.0	8.3	6.8	116.96	7,472.9	1,924.4	7,754.2	7,739.2	15.07	514.483	
2,500.0	2,495.5	2,089.6	2,087.4	8.7	6.9	117.03	7,473.3	1,928.8	7,764.8	7,749.2	15.57	498.578	
2,600.0	2,594.5	2,147.0	2,144.3	9.1	7.1	117.13	7,474.6	1,936.0	7,776.3	7,760.2	16.15	481.470	
2,700.0	2,693.5	2,160.7	2,157.8	9.5	7.2	117.15	7,475.0	1,937.7	7,788.5	7,771.9	16.57	470.134	
2,800.0	2,792.5	2,240.0	2,236.4	9.9	7.5	117.29	7,477.3	1,947.9	7,801.2	7,784.0	17.23	452.719	
2,900.0	2,891.6	2,294.4	2,290.3	10.3	7.7	117.39	7,479.2	1,954.8	7,814.4	7,796.6	17.80	438.891	
3,000.0	2,990.6	2,335.0	2,330.6	10.7	7.8	117.46	7,480.8	1,960.0	7,828.3	7,809.9	18.33	427.180	
3,100.0	3,089.6	2,391.8	2,386.9	11.1	8.0	117.56	7,483.4	1,967.1	7,842.7	7,823.8	18.91	414.759	
3,200.0	3,188.6	2,446.5	2,441.1	11.5	8.2	117.65	7,486.3	1,974.0	7,857.9	7,838.4	19.49	403.269	
3,300.0	3,287.7	2,524.0	2,517.8	11.9	8.5	117.78	7,490.7	1,984.0	7,873.4	7,853.2	20.15	390.688	
3,400.0	3,386.7	2,599.6	2,592.6	12.3	8.8	117.91	7,495.0	1,994.0	7,889.2	7,868.4	20.82	378.997	
3,500.0	3,485.7	2,680.9	2,673.0	12.7	9.1	118.05	7,499.7	2,005.2	7,905.4	7,883.9	21.51	367.602	
3,600.0	3,584.8	2,755.1	2,746.3	13.1	9.4	118.18	7,504.1	2,015.7	7,921.8	7,899.6	22.17	357.358	
3,700.0	3,683.8	2,836.4	2,826.6	13.5	9.7	118.33	7,509.2	2,027.4	7,938.5	7,915.6	22.86	347.217	
3,800.0	3,782.8	2,941.6	2,930.5	13.9	10.1	118.51	7,515.6	2,042.4	7,955.2	7,931.6	23.66	336.250	
3,900.0	3,881.8	3,065.0	3,052.5	14.3	10.6	118.73	7,523.0	2,060.3	7,972.1	7,947.5	24.53	324.939	
4,000.0	3,980.9	3,316.1	3,300.8	14.7	11.6	119.16	7,534.9	2,094.7	7,987.3	7,961.3	25.95	307.836	
4,100.0	4,079.9	3,453.1	3,436.7	15.1	12.2	119.38	7,540.6	2,111.1	8,001.7	7,974.8	26.88	297.725	
4,200.0	4,178.9	3,581.8	3,564.6	15.5	12.7	119.58	7,545.8	2,125.0	8,015.9	7,988.1	27.77	288.680	
4,300.0	4,277.9	19,030.0	11,592.2	15.9	132.6	-171.55	2.1	2,755.2	7,984.6	7,902.7	81.96	97.424	
4,400.0	4,377.0	19,030.0	11,592.2	16.3	132.6	-171.55	2.1	2,755.2	7,898.7	7,816.1	82.62	95.606	
4,500.0	4,476.0	19,030.0	11,592.2	16.8	132.6	-171.55	2.1	2,755.2	7,813.1	7,729.8	83.30	93.798	
4,600.0	4,575.0	19,030.0	11,592.2	17.2	132.6	-171.55	2.1	2,755.2	7,727.9	7,643.9	84.00	92.001	
4,700.0	4,674.0	19,030.0	11,592.2	17.6	132.6	-171.55	2.1	2,755.2	7,643.0	7,558.3	84.72	90.216	
4,800.0	4,773.1	19,030.0	11,592.2	18.0	132.6	-171.55	2.1	2,755.2	7,558.5	7,473.1	85.46	88.444	
4,900.0	4,872.1	19,030.0	11,592.2	18.4	132.6	-171.55	2.1	2,755.2	7,474.4	7,388.2	86.22	86.685	
5,000.0	4,971.1	19,030.0	11,592.2	18.8	132.6	-171.55	2.1	2,755.2	7,390.7	7,303.6	87.01	84.941	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Survey Program: 284-MWD													Offset Well Error:	0.0 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		
5,100.0	5,070.2	19,030.0	11,592.2	19.2	132.6	-171.55	2.1	2,755.2	7,307.3	7,219.5	87.82	83.211		
5,200.0	5,169.2	19,030.0	11,592.2	19.7	132.6	-171.55	2.1	2,755.2	7,224.4	7,135.8	88.65	81.497		
5,300.0	5,268.2	19,030.0	11,592.2	20.1	132.6	-171.55	2.1	2,755.2	7,142.0	7,052.5	89.50	79.799		
5,400.0	5,367.2	19,030.0	11,592.2	20.5	132.6	-171.55	2.1	2,755.2	7,060.0	6,969.6	90.38	78.118		
5,500.0	5,466.3	19,030.0	11,592.2	20.9	132.6	-171.55	2.1	2,755.2	6,978.4	6,887.2	91.28	76.454		
5,600.0	5,565.3	19,030.0	11,592.2	21.3	132.6	-171.55	2.1	2,755.2	6,897.4	6,805.2	92.20	74.808		
5,700.0	5,664.3	19,030.0	11,592.2	21.7	132.6	-171.55	2.1	2,755.2	6,816.8	6,723.7	93.15	73.180		
5,800.0	5,763.3	19,030.0	11,592.2	22.2	132.6	-171.55	2.1	2,755.2	6,736.8	6,642.7	94.13	71.572		
5,900.0	5,862.4	19,030.0	11,592.2	22.6	132.6	-171.55	2.1	2,755.2	6,657.3	6,562.2	95.13	69.983		
6,000.0	5,961.4	19,030.0	11,592.2	23.0	132.6	-171.55	2.1	2,755.2	6,578.4	6,482.2	96.16	68.414		
6,100.0	6,060.4	19,030.0	11,592.2	23.4	132.6	-171.55	2.1	2,755.2	6,500.1	6,402.8	97.21	66.866		
6,200.0	6,159.4	19,030.0	11,592.2	23.8	132.6	-171.55	2.1	2,755.2	6,422.3	6,324.0	98.29	65.340		
6,300.0	6,258.5	19,030.0	11,592.2	24.2	132.6	-171.55	2.1	2,755.2	6,345.2	6,245.8	99.40	63.835		
6,400.0	6,357.5	19,030.0	11,592.2	24.7	132.6	-171.55	2.1	2,755.2	6,268.7	6,168.2	100.54	62.352		
6,500.0	6,456.5	19,030.0	11,592.2	25.1	132.6	-171.55	2.1	2,755.2	6,192.9	6,091.2	101.70	60.892		
6,600.0	6,555.6	19,030.0	11,592.2	25.5	132.6	-171.55	2.1	2,755.2	6,117.8	6,014.9	102.90	59.455		
6,700.0	6,654.6	19,030.0	11,592.2	25.9	132.6	-171.55	2.1	2,755.2	6,043.4	5,939.3	104.12	58.042		
6,800.0	6,753.6	19,030.0	11,592.2	26.3	132.6	-171.55	2.1	2,755.2	5,969.8	5,864.4	105.37	56.653		
6,900.0	6,852.6	19,030.0	11,592.2	26.8	132.6	-171.55	2.1	2,755.2	5,896.9	5,790.3	106.66	55.289		
7,000.0	6,951.7	19,030.0	11,592.2	27.2	132.6	-171.55	2.1	2,755.2	5,824.8	5,716.9	107.97	53.950		
7,100.0	7,050.7	19,030.0	11,592.2	27.6	132.6	-171.55	2.1	2,755.2	5,753.6	5,644.3	109.31	52.636		
7,136.4	7,086.7	19,030.0	11,592.2	27.8	132.6	-171.55	2.1	2,755.2	5,727.9	5,618.1	109.80	52.164		
7,200.0	7,149.8	19,030.0	11,592.2	28.0	132.6	-171.41	2.1	2,755.2	5,682.9	5,572.2	110.67	51.348		
7,300.0	7,249.2	19,030.0	11,592.2	28.4	132.6	-171.17	2.1	2,755.2	5,611.3	5,499.3	112.04	50.085		
7,400.0	7,348.8	19,030.0	11,592.2	28.8	132.6	-170.93	2.1	2,755.2	5,538.8	5,425.5	113.39	48.848		
7,500.0	7,448.7	19,030.0	11,592.2	29.2	132.6	-170.67	2.1	2,755.2	5,465.4	5,350.7	114.73	47.636		
7,600.0	7,548.6	19,030.0	11,592.2	29.5	132.6	-170.40	2.1	2,755.2	5,391.1	5,275.0	116.07	46.447		
7,669.7	7,618.3	19,030.0	11,592.2	29.7	132.6	87.24	2.1	2,755.2	5,338.7	5,221.7	116.99	45.634		
7,700.0	7,648.6	19,030.0	11,592.2	29.8	132.6	87.24	2.1	2,755.2	5,316.0	5,198.6	117.39	45.285		
7,800.0	7,748.6	19,030.0	11,592.2	30.1	132.6	87.24	2.1	2,755.2	5,241.2	5,122.5	118.72	44.146		
7,900.0	7,848.6	19,030.0	11,592.2	30.5	132.6	87.24	2.1	2,755.2	5,167.3	5,047.3	120.09	43.030		
8,000.0	7,948.6	19,030.0	11,592.2	30.8	132.6	87.24	2.1	2,755.2	5,094.3	4,972.9	121.48	41.935		
8,100.0	8,048.6	19,030.0	11,592.2	31.1	132.6	87.24	2.1	2,755.2	5,022.3	4,899.4	122.91	40.863		
8,200.0	8,148.6	19,030.0	11,592.2	31.4	132.6	87.24	2.1	2,755.2	4,951.2	4,826.8	124.36	39.813		
8,300.0	8,248.6	19,030.0	11,592.2	31.7	132.6	87.24	2.1	2,755.2	4,881.1	4,755.3	125.84	38.787		
8,400.0	8,348.6	19,030.0	11,592.2	32.0	132.6	87.24	2.1	2,755.2	4,812.1	4,684.7	127.35	37.785		
8,500.0	8,448.6	19,030.0	11,592.2	32.4	132.6	87.24	2.1	2,755.2	4,744.2	4,615.3	128.89	36.807		
8,600.0	8,548.6	19,030.0	11,592.2	32.7	132.6	87.24	2.1	2,755.2	4,677.4	4,547.0	130.46	35.853		
8,700.0	8,648.6	19,030.0	11,592.2	33.0	132.6	87.24	2.1	2,755.2	4,611.9	4,479.8	132.05	34.925		
8,800.0	8,748.6	19,030.0	11,592.2	33.3	132.6	87.24	2.1	2,755.2	4,547.6	4,413.9	133.67	34.022		
8,900.0	8,848.6	19,030.0	11,592.2	33.6	132.6	87.24	2.1	2,755.2	4,484.6	4,349.3	135.30	33.145		
9,000.0	8,948.6	19,030.0	11,592.2	34.0	132.6	87.24	2.1	2,755.2	4,422.9	4,286.0	136.96	32.293		
9,100.0	9,048.6	19,030.0	11,592.2	34.3	132.6	87.24	2.1	2,755.2	4,362.7	4,224.1	138.64	31.469		
9,200.0	9,148.6	19,030.0	11,592.2	34.6	132.6	87.24	2.1	2,755.2	4,304.0	4,163.6	140.33	30.671		
9,300.0	9,248.6	19,030.0	11,592.2	34.9	132.6	87.24	2.1	2,755.2	4,246.8	4,104.8	142.03	29.901		
9,400.0	9,348.6	19,030.0	11,592.2	35.3	132.6	87.24	2.1	2,755.2	4,191.2	4,047.5	143.74	29.158		
9,500.0	9,448.6	19,030.0	11,592.2	35.6	132.6	87.24	2.1	2,755.2	4,137.3	3,991.8	145.46	28.443		
9,600.0	9,548.6	19,030.0	11,592.2	35.9	132.6	87.24	2.1	2,755.2	4,085.1	3,937.9	147.18	27.756		
9,700.0	9,648.6	19,030.0	11,592.2	36.3	132.6	87.24	2.1	2,755.2	4,034.7	3,885.8	148.89	27.098		
9,800.0	9,748.6	19,030.0	11,592.2	36.6	132.6	87.24	2.1	2,755.2	3,986.2	3,835.6	150.60	26.469		
9,900.0	9,848.6	19,030.0	11,592.2	36.9	132.6	87.24	2.1	2,755.2	3,939.7	3,787.4	152.30	25.869		
10,000.0	9,948.6	19,030.0	11,592.2	37.2	132.6	87.24	2.1	2,755.2	3,895.1	3,741.2	153.97	25.298		

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 284-MWD												Offset Well Error:	0.0 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	
10,100.0	10,048.6	19,030.0	11,592.2	37.6	132.6	87.24	2.1	2,755.2	3,852.7	3,697.0	155.63	24.756	
10,200.0	10,148.6	19,030.0	11,592.2	37.9	132.6	87.24	2.1	2,755.2	3,812.3	3,655.1	157.25	24.244	
10,300.0	10,248.6	19,030.0	11,592.2	38.2	132.6	87.24	2.1	2,755.2	3,774.3	3,615.4	158.83	23.762	
10,400.0	10,348.6	19,030.0	11,592.2	38.6	132.6	87.24	2.1	2,755.2	3,738.4	3,578.1	160.38	23.310	
10,500.0	10,448.6	19,030.0	11,592.2	38.9	132.6	87.24	2.1	2,755.2	3,705.0	3,543.1	161.87	22.888	
10,528.4	10,477.0	19,030.0	11,592.2	39.0	132.6	87.24	2.1	2,755.2	3,695.9	3,533.6	162.29	22.774	
10,550.0	10,498.6	19,030.0	11,592.2	39.1	132.6	-93.11	2.1	2,755.2	3,689.2	3,526.6	162.60	22.689	
10,600.0	10,548.4	19,030.0	11,592.2	39.2	132.6	-94.68	2.1	2,755.2	3,674.2	3,510.9	163.31	22.498	
10,650.0	10,597.7	19,030.0	11,592.2	39.4	132.6	-96.13	2.1	2,755.2	3,660.2	3,496.2	164.01	22.317	
10,700.0	10,646.1	19,030.0	11,592.2	39.6	132.6	-97.46	2.1	2,755.2	3,647.2	3,482.5	164.69	22.146	
10,750.0	10,693.1	19,030.0	11,592.2	39.7	132.6	-98.66	2.1	2,755.2	3,635.5	3,470.1	165.34	21.988	
10,800.0	10,738.5	19,030.0	11,592.2	39.9	132.6	-99.72	2.1	2,755.2	3,625.0	3,459.0	165.96	21.842	
10,850.0	10,782.0	19,030.0	11,592.2	40.0	132.6	-100.63	2.1	2,755.2	3,615.9	3,449.4	166.55	21.710	
10,900.0	10,823.1	19,030.0	11,592.2	40.2	132.6	-101.38	2.1	2,755.2	3,608.3	3,441.2	167.11	21.593	
10,950.0	10,861.6	19,030.0	11,592.2	40.4	132.6	-101.98	2.1	2,755.2	3,602.2	3,434.6	167.62	21.491	
11,000.0	10,897.1	19,030.0	11,592.2	40.5	132.6	-102.42	2.1	2,755.2	3,597.7	3,429.6	168.08	21.405	
11,050.0	10,929.5	19,030.0	11,592.2	40.7	132.6	-102.70	2.1	2,755.2	3,594.8	3,426.3	168.50	21.335	
11,100.0	10,958.4	19,030.0	11,592.2	40.8	132.6	-102.82	2.1	2,755.2	3,593.6	3,424.8	168.86	21.281	
11,111.7	10,964.6	19,030.0	11,592.2	40.9	132.6	-102.83	2.1	2,755.2	3,593.6	3,424.6	168.94	21.271	CC, ES
11,150.0	10,983.6	19,030.0	11,592.2	41.0	132.6	-102.78	2.1	2,755.2	3,594.1	3,424.9	169.18	21.244	
11,200.0	11,005.0	19,030.0	11,592.2	41.2	132.6	-102.58	2.1	2,755.2	3,596.2	3,426.7	169.44	21.224	
11,250.0	11,022.4	19,030.0	11,592.2	41.4	132.6	-102.21	2.1	2,755.2	3,599.9	3,430.3	169.65	21.220	SF
11,300.0	11,035.6	19,030.0	11,592.2	41.5	132.6	-101.68	2.1	2,755.2	3,605.3	3,435.5	169.80	21.232	
11,350.0	11,044.6	19,030.0	11,592.2	41.8	132.6	-101.00	2.1	2,755.2	3,612.2	3,442.3	169.90	21.261	
11,400.0	11,049.3	19,030.0	11,592.2	42.0	132.6	-100.16	2.1	2,755.2	3,620.6	3,450.6	169.94	21.305	
11,428.4	11,050.0	19,030.0	11,592.2	42.1	132.6	-99.62	2.1	2,755.2	3,626.0	3,456.0	169.94	21.337	
11,428.7	11,050.0	19,030.0	11,592.2	42.1	132.6	-99.62	2.1	2,755.2	3,626.0	3,456.1	169.94	21.338	
11,500.0	11,050.0	19,030.0	11,592.2	42.4	132.6	-99.62	2.1	2,755.2	3,640.9	3,471.0	169.90	21.430	
11,600.0	11,050.0	19,030.0	11,592.2	43.0	132.6	-99.62	2.1	2,755.2	3,663.9	3,494.1	169.80	21.577	
11,700.0	11,050.0	19,030.0	11,592.2	43.5	132.6	-99.62	2.1	2,755.2	3,689.5	3,519.9	169.67	21.746	
11,800.0	11,050.0	19,030.0	11,592.2	44.2	132.6	-99.62	2.1	2,755.2	3,717.7	3,548.2	169.48	21.936	
11,900.0	11,050.0	19,030.0	11,592.2	44.9	132.6	-99.62	2.1	2,755.2	3,748.2	3,579.0	169.25	22.146	
12,000.0	11,050.0	19,030.0	11,592.2	45.6	132.6	-99.62	2.1	2,755.2	3,781.2	3,612.2	168.98	22.377	
12,100.0	11,050.0	19,030.0	11,592.2	46.4	132.6	-99.62	2.1	2,755.2	3,816.5	3,647.9	168.66	22.628	
12,200.0	11,050.0	19,030.0	11,592.2	47.2	132.6	-99.62	2.1	2,755.2	3,854.1	3,685.8	168.31	22.899	
12,300.0	11,050.0	19,030.0	11,592.2	48.1	132.6	-99.62	2.1	2,755.2	3,893.9	3,726.0	167.91	23.190	
12,400.0	11,050.0	19,030.0	11,592.2	49.0	132.6	-99.62	2.1	2,755.2	3,935.9	3,768.4	167.48	23.500	
12,500.0	11,050.0	19,030.0	11,592.2	50.0	132.6	-99.62	2.1	2,755.2	3,979.9	3,812.8	167.02	23.828	
12,600.0	11,050.0	19,030.0	11,592.2	51.0	132.6	-99.62	2.1	2,755.2	4,025.9	3,859.3	166.53	24.175	
12,700.0	11,050.0	19,030.0	11,592.2	52.0	132.6	-99.62	2.1	2,755.2	4,073.8	3,907.8	166.01	24.540	
12,800.0	11,050.0	19,030.0	11,592.2	53.1	132.6	-99.62	2.1	2,755.2	4,123.6	3,958.2	165.46	24.922	
12,900.0	11,050.0	19,030.0	11,592.2	54.2	132.6	-99.62	2.1	2,755.2	4,175.2	4,010.3	164.89	25.321	
13,000.0	11,050.0	19,030.0	11,592.2	55.3	132.6	-99.62	2.1	2,755.2	4,228.6	4,064.3	164.30	25.737	
13,100.0	11,050.0	19,030.0	11,592.2	56.4	132.6	-99.62	2.1	2,755.2	4,283.6	4,119.9	163.69	26.169	
13,200.0	11,050.0	19,030.0	11,592.2	57.6	132.6	-99.62	2.1	2,755.2	4,340.2	4,177.2	163.06	26.617	
13,300.0	11,050.0	19,030.0	11,592.2	58.8	132.6	-99.62	2.1	2,755.2	4,398.4	4,236.0	162.42	27.080	
13,400.0	11,050.0	19,030.0	11,592.2	60.0	132.6	-99.62	2.1	2,755.2	4,458.1	4,296.3	161.77	27.558	
13,500.0	11,050.0	19,030.0	11,592.2	61.2	132.6	-99.62	2.1	2,755.2	4,519.1	4,358.0	161.11	28.050	
13,600.0	11,050.0	19,030.0	11,592.2	62.5	132.6	-99.62	2.1	2,755.2	4,581.6	4,421.1	160.44	28.556	
13,700.0	11,050.0	19,030.0	11,592.2	63.8	132.6	-99.62	2.1	2,755.2	4,645.4	4,485.6	159.77	29.076	
13,800.0	11,050.0	19,030.0	11,592.2	65.1	132.6	-99.62	2.1	2,755.2	4,710.4	4,551.3	159.09	29.608	
13,900.0	11,050.0	19,030.0	11,592.2	66.4	132.6	-99.62	2.1	2,755.2	4,776.6	4,618.2	158.41	30.154	

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

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Big Game - Minis 1 Federal Com #016H - Wellbore #1 - Actual													Offset Site Error:	0.0 usft
Survey Program: 284-MWD													Offset Well Error:	0.0 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		
14,000.0	11,050.0	19,030.0	11,592.2	67.7	132.6	-99.62	2.1	2,755.2	4,844.0	4,686.3	157.73	30.711		
14,100.0	11,050.0	19,030.0	11,592.2	69.0	132.6	-99.62	2.1	2,755.2	4,912.5	4,755.5	157.04	31.281		
14,200.0	11,050.0	19,030.0	11,592.2	70.4	132.6	-99.62	2.1	2,755.2	4,982.1	4,825.7	156.37	31.862		
14,300.0	11,050.0	19,030.0	11,592.2	71.7	132.6	-99.62	2.1	2,755.2	5,052.7	4,897.0	155.69	32.454		
14,400.0	11,050.0	19,030.0	11,592.2	73.1	132.6	-99.62	2.1	2,755.2	5,124.2	4,969.2	155.02	33.056		
14,500.0	11,050.0	19,030.0	11,592.2	74.5	132.6	-99.62	2.1	2,755.2	5,196.7	5,042.4	154.35	33.669		
14,600.0	11,050.0	19,030.0	11,592.2	75.9	132.6	-99.62	2.1	2,755.2	5,270.1	5,116.4	153.69	34.292		
14,700.0	11,050.0	19,030.0	11,592.2	77.3	132.6	-99.62	2.1	2,755.2	5,344.4	5,191.4	153.03	34.924		
14,800.0	11,050.0	19,030.0	11,592.2	78.7	132.6	-99.62	2.1	2,755.2	5,419.5	5,267.1	152.38	35.565		
14,900.0	11,050.0	19,030.0	11,592.2	80.1	132.6	-99.62	2.1	2,755.2	5,495.4	5,343.6	151.74	36.216		
15,000.0	11,050.0	19,030.0	11,592.2	81.6	132.6	-99.62	2.1	2,755.2	5,572.0	5,420.9	151.11	36.875		
15,100.0	11,050.0	19,030.0	11,592.2	83.0	132.6	-99.62	2.1	2,755.2	5,649.4	5,498.9	150.48	37.542		
15,200.0	11,050.0	19,030.0	11,592.2	84.5	132.6	-99.62	2.1	2,755.2	5,727.5	5,577.6	149.87	38.217		
15,300.0	11,050.0	19,030.0	11,592.2	85.9	132.6	-99.62	2.1	2,755.2	5,806.3	5,657.0	149.26	38.900		
15,400.0	11,050.0	19,030.0	11,592.2	87.4	132.6	-99.62	2.1	2,755.2	5,885.7	5,737.0	148.67	39.590		
15,500.0	11,050.0	19,030.0	11,592.2	88.9	132.6	-99.62	2.1	2,755.2	5,965.7	5,817.6	148.08	40.287		
15,600.0	11,050.0	19,030.0	11,592.2	90.4	132.6	-99.62	2.1	2,755.2	6,046.3	5,898.8	147.50	40.991		
15,700.0	11,050.0	19,030.0	11,592.2	91.8	132.6	-99.62	2.1	2,755.2	6,127.5	5,980.5	146.94	41.701		
15,800.0	11,050.0	19,030.0	11,592.2	93.3	132.6	-99.62	2.1	2,755.2	6,209.2	6,062.8	146.38	42.418		
15,900.0	11,050.0	19,030.0	11,592.2	94.8	132.6	-99.62	2.1	2,755.2	6,291.5	6,145.6	145.84	43.141		
16,000.0	11,050.0	19,030.0	11,592.2	96.3	132.6	-99.62	2.1	2,755.2	6,374.2	6,228.9	145.30	43.869		
16,100.0	11,050.0	19,030.0	11,592.2	97.8	132.6	-99.62	2.1	2,755.2	6,457.5	6,312.7	144.78	44.603		
16,200.0	11,050.0	19,030.0	11,592.2	99.4	132.6	-99.62	2.1	2,755.2	6,541.2	6,397.0	144.26	45.343		
16,300.0	11,050.0	19,030.0	11,592.2	100.9	132.6	-99.62	2.1	2,755.2	6,625.4	6,481.6	143.76	46.087		
16,400.0	11,050.0	19,030.0	11,592.2	102.4	132.6	-99.62	2.1	2,755.2	6,710.0	6,566.7	143.26	46.837		
16,500.0	11,050.0	19,030.0	11,592.2	103.9	132.6	-99.62	2.1	2,755.2	6,795.0	6,652.3	142.78	47.591		
16,600.0	11,050.0	19,030.0	11,592.2	105.5	132.6	-99.62	2.1	2,755.2	6,880.5	6,738.2	142.31	48.349		
16,700.0	11,050.0	19,030.0	11,592.2	107.0	132.6	-99.62	2.1	2,755.2	6,966.3	6,824.5	141.84	49.112		
16,800.0	11,050.0	19,030.0	11,592.2	108.5	132.6	-99.62	2.1	2,755.2	7,052.5	6,911.1	141.39	49.879		
16,900.0	11,050.0	19,030.0	11,592.2	110.1	132.6	-99.62	2.1	2,755.2	7,139.0	6,998.1	140.95	50.650		
17,000.0	11,050.0	19,030.0	11,592.2	111.6	132.6	-99.62	2.1	2,755.2	7,225.9	7,085.4	140.52	51.425		
17,100.0	11,050.0	19,030.0	11,592.2	113.2	132.6	-99.62	2.1	2,755.2	7,313.2	7,173.1	140.09	52.203		
17,200.0	11,050.0	19,030.0	11,592.2	114.7	132.6	-99.62	2.1	2,755.2	7,400.7	7,261.1	139.68	52.984		
17,300.0	11,050.0	19,030.0	11,592.2	116.3	132.6	-99.62	2.1	2,755.2	7,488.6	7,349.3	139.27	53.769		
17,357.4	11,050.0	19,030.0	11,592.2	117.1	132.6	-99.62	2.1	2,755.2	7,539.2	7,400.2	139.04	54.222		

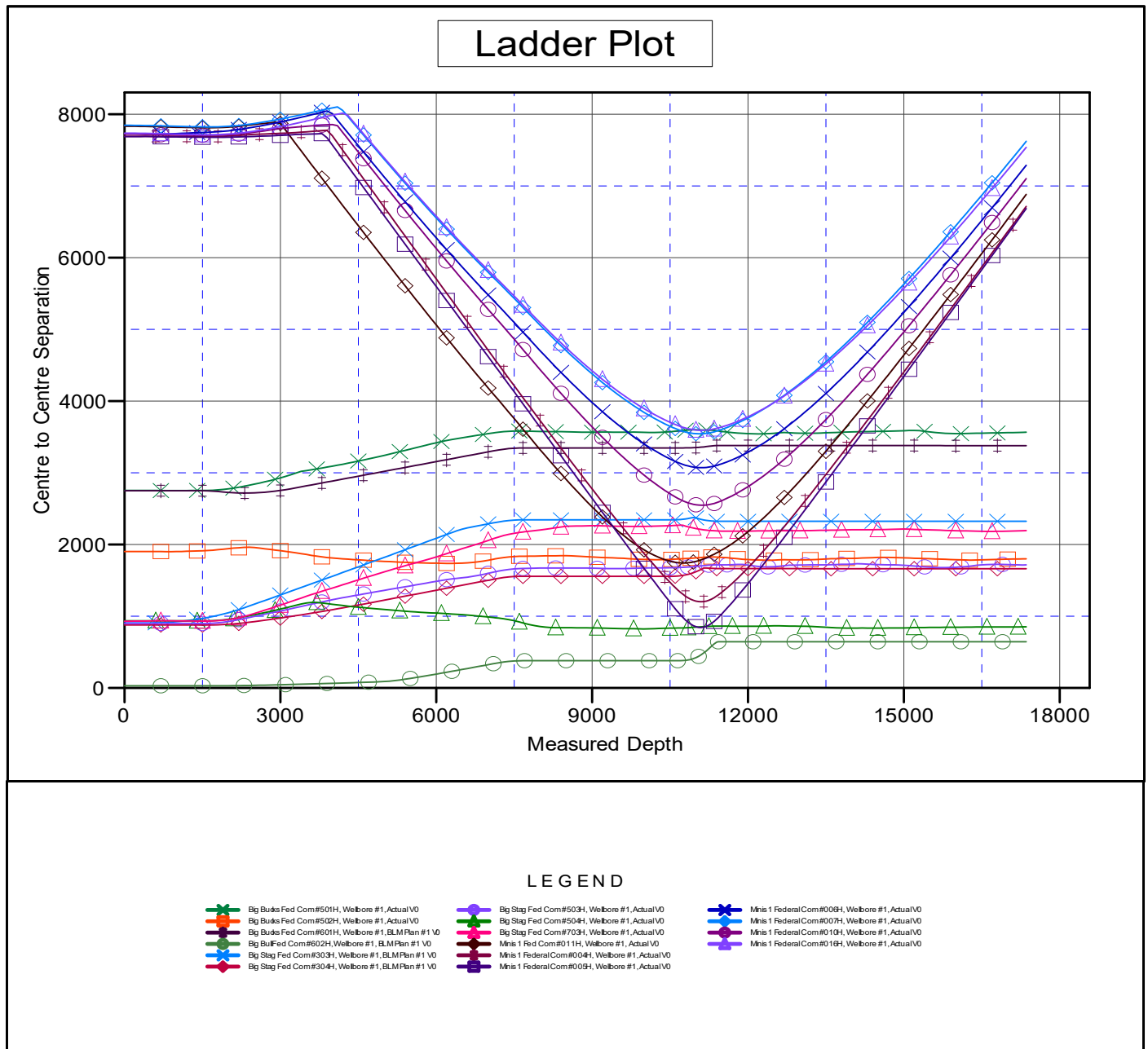
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3804.5usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Big Bull Fed Com #305H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.38°



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

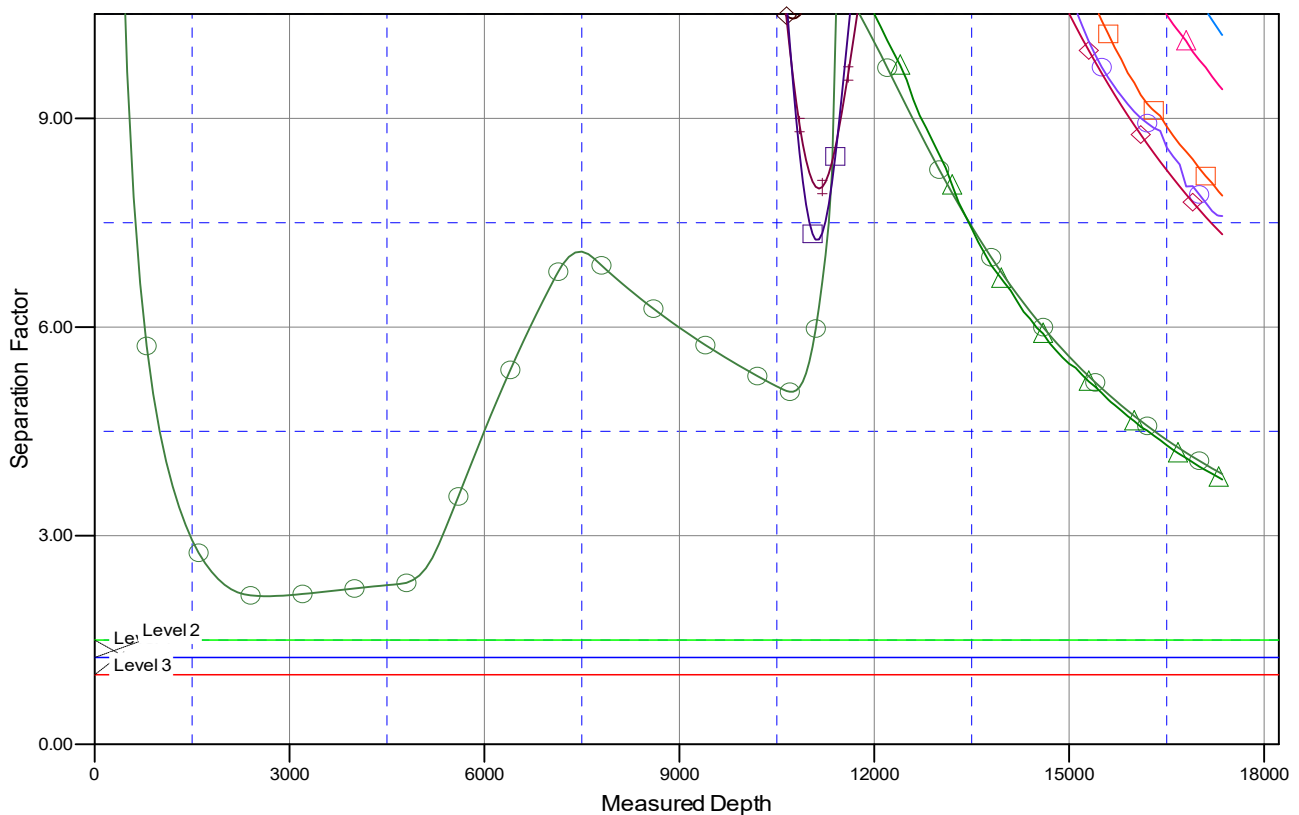
Anticollision Report

Company:	Matador Production Company	Local Co-ordinate Reference:	Well Big Bull Fed Com #305H
Project:	Ranger/Arrowhead	TVD Reference:	KB @ 3804.5usft
Reference Site:	Big Game	MD Reference:	KB @ 3804.5usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Big Bull Fed Com #305H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.14 Server
Reference Design:	BLM Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3804.5usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Big Bull Fed Com #305H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.38°

Separation Factor Plot



LEGEND

Big Bulls Fed Com#501H, Wellbore #1, Actual V0	Big Stag Fed Com#503H, Wellbore #1, Actual V0	Minis 1 FederalCom#000H, Wellbore #1, Actual V0
Big Bulls Fed Com#502H, Wellbore #1, BLM Plan #1 V0	Big Stag Fed Com#703H, Wellbore #1, Actual V0	Minis 1 FederalCom#007H, Wellbore #1, Actual V0
Big Bulls Fed Com#601H, Wellbore #1, BLM Plan #1 V0	Big Stag Fed Com#011H, Wellbore #1, Actual V0	Minis 1 FederalCom#010H, Wellbore #1, Actual V0
Big Bulls Fed Com#602H, Wellbore #1, BLM Plan #1 V0	Minis 1 FederalCom#004H, Wellbore #1, Actual V0	Minis 1 FederalCom#019H, Wellbore #1, Actual V0
Big Stag Fed Com#303H, Wellbore #1, BLM Plan #1 V0	Minis 1 FederalCom#005H, Wellbore #1, Actual V0	
Big Stag Fed Com#304H, Wellbore #1, BLM Plan #1 V0		

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

Issued on: 22 Apr. 2021 by Logan Van Gorp



Connection Data Sheet

OD	Weight (lb/ft)	Wall Th.	Grade	Alt. Drift:	Connection
8 5/8 in.	Nominal: 32.00 Plain End: 31.13	0.352 in.	P110EC	7.875 in.	VAM® SPRINT-FJ

PIPE PROPERTIES		
Nominal OD	8.625	in.
Nominal ID	7.921	in.
Nominal Cross Section Area	9.149	sqin.
Grade Type	High Yield	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

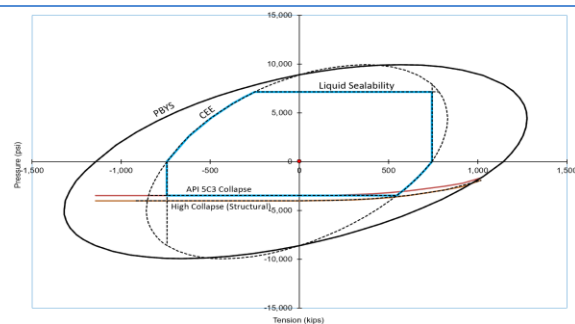
CONNECTION PROPERTIES		
Connection Type	Semi-Premium Integral Flush	
Connection OD (nom):	8.665	in.
Connection ID (nom):	7.954	in.
Make-Up Loss	2.614	in.
Critical Cross Section	6.038	sqin.
Tension Efficiency	65.0	% of pipe
Compression Efficiency	65.0	% of pipe
Internal Pressure Efficiency	80.0	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	744	klb
Compression Resistance	744	klb
Max. Internal Pressure	7,150	psi
Structural Collapse Resistance	4,000	psi
Max. Structural Bending	41	°/100ft
Max. Bending with Sealability	10	°/100ft

* 87.5% RBW

TORQUE VALUES		
Min. Make-up torque	15,000	ft.lb
Opt. Make-up torque	16,500	ft.lb
Max. Make-up torque	18,000	ft.lb
Max. Torque with Sealability (MTS)	48,000	ft.lb

VAM® SPRINT-FJ is a semi-premium flush connection designed for shale applications, where maximum clearance and high tension capacity are required for intermediate casing strings.



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Do you need help on this product? - Remember no one knows VAM® like VAM®

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australia@vamfieldservice.com

Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance



Issued on: 08 Jul. 2020 by Wesley Ott

VAM® SPRINT-SF

Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift:	Connection
5 1/2 in.	20.00 lb/ft	0.361 in.	P110EC	4.653 in.	VAM® SPRINT-SF

PIPE PROPERTIES		
Nominal OD	5.500	in.
Nominal ID	4.778	in.
Nominal Cross Section Area	5.828	sqin.
Grade Type	High Yield	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

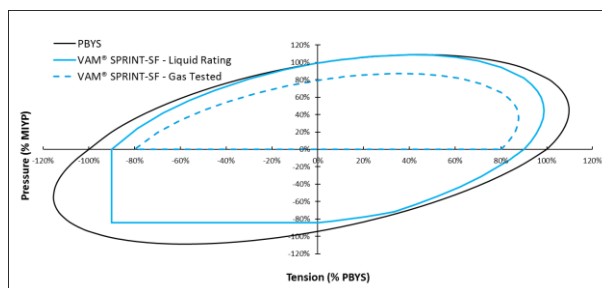
CONNECTION PROPERTIES		
Connection Type	Semi-Premium Integral Semi-Flush	
Connection OD (nom):	5.783	in.
Connection ID (nom):	4.717	in.
Make-Up Loss	5.965	in.
Critical Cross Section	5.244	sqin.
Tension Efficiency	90.0	% of pipe
Compression Efficiency	90.0	% of pipe
Internal Pressure Efficiency	100	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	656	klb
Compression Resistance	656	klb
Internal Yield Pressure	14,360	psi
Collapse Resistance	12,080	psi
Max. Structural Bending	89	°/100ft
Max. Bending with ISO/API Sealability	30	°/100ft

TORQUE VALUES		
Min. Make-up torque	20,000	ft.lb
Opt. Make-up torque	22,500	ft.lb
Max. Make-up torque	25,000	ft.lb
Max. Torque with Sealability (MTS)	40,000	ft.lb

* 87.5% RBW

VAM® SPRINT-SF is a semi-flush connection innovatively designed for extreme shale applications. Its high tension rating and ultra high torque capacity make it ideal to run a fill string length as production casing in shale wells with extended horizontal sections and tight clearance requirements.



Do you need help on this product? - Remember no one knows VAM® like VAM®

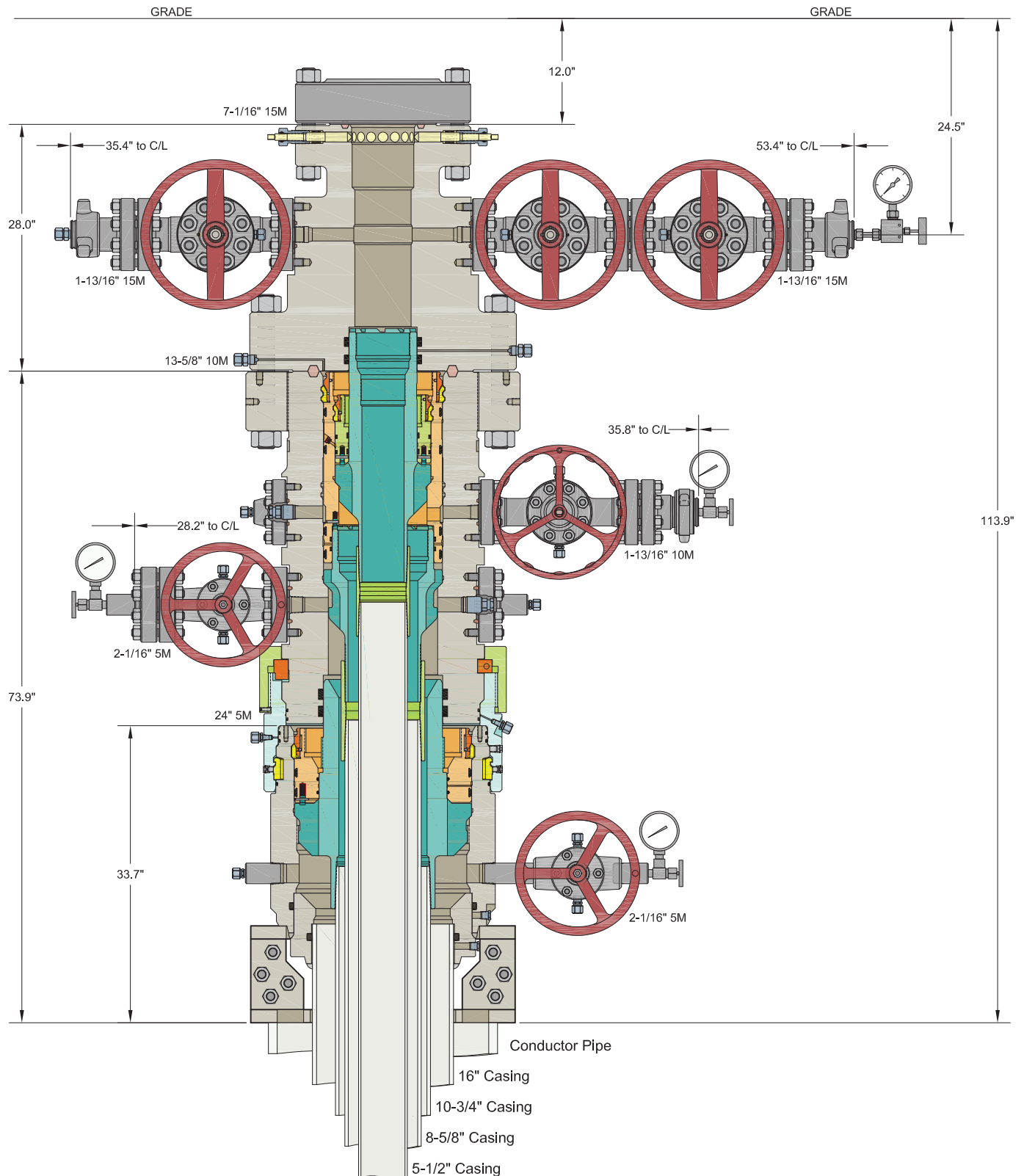
canada@vamfieldservice.com
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Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance





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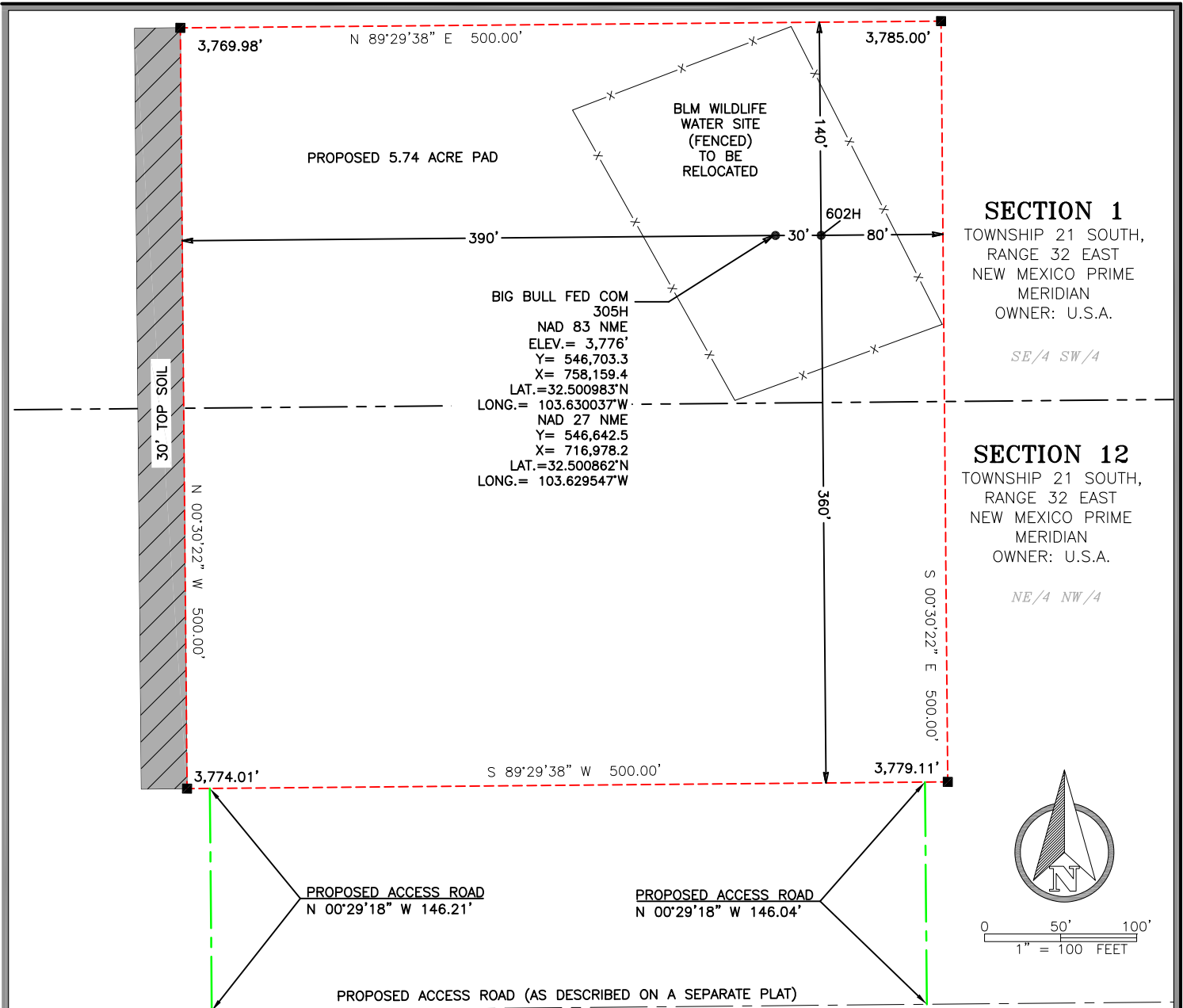
ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

MATADOR PRODUCTION COMPANY
WEST TEXAS

16" x 10-3/4" x 8-5/8" x 5-1/2" CRC / MBU-3T-CFL Wellhead
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head
And 10-3/4", 8-5/8" & 5-1/2" Mandrel Casing Hangers

DRAWN	DLE	08JUL22
APPRV		
DRAWING NO.	HBE0000778	



NOTE:

- 1). SEE "TOPOGRAPHICAL AND ACCESS ROAD MAP" FOR PROPOSED ROAD LOCATION

DIRECTIONS TO THIS LOCATION:

FROM THE INTERSECTION OF N.M. HIGHWAY 176 AND BOOTLEG LANE, GO SOUTH ON BOOTLEG LANE APPROX. 1.7 MILES. TURN LEFT (EAST) ON A GRAVEL ROAD AND GO APPROX. 0.30 MILES TURN LEFT (NORTH), THE LOCATION IS TO THE NORTH.

I, MARK DILLON HARP, NEW MEXICO PROFESSIONAL SURVEYOR NO. 23786, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

MARK DILLON HARP
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF NEW MEXICO NO. 23786



550 Bailey Ave., 205 - Fort Worth, TX 76107
Ph: 817.349.9800 - Fax: 979.732.5271
TBPE Firm 17957 | TBPLS Firm 10193887
www.fscinc.net

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**MATADOR PRODUCTION
COMPANY**

WELL SITE PLAN

BIG BULL FED COM 305H
LOCATED 2,119 FEET FROM THE WEST LINE
AND 110 FEET FROM THE SOUTH LINE OF
SECTION 1, TOWNSHIP 21 SOUTH, RANGE 32
EAST, N.M.P.M. LEA COUNTY, NEW MEXICO

DATE:	10-10-2022	PROJECT NO:	2022101651
DRAWN BY:	RE	SCALE:	1" = 100'
CHECKED BY:	AR	SHEET:	1 OF 3
FIELD CREW:	RD	REVISION:	1

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025	² Pool Code	³ Pool Name
⁴ Property Code	⁵ Property Name BIG BULL FED COM	⁶ Well Number 305H
⁷ OGRID No. 228937	⁸ Operator Name MATADOR PRODUCTION COMPANY	⁹ Elevation 3,776'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	1	21 S	32 E		110	SOUTH	2,119	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	13	21 S	32 E		1,271	NORTH	1,370	WEST	LEA

¹² Dedicated Acres 200	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	SHL (NAD83 NME) Y = 546,703.3 X = 758,159.4 LAT. = 32.500983 °N LONG. = 103.630037 °W FTP (NAD83 NME) Y = 546,486.6 X = 757,411.8 LAT. = 32.500401 °N LONG. = 103.632467 °W CORNER COORDINATES (NAD83 NME) A - Y = 546,597.8 N X = 758,674.7 E B - Y = 543,956.2 N X = 758,690.6 E C - Y = 541,317.0 N X = 758,706.4 E D - Y = 539,996.6 N X = 758,714.8 E E - Y = 539,984.9 N X = 757,398.7 E F - Y = 541,305.4 N X = 757,390.3 E G - Y = 543,945.2 N X = 757,374.0 E H - Y = 546,586.2 N X = 757,358.0 E SHL (NAD27 NME) Y = 546,642.5 X = 716,978.2 LAT. = 32.500862 °N LONG. = 103.629547 °W FTP (NAD27 NME) Y = 546,425.8 X = 716,230.5 LAT. = 32.500280 °N LONG. = 103.631976 °W CORNER COORDINATES (NAD27 NME) A - Y = 546,537.0 N X = 717,493.4 E B - Y = 543,895.5 N X = 717,509.2 E C - Y = 541,256.4 N X = 717,524.9 E D - Y = 539,935.9 N X = 717,533.3 E E - Y = 539,924.2 N X = 716,217.2 E F - Y = 541,244.7 N X = 716,208.8 E G - Y = 543,884.5 N X = 716,192.7 E H - Y = 546,525.4 N X = 716,176.7 E	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division <i>Cassie Hahn</i> 10/24/22 Signature Date <i>Cassie Hahn</i> Printed Name <i>channa@matadorresources.com</i> E-mail Address
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 10-24-2022 Date of Survey <i>Mark Dillon Harp</i> Signature and Seal of Professional Surveyor MARK DILLON HARP 23786 Certificate Number AW 2022101651	

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 229546

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 229546
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	7/12/2023